



FINAL ENVIRONMENTAL IMPACT STATEMENT/ENVIRONMENTAL IMPACT REPORT SOUTH SACRAMENTO HABITAT CONSERVATION PLAN



VOLUME I



U.S. Fish and Wildlife Service

Sacramento Fish and Wildlife Office

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City of Rancho Cordova
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Capital SouthEast Connector Joint Powers
Authority
Central Valley Regional Water Quality
Control Board

Cooperating Agencies

US Army Corps of Engineers
US Environmental Protection Agency
California Department of Fish & Wildlife

Final Environmental Impact Statement and Environmental Impact Report for the South Sacramento Habitat Conservation Plan

February 2018

Abstract

This document evaluates the environmental consequences of approving incidental take permits under the federal and state Endangered Species Acts and implementing new urban development and associated infrastructure projects within southern Sacramento County, California, pursuant to a proposed Habitat Conservation Plan. Net benefits to most biological resources and aquatic resources are expected, compared to conventional project-by-project authorization processes. The proposed project and other action-alternatives would have minor impacts to other resources, none of which are significant.

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FINAL
Environmental Impact Statement/Environmental Impact Report
for the
South Sacramento Habitat Conservation Plan

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United States Fish and Wildlife Service

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Conservation Planning Division

and

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Department of Community Development,
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ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
°C	degrees Celsius
°F	degrees Fahrenheit
µg/m ³	micrograms per cubic meter
2020 SRWTP Master Plan	Sacramento Regional Wastewater Treatment Plant Master Plan 2020
AB	Assembly Bill
ADA	Americans with Disabilities Act
AFY	acre-feet per year
AMM	Avoidance and Minimization Measure
amsl	above mean sea level
ARP	Aquatic Resources Program
ATCM	Airborne Toxic Control Measure
BDCP	Bay Delta Conservation Plan
BGOs	biological goals and objectives
BMP	best management practice
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	California Occupational Health and Safety Administration
CalEEMod	California Emissions Estimate Model
CalEPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDC	California Department of Conservation
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
Central Valley RWQCB	Central Valley Regional Water Quality Control Board
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CH ₄	methane
CHSRA	California High Speed Rail Authority
CLUP	Comprehensive Land Use Plan
CMP	Coordinated Monitoring Program
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	carbon monoxide
CO ₂	carbon dioxide

ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
CO ₂ e	carbon dioxide equivalent
Coalition	Sacramento Valley Water Quality Coalition
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CSD	Community Services District
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
Delta	Sacramento River–San Joaquin River Delta
DWR	California Department of Water Resources
EA	Environmental Assessment
ECM	Environmental Compliance Memorandum
EGCSD	Elk Grove Community Services District
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESA	U.S./federal Endangered Species Act
FBO	fixed base operator
FCAM	Functional/Condition Assessment Method
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
Galt General Plan	<i>2030 Galt General Plan</i>
GHG	greenhouse gas
GIS	geographic information system
GPS	Global Positioning System
GVWR	gross vehicle weight rating
GWP	global warming potential
HCP	habitat conservation plan
HFC	hydrofluorocarbon
HMP	Hydromodification Management Plan
HSC	Health and Safety Code
HUC	Hydrologic Unit Code
I-	Interstate
IA	Implementation Agreement
ILF	in-lieu fee
ISS	Interceptor Sequencing Study
ITP	Incidental Take Permit
JPA	Joint Powers Authority
km	kilometers
LAFCO	Local Agency Formation Commission
LAU	Land Analysis Unit
LAWG	Local Agency Working Group

ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
lb/day	pounds/day
LESA	Land Evaluation and Site Assessment
LID	low-impact development
LIDAR	Light Detection and Ranging
LOP	Letter of Permission
LSA	Lake and Streambed Alteration Agreement
MBTA	Migratory Bird Treaty Act
MCRA	Mather Core Recovery Area
mgd	million gallons per day
MMP	Monitoring and Management Program
MMT	million metric tons
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
mpg	miles per gallon
MPO	metropolitan planning organization
MRZ	mineral resource zone
MSAA	Master Streambed Alteration Agreement
msl	mean sea level
MT	metric ton
MTP	Metropolitan Transportation Plan
MW	megawatt
N ₂ O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NCCP	natural community conservation plan
NCIC	North Central Information Center
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NO	nitric oxide
NO ₂	nitrogen dioxide
NOD	Notice of Determination
NOI	Notice of Intent
NOP	Notice of Preparation
NO _x	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWR	National Wildlife Refuge
PAC	Public Advisory Committee
Pb	lead
PFC	perfluorocarbon
PG&E	Pacific Gas & Electric Company

ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
PGP	Programmatic General Permit
PM ₁₀	respirable particulate matter
PM _{2.5}	fine particulate matter
PMP	Preserve Management Plan
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
ppb	parts per billion
ppm	parts per million
PPU	Preserve Planning Unit
RCRA	Resource Conservation and Recovery Act
Regional San	Sacramento Regional County Sanitation District
RFS	Renewable Fuel Standard
ROD	Record of Decision
ROG	reactive organic gas
RPS	Renewable Portfolio Standard
RPU	Reserve Planning Unit
RT	Regional Transit
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SACOG	Sacramento Area Council of Governments
Sacramento County General Plan	<i>Sacramento County 2030 General Plan</i>
SAFCA	Sacramento Area Flood Control Agency
SASD	Sacramento Area Sewer District
SB	Senate Bill
SCAS	Sacramento County Airport System
SCGA	Sacramento Central Groundwater Authority
SCS	Sustainable Communities Strategy
SCT/Link	South County Transit/Link
SCWA	Sacramento County Water Authority
SF ₆	sulfur hexafluoride
SFNA	Sacramento Federal Nonattainment Area
SIP	State Implementation Plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMARA	Surface Mining and Reclamation Act
SMFD	Sacramento Metropolitan Fire District
SMUD	Sacramento Municipal Utilities District
SO ₂	sulfur dioxide
SOI	sphere of influence
SP	Standard Permit
SQIP	Stormwater Quality Improvement Plan
SR	State Route
SRWTP	Sacramento Regional Wastewater Treatment Plant
SSHCP	South Sacramento Habitat Conservation Plan
SVAB	Sacramento Valley Air Basin

ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Technical Advisory Committee
TCM	Transportation Control Measure
TDS	total dissolved solids
TMDL	Total Maximum Daily Load
UDA	Urban Development Area
UPA	Urban Policy Area
US 50	U.S. Route 50
USACE	U.S. Army Corps of Engineers
USB	Urban Service Boundary
USFWS	U.S. Fish and Wildlife Service
VMT	vehicle miles travelled
VPIH	vernal pool invertebrate habitat
VWADI	Vernal Wetted Acre Density Index
WDR	waste discharge requirement
WRCC	Western Regional Climate Center
WWTP	wastewater treatment plant

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SSHCP EIS/EIR EXECUTIVE SUMMARY

ES.1 INTRODUCTION

This document is the joint Environmental Impact Statement (EIS) and Environmental Impact Report (EIR) for the proposed South Sacramento Habitat Conservation Plan (SSHCP), prepared pursuant to both the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). The U.S. Fish and Wildlife Service (USFWS) is the lead agency under NEPA and Sacramento County is the lead agency under CEQA for this joint SSHCP EIS and EIR (SSHCP EIS/EIR). Cooperating agencies are U.S. Army Corps of Engineers (USACE), U.S. Environmental Protection Agency (USEPA), and California Department of Fish and Wildlife (CDFW).

The SSHCP EIS/EIR evaluates the potential environmental impacts from issuing federal and state endangered-species take permits, and the implementation of a long-term HCP in south Sacramento County. Five local government organizations in south Sacramento County—the Permit Applicants¹—have applied for incidental take² permits (ITPs) from the USFWS under Section 10(a)(1)(B) of the federal Endangered Species Act (ESA) and from the CDFW under Section 2835 of the California Fish and Game Code.

The ITPs issued by the USFWS and CDFW would authorize incidental take of 28 native plant and animal species (Covered Species). Incidental take of these Covered Species would be authorized for defined categories of future activities (Covered Activities), including the planned urban development and associated transportation and infrastructure projects that are anticipated by the Permit Applicants within the Planning Area³ (Figure ES-1) during the next 50 years. The issuance of ITPs would address and satisfy future regulatory compliance needs of the Plan Permittees and would result in the establishment of a relatively large and interconnected Preserve System in the Planning Area.

As a required component of these ITP applications, the Permit Applicants have prepared the SSHCP, which is an HCP under ESA Section 10. The SSHCP identifies where future projects and activities would likely impact listed species, natural communities, and aquatic resources, and presents a comprehensive regional strategy for the avoidance, minimization, and mitigation of

¹ The Permit Applicants are Sacramento County, Galt, Rancho Cordova, the Sacramento County Water Agency (SCWA), and the Capital Southeast Connector Joint Powers Authority (Connector JPA). Each of these Permit Applicants is a lead agency for CEQA review of the SSHCP EIS/EIR. In addition, the future South Sacramento Conservation Agency (the SSHCP Implementing Entity) will become a Permit Applicant.

² Incidental take is generally defined as direct or indirect harm to a species, including habitat loss, which is incidental to an otherwise lawful activity (e.g., land development, improvements to public infrastructure).

³ The EIS/EIR Planning Area encompasses approximately 317,655 acres within south Sacramento County, and has the same boundaries as the SSHCP Planning Area. The EIS/EIR Planning Area includes Galt and Galt's sphere of influence, and the portion of Rancho Cordova that is located south of U.S. Highway 50. The geographical boundaries of the Planning Area are U.S. Highway 50 and White Rock Road to the north, the Sacramento River levee and County Road J11 (Walnut Grove-Thornton Road) to the west, the Sacramento County line with El Dorado and Amador Counties to the east, and the San Joaquin County to the south.

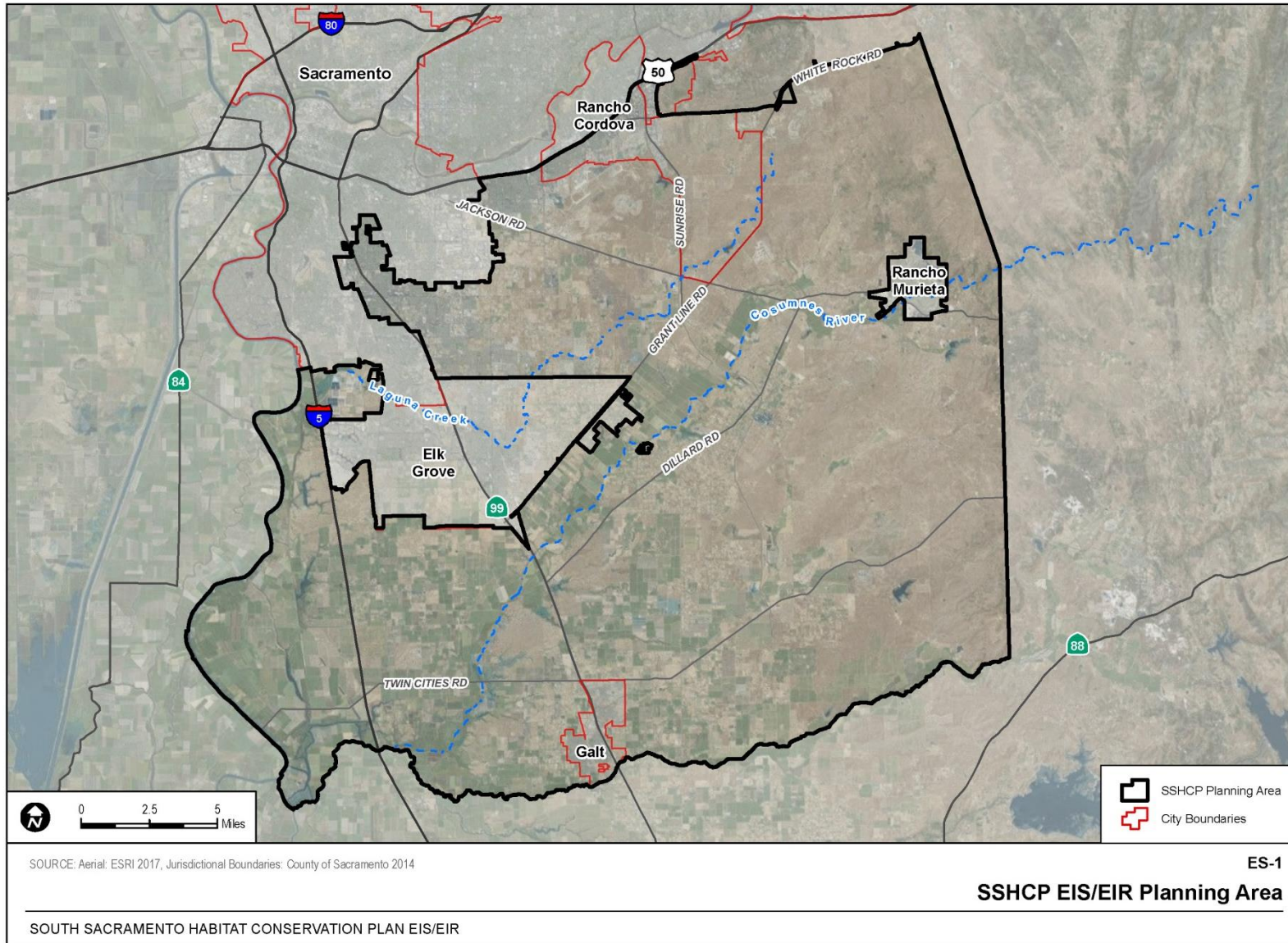
those impacts. SSHCP is accompanied by an Aquatic Resources Program (ARP), which proposes a locally based program for projects that impact aquatic resources to obtain permits under Section 404 of the Clean Water Act (CWA 404). The SSHCP also identifies future Covered Activity impacts to aquatic resources of the Planning Area, and provides a strategy to maximize the avoidance, minimization, and compensatory mitigation of aquatic resource impacts. (see Chapter 2 for a detailed description of the Proposed Action/Proposed Project Alternative and other alternatives considered). This EIS/EIR evaluates the potential impacts of ITP issuance by the USFWS and CDFW; approval and execution of an Implementing Agreement (IA) for the SSHCP; approval and implementation of the SSHCP by Sacramento County and the other Permit Applicants; approval and implementation by USACE of a multilevel CWA Section 404 permitting program for future SSHCP Covered Activity projects and activities; and approval and implementation of the SSHCP ARP by the Permit Applicants, as further discussed in EIS/EIR Section 1.5 (see Chapter 2 for a detailed description of all project alternatives).

The purpose of the EIS component of this joint EIS/EIR is to inform USFWS decision makers and the public of the effects on the human environment that would result from issuance of the ITPs to these local and state entities and from implementation of the proposed SSHCP or an alternative HCP within south Sacramento County. The USFWS will use the EIS/EIR to comply with NEPA for their issuance of ITPs to the Permit Applicants. The purpose of the EIR component of this joint EIS/EIR is to inform Permit Applicant decision makers and the public of the anticipated significant environmental impacts of the proposed project (the SSHCP), measures to mitigate any significant impacts, and reasonable alternatives that could reduce any significant environmental impacts of the proposed project to a less-than-significant level. The EIR will be used by the Permit Applicants to approve the SSHCP in compliance with CEQA.

ES.2 EIS/EIR PLANNING AREA

The Planning Area encompasses approximately 317,655 acres within south Sacramento County, as shown in Figure ES-1. The boundary of the Planning Area was defined by the Permit Applicants using both jurisdictional and ecological factors, and is the area where future projects and activities, conservation actions, and associated incidental take of species would occur under the EIS/EIR alternatives.

Figure ES-1 SSHCP EIS/EIR Planning Area



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The Planning Area includes Galt and Galt's sphere of influence, and the portion of Rancho Cordova that is located south of U.S. Highway 50. The geographical boundaries of the Planning Area are U.S. Highway 50 and White Rock Road to the north, the Sacramento River levee and County Road J11 (Walnut Grove-Thornton Road) to the west, the Sacramento County line with El Dorado and Amador Counties to the east, and the San Joaquin County line to the south.

The portions of the Planning Area where future urban-development projects would occur are also discussed as the Urban Development Area (UDA). Sacramento County has previously adopted an Urban Service Boundary (USB) to demarcate the ultimate extent to which the County would provide future urban services, such as sanitary sewer and water supply. Therefore, the portion of the Sacramento County USB that is within the Planning Area is within the UDA. Likewise, the portion of Rancho Cordova's sphere of influences that is within the USB is also part of the Planning Area's UDA. The Planning Area's UDA also includes all lands within Galt and within Galt's sphere of influence (see Figure ES-1). Approximately 67,618 acres of the Planning Area are also within the UDA.

ES.3 ALTERNATIVES CONSIDERED AND ALTERNATIVES EVALUATED

Underlying needs and problems that are currently present within the Planning Area include the large loss of natural land covers and natural communities, including grazing lands and croplands, from urban development and other human activities. The corresponding loss of suitable habitat for native plant and animal species within the Planning Area has led to a desire for a coordinated plan for protecting or conserving the best remaining natural communities in the Planning Area, including aquatic resources, and a desire to streamline the project review and permitting processes for future development projects and activities.

The lead agencies evaluated a range of reasonable project alternatives for an HCP in south Sacramento County to address these underlying needs and problems. Ideas for potential alternatives came from a variety of sources, including the SSHCP development process, the public scoping process under CEQA and NEPA, and input from the lead and cooperating agencies. In addition to the No Action/No Project Alternative, which must be analyzed, two action alternatives were carried forward for detailed analysis in the EIS/EIR because they are practicable, include provisions to reduce impacts, address the existing issues and underlying needs present in the Planning Area, and will achieve the purposes and objectives presented in Section 1.3:

- Alternative 1: No Action/No Project
- Alternative 2: Proposed Action/Proposed Project
- Alternative 3: Reduced Permit Term

Each of these alternatives would occur within the same Planning Area (Figure ES-1).

Alternative 1—No Action/No Project

Under the No Action/No Project Alternative, an HCP for south Sacramento County would not be approved or implemented, and ITPs would not be issued to the Permit Applicants for species impacts from future development projects and activities within the Planning Area. Also, the Permit Applicants would not implement a local ARP or approve associated local aquatic resource protection ordinances. Therefore, the USACE would not develop a CWA 404 permitting strategy for future development projects and activities. In addition, the CDFW would not develop a streamlined permit strategy for streambed impacts of future development projects and activities, and the CDFW would not issue a Master Streambed Alteration Agreement to the Permit Applicants.

Therefore, the No Action/No Project Alternative would continue the conventional project-by-project regulatory reviews in which individual project developers apply for necessary project permits with multiple state and federal resource agencies, and with permit application review proceeding without a systematic, comprehensive process. Individual projects/actions in the Planning Area that require authorization under CWA 404 would continue to obtain USACE authorization through existing types of CWA 404 authorizations, and would continue to comply with requirements for providing compensatory mitigation.

The No Action/No Project Alternative assumes that all lands zoned or ultimately planned/contemplated for urban development in adopted General Plans that are not already currently developed would eventually become developed over the next 50 years.⁴ In association with the expected future urban development, the public infrastructure systems, such as water, wastewater, recycled water, stormwater, flood control, solid waste, and utility systems, as well as transportation systems, would be expanded or improved, as described in several local and regional infrastructure agency master plans and/or capital improvement programs.

The vast majority of urban development under the No Action/No Project Alternative would occur within the UDA described in Section ES.2. However, the No Action/No Project Alternative also assumes that it will become increasingly more difficult for new projects to obtain authorizations under ESA or CWA within the area now designated as the Mather Core Recovery Area (MCRA) by the USACE.⁵ Consequently, No Action/No Project Alternative also assumes that

⁴ Full buildout means all currently undeveloped lands that are zoned for, or are ultimately planned/contemplated for, future urban development (in the adopted general plans of the Permit Applicants) would become developed. However, full buildout will include some open space and conservation lands within the areas planned for urban development. This includes all lands within the Sacramento County USB that are within the Planning Area (including lands within the Rancho Cordova city limits that are within the Planning Area), and all lands within Galt's city limits and within Galt's sphere of influence.

⁵ The MCRA was defined in the 2005 *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon*. Portland, Oregon: USFWS, Region 1.

not all urban development allowed under current zoning could be accommodated within the MCRA, and approximately 1,900 acres of future development could be “displaced” to locations outside the current USB for Sacramento County.

Alternative 2—Proposed Action/Proposed Project

The Proposed Action/Proposed Project (the SSHCP) is a regional, comprehensive plan that establishes a framework for Permit Applicants to comply with state and federal endangered species regulations and with aquatic resource regulations, while accommodating future land use and development included in the general plans of Sacramento County, Galt, and Rancho Cordova.

The SSHCP identifies Covered Activities, which are specific types of projects and activities within the Planning Area that may result in the take of SSHCP Covered Species or loss of aquatic resources. SSHCP Covered Activities implemented within the UDA would include, but are not limited to:

- Activities and projects related to urban development and associated infrastructure, including buildout of the USB as described for the No Action/No Project Alternative.
- The Capital Southeast Connector Project and other planned transportation projects;
- Planned water and wastewater development projects; and
- Maintenance of stream channels in the UDA, such as vegetation and sediment removal.

The SSHCP Conservation Strategy is designed to allow streamlining of Covered Activity compliance with the federal ESA, the California Endangered Species Act (CESA), CWA, Fish and Game Code, and other applicable environmental regulations. The SSHCP Conservation Strategy identifies Biological Goals for Planning Area land covers, natural communities, aquatic resources, and Covered Species, including specific measurable Biological Objectives to achieve each Biological Goal. The SSHCP’s Conservation Strategy would include habitat restoration, enhancement and management actions, and adaptive management and monitoring activities. The SSHCP Conservation Strategy would establish and implement a consolidated and interconnected Preserve System in the Planning Area that would preserve ecologically important resources using a landscape or watershed perspective. The SSHCP includes a preserve monitoring and management program and an adaptive management plan.

The Permit Applicants are requesting ESA and CESA ITPs with 50-year permit terms. Under the Proposed Action/Proposed Project Alternative, federal and state ITPs would be issued to the Permit Applicants by the USFWS and CDFW, and the USACE would develop and approve a multilevel CWA 404 permit strategy for the Permit Applicants.

Alternative 3—Reduced Permit Term

This alternative also includes a regional HCP for south Sacramento County, including an ARP; the issuance of 30-year ITPs by USFWS and CDFW; and development of a 30-year multi-level CWA permit

strategy by the USACE for HCP Covered Activities. However, the ITPs and the expedited CWA permit strategy would end at year 30, which generally coincides with the durations of the adopted General Plans and reasonably foreseeable master plan projects for the local jurisdictions. Under the Reduced Permit Term Alternative, the Permit Applicants would implement the same categories of Covered Activities, and request ESA and CESA take coverage for the same Covered Species. Urban development would occur within the UDA (described in Section ES.2), with the only development Covered Activities outside the UDA being road and pipeline infrastructure projects.

The Reduced Permit Term Alternative would implement an HCP Conservation Strategy during the 30-year permit term, which would include the same Biological Goals for the Planning Area as the Proposed Action/Proposed Project Alternative. The Reduced Permit Term Alternative would implement the same Avoidance and Minimization Measures (AMMs) as the Proposed Action/Proposed Project Alternative and would provide additional avoidance measures not included in the No Action/No Project Alternative.

However, the acres of natural land covers, species habitats, and aquatic resources preserved under each of the Measurable Objectives would be less under the Reduced Permit Term Alternative's Conservation Strategy because less urban development would occur during the 30-year permit term of the Reduced Permit Term Alternative, so fewer development fees would be collected to acquire lands for a Preserve System.

ES.4 KNOWN ISSUES OR CONTROVERSY

NEPA regulations and the CEQA Guidelines require the Executive Summary to identify issues raised by agencies and the public. Chapter 1 presents an overview of the EIS/EIR public scoping process. Generally, the issues of concern raised during the 2008 and 2013 public scoping processes included the following:

- The proper geographic scope of the SSHCP and EIS/EIR, such as considering effects in adjacent areas or addressing Elk Grove's sphere of influence.
- Effects of SSHCP implementation on agriculture, including grazing.
- Regulatory topics, such as consistency with USACE mitigation regulations and the potential role of mitigation banks.
- Compliance with air quality regulations and the potential effects of air quality on Covered Species and human health.
- Consistency with planning efforts in the Sacramento/San Joaquin Delta.
- Coordination with the activities and planning of local jurisdictions, agencies, and land management organizations that are not Permit Applicants.
- Adequacy of funding for implementation of the Conservation Strategy.

- Which Covered Activities should be included in the alternatives, and what locations are available for Preserves.
- The analysis of cumulative impacts.
- Use of best-available science and data, such as recent research on tricolored blackbird (*Agelaius tricolor*).
- Questions and suggestions regarding the funding, selection, acquisition, location, and management of Preserve System lands.
- Integration of mosquito and vector control with SSHCP implementation and Preserve System management.
- Integration of the SSHCP with issues of water supply and new urban development.

EIS and EIR summary sections are also required to identify areas of controversy known to the lead agencies. The term “controversy” is defined as circumstances where a substantial dispute exists as to the environmental consequences of an action, and does not refer to the existing of opposition to an action where the environmental effects are relatively undisputed (43 CFR 46.30). A potential area of controversy may be the amount of new urban development that would occur within the MCRA under each alternative evaluated, because each alternative would remove more suitable species habitat within the MCRA than is provided by the species-specific recovery criteria presented in the *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (USFWS 2005).⁶

ES.5 SUMMARY OF ENVIRONMENTAL CONSEQUENCES

Tables ES-1, Summary of Impacts and Mitigation, and ES-2, Summary of Impacts to Special-Status Species, Including Covered Species, briefly describe and compare the adverse and beneficial impacts of each alternative evaluated in the SSHCP EIS/EIR, including potential impacts to environmental resources identified during scoping, and potential impacts to other resources analyzed in the EIS/EIR. When comparing the two action alternatives to the No Action/No Project Alternative baseline condition, most of the impacts were determined to be **Minor Beneficial** effects or determined to have **No Impact**. Examples of impacts that differed the most between alternatives include the following:

- Impacts to Vernal Pool ecosystem and Valley Grassland land covers under “Natural Land Cover Habitats, and Associated Plant and Animal Communities” (Table ES-1); and

⁶ U.S. Fish and Wildlife Service. 2005. *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon*. Approved December 15, 2005. U.S. Fish and Wildlife Service, Region 1. Portland, Oregon. Available at: https://www.fws.gov/sacramento/es/Recovery-Planning/Vernal-Pool/es_recovery_vernal-pool-recovery.htm.

- Impacts to 11 Vernal Pool species, western spadefoot (*Spea hammondi*), western pond turtle (*Actinemys marmorata*), several bird species, and several non-covered plant species under “Special-Status Species Including HCP Covered Species” (Table ES-2).

Based on the analysis in Chapters 4 through 16 and as summarized in Tables ES-1 and ES-2, the Proposed Action/Proposed Project Alternative was identified as the Environmentally Preferable Alternative and Environmentally Superior Alternative. Discussions of each of the identified impacts and any mitigation measures, including pertinent support data, can be found in the resource-topic chapters of the EIS/EIR, Chapters 4 through 16.

Table ES-1. Summary of Impacts and Mitigation

No Action/No Project Alternative		Proposed Action/Proposed Project Alternative			Reduced Permit Term Alternative		
Impact	Impact	CEQA/NEPA Significance	Mitigation Measures	Impact	CEQA/NEPA Significance	Mitigation Measures	
LAND USE							
Direct and Indirect Effects							
As compared to the Existing Condition, the No Action/No Project Alternative would: <ul style="list-style-type: none">displace urban development outside the Urban Services Boundary (USB), inconsistent with the Sacramento Area Council of Governments (SACOG's) Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) and other regional plans, as well as the smart growth policies of the County and Rancho Cordova's adopted General Plans;place mitigation preserves in areas that would eventually be surrounded by urban development, potentially resulting in conflicts with existing and planned land uses, but management and monitoring activities on new preserves are not expected to be intensive relative to existing conditions, and management and monitoring activities would not result in incompatibility with adjacent land uses or inconsistencies with any applicable planning document; andpotentially increase safety hazards associated with wildlife strikes on aircraft due to wetland re-establishment and establishment within proximity to airports.	As compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would: <ul style="list-style-type: none">avoid inconsistencies with existing land use plans;minimize potential conflicts of preserve management and monitoring activities by siting compatible uses near preserves and by providing a coordinated way to minimize incompatibilities with existing or planned land uses, or conflicts with existing plans; andimprove compatibility with airports and minimize potential airport safety hazards by implementing a planning process that coordinates wetlands re-establishment/ establishment with airport planning staff.	Minor Beneficial Effect	None required	As compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would: <ul style="list-style-type: none">avoid inconsistencies with existing land use plans by avoiding urban development outside the UDA;minimize potential conflicts of preserve management and monitoring activities by siting compatible uses near preserves and by providing a coordinated way to minimize incompatibilities with existing or planned land uses, or conflicts with existing plans during years 1–30 of the EIS/EIR study period; andimprove compatibility with airports and minimize potential airport safety hazards by implementing a planning process during years 1-30 of the EIS/EIR study period that coordinates wetlands re-establishment/ establishment with airport planning staff.	Minor Beneficial Effect	None required	
Cumulative Effects							
Under the No Action/No Project Alternative, approximately 1,900 acres of planned urban development would be shifted or displaced to areas outside the current UDA, probably to areas south of the Elk Grove SOI , or areas near Rancho Murieta. This displaced development of the No Action/No Project Alternative would add to the land use impacts of reasonably foreseeable development in the Elk Grove SOI and Rancho Murieta areas. Because the No Action/No Project Alternative would add to the existing land use plan conflicts of past and present activities, and the reasonably foreseeable future projects, the No Action/No Project Alternative would substantially contribute to the existing significant cumulative impact to land use from past, present and reasonably foreseeable projects present in the Study Area.	Because the Proposed Action/Proposed Project would not conflict with any existing land use plans, the Proposed Action/Proposed Project would have a smaller incremental contribution to the Planning Area's cumulative conflicts with existing land use plans.	Minor Beneficial Cumulative Effect	None required	Because the Reduced Permit Term Alternative would result in less development outside the UDA than the No Action/No Project Alternative, it would have a smaller cumulative contribution to conflicts with existing land use plans.	Minor Beneficial Cumulative Effect	None required	
SOILS, GEOLOGY AND MINERAL RESOURCES							
Direct and Indirect Effects							
As compared to the Existing Condition, the No Action/No Project Alternative would: <ul style="list-style-type: none">not substantially increase development on expansive soils, asbestos-containing soils, or areas prone to landslide, as these are not present in the UDA; andpreclude or substantially inhibit the extraction of any mineral resources present within lands that are developed or used for mitigation preserves.	As compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would: <ul style="list-style-type: none">result in reduced potential for adverse effects from erosion and landslide from development activities and preserve system establishment and establishment;result in a slightly reduced risk of exposure to naturally occurring asbestos;result in a slightly more removal of access to important mineral resource s by new urban development or associated infrastructure; and	Minor Beneficial Effect to geological resources, soils, and exposure to geological hazards Less Than Significant Adverse Effect to	None required	As compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would: <ul style="list-style-type: none">result in reduced potential for adverse effects from erosion and landslide from development activities and preserve system establishment;result in a slightly reduced risk of exposure to naturally occurring asbestos;result in a slightly more removal of access to important mineral resources by new urban development or associated infrastructure; and	Minor Beneficial Effect to geological resources, soils, and exposure to geological hazards Less Than Significant Adverse Effect to	None required	

Table ES-1. Summary of Impacts and Mitigation

No Action/No Project Alternative		Proposed Action/Proposed Project Alternative			Reduced Permit Term Alternative		
Impact	Impact	CEQA/NEPA Significance	Mitigation Measures	Impact	CEQA/NEPA Significance	Mitigation Measures	
	<ul style="list-style-type: none">result in similar potential for removal of access to important mineral resources by new preserves.	mineral resources access		<ul style="list-style-type: none">result in a similar potential for removal of access to important mineral resources from new preserves.	mineral resources access		
Cumulative Effects							
Projects and activities included in the No Action/No Project Alternative would not have an adverse effect on geology and soils or human exposure to naturally occurring asbestos because of the combination of geologic and soils conditions in the Planning Area and because future projects would comply with applicable regulations and policies. The No Action/No Project Alternative, when considered together with past, present, and reasonably foreseeable other projects, could limit access to aggregate resources that are outside the mapped MRZ-2 significant mineral deposits.	The incremental effects of the Proposed Action/Proposed Project Alternative would have a minor beneficial impact to geology and soils and risk of exposure to naturally occurring asbestos when compared to the incremental effects of the No Action/No Project Alternative baseline condition. Incremental effects of the Proposed Action/Proposed Project Alternative would have a less than significant impact to access to mineral resources when compared to the incremental effects of the No Action/No Project Alternative baseline condition.	Minor Beneficial Cumulative Impact to geology and soils and risk of exposure to naturally occurring asbestos Less than Significant Cumulative Impact to access to mineral resources	None required	The incremental effects of Reduced Permit Term Alternative would have a minor beneficial impact to geology and soils and risk of exposure to naturally occurring asbestos when compared to the incremental effects of the No Action/No Project Alternative baseline condition. Incremental effects of the Reduced Permit Term Alternative would have a less than significant impact to access to mineral resources when compared to the incremental effects of the No Action/No Project Alternative baseline condition.	Minor Beneficial Cumulative Impact to geology and soils and risk of exposure to naturally occurring asbestos Less than Significant Cumulative Impact to access to mineral resources	None required	
AGRICULTURE							
Direct and Indirect Effects							
As compared to the Existing Condition, the No Action/No Project Alternative would: <ul style="list-style-type: none">result in conversion of approximately 32,205 acres of Important Farmland to non-agricultural uses;result in new land uses that conflict with 4,767 acres of land that have existing Williamson Act contracts; andresult in incompatible uses near existing agricultural uses by displacing 1,900 acres of new urban development to locations outside the UDA.	As compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would: <ul style="list-style-type: none">result in conversion of approximately 1,100 less acres of Important Farmland to non-agricultural uses;result in new land uses that conflict with 32 more acres of land that have existing Williamson Act contracts;result in fewer incompatible uses near existing agricultural uses by not displacing 1,900 acres of new urban development to locations outside the UDA; andresult in fewer incompatible uses near existing agricultural by implementing an AMM that emphasizes placement of compatible uses adjacent to cropland preserves.	Minor Beneficial Effect	None required	As compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would: <ul style="list-style-type: none">result in conversion of approximately 1,720 less acres of Important Farmland to non-agricultural uses;result in land uses that conflict with 133 more acres of land with existing Williamson Act contracts; andresult in fewer incompatible uses near existing agricultural uses by not displacing development outside the UDA and by implementing an AMM during the 30-year permit term that emphasizes placement of compatible uses adjacent to cropland preserves.	Minor Beneficial Effect	None required	
Cumulative Effects							
The cumulative effects of planned urban growth on existing Important Farmlands would result in a cumulatively significant and unavoidable adverse impact on agriculture resources. Under the No Action/No Project Alternative, approximately 1,900 acres of planned urban development is expected to be shifted or displaced to locations outside the UDA. Among the areas that are expected to receive this urban development are south of the Elk Grove SOI and near Rancho Murieta. These components of the No Action/No Project Alternative would further increase conflicts with land use plans, and further make a cumulatively considerable (i.e., significant) contribution to the cumulatively significant and unavoidable adverse impacts to agriculture that was identified in the General Plan EIRs for Sacramento County, Galt, and Rancho Cordova.	Because the Proposed Action/Proposed Project Alternative would not result in urban development shifted or displaced to outside the UDA, and would result in more preservation of Important Farmlands and grazing lands as compared to the No Action/No Project Alternative, the Proposed Action/Proposed Project Alternative’s incremental contribution to cumulative impacts on agriculture resources would be less than that described for the No Action/No Project Alternative.	Minor Beneficial Cumulative Effect	None required	Because the Reduced Permit Term Alternative would avoid urban development outside the UDA and increase preservation of Important Farmlands and grazing lands as compared to the No Action/No Project Alternative, the Reduced Permit Term Alternative’s contribution to cumulative impacts on agriculture would also be less than that described for the No Action/No Project Alternative.	Minor Beneficial Cumulative Effect	None required	

Table ES-1. Summary of Impacts and Mitigation

No Action/No Project Alternative		Proposed Action/Proposed Project Alternative			Reduced Permit Term Alternative		
Impact	Impact	CEQA/NEPA Significance	Mitigation Measures	Impact	CEQA/NEPA Significance	Mitigation Measures	
HYDROLOGY AND WATER QUALITY							
Direct and Indirect Effects – Groundwater Hydrology							
As compared to the Existing Condition, the No Action/No Project Alternative would: <ul style="list-style-type: none">• result in increased groundwater demand for new urban development; and• result in increased impervious surfaces from development, with associated adverse effects to groundwater recharge.	As compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would: <ul style="list-style-type: none">• result in groundwater demand that is consistent with the groundwater demand of the No Action/No Project ;• result in impervious surfaces from development and associated effects to groundwater recharge are consistent with the adverse effect of the No Action/No Project Alternative;• result in greater protection of groundwater recharge from larger and more contiguous preserves;• result in greater protection of groundwater recharge along streams and other waterways from required setbacks and larger setback between new development and natural waterways; and• implement a regional Conservation Strategy that has protection of watersheds and related ecosystem functions (including groundwater recharge) as one of the guiding principles.	Minor Beneficial Effect	None required	As compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would: <ul style="list-style-type: none">• result in consistent groundwater use;• result in consistent adverse effects to groundwater recharge due to impervious surfaces from development;• result in greater protection of groundwater recharge areas from preserve establishment inside the UDA; and• result in a Conservation Strategy that has protection of watersheds and related ecosystem functions (including groundwater recharge) as one of the guiding principles inside the UDA.	Minor Beneficial Effect	None required	
Cumulative Effects - Groundwater Hydrology							
The combination of past, present, and reasonably foreseeable future projects would combine with the No Action/No Project Alternative groundwater use leading to adverse cumulative effects and exceedance of the sustainable yields of the groundwater basins, groundwater level reductions affecting increased pumping energy use, occurrence of dry wells, or land subsidence.	Implementation of the SSHCP Conservation Strategy, including the SSHCP AMMs, the SSHCP ARP, and the interconnected SSHCP Preserve System is expected to result in more consistent and frequent conservation of groundwater recharge compared to the No Action/No Project Alternative.	Minor Beneficial Cumulative Effect	None required	The implementation of an HCP Conservation Strategy, including AMMs, an ARP, and the interconnected Preserve System during the 30-year permit term under the Reduced Permit Term Alternative would result in better conservation of groundwater recharge inside the UDA compared to the No Action/No Project Alternative.	Minor Beneficial Cumulative Effect	None required	
Direct and Indirect Effects – Surface Water Hydrology and Flooding							
As compared to the Existing Condition, the No Action/No Project Alternative would: <ul style="list-style-type: none">• not substantially increase the existing rate or amount of surface runoff in a manner that would cause flooding or exceed stormwater system capacity; and• not place residences within a flood hazard area, or expose people or structures to a significant risk involving flooding.	As compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would: <ul style="list-style-type: none">• provide greater setbacks of new development from streams, creeks, and minor tributaries, which would maintain existing hydrologic functions of UDA streams and floodplains, and retain more of the stream’s floodplain to provide better flood storage and flood flow;• provide greater protection of surface waters in each Planning Area HUC watersheds by consolidating project avoidance and mitigation requirement into contiguous and interconnected preserves. Provide greater avoidance and protection of aquatic resources within the UDA, including in the MCRA portion of the UDA. Assembles a large contiguous Landscape Preserve in the southeast portion of the Planning Area, totaling between 33,500 to 34,000 acres;• require implementation of additional AMMs to avoid or minimize surface hydrologic resources, and requires consistent implementation of surface hydrology AMMs during	Minor Beneficial Effect	None required	As compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would: <ul style="list-style-type: none">• provide greater setbacks of new development from streams, creeks, and minor tributaries, which would maintain existing hydrologic functions of UDA streams and floodplains, and retain more of the stream’s floodplain to provide better flood storage and flood flow;• result in greater and more consistent avoidance of adverse effects to surface hydrology conditions because of overlapping and new AMMs. Requires implementation of additional AMMs to avoid or minimize surface hydrologic resources, and requires consistent implementation of surface hydrology AMMs during all ground disturbing Covered Activities and would provide greater management of indirect impacts of urbanization, such as intrusion from domestic animals and informal trails; and• result in a Conservation Strategy that has protection of watersheds and related ecosystem functions as one of the	Minor Beneficial Effect	None required	

Table ES-1. Summary of Impacts and Mitigation

No Action/No Project Alternative	Proposed Action/Proposed Project Alternative			Reduced Permit Term Alternative		
Impact	Impact	CEQA/NEPA Significance	Mitigation Measures	Impact	CEQA/NEPA Significance	Mitigation Measures
	<p>all ground disturbing Covered Activities;</p> <ul style="list-style-type: none">• result in better management of avoided aquatic resources and aquatic habitat to minimize indirect impacts of adjacent urbanization, and to maintain values and aquatic functions on preserved lands in perpetuity; and• implement a regional Conservation Strategy that has protection of watersheds and related ecosystem functions as one of the guiding principles, while balancing regional housing and development needs.			<p>guiding principles.</p>		
Cumulative Effects - Surface Water Hydrology and Flooding						
<p>Projects and activities included in the No Action/No Project Alternative with potential to affect surface hydrologic conditions are conversion of agricultural and undeveloped lands to new urban development. New urban development projects under the No Action/No Project Alternative would be required to adequately address stormwater runoff and flooding issues. Incremental effects of the No Action/No Project Alternative are individually limited, and would not make a cumulatively considerable contribution.</p>	<p>The implementation of the SSHCP Conservation Strategy, including the interconnected SSHCP Preserve System, the Covered Activity AMMs, and the ARP, would result in larger areas of watershed preservation, consistent and more frequent implementation of AMMs, and require larger setbacks and more conservation of natural waterways compared to the No Action/No Project Alternative. Incremental effects of the Proposed Action/Proposed Project are individually limited, and would not make a cumulatively considerable contribution.</p>	<p>Minor Beneficial Cumulative Effect</p>	<p>None required</p>	<p>The implementation of an HCP Conservation Strategy, including Covered Activity AMMs, and interconnected Preserve System, and an ARP during the 30-year permit term of the Reduced Permit Term Alternative would result in larger areas of watershed preservation, consistent and more frequent implementation of AMMs, and require larger setbacks and more conservation of natural waterways in the UDA when compared to the No Action/No Project Alternative. Consequently, the incremental effects of the Reduced Permit Term Alternative would have a minor beneficial impact to surface hydrology, stormwater runoff, and flooding conditions when compared to the incremental effects of the No Action/No Project Alternative baseline condition. Incremental effects of Reduced Permit Term Alternative are individually limited, and would not make a cumulatively considerable contribution.</p>	<p>Minor Beneficial Cumulative Effect</p>	<p>None required</p>
Direct and Indirect Effects – Surface Water Quality and Groundwater Quality						
<p>As compared to the Existing Condition, the No Action/No Project Alternative would:</p> <ul style="list-style-type: none">• not alter the course of local waterways in a manner that results in substantial erosion or sedimentation or result in substantial new sources of pollutants in urban runoff;• not result in migration of contaminants from the lower aquifers, or migration of the contaminant plumes at the groundwater cleanup sites in Sacramento County;• not result in degradation of groundwater quality;• not result in substantially increased levels of contaminants in stormwater runoff from the post-construction activities, cause impairment of the beneficial uses of receiving waters or areas that provide water quality benefit, or cause substantial harm to the biological integrity of the waterways by the discharge of stormwater; and• not substantially increase discharge of stormwater from material storage areas, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas or loading docks, or other outdoor work areas.	<p>As compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would:</p> <ul style="list-style-type: none">• have smaller direct and indirect impacts to surface water quality and to ground water quality;• provide a Conservation Strategy that has protection of watersheds and related ecosystem functions (including water quality) as one of the guiding principles;• provide larger contiguous preserves that would provide better protection to existing surface water quality; and• provide greater setbacks between new development and streams, creeks, and minor tributaries, and provide setbacks between new development and preserves to reduce al direct and indirect water quality effects of new urban development on surface water quality. , better improve or maintain existing water quality through processes such as filtration and/or trapping of contaminants such as sediment or toxicants and prevention of erosion, and would facilitate greater groundwater recharge along creeks and streams.	<p>Minor Beneficial Effect</p>	<p>None required</p>	<p>As compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would:</p> <ul style="list-style-type: none">• result in smaller direct and indirect impacts to surface water quality and ground water quality;• provide larger contiguous preserves that would provide better protection to existing surface water quality inside the UDA;• provide greater setbacks between new development and streams, creeks, and minor tributaries, and provide setbacks between new development and preserves to reduce all direct and indirect water quality effects of new urban development on surface water quality to better improve or maintain existing water quality through processes such as filtration and/or trapping of contaminants such as sediment or toxicants and prevention of erosion; and• facilitate greater groundwater recharge along creeks and streams.	<p>Minor Beneficial Effect</p>	<p>None required</p>

Table ES-1. Summary of Impacts and Mitigation

No Action/No Project Alternative		Proposed Action/Proposed Project Alternative			Reduced Permit Term Alternative		
Impact	Impact	CEQA/NEPA Significance	Mitigation Measures	Impact	CEQA/NEPA Significance	Mitigation Measures	
Cumulative Effects - Surface Water Quality and Groundwater Quality							
The existing water treatment infrastructure has capacity to accommodate additional wastewater inflows expected from all future planned development in the Planning Area, including the full build-out of the UDA by 2065 assumed under the No Action/No Project Alternative. Therefore, the incremental effects of additional surface water in the Planning Area that would occur under the No Action/No Project Alternative would be individually limited, and would not make a considerable contribution to the downstream significant cumulative Delta water quality impact.	Implementation of the SSHCP Conservation Strategy, including the SSHCP AMMs, the interconnected SSHCP Preserve System and the ARP, are expected to result in greater protection of surface water quality and groundwater quality compared to the No Action/No Project Alternative.	Minor Beneficial Cumulative Effect	None required	The implementation of the Conservation Strategy during the 30-year permit term under the Reduced Permit Term Alternative, including AMMs, the ARP, and the interconnected Preserve System, are expected to result in greater protection of surface water quality and groundwater quality compared to the No Action/No Project Alternative.	Minor Beneficial Cumulative Effect	None required	
NATURAL LAND COVER HABITATS, AND ASSOCIATED PLANT AND ANIMAL COMMUNITIES							
Direct and Indirect Effects – Vernal Pool Ecosystem							
As compared to the Existing Condition, the No Action/No Project Alternative would: <ul style="list-style-type: none">• directly and indirectly impact approximately 17,949 acres of vernal pool ecosystem, which is approximately 17.4 % of the total 103,210 acres of existing vernal pool ecosystem within the Planning Area;• directly and indirectly impact 9,783 acres of the Mather Core Recovery Area's Vernal Pool Ecosystem, or approximately 54% of what exists in the Mather Core Recovery Area;• preserve approximately 10,406 acres of existing Vernal Pool Ecosystem within the Planning Area as mitigation for projects and activities;• re-establish and/or establish approximately 562 acres of vernal pools and swales on mitigation preserves to mitigate direct impacts (loss) of 562 acres of vernal pools and swales; and• preserve approximately 4,550 acres of the existing 18,117 acres of Vernal Pool Ecosystem within the Mather Core Area.	As compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would: <ul style="list-style-type: none">• directly and indirectly impact 690 fewer total acres of the Planning Area's total vernal pool ecosystem and the associated vernal pool plant and animal communities;• directly and indirectly impact 1,283 fewer acres of the Mather Core Area's vernal pool ecosystem and the associated vernal pool plant and animal communities;• require Covered Activities to implement better and more consistently implemented AMMs to avoid and minimize indirect effects of development projects and activities on the vernal pool ecosystem;• preserve approximately 7,340 more acres of Vernal Pool Ecosystem in the Planning Area;• result in interconnected and more contiguous preserves of vernal pool ecosystem within the Planning Area; and• preserve 934 more acres of the Mather Core Area's vernal pool ecosystem and the associated vernal pool plant and animal communities.	Significant Beneficial Effect	None required	As compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would: <ul style="list-style-type: none">• directly and indirectly impact 1,147 more acres of vernal pool ecosystem and associated vernal pool plant and animal communities;• directly and indirectly impact 254 more acres of the Mather Core Area's vernal pool ecosystem and the associated vernal pool plant and animal communities;• require Covered Activities to implement better AMMs to reduce and minimize indirect effects of development projects and activities on the vernal pool ecosystem during the 30-year permit term;• preserve approximately 4,896 more acres of Vernal Pool Ecosystem in the Planning Area, and approximately 2/3 of the preserved Vernal Pool Ecosystem acres would be within an interconnected preserve system established during the 30-year permit term;• establish preserves during the 30-year permit term that would be more interconnected and more contiguous than the preserves established under the No Action/No Project Alternative; and• preserve approximately 1,193 acres less of the Mather Core Area's vernal pool ecosystem and the associated vernal pool plant and animal communities.	Less than Significant Adverse	None required	
Cumulative Effects – Vernal Pool Ecosystem							
The incremental effects of the No Action/No Project Alternative would have direct and indirect impacts that would result in an estimated loss of 17,949 acres or approximately 17.4 % of the 103,210 acres of existing vernal pool ecosystem within the Planning Area. Project mitigation under the No Action/No Project Alternative would include an estimated 10,406 acres of preservation and 579 acres of vernal pool habitat re-establishment/establishment within the Planning area. Therefore, the incremental direct and indirect impacts of No Action/No Project Alternative to vernal pool ecosystem, when considered together with the significant impacts to vernal pool ecosystem from past, current, and foreseeable future	Overall, the Proposed Action/Proposed Project Alternative would make a slightly smaller contribution to Study Area cumulative effects on the vernal pool ecosystem, when compared to the No Action/No Project Alternative. However, at the scale of Vernal Pool Ecosystem impacts throughout the Study Area, the 690-acre difference in impacts under the Proposed Action/Proposed Project Alternative compared to impacts under the No Action/No Project Alternative is not discernibly different.	No Cumulative Effect	None required	The incremental effects of the Reduced Permit Term Alternative would directly and indirectly impact 19,096 acres vernal pool ecosystem within the Planning Area, which is 1,147 acres more than the total direct and indirect impact expected under the No Action/No Project Alternative. Overall, the Reduced Permit Term Alternative would make a slightly larger contribution to Study Area cumulative effects on the vernal pool ecosystem, when compared to the No Action/No Project Alternative. However, at the scale of Vernal Pool Ecosystem impacts throughout the Study Area, the 1,147-acre difference in impacts under the Reduced Permit Term	No Cumulative Effect	None required	

Table ES-1. Summary of Impacts and Mitigation

No Action/No Project Alternative	Proposed Action/Proposed Project Alternative			Reduced Permit Term Alternative		
Impact	Impact	CEQA/NEPA Significance	Mitigation Measures	Impact	CEQA/NEPA Significance	Mitigation Measures
projects and activities in the Study Area, would be a significant cumulative effect				Alternative compared to impacts under the No Action/No Project Alternative is not discernibly different.		
Direct and Indirect Effects – Seasonal Wetlands, Freshwater Marsh, Streams/Creeks, Open Water						
As compared to the Existing Condition, the No Action/No Project Alternative would: <ul style="list-style-type: none">• directly impact 583 acres of Seasonal Wetlands, Freshwater Marsh, Streams/Creeks, and Open Water land covers and associated plant and animal communities, approximately 5.5% of the existing 10,676 acres of the land covers within the Planning Area;• preserve approximately 24 acres of Seasonal Wetlands, Freshwater Marsh, Streams/Creeks, and Open Water land covers within the Planning Area; and• re-establish or establish 291 acres of Seasonal Wetlands, Freshwater Marsh, Streams/Creeks, and Open Water land covers within the Planning Area.	As compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would: <ul style="list-style-type: none">• directly impact 79 fewer acres of Seasonal Wetlands, Freshwater Marsh, Streams/Creeks, and Open Water land covers and associated plant and animal communities;• require Covered Activity activities and project to implement better and more consistently implemented AMMs to avoid and minimize indirect effects to Seasonal Wetlands, Freshwater Marsh, Streams/Creeks, Open Water natural communities, such as larger setbacks between new development and streams and creeks;• preserve 480 more acres of Seasonal Wetlands, Freshwater Marsh, Streams/Creeks, and Open Water;• re-establish or establish 213 more acres of Seasonal Wetlands, Freshwater Marsh, Streams/Creeks, and Open Water land covers within the Planning Area; and• result in more interconnected and contiguous preserves of Seasonal Wetlands, Freshwater Marsh, Streams/Creeks, and Open Water land covers within the Planning Area.	Minor Beneficial Effect	None required	As compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would: <ul style="list-style-type: none">• directly impact 48 fewer acres of Seasonal Wetlands, Freshwater Marsh, Streams/Creeks, and Open Water land covers and associated plant and animal communities;• require Covered Activity activities and projects implemented during the 30-year permit term to incorporate better and more consistently implemented AMMs to better avoid and minimize indirect effects to Seasonal Wetlands, Freshwater Marsh, Streams/Creeks, and Open Water natural communities, such as larger setbacks between new development and streams and creeks;• preserve 311 more acres of Seasonal Wetlands, Freshwater Marsh, Streams/Creeks, and Open Water;• re-establish or establish 128 more acres of Seasonal Wetlands, Freshwater Marsh, Streams/Creeks, and Open Water land covers within the Planning Area; and• result in more interconnected and more contiguous preserves of Seasonal Wetlands, Freshwater Marsh, Streams/Creeks, and Open Water land covers within the Planning Area.	Minor Beneficial Effect	None required
Cumulative Effects – Seasonal Wetlands, Freshwater Marsh, Streams/Creeks, Open Water						
The incremental impacts of the No Action/No Project Alternative would result in the direct loss of 583 acres, or approximately 5.5 % of the existing Seasonal Wetlands, Freshwater Marsh, Streams/Creeks, and Open Water land covers and associated natural communities within the Planning Area. Project mitigation for impacts to Seasonal Wetlands, Freshwater Marsh, Streams/Creeks, and Open Water would continue to be implemented on a project-by-project basis. Therefore, the incremental direct and indirect impacts of No Action/No Project Alternative to Seasonal Wetlands, Freshwater Marsh, Streams/Creeks, and Open Water, when considered together with the significant impacts to Valley Grassland from past, current, and foreseeable future projects and activities in the Study Area, would be a significant cumulative effect.	Overall, the Proposed Action/Proposed Project Alternative would make a slightly smaller incremental contribution the cumulative loss of Seasonal Wetlands, Freshwater Marsh, Streams/Creeks, and Open Water in the Study Area, when compared to the No Action/No Project Alternative. However, at the scale of impacts to these aquatic resources throughout the Study Area, the 79-acre difference in direct impacts, the 480-acre difference in preservation, and the 213-acre difference in re-establishment of Seasonal Wetlands, Freshwater Marsh, Streams/Creeks, and Open Water land covers under the Proposed Action/Proposed Project Alternative when compared to impacts under the No Action/No Project Alternative is not discernibly different.	No Cumulative Effect	None required	Overall, the Reduced Permit Term Alternative would make a slightly smaller contribution the cumulative loss of Seasonal Wetlands, Freshwater Marsh, Streams/Creeks, and Open Water in the Study Area, when compared to the No Action/No Project Alternative. However, at the scale of impacts to these aquatic resources throughout the Study Area, the 535-acre difference in direct impacts, the 311-acre difference in preservation, and the 128-acre difference in re-establishment of Seasonal Wetlands, Freshwater Marsh, Streams/Creeks, and Open Water land covers under the Reduced Permit Term Alternative is not discernibly different from the impacts expected under the No Action/No Project Alternative.	No Cumulative Effect	None required
Direct and Indirect Effects – Riparian Land Covers (Mixed Riparian Woodland, Mixed Riparian Scrub and Mine Tailing Riparian Woodland)						
As compared to the Existing Condition, the No Action/No Project Alternative would: <ul style="list-style-type: none">• directly impact (remove) 554 acres of riparian land covers and their associated natural community within the Planning Area, approximately 7% of the existing 7,951 acres of riparian land covers and riparian plant and animal natural communities present in the Planning Area; and• re-establish or establish 256 acres of Mixed Riparian Woodland and 298 acres of Mixed Riparian Scrub land covers.	As compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would: <ul style="list-style-type: none">• directly impact 37 more acres of Riparian land covers and associated plant and animal communities;• require Covered Activities to implement better and more consistently implemented AMMs to avoid and minimize indirect effects to Riparian land covers such as larger setbacks between new development and streams and creeks;• preserve 964 acres more of Riparian land covers (Mixed	Minor Beneficial Effect	None required	As compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would: <ul style="list-style-type: none">• directly impact 56 more acres of Riparian land covers and associated plant and animal communities;• require Covered Activity activities and projects implemented during the 30-year permit term to incorporate better and more consistently implemented AMMs, to better avoid and minimize indirect effects to Riparian land covers and natural communities, such as larger setbacks between new	Minor Beneficial Effect	None required

Table ES-1. Summary of Impacts and Mitigation

No Action/No Project Alternative		Proposed Action/Proposed Project Alternative			Reduced Permit Term Alternative		
Impact	Impact	CEQA/NEPA Significance	Mitigation Measures	Impact	CEQA/NEPA Significance	Mitigation Measures	
	Riparian Woodland and Mixed Riparian Scrub); <ul style="list-style-type: none">re-establish or establish 37 acres more of Riparian land covers (Mixed Riparian Woodland and Mixed Riparian Scrub) within the Planning Area; andresult in more interconnected and contiguous preserves of Riparian land covers within the Planning Area, which would reduce habitat fragmentation effects on the plant and animal community.			development and streams and creeks; <ul style="list-style-type: none">preserve 696 more acres of Riparian land covers;re-establish or establish 55 more acres of Riparian land covers within the Planning Area;result in more interconnected and more contiguous preserves of Riparian land covers within the Planning Area.			
Cumulative Effects – Riparian Land Covers (Mixed Riparian Woodland, Mixed Riparian Scrub and Mine Tailing Riparian Woodland)							
The incremental impacts of the No Action/No Project Alternative would result in the direct loss of 554 acres, or approximately 7 % of the existing Riparian land covers within the Planning Area. However, the regulatory environment under the No Action/No Project is expected to require projects to re-establish or establish 554 acres of riparian land covers which, over time, are expected to re-establish the wildlife habitat and plant and animal natural community of the directly impacted riparian land covers. However, under the No Action/No Project Alternative, preserved and re-established/established habitat would often be geographically fragmented and not adaptively managed to provide conservation at a landscape scale due to the project-by-project nature of the mitigation. Therefore, the incremental impacts of the No Action/No Project Alternative on Riparian land covers, when considered together with the significant impacts to riparian land covers from past and current human activities and the reasonably foreseeable future project within the Study Area, would result in a less than significant cumulative effect.	The incremental impacts of Proposed Action/Proposed Project Alternative would make a slightly similar contribution the cumulative loss of Riparian land covers in the Study Area, when compared to the incremental impacts of the No Action/No Project Alternative. However, at the scale of cumulative impacts to riparian resources throughout the Study Area, the 37-acre difference in direct impacts, the 964 acre difference in Riparian preservation, and the 37-acre difference in re-establishment of Riparian land covers is not discernibly different from the impacts expected under the No Action/No Project Alternative.	No Cumulative Effect	None required	Overall, the impacts of Reduced Permit Term Alternative would make a similar contribution the cumulative loss of Riparian land covers in the Study Area, when compared to the No Action/No Project Alternative. In addition, at the scale of cumulative impacts to riparian resources throughout the Study Area, the 56-acre difference in direct impacts, and the 693 acre difference in Riparian preservation, and the 55-acre difference in re-establishment of Riparian land covers is not discernibly different when compared to impacts expected under the No Action/No Project Alternative.	No Cumulative Effect	None required	
Direct and Indirect Effects – Valley Grassland							
As compared to the Existing Condition, the No Action/No Project Alternative would: <ul style="list-style-type: none">remove a total of 23,429 acres of Valley Grassland natural community, approximately 17.3% of the existing Valley Grassland within the Planning Area; andpreserve approximately 11,806 acres of Valley Grassland land cover within the Planning Area, which includes the 8,690 acres of Valley Grassland that would be preserved within the Vernal Pool Ecosystem.	As compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would: <ul style="list-style-type: none">directly impact(remove) 1,415 fewer acres of Valley Grassland land cover and the associated plant and animal communities;require Covered Activities to implement better and more consistently implemented AMMs to avoid and minimize indirect effects to Valley Grasslands;preserve 10,208 acres more Valley Grassland within a large SSHCP Preserve System; andresult in more interconnected and contiguous preserves of Valley Grassland within the Planning Area, which would reduce habitat fragmentation effects on the Valley Grassland plant and animal community.	Significant Beneficial Effect	None required	As compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would: <ul style="list-style-type: none">directly impact 242 more acres of Valley Grassland land covers and associated plant and animal communities;require Covered Activity activities and projects implemented during the 30-year permit term to incorporate better and more consistently implemented AMMs, to better avoid and minimize indirect effects to Valley Grassland natural communities, such as larger setbacks between new development and preserved land covers, and larger setbacks between new development and streams and creeks;preserve 6,783 more acres of Valley Grassland land cover; andresult in more interconnected and more contiguous preserves of Valley Grasslands within the Planning Area.	Less than Significant Adverse Effect	None Required	
Cumulative Effects – Valley Grassland							
The incremental impact of the No Action/No Project Alternative would result in the direct loss of 23,429 acres of Valley Grassland (21,797 acres in the UDA and 1,632 acres outside the UDA), which would remove approximately 17.3% of the existing Valley Grassland acres within the Planning Area.	The incremental impacts of the Proposed Action/Proposed Project Alternative would make a smaller contribution to the cumulative loss of Valley Grassland in the Study Area, when compared to the incremental impact of the No Action/No Project Alternative.	Minor Beneficial Cumulative Effect	None required.	At the scale of impacts to Valley Grassland throughout the Study Area, the 242-acre difference in direct impacts and the 6,783-acre difference in Valley Grassland preservation under the Reduced Permit Term Alternative is not discernibly different from the	No Cumulative Effect	None required.	

Table ES-1. Summary of Impacts and Mitigation

No Action/No Project Alternative	Proposed Action/Proposed Project Alternative			Reduced Permit Term Alternative		
Impact	Impact	CEQA/NEPA Significance	Mitigation Measures	Impact	CEQA/NEPA Significance	Mitigation Measures
Therefore, the incremental direct and indirect impacts of No Action/No Project Alternative to Valley Grassland, when considered together with the significant impacts to Valley Grassland from past, current, and foreseeable future projects and activities in the Study Area, would be a significant cumulative effect.				impacts expected under the No Action/No Project Alternative.		
Direct and Indirect Effects – Blue Oak Woodland and Blue Oak Savanna						
As compared to the Existing Condition, the No Action/No Project Alternative would: <ul style="list-style-type: none">• directly impact (remove) 140 acres of Blue Oak Woodland and Blue Oak Savanna land covers and their associated natural communities , approximately 1% of the existing 14,769 acres of combined Blue Oak Woodland and Blue Oak Savanna existing in the Planning Area; and• preserve approximately 70 acres of Blue Oak Woodland and/or Blue Oak Savanna and re-establish or establish approximately 70 acres of Blue Oak Woodland and/or Blue Oak Savanna.	As compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would: <ul style="list-style-type: none">• directly impact 93 acres less Blue Oak Woodland and Blue Oak Savanna and associated plant and animal communities;• require Covered Activities to implement better and more consistently implemented AMMs to avoid and minimize indirect effects to Blue Oak Woodland and Blue Oak Savanna;• preserve an acreage of Blue Oak Woodland and Blue Oak Savanna in the Planning Area (47 acres) equal to the expected impacts to Blue Oak Woodland and Blue Oak Savanna. By comparison, the acreage of Blue Oak Woodland and Blue Oak Savanna preservation in the Planning Area under the No Action/No Project Alternative (70 acres) is only half of the expected impacts to Blue Oak Woodland and Blue Oak Savanna (140 acres);• re-establish and/or establish an acreage of Blue Oak Woodland and Blue Oak Savanna in the Planning Area (47 acres) equal to the expected impacts to Blue Oak Woodland and Blue Oak Savanna to provide no net loss of oak woodlands within the Planning Area. By comparison, the acreage of Blue Oak Woodland and Blue Oak Savanna re-establishment or establishment in the Planning Area under the No Action/No Project Alternative (70 acres) is only half of the expected impacts to Blue Oak Woodland and Blue Oak Savanna (140 acres); and• result in more interconnected and contiguous preserves of Blue Oak Woodland and Blue Oak Savanna within the Planning Area, which would reduce habitat fragmentation effects on the Blue Oak Woodland and Blue Oak Savanna plant and animal community.	Minor Beneficial Effect	None required	As compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would: <ul style="list-style-type: none">• directly impact 93 acres less Blue Oak Woodland and Blue Oak Savanna and their associated plant and animal communities;• require Covered Activity projects and activities implemented during the 30-year permit term to implement better and more consistently implemented AMMs to avoid and minimize indirect effects to Blue Oak Woodland and Blue Oak Savanna;• preserve an acreage of Blue Oak Woodland and Blue Oak Savanna in the Planning Area (46 acres) that would nearly equal acres of expected impacts to Blue Oak Woodland and Blue Oak Savanna (47 acres). By comparison, the acreage of Blue Oak Woodland and Blue Oak Savanna preservation in the Planning Area under the No Action/No Project Alternative (70 acres) is only half of the expected impacts to Blue Oak Woodland and Blue Oak Savanna (140 acres);• re-establish and/or establish an acreage of Blue Oak Woodland and Blue Oak Savanna in the Planning Area (46 acres) that would nearly equal the acres of expected impacts to Blue Oak Woodland and Blue Oak Savanna (47 acres). By comparison, the acreage of Blue Oak Woodland and Blue Oak Savanna re-establishment or establishment in the Planning Area under the No Action/No Project Alternative (70 acres) is only half of the expected impacts to Blue Oak Woodland and Blue Oak Savanna (140 acres); and• result in more interconnected and contiguous preserves of Blue Oak Woodland and Blue Oak Savanna within the Planning Area, which would reduce habitat fragmentation effects on the Blue Oak Woodland and Blue Oak Savanna plant and animal community	Minor Beneficial Effect	None required
Cumulative Effects – Blue Oak Woodland and Blue Oak Savanna						
The No Action/No Project Alternative is anticipated to preserve 70 acres and to re-establish 70 acres of Blue Oak Woodland and Blue Oak Savanna, which together is equivalent to the 140 acres expected to be directly impacted (lost) under the No Action/No Project Alternative. Therefore, only 70 acres or approximately 0.5% of the Blue Oak Woodland and Blue Oak Savanna within the Planning Area would be directly impacted (lost), and the past and current impacts to Blue Oak Woodland and Blue Oak Savanna within most of the Study Area have been relatively small. Therefore, the	The incremental impacts of the Proposed Action/Proposed Project Alternative would make a slightly smaller contribution to the cumulative loss of Blue Oak Woodland and Blue Oak Savanna in the Study Area, when compared to the incremental impacts of the No Action/No Project Alternative. However, at the scale of impacts to Blue Oak Woodland and Blue Oak Savanna throughout the Study Area, the difference in direct impacts and the difference in preservation and re-establishment or establishment of Blue Oak	No Cumulative Effect	None required	Overall, the incremental impacts of the Reduced Permit Term Alternative would make a slightly smaller contribution the cumulative loss of Blue Oak Woodland and Blue Oak Savanna in the Study Area, when compared to the incremental impacts of the No Action/No Project Alternative. However, at the scale of impacts to Blue Oak Woodland and Blue Oak Savanna throughout the Study Area, the difference in direct impacts and the difference in preservation and re-establishment or establishment of Blue Oak	No Cumulative Effect	None required

Table ES-1. Summary of Impacts and Mitigation

No Action/No Project Alternative	Proposed Action/Proposed Project Alternative			Reduced Permit Term Alternative		
Impact	Impact	CEQA/NEPA Significance	Mitigation Measures	Impact	CEQA/NEPA Significance	Mitigation Measures
incremental impact of the No Action/No Project Alternative on Blue Oak Woodland and Blue Oak Savanna, when considered together with the impacts of past, current, and reasonably foreseeable projects, would result in a less than significant cumulative effect.	Woodland and Blue Oak Savanna land covers is not discernibly different.			Woodland and Blue Oak Savanna land covers is not discernibly different.		
Direct and Indirect Effects – Farmland (Croplands and Irrigated Pasture-Grassland)						
As compared to the Existing Condition, the No Action/No Project Alternative would: <ul style="list-style-type: none">• directly remove up to approximately 8,484 acres of existing Cropland and Irrigated Pasture-Grassland land covers and their associated plant and animal communities, which is approximately 12.5% of the total existing of these land covers in the Planning Area; and• preserve approximately 7,615 acres of similar resource-category farmland to mitigate direct impacts to Cropland and Irrigated Pasture-Grassland land covers.	As compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would: <ul style="list-style-type: none">• directly impact (remove) 450 fewer acres of Croplands and Irrigated Pasture-Grasslands land cover and the their plant and animal communities;• require Covered Activities to implement better and more consistently implemented AMMs to avoid and minimize indirect effects to Croplands and Irrigated Pasture-Grasslands;• preserve 2,081 acres more Croplands and Irrigated Pasture-Grasslands (or a similar quality farmland land cover) within a large SSHCP Preserve System; and• result in more contiguous preserves and an interconnected Preserve System in that includes Croplands and Irrigated Pasture-Grasslands within the Planning Area, and which would reduce habitat fragmentation effects on native wildlife in the Planning Area.	Minor Beneficial Effect	None required	As compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would: <ul style="list-style-type: none">• directly impact 354 fewer acres of Cropland and Irrigated Pasture-Grassland land covers and associated wildlife communities;• require Covered Activity activities and projects implemented during the 30-year permit term to incorporate better and more consistently implemented AMMs, to better avoid and minimize indirect effects to Cropland and Irrigated Pasture-Grassland;• preserve 326 more acres of Cropland and Irrigated Pasture-Grassland land covers;• preserve higher quality farmland during the 30-year permit term by mitigating impact to any farmland land cover with the higher quality Cropland or Irrigated Pasture-Grassland;• result in more contiguous and interconnected and preserves of Cropland and Irrigated Pasture-Grassland farmland within a larger Preserve System; and• result in management of Cropland and Irrigated Pasture-Grassland within the Preserve System on a regional basis, and under a comprehensive preserve management program.	Minor Beneficial Effect	None required
Cumulative Effects – Farmland (Croplands and Irrigated Pasture-Grassland)						
The incremental loss of 8,484 acres of Cropland and Irrigated Pasture-Grasslands under the No Action/No Project Alternative would be a significant cumulative effect when considered together with the acres of Cropland and Irrigated Pasture Grassland lost from past and present human activities and the other foreseeable future projects in the Study Area.	The incremental impacts of the Proposed Action/Proposed Project Alternative would make a smaller contribution the cumulative loss of Cropland and Irrigated Pasture-Grassland in the Study Area, when compared to the incremental impacts of the No Action/No Project Alternative. However, at the scale of impacts to Cropland and Irrigated Pasture-Grassland throughout the Study Area, the 450-acre difference in direct impacts and the 2,081-acres difference in the permanent preservation of Cropland and Irrigated Pasture-Grassland land covers is not discernibly different between the Proposed Action/ Proposed Project Alternative and the No Action/No Project Alternative.	No Cumulative Effect	None required	At the scale of impacts to Cropland and Irrigated Pasture-Grassland throughout the Study Area, the 354-acre difference in direct impacts and the 326-acre difference in Cropland and Irrigated Pasture-Grassland preservation under the Reduced Permit Term Alternative is not discernibly different from the impacts expected under the No Action/No Project Alternative.	No Cumulative Effect	None required
Direct and Indirect Effects – Farmland (Orchards/Vineyards)						
As compared to the Existing Condition, the No Action/No Project Alternative would: <ul style="list-style-type: none">• directly impact approximately 1,745 acres of existing Orchard and Vineyard land covers and associated plant and animal communities, which is approximately 5.7% of the existing 30,367 acres of Orchard and Vineyard land covers in the Planning Area; and• preserve approximately 1,566 acres of similar quality farmland, which	As compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would: <ul style="list-style-type: none">• directly impact (remove) 63 fewer acres of Orchards and Vineyards land cover and the their plant and animal communities;• require Covered Activities to implement better and more consistently implemented AMMs to avoid and minimize	Minor Beneficial Effect	None required	As compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would: <ul style="list-style-type: none">• directly impact 119 acres less of Orchards and Vineyards land covers and associated wildlife communities;• require Covered Activity activities and projects implemented during the 30-year permit term to incorporate better and more consistently implemented AMMs, to better avoid and minimize	Minor Beneficial Effect	None required

Table ES-1. Summary of Impacts and Mitigation

No Action/No Project Alternative	Proposed Action/Proposed Project Alternative			Reduced Permit Term Alternative		
Impact	Impact	CEQA/NEPA Significance	Mitigation Measures	Impact	CEQA/NEPA Significance	Mitigation Measures
equals approximately 90% of the acres of Orchard and Vineyard lost.	indirect effects to Orchards and Vineyards land covers; <ul style="list-style-type: none">• preserve 515 acres more farmland, and would preserve farmland within a large SSHCP Preserve System;• mitigate impacts to Orchard and Vineyard land covers by preserving equal acres of Croplands and Irrigated Pasture land covers, which provide much higher quality habitat for the native wildlife community that uses farmland in the Planning Area; and• preserve farmland in larger preserves within an interconnected Preserve System, which would reduce habitat fragmentation effects on native wildlife in the Planning Area.			indirect effects to Orchards and Vineyards; <ul style="list-style-type: none">• preserve higher quality farmland during the 30-year permit term by mitigating impact to Orchards and Vineyards with higher quality Cropland or Irrigated Pasture-Grassland;• preserve 381 less acres of Orchards and Vineyards over the 50-year EIS/EIR Study Period;• result in farmland preserves that are more contiguous, more interconnected, and within a larger Preserve System; and• result in management of preserved farmlands on a regional basis within the Preserve System, and under a comprehensive preserve management program.		
Cumulative Effects – Farmland (Orchards/Vineyards)						
Projects and activities implemented under the No Action/No Project Alternative are estimated to result in the direct loss of approximately 1,745 acres of existing Orchard and Vineyard. The regulatory environment of would require the preservation of approximately 1,566 acres of farmland of a similar category, which would permanently preserve those acres of farmland, but would still result in a net loss of 1,745 acres of farmland in the Planning Area. In addition, mitigation for impacts to farmland would continue to occur on a project by project basis, and would likely result of a pattern of farmland preserves that are geographically fragmented. Therefore, the incremental loss of Orchard and Vineyard under the No Action/No Project Alternative, when combined with the effects of past and current projects and the effects of the foreseeable future actions in the Study Area, would likely result in a less than significant cumulative effect to Orchard and Vineyard land covers.	The incremental impacts of the Proposed Action/Proposed Project Alternative would make a smaller contribution the cumulative loss of farmland in the Study Area, when compared to the incremental impacts of the No Action/No Project Alternative. However, at the scale of impacts to farmland throughout the Study Area, the 63-acre difference in direct impacts to Orchard and Vineyard land covers and the 515-acres difference in the preservation of farmland land covers is not discernibly different between the Proposed Action/ Proposed Project Alternative and the No Action/No Project Alternative.	No Cumulative Effect	None required	At the scale of impacts to Orchards and Vineyard throughout the Study Area, the 119-acre difference in direct impacts and the 381-acre difference in Orchards and Vineyard preservation under the Reduced Permit Term Alternative is not discernibly different from the impacts expected under the No Action/No Project Alternative.	No Cumulative Effect	None required
Direct and Indirect Effects – Wildlife Movement Corridors						
As compared to the Existing Condition, the No Action/No Project Alternative would: <ul style="list-style-type: none">• impact the extreme northern most portion of the Coyote Creek;• directly and indirectly impact existing wildlife movement and dispersal along Laguna Creek corridor due to planned urban development, and associated human activities and recreation along creeks and streams within the UDA; and• impact Bear Slough-Browns Creek ECAs and the Coyote Creek- Dry Creek ECAs through some rural transportation projects.	As compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would: <ul style="list-style-type: none">• provide a coordinated, interconnected Preserve System designed to provide connectivity between existing preserves and new preserves established under the Proposed Action/Proposed Project;• require new development project to incorporate AMMs that would avoid or minimize effects on riparian corridors used for wildlife movement;• require new development projects inside the UDA and related roadway projects outside the UDA to incorporate wildlife crossing structures at specific locations; and• not result in displaced development outside the UDA, to locations that have a greater potential to affect designated wildlife movement corridors.	Minor Beneficial Effect	None required	As compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would: <ul style="list-style-type: none">• provide a coordinated, interconnected Preserve System designed to provide connectivity between existing preserves and new preserves established under the Reduced Permit Term Alternative;• require new development projects implemented during the 30-year permit term to incorporate AMMs that would avoid or minimize effects on riparian corridors used for wildlife movement;• require new development projects inside the UDA and related roadway projects outside the UDA implemented during the 30-year permit term to incorporate wildlife crossing structures at specific locations;• not result in displaced development outside the UDA, to locations that have a greater potential to affect designated wildlife movement corridors.	Minor Beneficial Effect	None required

Table ES-1. Summary of Impacts and Mitigation

No Action/No Project Alternative		Proposed Action/Proposed Project Alternative			Reduced Permit Term Alternative		
Impact	Impact	CEQA/NEPA Significance	Mitigation Measures	Impact	CEQA/NEPA Significance	Mitigation Measures	
Cumulative Effects — Wildlife Movement Corridors							
the incremental loss and degradation of wildlife movement and corridors under the No Action/No Project Alternative would be a significant cumulative effect when considered together with the impacts to wildlife movement from by past and current human activities and the foreseeable other projects in the Study Area.	The incremental impacts of the Proposed Action/Proposed Project Alternative would make a smaller contribution the cumulative loss of wildlife movement and dispersal in the Study Area, when compared to the incremental impact of the No Action/No Project Alternative. However, at the scale of wildlife movement throughout the Study Area, the difference in movement under the Proposed Action/Proposed Project Alternative when compared to impacts under the No Action/No Project Alternative is not discernibly different.	No Cumulative Effect	None required	The incremental impacts of the Reduced Permit Term Alternative would make a smaller contribution the cumulative loss of wildlife movement and dispersal in the Study Area, when compared to the incremental impacts of the No Action/No Project Alternative. However, at the scale of wildlife movement throughout the Study Area, the difference in impacts to wildlife movement under the Reduced Permit Term Alternative when compared to expected impacts to wildlife movement under the No Action/No Project Alternative, is not discernibly different.	No Cumulative Effect	None required	
SPECIAL-STATUS SPECIES INCLUDING HCP COVERED SPECIES							
Direct and Indirect Effects							
Refer to Table ES-2 for impact significance for each analyzed species.							
Cumulative Effects							
Refer to Table ES-2 for impact significance for each analyzed species.							
AQUATIC RESOURCES							
Direct and Indirect Effects							
As compared to the Existing Condition, the No Action/No Project Alternative would: <ul style="list-style-type: none">• result in the loss of 821 acres of wetland waters;• result in the loss of 359 other waters;• result in the loss of 427 acres of Riparian land cover types;• in total, result in the loss of 1,607 acres of aquatic resources; and• preserve 1,740 acres of aquatic resources.	As compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would: <ul style="list-style-type: none">• result in the loss of 855 acres of wetland waters, which is 34 more acres than the 821-acre loss anticipated under the No Action/No Project Alternative;• result in the loss of 294 other waters, which is 65 acres less than the 359-acre loss anticipated under the No Action/No Project Alternative;• result in the loss of 464 acres of Riparian land cover types, which is 37 acres more than the 427 acres expected under the No Action/No Project Alternative;• in total, result in the loss of 1,613 acres of aquatic resources, which is 5 acres greater loss of aquatic resources compared to the 1,607-acre loss of the No Action/No Project Alternative;• preserve 2,738 acres of aquatic resources, which is greater by 998 acres compared 1,740 acres under the No Action/No Project Alternative;• require AMMs such as increased Stream Setbacks that would be more protective to aquatic resources relative to the No Action/No project Alternative;• implement the SSHCP and ARP resulting in a greater area of aquatic resources protections and management than the No Action/No Project Alternative; and• improve aquatic resource abundance, diversity, and condition within the Planning Area over that expected under the No Action/No Project Alternative.	Minor Beneficial Effect	None required	As compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would: <ul style="list-style-type: none">• result in the loss of 931 acres of wetland waters, which is 110 more acres than the 821-acre loss anticipated under the No Action/No Project Alternative;• result in the loss of 315 other waters, which is 44 acres less than the 359-acre loss anticipated under the No Action/No Project Alternative;• result in the loss of 485 acres of Riparian land cover types, which is 55 acres more than the 427 acres expected under the No Action/No Project Alternative;• in total, result in the loss of 1,728 acres of aquatic resources, which is 121 acres greater loss of aquatic resources compared to the No Action/No Project Alternative;• preserve 2,778 acres of aquatic resources, which is greater by 1,038 acres compared 1,740 acres under No Action/No Project Alternative;• require AMMs such as increased Stream Setbacks that would be more protective to aquatic resources relative to the No Action/No project Alternative. However, once the permit term has expired (Years 31–50 of the 50-year EIS/EIR Study Period) projects would be subject to the Avoidance and Minimization Measures of the No Action/Project alternative (which do not include, for example, the expectation of required Stream Setbacks);• implement the SSHCP and ARP for the first 30 years of the study period, and result in a greater area of aquatic resources preserved than the No Action/No Project Alternative; and	Minor Beneficial Effect	None required	

Table ES-1. Summary of Impacts and Mitigation

No Action/No Project Alternative		Proposed Action/Proposed Project Alternative			Reduced Permit Term Alternative	
Impact	Impact	CEQA/NEPA Significance	Mitigation Measures	Impact	CEQA/NEPA Significance	Mitigation Measures
				• improve aquatic resource abundance, diversity, and condition within the Planning Area over that expected under the No Action/No Project Alternative.		
Cumulative Effects						
Many of the foreseeable other projects and actions would not result in additional losses of aquatic resource functions and services from the study area because they would comply with existing regulatory requirements to avoid and minimize impacts to aquatic resources and to provide compensatory mitigation for unavoidable impacts. However, the foreseeable rural residential developments, the agricultural activities on private lands, and other future activities are likely to result in additional losses and additional adverse impacts to existing aquatic resources within the resource study area over the 50-year EIS/EIR study period	Implementation of the SSHCP Conservation Strategy, including the SSHCP AMMs, the SSHCP ARP, and the interconnected SSHCP Preserve System is expected to result in more consistent and frequent conservation of aquatic resources compared to the No Action/No Project Alternative.	Minor Beneficial Cumulative Effect	None required	Implementation of the SSHCP Conservation Strategy, including the SSHCP AMMs, the SSHCP ARP, and the interconnected SSHCP Preserve System during the first 30 years of the study period is expected to result in more consistent and frequent conservation of aquatic resources compared to the No Action/No Project Alternative.	Minor Beneficial Cumulative Effect	None required
PALEONTOLOGICAL, CULTURAL, AND HISTORICAL RESOURCES						
Direct and Indirect Effects						
As compared to the Existing Condition, the No Action/No Project Alternative would: <ul style="list-style-type: none">• result in damage to cultural resources from construction in areas where cultural resources are present;• result in damage or destruction to historic resources, including structures and sites; and• potentially impact human remains due to ground disturbance during construction.	As compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would: <ul style="list-style-type: none">• not result in disturbance of up to 1,900 acres outside the UDA identified as “moderate” or “high” cultural resource sensitivity by Sacramento County;• provide additional setback preserves along stream, creeks, and riparian areas, which generally have the highest sensitivity for cultural resources in the Planning Area; and• result in similar effects to existing historical resources and paleontological resources.	Minor Beneficial Effect	None required	As compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would: <ul style="list-style-type: none">• not result in disturbance of up to 1,900 acres outside the UDA identified as “moderate” or “high” cultural resource sensitivity by Sacramento County;• provide 30-years of additional protections for stream, creeks, and riparian areas, which generally have the highest sensitivity for cultural resources in the Planning Area; and• result in similar effects on historical resources and paleontological resources.	Minor Beneficial Effect	None required
Cumulative Effects						
Although the policies in the Sacramento County General Plan (Sacramento County 2011) and Rancho Cordova General Plan (Rancho Cordova 2013) are designed to minimize protect impacts to paleontological and cultural resources, additional losses of paleontological and cultural resources would result from the new urban development projects, activities, and actions included in the No Action/No Project Alternative. Therefore, the direct and indirect impacts of the No Action/No Project Alternative would further increase the significant loss of cultural and paleontological resources that already exists in the study area.	Compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would include less development outside the current Sacramento County USB boundary, where cultural resource sensitivity is higher. The Proposed Action/Proposed Project would also include stream setbacks on streams, creeks, and first and second order tributaries to those streams and creeks. Because stream/creek and riparian areas have greater cultural resource sensitivity, these setbacks would reduce the potential for impacts to cultural resources.	Minor Beneficial Cumulative Effect	None required	Compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would not displace or shift urban development outside the current Sacramento County USB boundary where cultural resource sensitivity is moderate or high. The Reduced Permit Term Alternative would also include 30 -years of additional setbacks between new urban development and UDA streams, creeks, and first and second order tributaries to those streams and creeks. Because stream/creek and riparian areas have greater cultural resource sensitivity, the 30 -years of larger and more numerous setbacks are expected to reduce impacts to cultural resources.	Minor Beneficial Cumulative Effect	None required
PUBLIC SERVICES AND FACILITIES						
Direct and Indirect Effects - Law Enforcement, Fire Protection, and Emergency Services						
As compared to the Existing Condition, the No Action/No Project Alternative would: <ul style="list-style-type: none">• increase the potential for adverse physical impacts associated with the provision of law enforcement services, fire protection, or emergency services to meet demands of urban development outside the UDA;• increase demand for law enforcement, fire protection, or emergency	As compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would: <ul style="list-style-type: none">• reduce the potential for adverse physical impacts associated with the provision of law enforcement services, fire protection, or emergency services to meet demands of urban development outside the UDA;	Minor Beneficial Effect	None required	As compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would: <ul style="list-style-type: none">• reduce the potential for adverse physical impacts associated with the provision of law enforcement services, fire protection, or emergency services to meet demands of urban development outside the UDA;	Minor Beneficial Effect	None required

Table ES-1. Summary of Impacts and Mitigation

No Action/No Project Alternative	Proposed Action/Proposed Project Alternative			Reduced Permit Term Alternative		
Impact	Impact	CEQA/NEPA Significance	Mitigation Measures	Impact	CEQA/NEPA Significance	Mitigation Measures
services by displacing urban development to areas remote from existing concentrations of law enforcement services, fire protection, or emergency services; <ul style="list-style-type: none">• not change demand for local fire departments or CAL FIRE beyond current levels as a result of preserve management activities; and• not impede delivery of fire, police, and emergency services to preserve areas by improving coordination with local and state service providers.	<ul style="list-style-type: none">• reduce demand for law enforcement, fire protection, or emergency services by not resulting in urban development remote from existing concentrations of law enforcement services, fire protection, or emergency services;• not change demand for local fire departments or CAL FIRE beyond current levels as a result of preserve management activities; and• not impede delivery of fire, police, and emergency services to preserve areas by improving coordination with local and state service providers.			<ul style="list-style-type: none">• reduce demand for law enforcement, fire protection, or emergency services by not resulting in urban development remote from existing concentrations of law enforcement services, fire protection, or emergency services;• not change demand for local fire departments or CAL FIRE beyond current levels as a result of preserve management activities; and• not impede delivery of fire, police, and emergency services to preserve areas by improving coordination with local and state service providers.		
Cumulative Effects - Law Enforcement, Fire Protection, and Emergency Services						
Development under the No Action/No Project Alternative would include additional demand for police and fire services after the time frame evaluated in General Plan EIRs of the Cities of Rancho Cordova and Galt and the County of Sacramento, ranging from 15 to 35 additional years. That additional development would include 1,900 acres of urban development displaced or shifted outside the UDA. However, existing funding mechanisms for law enforcement, fire protection, and emergency services would ensure that the new development would also provide new funding for these services.	The Proposed Action/Proposed Project would not include urban development outside the UDA where law enforcement, fire protection, and emergency services are less available. The Proposed Action/Proposed Project would also improve coordination between Preserve Managers and local or state service providers. Therefore, the Proposed Action/Proposed Project would have a smaller incremental contribution to impacts on demand for new facilities or law enforcement services, fire protection, or emergency services as compared to the No Action/No Project alternative.	Minor Beneficial Cumulative Effect	None required	The Reduced Permit Term Alternative would not include urban development outside the UDA where law enforcement, fire protection, and emergency services are less available. The Reduced Permit Term Alternative would also improve coordination between Preserve Managers and local or state service providers and therefore would have a smaller incremental contribution to impacts on demand for new facilities of law enforcement services, fire protection, or emergency services as compared to the No Action/No Project alternative.	Minor Beneficial Cumulative Effect	None required
Direct and Indirect Effects - Water and Wastewater Services						
As compared to the Existing Condition, the No Action/No Project Alternative would: <ul style="list-style-type: none">• result in impacts from expanding water and wastewater infrastructure to serve urban development urban development outside the UDA;• continue the potential for existing aquatic resources or future preserves to conflict with planned infrastructure development; and• increase the severity of the significant and unavoidable impacts to potable water supply and wastewater treatment identified previously for Sacramento County, Rancho Cordova, and Galt.	As compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would: <ul style="list-style-type: none">• reduce the impacts from expanding water and wastewater infrastructure to serve urban development urban development outside the UDA;• reduce the potential for existing aquatic resources or future preserves to conflict with planned infrastructure development; and• result in similar impacts on adequacy of water supply for full buildout of the project.	Minor Beneficial Effect	None required	As compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would: <ul style="list-style-type: none">• reduce the impacts from expanding water and wastewater infrastructure to serve urban development urban development outside the UDA;• reduce the potential for existing aquatic resources or future preserves to conflict with planned infrastructure development; and• result in similar impacts on adequacy of water supply for full buildout of the project.	Minor Beneficial Effect	None required
Cumulative Effects - Water and Wastewater Services						
Cumulative effects on water and wastewater services not evaluated in the General Plan EIRs of the Cities of Rancho Cordova and Galt and the County of Sacramento would include the additional increment of growth in the Planning Area after the end of their study periods, which range from 15 to 35 years of additional growth and development. That additional development would include 1,900 acres of urban development displaced or shifted outside the UDA. The additional demand for water and wastewater infrastructure outside the UDA from these projects would be offset through payment of fees by project developers and by rate increases passed on to residents of the Planning Area.	The Proposed Action/Proposed Project would not include urban development outside the UDA where water and wastewater infrastructure are less available, and would have a smaller incremental contribution to impacts on demand for new water or wastewater facilities as compared to the No Action/No Project alternative.	Minor Beneficial Cumulative Effect	None required	The Reduced Permit Term Alternative would not include urban development outside the UDA where water and wastewater infrastructure are less available, and would have a smaller incremental contribution to impacts on demand for new water or wastewater facilities as compared to the No Action/No Project alternative.	Minor Beneficial Cumulative Effect	None required

Table ES-1. Summary of Impacts and Mitigation

No Action/No Project Alternative		Proposed Action/Proposed Project Alternative			Reduced Permit Term Alternative		
Impact	Impact	CEQA/NEPA Significance	Mitigation Measures	Impact	CEQA/NEPA Significance	Mitigation Measures	
Direct and Indirect Effects - Solid Waste Disposal							
As compared to the Existing Condition, the No Action/No Project Alternative would: <ul style="list-style-type: none">be serviced by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs; andnot result in a demand for solid waste disposal services that cannot be met by existing or reasonably foreseeable future service capacity.	As compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would: <ul style="list-style-type: none">be serviced by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs; andresult in the same demand for solid waste disposal services.	No Effect	None required	As compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would: <ul style="list-style-type: none">be serviced by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs; andresult in the same demand for solid waste disposal services.	No Effect	None required	
Cumulative Effects - Solid Waste Disposal							
Cumulative effects to solid waste disposal under the No Action/No Project alternative that were not evaluated in the General Plan EIRs of the Cities of Rancho Cordova and Galt and the County of Sacramento would include the additional increment of growth in the Planning Area after the end of their study periods, which range from 15 to 35 years of additional growth and development. That additional development would include 1,900 acres of urban development displaced or shifted outside the UDA. The additional demand for solid waste disposal from these projects would be offset through payment of fees by project developers and by rate increases passed on to residents of the Planning Area.	The urban development under the Proposed Action/Proposed Project would accommodate the same population increase as the No Action/No Project Alternative, and would generate approximately the same amount of solid waste.	No Cumulative Effect	None required	The urban development under the Reduced Permit Term Alternative would accommodate the same population increase as the No Action/No Project Alternative and would generate approximately the same amount of solid waste.	No Cumulative Effect	None required	
Direct and Indirect Effects - Parks and Recreational Facilities							
As compared to the Existing Condition, the No Action/No Project Alternative would: <ul style="list-style-type: none">increase the potential for substantial adverse physical impacts associated with the provision of park and recreation services outside the UDA; andallow for development of trails planned in the Sacramento County, Galt, or Rancho Cordova General Plan.	As compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would: <ul style="list-style-type: none">reduce the potential for substantial adverse physical impacts associated with the provision of park and recreation services outside the UDA, or result in substantial physical deterioration of an existing facility due to increased use; andallow for development of trails planned in the Sacramento County, Galt, or Rancho Cordova General Plan.	No Effect	None required	As compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would: <ul style="list-style-type: none">not result in substantial adverse physical impacts associated with the provision of park and recreation services, or result in substantial physical deterioration of an existing facility due to increased use; andallow for development of trails planned in the Sacramento County, Galt, or Rancho Cordova General Plan.	No Effect	None required	
Cumulative Effects - Parks and Recreational Facilities							
Under the No Action/No Project Alternative, parks and recreational facilities would continue to be developed along with urban development in the cumulative impacts study area, maintaining a similar per capita availability of parks and recreational facilities despite increases in population. This would also be the case for reasonably foreseeable other projects.	Urban development under the Proposed Action/Proposed Project would also increase the Planning Area population and result in increased demand for parks and recreational facilities, but this new urban development would generate fees and taxes to pay for additional parks and recreational facilities. The Proposed Action/Proposed Project Alternative would provide limited park and recreational facility benefits by providing nature trails in some preserves, designed consistent with AMMs NATURE TRAIL-1 through NATURE TRAIL-5.	No Cumulative Effect	None required	Urban development under the Reduced Permit Term Alternative would also increase the Planning Area population and result in increased demand for parks and recreational facilities, but as with the past, present, and reasonably foreseeable future projects, this new urban development would generate fees and taxes to pay for additional parks and recreational facilities. The Reduced Permit Term Alternative would provide limited park and recreational facility benefits by providing nature trails in some preserves established during the 30-year permit term, designed in a manner consistent with AMMs NATURE TRAIL-1 through NATURE TRAIL-5. Additional trails would likely be constructed within preserves that are established as mitigation for project impacts in years 31–50 of the EIS/EIR study period.	No Cumulative Effect	None required	
Direct and Indirect Effects - Energy							
As compared to the Existing Condition, the No Action/No Project Alternative would: <ul style="list-style-type: none">increase the potential for impacts associated with building new electric	As compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would: <ul style="list-style-type: none">reduce the potential for impacts associated with building new	Minor Beneficial Effect	None required	As compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would: <ul style="list-style-type: none">reduce the potential for impacts associated with building new	Minor Beneficial Effect	None required	

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No Action/No Project Alternative	Proposed Action/Proposed Project Alternative			Reduced Permit Term Alternative		
Impact	Impact	CEQA/NEPA Significance	Mitigation Measures	Impact	CEQA/NEPA Significance	Mitigation Measures
or natural gas infrastructure to meet demands of urban development outside the UDA; <ul style="list-style-type: none">• increase the potential for urban development patterns to conflict with regional energy infrastructure plans; and• increase demand for electricity and natural gas service because of increased urban development within the Planning Area.	electric or natural gas infrastructure to meet demands of urban development outside the UDA; <ul style="list-style-type: none">• reduce the potential for urban development patterns to conflict with regional energy infrastructure plans; and• result in similar demand for electricity and natural gas service because total amounts of urban development within the Planning Area would be similar.			electric or natural gas infrastructure to meet demands of urban development outside the UDA; <ul style="list-style-type: none">• reduce the potential for urban development patterns to conflict with regional energy infrastructure plans; and• result in similar demand for electricity and natural gas service because total amounts of urban development within the Planning Area would be similar.		
Cumulative Effects - Energy						
Cumulative effects to energy not evaluated in the General Plan EIRs of Rancho Cordova, Galt and the Sacramento County would include the additional increment of growth in the Planning Area after the end of their study periods, which range from 15 to 35 years of additional growth and development. That additional development would include 1,900 acres of urban development displaced or shifted outside the UDA. The additional demand for energy infrastructure outside the UDA from these projects would be offset by rate increases passed on to residents of the Planning Area.	Additional development from urban development under the Proposed Action/Proposed Project would offset its impacts similarly to the No Action/No Project Alternative, through payment of usage fees. Because the Proposed Action/Proposed Project would include an Aquatic Resources Plan and expedited permitting process for aquatic resources, proponents constructing or expanding energy infrastructure would be less likely to have to develop alternative routes to avoid wetlands and waters. Generally, development of utility infrastructure within the Preserve System could occur as long as those projects complied with SSHCP AMMs.	No Cumulative Effect	None required	Additional development from urban development under the Reduced Permit Term Alternative would offset its impacts similarly to the No Action/No Project Alternative, through payment of usage fees. Because the Proposed Action/Proposed Project would include an Aquatic Resources Plan and expedited permitting process for aquatic resources, proponents constructing or expanding energy infrastructure would be less likely to have to develop alternative routes to avoid wetlands and waters. Generally, development of utility infrastructure within the Preserve System could occur as long as those projects complied with SSHCP AMMs.	No Cumulative Effect	None required
Direct and Indirect Effects - Mosquito Abatement						
As compared to the Existing Condition, the No Action/No Project Alternative would: <ul style="list-style-type: none">• potentially create more new breeding areas for mosquitos; and• potentially restrict mosquito abatement activities within preserves.	As compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would: <ul style="list-style-type: none">• potentially create more new breeding areas for mosquitos, but would include monitoring and management to ensure that aquatic resources do not generate substantial populations of mosquitos and affect public health; and• potentially restrict mosquito abatement activities within preserves, but would include monitoring and management to ensure that aquatic resources do not generate substantial populations of mosquitos and affect public health.	Less Than Significant Adverse Effect	None required	As compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would: <ul style="list-style-type: none">• potentially create more new breeding areas for mosquitos, but would include monitoring and management to ensure that aquatic resources do not generate substantial populations of mosquitos and affect public health; and• potentially restrict mosquito abatement activities within preserves, but would include monitoring and management to ensure that aquatic resources do not generate substantial populations of mosquitos and affect public health.	Less Than Significant Adverse Effect	None required
Cumulative Effects - Mosquito Abatement						
Existing patterns of development have resulted in avoidance of wetlands, establishment of on-site preserves, and on-site wetland establishment projects, which expose residents and employees to potential mosquito hazards. The lead agencies anticipate that avoidance of wetlands, establishment of on-site preserves, and wetland establishment projects would continue to be a common mitigation strategy under the No Action/No Project Alternative. However, funding for mosquito abatement would continue to be provided by the additional property taxes and other assessments on new development, so any additional demand for mosquito abatement would be met.	The Proposed Action/Proposed Project would contribute to cumulative impacts on mosquito abatement by establishing new aquatic resources and potentially making it more difficult to conduct mosquito abatement activities on preserves. However, the Preserve System would be carefully monitored and managed to avoid the aquatic resource conditions conducive to mosquito breeding. Further, funding for mosquito abatement would continue to be provided by the additional property taxes and other assessments on new development, so additional demand for mosquito abatement would be met.	Less Than Significant Adverse Cumulative Effect	None required	The Reduced Permit Term Alternative would contribute to cumulative impacts on mosquito abatement by establishing new aquatic resources and potentially making it more difficult to conduct mosquito abatement activities on preserves. However, the conceptual preserve system would be carefully monitored and managed to avoid the aquatic resource conditions conducive to mosquito breeding. Further, funding for mosquito abatement would continue to be provided by the additional property taxes and other assessments on new development, so additional demand for mosquito abatement would be met.	Less Than Significant Adverse Cumulative Effect	None required
TRAFFIC AND CIRCULATION						
Direct and Indirect Effects						
As compared to the Existing Condition, the No Action/No Project Alternative would:	As compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would:	Minor Beneficial Effect	None required	As compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would:	Minor Beneficial Effect	None required

Table ES-1. Summary of Impacts and Mitigation

No Action/No Project Alternative		Proposed Action/Proposed Project Alternative			Reduced Permit Term Alternative		
Impact	Impact	CEQA/NEPA Significance	Mitigation Measures	Impact	CEQA/NEPA Significance	Mitigation Measures	
<ul style="list-style-type: none">• increase vehicle trips, demand on transit to serve outlying areas, and overall demand on the local and regional transportation system by resulting in displacement and shifting of urban development outside the UDA;• increase potential conflicts with future planned roadways, extensions of existing roadways, and roadway widening and improvements that are planned in the Sacramento County, Galt, and Rancho Cordova General Plan Circulation Elements;• result in a minimal amount of additional vehicle trips for management and monitoring of mitigation preserves; and• result in a minimal amount of additional heavy vehicle trips for habitat re-establishment/ establishment on mitigation preserves.	<ul style="list-style-type: none">• reduce vehicle trips, demand on transit to serve outlying areas, and overall demand on the local and regional transportation system by not resulting in displacement and shifting of urban development outside the UDA;• reduce potential conflicts with future planned roadways, extensions of existing roadways, and roadway widening and improvements that are planned in the Sacramento County, Galt, and Rancho Cordova General Plan Circulation Elements;• result in a minimal amount of additional vehicle trips for preserve system management and monitoring; and• result in a minimal amount of additional heavy vehicle trips for preserve system habitat re-establishment/establishment.			<ul style="list-style-type: none">• reduce vehicle trips, demand on transit to serve outlying areas, and overall demand on the local and regional transportation system by not resulting in displacement and shifting of urban development outside the UDA;• reduce potential conflicts with future planned roadways, extensions of existing roadways, and roadway widening and improvements that are planned in the Sacramento County, Galt, and Rancho Cordova General Plan Circulation Elements;• result in a minimal amount of additional vehicle trips for preserve system management and monitoring; and• result in a minimal amount of additional heavy vehicle trips for preserve system habitat re-establishment/establishment.			
Cumulative Effects							
The future traffic impacts analyzed in this EIS/EIR are, by definition, cumulative. Therefore, cumulative impacts of the No Action/No Project Alternative on existing and future traffic and circulation are identical to the direct and indirect impacts.	The future traffic impacts analyzed in this EIS/EIR are, by definition, cumulative. Therefore, cumulative impacts of the Proposed Project/Proposed Action on existing and future traffic and circulation are identical to the direct and indirect impacts	N/A	None required	The future traffic impacts analyzed in this EIS/EIR are, by definition, cumulative. Therefore, cumulative impacts of the Reduced Permit Term Alternative on existing and future traffic and circulation are identical to the direct and indirect impacts	N/A	None required	
AIR QUALITY							
Direct and Indirect Effects							
As compared to the Existing Condition, the No Action/No Project Alternative would: <ul style="list-style-type: none">• result in increased mobile-source criteria pollutant, TAC, and odor emissions, and dust emissions from construction of urban development;• result in increased CO emissions during construction of urban development;• result in increased mobile-source criteria pollutant emissions from operation of urban development;• result in increased emissions of criteria pollutants, TACs, and odors from stationary and area wide sources associated with operation of urban development;• result in increased CO emissions during the operation of urban development;• result in increased exposure of sensitive receptors to mobile source TACs and odors from operation of urban development;• result in increased mobile source emissions from operation of mitigation preserves; and• result in increased exposure of sensitive receptors to TACs, odors, and CO from operation of mitigation preserves.	As compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would: <ul style="list-style-type: none">• result in reduced mobile-source criteria pollutant, TAC, and odor emissions, and dust emissions from construction of urban development and preserve establishment;• result in similar CO emissions during construction of urban development and preserve establishment;• result in reduced mobile-source criteria pollutant emissions from operation of urban development;• result in similar emissions of criteria pollutants, TACs, and odors from stationary and area wide sources associated with operation of urban development;• result in similar CO emissions during the operation of urban development;• result in similar exposure of sensitive receptors to mobile source TACs and odors from operation of urban development;• result in reduced mobile source emissions from preserve system operation; and• result in similar exposure of sensitive receptors to TACs, odors, and CO from preserve system operation.	Minor Beneficial Effect	None required	As compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would: <ul style="list-style-type: none">• result in reduced mobile-source criteria pollutant, TAC, and odor emissions, and dust emissions from construction of urban development and preserve establishment;• result in similar CO emissions and concentrations during construction of urban development and preserve establishment;• result in reduced mobile-source criteria pollutant emissions from operation of urban development;• result in similar emissions of criteria pollutants, TACs, and odors from stationary and area wide sources associated with operation of urban development;• result in similar CO emissions during the operation of urban development;• result in similar exposure of sensitive receptors to mobile source TACs and odors from operation of urban development;• result in reduced mobile source emissions from preserve system operation; and• result in similar exposure of sensitive receptors to TACs, odors, and CO from preserve system operation.	Minor Beneficial Effect	None required	
Cumulative Effects							
The construction, stationary, and mobile source air emissions from these foreseeable other projects were generally included in the analysis of cumulative air emissions impacts incorporated from the General Plan EIRs. These General Plan EIRs identified significant and unavoidable air quality impacts from	Various elements of the Proposed Action/Proposed Project Alternative would reduce emissions of criteria pollutants compared to the No Action/No Project Alternative, including more effective emission reductions from implementation of AMMs and the lack of	Minor Beneficial Cumulative Effect	None required	Various elements of the Reduced Permit Term Alternative would reduce emissions of criteria pollutants compared to the No Action/No Project Alternative, including more effective emission reductions from implementation of AMMs and the lack of urban development being	Minor Beneficial Cumulative Effect	None required	

Table ES-1. Summary of Impacts and Mitigation

No Action/No Project Alternative	Proposed Action/Proposed Project Alternative			Reduced Permit Term Alternative		
Impact	Impact	CEQA/NEPA Significance	Mitigation Measures	Impact	CEQA/NEPA Significance	Mitigation Measures
emissions of criteria pollutants during construction and operation. Consequently, the combination of past, present, and reasonably foreseeable future projects would result in continued significant adverse cumulative air quality effects, with the SVAB likely remaining in non-attainment for ozone, PM10, and PM2.5. As discussed above, the direct and indirect impacts of No Action/No Project Alternative would adversely affect existing air quality through the emissions of criteria pollutants.	urban development being shifted or displaced outside the USB, thereby reducing VMT. The reduced emissions result in the minor beneficial effects identified above, and the Proposed Action/Proposed Project Alternative would make a smaller incremental contribution to any cumulative air quality impacts when compared to the incremental effects of the No Action/No Project Alternative.			shifted or displaced outside the USB, thereby reducing VMT. The reduced emissions result in the minor beneficial effects identified above, and the Reduced Permit Term Alternative would make a smaller incremental contribution to any cumulative air quality impacts when compared to the incremental effects of the No Action/No Project Alternative.		
GREENHOUSE GASES AND CLIMATE CHANGE						
Direct and Indirect Effects						
As compared to the Existing Condition, the No Action/No Project Alternative would: <ul style="list-style-type: none">• result in increased GHG emissions from construction of urban development;• result in increased GHG emissions from mitigation preserve construction/establishment;• result in increased GHG emissions from operations of urban development;• result in increased GHG emissions from the loss of carbon-sequestering terrestrial land covers; and• result in little difference in GHG emissions resulting from mitigation preserve management.	As compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would: <ul style="list-style-type: none">• result in a net reduction in GHG emissions from construction of urban development;• result in net reduction in GHG emissions from preserve system construction/establishment;• result in a net reduction in GHG emissions from operations of urban development;• result in a net reduction in GHG emissions from the loss of carbon-sequestering terrestrial land covers;• result in a net reduction in GHG emissions from preserve system management; and• result in a preserve system that is more resilient to climate change.	Minor Beneficial Effect	None required	As compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would: <ul style="list-style-type: none">• result in a net reduction in GHG emissions from construction of urban development;• result in a net reduction in GHG emissions resulting from operations of urban development;• result in a negligible difference in GHG emissions from the loss of carbon-sequestering terrestrial land covers;• result in little difference in GHG emissions from preserve system construction/ establishment;• result in little difference in GHG emissions from preserve system management; and• result in a preserve system that is more resilient to climate change.	Minor Beneficial Effect	None required
Cumulative Effects						
The GHG emission impacts analyzed in this EIS/EIR are, by definition, cumulative. Therefore, cumulative GHG emission impacts of the No Action/No Project Alternative are identical to the direct and indirect impacts.	The GHG emission impacts analyzed in this EIS/EIR are, by definition, cumulative. Therefore, cumulative GHG emission impacts of the Proposed Action/Proposed Project Alternative are identical to the direct and indirect impacts.	N/A	None required	The GHG emission impacts analyzed in this EIS/EIR are, by definition, cumulative. Therefore, cumulative GHG emission impacts of the Reduced Permit Term Alternative are identical to the direct and indirect impacts.	N/A	None required
POPULATION AND HOUSING, SOCIOECONOMICS, AND ENVIRONMENTAL JUSTICE						
Direct and Indirect Effects						
As compared to the Existing Condition, the No Action/No Project Alternative would: <ul style="list-style-type: none">• result in conversion of grazing land and farmland to developed land uses, reducing agricultural employment.• not impede meeting current or future residential development needs.• not result in a substantial displacement of housing units or people; and• positively affect low –income and minority populations through establishment of preserves in the UDA.	As compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would: <ul style="list-style-type: none">• result in similar population and housing impacts;• result in similar socioeconomic impacts; and• result in similar environmental justice impacts.	No Impact	None required	As compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would: <ul style="list-style-type: none">• result in similar population and housing impacts;• result in similar socioeconomic impacts; and• result in similar environmental justice impacts.	Minor Beneficial Effect	None required
Cumulative Effects						
The No Action/No Project Alternative, when considered with past, present, and other reasonably foreseeable projects would result in greater opportunities to live and/or work near quality transit, provide for more access to parks and higher education, and would not displace housing, businesses, or populations.	The incremental direct and indirect effects on population and housing, socioeconomic, and environmental justice under the Proposed Action/Proposed Project Alternative are similar to the incremental effects of the No Action/No Project Alternative.	No Cumulative Impact	None required	The incremental direct and indirect effects on population and housing, socioeconomic, and environmental justice under the Reduced Permit Term Alternative are similar to the incremental effects of the No Action/No Project Alternative.	No Cumulative Impact	None required

Table ES-2. Summary of Impacts to Special-Status Species, Including Covered Species

Species Common Name	Covered Species?	Significance of Impacts to Species Relative to No Action/No Project Alternative Baseline Condition	
		Proposed Action/ Proposed Project	Reduced Permit Term Alternative
Vernal Pool Tadpole Shrimp	Y	Significant Beneficial Effect No Cumulative Effect	Less than Significant Adverse Effect No Cumulative Effect
Vernal Pool Fairy Shrimp	Y	Significant Beneficial Effect No Cumulative Effect	Less than Significant Adverse Effect No Cumulative Effect
Mid-Valley Fairy Shrimp	Y	Significant Beneficial Effect No Cumulative Effect	Less than Significant Adverse Effect No Cumulative Effect
Ricksecker's Water Scavenger Beetle	Y	Significant Beneficial Effect No Cumulative Effect	Less than Significant Adverse Effect No Cumulative Effect
Dwarf Downingia	Y	Significant Beneficial Effect No Cumulative Effect	Less than Significant Adverse Effect No Cumulative Effect
Ahart's Dwarf Rush	Y	Significant Beneficial Effect No Cumulative Effect	Less than Significant Adverse Effect No Cumulative Effect
Pincushion Navarretia	Y	Significant Beneficial Effect No Cumulative Effect	Less than Significant Adverse Effect No Cumulative Effect
Slender Orcutt Grass	Y	Significant Beneficial Effect No Cumulative Effect	Less than Significant Adverse Effect No Cumulative Effect
Sacramento Orcutt Grass	Y	Significant Beneficial Effect No Cumulative Effect	Less than Significant Adverse Effect No Cumulative Effect
Boggs Lake Hedge-Hyssop	Y	Significant Beneficial Effect No Cumulative Effect	Less than Significant Adverse Effect No Cumulative Effect
Legenere	Y	Significant Beneficial Effect No Cumulative Effect	Less than Significant Adverse Effect No Cumulative Effect
Valley Elderberry Longhorn Beetle	Y	Minor Beneficial Effect No Cumulative Effect	No Effect No Cumulative Effect
California Tiger Salamander (Central Valley population)	Y	Significant Beneficial Effect Minor Beneficial Cumulative Effect	Minor Beneficial Effect No Cumulative Effect
Western Spadefoot	Y	Significant Beneficial Effect Minor Beneficial Cumulative Effect	No Effect No Cumulative Effect
Giant Garter Snake	Y	Minor Beneficial Effect Minor Beneficial Cumulative Effect	No Effect No Cumulative Effect
Western Pond Turtle	Y	Significant Beneficial Effect Minor Beneficial Cumulative Effect	Significant Beneficial Effect Minor Beneficial Cumulative Effect
Cooper's Hawk	Y	Minor Beneficial Effect No Cumulative Effect	Minor Beneficial Effect No Cumulative Effect
Tricolored Blackbird	Y	Significant Beneficial Effect Significant Beneficial Cumulative Effect	Less than Significant Adverse Effect No Cumulative Effect
Western Burrowing Owl	Y	Significant Beneficial Effect Minor Beneficial Cumulative Effect	Less than Significant Adverse Effect No Cumulative Effect
Ferruginous Hawk	Y	Significant Beneficial Effect Minor Beneficial Cumulative Effect	Less than Significant Adverse Effect No Cumulative Effect
Swainson's Hawk	Y	Significant Beneficial Effect Minor Beneficial Cumulative Effect	Less than Significant Adverse Effect No Cumulative Effect

Table ES-2. Summary of Impacts to Special-Status Species, Including Covered Species

Species Common Name	Covered Species?	Significance of Impacts to Species Relative to No Action/No Project Alternative Baseline Condition	
		Proposed Action/ Proposed Project	Reduced Permit Term Alternative
Northern Harrier	Y	Significant Beneficial Effect Minor Beneficial Cumulative Effect	Minor Beneficial Effect No Cumulative Effect
White-Tailed Kite	Y	Significant Beneficial Effect Minor Beneficial Cumulative Effect	Minor Beneficial Effect No Cumulative Effect
Greater Sandhill Crane	Y	Minor Beneficial Effect No Cumulative Effect	Minor Beneficial Effect No Cumulative Effect
Lesser Sandhill Crane	N	Minor Beneficial Effect No Cumulative Effect	Minor Beneficial Effect No Cumulative Effect
Loggerhead Shrike	Y	Significant Beneficial Effect Minor Beneficial Cumulative Effect	Less than Significant Adverse Effect No Cumulative Effect
Grasshopper Sparrow	N	Significant Beneficial Effect Minor Beneficial Cumulative Effect	Less than Significant Adverse Effect No Cumulative Effect
Song Sparrow (Modesto population)	N	Minor Beneficial Effect No Cumulative Effect	Minor Beneficial Effect No Cumulative Effect
Bank Swallow	N	Less than Significant Adverse Effect No Cumulative Effect	Less than Significant Adverse Effect No Cumulative Effect
Western Red Bat	Y	Significant Beneficial Effect Minor Beneficial Cumulative Effect	Less than Significant Adverse Effect No Cumulative Effect
American Badger	Y	Significant Beneficial Effect Minor Beneficial Cumulative Effect	Less than Significant Adverse Effect No Cumulative Effect
Sanford's Arrowhead	Y	Minor Beneficial Effect Minor Beneficial Cumulative Effect	Minor Beneficial Effect Minor Beneficial Cumulative Effect
Watershield	N	Less than Significant Adverse Effect No Cumulative Effect	Significant Beneficial Effect No Cumulative Effect
Bristly sedge	N	Less than Significant Adverse Effect No Cumulative Effect	Less than Significant Adverse Effect No Cumulative Effect
Fleshy owl's clover	N	Less than Significant Adverse Effect No Cumulative Effect	Significant Beneficial Effect No Cumulative Effect
Brandegee's clarkia	N	Less than Significant Adverse Effect No Cumulative Effect	Less than Significant Adverse Effect No Cumulative Effect
Bolander's water-hemlock	N	Less than Significant Adverse Effect No Cumulative Effect	Less than Significant Adverse Effect No Cumulative Effect
Peruvian dodder	N	Less than Significant Adverse Effect No Cumulative Effect	Significant Beneficial Effect No Cumulative Effect
Tuolumne button-celery	N	Less than Significant Adverse Effect No Cumulative Effect	Less than Significant Adverse Effect No Cumulative Effect
Stinkbells	N	Less than Significant Adverse Effect No Cumulative Effect	Less than Significant Adverse Effect No Cumulative Effect
Woolly rose-mallow	N	Less than Significant Adverse Effect No Cumulative Effect	Significant Beneficial Effect No Cumulative Effect
Northern California black walnut	N	Less than Significant Adverse Effect No Cumulative Effect	Less than Significant Adverse Effect No Cumulative Effect

Table ES-2. Summary of Impacts to Special-Status Species, Including Covered Species

Species Common Name	Covered Species?	Significance of Impacts to Species Relative to No Action/No Project Alternative Baseline Condition	
		Proposed Action/ Proposed Project	Reduced Permit Term Alternative
Delta tule pea	N	Less than Significant Adverse Effect No Cumulative Effect	Significant Beneficial Effect No Cumulative Effect
Heckard's pepper-grass	N	Less than Significant Adverse Effect No Cumulative Effect	Less than Significant Adverse Effect No Cumulative Effect
Mason's lilaeopsis	N	Less than Significant Adverse Effect No Cumulative Effect	Less than Significant Adverse Effect No Cumulative Effect
Delta mudwort	N	Less than Significant Adverse Effect No Cumulative Effect	Less than Significant Adverse Effect No Cumulative Effect
Marsh skullcap	N	Less than Significant Adverse Effect No Cumulative Effect	Significant Beneficial Effect No Cumulative Effect
Side-flowering skullcap	N	Less than Significant Adverse Effect No Cumulative Effect	Significant Beneficial Effect No Cumulative Effect
Suisun Marsh aster	N	Less than Significant Adverse Effect No Cumulative Effect	Significant Beneficial Effect No Cumulative Effect
Saline clover	N	Less than Significant Adverse Effect No Cumulative Effect	Less than Significant Adverse Effect No Cumulative Effect

CHAPTER 1 – INTRODUCTION/PURPOSE AND NEED

This joint Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) (EIS/EIR) evaluates the impacts associated with implementing all elements of the South Sacramento Habitat Conservation Plan (SSHCP or Plan) and issuing an associated Endangered Species Act Incidental Take Permit (ESA ITP) and California Endangered Species Act Incidental Take Permit (CESA ITP).

One purpose of this joint EIS/EIR is to inform decision makers and the public of the effects on the human environment of the approval of the SSHCP, issuance of ITPs to local entities, and the future implementation of the SSHCP. This joint EIS/EIR also provides measures to mitigate impacts and presents reasonable alternatives that could reduce the significant environmental impacts of the proposed action to a less-than-significant level.

This EIS/EIR was prepared pursuant to the National Environmental Policy Act of 1969 (NEPA) (42 United States Code [U.S.C.] 4321–4347 et seq.), the California Environmental Quality Act (CEQA) (California Public Resources Code, Section 21000 et seq.), the regulations for implementing NEPA (40 Code of Federal Regulations [CFR] Parts 1500–1508 and 43 CFR Part 46), and the Guidelines for Implementing CEQA (CEQA Guidelines) (Section 15000 et seq.).

The U.S. Fish and Wildlife Service (USFWS) is the lead agency under NEPA, and Sacramento County (the County) is the lead agency under CEQA in the preparation of this joint EIS/EIR.

The Draft EIS/EIR and Draft SSHCP were released for concurrent public reviews on June 2, 2017, when the USFWS published a Notice of Availability (NOA) for both documents (82 FR 25612), and the County published an NOA for the Draft EIS/EIR with the California State Clearinghouse (control number 2003-0637). Separately, the U.S. Army Corps of Engineers (USACE) released their draft Clean Water Act (CWA) Permitting Strategy for the SSHCP.

Pursuant to ESA Section 10 policy, the USFWS provided a minimum 90-day public review and comment period for both draft documents, which ended on September 5, 2017. A total of 26 comment letters were received on the Draft EIS/EIR, the Draft SSHCP, and the CWA Permitting Strategy. During the 90-day comment period, the lead agencies and the SSHCP Plan Partners jointly conducted three public meetings in Wilton, Rancho Cordova, and Galt, to provide additional opportunities for the public to provide comments on the Draft SSHCP and the Draft EIS/EIR (see NOAs for locations). A total of two comment letters were submitted at these public meetings. An additional 24 comment letters were submitted to the lead agencies during the 90-day public comment period.

The lead agencies prepared responses to comments on the Draft EIS/EIR, and the Plan Partners prepared responses to comments on the Draft SSHCP in collaboration with the USFWS (see Final EIS/EIR Chapter 19). The USACE prepared the responses to comments on their Public Notice (Chapter 19). If a response to a comment on the Draft SSHCP resulted in

changes to the Final SSHCP, those changes were carried into the project description of the Proposed Action/Proposed Project Alternative in the Final EIS/EIR. Likewise, if the response to comments on the USACE Public Notice resulted in changes to the proposed CWA Permit Strategy, those changes were copied into relevant sections of the Final SSHCP, and into the description of the Proposed Action/Proposed Project Alternative in the Final EIS/EIR, as needed. Using this process, the Proposed Action/Proposed Project Alternative that is described and studied in the Final EIS/EIR is consistent with the Final SSHCP. Overall, the environmental impacts of the Proposed Action/Proposed Project Alternative remained similar relative to the impacts described in the Draft EIS/EIR, because the scope of changes to the Proposed Action/Proposed Project Alternative was minimal.

Substantive changes in the Final EIS/EIR are clearly marked. Changes from the Draft EIS/EIR resulting in added text are shown with **bold underline**. Changes from the Draft EIS/EIR resulting in deleted text are shown with ~~strikethrough~~.

1.1 SSHCP OVERVIEW

The following local agencies are jointly applying for species ITPs from the state and federal Wildlife Agencies (USFWS and California Department of Fish and Wildlife [CDFW]):

- Sacramento County
- The City of Galt
- The City of Rancho Cordova
- The Sacramento County Water Agency (SCWA)
- The Capital Southeast Connector Joint Powers Authority (Connector JPA)
- The future South Sacramento Conservation Agency (SSHCP Implementing Entity).

These six entities are the Permit Applicants. Together, they are applying for an ITP from the USFWS, pursuant to Section 10(a)(1)(B) of the ESA, and for an ITP from the CDFW, pursuant to Section 2081 of the California Fish and Game Code. The ITPs would authorize take¹ of certain

¹ “Take” is defined in the ESA as harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting or attempting to engage in any such conduct. “Harass” is defined by the USFWS as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns (which include, but are not limited to, breeding feeding, or sheltering). “Harm” in the definition of take is further defined by USFWS to mean an act which actually kills or injures wildlife; such acts may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavior patterns, including breeding feeding, or sheltering (50 CFR 17.3).

“Take” is defined in Section 86 of the California Fish and Game Code as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill” a threatened or endangered species. Under CESA (which is

state-listed species, certain federally listed species, and other SSHCP Covered Species during the course of implementing otherwise lawful SSHCP Covered Activities that are described in Chapter 2, Alternatives, Including the Proposed Action/Proposed Project. The Permit Applicants are seeking ITPs with a 50-year permit term; however, this EIS/EIR also analyzes an action alternative with a shorter permit term.

The future SSHCP Implementing Entity would be a joint exercise of powers authority (JPA) called the South Sacramento Conservation Agency. This SSHCP Implementing Entity would be composed of a JPA Governing Board (JPA Board), an Implementation Commission, and an executive director and staff to help with day-to-day implementation of the SSHCP. The Implementing Entity would also be a permittee on the state and federal ITPs.

As a required component of the application for an ITP, the Permit Applicants have prepared the SSHCP, a habitat conservation plan (HCP) under Section 10 of the ESA. The SSHCP is intended to support the issuance of both the ESA and the CESA ITPs by providing a long-term conservation plan to minimize impacts to and permanently conserve the native species and all natural communities of the Planning Area, while allowing for planned future urban development and other Covered Activities that comply with local policies and regulations. The SSHCP identifies where future Covered Activities would likely impact Covered Species, natural communities, and aquatic resources, and presents a comprehensive regional strategy for the avoidance, minimization, and mitigation of those impacts.

The Permit Applicants have also prepared the SSHCP Aquatic Resources Plan (the ARP) to accompany the SSHCP, which proposes a locally based program for permitting future SSHCP Covered Activities that impact aquatic resources. The proposed SSHCP identifies future Covered Activity impacts to aquatic resources in the Planning Area, and provides a strategy to maximize the avoidance, minimization, and compensatory mitigation of aquatic resource impacts.

The three Land Use Authority Permit Applicants (i.e., Sacramento County, Galt, and Rancho Cordova) are using the SSHCP and the ARP to request that the USACE develop a (CWA Section 404 permitting strategy for future SSHCP Covered Activities that discharge dredged or fill material to wetlands and other waters of the United States. The Land Use Authority Permit Applicants are also requesting the Central Valley Regional Water Quality Control Board (RWQCB) develop a parallel multilevel CWA Section 401 permitting process for obtaining water quality certifications

included within the California Fish and Game Code), an endangered species is “a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range.” A threatened species is “a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts.”

for future SSHCP Covered Activities, and a process for issuing reports of waste discharge under the California Porter-Cologne Water Quality Control Act (Porter-Cologne). In addition, the three Land Use Authority Permit Applicants (i.e., Sacramento County, Galt, and Rancho Cordova) are requesting that the CDFW develop a Master Streambed Alteration Agreement for future SSHCP Covered Activities (see Section 1.5, Decisions to be Made).

1.1.1 Geographic Scope of the EIS/EIR Planning Area

The Permit Applicants began the HCP planning process by identifying the areas where planned future growth and development may occur, and where future growth and development may affect state and federally protected species. The Planning Area is defined as the area in which all SSHCP Covered Activities (projects and activities) and all SSHCP habitat conservation actions, projects, and activities would be implemented, and where all associated incidental take of species would occur. The boundary of the Planning Area was defined by the Permit Applicants using both jurisdictional and ecological factors.

The Planning Area encompasses approximately 317,655 acres within south Sacramento County, as shown on Figure 1-1, South Sacramento Habitat Conservation Plan Area. The Planning Area includes Galt and Galt's sphere of influence, and the portion of Rancho Cordova that is located south of U.S. Highway 50. The geographical boundaries of the Planning Area are U.S. Highway 50 and White Rock Road to the north, the Sacramento River levee and County Road J11 (Walnut Grove-Thornton Road) to the west, the Sacramento County line with El Dorado and Amador Counties to the east, and with the San Joaquin County to the south.

The Planning Area excludes the northern portion of Sacramento County, the portion of Rancho Cordova located north of U.S. Highway 50, the City of Sacramento, Elk Grove, Folsom, sovereign lands of the Miwok Tribe, and the Sacramento County community of Rancho Murieta (see Figure 1-1).

The SSHCP refers to the portion of the Planning Area where future urban development Covered Activities² would occur as the "Urban Development Area" (the UDA). Sacramento County has previously adopted an Urban Service Boundary (USB) to demarcate the ultimate extent to which the County would provide future urban services, such as sanitary sewer and water supply. Consequently, the portion of Sacramento County USB that is within the Planning Area is part of the SSHCP's UDA. The portion of the Rancho Cordova's sphere of influence that is within

² Covered Activities are future activities and projects over which an ITP permit applicant would have jurisdiction or another form of control, are likely to result in species incidental take, and are reasonably certain to occur over the proposed term of the ITP (USFWS and NOAA 2016). The SSHCP Covered Activities primarily consist of new urban development in the UDA, rural transportation projects and water recycling infrastructure outside the UDA, and management actions on future habitat preserves.

the boundaries of the Planning Area is also part of the UDA. The UDA also includes all lands within Galt and within Galt's sphere of influence (Figure 1-1). Approximately 67,618 acres within the Planning Area are also within the UDA.

The boundaries of the Planning Area also define the Planning Area used in this EIS/EIR. The EIS/EIR uses the term "Planning Area" because, as identified previously, the EIS/EIR evaluates alternatives to the proposed SSHCP. As described in Chapter 2, Section 2.1, Approach to Developing Alternatives, the lead agencies considered alternatives that might have smaller or different Planning Area boundaries. For these reasons, the term "Planning Area" is used in the EIS/EIR and indicates the geographic area for which the EIS/EIR provides analysis. The term "UDA" and the boundaries of the UDA are also used in the definition of the EIS/EIR Planning Area.

1.2 OVERVIEW OF NEPA AND CEQA

1.2.1 NEPA

NEPA requires federal agencies to conduct an environmental review before undertaking any discretionary actions, including any activities they implement, manage, permit, or fund. The NEPA process is intended to help federal officials make decisions that are based on an understanding of the environmental consequences of their decision, and to take actions that protect, restore, and enhance the environment. NEPA requires all federal agencies to solicit and to consider public input and comments on the environmental implications of their proposed actions through the preparation of appropriate documents. All federal agencies must use a systematic and interdisciplinary approach when preparing NEPA documents to ensure the integrated use of the natural and social sciences in planning and in all decision making that may have an impact on the human environment. The Office of the President's Council on Environmental Quality (the CEQ) has prepared NEPA regulations and guidance documents that federal agencies must follow (40 CFR Parts 1500–1508).

The USFWS, as the lead federal lead agency preparing this document, has determined that the issuance of an ITP to the Permit Applicants under Section 10 of the ESA would constitute a discretionary federal action likely to result in a significant effect on the human environment, and, thus, the preparation of an EIS is warranted.

Upon request of the lead agency, other federal agencies that have jurisdiction by law shall be a Cooperating Agency in the preparation of an EIS. Other federal, state, tribal, or local agencies that have special expertise with respect to an environmental issue analyzed in the EIS may be a Cooperating Agency in the preparation of an EIS. The Cooperating Agencies participate in the NEPA process at the earliest possible time; identify issues to be addressed in the EIS; collect and/or assemble necessary resource data; analyze data; develop alternatives; evaluate

alternatives; and estimate effects of implementing each alternative (40 CFR 1501.6; 43 CFR 46.230). A federal cooperating agency may adopt the EIS of a lead agency without recirculating when, after an independent review of the statement, the cooperating agency concludes that its suggestions and comments have been satisfied (40 CFR 1506.3[c]).

The USACE, the U.S. Environmental Protection Agency (EPA), and the CDFW have agreed to be Cooperating Agencies in the preparation of this EIS/EIR because of their jurisdiction by law and because of their special expertise on the environmental issues analyzed in this EIS/EIR.

1.2.2 CEQA

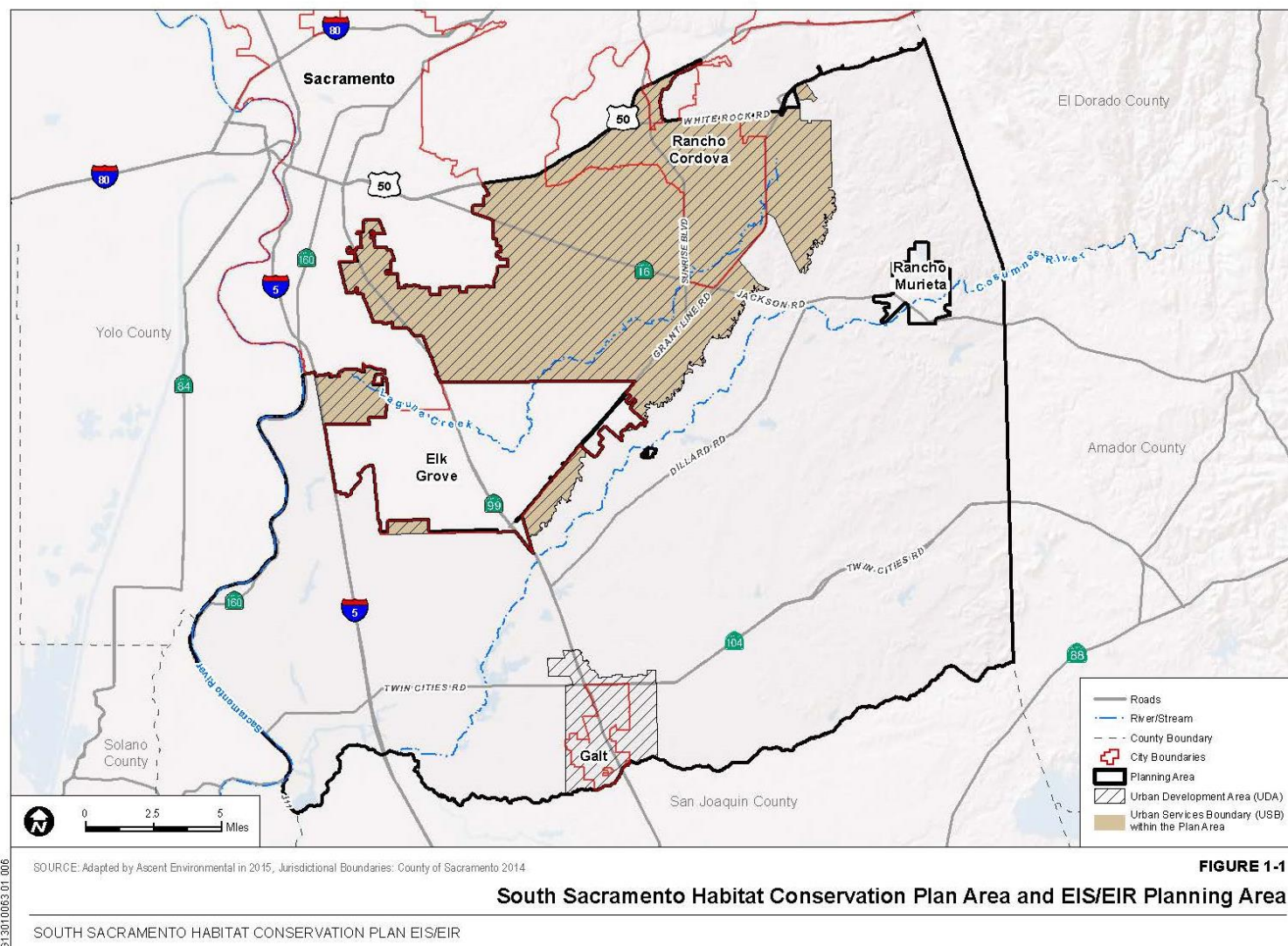
CEQA requires state and local agencies to evaluate the environmental implications of their actions and aims to prevent significant environmental impacts of those actions by requiring agencies, when feasible, to avoid significant environmental impacts or reduce them through the adoption of feasible mitigation measures. Like NEPA, CEQA requires all agencies to consider and publicly disclose the environmental implications of their proposed actions through the preparation of appropriate documents. CEQA requires that the state or local lead agency prepare an EIR when the lead agency determines that a project may have a significant effect on the environment. CEQA applies to all discretionary activities proposed to be carried out or approved by California public agencies. Sacramento County is the CEQA lead agency preparing this document and has determined that an EIR must be prepared for the proposed project because implementation of the SSHCP may result in a significant effect on the environment.

In addition to lead agencies, CEQA responsible agencies and CEQA trustee agencies have roles in the environmental review process. A responsible agency under CEQA is a state or local public agency other than the CEQA lead agency that has discretionary approval over all or a part of the project (CEQA Guidelines, Section 15381). A CEQA trustee agency is a state agency that has jurisdiction by law over natural resources affected by a project that are held in trust for the people of California (CEQA Guidelines, 15386).

All of the Permit Applicants are either a CEQA lead agency (Sacramento County) or CEQA responsible agencies (Galt, Rancho Cordova, SCWA, and the Connector JPA), and all Permit Applicants are responsible for discretionary approvals of the SSHCP and would be responsible for the future implementation of the SSHCP.

CDFW is a responsible agency under CEQA because it would approve the SSHCP and would issue a CESA ITP for the state-listed SSHCP Covered Species. In addition, as discussed in Section 1.5.6, the Permit Applicants are requesting that the CDFW develop and approve a programmatic Streambed Alteration Agreement for all future SSHCP Covered Activity projects and activities.

Figure 1-1 South Sacramento Habitat Conservation Plan Area



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CDFW is also a trustee agency under CEQA because it has jurisdiction by law over natural resources that would be affected by the operational SSHCP, including the fish and wildlife the state-designated natural communities present in the Planning Area, state-designated rare or endangered native plants, game refuges, and ecological reserves.

The RWQCB is a CEQA responsible agency because it would take action on any associated water quality certifications and/or waste discharge requirements.

Other trustee agencies include the California State Lands Commission with regard to state-owned “sovereign” lands, such as the beds of navigable waters and state school lands, and the California State Department of Parks and Recreation with regard to units of the State Park System.

1.2.3 Joint Documentation

USFWS is a federal governmental agency within the U.S. Department of the Interior. The CEQ NEPA regulations (40 CFR 1506.2), the Department of the Interior NEPA regulations (43 CFR 46.440), and the Department of the Interior Manual (516 DM 4.18), require federal agencies to eliminate duplication between NEPA requirements and state or local environmental requirements by preparing joint documents when possible. Similarly, CEQA and the CEQA Guidelines strongly encourage state and local agencies to prepare a combined EIS/EIR that satisfies both NEPA and CEQA (California Public Resources Code, Section 21083.6; CEQA Guidelines, Section 15222). Given these regulations and guidance, and the efficiencies, cost savings, and other benefits associated with intra-agency collaboration on a joint NEPA/CEQA document, the lead agencies are preparing this joint EIS/EIR.

Although there are many requirements of CEQA and NEPA that are the same or are similar, there are some important terminology differences between the two laws. Table 3-1 in Chapter 3 lists the most common terms under each law and correlates them to terms of the opposite law that are used in a similar manner.

1.3 PURPOSE, NEED, AND OBJECTIVES

NEPA regulations require that each EIS briefly describe the underlying purpose and need to which the lead agency is responding in proposing the alternatives, including the proposed action (40 CFR 1502.13). The “need” for lead agency action refers to an underlying problem or opportunity to which an agency is responding. Often a need is described as a condition requiring relief (i.e., the presence of something not wanted), or is described as the lack of something requisite, desirable, or useful (i.e., the lack of something wanted). The “purpose” refers to a goal or objective that the lead agency is trying to achieve and should be stated, to the extent possible, in terms of desired outcomes (43 CFR 46.420). Often a purpose is described as a goal or an end to be attained. Similarly, CEQA requires an EIR to contain a statement of the

“objectives” sought by the proposed project. The CEQA statement of objectives should include the underlying purpose of the project (CEQA Guidelines, Section 15124[b]).

Identifying the needs, purposes, and objectives of the project and action help the lead agencies develop and determine the range of alternatives to be analyzed, and they provide a basis for the selection of an alternative by the lead agency decision makers (43 CFR 46.420; CEQA Guidelines, Section 15124[b]).

1.3.1 Background Information

Land Cover Conversion, Native Species, and Aquatic Resources

Current habitat conditions in the Planning Area reflect a history of human modification of the pre-European settlement natural landscape. After the founding of Sacramento County in 1850, through the first half of the twentieth century, a dominant human activity in the western part of the Planning Area was the conversion of natural land covers to agricultural row crops (cropland), with a corresponding loss of suitable habitat for many Planning Area native plant and wildlife species. The eastern part of the Planning Area was used primarily for grazing cattle during this period, and cattle grazing continues to dominate this part of the Planning Area. Grazing of natural grasslands does not remove the natural landscape and has little direct effect on aquatic resources, allowing natural grassland ecosystem functions, including vernal pools and vernal pool complexes, to continue.

Sacramento County experienced a rapid increase in population in the 1940s, with a corresponding expansion of urban and suburban development in the Cities of Sacramento, Folsom, and Galt. A second wave of new development occurred between 1950 and 1960 when Sacramento County’s population grew by 81%, leading to new urban and suburban development in the south (Florin) and the east (Rancho Cordova), and additional expansions of Sacramento, Folsom, and Galt. The 1960s to 1980s saw moderate but steady increases in population growth, with a corresponding expansion of urban development and urban infrastructure (improved roadways, sewer/water lines, utilities, etc.) farther into the undeveloped southern and eastern portions of the County.

An additional expansion of urban development occurred in the Planning Area between 1997 and 2007. In 1988, approximately 137,000 acres or 41% of the Planning Area was cropland, 156,000 acres or 46% was grazing land, and 18,000 acres or 6% of the Planning Area was developed (DOC 2016). By 2014, the Planning Area had become 37% cropland, 42% grazing land, and 9% developed lands—a decrease of 12,000 acres of cropland, a decrease of 16,000 acres of grazing land, and an approximate 11,000-acre increase in developed land over this 26-year period (DOC 2016). New growth and development is expected to continue in the

south part of Sacramento County, with the rate of new development largely dependent on economic and market conditions.

During each period of rapid urban development, more and more of the pre-European settlement natural land covers and aquatic resources of the Planning Area were converted to urbanized land covers, which typically provide no suitable habitat for native plant or animal species. Urban development in Sacramento County has resulted in an especially high loss of the natural grassland landscapes that support critically endangered vernal-pool habitats (Witham et al. 2014; Witham et al 2005; Holland 2009; Holland and Vollmar 2009). A study of projects in the Planning Area that obtained CWA permits between 1979 and January 2013 found that during this 34-year time period, 991 acres of wetlands and other waters of the United States (i.e., vernal pools, marshes, other wetlands, streams, creeks, and other aquatic resources) were filled (lost) (USACE 2014; see EIS/EIR Appendix A). Most losses of the Planning Area aquatic resources authorized by CWA permits between 1979 and 2013 occurred inside the UDA (829 acres), and 162 acres of loss occurred outside the UDA. Therefore, streams, creeks, and other water bodies inside the UDA have experienced great direct losses, and the waters that remain in the UDA are now exposed to adverse effects from close proximity to development, such as decreased water quality resulting from urban runoff, changes in hydrologic regime, and reductions in habitat quality.

The losses of vernal pools and other natural land covers described previously for Sacramento County also occurred in most of the California Central Valley. Therefore, many of the Planning Area's native plant and animal species have had sufficient declines across their range to warrant listing under the ESA or CESA. For example, the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) was listed as endangered by the USFWS in 1980; the Swainson's hawk (*Buteo swainsoni*) was listed as threatened by CDFW in 1983; the giant garter snake (*Thamnophis gigas*) was listed as threatened by CDFW in 1984 and by the USFWS in 1993; greater sandhill crane (*Antigone canadensis tabida*) was listed as threatened by CDFW in 1983, tricolored blackbird (*Agelaius tricolor*) was emergency-listed as threatened by CDFW in 2014 and is being considered for formal threatened or endangered status. Many plant and crustacean species that live only in vernal pools were listed due to the extensive loss of vernal pool habitat over the entire Central Valley, including in the Planning Area (USFWS 2005). The vernal pool tadpole shrimp (*Lepidurus packardii*) and vernal pool fairy shrimp (*Branchinecta lynchi*) were listed as endangered and threatened respectively by USFWS in 1994; slender Orcutt grass (*Orcuttia tenuis*) and Sacramento Orcutt grass (*Orcuttia viscida*), a plant found only in Sacramento County, were listed as threatened and endangered respectively by the USFWS in 1997 and both were listed as endangered by CDFW in 1979; the plant Bogg's Lake hedge-hyssop (*Gratiola heterosepala*), was listed as endangered by CDFW in 1978; and the California tiger salamander (*Ambystoma californiense*) was listed as threatened by USFWS in

2003 and threatened by CDFW in 2010. Suitable habitat for these listed species, and most native plant and animal species, would continue to be lost in the future by new urban development in the Planning Area.

Sacramento County is projected to experience an increase in population from 1,475,381 in 2015 to 2,153,833 by 2060, representing a growth of 678,452 persons (46%) over the next 45-year period (DOF 2015). A large portion of this population growth is expected to occur in southern Sacramento County, within the Planning Area. This expected Planning Area population growth will require new housing, new economic development (businesses), and new supporting infrastructure, such as roads and utilities. To meet the future housing demand of this increasing population, an estimated 245,816 new housing units will be needed in Sacramento County by 2060 (DOF 2015b). If agricultural land in Sacramento County is converted to new urban development at the same rate as in the past (about 0.1 acre per person³), then approximately 68,000 acres of existing grazing land and cropland would become urbanized between 2014 and 2060.

The Planning Area local jurisdictions must balance the needs to provide for population growth and associated urban development with the need to continue agricultural production in Sacramento County and the need to protect the native plant and wildlife species and associated terrestrial and aquatic natural communities of Sacramento County.

The Existing Environmental Regulatory Processes

The Planning Area land-use jurisdictions (Sacramento County, Galt, and Rancho Cordova) anticipate that landowners and individuals will continue to request approval of new urban development projects until all remaining undeveloped lands within the UDA have been developed. The land-use jurisdictions also anticipate a continued need to provide new transportation, utility, and other infrastructure facilities inside the UDA, and in the rural areas outside the UDA, to accommodate the anticipated Sacramento County population growth.

In the past, “leapfrog development” has occurred in the Planning Area, where new development is placed in a location distant from existing development. This leapfrog development has resulted in greater costs to local land-use jurisdictions to connect the leapfrog development to existing utility infrastructure; greater vehicle miles travelled since leapfrog development residents must drive farther to reach jobs and services, causing increased adverse traffic and air quality effects; and new urban/agriculture or urban/wildland interfaces, increasing the potential for conflicts between these land uses. The USB, which provides a

³ This number was derived by dividing the 180,248 acres of urbanized land (DOC 2015) by 1,433,510 residents of Sacramento County in 2012 (DOF 2015b).

geographic limit to where Sacramento County urban services would be delivered, was established, in part, as a mechanism to reduce leapfrog development. The Planning Area land-use jurisdictions seek to develop and promote further mechanisms to encourage an orderly pattern of development extending out from the existing developed areas, focusing development within the UDA and discouraging future leapfrog development.

Currently, urban development projects coordinate with and seek approvals from multiple federal and state agencies for each individual project. This often results in a process that is lengthy, complex, and costly. Common local, state, and federal agency approval efforts include:

- Preparing a biological assessment for the project and consulting with the USFWS under the ESA and/or CDFW under CESA when there are potential effects to threatened or endangered species
- Conducting a wetland delineation and obtaining permits from USACE under Section 404 of the CWA for discharges of dredged and/or fill material into wetlands and other waters of the United States
- Obtaining authorization from the RWQCB under Section 401 of the CWA to support the CWA 404 permit from USACE
- Obtaining authorization from CDFW for modification to a river, stream, or creek through a Streambed Alteration Agreement pursuant to Section 1600 of the California Fish and Game Code.

To obtain all necessary agency approvals, an individual project proponent typically must consult and coordinate with several regulatory agencies, including those identified in the bullet list above, as well as the local land-use authority jurisdiction. Application packages for each agency differ, and similar data may need to be compiled and presented in a different manner for each agency, increasing the time and labor expended by project proponents. A consolidation of permit applications, or increased consistency across separate permit applications, would increase the efficiency of the existing permitting processes.

As project proponents proceed through the different agency approval processes, mitigation requirements of the different laws and statutes may also differ or conflict. (For example, aquatic resources [under the jurisdiction of the CWA 404] may also provide habitat for ESA and/or CESA listed species, and mitigation requirements under each law may differ or conflict.) One law may promote avoidance and preservation of resources on the project site, while another law may promote establishment of resource preserves outside the project site. Considerable time and effort may be expended by project proponents and by agency personnel to coordinate and develop a single acceptable project-mitigation approach that is suitable for all project regulatory approvals.

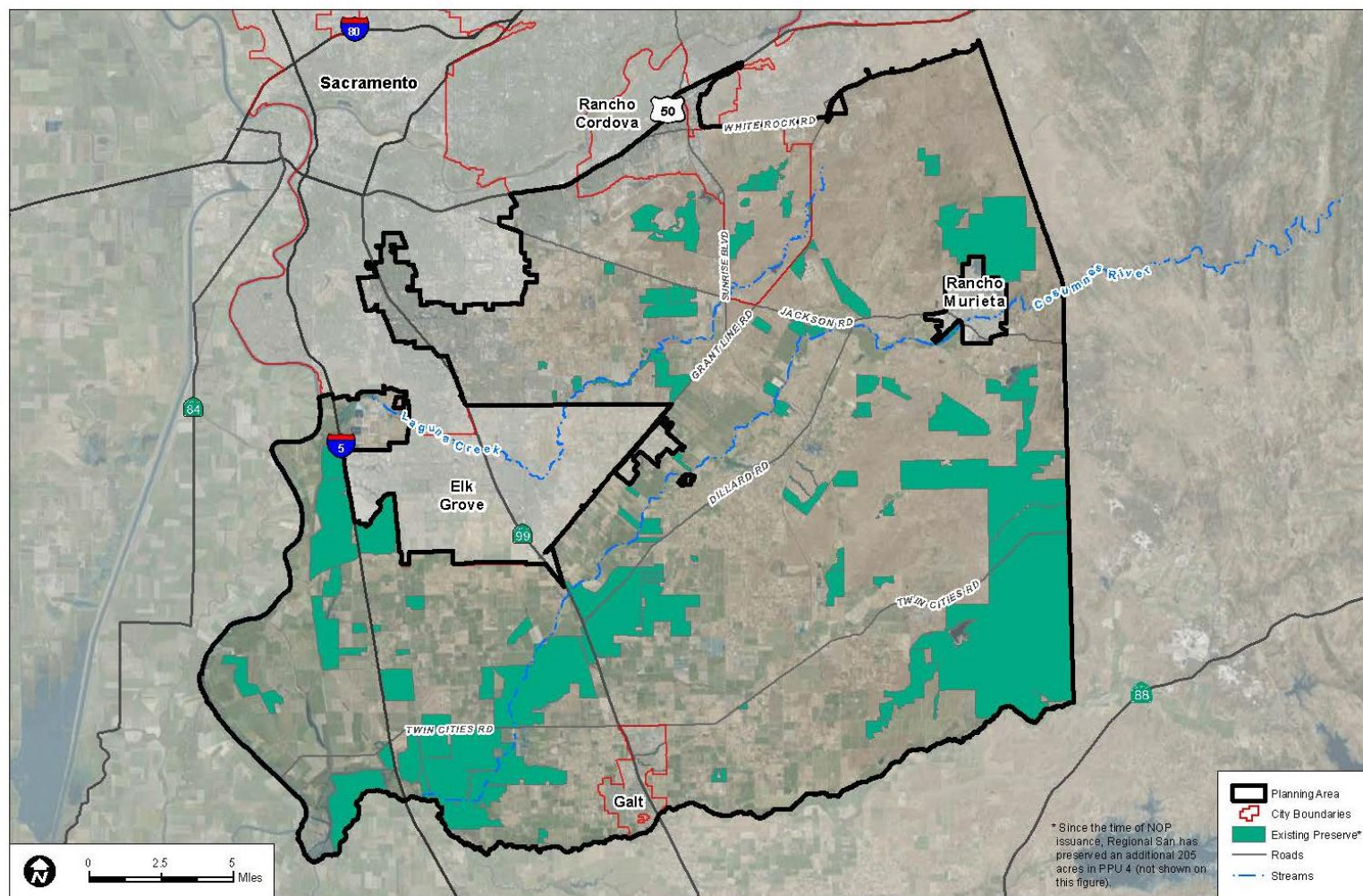
If a project design changes to meet the requirements of one environmental law, the applicant may have to reinitiate discussions with every the other regulatory agency through an iterative and lengthy process to find a project design that meets all regulatory requirements, including the requirements of the local land-use authority's development policies and goals. In many instances, project changes are implemented to comply with one set of regulatory requirements, resulting in the need to coordinate the changes with the other regulatory agencies and potentially triggering recirculation of completed project-level CEQA or NEPA documents, if the project is sufficiently altered.

The current regulatory review process is series of project-by-project individual permitting efforts. Mitigation to compensate for project effects is determined separately for each project, which has resulted in a number of scattered and relatively small-sized preserves located within the project site, or located off-site. Past development projects would often preserve the greatest acres of aquatic resources in the smallest area of a project site to maximize the available area of development and concurrently minimize mitigation costs. Projects often chose mitigation sites with little consideration to the quality of the species habitat in the preserved areas, or the adverse indirect effects of surrounding the preserve with new development, including habitat fragmentation and permanent isolation of preserved populations from other populations of the same species. Where mitigation preserves are isolated and have little connectivity to other areas of remaining natural habitat, the movement and dispersal of wildlife and dispersal of plant seed and propagules decrease as habitat isolation increases. Many of the existing preserves, particularly in the UDA portion of the planning area, are now surrounded by urban development and are isolated from other areas of natural habitat (see Figure 1-2, Existing Preserves).

Similarly, mitigation sites preserved outside of a project site (i.e., were "off site") were often selected by the project proponent based on factors such as existing ownership by the project proponent or the ability to acquire the land at a lower cost, and site selection often did not give high priority to maximizing species habitat values or maintaining habitat connectivity.

Another concern with smaller or isolated preserves is that they may provide habitat for only part of a species' life history needs. As new development occurs around the preserve, eliminating nearby habitat needed for other parts of the life history, the species may no longer use the preserve. For example, the loss of foraging habitat around a preserve may make the nesting or breeding habitat protected in the preserve no longer viable.

Figure 1-2 Existing Preserves



SOURCE: Aerial; ESRI 2014, Jurisdictional Boundaries: County of Sacramento 2014

SOUTH SACRAMENTO HABITAT CONSERVATION PLAN EIS/EIR

FIGURE 1-2
Existing Preserves

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Another outcome of the existing project-by-project review process is that mitigation preserves within the Planning Area are currently monitored and managed by several different entities and organizations, with a range in the quality of monitoring and habitat management. In some cases, required obligations or performance standards have not been met over the long term.

At present, the local land-use jurisdictions do not have a single coordinated plan for protecting or conserving the best of the remaining natural communities, the largest populations of native species, or the existing functions and benefits of the remaining aquatic resources in the Planning Area. If there were a mechanism to define which natural areas are of the highest preservation priority in the Planning Area, as well as high priority within important ecological subdivisions of the Planning Area (such as individual watersheds), then the mitigation efforts of each individual project would be better able to conserve Planning Area native species and their habitats, including species listed under the ESA and CESA, and maintain the existing physical, chemical, and biological functions and services of wetlands in the Planning Area.

A streamlined project review and permitting process that more efficiently integrates the multiple regulatory approval processes could reduce expenditures of the project proponents, the local land-use jurisdictions, and the regulatory agencies. Currently, regulatory agency staff must expend significant time and agency resources to respond to large numbers of individual approvals or permit applications submitted on a project-by-project basis. A streamlined project review and permitting process could also increase regulatory certainty for project proponents and increase agency project review efficiency, support identification of the most environmentally protective project alternatives, and allow more predictability of project budgets and schedules.

In addition, Sacramento County, Rancho Cordova, and Galt want new urban development to include “sound land use” planning principles, which include consolidating development to promote walkable neighborhoods and promote use of mass transit, and support the efficient provision of utilities and infrastructure. A streamlined and integrated project review and permitting process could help the local land-use jurisdictions achieve these principles.

Conclusion

The background information presented above summarizes the needs and goals of the parties involved in the ITP permit application, and also identify underlying problems and opportunities within this Planning Area to which the lead agencies wish to respond. The lead agencies considered the background information presented in Section 1.3.1, as well as the public interest, as they identified the broad purposes and needs and identified the detailed objectives listed in Sections 1.3.2 and 1.3.3.

1.3.2 Purpose and Need Statement

In response to receiving a request for authorization of species incidental take that is expected to result from future housing construction, other new urban development, and new supporting infrastructure within the Planning Area, the USFWS proposes to issue an ITP to the Permit Applicants. A purpose of that proposed federal action is to comprehensively protect and conserve multiple ESA and CESA listed species and other native species; to conserve, enhance, and restore the habitats and ecosystems upon which these native species depend, including aquatic resources and aquatic habitats; and to ensure the long-term survival of these species for the continuing benefit of the American people in Sacramento County, California.

In proposing alternative conservation plans, the lead agencies seek to accommodate the population growth and associated planned housing, economic development, and infrastructure expected within the Planning Area, using a streamlined environmental permitting process, while maintaining the existing richness of native plant and animal species in the south Sacramento County Planning Area and the natural ecosystems and agricultural lands on which these species depend.

1.3.3 Objectives

The following 18 objectives were identified to meet the above-stated purposes and needs:

1. Include an interconnected preserve system throughout the Planning Area that is large enough to maintain in perpetuity each type of natural community that is native to the Planning Area, maintain in perpetuity each type of native plant and animal species present within the Planning Area, and maintain in perpetuity or expand the existing distribution of each native animal and plant species within the Planning Area.
2. Locate preserves in areas that maximize protection of native plant and animal species and the ecosystems on which they depend.
3. Locate preserves in areas that maximize the protection of intact watersheds and watershed functions.
4. Protect large, contiguous blocks of species habitat. Provide habitat linkages between preserves that are wide enough to allow dispersal of individual native animals and plants and allow genetic exchange between species populations.
5. Protect sufficient cropland and irrigated pasture to provide important foraging habitat on which some native animal species now depend (e.g., Swainson's hawk, white-tailed kite).
6. Preserve adequate roosting and foraging habitat for the greater sandhill crane in the area between the existing Stone Lakes National Wildlife Refuge and the existing

Cosumnes River Preserve, to maintain or increase the population of greater sandhill crane over-wintering within the Planning Area.

7. Protect the long-term viability of ranching and farming operations in the Planning Area (consistent with other objectives).
8. Protect all currently documented occurrences and any newly discovered occurrences of Sacramento Orcutt grass, slender Orcutt grass, and Ahart's dwarf rush in the Planning Area.
9. Avoid or minimize impacts to state and federally listed species and their habitats, to the maximum extent practicable.
10. Avoid or minimize impacts to the existing physical, chemical, and biological functions and services of wetlands and streams in the Planning Area to the maximum extent practicable.
11. Achieve no net loss of the existing functions and services of aquatic resources in the Planning Area. Methods used to achieve no net loss may include the re-establishment and establishment of vernal pools and other aquatic land cover types.
12. Include a long-term preserve monitoring and habitat management program sufficient to maintain or improve habitats of targeted native plant and animal species in perpetuity.
13. Support the development and implementation of streamlined aquatic resource permitting programs under CWA 404, CWA 401, Porter-Cologne, and Section 1600 of the California Fish and Game Code (Streambed Alteration Agreements) by the federal and state agencies with responsibility for implementing those statutes within the Planning Area.
14. Facilitate the recovery of federally listed species, and provide sufficient preservation of federally designated recovery areas within the Planning Area.
15. Include adequate amount of urban development with associated fees to meet Objectives 1 through 14. In addition, the associated mitigation-fee structure must be practicable, with fees that are analogous to fees collected under other Northern California permitted HCPs that have similar species habitats and similar impacts.
16. Allow an adequate amount of urban development within the currently adopted spheres of influence for Rancho Cordova and Galt, and the currently adopted USB for Sacramento County, to discourage expansion beyond these boundaries and maintain the sound land use planning principles these boundaries encourage (e.g., preventing sprawl outside the USB and leap-frog development; consolidating development to support the efficient provision of utilities and infrastructure; promoting compact mixed-use development that supports viable transit and walkable areas; creating communities with a variety of housing types that support different income levels and socioeconomic conditions; and maintaining compliance with air quality laws and regulations that influence or are influenced by land use decisions such as Assembly Bill 32, Senate Bill 375, and the Clean Air Act).

17. Include as Covered Activities the SSHCP Permit Applicant’s transportation, utility, and other infrastructure activities and projects as described in the approved master plans of the SSHCP Permit Applicants (Sacramento County, Galt, Rancho Cordova, SCWA, and Connector JPA).
18. Rely on willing sellers for the purchase of land or easements when establishing habitat preserves; do not include condemnation or eminent domain to meet the project needs, purposes, and objectives.

1.4 EIS/EIR SCOPE AND CONTENT

Under NEPA, the “scope” of an environmental document is defined as the range of actions, the range of alternatives, and the impacts to be considered (40 CFR 1508.25). Actions include any connected actions, any cumulative actions, or any similar actions. The types of impacts must include the direct, indirect, and cumulative impact of all alternatives considered (40 CFR 1508.25). Under CEQA, when soliciting input on the scope of an EIR, the lead agency is seeking information on significant environmental issues to be addressed in the EIR, reasonable alternatives, and mitigation measures (CEQA Guidelines, Section 15082[b]). Under both NEPA and CEQA, the process of gathering input from the public, agencies, and interested parties on the scope of an environmental document prior to its preparation is referred to as “scoping” or the “scoping process.”

The scope and content of this EIS/EIR was shaped by the CEQ regulations for implementing NEPA, the requirements for an EIR provided in the CEQA statute and CEQA Guidelines, public and agency comments received during the EIS/EIR scoping process (described further in Sections 1.4.1 and 1.4.2), input from the Cooperating Agencies, input from the interdisciplinary EIS/EIR preparers, and the independent judgment of the lead agencies. Environmental resource topics that were considered for analysis in the EIS/EIR were guided, in part, by the initial study checklist that is provided in Appendix G of the CEQA Guidelines, which was adjusted as part of the scoping process.

The process and outcome for the selection of alternatives/actions is described in Chapter 2. Environmental Impacts and any associated mitigation measures are described within each environmental resource chapter of this EIS/EIR. See Chapter 3, Section 3.2, Resource Topics Evaluated in the Remaining Chapters, for a list of EIS/EIR resource chapters.

1.4.1 Summary of EIS/EIR Scoping Process

Scoping is the process used to determine the content (scope) of an EIS and/or EIR. The scoping process is used to help lead agencies identify the range of actions, alternative actions, potential impacts, mitigation measures, and the significant issues deserving of study in an EIS or EIR.

Scoping also helps lead agencies identify and eliminate from detailed study the issues that are not relevant or that have been analyzed in prior environmental documents or studies, thereby deemphasizing insignificant issues and narrowing the scope of the EIS or EIR (40 CFR 1501.1[d]; 40 CFR 1501.7; 43 CFR 46.235; CEQA Guidelines, Section 15082).

The scoping process includes internal scoping of lead agency interdisciplinary staff experts and external scoping of the public and other agencies. Lead agencies also use scoping to engage state, local, and tribal governments and the public in the early identification of concerns and information relevant to the preparation of the EIS/EIR (43 CFR 46.435).

Tools used to determine the scope of this EIS/EIR included publication of the Notice of Intent (NOI) and Notice of Preparation (NOP) pursuant to NEPA and CEQA, respectively; informal stakeholder and interagency meetings; public scoping meetings; and public workshops.

Public scoping processes for the SSHCP EIS/EIR occurred in 2008 and again in 2013. Elements of each scoping process are briefly summarized below. More detailed scoping summary reports that include copies of the NOIs and NOPs, public scoping meeting materials, and the scoping comments received during the 2008 and 2013 scoping processes are provided in EIS/EIR Appendix B.

Public Scoping Notices and Meetings

In 2008, the scoping process began on June 10 with the publication of the NOI in the Federal Register (pursuant to NEPA) and submittal of the NOP to the State Clearinghouse (pursuant to CEQA). NOPs (and often NOIs for joint NEPA/CEQA documents) are provided to the State Clearinghouse as part of the CEQA review process, and the Clearinghouse distributes the NOPs to various California state agencies. The NOI and NOP notified the public and agencies of the SSHCP; the intent to prepare an EIS/EIR; and the time, date, and location of public scoping meetings. The public was also invited to participate in the scoping process through a variety of media, including e-mail and hard-copy mailers. Display ads of the meeting announcement were also published in the Sacramento Bee (July 1, 2008), Grapevine (July 4, 2008), Galt Herald (July 2, 2008), and River Valley Times (July 2, 2008). In addition, the Elk Grove sent a meeting announcement attached to each resident's utility bill informing them of the scoping meetings.

USFWS, as the NEPA lead agency, and Sacramento County, as the CEQA lead agency, held four joint public scoping meetings on the following dates and times:

- July 8, 2008, from 6:30 p.m. to 8:30 p.m. in Galt
- July 11, 2008, from 10 a.m. to 12:00 p.m. in Sacramento
- July 15, 2008, from 6:30 p.m. to 8:30 p.m. in Rancho Cordova
- July 16, 2008, from 6:30 p.m. to 8:30 p.m. in Elk Grove.

For the four meetings, a total of 79 people signed in as meeting participants. Each meeting began with a brief presentation, followed by an open house-style forum where informational poster boards were available for review and staff from the lead and cooperating agencies were available to answer questions.

In 2013, the draft SSHCP had been further refined, some conditions had changed, and sufficient time had elapsed that the lead agencies felt that a second public scoping process was warranted. Public scoping began on October 28, 2013, with an NOP provided to the State Clearinghouse (pursuant to CEQA) and on November 4, 2013, with the publication of a NOI in the Federal Register (pursuant to NEPA). The NOI and NOP notified the public and agencies of the SSHCP; the intent to prepare an EIS/EIR; the circumstances for initiating the second scoping process; and the time, date, and location of public scoping meetings. The NOI or NOP were mailed to over 200 recipients in and around Sacramento County, including non-profit groups, media outlets, stakeholders, and local and state agencies. A news release for the NOI was also sent to six media outlets and was also available for review on the USFWS's website. The NOP was also posted on a project website developed specifically for the SSHCP.

USFWS, as the NEPA lead agency, and Sacramento County, as the CEQA lead agency, held two joint public scoping meetings on the following dates and times:

- November 20, 2013, from 6:30 p.m. to 8:30 p.m. in Galt
- November 21, 2013, from 2:00 p.m. to 4:00 p.m. in Sacramento.

For the two meetings, a total of 29 people signed in as meeting participants. Each meeting included a brief presentation and an open house forum where informational poster boards were available for review and staff from the lead agencies were available to answer questions.

In 2008 and 2013, the lead agencies also contacted the Native American Heritage Commission (NAHC) to obtain a list of tribes, individuals, and organizations that may have knowledge of heritage lands or other resources of interest that could potentially be affected by implementation of an HCP in the Planning Area. The 2008 and 2013 NOIs and NOPs (EIS/EIR Appendix B) were sent to the NAHC through the standard distribution to state agencies via the California State Clearinghouse, and sent directly to the tribal contacts provided by the NAHC at that time. At the time of this writing, no comments on the NOI and NOP or requests for further consultation were received.

The most recent list received in 2015 from the NAHC provided 19 tribal contacts for south Sacramento County. Copies of the draft EIS/EIR will be mailed directly to the tribal contacts provided by the NAHC. USFWS is conducting outreach to federally recognized tribes in the Planning Area during the EIS/EIR process. This process will be completed and tribal input

considered before the USFWS prepares their Record of Decision. In addition, compliance with Section 106 of the National Historic Preservation Act (NHPA 106) may require USFWS to consult with the State Historic Preservation Officer.

1.4.2 Significant Issues Identified in Public Scoping

During the 2008 scoping process, a total of approximately 80 comment letters, including emails, from individuals, businesses, organizations, and agencies were received. The primary issues identified in these comments include the following:

- The proper geographic scope of the SSHCP and EIS/EIR, such as considering effects in adjacent areas and addressing the Elk Grove sphere of influence
- Effects of plan implementation on agriculture, including grazing
- Regulatory topics such as consistency with USACE mitigation regulations and the potential role of mitigation banks.

During the 2013 scoping process, a total of 84 comments were received via letters, e-mails, written comments provided at scoping meetings, and oral comments provided at scoping meetings and via telephone. The primary issues identified in these comments include the following:

- Compliance with air quality regulations and the potential effects of air quality on Covered Species and human health
- Consistency of the SSHCP with planning efforts in the Sacramento/San Joaquin Delta
- Coordination of the SSHCP with the activities and planning of local jurisdictions, agencies, and land management organizations that are not SSHCP Permit Applicants
- Adequacy of funding for SSHCP implementation
- Consideration of alternatives related to inclusion of Covered Activities and locations available for preserves
- Projects and activities to include in the analysis of cumulative impacts, such as infrastructure impact from the proposed Cordova Hills project and potential development associated with the Elk Grove sphere of influence
- The placement of grazing lands in land cover classifications (agricultural or annual grassland)
- Use of best available science and data, such as recent research on tri-colored blackbird
- Questions and suggestions regarding the funding, selection, acquisition, location, and management of preserve system lands
- Integration of mosquito and vector control with SSHCP implementation and preserve system management

- Integration of the SSHCP with issues of water supply and water rights.

All of the 2008 and 2013 scoping comments were considered by the lead agencies during the development and preparation of the EIS/EIR. However, scoping comments did not identify areas of potential impacts or environmental analyses that were not already anticipated for inclusion in the EIS/EIR by the lead agencies (see Chapter 2, Section 3.2 for a list of resource chapters included in this EIS/EIR). Scoping comments related to potential EIS/EIR alternatives deserving of study are discussed further in Chapter 2.

1.5 DECISIONS TO BE MADE

Implementation of the SSHCP would require permits and approvals from the lead agencies as well as public agencies other than the lead agencies. This section describes the uses of this EIS/EIR by the lead agencies as well as the cooperating and responsible agencies. This section also satisfies the requirements of 40 CFR 1502.25 stating that a Draft EIS shall list all federal permits, licenses, and other entitlements that must be obtained in implementing the proposal.

1.5.1 U.S. Fish and Wildlife Service

USFWS would use the EIS/EIR to comply with NEPA for their issuance of ITPs to the Permit Applicants. As the lead agency under NEPA, USFWS must make a determination whether the EIS/EIR scope and impact analysis is adequate to provide NEPA compliance for its decision whether to issue an ESA Section 10(a)(1)(B) ITP for SSHCP Covered Species. In addition, it must select a preferred EIS/EIR alternative. If USFWS decides to issue the ITP, it would also decide to sign the SSHCP Implementing Agreement. The purpose of an HCP Implementing Agreement, when used, is to ensure that each permittee and all other parties understand their roles and responsibilities under the HCP, ESA ITP, and CESA ITP, and to provide remedies should any party fail to fulfill its obligations (USFWS and NOAA 2016).

ESA Section 10(a)(2)(B) requires that specific permit issuance criteria be met before USFWS may issue ITPs, and the USFWS must decide if those criteria would be met before selecting the EIS/EIR Alternative.

Permit Issuance Criteria

The issuance criteria for an ITP are contained in ESA Section 10(a)(2)(B) and the implementing regulations for ESA (50 CFR 17.22(b)(2) and 50 CFR 17.32[b][2]). These issuance criteria are listed below.

1. All taking of covered species must be incidental to otherwise lawful activities.
2. The applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such taking.

3. The applicant will ensure adequate funding for the HCP.
4. The applicant will provide procedures to deal with changed circumstances, including adequate funding to address such changes.
5. The taking will not appreciably reduce the likelihood of survival and recovery of the species in the wild.
6. The applicant will ensure that other measures that USFWS may require will be provided.
7. The USFWS has received assurances that the HCP will be implemented by the applicants.

An applicant must prepare and submit to USFWS for approval an HCP containing the mandatory elements of Section 10(a)(2)(A) before an ITP can be issued. Accordingly, the HCP must specify the following information.

1. The impact that will likely result from the taking.
2. What steps the applicant will take to monitor, minimize, and mitigate such impacts; the funding available to implement such steps; and the procedures to be used to deal with unforeseen circumstances.
3. What alternative actions to such taking the applicant considered and the reasons why such alternatives are not proposed to be used.
4. Such other measures that USFWS may require as being necessary or appropriate for the purposes of the plan.

The determination as to whether the criteria have been met would be described in USFWS's permit decision package, which includes a Biological Opinion prepared pursuant to Section 7 of ESA, an appropriate final NEPA document, and ESA Findings prepared pursuant to ESA Section 10. These documents are produced and the permit decision package compiled after the NEPA process is completed. The permit decision package would contain the rationale behind USFWS's decision to either approve or deny a Section 10(a)(1)(B) permit application.

USFWS may decide to issue the ITP, which would contain standard permit terms and conditions, and may also contain additional permit terms and conditions appropriate for the operational SSHCP. Alternatively, USFWS may deny the ITP application. Permit denial regulations are explained in 50 CFR 13.21(b).

ESA Section 7

Issuance of an ITP is a federal action, which is subject to Section 7 of ESA. ESA Section 7(a)(2) requires all federal agencies consult with USFWS to ensure that any action "authorized, permitted, funded, or carried out" by any such agency "is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the

destruction or adverse modification” of Critical Habitat. The USFWS Sacramento Field Office would conduct an internal Section 7 consultation with the USFWS Region 8 office concerning its decision to issue ITPs to the SSHCP Permit Applicants. The results of this internal consultation would be documented in a Biological Opinion, which would be prepared by the USFWS Sacramento Field Office after completion of the NEPA process. Although the provisions of ESA Section 7 and ESA Section 10 are similar, Section 7 and its regulations also require an analysis of the HCP’s direct and indirect effects, a jeopardy analysis for federally listed plants, and effects on Critical Habitat.

NEPA

Issuance of an ITP is a federal action, which is also subject to NEPA. As discussed in Section 1.2.1, USFWS has determined that issuance of ITPs for the SSHCP, a large regional HCP, is a major federal action likely to result in a significant effect on the environment, and therefore, the preparation of an EIS is warranted. The ESA Section 10’s Five-Point Policy (USFWS and NOAA 2000) also requires preparation of an EIS for large regional HCPs. The USFWS’s NEPA process would culminate in the preparation of a Record of Decision (ROD), a NEPA document which would document USFWS’s final decision on the alternatives analyzed in this joint EIS/EIR.

The USFWS ROD would state the USFWS decision, identify all alternatives considered by the USFWS in reaching that decision, ~~and identify the alternative considered to be environmentally preferable by the USFWS,~~ **identify the environmentally preferable alternative (see Section 17.7), and identify the USFWS’s preferred alternative.** The ROD must discuss preferences among alternatives based on relevant factors including the agency’s statutory mission, economic, and technical considerations, and would identify and discuss considerations that were balanced by the USFWS in making its decision and how those considerations entered into the decision. The ROD would state whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and the ROD would require a monitoring and enforcement program be adopted for conservation preserves and any additional mitigation measures.

1.5.2 Sacramento County

The EIS/EIR would be used by the five Permit Applicants to approve the SSHCP in compliance with CEQA. As discussed in Section 1.2.2, Sacramento County is the lead agency under CEQA and would be the first of the Permit Applicants to make a decision to certify that the EIS/EIR impact analysis is adequate to provide CEQA compliance for its decision to approve the SSHCP (or other action alternative). As the lead agency under CEQA, Sacramento County may also need to make Findings of Fact and Statements of Overriding Considerations pursuant to CEQA if one or more significant effects associated with approval of the SSHCP are identified. The County

would also file a Notice of Determination (NOD) upon adopting the SSHCP. In addition, Sacramento County would sign the SSHCP Implementing Agreement.

Once the SSHCP is adopted, as a Permit Applicant with land use authority, Sacramento County would use the information and analysis in the EIS/EIR to support future decisions related to the SSHCP, such as approval of a local SSHCP implementation ordinance or an implementation resolution. The ordinance or resolution would enable the County to enforce the requirements and commitments of the adopted SSHCP.

Sacramento County **and other Land-use Authority Permit Applicants** would also use the information and analysis in the EIS/EIR, as well as additional CEQA documentation if required, in making a decision to approve an aquatic resource protection ordinance that would enable Sacramento County **and other Land-use Authority Permit Applicants** to implement the requirements and commitments of the ARP, **including consistent with the requirements of a USACE's proposed issuance of a CWA 404 programmatic general permit (PGP) to be implemented by Sacramento County and the other Land-use Authority Permit Applicants.**

As discussed in Section 1.1, each SSHCP Permit Applicant with land use authority is also requesting a Master Streambed Alteration Permit from CDFW for future SSHCP Covered Activities and is requesting a programmatic CWA 401 permit strategy from the RWQCB for future SSHCP Covered Activities (see Sections 1.5.4, 1.5.6, and 1.5.7 regarding these proposed Covered Activity permit strategies).

In addition, the County would use the information and analysis in the EIS/EIR in its decision to create the South Sacramento Conservation Agency, a new Joint Powers Authority that would function as the SSHCP Implementing Entity, as discussed previously in Section 1.1 and in Section 2.3.7.

1.5.3 Other Permit Applicants

Galt and Rancho Cordova. As discussed in Section 1.2.2, each Permit Applicant is a responsible agency under CEQA and would be required to consider the EIS/EIR and make findings, pursuant to CEQA. Galt and Rancho Cordova would use the information and analysis in the EIS/EIR to aid in their decision to adopt the SSHCP (i.e., approve the proposed Plan) and to sign the SSHCP Implementing Agreement. ¶ Galt and Rancho Cordova would each file an NOD upon adopting the SSHCP.

Once the SSHCP is adopted, as Permit Applicants with land use authority, Galt and the Rancho Cordova would use the information and analysis in the EIS/EIR to support future decisions related to the SSHCP, such as approval of their SSHCP implementation ordinance or an

implementation resolution. The respective ordinances or resolutions would enable each city to enforce the requirements and commitments of the adopted SSHCP.

Each of these jurisdictions would also use the information and analysis in the EIS/EIR in making a decision to approve an aquatic resource protection ordinance that would enable each City to implement the requirements and commitments of the ARP, ~~including~~ **consistent with the requirements of the Corps' proposed CWA 404 PGPs to be implemented by Rancho Cordova, the Galt, and Sacramento County.**

As discussed in Section 1.1, each SSHCP Permit Applicant with land use authority is also requesting a Master Streambed Alteration Permit from CDFW for future SSHCP Covered Activities, and is requesting a programmatic CWA 401 permit strategy from the RWQCB for future SSHCP Covered Activities (see Sections 1.5.4, 1.5.6, and 1.5.7 regarding these permit strategies).

In addition, Rancho Cordova and Galt would use the information and analysis in the EIS/EIR in their decision to create the South Sacramento Conservation Agency, a new Joint Powers Authority that would function as the SSHCP Implementing Entity, as discussed previously in Section 1.1 and in Section 2.3.7.

SCWA and the Connector JPA. As Permit Applicants, the SCWA and the Connector JPA are responsible agencies under CEQA and would be required to consider the EIS/EIR and make findings pursuant to CEQA. The SCWA and the Connector JPA would use the information and analysis in the EIS/EIR to aid in their decision whether to adopt the SSHCP, and to decide to sign the SSHCP Implementing Agreement. The SCWA and the Connector JPA would each file an NOD upon adopting the SSHCP.

The SCWA and the Connector JPA do not have authority to approve land-use decisions, and therefore do not need to make decisions related to adoption of an implementing ordinance/resolution, adopting an aquatic resource protection ordinance, or creation of the SSHCP Implementing Entity. As discussed in Section 1.1, the SCWA and the Connector JPA are requesting ITPs only for Covered Activity projects and activities that they directly implement.

1.5.4 U.S. Army Corps of Engineers

The USACE would use the information and analysis in the EIS/EIR in its decision making on a multilevel CWA Section 404 permitting program for future SSHCP Covered Activity projects and activities that discharge dredged or fill material to wetlands and other waters of the United States (see USACE 2015). The proposed multilevel CWA 404 **permit** strategy would draw upon the content of the SSHCP, the ARP, and aquatic resource protection ordinances that would be implemented by the Land-use Authority Permit Applicants (see Section 1.1).

A primary goal of ARP implementation is to achieve an overall no net loss of aquatic resource functions and services in accordance with the USACE and EPA's 2008 Compensatory Mitigation Rule, *33 C.F.R. Parts 325 and 332, Compensatory Mitigation for Losses of Aquatic Resources: Final Rule* (Mitigation Rule). The draft ARP discusses and explains the proposed regional SSHCP Preserve System (and other elements of the SSHCP Conservation Strategy) in terms of a unified watershed strategy for improving the protection and management of Planning Area aquatic resources, and the ARP provides an evaluation of aquatic resources within the Planning Area. The proposed USACE's multilevel CWA 404 permit strategy being developed consists of:

- A PGP, founded on a local aquatic resources protection program and designed to reduce duplication with that program, for future Covered Activities with minimal individual and cumulative effects on aquatic resources. The PGP would be implemented by the three land-use authority Permit Applicants (i.e., Sacramento County, Galt, and Rancho Cordova).
- A regional general permit (RGP), if needed, for future Covered Activities with minimal individual and cumulative effects on aquatic resources that do not ~~fall under~~ **qualify for** the PGP.
- A procedure for issuing Letters of Permission (LOPs) for future Covered Activities with more than minimal effects, but less-than-significant effects, on the human environment, including aquatic resources.
- An abbreviated process for issuing standard permits (SPs) for other Covered Activity impacts that do not qualify for the PGP, RGP, or the LOP procedure.

Each of these permit approaches is summarized in the USACE white paper, *CWA 404 Permit Strategy Aligned with the South Sacramento Habitat Conservation Plan* (EIS/EIR Appendix C), which contains the draft CWA 404 permit instruments (e.g., PGP) and procedures (e.g., LOP).

NEPA

As a cooperating agency on the SSHCP EIS/EIR, the USACE participated in the SSHCP EIS/EIR scoping processes discussed in Section 1.4. The USACE provided information to the lead agencies, and provided input on the sections of the EIS/EIR that concern the topics and issues that the USACE has both special expertise and jurisdiction by law, pursuant to NEPA regulations for cooperating agencies (40 CFR 1501.6; 43 CFR 46.230).

The USACE anticipates that the SSHCP NEPA process will be sufficient to comply with its regulatory mandates necessary to implement a CWA 404 permit strategy, including NEPA; its implementing regulations under 33 CFR Parts 320–332; and EPA's 404(b)(1) Guidelines for the alternatives considered in the SSHCP NEPA process. If the USACE determines that the EIS/EIR NEPA process was not sufficient to develop a permitting strategy, or if there are

substantial changes in the baseline conditions, additional NEPA documentation may be determined by the USACE to be required. As part of its compliance documentation with EPA's 404(b)(1) Guidelines, the USACE will also consider additional information outside of the purview of the NEPA process.

The USACE intends to complete a ROD that would document the agency's decision regarding the CWA 404 permit strategy and bases thereof, including a discussion of alternatives considered and evaluation of the environmental consequences. Findings would be documented in the ROD with regard to all applicable CWA 404 regulations and other applicable laws, including a discussion of public interest review factors considered and the USACE public interest determination (33 CFR 320.4[a]), and a determination of compliance with the Section 404(b)(1) Guidelines (40 CFR 230).

ESA Section 7

The USACE Sacramento District would request one consultation with the USFWS under ESA Section 7 that provides a single Biological Opinion for species take expected in association with all future SSHCP Covered Activities that would utilize the above-described CWA 404 permit strategy. This comprehensive Section 7 consultation would involve a review of all USACE actions under the proposed multilevel CWA permitting strategy for future SSHCP Covered Activities, and would be conducted simultaneously with the development of the SSHCP to assist the USFWS in assessing overall effects on individual species, groups of species, and ecosystems from multiple actions implemented by several parties under the HCP.

~~The USACE and the USFWS would complete this comprehensive and ecosystem-based consultation before the USACE decision to approve or deny the proposed multilevel CWA 404 permitting program.~~

As the final EIS/EIR was prepared, the USFWS continued to coordinate with USACE to discuss the most efficient approach to achieving ESA section 7 compliance for the Corps' section 404 CWA permit strategy for future SSHCP covered activities. This approach will be described and documented prior to the Service's completion of the Record of Decision and issuance of the SSHCP ITP. The intent of USFWS is to provide the Corps with one biological opinion that will reflect compliance with ESA section 7(a)(2) for section 404 CWA permitting of SSHCP Covered Activities, and preclude the need for project-level consultations on individual SSHCP Covered Activities.

NHPA Section 106

Projects and activities authorized by the USACE under CWA 404 must comply with Section 106 of NHPA 106. The NHPA protects cultural resources that are listed or are eligible to be listed on

the National Register of Historic Places. To meet the NHPA 106 requirements for CWA 404 permits for future SSHCP Covered Activities, the USACE may develop a Programmatic Agreement with the State Historic Preservation Office specifically to address NHPA 106 consultations on future SSHCP Covered Activities authorized under CWA 404. If this were to occur, as part of developing a Programmatic Agreement, the USACE would consult with regional Native American tribal contacts, and it may consider establishing a Memorandum of Understanding (MOU) with Native American tribes concerning future coordination and the protection of cultural resources.

1.5.5 U.S. Environmental Protection Agency

Among the roles and responsibilities of the EPA is to review and comment on CWA Section 404 permit applications. The EPA ~~determines appropriateness of~~ **maintains oversight on** CWA 404 permit actions and ~~determines~~ **confirms** consistency of a CWA 404 permit actions with **the regulations and policies of** the CWA Section 404 program. ~~If the USACE decides to issue a 404 permit, the EPA may object to the issuance of a permit as part of its review and comment role.~~ Under Section 404(q) of the CWA, and pursuant to a Memorandum of Agreement (MOA) between the ~~s~~Secretary of the Army and the **EPA a**Administrator of the EPA, if EPA objects to issuance of a Section 404 permit, it may initiate a process where the permit decision is elevated to higher levels of review within USACE and the Department of the Army. If resolution cannot be achieved, EPA may ultimately initiate a “veto” action pursuant to Section 404(q) of the CWA. Section 404(q) requires the following:

Not later than the one-hundred-eightieth day after the date of enactment of this subsection, the Secretary shall enter into agreements with the Administrator, the Secretaries of the Departments of Agriculture, Commerce, Interior, and Transportation, and the heads of other appropriate Federal agencies to minimize, to the maximum extent practicable, duplication, needless paperwork, and delays in the issuance of permits under this section. Such agreements shall be developed to assure that, to the maximum extent practicable, a decision with respect to an application for a permit under subsection (a) of this section will be made not later than the ninetieth day after the date the notice of such application is published under subsection (a) of this section..

As a result, the Department of the Army entered into MOAs with the EPA, USFWS, and National Marine Fisheries Service related to procedures for elevating policy decisions or permit decision. If a permit decision is elevated to the ~~a~~Assistant ~~s~~Secretary of the Army for ~~Civil w~~Works (ASA-CW) by EPA, USFWS, and National Marine Fisheries Service, ASA-CW will either (1) inform the district engineer to proceed with final action, (2) inform the district engineer to proceed with final action in accordance with case-specific policy guidance, or (3) make a final permit decision in accordance

with 33 CFR 325.8. There isn't a negotiation or resolution process with the agency requesting the elevation under the Section 404(q) MOA. Section 404(c) states the following:

The Administrator is authorized to prohibit the specification (including the withdrawal of specification) of any defined area as a disposal site, and he is authorized to deny or restrict the use of any defined area for specification (including the withdrawal of specification) as a disposal site, whenever he determines, after notice and opportunity for public hearings, that the discharge of such materials into such area will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas. Before making such determination, the Administrator shall consult with the Secretary. The Administrator shall set forth in writing and make public his findings and his reasons for making any determination under this subsection.

Therefore, under Section 404(c), EPA has the authority to veto permit actions. There is no requirement that EPA go through the process identified in the 404(q) MOA before going through the veto process. Therefore, EPA could veto a permit whether or not it elevated it under Section 404(q).

The EPA ~~would~~ **is reviewing and commenting on** the USACE's proposed multilevel CWA 404 permit strategy for future SSHCP Covered Activities, including the proposed PGP permit action and **potentially** proposed RGP permit action, **as a Cooperating Agency on this EIS/EIR, and via review of the USACE's public noticing of the draft CWA 404 permit strategy.** If the USACE decides to approve and implement the proposed CWA 404 permit strategy for future SSHCP Covered Activities, the EPA would **retain its normal** review and ~~determine appropriateness of any~~ **and comment responsibilities in regard to** future abbreviated LOPs or SPs **applications** issued for individual SSHCP Covered Activities. ~~During these reviews, the EPA would use the information and programmatic analysis of Planning Area aquatic resources, species habitat, water quality, and hydrology impacts presented in the SSHCP EIS/EIR to the same extent that the USACE used that information and analysis for their decision to issue the PGP, RGP, LOP, and SP permits for SSHCP Covered Activities.~~

EPA also has comment authority under Section 309 of the Clean Air Act and under NEPA Section 102. The EPA would rate the draft SSHCP EIS/EIR and determine if the document is adequate, provides insufficient information, or is inadequate. In addition, EPA would rate the environmental impacts associated with the draft SSHCP EIS/EIR preferred action, with ratings on a scale from a lack of objections, environmental objections, to environmentally unsatisfactory. The rating system would provide a basis upon which EPA would make recommendations to the federal lead agency for improving the draft EIS/EIR.

1.5.6 California Department of Fish and Wildlife

CDFW participated in the preparation of the EIS/EIR as both a CEQA responsible agency and a CEQA trustee agency. The EIS/EIR would serve as the CEQA document that analyzes the regulatory permits issued by CDFW for the SSHCP. As a responsible agency under CEQA, CDFW would be required to consider the EIR for two CDFW decisions, as discussed below.

CESA Species Incidental Take Permit

CDFW would use the EIS/EIR and the SSHCP document in deciding whether to issue a CESA ITP under Section 2081 of the California Fish and Game Code for the incidental take of the SSHCP Covered Species that are listed as threatened or endangered under CESA (see Table 2-5 in Chapter 2).

CDFW would determine whether the information and analysis in the EIS/EIR is adequate to provide CEQA compliance for their CESA permit decision. CDFW would make the appropriate Findings pursuant to CEQA. CDFW would file a CEQA NOD, which would state that it has considered the EIS/EIR and would announce that CDFW has issued the CESA ITP for the SSHCP.

California Fish and Game Code Section 1600 Streambed Alteration Agreement

Section 1600 of the California Fish and Game Code requires that a Lake or Streambed Alteration Application be submitted to the CDFW for “any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake.” CDFW reviews the proposed actions and, if necessary, submits to the applicant a proposal for avoidance and minimization measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by CDFW and the project applicant is called a Lake or Streambed Alteration Agreement.

Covered Activities that require a Streambed Alteration Agreement may also require a CWA Section 404 permit from the USACE. In these instances, the conditions of the CWA Section 404 permit and the Streambed Alteration Agreement may overlap. The Land-use Authority Permit Applicants (Sacramento County, Rancho Cordova, and Galt) are requesting CDFW to enter into a Master Streambed Alteration Agreement (MSAA) or a Long-term Streambed Alteration Permit (LTLA) to address future Covered Activities occurring within stream zones (defined under Section 1602 of the California Fish and Game Code). The MSAA or LTLA would be valid for 12 years and would be eligible for a one-time extension for a maximum period of 17 years. For the amount of time remaining under the 50-year SSHCP term following the expiration of the MSAA or LTLA extension, Sacramento County, Rancho Cordova, and Galt would enter into a new MSAA or LTLA agreement that would build upon the first agreement.

Under the proposed MSAA or the LTLA, the Implementing Entity and the CDFW would develop an MOU to expedite CDFW reviews of future Covered Activities. The MOU would describe the Covered Activity permitting framework agreement between CDFW and the Implementing Entity, which is expected to include standardized procedures for Covered Activity avoidance, minimization, and compensatory mitigation requirements for impacts within a stream zone. Under the MOU, CDFW would allow Covered Activity project-proponents to submit a request for verification to the local Land Use Authority Permit Applicants or to the Implementing Entity (whoever has jurisdiction), and the Land Use Permit Applicant or Implementing Entity would act as a “clearinghouse” for the notification forms and would conduct an initial screening process to verify the project’s consistency with the SSHCP, the ARP, and the aquatic protection ordinances. The Land Use Permit Applicant or the Implementing Entity would then submit the notification forms to CDFW, who would review the Covered Activity projects under the MOU agreement. Under the MOU, CDFW would collect a fee for each streambed alternation notification submitted by the Implementing Entity, and CDFW would determine whether to use the MSAA (or LTLA), or to issue an individual Lake or Streambed Alternation Agreement (LSA) for a Covered Activity project.

CDFW would decide whether to develop an MSAA or LTLA under California Fish and Game Code Section 1600 with the three land-use authority Permit Applicants for future SSHCP Covered Activities. CDFW would consider the information and analysis in the EIS/EIR and make the appropriate Findings of Fact pursuant to CEQA on that decision. CDFW would file a CEQA NOD, which would state that it has considered the EIS/EIR and would announce that it has issued the MSAA or LTLA.

1.5.7 Central Valley Regional Water Quality Control Board

As a responsible agency under CEQA, the Central Valley RWQCB would determine whether the information and analysis in this EIS/EIR is adequate to provide CEQA compliance for its discretionary decisions associated with the SSHCP.

Assuming the information and analysis of the proposed RWQCB decisions is adequate in the EIS/EIR, the RWQCB would make the appropriate Findings pursuant to CEQA and would file an NOD, which would state that it has considered the EIS/EIR in its decision to approve a programmatic CWA 401 permit strategy for future SSHCP Covered Activities. The RWQCB would use the NOD to disclose this decision.

Programmatic CWA Section 401 Water Quality Certification

Section 401 of the CWA requires any applicant for a federal license or permit conducting an activity that may result in a discharge of a pollutant into wetlands and other waters of the

United States to obtain a certification indicating that the discharge would comply with the state's applicable effluent limitations and water quality standards. In California, the RWQCB administers CWA Section 401 requirements.

Parallel to the USACE's proposed multilevel CWA 404 permitting strategy, the RWQCB has an opportunity to increase the efficiency of their CWA 401 permitting processes for future SSHCP Covered Activities, while improving the protection and management of aquatic resources in the Planning Area. The SSHCP, the ARP, and the aquatic resource protection ordinances could facilitate the Central Valley RWQCB's development of these water quality certification strategies. The SSHCP Conservation Strategy provides aquatic resource avoidance, minimization, and mitigation measures that are consistent with the CWA Sections 404 and 401 implementing regulations and Porter-Cologne.

As discussed in Section 1.1, the SSHCP Permit Applicants are requesting that the RWQCB develop a programmatic Section 401 Water Quality Certification for future Covered Activities that qualify for the USACE's proposed CWA 404 PGP or **(potential)** RGP processes (see Section 1.5.4). As with the USACE's proposed CWA 404 General Permits (PGPs and **(potential)** RGPs), the programmatic 401 Water Quality Certification would authorize those SSHCP activities that cause no more than minimal individual and cumulative adverse impacts to aquatic resources within the Planning Area.

In addition, the RWQCB could adopt a more efficient Water Quality Certification process for the individual Covered Activities that would ~~fall under~~ **qualify for** the USACE's proposed CWA 404 abbreviated LOP ~~process~~ **procedure and/or the proposed CWA 404 abbreviated SP process** (see Section 1.5.4).

RWQCB would use the information and analysis in the EIS/EIR when deciding whether to develop and approve (1) a programmatic Section 401 Water Quality Certification program for future Covered Activities with minimal individual and cumulative effects on aquatic resources that would ~~fall under~~ **qualify for** the proposed CWA 404 PGP or **(potential)** RGP ~~processes~~; and (2) when deciding whether to develop a more efficient and shorter process for issuing individual Water Quality Certifications to future Covered Activities that require a CWA 404 LOP or a SP under the USACE's proposed multilevel CWA 404 permit ~~permitting processes~~ **strategy**.

Programmatic Porter-Cologne Act Compliance

Porter-Cologne is California's primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater. Porter-Cologne grants the State Water Resources Control Board and the RWQCBs power to protect water quality, including authority to adopt plans and policies, to regulate discharges of waste to surface and

groundwater, to regulate waste disposal sites, and to require cleanup of discharges of hazardous materials and other pollutants. Projects that require a CWA Section 401 water quality certification, a CWA Section 404 permit, and/or a Streambed Alteration Agreement may also require a Report of Waste Discharge for wetlands and others waters of the state under the Porter-Cologne Act.

The SSHCP Permit Applicants are requesting that the programmatic CWA 401 Water Quality Certification also satisfy the Report of Waste Discharge requirements under Porter-Cologne when future Covered Activities impact wetlands and other waters of the state. In addition, the SSHCP Permit Applicants are requesting that the RWQCB also adopt a more efficient Waste Discharge Requirement approach for the Covered Activities that do not qualify for the programmatic 401 Water Quality Certification.

RWQCB would also use the information and analysis in the EIS/EIR in deciding whether it would develop a program to issue a Report of Waste Discharge to three land-use authority Permit Applicants (Sacramento County, Rancho Cordova, and Galt) under Porter-Cologne. The Report of Waste Discharge would authorize discharges to surface waters applicable to all, or a subset, of future SSHCP Covered Activities.

RWQCB would make the appropriate Findings pursuant to CEQA and would file an NOD, which would state that it has considered the EIS/EIR for their approval decision, and inform the public that it has developed and approved a multilevel CWA 401 permitting program and Report of Waste Discharge.

1.6 FUTURE USES OF THE FINAL EIS/EIR DOCUMENT

Because many of the SSHCP's Covered Species live part or all of their lives in water bodies, the SSHCP would conserve wetland and stream habitats that are also subject to regulation under Sections 404 and 401 of the CWA, Porter-Cologne, and California Fish and Game Code Section 1600 et seq., pursuant to California's Lake and Streambed Alteration Program. Consequently, the aquatic resources addressed in the SSHCP include those regulated by the USACE, State Water Resources Control Board, Central Valley RWQCB, and CDFW, as well as local zoning and aquatic resource ordinances. Therefore, as discussed in Section 1.5, in addition to seeking ITPs from the USFWS and the CDFW, the SSHCP Permit Applicants are also seeking concurrent and parallel authorizations from other federal and state aquatic-resource regulatory agencies.

This section discusses how the information and analysis presented in the final SSHCP EIS/EIR would be used in the future by federal and state regulatory agencies to enact more efficient permitting processes for future SSHCP Covered Activity projects and activities implemented by third-parties or implemented by the Permit Applicants. These efficiencies would save time and

money for the regulatory agencies and the regulated public, and would facilitate better decision-making processes at the landscape level and at the project level.

1.6.1 U.S. Army Corps of Engineers Future Uses of the EIS/EIR

As described in Section 1.5.4, the USACE Sacramento District will rely on the EIS/EIR to support the agency's decision-making on development and implementation of a complementary CWA 404 permitting strategy that would align with a USFWS-permitted SSHCP (see USACE 2015 and EIS/EIR Appendix C).

As discussed previously, the ARP provides for a multidisciplinary, comprehensive, and programmatic approach to attain permit authorizations for future Covered Activity projects with impacts to the aquatic resources that are regulated by different agencies. This complementary multilevel strategy for permitting future SSHCP Covered Activities would rely upon use of the regional SSHCP Preserve System as one part of a unified watershed strategy for aquatic resource mitigation. This coordinated permitting and mitigation approach is expected to improve aquatic resources protection on a regional scale while providing a balanced approach and a robust strategy for the avoidance, minimization, and compensatory mitigation of aquatic resources.

The SSHCP and the ARP offer opportunities to integrate local land-use planning with regional aquatic-resource protection. The SSHCP and the ARP are expected to increase permitting efficiencies of similar state and federal permits, and to provide greater regulatory certainty for the Land Use Authority Permit Applicants and their third-party project proponents, as discussed in Section 1.6.4. This multidisciplinary permitting approach would include a logical permit-review progression that uses the proposed multilevel CWA 404 permitting strategy. As discussed in Section 1.5.4, the proposed CWA 404 permitting strategy is expected to include multiple permit instruments and/or processes, including a General Permit(s) (PGP, **potential** RGP), and abbreviated LOP **procedure** and **abbreviated** SP processes.

As discussed in Section 1.5.4, the USACE would request a single ESA Section 7 consultation with the USFWS that would provide ESA compliance for all future Covered Activities authorized by the USACE under the PGP or **(potential)** RGP process(es), and under the abbreviated LOP **procedure** and **abbreviated** SP processes. With a single Biological Opinion in place that addresses all USACE permit actions for future SSHCP Covered Activities, the current project-by-project "individual" Section 7 consultations between the USACE and USFWS is anticipated, for the most part, to be unnecessary.

Furthermore, as discussed in Section 1.5.4, the USACE may develop a Programmatic Agreement with the State Historic Preservation Office to address NHPA 106 consultations on future SSHCP Covered Activities that are authorized under CWA 404.

The USACE anticipates using the SSHCP EIS/EIR as a programmatic NEPA document during its future CWA 404 permit reviews of SSHCP Covered Activities. The SSHCP EIS/EIR provides a regional-scale, comprehensive, and programmatic analysis of expected impacts to aquatic resources, species habitat, water quality, and hydrology from all planned urban development over a 50-year study period. The USACE anticipates using, to the maximum extent feasible, the 50-year programmatic analyses provided in the EIS/EIR to address NEPA compliance required for the CWA 404 permits issued under each level of the proposed multilevel CWA 404 permitting strategy.

1.6.2 Regional Water Quality Control Board future uses of the EIS/EIR

As discussed in Section 1.5.7, the Central Valley RWQCB would develop a CWA 401 water quality certification strategy for future SSHCP Covered Activities that obtain a CWA 404 permit under the USACE's proposed multilevel CWA 404 permitting strategy for future SSHCP Covered Activities.

The SSHCP EIS/EIR provides a regional-scale and programmatic analysis of impacts to water quality and hydrology expected from implementation of new urban development over a 50-year period. The RWQCB would use the SSHCP EIS/EIR to address CEQA compliance for future CWA 401 permits issued to future Covered Activity projects that obtain a CWA 404 permit under each level of the proposed multilevel CWA 404 permitting strategy.

A programmatic CWA Section 401 Water Quality Certification could be used for the Covered Activity projects that ~~fall under~~ **qualify for** the USACE's proposed PGP or **(potential) RGP** (see Section 1.5.4). If a Covered Activity project qualifies for the USACE's PGP, and the RWQCB has issued a programmatic Section 401 Water Quality Certification for the PGP, the Covered Activity project would already be certified under CWA 401. The proposed programmatic 401 Water Quality Certification would also satisfy the Report of Waste Discharge requirements for Porter-Cologne. In addition, the programmatic Section 401 Water Quality Certification may potentially cover (all or in part) some larger Covered Activity projects that would ~~fall under~~ **qualify for** the USACE's abbreviated LOP ~~process~~ **procedure**, or ~~fall under~~ **qualify for** the abbreviated SP process.

Any Covered Activity project authorized under the proposed CWA Section 401 Water Quality Certification strategy must satisfy the RWQCB's water quality anti-degradation policy, to demonstrate that water quality standards would be maintained in the Planning Area. Covered Activities would demonstrate this by complying with all avoidance, minimization, and mitigation

requirements of the SSHCP. The local Land Use Authority Permit Applicant or the Implementing Entity (whoever has jurisdiction) would review the Covered Activity to assure all measures required by the SSHCP and ARP are met.

The local Land Use Authority Permit Applicant, or the Implementing Entity (whoever has jurisdiction), would evaluate each Covered Activity project submittal. Based on the CWA 404 permit process under which the Covered Activity would likely be processed, the local Land Use Authority Permit Applicant (or the Implementing Entity) would determine the appropriate means through which the project would apply for the associated CWA 401 Water Quality Certification. This initial Land Use Authority Permit Applicant (or the Implementing Entity) screening (vetting) before submittal to the RWQCB is anticipated to result in more efficient and streamlined RWQCB review process of individual CWA 401 Water Quality Certification applications.

This more efficient CWA 401 Water Quality Certification process would save time and costs compared to the current project-by-project permitting process, and would allow the RWQCB to consider individual project impacts from a watershed perspective. The SSHCP's comprehensive and balanced approach to aquatic resource impacts and aquatic resource conservation would provide a greater level of landscape-scale and watershed-scale protection of water quality than is possible under the conventional project-by-project permitting approach under the CWA 404 and CWA 401.

1.6.3 California Department of Fish and Wildlife Future Uses

As discussed in Section 1.5.4, the Permit Applicants are requesting an MSAA or LTLA from the CDFW for future SSHCP Covered Activities occurring within a stream zone.

The SSHCP and ARP describes procedures for avoidance, minimization, and describes compensatory mitigation requirements for future Covered Activities occurring within a stream zone. Because each Covered Activity would comply with standardized requirements set forth in the SSHCP and ARP, the CDFW would be able to quicken its permitting process using the MOU procedure described in Section 1.5.6.

CDFW would use the SSHCP EIS/EIR to satisfy CEQA requirements for its decision to issue the MSAA or LTLA, and would use the EIS/EIR for future decisions in individual LSAs issued for some Covered Activity projects. The proposed MOU would enable CDFW to quicken its LSA permitting process for Covered Activity urban development projects that comply with all SSHCP requirements. The CEQA lead agency would be able to incorporate regional, comprehensive, and programmatic analysis of aquatic resources, species habitat, natural communities, water quality, and hydrology from the SSHCP EIS/EIR, which would greatly quicken CDFW review timeline.

The Land Use Authority Permit Applicants would establish a review process to assist CDFW in the efficient processing of individual CWA 401 certifications for proposed Covered Activity projects and activities. Under this process, the Land Use Authority Permit Applicants (or the SSHCP Implementing Entity) would act as the initial “clearinghouse” for project LSA permit applications, in the same manner they would for the CWA 404 permit application reviews. The Land Use Authority Permit Applicant (or the Implementing Entity, as applicable) would screen individual Covered Activity applications to ensure that the proposed project complies with all requirements of the SSHCP and ARP, and the Land Use Authority Permit Applicant would notify the CDFW (pursuant to Section 1600 of the California Fish and Game Code), and would seek an individual LSA or would seek to append the Covered Activity project to an MSAA or LTLA.

1.6.4 The SSHCP Permit Applicants (Future SSHCP Permittees) Future Uses of the EIS/EIR

In most cases, an individual Covered Activity project or activity would trigger CEQA and require preparation of a CEQA document that analyzes the proposed project or activity. All six of the SSHCP Permit Applicants (the future SSHCP Permittees) could use the final SSHCP EIS/EIR to simplify and streamline preparation of individual project CEQA documents for future Covered Activity projects that they directly implement over the proposed 50-year term of the SSHCP. The SSHCP Permit Applicant would be the CEQA lead agency in the preparation of CEQA documents for Covered Activity projects that they directly implement. The SSHCP EIS/EIR provides regional-scale comprehensive analyses of environmental impacts of all planned urban development within the Planning Area over a 50-year period. The SSHCP Permit Applicants (CEQA lead agencies) would use the analyses presented in the final SSHCP EIS/EIR to simplify and streamline preparation of future CEQA documents for individual Covered Activity projects, especially the comprehensive analyses of impacts to native plant and animal species, natural communities, aquatic resources, water quality, and hydrology.

The three local Land Use Authority Permit Applicants (Sacramento County, Galt, and Rancho Cordova) would also have the ability to extend the species incidental take coverage provided by the SSHCP ITPs to the Covered Activities implemented by third-party project proponents under their jurisdiction. The SSHCP term “third-party project proponents” refers to individuals or organizations that implement a SSHCP Covered Activity under the jurisdiction of a Land Use Authority Permit Applicant (i.e., Sacramento County, Galt, or Rancho Cordova). An example would be a developer (the third-party project proponent) who proposes a development project that is consistent with the requirements of an SSHCP urban development Covered Activity, and the proposed project’s approvals or entitlements are subject to the jurisdiction of Sacramento County (a Land-use Authority Permit Applicant). Third-party project proponent uses of the Final EIS/EIR are discussed in Section 1.6.5.

Similarly, the SSHCP Implementing Entity would have the ability to extend incidental take coverage provided by the SSHCP ITPs to “Participating Special Entities” that implement a Covered Activity project under the oversight of the SSHCP Implementing Entity. SSHCP Participating Special Entities are third-party entities that are not under the jurisdiction of a Land Use Authority Permittee. Participating Special Entities might include school districts, reclamation districts, irrigation or water districts, utilities, or other organizations that are not subject to the regulatory authority of a local jurisdiction.

1.6.5 Third-Party Project Proponent Future Uses of the Final EIS/EIR

Because Land Use Authority Permit Applicants (Sacramento County, Galt, and Rancho Cordova) and the SSHCP Implementing Entity have the ability to extend the incidental take coverage provided by the SSHCP ITPs to Covered Activities implemented by third-party project proponents, the third-party project proponents implementing a Covered Activity would not need to prepare ESA Biological Assessment documents, would not need to apply for a CESA take permit, and would avoid the multiple negotiations and multiple project reviews that are currently required for project ESA and CESA compliance under the conventional project-by-project review process. Similarly, third-party project proponents implementing a Covered Activity that impacts wetlands and other waters of the United States or state, for the most part, would not need to apply for individual permits or approvals from each of aquatic resource regulatory agencies that have participated in the development of the SSHCP and the ARP (i.e., USACE and RWQCB under CWA 404 and CWA 401, and CDFW under California Fish and Game Code Section 1600 Lake and Streambed Alteration Program). For the relatively few number of large urban development Covered Activities that would still need a Letter of Permission or Standard Permit under CWA 404 and an individual CWA 401 permit, or an individual California Fish and Game Code Section 1600 Streambed Alteration permit, the process, effort, and time required to obtain those permits would be substantially simplified, abbreviated, and streamlined, relative to the current project-by-project review.

The SSHCP and the ARP provide third-party project proponents with pre-negotiated project-level biological and aquatic-resource Avoidance and Minimization Measures that can be incorporated early into the proposed project’s design. Where project impacts are unavoidable, the SSHCP and the ARP permits and authorizations provide third-party project proponents with pre-determined mitigation requirements, which are standardized and are predictable in advance. In addition, the SSHCP and ARP permits and authorizations would provide pre-negotiated mitigation monitoring requirements and methodologies.

Because the final SSHCP EIS/EIR provides a comprehensive and regional-scale analysis of biological resource and aquatic resource impacts from implementation of future urban development planned for the next 50-year period, the effort and cost of preparing future

project-level CEQA documents and project-level NEPA documents could be reduced relative to project CEQA and NEPA documents prepared under the current project-by-project review process. Project-level CEQA and NEPA documents can reference and use the EIS/EIR's regional-scale and 50-year comprehensive and programmatic analysis of future Covered Activity impacts to native plant and animal species, natural communities, aquatic resources, water quality, hydrology, and other environmental resources natural resources, as well as the EIS/EIR's cumulative analysis of impacts to wetlands and other waters in the region.

This incorporation of information and analysis from the SSHCP EIS/EIR is expected to produce better project-level CEQA and NEPA documents and would save third-party project proponents time and reduce costs associated with the preparation of each project-level CEQA or NEPA document. Although the CEQA and NEPA lead agencies determine the scope and the conclusions of a development project's CEQA and/or NEPA document, in most cases the project proponent funds the document preparation.

Compared to the existing, conventional project-by-project CWA permit process, the proposed multilevel CWA 404 permit strategy for future Covered Activities would increase the efficiency of the CWA permitting process; provide for more systematic regional protection of Planning Area aquatic resources; balance the impacts to and conservation of aquatic resources at a regional-scale and at project-scale; and provide a coordinated approach for providing regional avoidance, minimization, and compensation for unavoidable impacts to aquatic resources. With a single, comprehensive ESA Section 7 consultation Biological Opinion that addresses all future Covered Activities authorized under the proposed CWA 404 permit strategy (see Section 1.5.4 and EIS/EIR Appendix C), the conventional project-by-project Section 7 consultations between the USACE and the USFWS for each project CWA permit would, for the most part, be unnecessary. The proposed multilevel CWA 404 permit strategy ~~permitting process~~, envisioned CWA 401 Certification process, and ~~envisioned~~ **potential** programmatic NHPA 106 agreement would be more efficient and would save time and costs, when compared to the conventional project-by-project permitting processes.

Under the proposed multilevel CWA 404 permit strategy ~~for future Covered Activities~~, most future Covered Activity projects requiring a CWA permit could be authorized **under the local programs implemented** by the jurisdictional Land-use Authority Permit Applicants ~~under the~~, **in that most activities would be anticipated to meet the terms and conditions of the USACE's proposed PGP and would not require the**. **Thus, third-party project proponents would be most likely to receive a local permit under the ARP and local ordinances, rather than** to seek authorization directly from the USACE ~~or prepare a CWA 404 permit application~~.

As discussed in Section 1.5.4, and in EIS/EIR Appendix C, the **USACE's proposed** abbreviated LOP **procedure** and **abbreviated** SP process for CWA 404 permits would ~~likely~~ be needed for

only a small portion of the larger-scale urban development Covered Activity projects in the Planning Area. The SSHCP, ARP, and the regional, programmatic, and comprehensive analysis of aquatic resources in the Final SSHCP EIS/EIR, would identify appropriate and adequate aquatic resource impact Avoidance and Minimization Measures to assist in compliance with the 404(b)(1) guidelines. The envisioned abbreviated LOP procedure and abbreviated SP processes would ~~largely~~ fulfill (in advance) the requirements of a separate off-site alternatives analysis, so an off-site alternatives analysis would not be required for the assessment of the Least Environmentally Damaging Practicable Alternative, ~~and in the case of SPs,~~ alleviating the necessity of preparing often a rigorous off-site alternatives analysis. Therefore, the alternatives analysis necessary under the abbreviated LOP procedure and abbreviated SP processes could be limited to identifying particular Avoidance and Minimization Measures from the SSHCP that are appropriate to apply to the project-site. In addition, the abbreviated LOP procedure and abbreviated SP processes would provide the third-party project proponents with greater regulatory certainty.

NEPA requirements for future Covered Activity projects requiring permits under the abbreviated SP process ~~may be satisfied with a smaller Environmental Assessment level of review, rather than the EIS level of review that is typical under the current project-by-project CWA permit process.~~ would realize greater efficiencies. ~~Even for future Covered Activity urban development projects proposing potentially significant effects on the human environment and requiring the,~~ for which the Corps determines requires preparation of an EIS, the ~~proposed~~ SP abbreviated process would be ~~greatly abbreviated by relying on the regional, programmatic, and comprehensive analysis in the EIS/EIR.~~ reduced in terms of process, information requirements, and timing. Please refer to Appendix C for additional description of the SP abbreviated process.

Therefore, the proposed abbreviated LOP procedure and abbreviated SP processes would save project proponents time and costs and would increase regulatory certainty in comparison to the conventional project-by-project processes.

Project Proposals Seeking CWA 401 Water Quality Certification

A parallel permitting process is anticipated for CWA 401 Certification of Covered Activity project proposals, including the potential use of all (or portions) of a programmatic Section 401 Certification. This more efficient CWA 401 Certification process would save project proponents time and costs when compared to the conventional project-by-project permitting process. The envisioned parallel multilevel process for Covered Activity 401 Water Quality Certification would allow greater environmental benefits at the watershed and regional scale.

Project Proposals Seeking a CDFW 1600 Streambed Alteration Agreement

A streamlined permitting process is envisioned for obtaining Streambed Alteration Agreements for Covered Activity project proposals. The Implementing Entity would evaluate the project submittal subnotification forms and conduct the initial screening process to verify project consistency with the SSHCP and the ARP regulatory permitting framework. Once approved by the Implementing Entity, the subnotification forms would then be submitted to CDFW for review and verification. The Final SSHCP EIS/EIR would provide CEQA compliance for these Streambed Alteration Agreements.

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CHAPTER 2 – ALTERNATIVES, INCLUDING THE PROPOSED ACTION/PROPOSED PROJECT

This chapter presents detailed descriptions of the proposed South Sacramento Habitat Conservation Plan (SSHCP or Plan) for south Sacramento County (the Proposed Action/Proposed Project), the Reduced Permit Term Alternative HCP, and the No Action/No Project Alternative. This chapter also summarizes the approach used to consider and select the alternatives studied in detail, and discusses the alternatives that were considered but are not studied in detail.

The Environmental Impact Study/Environmental Impact Report (EIS/EIR) alternatives accommodate all planned future projects and activities in the Planning Area (Section 1.1.1), as described in the adopted General Plans of Sacramento County and Galt and Rancho Cordova, and the *Capital SouthEast Connector Project EIR* (Section 2.2.1 and Section 3.4).

2.1 APPROACH TO DEVELOPING ALTERNATIVES

2.1.1 Regulatory Framework for Developing Alternatives

National Environmental Policy Act and California Environmental Quality Act

The National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) require that an EIS/EIR evaluate a reasonable range of alternatives to a proposed action, including a no-action alternative. While there is no clear rule for determining a reasonable range, NEPA and CEQA provide guidance that can be used to determine alternatives for consideration in an EIS/EIR.

NEPA regulations identify the alternatives as the “heart” of an EIS (40 CFR 1502.14). Each EIS must devote substantial treatment to each alternative, and present alternatives in comparative form to sharply define the issues and provide a clear basis for choice among options by the decision makers and the public (40 CFR 1502.14). The term “range of alternatives” refers to the alternatives discussed in an environmental document (CEQ 1981, Question 1a). The range of alternatives discussed must include all reasonable alternatives. Reasonable alternatives are those that are both technically and economically practical and feasible and meet the stated purposes and needs of the proposed action (43 CFR 46.420(b); CEQ 1981, Question 2a). The term “range of alternatives” includes other alternatives that were eliminated from detailed study, with a brief discussion of the reasons for eliminating them (40 CFR 1502.14(a); 43 CFR 46.420(c)). What constitutes a reasonable range of alternatives depends on the nature of the proposal and the facts in each case (CEQ 1981, Question 1b). The stated purpose and need for action and the “significant issues” identified during the scoping process will determine the range of alternatives and provide a basis for the selection of an alternative in the decision (43 CFR 43.415[b]; 43 CFR 46.420 [a][2]).

The range of alternatives under CEQA is governed by the rule of reason (14 CCR 15126.6[f]). Alternatives under CEQA must meet most of the basic project objectives, but avoid or substantially lessen any of the significant effects of the proposed project, and must be potentially feasible. In determining whether alternatives are feasible, lead agencies are guided by the following general definition of feasibility found in CEQA Guidelines, Section 15364 (14 CCR 15364): “capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.” In accordance with CEQA Guidelines, Section 15126.6(f), the lead agency should consider site suitability, economic viability, availability of infrastructure, general plan consistency, other regulatory limitations, jurisdictional boundaries, and the proponent’s control over alternative sites in determining the range of feasible alternatives to be evaluated in an EIR. An EIR must briefly describe the rationale for selection and rejection of alternatives and the information that the lead agency relied upon in making the selection. It should also identify any alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process, and briefly explain the reason for their exclusion (14 CCR 15126.6[c]).

A no-action alternative is required to be considered in an EIS, and a no project alternative is required to be considered in an EIR. A no action/no project alternative allows decision makers to compare the impacts of approving the project (or an alternative) to the expected future conditions if no project or alternative is approved and the activity would not take place.

NEPA regulations require an EIS to include a no-action alternative (40 CFR 1502.14). Where a new project or activity is proposed for implementation, the no-action alternative means “no project,” and the no-action alternative looks at the effects of not approving the action under consideration (43 CFR 46.30[1]; 43 CFR 46.30[2]; CEQ 1981, Question 3). The no-action alternative describes the likely future conditions without the project and may also include predictable actions by other persons or entities in addition to the federal agency involved.

Under CEQA, an EIR is required to analyze the no project alternative. CEQA Guidelines Section 15126.6(e)(2) (14 CCR 15126.6[e][2]) indicates that the no project analysis shall discuss the baseline existing conditions at the time of the Notice of Preparation is published, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.

Clean Water Act

Consideration of alternatives is also required under the Section 404 of the Clean Water Act (CWA 404). Activities that would result in the discharge of dredged or fill material into wetlands and other waters of the United States may require authorization from the U.S. Army Corps of

Engineers (USACE) under CWA 404 (**e.g., exempt activities do not require authorization**).

Projects subject to permitting under the CWA 404 must comply with Section 404(b)(1) guidelines (40 CFR, Part 230) for discharge of dredged or fill material into wetlands and other waters of the United States. Section 404(b)(1) guidelines require that:

except as provided under Section 404(b)(2), no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences.

The guidelines (40 CFR, Part 230) consider an alternative practicable “if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.” Practicable alternatives under the guidelines (40 CFR, Part 230) assume that “alternatives that do not involve special aquatic sites are available, unless clearly demonstrated otherwise.” The guidelines (40 CFR, Part 230) also assume that “all practicable alternatives to the proposed discharge which do not involve a discharge into a special aquatic site are presumed to have less adverse impact on the aquatic ecosystem, unless clearly demonstrated otherwise.”

Per the USACE’s NEPA implementing regulations (33 CFR 325, Appendix B(9)(b)(5)), the alternatives analysis conducted in an EIS should be thorough enough to use for both the public interest review and the Section 404(b)(1) guidelines, where applicable; **however, on a case-by-case basis, additional information may be necessary. As discussed in Section 1.5.4, as part of its compliance documentation with EPA’s 404(b)(1) Guidelines, the USACE will also consider additional information outside the purview of the NEPA process for this project.** Under the USACE public interest review, for activities in which there are unresolved conflicts as to resource use, USACE must evaluate the practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed structure or work (33 CFR 320.4(a)(2)(ii)). As explained in Section 2.1.1, under the Section 404(b)(1) Guidelines, USACE must evaluate the practicability of alternatives in light of the overall project purpose (40 CFR 230.10(a)).

The Plan Permittees are seeking a Section 404 programmatic general permit from the USACE that would apply to the majority of SSHCP Covered Activities requiring CWA 404 authorization. If issued, the programmatic general permit would streamline the CWA 404 permitting process for certain activities covered under the SSHCP that would result in the discharge of dredged or fill material into wetlands and other waters of the United States. As discussed in greater detail in Chapter 1 of this document, other components of a CWA 404 permit strategy coordinated with the SSHCP may include the USACE’s issuance of a regional general permit, Letter of Permission procedures, and an abbreviated standard permit process. As it applies to discussing the alternatives

analysis, as part of the ~~evaluation to issue~~ **decision making on issuing** programmatic general permits or regional general permits under CWA 404, USACE must ~~follow~~ **ensure compliance with** the U.S. Environmental Protection Agency's (EPA's) Section 404(b)(1) Guidelines, ~~which in part require that USACE document that the Covered Activities would result in no more than minimal individual and cumulative adverse effects on wetlands and other waters of the United States and that the permitted action is the least environmentally damaging practicable alternative.~~

2.1.2 How the SSHCP Development Process Has Considered Alternatives

The SSHCP has been developed through an iterative process that first began in 1992. Since that time, a range of conservation plan concepts were vetted by the proposed Permit Applicants; by several stakeholder committees; and representatives of the U.S. Fish and Wildlife (USFWS), California Department of Fish and Wildlife (CDFW), USACE, EPA, and the Regional Water Quality Control Board (RWQCB). The Proposed Action/Proposed Project Alternative is the end result of this process. The chronology of SSHCP development is briefly described in the following text.

1992–2006

In 1992, the EPA funded a USACE watershed study to assess the water resource needs of river basins and watersheds in south Sacramento County, including needs relating to ecosystem protection and restoration, flood risk management, watershed protection, water supply, and drought preparedness. In 1993, USFWS and CDFW proposed shifting from a watershed study to a more comprehensive regional resource protection plan, such as an HCP. After an initial assessment confirmed that an HCP in south Sacramento County would be politically, economically, and biologically feasible, further work was conducted to identify possible strategies and economic constraints.

In 1995, an SSHCP Steering Committee was formed to provide public stakeholder input into the development of the program. As initially constituted, this committee consisted of an equal number of members representing the regulatory, agricultural, development, and environmental stakeholders, as well as federal, state, and Sacramento County agency representatives.

In September 1996, the Steering Committee began to meet regularly to provide input regarding the goals and principles that it felt should guide the development of the SSHCP. The Steering Committee also formed two subcommittees to address biological and economic issues and identified members for these stakeholder subcommittees. Experts with local knowledge participated as science advisors to develop background information and baseline data about the Planning Area. In the late 1990s, funding was insufficient to make substantial progress, and work on the SSHCP halted.

In 2002, work began again on the SSHCP, which provides the foundation for the current Plan. Following the incorporation of the City of Elk Grove in 2000 and the City of Rancho Cordova in 2003, the local agencies with land use authority (Sacramento County and the Galt, Rancho Cordova, and Elk Grove) established¹ a strong collaboration to complete the SSHCP process successfully. A committee consisting of the land use authority Permit Applicants—the Local Agency Working Group—was established to consider each jurisdiction’s interests in the Plan.

2006–2011

By late 2006, a Preliminary Administrative Draft SSHCP was completed and released to stakeholders for input. The Conservation Strategy of this preliminary plan considered all vernal pools within the Planning Area to have the same habitat value. The Conservation Strategy associated with this assumption is described in Section 2.1.5 as a potential alternative (i.e., “Preserve 50% of all Vernal Pools in the Planning Area”). However, just before the release of the 2006 Preliminary Draft SSHCP, the USFWS released the *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (Vernal Pool Recovery Plan) (USFWS 2005). The information in the Vernal Pool Recovery Plan prompted the Permit Applicants and stakeholder groups to change the focus of the SSHCP and to place greater conservation value on the vernal pools and other aquatic habitats located within the two vernal pool Core Recovery Areas now designated within the Planning Area (USFWS 2005). Those vernal pool Core Recovery Areas included the Mather Core Recovery Area (MCRA), located almost entirely within the Urban Services Boundary (USB), and the Cosumnes/Rancho Seco Core Recovery Area, located outside the USB in the southeastern portion of the Planning Area (Figure 1-1). The Vernal Pool Recovery Plan established targets for preservation of vernal pool species occurrences and habitat in each vernal pool Core Recovery Area for each species in the Vernal Pool Recovery Plan. The targets established by the Vernal Pool Recovery Plan form the basis of the alternative “Recovery Plan Alternative (Preserve 95% of the Vernal Pools in the MCRA)” that is discussed in Section 2.1.5.

In addition to the information provided by the Vernal Pool Recovery Plan, new information on vernal pool tadpole shrimp (*Lepidurus packardii*) became available (USFWS 2008), which showed much higher densities of vernal pool tadpole shrimp within the MRCA than within any other part of that species’ range, including the south part of the Planning Area and the Cosumnes/Rancho Seco Core Recovery Area.

During this period, the previously mentioned Local Agency Working Group evaluated comments and recommendations received from the Steering Committee, the stakeholder subcommittees, and the public. Scientific data on the ecology of the Planning Area was

¹ Note that in the context of this Plan, the word “establish” is synonymous with “create.”

updated. Through this process, the list of Covered Species was revised several times after the 2006 Preliminary Draft SSHCP. By 2010, 10 native species had been removed from the 2006 list of Covered Species. Certain native species were removed for one or more of the following three general reasons:

1. New information about the status of the species over the species' range indicated the species is unlikely to be listed under the federal Endangered Species Act (ESA) or the California Endangered Species Act (CESA) during the proposed permit term.
2. The Plan preparers, Wildlife Agencies, and local species experts were not able to identify areas of breeding, feeding, or sheltering habitat for the species within the Planning Area.
3. The Permit Applicants, the stakeholder groups, and the Wildlife Agencies determined that the species could not be adversely impacted by any of the proposed Covered Activities.

The following native species were considered but removed from the list of SSHCP Covered Species in 2006:

- American peregrine falcon (*Falco peregrinus anatum*)
- Bald eagle (*Haliaeetus leucocephalus*)
- Golden eagle (*Aquila chrysaetos*)
- Long-eared owl (*Asio otus*)
- Merlin (*Falco columbarius*)
- Sharp-shinned hawk (*Accipiter striatus*)
- Short-eared owl (*Asio flammeus*)
- White-faced ibis (*Plegadis chihi*)
- Yellow-breasted chat (*Icteria virens*)
- Ringtail (*Bassariscus astutus*).

Although the Permit Applicants no longer sought incidental take authorization for these species, the Permit Applicants and stakeholder groups recognized that these native species would directly and indirectly benefit from the SSHCP Conservation Strategy.

For the 2010 Administrative Draft SSHCP, the Permit Applicants and stakeholder groups expanded the western boundary of the Planning Area to include agricultural lands located west of Interstate (I-) 5, which would allow the Plan to consider alternative ways to conserve Swainson's hawk (*Buteo swainsoni*) foraging habitat.

The regulatory agencies (USFWS, CDFW, USACE, EPA, and RWQCB) developed a map in 2011 that identified all important aquatic resources and Vernal Pool habitat remaining inside and adjacent to the designated MCRA. This map of aquatic resource conservation was informally called the "blue

line map” but is labeled as the “2011 Agency Conceptual Design” in the maps prepared around that time. This map identified 76% of remaining vernal pools in the MCRA for preservation but did not take into account the feasibility of acquiring these parcels. The 2011 Agency Conceptual Design map formed the basis of an alternative discussed further in Section 2.1.5.

A subsequent map (“2011 USFWS Most-Essential Habitat”) was prepared by USFWS staff to identify areas where the most valuable vernal pool species habitat should be preserved in the MCRA, and identified preservation of 49% of Vernal Pool ecosystem landscape that remained in the MCRA in 2011. The 2011 USFWS Most-Essential Habitat map formed the basis of the alternative “Preserve 49% of the Vernal Pools within the MCRA” that is discussed in Section 2.1.5.

2012–Present

From 2012 to the present, several modifications were made to the SSHCP to further refine the document’s impacts analysis and to enhance the SSHCP Conservation Strategy. In early 2012, the SSHCP Plan Partners, the regulatory agencies, and a select group of local experts with specific knowledge of SSHCP Covered Species held several meetings to discuss how the SSHCP Conservation Strategy could be crafted to maximize preservation of the Vernal Pool ecosystem within the Urban Development Area (UDA)². The meetings resulted in tentative points of agreement that set the foundation for the SSHCP Conservation Strategy as it is currently described in the SSHCP. The main points of agreement are summarized as follows:

- The approach to conservation within the UDA will be a hybrid approach with the combination of hardline preserves being delineated where preserves could be negotiated with landowners coupled with a criteria-based approach where preserves could not be negotiated with willing landowners at that time.
- Hardline preserves will be shown for five projects (Arboretum, Sun Creek, Cordova Hills, Excelsior Estates [now known as Jackson Township], and New Bridge).
- Criteria are established for three zones within or adjacent to the MCRA. (“Adjacent” is defined as within 1 mile of the existing MCRA boundary.)

² As discussed in Section 1.1.1, the term Urban Development Area (UDA) is used by the EIS/EIR to discuss all lands where new urban development projects or activities could occur under the No Action/No Project Alternative, or where new urban development Covered Activities could occur under the two action alternatives. Therefore, the term “UDA” means all lands within the Sacramento County USB boundary that are also within the Planning Area (this includes lands within the Rancho Cordova city limits that are within the Planning Area); and all lands within Galt’s city limits and within the City of Galt’s sphere of influence (see Section 1.1.1 and Figure 1-1).

- In order to meet regulatory agency concerns that the combined hardline preserve and criteria do not provide sufficient acquisition to mitigate for anticipated take, the Plan will specify that an additional 500 “flexible” acres will be acquired within or adjacent to the MCRA.
- The large Landscape-level preserve outside of the UDA is increased from 10,000 acres to 10,500 acres.
- An ordinance will be drafted and issued concurrently with the Draft EIS/EIR to provide assurances that incompatible practices do not irreparably harm potential resources (particularly Vernal Pool landscapes).

In addition to determining an acceptable approach to conservation within the MCRA because of its importance in the conservation of vernal pool tadpole shrimp, Sacramento Orcutt grass (*Orcuttia viscida*), and slender Orcutt grass (*Orcuttia tenuis*), the Plan Partners and the regulatory agencies also made several adjustments to SSHCP Land Cover Type Classifications. These modifications improved the baseline map that is used to calculate impacts that will result from the implementation of Covered Activities and is used to guide preservation of Covered Species habitat. The changes to the Land Cover Type Classifications include the following:

Low-Density Development Land Cover Type

Initial mapping underrepresented the acres of upland habitats (e.g., Valley Grassland) in areas characterized by small parcels (less than 5 acres in size). Specifically, many backyard areas within agricultural-residential development were mapped as grassland, and a number of larger fields were mapped as Low-Density Development. To correct these errors, all Low-Density Development cover types were reviewed against aerial photos and were adjusted to reflect the correct cover type.

Vernal Swale Land Cover Type

The Vernal Swale land cover type was removed as an SSHCP land use classification. Any feature that was classified as a Vernal Swale was reclassified as a Swale.

Vernal Impoundment Land Cover Type

The Vernal Impoundment land cover type was removed as an SSHCP land use classification. Vernal impoundments outside of the UDA were reclassified as Vernal Pool. Within the UDA, most vernal impoundments were reclassified as Vernal Pool, and some were reclassified as other Seasonal Wetland cover types, where appropriate.

Seasonal Impoundment Land Cover Type

The Seasonal Impoundment land cover type was removed as an SSHCP land use classification. Seasonal impoundments outside of the UDA were reclassified as Seasonal Wetland. Within the

UDA, seasonal impoundments outside of the MCRA were reclassified as Seasonal Wetland or Open Water. Within the MCRA, most seasonal impoundments were reclassified as Vernal Pool.

Stream/Creek (VPIH) Land Cover Type

The Stream/Creek Vernal Pool Invertebrate Habitat (VPIH) land use classification was created to capture VPIH that occurs within stream or creek channels.

During the winter of 2014, the Plan Permittees and the regulatory agencies developed a Vernal Pool watershed map that was prepared to help plan preserves to reduce the indirect impacts to Vernal Pool features covered under the SSHCP. The map is also used to calculate indirect impacts that will result from the implementation of a Covered Activity. The models are specifically designed for the portion of the Southeastern Sacramento Valley Vernal Pool Region (Keeler-Wolf et al. 1998; USFWS 2005) that is located in south Sacramento County.

Final adjustments were made to the Planning Area that included the removal of the Aerojet property and the removal of the City of Elk Grove to accommodate their requests to be dropped from the Plan. These modifications necessitated major adjustments to the Plan, including a new impacts analysis and adjustments to the Conservation Strategy. In addition to the changes mentioned previously, the Plan Partners also made some minor adjustments to the placement of infrastructure within the Planning Area to reduce impacts to Covered Species habitat. These adjustments included the minor realignment of roadways, water supply lines, and sewer lines.

2.1.3 Alternatives Considered

The lead agencies evaluated a range of reasonable project alternatives for an HCP in south Sacramento County. Ideas for potential alternatives came from a variety of sources, including the SSHCP development process, the public scoping process under CEQA and NEPA, and input from the lead and cooperating agencies. The following categories of potential alternatives were considered by the lead agencies. All alternatives considered were different types of conservation plans that varied in the ways described below:

- **Different permit terms³**—For example, include a 30-year permit term consistent with the term of the adopted General Plans, or include a longer term consistent with other development scenarios, such as the expected 50-year period needed for “full buildout⁴”

³ The permit term is the time period in which incidental take associated with all Covered Activities is authorized by the Incidental Take Permits (ITPs), and the time period in which assembly of the Preserve System and all other aspects of the Conservation Strategy must be successfully completed.

⁴ “Full buildout” means all currently undeveloped lands that are zoned for, or are ultimately planned/contemplated for, future urban development (in the adopted general plans of the Permit Applicants) would become developed. Full buildout will include some open space and conservation lands within the areas planned for urban development.

of Sacramento County’s approved USB and the other components of the UDA as described in Section 1.1.1.

- **Different Covered Species**—For example, include only species currently listed as threatened or endangered under ESA or CESA, or also include all or some unlisted species that may become listed during the permit term, or also include other species of local concern.
- **Different Planning Area boundary**—Smaller, larger, or differently shaped Planning Area. For example, the Planning Area size could include all undeveloped lands within south Sacramento County, or limit the size of the Planning Area to include only undeveloped lands within Sacramento County’s approved USB, or include undeveloped lands within the Elk Grove sphere of influence (SOI), or also include undeveloped lands west of I-5.
- **Different types of Covered Activities**—In addition to covering future urban development and associated infrastructure activities, consider covering other types of activities that are under the jurisdiction of a Permit Applicant, such as the operation and maintenance of their existing facilities within the Planning Area.
- **Different amounts or frequency of Covered Activities**—For example, include greater or smaller amounts of new urban development within each Permit Applicant’s jurisdiction.
- **Different Conservation Strategy elements**—Consider different types, locations, total amounts, or frequency of implementing certain conservation measures. For example, include different amounts or different locations of avoidance/preservation of vernal pools and other aquatic resources.

2.1.4 Alternative Formulation and Screening

Project alternatives were identified and screened using three tiers of criteria. Potential alternatives that met the screening criteria in the first tier were carried forward to the second tier, and then those that met the screening criteria in the second tier were carried over to the third tier. Only the alternatives that met the criteria for all three tiers were carried forward in this EIS/EIR for detailed study. EIS/EIR Appendix E contains a detailed description of how and why alternatives were screened from further analysis.

As discussed in Section 2.1.1, NEPA regulations and CEQA Guidelines require that the EIS/EIR include action alternatives that satisfy the following three criteria:

1. Achieves the stated purposes, needs, and objectives
2. Addresses one or more of the significant issues identified during scoping; avoids or substantially lessens potentially significant impacts
3. Is feasible, practicable, and reasonable

Alternatives in the EIS/EIR were screened using the three previously listed criteria, which are described in greater detail below. Alternatives that met those three criteria were then evaluated to be consistent with the guidance in the CWA Section 404(b)(1) Guidelines.

1. Purpose, Needs, and Objectives – First Tier Screening Criteria

The first tier criteria asked if the alternative would achieve the stated purposes, needs, and objectives. A purpose of the proposed federal action is to comprehensively protect and conserve multiple ESA- and CESA-listed species and other native species; to conserve, enhance, and restore the habitats and ecosystems upon which these native species depend, including aquatic resources and aquatic habitats; and to ensure the long-term survival of these species for the continuing benefit of the American people in Sacramento County, California. This purpose and need statement is supported by a list of underlying objectives identified by the lead agencies for the project. Potential alternatives were evaluated through the first tier screening criteria using the following question:

- Would the alternative meet Objectives 1–14 listed in Section 1.3.3?

To advance to the second tier, the answer to most or all of these questions had to be “yes” or “possibly.” If the answer to the questions was “no” or “not likely,” the alternative was screened out at that point.

2. Significant Issues and Impacts – Second Tier Screening Criteria

The second tier criteria considered whether the potential alternative addresses one or more of the significant issues identified during internal scoping and public scoping and whether the alternative would avoid or substantially lessen any significant adverse environmental effects (see Section 1.4.2). Potential alternatives that advanced to the second tier of screening were evaluated using the following question:

- Would the potential alternative address one or more significant issues related to the proposed action, and would the potential alternative avoid or substantially lessen any of the significant adverse environmental effects of the proposed project?

If the answer to the question was “yes,” “possibly,” or “unknown,” the potential alternative was carried forward for third tier screening. If the answer was “no” or “not likely,” then the potential alternative was not carried forward for detailed study in the EIS/EIR.

3. Feasible, Practicable, and Reasonable – Third Tier Screening Criteria

The third tier criteria focused on CEQA’s concept of feasibility and NEPA’s principle of reasonableness. As discussed in Sections 2.1.1 and 2.1.4, alternatives evaluated in an EIR should be

feasible. CEQA defines a “feasible” alternative as capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors. Under NEPA, reasonable alternatives are technically and economically capable of being accomplished in a successful manner and within a reasonable period of time, taking into account environmental, social, legal, technological, and economic factors.

Therefore, under both CEQA and NEPA, the screening of alternatives can consider economic and social factors, as well as legal and technical feasibility. Project Objectives 15–18 identify planning and development criteria that must be met for an alternative to be considered feasible, practicable, and reasonable. Potential alternatives were evaluated through the third tier screening criteria using the following question:

- Would the alternative meet Objectives 15–18 listed in Section 1.3.3?

If all answers to whether an alternative would achieve all of the third tier screening criteria were “yes” or “possibly,” the potential alternative is described in this EIS/EIR. If the answers to any of these questions were “no” or “not likely,” the potential alternative was rejected for detailed study, and was not considered further.

Criteria to Determine Compliance of Alternatives with the 404(b)(1) Guidelines

In addition to the previously described CEQA and NEPA considerations, alternatives to adverse effects on the aquatic ecosystem must be evaluated by USACE pursuant with the requirements of the Section 404(b)(1) Guidelines. The alternatives analysis conducted in an EIS should be thorough enough to use for both the public interest review and the Section 404(b)(1) guidelines, where applicable; **however, on a case-by-case basis, additional information may be necessary. As discussed in Section 1.5.4, as part of its compliance documentation with EPA’s 404(b)(1) Guidelines, the USACE will also consider additional information outside the purview of the NEPA process for this project.** ~~Under the USACE public interest review, for activities where there are unresolved conflicts as to resource use, USACE must evaluate the practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed structure or work (33 CFR 320.4(a)(2)(ii)).~~ As explained in Section 2.1.1, under the Section 404(b)(1) Guidelines, USACE must evaluate the practicability of alternatives in light of the overall project purpose (40 CFR 230.10(a)). Under the Section 404(b)(1) Guidelines, USACE must evaluate the following to determine if each alternative is practicable:

- Availability
- Overall project purpose
- Costs
- Logistics
- Existing technology

- Adverse effects on the aquatic ecosystem
- Other significant adverse environmental consequences.

If the answers to the seven questions below were “not likely” or “unknown,” the potential alternative is considered in this EIS/EIR. If the answers to any of these seven questions were “likely” or “yes,” the potential alternative failed the screening, and consequently, is not considered in detail in this EIS/EIR. The seven questions are as follows:

1. Would the marginal costs of the potential alternative be so substantial that a reasonably prudent public agency would not proceed with the alternative?
2. Would the marginal costs of the potential alternative be so substantial that it would be impractical to proceed with the alternative?
3. Would the potential alternative take so long to implement, compared with the proposed action, that it would not meet the project purpose or objectives within an acceptable time frame?
4. Would the potential alternative require technology or physical components that are clearly technically infeasible based on currently available science and engineering for the scope of the potential alternative?
5. Would construction, operation, and/or maintenance of the potential alternative violate any federal, state, or local statutes or regulations?
6. Would the potential alternative involve an outcome that is clearly undesirable from a policy standpoint in that the outcome could not reflect a reasonable balancing of relevant economic, environmental, social, and technological factors?
7. Would the potential alternative involve an increase in adverse effects to the aquatic ecosystem?

2.1.5 Alternatives Considered and Not Carried Forward for Detailed Analysis

As discussed in Section 2.1.2, a conservation plan for southern Sacramento County has been under development in some form for approximately 20 years. During this time, many alternatives that considered different Planning Area boundaries, protection of different natural resources, different Covered Species, different conservation strategies, and other elements have been considered.

The SSHCP is the culmination of countless revisions and requests from stakeholders and regulators. The alternatives carried forward for detailed analysis include a comprehensive Conservation Strategy that endeavors to strike the balance of preservation, avoidance, minimization, and mitigation to reach economically feasible, beneficial outcomes. The NEPA process and identification of alternatives for the SSHCP has been ongoing with the formulation of

the SSHCP for over a decade. Several alternatives are described in Section 2.1.3. Many of these alternatives were not carried forward because they were not feasible or did not meet the project objectives. Over time, numerous USFWS-, CDFW-, and USACE-recommended avoidance measures were incorporated into the proposed action, and earlier SSHCP versions (alternatives) were not carried forward in favor of an alternative with less adverse impacts than some of the earlier iterations of the SSHCP. For example, over time the currently proposed Stream Setbacks, the protection of micro-watersheds,⁵ and different types of utility and road realignments that avoid impacts to species and aquatic resources were added.

The lead agencies screened all potential alternatives following the process outlined in Section 2.1.4. The following sub-sections describe the alternatives considered and not carried forward based on one of the screening criteria outlined previously. These alternatives are organized into two groups: those that were proposed during the multiyear development of the SSHCP, and those that were suggested by commenters during the public scoping of the EIS/EIR (see Section 1.4). EIS/EIR Appendix E presents three tables that provide information regarding the reasons an alternative was not carried forward for detailed study in the EIS/EIR.

All Habitat Preservation and Project Mitigation is Located Outside of the USB

To allow development on all remaining undeveloped lands within Sacramento County's USB boundary, this alternative proposed all species habitat and aquatic resource avoidance, mitigation, and conservation would be located outside of the USB boundary. This was a primary component of the initial Conservation Strategy proposed by the Permit Applicants during the early period of SSHCP preparation (see Section 2.1.2). Under this potential alternative, approximately 28,000 acres of new development and associated infrastructure could occur inside the USB boundary, and all of the more than 30,000 acres of required habitat preservation would occur in the Planning Area outside the USB compared to the proposed action, which includes over 6,900 acres of habitat preservation inside the USB and over 27,500 acres outside the USB (Table 2-8) and assumes the remaining natural land covers within the USB would eventually be urbanized (approximately 33,500 acres; Table 2-4).

This alternative failed the first screening criteria because it would not achieve many of the purposes and objectives identified in Section 1.3.3. Objectives 1, 2, 3, 10, and 11 for maintaining the functions of aquatic resources in the Planning Area would not be achieved. This alternative would not allow for establishment of habitat linkages between new preserves in the USB and existing preserves outside the USB, conflicting with Objective 4. This alternative would not protect occurrences of narrowly distributed plant species such as Sacramento Orcutt grass and

⁵ Refer to EIS/EIR Appendix D for AMM STREAM-1, AMM STREAM-2, AMM STREAM-3, AMM UTILITY-1, AMM UTILITY-2, and AMM UTILITY-4.

slender Orcutt grass that are known to occur within the USB, conflicting with Objective 8. Impacts to state and federally listed species and their habitats and impacts to aquatic resources would not be avoided to the maximum extent practicable, conflicting with Objectives 9 and 10. This alternative would not achieve Objective 14 because it would not preserve any of the MCRA, an area necessary for the recovery of 12 Planning Area species (USFWS 2005) and an especially important part of the endangered vernal pool tadpole shrimp range (USFWS 2007a). In addition, limiting preserves to the areas outside the USB would not satisfy the purpose and need to maintain the existing native species richness and natural communities in the Planning Area. For these reasons, this alternative was not carried forward for detailed analysis.

Preserve 50% of All Vernal Pools in the Planning Area

This alternative was considered by the Permit Applicants early in the initial period of SSHCP preparation (prior to the publication of the Vernal Pool Recovery Plan (USFWS 2005)) and would preserve a minimum of 50% of the vernal pools (wetted acres) remaining within the Planning Area at that time within new and existing preserves. This alternative would result in only 285 acres of new Vernal Pool preservation in the Planning Area compared to the proposed action, which would result in almost 1,000 acres of new Vernal Pool preservation and almost 400 acres of re-establishment (Table 8-9) in the Planning Area. The proposed action would preserve approximately 89% (Table 8-8) of the vernal pools within the Planning Area within new and existing preserves. The level of habitat preservation provided by this “Preserve 50%” alternative could not achieve several of the stated purposes and objectives (see Section 1.3). For example, this alternative would not provide sufficient preservation of vernal pools to maintain the existing distribution of native animal and plant species in the Planning Area, and therefore, it would not achieve Objective 1 (Section 1.3). This alternative would not provide sufficient preservation of Vernal Pool habitat to maximize protection of native plant and animal species or their ecosystems, which would not achieve Objective 2. This alternative would also not achieve Objective 3 because it would not provide large blocks of interconnected species habitat. This alternative would not achieve Objective 9 because it would not provide sufficient Vernal Pool preservation to avoid or minimize impacts to state and federally listed species and their habitats to the maximum extent practicable. This alternative may not achieve Objective 11 because it would make it less likely that the project could achieve no net loss of watershed function. In addition, it would not achieve Objective 14 because it would not provide sufficient preservation in the vernal pool Core Recovery Areas that are now designated within the Planning Area (USFWS 2005). For these reasons, this alternative would not achieve the stated purposes and objectives for a conservation plan implemented in south Sacramento County. Therefore, this alternative failed the first screening criteria and was not carried forward for detailed analysis.

Maximize Protection of Vernal Pool Wetted Acres in the MCRA Alternative

This alternative was derived from recovery criteria for the vernal pool tadpole shrimp in the MCRA (USFWS 2005) to maximize protection of Vernal Pool wetted acres within the MCRA. It was thought that vernal pool tadpole shrimp would be a good umbrella species for the purpose of developing potential conservation scenarios for the MCRA because vernal pool tadpole shrimp are distributed in vernal pools throughout the MCRA and co-occur in vernal pools or complexes with other listed or rare species in the MCRA. For the purposes of developing maps for potential conservation scenarios, the Vernal Pool Recovery Plan's criterion of 95% of suitable habitat was equated to wetted acres.

Urban development within Sacramento County continued from 2005 to the present, and projects meeting the regulatory requirements of CWA 404 and ESA received local and federal permits years subsequent to 2005. Due to development that has occurred since initial conception of this alternative, this alternative is no longer feasible based on existing conditions and was not carried forward for detailed analysis.

Preserve 76% of the Total Acreage of the MCRA

In 2011, regulatory agencies participating in the SSHCP planning process worked together to delineate a map of important aquatic resources and Vernal Pool habitat remaining in the MCRA (described in Section 2.1.2 as the "blue line map" or "2011 Agency Conceptual Design"). The Conservation Strategy depicted on this map would preserve 76% of the approximately 24,245-acre MCRA.

The large amount of Vernal Pool ecosystem preservation within the MCRA boundary would limit planned urban development within the USB, which overlaps with the MCRA (County of Sacramento 2011; City of Rancho Cordova 2006). This would shift development pressure to other areas that are currently unplanned for growth, since the development planned within the MCRA/USB occurs simultaneously with other regional planned development. For this reason, restrictions in the MCRA/USB would move development pressure to rural areas that are currently outside the USB and/or adjacent cities. These rural areas are typically large agricultural parcels that often support high-quality aquatic resources and species habitat because the inventory of properties with less constraint have been largely developed or are currently planned for development within the USB and adjacent cities. Therefore, this alternative would not achieve Objective 1 and Objective 5, which require protection of enough habitat to conserve every Planning Area Covered Species, including Swainson's hawk and white-tailed kite (*Elanus leucurus*) foraging habitat.

The 76% requirement for Vernal Pool landscape preservation within the MCRA/USB would reduce the available development fees to pay for acquisition of Cropland and Irrigated Pasture-Grassland in the SSHCP Preserve System or would increase fees. Typically, the land prices within the USB are greater than outside the USB, and the 2011 Agency Conceptual Design map did not consider the cost of acquiring a large percentage of lands within the USB for permanent habitat preservation. Analysis by the Permit Applicants determined that it would be economically infeasible for the SSHCP to acquire all parcels needed to achieve the Conservation Strategy mapped in the 2011 Agency Conceptual Design. Under this alternative, the development fees would be higher than fees charged by other HCPs, thus not achieving Objective 15. This alternative would not meet Objective 16 because it would limit urban development in the USB and potentially result in expansion outside currently adopted SOIs for Galt and Rancho Cordova and the Sacramento County USB. Objective 16 discourages expansion beyond these boundaries to maintain sound land use planning principles (e.g., consolidate development within USB and cities to support the efficient provision of utilities and infrastructure; support viable transit; and maintain compliance with land use and air quality regulations such as Assembly Bill 32, Senate Bill 375, and the Clean Air Act). This alternative may also require exercising of eminent domain to acquire some parcels within the MCRA, which is not consistent with Objective 18.

Because this alternative would not achieve several purposes and objectives (Section 1.3.3), this alternative failed the third screening criteria and was not carried forward for detailed analysis.

Preserve 49% of the Total Acreage of the MCRA

As described in Section 2.1.2, the USFWS developed a MCRA Conservation Strategy map in 2011 called the “2011 USFWS Most-Essential Habitat.” This Conservation Strategy map identified the most valuable Vernal Pool habitat within the MCRA. The acreage of the “most-essential” Vernal Pool habitat was calculated to be 49% of the MCRA, or 11,880 acres of Vernal Pool ecosystem, which included preserving approximately 342 wetted acres of vernal pools in the MCRA. This amount of habitat preservation in the MCRA would not accommodate housing needs of the projected population growth in the Planning Area (see background discussion in Section 1.3 for information on projected population growth). Therefore, this potential alternative is not consistent with Objective 16, which requires the SSHCP to accommodate population growth and associated housing, economic development, and infrastructure within the currently adopted USB and SOIs of Galt and Rancho Cordova. In addition, this alternative would not achieve Objective 16 since it would lead to more development outside the USB, which would require the extension of utilities and infrastructure outside the USB; would lead to more urban sprawl with more vehicle trips; and would not promote compact mixed-use development that supports viable transit and walkable areas. The extension of utilities and additional transportation infrastructure

required by potential new development outside the USB would also conflict with Objective 17, which requires that master plans already approved by Sacramento County, Galt, Rancho Cordova, and Sacramento County Water Agency (SCWA) to be included as Covered Activities in any alternative analyzed in detail. These master plans focus on provision of new services to development within the USB and Galt's and Rancho Cordova's SOIs. Because this alternative would not achieve Objectives 16 or 17, it failed the third screening criteria and was not carried forward for detailed analysis.

Remove Lands Outside USB From the Planning Area Boundary

Under this potential alternative, the size of the Planning Area would be smaller. The new Planning Area would include the portion of the current Planning Area that is located within Sacramento County's USB and would exclude the areas of south Sacramento County that are outside the USB boundary. This alternative was identified during the scoping process for the EIS/EIR.

Under this potential alternative, the Planning Area covered by the SSHCP permits would not include the area of south Sacramento County that is outside the USB boundary. Therefore, the Planning Area would be limited to approximately 86,480 acres. Approximately 35,570 acres of that potential 86,480-acre Planning Area are already one of the "developed" land cover types (see Table 8-1), and 10,585 acres are already Cropland, Irrigated Pasture-Grassland, Vineyard, or Orchard. Constraining the Planning Area to the USB boundary would not allow the SSHCP Conservation Strategy to establish large preserves of Vernal Pool ecosystem in the area south of the USB and would prevent the SSHCP from achieving many identified needs, purposes, and objectives (Section 1.3). For example, this alternative could not maintain in perpetuity each type of natural community present in south Sacramento County, as is required by Objective 1. This alternative would not protect large, contiguous blocks of species habitat, as required by Objective 4, and would not allow for full implementation of the existing transportation, utility, and other infrastructure master plans outside the USB, as required by Objective 15. Finally, because this alternative would require all preserves to be established inside the USB, the alternative would not allow sufficient urban development within the currently adopted SOIs for Galt and Rancho Cordova and currently adopted USB for Sacramento County, as required by Objectives 16 and 17. Because this alternative would not achieve several objectives, this alternative was not carried forward for detailed analysis.

Remove Lands West of I-5 from the Planning Area Boundary

Under this potential alternative, the size of the Planning Area would be smaller. The western border of the Planning Area boundary would stop at I-5, and the Planning Area would not include lands west of I-5. This alternative was identified during the scoping process for the EIS/EIR.

This alternative would establish all SSHCP Preserves in the Planning Area located east of I-5 and would not preserve Swainson's hawk foraging habitat or other natural land covers west of I-5 because portions of this area are thought to be at risk from flooding and future sea level rise. However, recent species habitat mapping indicates that the Planning Area west of I-5 (in and around Stone Lakes National Wildlife Refuge [NWR]) provides key roosting habitat for greater sandhill crane (*Grus canadensis tabida*) (USFWS 2007b). Establishment of new SSHCP Preserves west of I-5 could provide substantial benefit to the local greater sandhill crane wintering population by enlarging the roosting areas within Stone Lakes NWR and by preserving linkages to existing foraging habitat along the Cosumnes River corridor. This alternative would not achieve Objective 6, which requires establishment of such greater sandhill crane habitat linkages. Alternatives that preserve habitat only east of I-5 could also prevent the establishment of preserves that are consistent with Objective 2, which directs that preserves be located in areas that maximize protection of native plant and animal species and the ecosystems on which they depend.

In addition, this alternative would not achieve Objective 5 because preserved Cropland and Irrigated Pasture-Grassland would not be sufficient to provide adequate amount of foraging habitat for Swainson's hawk and white-tailed kite. There may not be sufficient willing sellers in the lands east of I-5 that would sell land or conservation easements at an appropriate price to meet all SSHCP habitat preservation objectives, and this alternative may not be able to offset the effects of Covered Activities on Swainson's hawk and on other bird Covered Species.

For these reasons, this alternative would not achieve several of the purposes and objectives listed in Section 1.3.3 and failed the first screening criteria. Therefore, this alternative was not carried forward for detailed analysis.

Reduce Impacts to the Highest-Quality Swainson's Hawk Habitat

This alternative would preserve most of the existing Cropland and Irrigated Pasture-Grassland within Preserve Planning Units (PPUs⁶) 4 and 6 of the Planning Area (Figure 2-1, Preserve Planning Units) to reduce impacts to important Swainson's hawk foraging and nesting habitat. This alternative was suggested at public scoping meetings (Section 1.4), and at those times, the entire SOI for the City of Elk Grove was still included in the Planning Area for the SSHCP. Future urban development in that SOI was expected to result in substantial loss of existing habitat, especially for Swainson's hawk and other special status species that use the Croplands and Irrigated

⁶ To assist with development of an adequate SSHCP Conservation Strategy, the Permit Applicants divided the Planning Area into eight Preserve Planning Units (PPUs) that encompass areas where important Covered Species resources are present and where habitat preservation would occur (see Figure 1-1 in the SSHCP document). These eight SSHCP PPU are geographic subdivisions of the Plan Area and were delineated to ensure that adequate Biological Goals and Measurable Objectives would be developed for biological resources in all parts of the Plan Area, including the location and implementation of the SSHCP Preserve System.

Pasture-Grassland that are currently present in much of the Elk Grove SOI. When Elk Grove withdrew from the SSHCP planning effort in 2014, all of the lands that are in Elk Grove’s jurisdiction were also removed from the Planning Area. The removal of the current Elk Grove SOI boundaries from the Planning Area greatly reduced the acres of planned new urban development and loss of quality Swainson’s hawk habitat requested in the SSHCP’s Incidental Take Permits (ITPs). As a result, the alternative would no longer avoid or substantially lessen environmental effects of the proposed project, and it would not address a significant issue related to the proposed action; therefore, the alternative failed the second screening criteria, and analysis of this alternative was not carried forward subsequent to the participation of Elk Grove in the SSHCP.

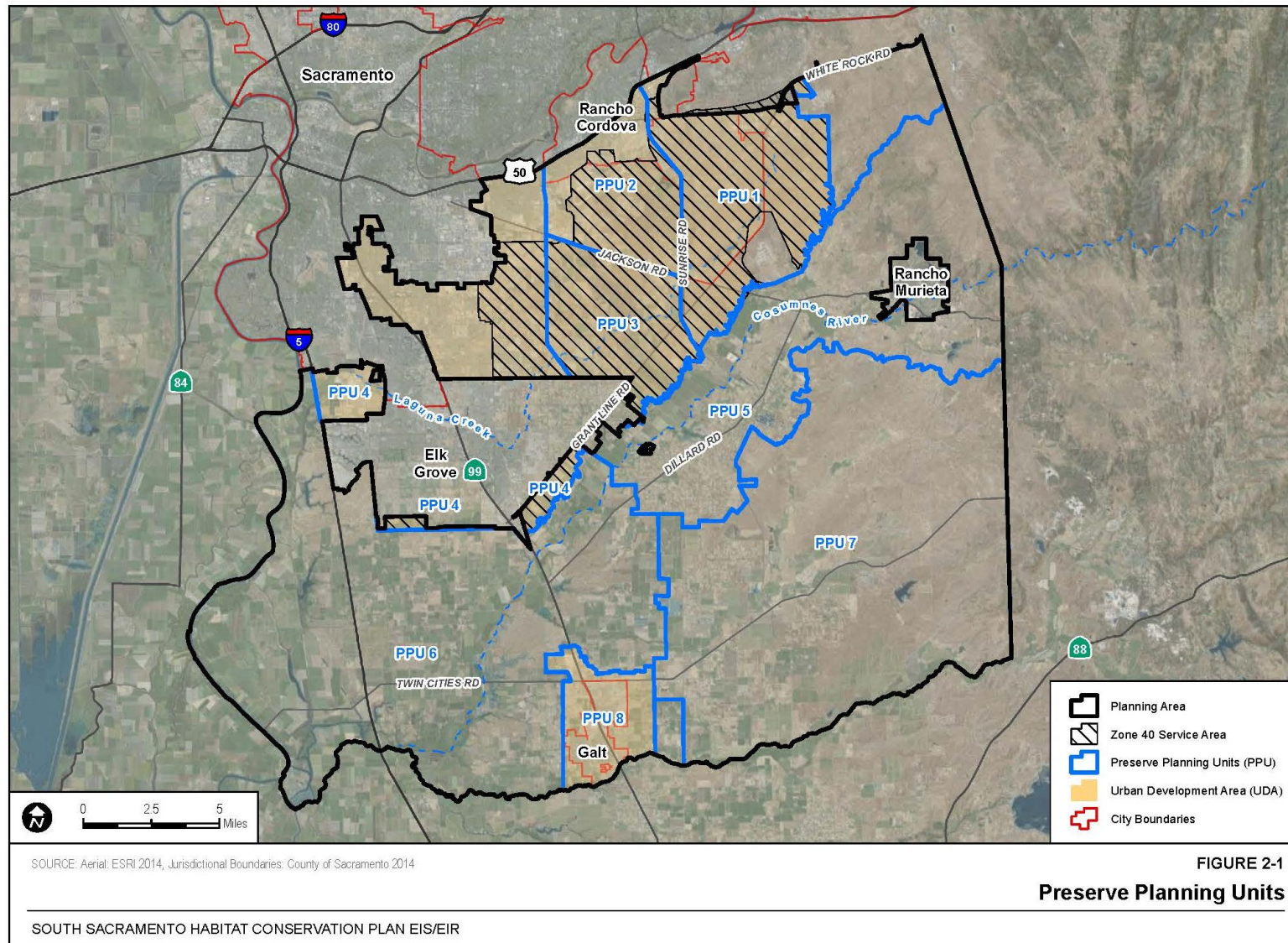
2.1.6 Alternatives Carried Forward for Detailed Analysis

The following two EIS/EIR Action Alternatives were carried forward for detailed analysis in the EIS/EIR because they are practicable, include provisions to reduce impacts, address the existing issues and underlying needs present in the Planning Area, and will achieve the purposes and objectives presented in Section 1.3:

- **Proposed Action/Proposed Project Alternative (Section 2.3).** The Permit Applicants (future Plan Permittees) would implement categories of Covered Activities and a Conservation Strategy over a 50-year permit term. This is described in the SSHCP document that was prepared by the Permit Applicants and will be included in the ESA and CESA incidental-take permit application packages submitted to the USFWS and CDFW.
- **Reduced Permit Term Alternative (Section 2.4).** The Permit Applicants would implement the same categories of HCP Covered Activities as in the proposed SSHCP but over a shorter 30-year incidental-take permit term. The Permit Applicants would implement a similar HCP Conservation Strategy, but this strategy would result in a smaller, less comprehensive preserve system in the Planning Area (relative to the interconnect SSHCP Preserve System described in the Conservation Strategy of the Proposed Action/Proposed Project Alternative).

In addition to the two Action Alternatives studied in this EIS/EIR (i.e., the Proposed Action/Proposed Project Alternative and the Reduced Permit Term Alternative), a No Action/No Project Alternative is studied in detail. As discussed in Section 2.1.1, a No Action/No Project Alternative must be included in any EIS or EIR.

Figure 2-1 Preserve Planning Units



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2.2 NO ACTION/NO PROJECT ALTERNATIVE

Under the No Action/No Project Alternative, the SSHCP would not be approved or implemented, and no comprehensive ESA and CESA ITPs would be issued to the Permit Applicants for species impacts resulting from future development projects and activities within the Planning Area.

Also, the local agencies (that are Land Use Authority Permittees under the SSHCP) would not implement a local Aquatic Resources Program (ARP) and associated local aquatic resource protection ordinances. Thus, there would be no local-level aquatic resources permitting program. In addition, the USACE would not develop a strategy for permitting these future projects and activities under CWA 404. Finally, the CDFW would not develop a streamlined permit strategy for the future development projects and activities, and the CDFW would not issue a Master Streambed Alteration Agreement (MSAA) to the Permit Applicants.

Under the No Action/No Project Alternative, project proponents (including local agencies and individual private developers) would continue to apply directly to the resource agencies for permits for species take under the ESA and CESA, as well as for CWA 404 authorizations for projects proposing to discharge dredged or fill material into wetlands and other waters of the United States, and for 401 and CDFW MSAA authorizations. Therefore, the No Action/No Project Alternative would continue the conventional project-by-project project regulatory reviews in which individual project developers apply for necessary project permits independently with each of the resource agencies with application review proceeding in a less systematic, comprehensive fashion.

2.2.1 Future Projects/Activities Likely Under the No Action/No Project Alternative

The types of future projects and activities expected in the Planning Area under the No Action/No Project Alternative are described in the following text.

Future Urban Development

All lands within the Sacramento County USB are zoned or ultimately planned for urban development, as described in the adopted *Sacramento County General Plan of 2005–2030* (Sacramento County General Plan) (Sacramento County 2011, 2014a). Similarly, all lands within Galt and the Galt SOI, as well all lands within the Rancho Cordova SOI are zoned or ultimately planned for urban development, as described in those adopted General Plans (Galt 2009; Rancho Cordova 2006) (Figure 1-1).

Five Urban Development Master Plans (Arboretum, Cordova Hills, Jackson Township, NewBridge, and SunCreek) for large urban development projects are currently under preparation or have recently been approved in the UDA. These five Urban Development Master Plans were designed

to comply with SSHCP requirements and include preserves that would likely be similar in size, acreage, and location under the No Action/No Project Alternative.

The No Action/No Project Alternative assumes that all lands zoned or ultimately planned/contemplated for urban development in these five adopted General Plans that are not already currently developed would eventually become developed, which the EIS/EIR terms “full buildout.” The Permit Applicants expect full buildout to occur over a 50-year period.

Although all lands within the Sacramento County USB are zoned or ultimately planned for urban development (County of Sacramento 2011, 2014a), not all of the land inside Sacramento County USB has specific urban land use designations at this time.

Full buildout would continue and include some on-site project avoidance of natural land covers⁷ through both designated preserves and open space within the boundaries of the urban development projects. Other preserves would continue to be outside the UDA as off-site mitigation for private and public projects inside and outside the UDA.

Expansion, Improvement, Maintenance, and Operation of Public Infrastructure Systems

In association with the expected future urban development, the public infrastructure systems such as water, wastewater, recycled water, stormwater, flood control, solid waste, and utility systems, as well as transportation systems, would be expanded or improved, as described in several local and regional infrastructure agency master plans and/or capital improvement programs (Sacramento Area Sewer District 2010, 2014; Regional San 2000, 2015; SCWA 2005).

Although it is not included in these regional infrastructure plans or capital improvement programs, the South Sacramento County Agriculture and Habitat Lands Recycled Water Project (Regional San 2015) is also assumed to proceed under the No Action/No Project Alternative. This project would include new pumping and water transmission pipelines in the UDA and water distribution pipelines outside the UDA.

The SCWA and the Sacramento Area Flood Control Agency would continue to separately construct water pipeline, pumping station, and flood control infrastructure maintenance and improvements that are not identified in their master plans or capital improvement projects. These miscellaneous minor improvements or maintenance efforts would serve individual

⁷ Natural land covers are those SSHCP land cover types that provide habitat for Covered Species and include Blue Oak Savanna, Blue Oak Woodland, Cropland, Freshwater Marsh, Irrigated Pasture-Grassland, Mine Tailings Riparian Woodland, Mixed Riparian Scrub, Mixed Riparian Woodland, Open Water, Orchard, Seasonal Wetland, Stream/Creek, Stream/Creek (VPIH), Swale, Valley Grassland, Vernal Pool, and Vineyard, as discussed in Table 8-1.

development projects or address newly discovered system vulnerabilities. All of the new and existing public infrastructure facilities would be operated and maintained.

Road Improvements

Existing roadways would continue to be expanded and improved in the Planning Area, as discussed in the adopted General Plans. The majority of this expansion and improvement would be within the UDA to serve the transportation needs of new development and increased population. However, roads outside the UDA would also be improved to facilitate transportation between developed areas as follows:

- Road improvements described in the Sacramento County General Plan Circulation Element and associated Transportation Plan map (Sacramento County 2014b)
- Road improvements in the City of Rancho Cordova as directed by the *City of Rancho Cordova General Plan* (Rancho Cordova General Plan) (City of Rancho Cordova 2006) and Capital Improvement Plan⁸ (Rancho Cordova 2013)
- Road improvements in the City of Galt and its SOI as directed by the *2030 Galt General Plan: Policy Document* (Galt General Plan) (Galt 2009)
- Minor roads in the Planning Area that are not specifically identified for expansion or improvement in adopted General Plans of Sacramento County or Galt or Ranch Cordova to serve new and existing development

2.2.2 Expected Regulatory Environment Under the No Action/ No Project Alternative

Permitting and Local Entitlement Process

The No Action/No Project Alternative assumes that new projects and activities would seek entitlements and permits as they do now, following the conventional project-by-project review process. For the local land use agencies (i.e., Sacramento County, Galt, or Rancho Cordova), this process includes the review of building permits, grading permits, and use permits, as well as parcel maps, subdivision maps, specific plans, and master plans. Depending on the project details, some projects would be subject to CEQA review. In addition, individual projects would continue

⁸ Capital Improvement Plans or Capital Improvement Programs, commonly referred to as CIPs, are short-range plans (typically over a 5–10 year horizon) that identify capital projects that an organization or public agency expects to develop. The definition of a capital projects can vary, but they generally include all long-lived infrastructure such as water facilities, sewers, streets, parks, and buildings, along with equipment. Utility providers often prepare and maintain utility master plans that are similar to CIPs.

to comply with any applicable policies contained in the adopted General Plans of Sacramento County, Galt, and Rancho Cordova.

Future Project Compliance with ESA and CESA

Under the No Action/No Project Alternative, projects subject to CEQA review would continue to be reviewed individually by the CDFW under the conventional project-by-project review process, and projects with the potential to result in the direct take of any state-listed species would be required to apply for an individual CESA incidental take permit under Section 2081(b) of the California Fish and Game Code. Similarly, the No Action/No Project Alternative would continue the existing project-by-project ESA-compliance process currently used by development projects and activities within the Planning Area. Currently, the most common way for development projects and activities in this Planning Area to receive their ESA clearance is through an ESA Section 7 consultation initiated by a federal agency, such as USACE, that is making a permit-issuance decision or another discretionary federal decision about the proposed project or activity. For example, **for** projects or activities that ~~could result in the direct fill or discharge to waters of the US~~ **must obtain** require USACE authorization under Section 404 of the Clean Water Act (CWA 404), ~~and~~ the USACE must ensure that their authorization **permit** decision complies with the ESA. Therefore, the USACE consults with the USFWS and/or the National Marine Fisheries Service (NMFS) on the potential impacts of their permit or authorization decision on federally listed species and designated Critical Habitat. As part of this ESA Section 7 consultation, the USFWS (or NMFS) typically prepares an ESA Section 7 Biological Opinion document, which identifies any species-impact avoidance and minimization requirements, as well as any habitat preservation requirements needed to compensate for the project impacts on federally listed species. The USACE will incorporate the terms, conditions, and requirements of the ESA Section 7 Biological Opinion into the project's CWA 404 permit authorization as a special condition. If the USFWS determines during ESA Section 7 consultation, that the project is likely to jeopardize the continued existence of a federal species, or that the project is likely to result in the destruction or adverse modification of Critical Habitat, that project could not proceed without modifications. However, many of the future projects and activities within the UDA would continue to be implemented without obtaining USACE authorization under CWA 404, and therefore would not be reviewed under ESA Section 7. These projects may continue to receive building permits from Sacramento County, City of Galt, or City of Rancho Cordova for construction in or near habitat for federally listed species, but if the project does not ~~cause~~ **result in a** direct fill or discharge of dredged or fill material into waters of the U.S., the project would not be required to request CWA 404 authorization from the USACE. Projects and activities that do not request a CWA 404 authorization are not likely to be reviewed under the ESA, and therefore, the project would not mitigate or compensate impacts to listed species. Especially, indirect impacts to species and species habitat that occur later in time are often unmitigated within the UDA, such as indirect

impacts that result from altered surface and subsurface hydrology (which changes vernal pool inundation regimes), unseasonal landscaping irrigation and nuisance flows in to vernal pool habitat, increased invasive plant species, species disturbance and mortality by domestic dogs and cats, human recreation, increased trash, and increased wildfire frequency. These Planning Area unmitigated indirect impacts generally occur when the aquatic resource and species habitat is located on an adjacent parcel with a different owner, and the aquatic resources are not shown to be part of the pending project when it is reviewed by the local land-use authority (e.g., Sacramento County, Galt, or Rancho Cordova), or there is no CEQA nexus, or no CWA 404 permit or NEPA is required.

As part of the individual project ESA and CESA consultations, USFWS or CDFW are expected to continue requiring projects to implement impact Avoidance and Minimization Measures (AMMs), which may include species surveys conducted using ~~USACE~~ USFWS or CDFW protocols, species specific construction timing restrictions (i.e., construction windows), equipment use restrictions, addition of buffers⁹ or setbacks to the project design, as well as other project-specific impact avoidance measures.

Currently, USFWS works with individual project proponents to include a “buffer” between the project’s footprint and any adjacent species occurrence or species habitat that could be indirectly affected by the project or activity. The width of the buffer/setback needed to effectively avoid or minimize project impacts to species is determined through project-by-project consultations with the USFWS and CDFW, and is based on site-specific conditions.

As a result of each individual consultation with the USFWS and CDFW, different types of ESA and CESA compensation or mitigation would continue to be required by individual projects to offset unavoided project impacts to listed species under the No Action/No Project Alternative:

- The project proponent avoids and permanently preserves species habitat at the project site (i.e., on site preserves), and provides an endowment and a management plan to maintain species habitat on those preserves;
- The project proponent purchases existing habitat in off-site areas, puts a conservation easement on the property, and provides an endowment and a management plan to maintain species habitat on those preserves by a third party (i.e., are “turn-key” preserves);
- In certain cases, the project proponent would be allowed to offset species impacts by purchasing credits at a USFWS or CDFW approved habitat conservation bank;
- or a combination of some or all of the above.

⁹ A buffer is the linear distance that a development footprint must be located away from the edge of a natural resource, such as species occurrence, an aquatic resource, or natural lands.

One of the Core Recovery Areas identified in the Vernal Pool Recovery Plan (USFWS 2005) is the MCRA. It is located largely inside Sacramento County's USB and is approximately 24,245 acres in size (Figure 1-2). Species populations and habitat present for which the MCRA is necessary for the recovery of species listed under the ESA, including the Sacramento Orcutt grass, slender Orcutt grass, vernal pool tadpole shrimp, and vernal pool fairy shrimp (*Branchinecta lynchi*), as well as Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*), legenere (*Legenere limosa*), mid-valley fairy shrimp (*Branchinecta mesovallensis*), and western spadefoot (*Spea hammondi*). Recovery Criteria are identified for each of these species in the 2005 Vernal Pool Recovery Plan. The MCRA is designated as a Zone 1 Core Recovery Area (USFWS 2005). Protection of habitat and species occurrences in Zone 1 Core Recovery Areas would support metapopulation dynamics, provide for reintroduction or introduction sites, protect known and undiscovered populations, and prevent the extinction or irreversible decline of several listed species, often including a narrowly endemic species.

The USFWS has tracked loss of habitat for Vernal Pool species within the MCRA since the Vernal Pool Recovery Plan was adopted (Holland 2009). Further, the vernal pool tadpole shrimp, vernal pool fairy shrimp, Sacramento Orcutt grass, and slender Orcutt grass are becoming increasingly imperiled across their range (USFWS 2007b, 2007c, 2008, 2009). The MCRA includes population occurrences and high-quality habitat for each of these species, including the highest densities and largest populations of vernal pool tadpole shrimp present within the species' range (USFWS 2007b). Due to these factors and a need to protect habitat and species population in the MCRA for recovery of Vernal Pool species, the USFWS Sacramento office prioritizes preservation of vernal pools within the MCRA over preservation of vernal pools elsewhere for projects that impact vernal pools within the MCRA.

Therefore, over the next 50 years, the USFWS is expected to require new development projects and activities to provide increasingly greater amounts of compensation for impacts to federal and state-listed species within the MCRA, due to the ongoing and projected level of demand for urban development land use in the MCRA, and corresponding decline in habitat conservation opportunities. Therefore, it would be increasingly difficult for individual project proponents to protect large blocks of suitable habitat when project mitigation (habitat preservation or compensatory mitigation) is a result of set-asides, and/or land acquisition and purchase. Likewise, conservation banks and mitigation banks are typically not economical to establish in areas targeted for urban development where land prices are high, such as the MCRA. Zone 40 is an existing special benefit zone created by the SCWA and established in 1985 and expanded in 2005. Zone 40 is mostly located within Sacramento County's USB, and includes portions of Rancho Cordova and Elk Grove (Figure 2-1). Approximately 21,936 acres of the total 24,245-acre MCRA is within Zone 40 portion of the UDA. A portion of the Zone 40 water supply is provided through the

Freeport Regional Water Project, which diverts surface water from the Sacramento River and conveys it to a treatment plant located within Zone 40.

A 2004 Memorandum of Agreement (MOA) (Sacramento County et al. 2004) was signed between the USFWS, Sacramento County, SCWA, and Regional San to ensure implementation of all conservation commitments and all terms and conditions associated with two USFWS Biological Opinions related to delivery of water to Zone 40 (USFWS 1999a, 2004). The MOA (Sacramento County et al. 2004) states that proposed new residential or commercial development projects within Zone 40 that will use water delivered by the SCWA through the Freeport Regional Water Project will first complete ESA consultation (informal or formal consultation, Section 10 or Section 7) with the USFWS before receiving any project approvals or entitlements from a local land use jurisdiction (e.g., Sacramento County or Rancho Cordova). The MOA requirements were a condition for the Freeport Regional Water Project construction permits. The 2004 MOA identifies conservation measures that the U.S. Bureau of Reclamation, the San Juan Water District, Sacramento County, SCWA, and the City of Folsom will implement to avoid or to mitigate the indirect impacts of delivering Freeport Regional Water Project water to new urban growth within Zone 40 (County of Sacramento et al. 2004). One MOA conservation measure is to expedite the completion of a regional HCP that would include regional conservation measures that could mitigate the indirect effects of providing Freeport Regional Water Project water to the new development planned within the Zone 40 area. However, until a regional HCP is approved, the MOA states that the SCWA will not provide new service¹⁰ from Freeport Regional Water Project facilities to any new building, development project, or new facility until the project proponent has complied with the ESA (Sacramento County et al. 2004). To assure this, Sacramento County and Folsom agreed to withhold all discretionary project approvals (e.g., grading permits and tentative/final map) for new projects intended to receive new service that could result in take of ESA-listed species until the project shows that it has complied with the ESA.

At the time of EIS/EIR preparation, the development projects proposed in the Zone 40 service area have demonstrated to Sacramento County that each proposed development project would have adequate groundwater supply without using surface water delivered by the Freeport Regional Water Project facilities. Therefore, the Zone 40 proposed development projects have obtained or are in the process of obtaining entitlements from Sacramento County (or from other local land use authority) based on the assumed water availability from other sources. Thus, there is no precedent to determine how much ESA mitigation will be required to offset the indirect

¹⁰ For the purpose of this MOA “new service” means service that was not in existence and would not exist absent the Freeport Regional Water Project.

impacts of Freeport Regional Water Project water deliveries to individual new urban development project within Zone 40.

However, because future development projects within Zone 40 must comply with the federal ESA before local land use authorities provide entitlements and discretionary project approvals, the lead agencies assume that the USFWS would begin to have earlier input on project designs within Zone 40. This earlier ESA avoidance and minimization input from the USFWS is expected to result in more effective on-site avoidance and minimization of species impacts under the No Action/No Project Alternative compared to the existing conditions, where projects were sometimes too far along in design to feasibly add the maximum avoidance or preservation species habitats, including vernal pools.

Future Project Compliance with Section 404 of the Clean Water Act

Aquatic resources regulated by CWA 404 often provide habitat for species listed under the CESA and ESA. As discussed above, prior to making a decision on a project's CWA 404 authorization, the USACE must assure that their authorization decision complies with the ESA by consulting with the USFWS (and/or NMFS) under ESA Section 7.

In addition, the USACE must assure that ~~their~~ CWA 404 authorizations comply with Section 106 of the National Historic Preservation Act (NHPA 106). The National Historic Preservation Act protects cultural resources that are listed or are eligible to be listed on the National Register of Historic Places. Therefore, the USACE would continue to consult with the State Historic Preservation Office under NHPA 106, as needed for individual projects that receive CWA 404 authorizations.

Proponents for individual projects or activities in the Planning Area that may result in fill or discharge to waters of the U.S. would continue to request CWA 404 authorization from the USACE. The USACE evaluates two types of permits under CWA 404: General Permits (nationwide, regional, and programmatic) and Individual Permits (Letters of Permission and Standard Permits). Under existing regulatory conditions, each project or activity applies individually to USACE for a CWA 404 authorization. For future projects or activities with minimal individual and cumulative environmental impacts, projects would continue to apply for CWA 404 General Permits (nationwide permits, or regional general permits). Projects or activities that result in impacts to aquatic resources that exceed the limits for use of a nationwide permit, do not meet the terms and conditions of a **nationwide general** permit, or are determined to have more than minimal impacts, would continue to require individual permits (standard permits or letters of permission). ~~CWA 404 applications for standard permits would continue to require additional analyses and procedures, and therefore would continue to add time, complexity, and uncertainty to the project schedule and budget.~~

For **proposed** discharges of dredged or fill material authorized under CWA 404, adverse impacts to waters of the U.S (WOUS) must be avoided and minimized to the extent practicable. For unavoidable adverse impacts, compensatory mitigation ~~is~~ **may be** required to replace the loss of functions and services of those wetlands and other waters. In 2008, the USACE and the U.S. Environmental Protection Agency (USEPA) jointly issued regulations for compensatory mitigation titled *Compensatory Mitigation for Losses of Aquatic Resources: Final Rule, 33 CFR Parts 325 and 332* (USACE and USEPA 2008). The term “compensatory mitigation” refers to the restoration, re-establishment establishment, enhancement, and/or preservation of wetlands, streams, or other waters specifically for the purpose of offsetting loss of waters of the US caused by authorized discharges of dredged or fill material.

To determine the amount of CWA 404 compensatory mitigation that is required, the USACE would continue to refer to the 2008 Compensatory Mitigation Rule and use the USACE South Pacific Division’s *Standard Operating Procedure for Determination of Mitigation Ratios* (2013) (or compensatory mitigation standards that are in use at the time of the project’s CWA 404 permit application review). The amount of compensatory mitigation would continue to be sufficient to replace lost aquatic resource functions and services, to the extent practicable. In cases where functional or condition assessments or other suitable metrics are not used to determine loss of functions and services, a minimum one-to-one acreage or one-to-one linear foot compensation ratio (i.e., a 1:1 mitigation ratio) required by the 2008 Compensatory Mitigation Rule would be ~~used~~ **assumed to be required**.

~~In addition to setting minimum compensatory mitigation amounts, t~~The 2008 Mitigation Rule establishes equivalent standards for types of compensatory mitigation ~~projects (33 CFR Part 332.2(b))~~. The three ~~types of~~ **general options for** compensatory mitigation ~~projects~~ are: ~~use of~~ mitigation banks **credits**, ~~use of~~ in-lieu fee programs ~~or credits~~, and permittee-responsible mitigation ~~projects~~. Use of mitigation banks **credits** and use of in-lieu fee programs **credits** are the preferred forms of CWA 404 compensatory mitigation under the 2008 Mitigation Rule, as they usually involve consolidating compensatory mitigation projects in ecologically appropriate locations using a watershed approach, they consolidate resources, ~~and they provide financial planning and scientific expertise (which often is not practical for permittee responsible mitigation projects)~~, they reduce temporal losses of functions, and they reduce uncertainty over mitigation project success. The 2008 Mitigation Rule would continue to require the USACE to consider compensatory mitigation options in the following order: 1) credits from a mitigation bank; 2) credits from an in-lieu fee program; 3) permittee-responsible mitigation under a watershed approach; 4) permittee-responsible mitigation through on-site and in-kind mitigation and; 5) permittee-responsible mitigation through off-site and/or out-of-kind mitigation.

In the 2011 Record of Decision (ROD) prepared by the USACE for the Sunridge Specific Plan EIS (SPK-2009-00511; USACE 2011), the USACE made a finding that, recognizing a significant cumulative loss of Vernal Pool wetlands within the MCRA, for any future unavoidable impacts to Vernal Pool wetlands within the MCRA, compensatory mitigation shall be:

1. Based on a method for assessing the functions of all wetlands and other waters of the U.S. on the project site;
2. Accomplished at a ratio of greater than 1:1, after considering direct and indirect impacts, temporal loss and difficulties creating vernal pool wetlands; and
3. Located within the MCRA, unless determined impracticable or inappropriate by the Corps.

Because these USACE findings are part of the existing regulatory environment, the above findings are expected to continue under the No Action/No Project Alternative. Therefore, the descriptions of the No Action/No Project Alternative presented in Sections 2.2.3 and 2.2.4 and the No Action/No Project Alternative impact analyses presented in Chapters 4–18 assume that future CWA 404 compensatory mitigation required for vernal pool losses inside the MCRA would be located inside or adjacent to the MCRA boundary. (However, it should be noted that the Sunridge Specific Plan ROD (USACE 2011) requirements apply only to vernal pools and not to other types of waters and aquatic resources, and that finding No. 3 of the Sunridge ROD provides the USACE some flexibility in judgment).

Therefore, as Vernal Pool wetlands within the MCRA continue to be lost, even if compensatory mitigation for lost Vernal Pool wetlands occurs within the MCRA, the USACE could recommend denial of one or more future CWA 404 applications, or the EPA could use their project veto authority under CWA Section 404(c). (It is also noted for clarity that, as part of the CWA 404 program's procedures, the USACE or EPA could make these decisions for other CWA 404 permit applications in other parts of the Planning Area for reasons involving availability of appropriate compensatory mitigation or based on other justifications relating to compliance with CWA 404 regulations).

Future Project Compliance with CWA 401 and Porter-Cologne Water Quality Control Act Project Compliance

Under CWA 401, projects and activities that require authorization of a federal license or permit that may result in the discharge of a pollutant into wetlands and other waters of the United States must also obtain a CWA 401 water quality certification from the state in which the discharge would originate. In California, the EPA has delegated the authority to grant water quality certifications to the State Water Resources Control Board (SWRCB), which are typically processed by the RWQCBs with local jurisdiction. A water quality certification

requires the project or activity to evaluate its potential impacts and implement appropriate measures to protect water quality and to comply with regulatory water quality standards.

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) is California's primary statute governing water quality and water pollution issues with respect to surface water and groundwater. The Porter-Cologne Act grants the SWRCB and the RWQCBs power to protect water quality. The Porter-Cologne Act grants the SWRCB and the RWQCBs authority to adopt plans and policies, to regulate discharges of waste to surface and groundwater, to regulate waste disposal sites, and to require cleanup of discharges of hazardous materials and other pollutants.

The RWQCBs' jurisdiction includes wetlands and other waters of the United States, as well as areas that meet the definition of wetlands and other "waters of the state." Wetlands and other waters of the state are defined as any surface water or groundwater, including saline waters, within the boundaries of the state. The RWQCBs have the discretion to take jurisdiction over areas not federally protected under CWA 404, provided the areas meet the definition of wetlands and other "waters of the state."

Each project or activity would apply separately to the Central Valley RWQCB for a CWA 401 water quality certification under the No Action/No Project Alternative. The certification would declare that the discharge will comply with applicable provisions of the CWA 401, including water quality standards set by the state pursuant to the Porter-Cologne Act. California's water quality standards specify the designated use of a stream or lake (e.g., for water supply or recreation), pollutant limits necessary to protect the designated use (in the form of numeric or narrative criteria), and policies to ensure that existing water uses will not be degraded by pollutant discharges.

Summary of ESA, CWA 404, and CESA Compliance under the No Action/ No Project Alternative

Project compliance with state and federal laws that pertain to the special-status species and aquatic resources would continue to be achieved through individual consultations and individual permit applications. This individual project-by-project permitting process would continue to result in a project-by-project compensation, including compensatory mitigation for impacts to aquatic resources regulated by CWA 404. While CWA 404 mitigation is often accomplished using conservation and mitigation bank credits (e.g., the 2008 Federal Mitigation Rule puts mitigation banks at the top of its compensatory mitigation hierarchy), there would not likely be as much opportunity for regional coordination of compensatory mitigation as there would be with a regional HCP.

Each project proponent would continue to initiate individual consultations or permit applications with the different regulatory agencies, which currently requires substantial agency time and effort, can delay project implementation, and can add cost to the project.

ESA and CESA violations and unauthorized activities under CWA 404 and/or 401 may not be identified in a timely fashion (or at all) on some projects, particularly at project sites that are not subject to CEQA, such as a building permit for a commercial structure on a parcel with the appropriate commercial zoning. In some cases, these are large lots that may contain wetlands or other habitat for state and/or federally listed species; however, not all impacts to habitat would be identified consistent with ESA, CESA, or CWA requirements. For example, impacts are more likely overlooked on projects that are not subject to CEQA because the potential environmental impacts would not be identified in an Initial Study or EIR, and the proponent may not have the expertise to identify biological resources or understand the regulations, and the project impacts to species or habitat is beyond the purview of the regulators reviewing the building plans.

The cost and time required to obtain individual CWA 404 and ESA authorizations under the No Action/No Project scenario would result in some projects avoiding the requirement to obtain ESA and CWA 404 authorizations by designing the project footprint to avoid direct impact to existing aquatic resources and/or species habitat. For example a subdivision may have an undeveloped remainder lot that contains on-site wetlands. Over time, the avoided aquatic resources would likely be indirectly impacted from the nearby urban developments. This would continue to result in unpermitted (and therefore unmitigated) direct and indirect impacts under the No Action/No Project Alternative.

Future Project Compliance with California Fish and Game Code/Section 1600 Compliance

The No Action/No Project Alternative would continue the existing project-by-project permitting process for Lake and Streambed Alteration Agreements (LSA) under California Fish and Game Code Section 1600. Each project proponent would submit to the CDFW a Streambed Alteration Application for “any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake” (California Fish and Game Code, Section 1602). CDFW would review the proposed project, and if necessary, provide the applicant with a list of suggested measures, which can include development setbacks from the lake or stream, to protect affected fish and wildlife resources. The final proposal would be mutually agreed upon by CDFW and the applicant. This project-by-project process would continue to require project proponents to engage in back-and-forth discussions with CDFW, adding time and expense to their project.

Future Project Compliance with Local Environmental Policies Compliance

Existing natural resource policies that are included in the Sacramento County Code, the Sacramento County General Plan (Sacramento County 2011) and the General Plans for Galt (2009) and Rancho Cordova (2006) would continue to be applied to new projects and activities implemented under the No Action/No Project Alternative.

Sacramento County's existing Swainson's Hawk Ordinance would remain in effect under the No Action/No Project Alternative and would apply to projects and activities implemented both within the USB and outside the USB. This ordinance would continue to provide opportunities for future projects and activities implemented under the No Action/No Project Alternative (Section 2.2.2) to mitigate impacts to Swainson's hawk in two ways: (1) by payment of a fee, or (2) through dedication of conservation land. For projects affecting more than 40 acres of Swainson's hawk habitat, payment of a fee would not be an option. Although any dedicated lands used for Swainson's hawk mitigation must be approved by Sacramento County and CDFW, the Swainson's Hawk Ordinance does not require that the dedicated lands be high-quality habitat or be connected to other preserved lands. Therefore, under the No Action/No Project Alternative, Swainson's hawk mitigation would continue to be uncoordinated and implemented on a project-by-project basis, and would not necessarily be located on high-quality Swainson's hawk habitat.

Sacramento County's General Plan policy encouraging new development to be setback from streams and creeks in the Planning Area (General Plan Policy CO-115) would continue under the No Action/No Project Alternative future condition. This policy suggests 100-foot-wide setbacks, measured from the top of the stream bank to the adjacent development or agricultural activities, and includes two supplemental 50-foot setbacks added to the 100-foot setback. However, setbacks are suggested rather than required under this policy. Project stream setback requirements will continue to be imposed by Sacramento County through individual project CEQA process as mitigation for potential project impacts, and would continue to vary widely from the suggested setbacks listed in Policy CO-115.

2.2.3 Loss of Natural Lands Under the No Action/No Project Alternative

The majority of existing natural lands would be removed in the UDA as a result of new urban development and associated infrastructure envisioned in the adopted Sacramento County General Plan, adopted Rancho Cordova General Plan, and adopted Galt General Plan, as discussed in Section 2.2.1. Natural lands include all land except Aqueducts, Disturbed Land,¹¹ Low- and High-Density Development, Major Roads, Mine Tailings, and Recreation/Landscaped areas.

¹¹ The disturbed land cover type is defined as open space areas that have been subject to previous or ongoing disturbances such as along roadsides, trails, and parking lots. Scraped or graded land, gravel mining, and waste

The lead agencies assumed that the No Action/No Project Alternative would include the full buildout over of the UDA¹² the next 50 years, with the exception of approximately 1,900 acres of natural lands now located within the MCRA, as discussed in the following text.

The lead agencies reviewed assumptions about current and expected future regulatory requirements for the MCRA, as described in Section 2.2.2. Based on those future regulatory requirements, the lead agencies estimated approximately how much undeveloped land currently remaining inside the MCRA could reasonably be developed if the Vernal Pool wetland ESA and CESA mitigation requirements for that development also occur within the MCRA, as discussed above in Section 2.2.2. The lead agencies also estimated the number of acres of each natural land cover within the MCRA that would be developed under different species and wetland mitigation scenarios over a 50-year period.

Professional judgement was used in modeling conceptual mitigation scenarios under the regulatory environment of the No Action/No Project Alternative described in 2.2.2. The lead agencies considered the requirements for ESA and CWA 404 mitigation that have occurred within Sacramento County since the designation of the MCRA in 2005 (USFWS 2005) and the best available scientific information on the status of the species and aquatic resources in the MCRA.

Using these trends in requirements and best available information, the lead agencies estimated minimum and maximum amounts of development and resultant preserves for ESA and CWA 404 mitigation.

The amounts of resource avoidance and preservation required by the expected regulatory setting in Section 2.2.2 restricts the amount of currently undeveloped land within the UDA that can be built out under the under the No Action/No Project Alternative.

Five large Urban Development Master Plans (Arboretum, Cordova Hills, Jackson Township, NewBridge, and SunCreek) are currently proposed within the UDA. These five Urban Development Master Plans were designed to comply with SSHCP requirements, including the establishment of large on-site preserves ranging in size from 100 to 600 acres. It is likely that preserves for the Urban Development Master Plans would be of similar size and location

disposal sites are included in this land cover type. Disturbed land cover type is vegetated with diverse weedy flora. These areas are of special concern as they tend to harbor and facilitate the spread of invasive plant species. Vascular plant species associated with the disturbed land cover typically include Johnson grass, Canadian horseweed (*Conyza canadensis*), milk thistle, yellow-star thistle (*Centaurea solstitialis*), stinkwort (*Dittrichia graveolens*), and field bindweed (*Convolvulus arvensis*).

¹² “Full Buildout” of the UDA means all currently undeveloped lands that are zoned for, or are ultimately planned/contemplated for future urban development in the adopted general plans of the Permit Applicants would become developed. Full buildout of the UDA will includes some open space and conservation lands within the areas of new urban development.

established under the No Action/No Project Alternative. In some cases, even larger preserves may be required in association with CWA 404 authorizations and associated ESA approvals for these Urban Development Master Plans if there is no comprehensive regional habitat conservation plan. For this reason, one or more of these Urban Development Master Plans may not be developed as proposed due to its inability to acquire adequate land for mitigation.

Instead, the master planned areas may be developed in a manner that avoids CWA 404 permitting requirements by designing the project to be located 50 feet or more outside the existing aquatic resources. Although, the USFWS may expect there to be direct and/or indirect impacts from development this close to aquatic resources, which might support listed species, the development community often does not consult with the USFWS and/or obtain ITPs because the habitat is not on the property owned by the developer and/or they argue that there is no take of species. Consequently, the remaining aquatic resources would not be protected by conservation easements; therefore, there is a potential for impacts to occur that would not happen on a managed preserve, which is fenced and maintained. Typical activities that occur on unmanaged vacant land include spread of invasive plants; illegal dumping; off-road motor vehicle use; and informal trails for runners, hikers, equestrians, BMX, and mountain bike riders. These uses can ultimately result in the unmitigated loss of habitat on natural lands.

If the Urban Development Master Plans are developed with larger preserves than currently proposed, the result would be less urban development within the MCRA/UDA. Under the maximum mitigation scenario modeled by the lead agencies, expected new urban development in the MCRA would occur within a matrix of avoided vernal pools and wetlands and would be less dense than typical urban development; however, the anticipated population growth over the next 50 years and associated housing and development needs would not change (Section 1.2.1). Therefore, the No Action/No Project Alternative assumes that up to 1,900 acres of additional new development would occur in locations outside the current USB. Sacramento County planners identified the following list of four locations outside the USB that would undergo development pressure under the maximum mitigation scenario:

1. Northeast portion of the Planning Area, south of White Rock Road
2. North-central portion of the Planning Area, south of Kammerer Road
3. Rancho Murieta expanding to the west or northwest
4. South-central portion of the Planning Area, expanding the rural towns of Wilton and Herald

In addition, natural lands would be removed outside the UDA as a result of recycled-water pipeline projects, planned road expansions, road widening, intersection improvements, and bridge-crossing improvements. The EIS/EIR assumes that pipeline and road projects outside

the UDA that would be Covered Activities under the Proposed Action/Proposed Project Alternative (Section 2.3.3) would occur under the No Action/No Project Alternative. These road and pipeline projects are described in the adopted General Plans (Sacramento County 2011; Rancho Cordova 2006; Galt 2009) or in other regional planning documents (Connector JPA 2012; Regional San 2015).

For the same reasons described previously for future urban development in the MCRA under the No Action/No Project Alternative, the lead agencies assumed that planned expansions or extensions of roadway improvement projects inside the MCRA may not receive necessary ESA or CWA 404 authorizations, and permit approvals and entitlements if they are unable to avoid vernal pools and other wetlands. If roadway alignments cannot be revised to avoid Vernal Pool or other wetlands, segments of roadways may not be expanded or extended as envisioned by the Circulation Elements of the Sacramento County General Plan and City of Rancho Cordova's General Plan.

Under the scenario of maximum new development in the UDA, of the existing 272,596 acres of natural land covers present within the Planning Area, a maximum of approximately 35,532 acres could be removed by new projects and activities implemented under the No Action/No Project Alternative (Table 2-1). See Chapter 8 and Table 8.4 for more detailed discussion for losses of natural land cover types. Approximately half, or 17,091 acres, of the natural lands lost to new development are expected to be annual grasslands that support vernal pools and swales (i.e., the Vernal Pool ecosystem).

Table 2-1. Maximum Losses of Natural Land Categories Under the No Action/No Project Alternative

Land Cover Category ¹	Maximum Acres Lost		
	Inside UDA (acres)	Outside UDA (acres) ^{5, 6}	Planning Area Total (acres)
All natural land covers ²	32,426	3,106	35,532
Vernal Pool Ecosystem ³ land covers	17,135	553	17,688
Wetland land covers ⁴ and other water land covers	1,062	118	1,180

¹ The rows in the table are not additive because the land cover categories include some overlapping land cover types (e.g., Vernal Pool is included in "all natural land covers," "Vernal Pool Ecosystem land covers," and "wetland land covers and other water land covers."

² Planning Area land cover types were defined by the SSHCP preparers during development of the SSHCP. To allow for better comparison of impacts between the EIS/EIS alternatives, the EIS/EIR uses these same land covers and definitions in discussions of all alternatives. The natural land covers include Blue Oak Savanna, Blue Oak Woodland, Cropland, Freshwater Marsh, Irrigated Pasture-Grassland, Mine Tailings Riparian Woodland, Mixed Riparian Scrub, Mixed Riparian Woodland, Open Water, Orchard, Seasonal Wetland, Stream/Creek, Stream/Creek (VPIH), Swale, Valley Grassland, Vernal Pool, and Vineyard, as discussed in Table 8-1.

³ Vernal Pool Ecosystem includes three aquatic land cover types (Vernal Pool, Swale, and Stream/Creek (VPIH)) and hydrologically connected Valley Grassland.

⁴ Wetland land covers and other water land covers include the following aquatic land cover types: Freshwater Marsh, Seasonal Wetland, Open Water, Stream/Creek, Vernal Pool, Swale, and Stream/Creek (VPIH).

⁵ Under certain future development scenarios (see Section 2.2.3), some of the road and infrastructure projects planned within the MCRA may not occur because lead agencies do not anticipate the impacts to wetlands could be mitigated within the MCRA, as required by the assumptions made for the future regulatory environment of the No Action/No Project Alternative. However, Table 2-1 depicts the maximum development/maximum scenario and includes all potential road and infrastructure.

⁶ Acres of natural land cover types lost outside the UDA includes the effects of the "displaced development" described in Section 2.2.2.

2.2.4 Preservation of Natural Lands Under the No Action/ No Project Alternative

New preserves established as mitigation for impacts to CWA 404 aquatic resources and ESA and CESA threatened and endangered species will continue to be established under the No Action/No Project Alternative to offset impacts of new urban development. This project mitigation would continue to be implemented on a project-by-projects basis, and is expected to result in uncoordinated preservation of some species habitats and some natural communities under the No Action/No Project Alternative.

The acres of future habitat preservation for the No Action/No Project Alternative (Table 2-2) were calculated based on the future regulatory environment assumptions described in Section 2.2.2 for new projects in the Planning Area. Table 2-2 presents the No Action/No Project scenario with the highest feasible acres of development in the UDA and the lowest feasible mitigation acres in the UDA, to assure that all potential impacts of the future No Action/No Project Alternative are considered.

As discussed in Section 2.2.2, some of the project mitigation identified in Table 2-2 as required habitat preservation might be provided by projects purchasing credits in existing or new Conservation Banks.

Table 2-2. Minimum Acres of New Preserves Under the No Action/No Project Alternative

Land Cover Category ¹	Preserved Land (acres)		
	Inside UDA (acres)	Outside UDA (acres)	Planning Area Total (acres)
All natural land covers ²	6,814	16,616	23,430
Vernal pool ecosystem ³ land covers	5,065	5,341	10,406
Wetland land covers ⁴ and other water land covers	546	1,753	2,299

¹ The rows in the table are not additive because the land cover categories include some overlapping land cover types (e.g., Vernal Pool is included in "all natural land covers," "Vernal Pool Ecosystem land covers," and "wetland land covers and other water land covers.")

² Planning Area land cover types were defined by the SSHCP preparers during development of the SSHCP. To allow for better comparison of impacts between the EIS/EIS alternatives, the EIS/EIR uses these same land covers and definitions in discussions of all alternatives. The natural land covers include Blue Oak Savanna, Blue Oak Woodland, Cropland, Freshwater Marsh, Irrigated Pasture-Grassland, Mine Tailings Riparian Woodland, Mixed Riparian Scrub, Mixed Riparian Woodland, Open Water, Orchard, Seasonal Wetland, Stream/Creek, Stream/Creek (VPIH), Swale, Valley Grassland, Vernal Pool, and Vineyard, as discussed in Table 8-1.

³ Vernal Pool Ecosystem includes three aquatic land cover types (Vernal Pool, Swale, and Stream/Creek (VPIH)) and hydrologically connected Valley Grassland.

⁴ Wetland land covers and other water land covers include the following aquatic land cover types: Freshwater Marsh, Seasonal Wetland, Open Water, Stream/Creek, Vernal Pool, Swale, and Stream/Creek (VPIH).

In addition to the acres of new preserve identified in Table 2-2, additional acreage of Vernal Pool ecosystem would be avoided by new urban development in the UDA because the lead agencies assume, for purposes of this EIS/EIR, that it may be difficult for new projects to obtain authorizations under ESA or CWA 404 that would allow impacts to these land cover types,

particularly within the MCRA (see also Section 2.2.2). This additional avoided land is not quantified as preserved land because we assume it would not be developed, and it will not be managed, monitored, or protected in perpetuity like a preserve would. It is possible over time that the UDA adjacent development would encroach upon these avoided areas, and activities that do not require local permits, such as gardens, trails, and small outbuildings, might be built within the avoidance areas.

Preserves established for project compensatory mitigation would continue to be established individually under the project-by-project regulatory environment of the No Action/No Project Alternative (Section 2.2.2). Mitigation and conservation banks would continue to be established and credits would be made available for individual projects to mitigate impacts; however, sometimes these banks are geographically distant from the impact, which is of concern for ESA, and, as of the writing of this document, no mitigations credits are available in the MCRA. Locations and sizes of new mitigation preserves would not be coordinated, and new UDA preserves are expected to become surrounded by new urban development in a geographically fragmented pattern, as the buildout of the UDA continues over time (Section 2.2.2). These scattered and isolated new and existing mitigation preserve sites may not maintain hydrologic connectivity and may not be connected by habitat that allows wildlife movement between the preserves. In addition, there would be no comprehensive management and monitoring program of the individual preserves to ensure successful species conservation at a regional scale or at a landscape scale.

The five large Urban Development Master Plans (Arboretum, Cordova Hills, Jackson Township, NewBridge, and SunCreek) may establish similar large, 100- to 600-acre preserves under the No Action/No Project Alternative. However, the individual project preserves are expected to be managed by various entities rather than being managed under one comprehensive, over-arching management plan. For example, weed abatement would not be implemented on a large scale to prevent weed seeds from being transferred back and forth between preserves. Preserve maintenance would not be coordinated, and several individuals would make in efficient repairs as needed. Knowledge and information would not be shared between preserve managers for adaptive management purposes, so mistakes that were identified on one preserve would not be avoided on all other preserves in the Planning Area.

Furthermore, the project-by-project mitigation process that is expected to continue under the No Action/No Project Alternative would continue to provide only incidental conservation benefits for native species that are not already state- or federally listed as threatened or endangered, even those native species that are known to be rare or a species of concern or have other special-species status. Individual project ESA consultations and CESA permit applications would continue to address only federal and state-listed species, limiting the number of species that would benefit from the project's avoidance and preservation of natural land covers.

2.2.5 Preserve Management and Monitoring Under the No Action/No Project Alternative

Under the No Action/No Project Alternative, preserves established as compensation for impacts to ESA/CESA species, or to ~~avoid impacts from discharge of dredged or fill material into wetlands and other waters of the United States,~~ **minimize adverse effects to waters of the U.S., or, in certain circumstances, compensate for the unavoidable loss of waters of the U.S.,** would be managed and monitored according to the requirements of the individual regulatory agencies, under the existing project-by-project review process. Preserve management and monitoring requirements would vary for each individual preserve, but the requirements would be similar to those in place for the ESA or CWA 404 preserves already established in the Planning Area.

Typical preserve management actions related to management and monitoring of preserves under the No Action/No Project Alternative could include but are not limited to:

- Vegetation management, including grazing within vernal pool ecosystem preserves;
- Relocation of special-status species;
- Collection and relocation of inocula soil from vernal pools that will be lost to re-established or established vernal pools;
- Collection of seeds and from plants that will be lost;
- Demolition or removal of existing structures on new preserve lands;
- Maintaining access roads;
- Control of non-native species;
- Wildfire management;
- Hazardous materials remediation on new preserve lands;
- Repair of existing fences and other land management facilities; and
- Operations related to water delivery for cattle and other animals used for managing grassland habitats.

Management of preserves could also require creating new dirt and paved roads (including bridges), drilling new wells for livestock water, and installing new fences. Typical preserve monitoring efforts under the No Action/No Project Alternative could include but not be limited to conducting surveys for special-status species and other natural resources within the preserve on a regular basis.

2.3 PROPOSED ACTION/PROPOSED PROJECT

Under the Proposed Action/Proposed Project Alternative, the six Permit Applicants (the future Plan Permittees) would implement the SSHCP over a 50-year period. If USFWS determines that

the proposed SSHCP meets all ESA Section 10 permit issuance criteria, a federal ITP would be issued to the six Permit Applicants by the USFWS for take of Covered Species by future Covered Activities. CDFW would issue a CESA ITP to the six Permit Applicants for take of state-listed Covered Species by future Covered Activities.

The proposed SSHCP is a comprehensive regional plan for conserving wildlife habitat and natural communities, including aquatic resources, in the Planning Area while accommodating the planned future land use and development described the approved General Plans of the Permit Applicants (see Section 2.2.1). The SSHCP is intended to establish and implement a regional program to conserve ecologically important resources in the Planning Area.

The SSHCP would to conserve 28 species of native plants and wildlife in the Planning Area, including 11 that are listed as threatened or endangered under the federal ESA, the CESA, or both. In addition, because so many of the Covered Species live part or all of their lives in water bodies, the SSHCP also helps to protect wetland and stream habitats that are subject to regulation under the federal CWA, the California Fish and Game Code, and California's Porter-Cologne Act.

A summary of the Proposed Action/Proposed Project Alternative is presented in the following text, including a description of the proposed action's Covered Activities, the Covered Species, the Conservation Strategy for the Planning Area, the monitoring program, and the ARP.

2.3.1 Expected Regulatory Environment Under the Proposed Action/Proposed Project

When compared to the future regulatory environment expected under the No Action/No Project Alternative (Section 2.2.2), the future regulatory environment of the Proposed Action/Proposed Project Alternative would differ as described in the following text.

Project Permitting and Local Entitlement Process

The six Permit Applicants (future Plan Permittees) or their third-party project proponents would pay development fees in order to use the SSHCP ITPs. The project development fees would be provided to the Land Use Authority Permittee with jurisdiction over the project site or to the SSHCP Implementing Entity.

The development fees paid by each Covered Activity would be used by the SSHCP Implementing Entity to fund the SSHCP Conservation Strategy.

Project ESA and CESA Compliance

Under the Proposed Action/Proposed Project Alternative, individual Covered Activity projects and activities that comply with the SSHCP would also comply with the ESA and CESA incidental take permits. Third party project proponents implementing a SSHCP Covered Activity project would pay “development fees” to the local Land Use Authority Permittee (i.e., Sacramento County, Galt, or Rancho Cordova), or to the SSHCP Implementing Entity, whoever has jurisdiction over the project site.

The SSHCP Conservation Strategy (see Section 2.3.5 below) provides a regional plan for conserving native species, natural communities, and aquatic resources in the Planning Area. The SSHCP Conservation Strategy was developed by the Permit Applicants and the regulatory agencies to both evaluate and prioritize the regional importance of the existing species habitat and existing aquatic resources in the Planning Area. Therefore, the importance (or lack of importance) of specific Planning Area locations and parcels to the conservation of listed species and ecosystem functions and service on a landscape and watershed basis has already been evaluated by the USFWS, CDFW, and USACE during the development of the SSHCP. In addition, activities and projects implemented under the Proposed Action/Proposed Project Alternative would be less likely to result in unmitigated ESA and CESA impacts due to lack of technical expertise or regulatory oversight, as described in Section 2.2.2 for the No Action/No Project Alternative.

The SSHCP would provide real streamlining for project proponents by significantly reducing the timeline for obtaining local approvals and entitlements, ESA and CESA authorizations, and CWA 404 authorizations. ~~The regulatory environment of the Proposed Action/Proposed Project SSHCP would eliminate the need for project level consultations with the USFWS under ESA and with CDFW under CESA.~~ **It is also anticipated that project-level consultation with CDFW under CESA would be reduced or eliminated for Covered Species and Covered Activities.** The SSHCP Conservation Strategy would provide individual projects with appropriate impact avoidance and minimization measures, which can be incorporated into the design and implementation of individual projects. Implementation of the SSHCP Conservation Strategy would provide the correct type and amounts of mitigation (in the form of habitat protection, establishment, or re-establishment) for the impacts of individual Covered Activities. The SSHCP Conservation Strategy, rather than an individual project proponent, assumes responsibility for locating and procuring high-quality mitigation sites, establishing conservation easements, and preparing and implementing preserve management and monitoring plans.

~~The Reduced Permit Term Alternative's~~ SSHCP Conservation Strategy would address cumulative impacts to vernal pools species within the MCRA. ~~Cumulative impacts within the MCRA as defined~~

~~in the Sunridge ROD (see Section 2.2.2) would be addressed through implementation of the SSHCP Conservation Strategy (described below in Section 2.3.5).~~

An approved and permitted SSHCP would meet the 2004 Zone 40 MOU (see Section 2.2.2) requirement for Sacramento County to prepare a regional HCP that addresses the indirect effects of the operational Freeport Regional Water Project and the indirect effect of the Zone 40 water delivery contracts. Therefore, new urban development Covered Activity projects implemented inside Zone 40 seeking entitlements from a local jurisdiction would be able to rely upon the Freeport Regional Water Project as the project's water source, without first obtaining project-level ESA approvals from the USFWS.

Project CWA 404 Compliance

Under the existing regulatory conditions, the USACE cannot authorize a proposed project under CWA 404 until the proposed project is in compliance with the ESA (see Section 2.2.2). Under the Proposed Action/Proposed Project, each Covered Activity that meets the requirements of the SSHCP would be in compliance with the ESA, and any incidental take of federally listed species would be covered by the SSHCP ESA incidental take permits. Therefore, **it is envisioned that in most cases,** the USACE would not be required to ~~intimate~~ **initiate** ESA Section 7 consultation with the USFWS before authorizing a proposed project that is a SSHCP Covered Activity. **There could be exceptions to this process, for example, if some time over the SSHCP permit term USACE authorized a Covered Activity that affected a threatened or endangered species that was not an SSHCP Covered Species.** As stated in Section 1.1, the SSHCP Permit Applicants used the SSHCP Conservation Strategy to prepare a local Aquatic Resources Program (ARP) which proposes a locally based program for permitting future SSHCP Covered Activities that impact aquatic resources, including wetlands and other waters. The Proposed Action/Proposed Project Alternatives includes the implementation of the ARP by the Permit Applicants and associated local aquatic resource protection ordinances.

The ARP relies on (and is consistent with) the SSHCP Conservation Strategy for aquatic habitats, including (1) Covered Activity implementation consistent with the ARP, (2) Covered Activity implementation of SSHCP AMMs that avoid and minimize direct and indirect adverse impacts to Planning Area aquatic resources to the extent practicable, (3) a landscape and watershed based cumulative analysis of expected impacts to wetlands and other waters over the next 50 years, and (4) the avoidance of wetlands and other waters, the minimization of impacts to wetlands and other waters, and the compensatory mitigation of wetlands and other waters planned on landscape and watershed basis, through the Planning Area.

~~As discussed in Section 2.2.2, the existing approach to permitting under CWA 404 provides the regulatory agencies little opportunity to evaluate individual project impacts or proposed~~

~~mitigation within a regional or a watershed scale; thus, the wetland regulatory agencies often have difficulty determining if projects are adequately mitigating for aquatic resource impacts. Under the Proposed Action/Proposed Project Alternative, implementation of the SSHCP Conservation Strategy and the ARP's measures to avoid and minimize impacts to aquatic resources, the Proposed Action/Proposed Project would assure CWA 404 compensatory mitigation for unavoidable impacts to aquatic resources is considered from a watershed-based perspective, and would systematically prioritize compensatory mitigation projects based on anticipated impacts to aquatic resources, considering both watershed- and function-based factors.~~

As discussed in Section 2.2.2, the existing approach to permitting under CWA 404 provides the regulatory agencies little opportunity to evaluate individual project impacts or proposed mitigation within a regional or a watershed scale. Under the Proposed Action/Proposed Project Alternative, implementation of the SSHCP Conservation Strategy and the ARP's mitigation approach (avoidance, minimization, and compensation) would be assumed to assure CWA 404 mitigation (avoidance, minimization, and compensation) is considered from a watershed-based perspective. These provisions, combined with a proposed in-lieu fee program (ILF); as discussed further below), would also systematically prioritize compensatory mitigation projects based on anticipated impacts to aquatic resources, considering both watershed- and function-based factors.

As discussed in EIS/EIR Chapter 10 and in Section 6 of the ARP document (see EIS/EIR Appendix I), the predicted future watershed conditions resulting from implementation of the SSHCP Conservation Strategy and the ARP would maintain or improve the overall aquatic resource abundance, diversity, and condition within the Planning Area. There would not be a net loss of aquatic resources in terms of acreage under the Proposed Action/Proposed Project, and the amount of high-condition resources within the Planning Area would be increased under the Proposed Action/Proposed Project, relative to the existing conditions.

The SSHCP Conservation Strategy and the ARP would provide compensatory mitigation for unavoidable impacts to aquatic resources (i.e., would provide aquatic resource re-establishment or establishment) that conforms to the minimum 1:1 compensatory mitigation ratios required by the 2008 Compensatory Mitigation Rule (see Section 2.2.2 above). Pursuant to the 2008 Compensatory Mitigation rule, the Permit Applicants are requesting the establishment of an in-lieu fee (ILF) program that would work in conjunction with the SSHCP's Covered Activity fee structure. The Permit Applicants (future Plan Permittees) would then be responsible for the CWA_404 compensatory mitigation requirements associated with the Covered Activity projects. The Permit Applicants would submit an ILF program proposal to the USACE and Interagency Review Team (a term described in the 2008 Compensatory Mitigation Rule) for review and processing. As of the writing of this EIS/EIR, the Permit Applicants have already submitted a draft ILF prospectus (in

accordance with 33 CFR 332.8[d][3]) and have received comments from the regulatory agencies that would potentially comprise the ILF's Interagency Review Team.

Under the Proposed Action/Proposed Project Alternative, the USACE has evaluated the Permit Applicants' proposed ARP (see EIS/EIR Appendix I), inclusive of its implementation guidance (as articulated in both the ARP and draft ARP ordinance), and has developed a draft Section 404 CWA permit strategy (see EIS/EIR Appendix C) for the future SSHCP Covered Activities (refer to Section 1.5.2), which is consistent with the USACE's regulations and guidance regarding CWA 404 permit development and issuance criteria.

Project Compliance with Porter Cologne Water Quality Control Act and CWA 401

As discussed above in Section 2.2.2, under CWA 401, and the Porter-Cologne Act projects and activities in California that require authorization of a federal license or permit for the discharge of a pollutant into wetlands and other waters must also obtain a CWA 401 water quality certification from the RWQCB with local jurisdiction

The ARP (see Appendix I) would facilitate the Central Valley RWQCB's development of water quality certification strategies for future SSHCP Covered Activities, in conjunction with USACE's development of a CWA 404 permitting strategy for future Covered Activities (see Appendix C).

Parallel to the USACE's CWA 404 permitting strategy, the RWQCB would have opportunities to increase the efficiency of their CWA 404 permitting processes while improving the protection and management of aquatic resources in the Planning Area. The RWQCB could issue a programmatic CWA 401 water quality certification for the USACE's general permit(s) and could adopt a more efficient water quality certification approach for Covered Activity projects associated with USACE's Letter of Permission and standard permit processes. The RWQCB could also adopt a more efficient waste discharge requirement approach for wetlands and other waters of the state.

California Fish and Game Code Section 1602 Master Lake or Streambed Alteration Agreement

The ARP and SSHCP address future impacts and provides for the conservation of streams and riparian habitat and other water bodies in the Planning Area that are regulated by CDFW. Under the Proposed Action/Proposed Project Alternative, CDFW would work with the land use authority Permit Applicants (Sacramento County, Galt, and Rancho Cordova) to streamline the process used to authorize Covered Activity projects and activities that affect the bed and bank of streams, ponds, and lakes under Section 1602 of the California Fish and Game Code, as discussed in Section 1.5.3.

In the streamlined process, the Land Use Authority Permittee Applicant or the SSHCP Implementing Entity may act as a “clearinghouse” for the notification forms, and would conduct an initial screening process to verify the project’s consistency with the SSHCP and ARP, and the aquatic protection ordinances. The Land Use Permit Applicant or the SSHCP Implementing Entity may then submit the Lake or Streambed Alteration (LSA) notification forms to CDFW on the behalf of their third-party project proponents. This would remove the need for project developers to coordinate with CDFW for Section 1600 permits. Prior to processing an LSA Notification, CDFW must collect the fee for each LSA Notification submitted by the SSHCP Implementing Entity or by an individual third-party project proponent. CDFW is solely responsible for determining whether a LSA Agreement is required.

It would also expedite the Section 1600 permitting process because CDFW would have pre-determined that consistency with the regional HCP and ARP satisfies the requirements for a Streambed Alteration Agreement.

Master LSA Agreements and LSA Agreements for Routine Maintenance may be issued individually to the three Land Use Authority Permit Applicants and plan participants for future SSHCP Covered Activities. Prior to issuing any LSA Agreement to an SSHCP Permit Applicant or participant, CDFW will consider the information and analysis in this EIS/EIR, and any additional CEQA information provided at the time of individual project’s CEQA review to make the appropriate Findings of Fact pursuant to CEQA on the decision, and would file a CEQA Notice of Determination.

Local Environmental Policies

The existing Sacramento County Swainson’s Hawk Ordinance, discussed in Section 2.2.2, only applies to portions of Sacramento County that are not included in an approved HCP that includes Swainson’s hawk as a Covered Species. Therefore, under the Proposed Action/Proposed Project Alternative, the Swainson’s Hawk Ordinance would no longer be available as an option for Covered Activity projects to mitigate impacts to Swainson’s hawk.

2.3.2 Permit Term Under the Proposed Action/Proposed Project Alternative

The Permit Applicants (Section 1.1) are requesting ESA and CESA ITPs with 50-year permit terms. The Permit Applicants (future Plan Permittees) are requesting this permit term to accommodate all of the planned buildout of the UDA (see Section 2.2.1), as the rural transportation improvement projects and new recycled water conveyance infrastructure located planned outside the UDA, including the Capital Southeast Connector project (refer to Section 2.3.3). The requested term of the ITPs will also provide adequate time for the future SSHCP Implementing Entity (Section 2.3.7) to purchase all lands and easements needed to achieve all parts of the

SSHCP Conservation Strategy, including each SSHCP Biological Goal and the SSHCP Measurable Objectives that implement each Biological Goal.

2.3.3 Covered Activities and Loss of Natural Land Covers Under the Proposed Action/Proposed Project Alternative

SSHCP Covered Activity categories, listed in Table 2-3, include the development, operation, and maintenance of new urban development structures, public facilities, and utilities that are anticipated in the Planning Area by the Permit Applicants and for which incidental take authorization is requested by the Permit Applicants from the Wildlife Agencies (USFWS and CDFW). The SSHCP Conservation Strategy will provide avoidance, minimization, and compensation for impacts to SSHCP Covered Species, habitats, and aquatic resources that would result from implementation of all SSHCP Covered Activities.

SSHCP Covered Activities implemented within the UDA would include activities and projects related to urban development and associated infrastructure on all lands zoned or ultimately planned/contemplated for urban development in adopted General Plans of Sacramento County, Galt, and Rancho Cordova. Covered Activities would also include the Capital Southeast Connector Project and other transportation, water, and wastewater development projects in the UDA. In-stream maintenance in the UDA, including vegetation and sediment removal, would also be a Covered Activity.

Five large Urban Development Master Plans (Arboretum, Cordova Hills, Jackson Township, NewBridge, and SunCreek) are proposed by third-party project proponents within the UDA (Figure 5-4). These Urban Development Master Plans meet the definition of an Urban Development Covered Activity, and the Plan Permittees anticipate that builders purchasing large lots from the Urban Development Master Plan developer will use the SSHCP incidental take permits to obtain project-level authorization under the ESA and CESA, and to expedite their individual project CWA authorizations. These five Urban Development Master Plans were designed to comply with all SSHCP requirements, including compliance with the SSHCP AMMs listed in this chapter.

Urban development Covered Activities (Table 2-3) would not occur outside of the UDA boundary. Covered Activities allowed outside the UDA are limited to planned infrastructure projects such as roadway improvements and widening, intersection improvements, construction of new recycled water pipelines, and maintenance of existing wastewater projects that provide sewer service to existing communities outside of the UDA.

The SSHCP Covered Activities would be implemented by the Plan Permittees or could be implemented by third parties (e.g., project proponents or private developers) that are subject to the jurisdiction and oversight of a Plan Permittee.

SSHCP Covered Activities would also include implementation of the SSHCP Conservation Strategy (Section 2.3.5), including management and monitoring of the proposed SSHCP Preserve System, and the re-establishment/establishment of aquatic resources within SSHCP Preserves located inside and outside the UDA.

Table 2-3 includes a list and a general description of the SSHCP Covered Activities. See Chapter 5 of the SSHCP document for further information about each of the SSHCP Covered Activities.

Table 2-3. Covered Activities Included in Each Action Alternative Studied in the EIS/EIR¹

Covered Activity Categories ²	Description
<i>Urban Development Covered Activities Inside the UDA</i>	
Residential, Commercial, and Industrial Structures	Construction, use, and maintenance of urban, suburban, and agricultural housing, retail centers, office buildings, factories, warehouses, and associated infrastructure. Also includes public service and cultural facilities such as new police and fire stations, convention centers, theaters, museums, hospitals, schools, colleges, libraries, and parking lots. Maintenance activities include the inspection, cleaning, rehabilitation, repair, and/or replacement of buildings, structures, and facilities.
Urban Park and Recreation Facilities	Construction and maintenance of recreational facilities such as regional parks, neighborhood parks, sports fields and facilities, indoor/outdoor sports complexes, recreation trails, community trails, playgrounds, golf courses, campgrounds, nature centers, racetracks, and associated infrastructure, including roads, bridges, restrooms, and parking areas.
Urban Water Supply Facilities	Construction and installation of new potable and recycled water supply facilities (e.g., pumping stations; water treatment facilities; storage facilities; reclamation facilities; and groundwater wells, valves, gates, weirs, and pipelines), extension of existing water pipelines, and removal and maintenance of existing water supply facilities.
Public and Private Utilities	Construction, replacement, augmentation, and maintenance of electric transmission utilities including underground and aboveground electric transmission and distribution lines, substations, access road maintenance, telecommunications lines, natural gas distribution pipelines, and urban solar energy projects. Other energy-generating projects within the UDA may also be determined to be Covered Activities, provided they meet the criteria established for Covered Activities not specifically described in the SSHCP.
Solid Waste Management Facilities	Construction, operation, maintenance, and decommissioning of new transfer stations and operation of new recycling stations within the UDA. Operation and maintenance of existing groundwater extraction and monitoring wells at Kiefer Landfill, as well as the expansion and decommissioning of existing landfills. This Covered Activity would not include operation of landfills.
Wastewater Facilities	Construction, installation, operation, and maintenance of all wastewater facilities in the UDA (e.g., sewage force mains, pumping stations, access facilities, treatment facilities, pipelines, recharge ponds, pipelines, and storage facilities) and all activities that support the provision of wastewater services including collection, diversion, delivery, distribution, conveyance, storage, treatment, and discharge. The extension, removal, replacement, abandonment, and maintenance of existing facilities/pipelines are also included, as are recharge ponds, groundwater wells, and operation and maintenance of existing wastewater projects in the rural communities of Walnut Grove and Courtland outside of the UDA.
Urban Transportation	Construction, realignment, widening, extension, abandonment, and removal of public and private transportation infrastructure (e.g., roadways, railroads, culverts, bridges, bike paths, street lights, roadside drainage, intersections/interchanges, sidewalks, and traffic signals), as well as other activities necessary to implement adopted transportation or capital improvement plans of the Permit Applicants. In-stream activities for transportation improvements including bridges, culverts, or other stream-crossing facility construction, replacement, and repair.

Table 2-3. Covered Activities Included in Each Action Alternative Studied in the EIS/EIR¹

Covered Activity Categories ²	Description
Flood Control and Stormwater Management in the UDA	All activities that support flood control as described in water drainage, capital improvement, flood control, and storm drain master plans for Sacramento County and Galt and Rancho Cordova. Construction of new facilities and maintenance of new and existing facilities. Stormwater abatement and treatment facilities could include detention basins, stormwater channels, pumping stations, and natural or realigned stream channels. Operations and maintenance activities including vegetation control, silt/sedimentation removal, erosion control, and stream bank stabilization projects.
Stream Channel Modification	The permanent deepening, widening, and rerouting of existing stream channels during urban development, including that associated with construction of water supply, wastewater, and urban transportation infrastructure.
Master Plans Known at the Time of the SSHCP Preparation	Urban development associated with five development projects within the UDA (Arboretum, Cordova Hills Specific Plan, Jackson Township Master Plan, NewBridge Specific Plan, and SunCreek Specific Plan) that were preparing land use plans during SSHCP preparation. These five master plans were designed to comply with SSHCP requirements, including compliance with the Covered Activity descriptions and the SSHCP AMMs.
Capital Southeast Connector	Construction, operation, and maintenance of the Capital Southeast Connector, including but not limited to initial vegetation clearing, grading of the project footprint, pouring of concrete or asphalt, excavation, staging of equipment and materials, compacting soil, and landscaping, as well as operation and maintenance. During construction it may be necessary to temporarily divert stream channels using appropriate measures to avoid or minimize impacts to stream habitat.
Mather Airport Master Plan Development Projects	Development projects at Mather Airport including the maintenance, replacement, and improvements of existing airfields (runway extensions, new taxiways, and aprons) and construction of new airfields, aircraft facilities (aircraft storage facilities, aircraft maintenance facilities, and jet fuel storage and dispensary facilities), and commercial facilities.
<i>Mining Covered Activities in the UDA</i>	
Mining Projects	Mining activities including surface extraction of rock or mineral resources and construction of associated infrastructure, buildings, and facilities (e.g., surface mining pits, processing sites, and access roads), and construction and operation of detention basins. A total of five surface mines (500 acres) are anticipated to occur within the UDA. The reclamation of previously mined land is also included as a Covered Activity.
<i>Covered Activities Allowed in UDA Preserve Setbacks</i>	
Trails	Construction, operation, and maintenance of paved bike/pedestrian trails may be sited within a Preserve Setback under certain conditions.
Low-velocity Bio-Retention Swales	Construction, operation, and maintenance of a bio-retention swale next to trails designed to hold and remove rainwater runoff from trails, which may be sited within a Preserve Setback under certain conditions.
Fencing	Installation of post and cable, split rail, or other open fencing adjacent to trails within the setback areas, which may be sited within a Preserve Setback under certain conditions.

Table 2-3. Covered Activities Included in Each Action Alternative Studied in the EIS/EIR¹

Covered Activity Categories ²	Description
Interpretive Signs and Kiosks	Construction, operation, and maintenance of safety and directional signs and kiosks intended to educate trail users about the benefits of the preserve and the importance of the setback to the resources that they are protecting.
Fire Breaks	Construction and maintenance of fire breaks, including shallow tilling or scraping vegetation if required by local fire regulations.
Benches, Shade Structures, and Shade Trees	Installation of benches, shade structures, and trash receptacles along trails if on the outer edge of the trail farthest from the preserve, which may be sited within a Preserve Setback under certain conditions.
<i>Covered Activities Allowed in UDA Stream Setbacks</i>	
Trails	Construction and maintenance of permeable or semi-permeable hiking trails, paved trails, and their associated infrastructure.
Low-Velocity Bio-Retention Swales	Construction, operation, and maintenance of small linear features (swales) located on one or both sides of allowed trails
Crossings Perpendicular to the Stream	New roads, bike/pedestrian trails, railroads, sewer/water pipelines, and public utility transmission lines that cross perpendicular to streams.
Stream Bank Stabilization Projects	Construction of in-stream structures for erosion control and bank stabilization.
Fencing	Installation of post and cable, split rail, or other open fencing along trails to keep users on the trail and out of the Stream Setbacks.
Benches, Shade Structures, and Shade Trees	Installation of benches, shade structures, and trash receptacles along trails if located on the outer edge of the trail farthest from the creek.
Interpretive Signs and Kiosks	Construction, operation, and maintenance of signs and kiosks.
Riparian Re-Establishment or Establishment	Actions associated with re-establishment or establishment of riparian vegetation.
Outfalls	Construction and operation of outfall structures that allow the discharge of stormwater into streams from adjacent urban areas.
Flood Control Structures and Stormwater Management	Construction of detention basins, bio-retention swales, and water quality facilities that are designed to be compatible with the habitat and wildlife values of the adjacent stream corridor.
Septic Systems	Existing subsurface sewage disposal systems. Note: The operation, maintenance, or replacement of entitled or currently existing subsurface sewage disposal systems are not Covered Activities.
Nonconforming Structures	Existing nonconforming structures and nonconforming uses of land subject to specific requirements (see Chapter 5 of the SSHCP).
<i>Rural Transportation Project Covered Activities (Outside the UDA)</i>	
General Activities	Transportation projects consistent with the Circulation Element of Sacramento County General Plan. Construction, operation, and maintenance of roadways are Covered Activities. See Chapter 5 of the SSHCP for a complete list of roadway projects.
Rural Collector Road Improvements (two-lane rural roads)	Roadway widening, increase of shoulder width, and drainage improvements.
Arterial Road Improvements (four-lane roadways)	Roadway widening.
Road Realignment Projects	Rerouting/constructing existing roadways to facilitate more direct or new road connections.

Table 2-3. Covered Activities Included in Each Action Alternative Studied in the EIS/EIR¹

Covered Activity Categories ²	Description
Road Interchange Projects	Construction of four planned interchange projects.
<i>Recycled Water Project Covered Activities (Outside the UDA)</i>	
Sacramento County Agriculture and Habitat Lands Recycled Water Project (South County Agricultural Program)	Construction and maintenance of facilities (e.g., pumping stations, pipelines, recycled water facilities, groundwater recharge facilities) associated with the South County Agricultural and Habitat Lands Recycled Water Project, plus a small section of pipeline that would provide recycled water to the existing Bartley-Cavanaugh Golf Course.
<i>Covered Activities within SSHCP Preserves</i>	
Preserve Management and Monitoring	Construction, maintenance, and use of facilities needed for preserve management and monitoring, including but not limited to roads, bridges, culverts, fences, gates, wells, stock tanks, and stock ponds.
Habitat Enhancement, Re-Establishment, and Establishment	Enhancement actions including but not limited to improvement of the hydrologic regime of a site to benefit a Covered Species, and vegetation management activities include installing perching poles and bat houses or other nesting/roosting improvements. Habitat re-establishment and establishment actions including but not limited to earth moving; regrading or recontouring of a site; restoring the past hydrologic regime or creating a hydrologic regime; and seeding or planting herbaceous vegetation, trees, shrubs, grasses, or other vegetation.
Species Surveys, Monitoring, Research, and Adaptive Management Activities	Species surveys conducted on preserve lands and on properties identified for potential acquisition, intensive management of habitat for research (e.g., new grazing regimes, controlled burns, cycling crop harvests), and other actions associated with adaptive management activities.
Water Supply for Livestock	New wells and associated infrastructure to provide water for livestock that are used to manage grassland vegetation as part of a preserve's management plan.
Groundwater Monitoring and Extraction Wells	Monitoring of existing and construction of new extraction wells for testing and treating existing contaminated groundwater on Kiefer Landfill Buffer lands.
Pesticide Use for Land Management	Pesticide use if part of an approved Preserve Management Plan (PMP) (e.g., exotic plant or exotic animal control). Only when necessary, pesticide use is allowed (1) within SSHCP Preserves, (2) within Preserve Setbacks, and (3) within road rights-of-way that border preserves.
Detention Basins	In limited situations, stormwater detention basins would be allowed on certain Linkage Preserves.
Low-Impact Nature Trails	Construction, maintenance, and improvement of a limited number of unpaved, low-impact nature trails within the Preserve System. Improvements include removal of upland vegetation, minor grading, directional and educational signs, and benches.

¹ The Action Alternatives studied in this EIS/EIR are: 1) The Proposed Action/Proposed Project Alternative (the SSHCP), and 2) the Reduced Permit Term Alternative HCP.

² Additional details of each Covered Activity category are presented in Chapter 5 of the Draft South Sacramento Habitat Conservation Plan document.

Removal of Natural Lands under the Proposed Action/Proposed Project Alternative

Natural land covers in the Planning Area (see Table 8-1a) would be directly or indirectly impacted by the Covered Activities implemented under the Proposed Action/Proposed Project Alternative.

As with the No Action/No Project Alternative, the Lead Agencies assume that the Proposed Action/Proposed Project Alternative would include the full build out of the UDA over the 50-year permit term. Under the Proposed Action/Proposed Project Alternative, all natural land covers currently present within the UDA will be removed by new urban development except the following:

- Natural lands within existing preserves in the UDA (see Table 8-1b)
- Natural lands within the UDA proposed for inclusion in the SSHCP Preserve System (see Section 2.3.5)
- Natural lands within the UDA expected to be inside minimum 50-foot-wide Preserve Setbacks (see Section 2.3.5)
- Natural lands within the UDA expected to be inside 25-foot wide to 150-foot-wide Stream Setbacks (see Section 2.3.5)

The maximum acres of Planning Area natural land cover directly impacted (removed) under the Proposed Action/Proposed Project Alternative is presented in Table 2-4. For all EIS/EIR Alternatives, direct impacts were calculated using the GIS methodology described in Section 3.6.5.

Table 2-4. Maximum Direct Impacts (Loss) of Natural Lands Under the Proposed Action/Proposed Project Alternative

Land Cover Category ¹	Maximum Acres Lost		
	Inside UDA (acres)	Outside UDA (acres)	All Planning Area (acres)*
All natural land covers ²	32,059	1,438	33,497
Vernal Pool Ecosystem ³ land covers	16,797	321	17,118
Aquatic resources ⁴	1,076	73	1,149

¹ The table columns are not additive because the land cover categories include some overlapping land cover types (e.g., Vernal Pool is included in "all natural land covers," "Vernal Pool Ecosystem land covers," and "aquatic resources."

² Planning Area land cover types are defined in the SSHCP document (Chapter 3). To allow for better comparison of impacts between the EIS/EIS alternatives, the EIS/EIR uses the SSHCP land cover types in discussions of all EIS/EIR alternatives. The SSHCP "natural" land covers include Blue Oak Savanna, Blue Oak Woodland, Cropland, Freshwater Marsh, Irrigated Pasture-Grassland, Mine Tailings Riparian Woodland, Mixed Riparian Scrub, Mixed Riparian Woodland, Open Water, Orchard, Seasonal Wetland, Stream/Creek, Stream/Creek (VPIH), Swale, Valley Grassland, Vernal Pool, and Vineyard, as discussed in Table 8-1 of the EIS/EIR.

³ Vernal Pool Ecosystem is defined by the SSHCP to include three aquatic land cover types (Vernal Pool, Swale, and Stream/Creek (VPIH) and hydrologically connected adjacent Valley Grassland.

⁴ Aquatic resources include the following SSHCP aquatic land cover types: Freshwater Marsh, Seasonal Wetland, Open Water, Stream/Creek, Vernal Pool, Swale, and Stream/Creek (VPIH).

2.3.4 Covered Species Under the Proposed Action/Proposed Project Alternative

Covered species are species that would be listed on the CESA or ESA ITPs issued by the Wildlife Agencies (CDFW and USFWS), and would be conserved in the Planning Area by the proposed SSHCP Conservation Strategy. The SSHCP proposes 28 special-status species for take coverage under ESA ITP and 8 state-listed species for take coverage under the CESA ITP (Table 2-5).

Table 2-5. Planning Area Special-Status Species Included as Covered Species

Scientific Name Common Name	Protection Status		
	Federal	State	California Native Plant Society
Invertebrates			
<i>Lepidurus packardii</i> Vernal pool tadpole shrimp	E*	—	—
<i>Branchinecta lynchi</i> Vernal pool fairy shrimp	T*	—	—
<i>Branchinecta mesovallensis</i> Mid-valley fairy shrimp	—	—	—
<i>Desmocerus californicus dimorphus</i> Valley elderberry longhorn beetle	T	—	—
<i>Hydrochara rickseckeri</i> Ricksecker's water scavenger beetle	—	—	—
Amphibians			
<i>Ambystoma californiense</i> California tiger salamander, (Central Valley population)	T*	T	—
<i>Spea hammondi</i> Western spadefoot	—	CSC	—
Reptiles			
<i>Actinemys marmorata</i> Western pond turtle	—	CSC	—
<i>Thamnophis gigas</i> Giant garter snake	T	T	—
Birds			
<i>Accipiter cooperii</i> Cooper's hawk	—	WL	—
<i>Agelaius tricolor</i> Tricolored blackbird	BCC	E**	—
<i>Athene cunicularia hypugaea</i> Western burrowing owl	BCC	CSC	—
<i>Buteo regalis</i> Ferruginous hawk	BCC	—	—
<i>Buteo swainsoni</i> Swainson's hawk	BCC	T	—
<i>Circus cyaneus</i> Northern harrier	—	CSC	—

Table 2-5. Planning Area Special-Status Species Included as Covered Species

Scientific Name Common Name	Protection Status		
	Federal	State	California Native Plant Society
<i>Elanus leucurus</i> White-tailed kite	—	CFP	—
<i>Grus canadensis tabida</i> Greater sandhill crane	—	T; CFP	—
<i>Lanius ludovicianus</i> Loggerhead shrike	BCC	CSC	—
Mammals			
<i>Lasiurus blossevillii</i> Western red bat	—	CSC	—
<i>Taxidea taxus</i> American badger	—	CSC	—
Plants			
<i>Downingia pusilla</i> Dwarf downingia	—	—	2.2
<i>Gratiola heterosepala</i> Boggs Lake hedge-hyssop	—	E	1B.2
<i>Juncus leiostermus</i> var. <i>ahartii</i> Ahart's dwarf rush	—	—	1B.2
<i>Legenere limosa</i> Legenere	—	—	1B.1
<i>Navarretia myersii</i> Pincushion navarretia	—	—	1B.1
<i>Orcuttia tenuis</i> Slender Orcutt grass	T*	E	1B.1
<i>Orcuttia viscida</i> Sacramento Orcutt grass	E*	E	1B.1
<i>Sagittaria sanfordii</i> Sanford's arrowhead	—	—	1B.2

Status Definitions**Federal:**

E= Listed as endangered under the ESA

T= Listed as threatened under the ESA

*= Species has designated ESA Critical Habitat located within the Planning Area

— = No ESA listing

BCC = Bird of Conservation Concern

State:

E = Listed as endangered under CESA

T = Listed as threatened under CESA

** = Under consideration for listing by CDFW as of September 14, 2015

CFP = Fully protected under the California Fish and Game Code

CSC = California species of special concern

WL = CDFW Watch List

— = No CESA or other state status

California Native Plant Society California Rare Plant Rank

1B = Rare, threatened, or endangered in California and elsewhere

2 = Rare, threatened, or endangered in California but more common elsewhere

California Native Plant Society California Rare Plant Rank Threat Ranks

0.1 = Seriously threatened in California (high degree/immediacy of threat)

0.2 = Fairly threatened in California (moderate degree/immediacy of threat)

2.3.5 Conservation Strategy under the Proposed Action/Proposed Project Alternative

The Conservation Strategy for the Proposed Action/Proposed Project Alternative includes implementation of AMMs (see Table 2-6 and EIS/EIR Appendix D) during construction and implementation of Covered Activities, achievement of the stated Biological Goals for the Planning Area, and each Measurable Objectives, including the assembly of an interconnected SSHCP Preserve System based on those Measurable Objectives, and a Preserve System Monitoring and Management Program.

Impact Avoidance and Minimization Measures (AMMs)

The SSHCP AMMs also provide new avoidance and minimization measures that would not occur under the No Action/No Project Alternative (Table 2-6), and these new measures are expected to lessen the potential adverse effects to surface water quality and groundwater quality, compared to the effects of the No Action/No Project Alternative.

Under the Proposed Action/Proposed Project Alternative, all Covered Activities (projects and activities) must incorporate or apply specific SSHCP AMMs during implementation of the Covered Activity (see EIS/EIR Appendix D). The SSHCP AMMs are intended to avoid or minimize direct and indirect impacts of the Covered Activities to Covered Species and Covered Species habitats, including aquatic resources. The SSHCP AMMs include measures to avoid species occurrences and habitat through project design, or through the timing of activities avoid times when a Covered Species could be present, including breeding periods. The SSHCP AMMs may also avoid or minimize the potential for take by reducing effects on Covered Species and other native species by altering construction plans or activities (e.g., modifying construction footprints, covering open trenches, using materials to reduce runoff from construction sites) or by modifying design elements of projects to reduce long term operational effects (e.g., noise, lighting, urban runoff). Many of the SSHCP AMMs also avoid or minimize impacts to wetlands and other waters to a greater extent, including several measures that would require new development to be set back a greater distance from the tops of stream and creek banks.

The SSHCP AMMs include some of the AMMs that projects are required to implement under the existing regulatory conditions (see Section 2.2.2). For example, AMM BMP1 through AMM BMP11 of the Proposed Action/Proposed Project Alternative would be similar to the construction best management practices that would be implemented under the No Action/No Project Alternative (see Table 2-6). However, the Proposed Action/Proposed Project Alternative includes additional on-site monitoring and measurement of the effectiveness of each AMM implemented, and annual reporting of the effectiveness of each AMM. The Proposed Action/Proposed Project Alternative also includes process for annual review of the effectiveness of each SSHCP AMM, and

a process to make adaptive changes to any AMM that was not fully effective at avoiding impacts to water quality and aquatic habitats. This additional oversight and guidance provided by the SSHCP would result these AMMs being implemented more frequently and consistently at all ground-disturbing activities, than would occur under the No Action/No Project Alternative. The SSHCP AMMs also provide new avoidance and minimization measures that would not occur under the No Action/No Project Alternative (Table 2-6), and these new measures are expected to lessen the potential adverse effects to species, species habitat and aquatic resources, compared to the effects of the No Action/No Project Alternative.

AMMs similar to those in the species-specific SSHCP AMMs may be required on a project-by-project basis under the No Action/No Project Alternative if required as a condition of the approval of the project entitlements or a permit (e.g., CWA, California Fish and Game Code Section 1600). However, under the Proposed Action/Proposed Project Alternative, there will be more consistent application of AMMs, which will inform the initial design of Covered Activities, so projects will not be delayed due to imposing unexpected AMMs that could require redesign. In addition, more consistent application of AMMs is expected because they would be implemented under the SSHCP comprehensive plan with a process for tracking implementation and effectiveness, rather than implemented under various statutes, regulations, and guidelines, with variability of their application and interpretation.

In addition, since AMMs will be known in advance and incorporated earlier in the design of projects, it is reasonable to assume that there will be greater application of AMMs than under the No Action/No Project Alternative. For example, the AMMs to minimize impacts to streams and creeks (AMMs STREAM-1 through Stream 5) must be applied to all Covered Activities where a stream or creek is located within a project footprint. These AMMs would be critical to the design of a project, such as a rezone and subdivision, because the AMMs require setbacks from streams that are 25–150 feet wide. Because project proponents will be aware of these measures early in the planning process, the setbacks can be accommodated more readily in the overall project plan, including the density and designation of land use zones coupled with economic considerations. In comparison, under the No Action/No Project Alternative, large setbacks can be economically infeasible at the permit stage in cases where zoning has already been approved, because the value of land changes with the zoning. Land approved for RD-5 zoning may be valued at one million dollars an acre compared to the same land zoned Ag-80 may be valued at 50,000 dollars per acre.

Table 2-6 compares SSHCP AMMs avoidance measures expected under the No Action/No Project Alternative. The comparisons are categorized as follows:

- New
- Similar

- More frequently applied.

AMMs are considered “new” if they were not identified in the No Action/No Project Alternative regulatory environment, and although the AMM may be an individual permit condition or condition of approval for an individual project, it is considered to be “new.” AMMs are considered to be “similar” if they were identified in the No Action/No Project Alternative regulatory environment and their application would be “similar” to the application under Proposed Action/Proposed Project Alternative scenario. AMMs are considered to be “more frequently applied” if they were identified in some form in the No Action/No Project Alternative regulatory environment, and they are considered to be “more frequently applied” under SSHCP.

Explanations of why AMMs would be “more frequently applied” under the Proposed Action/Proposed Project Alternative scenario are discussed previously and listed below:

- Increased knowledge of existing habitat
- Increased early coordination
- Applied more consistently by regulatory programs
- Applied to a greater variety of actions
- Reduced cost.

Table 2-6. Comparison of AMMs Under the Proposed Action/Proposed Project Alternative and the No Action/No Project Alternative

Proposed Action/Proposed Project Alternative Measure	No Action/No Project Alternative Regulatory Environment	Conclusion of SSHCP AMM Comparison with No Action/No Project Alternative Regulatory Environment
<i>Condition 1</i>		
Condition 1. Avoid and minimize urban development impacts to watershed hydrology and water quality. This condition will require Best Management Practices (BMPs) and low-impact development (LID) AMMs. The LID AMMs apply to all UDA Covered Activities that occur at the parcel, subdivision, or master plan scale.	National Pollutant Discharge Elimination System MS4 Design Measures. Sacramento and South Placer Regions (Stormwater Manual) Guidelines and requirements to reduce urban runoff from new development and redevelopment projects within the region (SSQP 2007).	The SSHCP AMMs are based on existing MS4 permit requirements.
LID-1 (Stormwater Quality) Enforce site design stormwater management.	See description for Condition 1.	<i>Similar.</i>
LID-2 (Groundwater Recharge) Consider groundwater recharge when siting preserves.	See description for Condition 1.	<i>More frequently applied.</i> Because SSHCP Preserves would be established by the Implementing Entity, the EIS/EIR assumes that increased attention would be paid to groundwater recharge when preserve locations are selected for acquisition.
LID-3 (Natural Site Features) Incorporate natural aquatic features into project design.	See description for Condition 1.	<i>Similar.</i>
<i>Condition 2.</i>		
Condition 2. Avoid and minimize urban development direct and indirect impacts to existing preserves and SSHCP Preserves. Applies to all UDA Covered Activities that border an existing preserve or planned SSHCP Preserve.	Most of the AMMs under Condition 2 are not codified in any existing regulations, but they could be required during project-by-project permitting or as design guidelines in specific plans.	—
EDGE-1 (Compatible Land Uses) Locate compatible land uses with less intensive human activity next to preserves.	None.	<i>New.</i>
EDGE-2 (Single-Loaded Streets) Streets adjacent to preserves should be single loaded (i.e., only be developed on one side so the preserve is visible from the street).	None.	<i>New.</i>

Table 2-6. Comparison of AMMs Under the Proposed Action/Proposed Project Alternative and the No Action/No Project Alternative

Proposed Action/Proposed Project Alternative Measure	No Action/No Project Alternative Regulatory Environment	Conclusion of SSHCP AMM Comparison with No Action/No Project Alternative Regulatory Environment
EDGE-3 (Preserve Setbacks) Set minimum 50-foot-wide setback outward from the boundary of any existing preserve or planned SSHCP Preserve.	None.	<i>New.</i>
EDGE-3a (Setback Recreational Trails) Set maximum 16-foot-wide trail on the side nearest development, with open fencing between setback and trail.	None.	<i>New.</i>
EDGE-3b (Setback Firebreaks) Set minimum legal firebreak width within Preserve Setbacks using trail as firebreak if possible.	None.	<i>New.</i>
EDGE-3c (Setback Shade Trees and Landscaping) Locate non-invasive, drought-tolerant landscaping between trail and adjacent urban development.	None.	<i>New.</i>
EDGE-4 (Locate Stormwater Control Outside Preserves) Direct urban stormwater away from preserve.	None.	<i>New.</i> Although MS4 requirements address stormwater control, they do not direct developers to avoid sending stormwater to preserves.
EDGE-5 (Stormwater Control in Preserve Setbacks) Locate within setback nearest development.	None.	<i>New.</i>
EDGE-6 (Detention Basins in Linkage Preserves) Design to minimize effects on species.	None.	<i>New.</i>
EDGE-7 (Hardpan/Duripan Protection) Avoid disruption or seal.	None.	<i>New.</i>
EDGE-8 (Outdoor Lighting) Direct lighting away from preserves.	Sacramento County Zoning Code offers some protection from light and glare for the night sky and residential uses.	<i>More frequently applied.</i> Under the SSHCP, outdoor lighting requirements would be applied to any Covered Activity that could direct light onto an existing or new preserve. This would be in addition to the requirements of Sacramento County's Zoning Code.

Table 2-6. Comparison of AMMs Under the Proposed Action/Proposed Project Alternative and the No Action/No Project Alternative

Proposed Action/Proposed Project Alternative Measure	No Action/No Project Alternative Regulatory Environment	Conclusion of SSHCP AMM Comparison with No Action/No Project Alternative Regulatory Environment
EDGE-9 (Livestock Access to Preserves) Design pick-up delivery facilities to be available and safe and not alter preserve habitat significantly.	Transportation improvement standards require safe ingress and egress.	<i>More frequently applied.</i> Under the AMM, focus would be on access for trucks with trailers and routes for such vehicles onto the preserve.
EDGE-10 (Prevent Invasive Species Spread)	Sacramento County Zoning Code restricts use of invasive plants in required landscape plans.	<i>More frequently applied.</i> Under the SSHCP, this AMM would be applied to all Covered Activities and not just those that are required to prepare landscape plans.
<i>Condition 3. Implement Construction BMPs</i>		
BMP-1 (Construction Fencing)	Generally required as a standard BMP by local land use authorities as part of a discretionary permit (grading or building permit).	<i>Similar.</i>
BMP-2 (Erosion Control)	Generally required as a standard BMP by local land use authorities as part of a discretionary permit (grading or building permit).	<i>Similar.</i>
BMP-3 (Equipment Storage and Fueling)	Generally required as a standard BMP by local land use authorities as part of a discretionary permit (grading or building permit).	<i>Similar.</i>
BMP-4 (Erodible Materials)	Generally required as a standard BMP by local land use authorities as part of a discretionary permit (grading or building permit).	<i>Similar.</i>
BMP-5 (Dust Control)	Generally required as a standard BMP by local land use authorities as part of a discretionary permit (grading or building permit).	<i>Similar.</i> However, the limitation on using surface water would apply less frequently (e.g., stock ponds could conceivably be used as a water source for dust control).
BMP-6 (Construction Lighting)	Generally required as a standard BMP by local land use authorities as part of a discretionary permit (grading or building permit).	<i>Similar.</i>
BMP-7 (Biological Monitor)	Generally required as a standard BMP by local land use authorities as part of a discretionary permit (grading or building permit).	<i>Similar.</i>

Table 2-6. Comparison of AMMs Under the Proposed Action/Proposed Project Alternative and the No Action/No Project Alternative

Proposed Action/Proposed Project Alternative Measure	No Action/No Project Alternative Regulatory Environment	Conclusion of SSHCP AMM Comparison with No Action/No Project Alternative Regulatory Environment
BMP-8 (Training of Construction Staff)	Generally required as a standard BMP by local land use authorities as part of a discretionary permit (grading or building permit).	<i>Similar.</i>
BMP-9 (Soil Compaction)	Generally required as a standard BMP by local land use authorities as part of a discretionary permit (grading or building permit).	<i>Similar.</i>
BMP-10 (Revegetation)	Generally required as a standard BMP by local land use authorities as part of a discretionary permit (grading or building permit).	<i>Similar.</i>
BMP-11 (Speed Limit)	Generally required as a standard BMP by local land use authorities as part of a discretionary permit (grading or building permit).	<i>Similar.</i> However, a 10-mile-per-hour speed limit on dirt roads might not always be applied.
<i>Condition 4. Avoid and Minimize Impacts that May Result from the Implementation of Covered Transportation Projects</i>		
ROAD-1 (Road Project Location)	Potentially required as part of ESA, CESA, or CWA permitting or consultation. Although road projects do take into account avoidance of impacts to species, wetlands, and waters, avoidance is not always held to the standard of "maximum extent practicable."	<i>More frequently applied.</i> Covered activity road projects would be held to a higher standard of avoidance than under existing regulatory conditions.
ROAD-2 (Wildlife Crossing Structures)	Potentially required as part of ESA or CESA permitting.	<i>More frequently applied.</i> Covered activity road projects would be held to a higher standard for wildlife connectivity than under existing regulatory conditions.
ROAD-3 (Roadside Pesticide Use)	The State Department of Pesticide Regulation requires full reporting of pesticide use along roadways. Use is reported monthly to agricultural commissioners who report to the state.	<i>More frequently applied.</i> Under the SSHCP, permittees will be responsible for ensuring that pesticide application along roadsides is in compliance with the AMM rather than relying on reporting that may not be consistent. Posting of signs for sensitive areas would also occur more frequently under the SSHCP.
<i>Condition 5. Avoid and Minimize Impacts that Result from Public Use of Low-Impact Nature Trails in Preserves</i>		
NATURE TRAIL-1 (Nature Trail Plan)	None.	<i>New.</i>
NATURE TRAIL- 2 (Nature Trail Protection of Duripan)	None.	<i>New.</i>
NATURE TRAIL- 3 (Nature Trail Location)	None.	<i>New.</i>

Table 2-6. Comparison of AMMs Under the Proposed Action/Proposed Project Alternative and the No Action/No Project Alternative

Proposed Action/Proposed Project Alternative Measure	No Action/No Project Alternative Regulatory Environment	Conclusion of SSHCP AMM Comparison with No Action/No Project Alternative Regulatory Environment
NATURE TRAIL- 4 (Biological Studies Prior to Nature Trail Design)	None.	<i>New.</i>
NATURE TRAIL- 5 (Monitoring of Nature Trail Impacts)	None.	<i>New.</i>
<i>Condition 6. Avoid and Minimize Impacts to Existing Vernal Pools when Re-Establishing or Establishing Vernal Pool Wetlands</i>		
RE-ESTABLISHMENT/ ESTABLISHMENT -1 (Vernal Pool)	Existing ESA, CESA, and CWA regulations put oversight for design and construction of re-established/established vernal pools under the responsibility of the USFWS, CDFW, and USACE.	<i>More frequently applied.</i> By listing the requirements for a Vernal Pool re-establishment/establishment site in the AMM, the SSHCP would result in increased certainty of methods and results when compared to the existing condition.
RE-ESTABLISHMENT/ ESTABLISHMENT -2 (Vernal Pool Inocula Bank)	None	<i>New.</i>
<i>Condition 7. Avoid and Minimize Impacts to Streams and Creeks</i>		
STREAM -1 (Laguna Creek Wildlife Movement Corridor)	None. However, some specific plans or flood control plans may establish setbacks along this reach.	<i>New.</i>
STREAM-2 (UDA Stream Setbacks)	None. However, some specific plans or flood control plans may establish setbacks along streams in the UDA.	<i>New.</i>
STREAM-3 (Minor Tributaries to UDA Streams)	None. However, some specific plans or flood control plans may establish setbacks along minor tributaries.	<i>New.</i>
STREAM-4 (Minimize Effects from Temporary Channel Re-Routing)	Projects would need to receive permits under California Fish and Game Code Section 1600. These would identify requirements to minimize effects on habitat and species in streams and creeks when the channel is temporarily rerouted.	<i>Similar.</i> The requirements of this SSHCP AMM would generally be the same as those required under a California Fish and Game Code Section 1600 permit.
STREAM-5 (Design for Stream Channel Re-Routing, Widening, or Deepening)	Projects would need to receive permits under California Fish and Game Code Section 1600. These would identify requirements to minimize effects on habitat and species in streams and creeks when the channel is temporarily rerouted.	<i>Similar.</i> The requirements of the SSHCP AMM would be generally the same as those required under a California Fish and Game Code Section 1600 permit.

Table 2-6. Comparison of AMMs Under the Proposed Action/Proposed Project Alternative and the No Action/No Project Alternative

Proposed Action/Proposed Project Alternative Measure	No Action/No Project Alternative Regulatory Environment	Conclusion of SSHCP AMM Comparison with No Action/No Project Alternative Regulatory Environment
<i>Condition 8. Avoid and Minimize Impacts from Utility and Utility Maintenance Covered Activities</i>		
UTILITY-1 (Avian Collision Avoidance)	Consultation with USFWS and CDFW, as well as adherence to the Avian Power Line Interaction Committee guidelines, are optional on utility projects unless a requirement is made by a local land use authority on a discretionary permit or in association with an ESA or CESA ITPs.	<i>New.</i>
UTILITY-2 (Utility Maintenance on Preserves)	Vernal pools receive protection through species avoidance or mitigation under CESA and ESA. However, these protections are not uniformly or consistently applied.	<i>More frequently applied.</i> This AMM would be implemented on any SSHCP Preserve.
UTILITY-3 (Trenchless Construction Methods)	Vernal pools receive protection through species avoidance or mitigation under CESA and ESA. However, these protections are not uniformly or consistently applied.	<i>More frequently applied.</i> This AMM would be implemented on any SSHCP Preserve.
UTILITY-4 (Siting of Entry and Exit Location)	Vernal pools and riparian woodland receive protection through species avoidance or mitigation under CESA and ESA. However, these protections are not uniformly or consistently applied.	<i>More frequently applied.</i> This AMM would be implemented on any SSHCP Preserve.
<i>Condition 9. Avoid and Minimize Impacts that Might Result from Removing or Breaching Levees to Establish or Re-Establish Riparian Habitat</i>		
LEVEE-1 (Preparation of Hydrologic Analysis)	CWA 404 regulations require consideration of flow alterations and related potential indirect impacts, such as effects of flows to downstream properties. Adherence to these regulations necessitates preparation of a hydrologic analysis.	<i>Similar.</i>
General Covered Species AMMs		
SPECIES-1 (Litter Removal Program)	None. Similar measures can be required under project-by-project permitting efforts by local land use authorities but are not regular or predictable.	<i>New.</i>
SPECIES-2 (No Pets in Construction Areas)	None. Similar measures can be required under project-by-project permitting efforts by local land use authorities but are not regular or predictable.	<i>New.</i>

Table 2-6. Comparison of AMMs Under the Proposed Action/Proposed Project Alternative and the No Action/No Project Alternative

Proposed Action/Proposed Project Alternative Measure	No Action/No Project Alternative Regulatory Environment	Conclusion of SSHCP AMM Comparison with No Action/No Project Alternative Regulatory Environment
SPECIES-3 (Take Report)	None. Similar measures can be required under project-by-project permitting efforts by local land use authorities but are not regular or predictable.	<i>New.</i>
SPECIES-4 (Post-Construction Compliance Report)	None. Similar measures can be required under project-by-project permitting efforts by local land use authorities but are not regular or predictable.	<i>New.</i>
<i>Sacramento or Slender Orcutt Grass</i>		
ORCUTT-1 (Orcutt Grass Surveys)	Federal ESA protections would be used; however, surveys would only be conducted for this species if the project is a discretionary action that would prompt Sacramento County or City of Sacramento to consult with USFWS.	<i>More frequently applied.</i> Instead of applying only on discretionary actions, this AMM would apply to any project that would like to use the SSHCP for species coverage.
ORCUTT-2 (Orcutt Grass Protection)	Federal ESA protections would be used; however, this species would only receive protection if the project is a discretionary action that would prompt Sacramento County or city to consult with USFWS.	<i>More frequently applied.</i> Instead of applying only on discretionary actions, this AMM would apply to any project that would like to use the SSHCP for species coverage.
<i>California Tiger Salamander</i>		
CTS-1 (California Tiger Salamander Daily Construction Schedule)	Federal ESA protections would be used; however, this species would only receive those protections if the project is a discretionary action that would prompt Sacramento County or city to consult with USFWS.	<i>More frequently applied.</i> Instead of applying only on discretionary actions, this AMM would apply to any project that would like to use the SSHCP for species coverage.
CTS-2 (California Tiger Salamander Exclusion Fencing)	Federal ESA protections would be used; however, this species would only receive those protections if the project is a discretionary action that would prompt Sacramento County or city to consult with USFWS.	<i>More frequently applied.</i> Instead of applying only on discretionary actions, this AMM would apply to any project that would like to use the SSHCP for species coverage.
CTS-3 (California Tiger Salamander Monitoring)	Federal ESA protections would be used; however, this species would only receive monitoring if the project is a discretionary action that would prompt Sacramento County or city to consult with USFWS.	<i>More frequently applied.</i> Instead of applying only on discretionary actions, this AMM would apply to any project that would like to use the SSHCP for species coverage.

Table 2-6. Comparison of AMMs Under the Proposed Action/Proposed Project Alternative and the No Action/No Project Alternative

Proposed Action/Proposed Project Alternative Measure	No Action/No Project Alternative Regulatory Environment	Conclusion of SSHCP AMM Comparison with No Action/No Project Alternative Regulatory Environment
CTS-4 (Avoid California Tiger Salamander Entrapment)	Federal ESA protections would be used; however, this species would only receive those protections if the project is a discretionary action that would prompt Sacramento County or city to consult with USFWS.	<i>More frequently applied.</i> Instead of applying only on discretionary actions, this AMM would apply to any project that would like to use the SSHCP for species coverage.
CTS-5 (California Tiger Salamander Encounter Protocol)	Federal ESA protections would be used; however, this species would only receive those protections if the project is a discretionary action that would prompt Sacramento County or city to consult with USFWS.	<i>More frequently applied.</i> Instead of applying only on discretionary actions, this AMM would apply to any project that would like to use the SSHCP for species coverage.
CTS-6 (Erosion Control Materials in California Tiger Salamander Habitat)	Federal ESA protections would be used; however, this species would only receive those protections if the project is a discretionary action that would prompt Sacramento County or city to consult with USFWS.	<i>More frequently applied.</i> Instead of applying only on discretionary actions, this AMM would apply to any project that would like to use the SSHCP for species coverage.
CTS-7 (Rodent Control)	Federal ESA protections would be used; however, this species would only receive those protections if the project is a discretionary action that would prompt Sacramento County or city to consult with USFWS.	<i>More frequently applied.</i> Instead of applying only on discretionary actions, this AMM would apply to any project that would like to use the SSHCP for species coverage.
Western Spadefoot		
WS-1 (Western Spadefoot Work Window)	There is no formal protection under ESA or CESA for this species. Protections can be required under project-by-project permitting efforts by local land use authorities but are not regular or predictable.	<i>New.</i>
WS-2 (Western Spadefoot Exclusion Fencing)	There is no formal protection under ESA or CESA for this species. Protections can be required under project-by-project permitting efforts by local land use authorities but are not regular or predictable.	<i>New.</i>
WS-3 (Western Spadefoot Monitoring)	There is no formal protection under ESA or CESA for this species. Protections can be required under project-by-project permitting efforts by local land use authorities but are not regular or predictable.	<i>New.</i>

Table 2-6. Comparison of AMMs Under the Proposed Action/Proposed Project Alternative and the No Action/No Project Alternative

Proposed Action/Proposed Project Alternative Measure	No Action/No Project Alternative Regulatory Environment	Conclusion of SSHCP AMM Comparison with No Action/No Project Alternative Regulatory Environment
WS-4 (Avoid Western Spadefoot Entrapment)	There is no formal protection under ESA or CESA for this species. Protections can be required under project-by-project permitting efforts by local land use authorities but are not regular or predictable.	<i>New.</i>
WS-5 (Erosion Control Materials in Western Spadefoot Habitat)	There is no formal protection under ESA or CESA for this species. Protections can be required under project-by-project permitting efforts by local land use authorities but are not regular or predictable.	<i>New.</i>
WS-6 (Western Spadefoot Encounter Protocol)	There is no formal protection under ESA or CESA for this species. Protections can be required under project-by-project permitting efforts by local land use authorities but are not regular or predictable.	<i>New.</i>
<i>Giant Garter Snake</i>		
GGs-1 (Giant Garter Snake Surveys)	Federal ESA protections would be used; however, this species would only receive surveys if the project is a discretionary action that would prompt Sacramento County or city to consult with USFWS.	<i>More frequently applied.</i> Instead of applying only on discretionary actions, this AMM would apply to any project that would like to use the SSHCP for species coverage.
GGs-2 (Giant Garter Snake Work Window)	Federal ESA protections would be used; however, this species would only receive those protections if the project is a discretionary action that would prompt Sacramento County or city to consult with USFWS.	<i>More frequently applied.</i> Instead of applying only on discretionary actions, this AMM would apply to any project that would like to use the SSHCP for species coverage.
GGs-3 (Giant Garter Snake Monitoring)	Federal ESA protections would be used; however, this species would only receive those protections if the project is a discretionary action that would prompt Sacramento County or city to consult with USFWS.	<i>More frequently applied.</i> Instead of applying only on discretionary actions, this AMM would apply to any project that would like to use the SSHCP for species coverage.
GGs-4 (Giant Garter Snake Habitat Dewatering and Exclusion)	Federal ESA protections would be used; however, this species would only receive those protections if the project is a discretionary action that would prompt Sacramento County or city to consult with USFWS.	<i>More frequently applied.</i> Instead of applying only on discretionary actions, this AMM would apply to any project that would like to use the SSHCP for species coverage.

Table 2-6. Comparison of AMMs Under the Proposed Action/Proposed Project Alternative and the No Action/No Project Alternative

Proposed Action/Proposed Project Alternative Measure	No Action/No Project Alternative Regulatory Environment	Conclusion of SSHCP AMM Comparison with No Action/No Project Alternative Regulatory Environment
GG5-5 (Avoid Giant Garter Snake Entrapment)	Federal ESA protections would be used; however, this species would only receive those protections if the project is a discretionary action that would prompt Sacramento County or city to consult with USFWS.	<i>More frequently applied.</i> Instead of applying only on discretionary actions, this AMM would apply to any project that would like to use the SSHCP for species coverage.
GG5-6 (Erosion Control Materials in Giant Garter Snake Habitat)	Federal ESA protections would be used; however, this species would only receive those protections if the project is a discretionary action that would prompt Sacramento County or city to consult with USFWS.	<i>More frequently applied.</i> Instead of applying only on discretionary actions, this AMM would apply to any project that would like to use the SSHCP for species coverage.
GG5-7 (Giant Garter Snake Encounter Protocol)	Federal ESA protections would be used; however, this species would only receive those protections if the project is a discretionary action that would prompt Sacramento County or city to consult with USFWS.	<i>More frequently applied.</i> Instead of applying only on discretionary actions, this AMM would apply to any project that would like to use the SSHCP for species coverage.
GG5-8 (Giant Garter Snake Post-Construction Restoration)	Federal ESA protections would be used; however, this species would only receive those protections if the project is a discretionary action that would prompt Sacramento County or city to consult with USFWS. Restoration can also be required under project-by-project permitting efforts by local land use authorities or as part of a California Fish and Game Code Section 1600 or CWA 401/404 permit, but requirements for restorations on projects are not regular or predictable.	<i>More frequently applied.</i> Rather than occurring only potentially on projects requiring local land use authority discretionary permits or that obtain a California Fish and Game Code Section 1600 permit or CWA 401/404 permit, this AMM would be applied to any Covered Activity.
Western Pond Turtle		
WPT-1 (Western Pond Turtle Surveys)	There is no formal protection under ESA or CESA for this species. Protections can be required under project-by-project permitting efforts by local land use authorities but are not regular or predictable.	<i>New.</i>
WPT-2 (Western Pond Turtle Work Window)	There is no formal protection under ESA or CESA for this species. Protections can be required under project-by-project permitting efforts by local land use authorities but are not regular or predictable.	<i>New.</i>

Table 2-6. Comparison of AMMs Under the Proposed Action/Proposed Project Alternative and the No Action/No Project Alternative

Proposed Action/Proposed Project Alternative Measure	No Action/No Project Alternative Regulatory Environment	Conclusion of SSHCP AMM Comparison with No Action/No Project Alternative Regulatory Environment
WPT-3 (Western Pond Turtle Monitoring)	There is no formal protection under ESA or CESA for this species. Protections can be required under project-by-project permitting efforts by local land use authorities but are not regular or predictable.	<i>New.</i>
WPT-4 (Western Pond Turtle Habitat Dewatering and Exclusion)	There is no formal protection under ESA or CESA for this species. Protections can be required under project-by-project permitting efforts by local land use authorities but are not regular or predictable.	<i>New.</i>
WPT-5 (Avoid Western Pond Turtle Entrapment)	There is no formal protection under ESA or CESA for this species. Protections can be required under project-by-project permitting efforts by local land use authorities but are not regular or predictable.	<i>New.</i>
WPT-6 (Erosion Control Materials in Western Pond Turtle Habitat)	There is no formal protection under ESA or CESA for this species. Protections can be required under project-by-project permitting efforts by local land use authorities but are not regular or predictable.	<i>New.</i>
WPT-7 (Western Pond Turtle Modeled Habitat Speed Limit)	There is no formal protection under ESA or CESA for this species. Protections can be required under project-by-project permitting efforts by local land use authorities but are not regular or predictable.	<i>New.</i>
WPT-8 (Western Pond Turtle Encounter Protocol)	There is no formal protection under ESA or CESA for this species. Protections can be required under project-by-project permitting efforts by local land use authorities but are not regular or predictable.	<i>New.</i>
WPT-9 (Western Pond Turtle Post-Construction Restoration)	There is no formal protection under ESA or CESA for this species. Restoration can be required under project-by-project permitting efforts by local land use authorities or as part of a California Fish and Game Code Section 1600 or CWA 401/404 permit, but requirements for restorations on projects are not regular or predictable.	<i>More frequently applied.</i> Rather than occurring only potentially on projects that obtain a California Fish and Game Code Section 1600 permit or CWA 401/404 permit, this AMM would be applied to any Covered Activity.

Table 2-6. Comparison of AMMs Under the Proposed Action/Proposed Project Alternative and the No Action/No Project Alternative

Proposed Action/Proposed Project Alternative Measure	No Action/No Project Alternative Regulatory Environment	Conclusion of SSHCP AMM Comparison with No Action/No Project Alternative Regulatory Environment
Tricolored Blackbird		
TCB-1 (Tricolored Blackbird Surveys)	This species is currently protected under CESA as a candidate for listing and also receives some protection under the Migratory Bird Treaty Act (MBTA). Future listing is uncertain, so required protections may not persist.	<i>More frequently applied.</i> Regardless of the listing decision by the Fish and Game Commission, this AMM would be applied to any Covered Activity.
TCB-2 (Tricolored Blackbird Pre-Construction Surveys)	This species is currently protected under CESA as a candidate for listing and also receives some protection under MBTA. Future listing is uncertain, so required protections may not persist.	<i>More frequently applied.</i> Regardless of the listing decision by the Fish and Game Commission, this AMM would be applied to any Covered Activity.
TCB-3 (Tricolored Blackbird Nest Buffer)	This species is currently protected under CESA as a candidate for listing and also receives some protection under MBTA. Future listing is uncertain, so required protections may not persist.	<i>More frequently applied.</i> Regardless of the listing decision by the Fish and Game Commission, this AMM would be applied to any Covered Activity.
TCB-4 (Tricolored Blackbird Nest Buffer Monitoring)	This species is currently protected under CESA as a candidate for listing and also receives some protection under MBTA. Future listing is uncertain, so required protections may not persist.	<i>More frequently applied.</i> Regardless of the listing decision by the Fish and Game Commission, this AMM would be applied to any Covered Activity.
TCB-5 (Timing of Pesticide Use and Harvest Timing on Agricultural Preserves)	This species is currently protected under CESA as a candidate for listing and also receives some protection under MBTA. Future listing is uncertain, so required protections may not persist.	<i>More frequently applied.</i> Regardless of the listing decision by the Fish and Game Commission, this AMM would be applied to any Covered Activity.
Swainson's Hawk		
SWHA-1 (Swainson's Hawk Surveys)	This species is formally protected under CESA and MBTA.	<i>More frequently applied.</i> Instead of potentially being applied only on discretionary actions, this AMM would be applied consistently to any project that would like to use the SSHCP for species coverage.
SWHA-2 (Swainson's Hawk Pre-Construction Surveys)	This species is formally protected under CESA and MBTA.	<i>More frequently applied.</i> Instead of potentially being applied only on discretionary actions, this AMM would be applied consistently to any project that would like to use the SSHCP for species coverage.
SWHA-3 (Swainson's Hawk Nest Buffer)	This species is formally protected under CESA and MBTA.	<i>More frequently applied.</i> Instead of potentially being applied only on discretionary actions, this AMM would be applied consistently to any project that would like to use the SSHCP for species coverage.

Table 2-6. Comparison of AMMs Under the Proposed Action/Proposed Project Alternative and the No Action/No Project Alternative

Proposed Action/Proposed Project Alternative Measure	No Action/No Project Alternative Regulatory Environment	Conclusion of SSHCP AMM Comparison with No Action/No Project Alternative Regulatory Environment
SWHA-4 (Swainson's Hawk Nest Buffer Monitoring)	This species is formally protected under CESA and MBTA.	<i>More frequently applied.</i> Instead of potentially being applied only on discretionary actions, this AMM would be applied consistently to any project that would like to use the SSHCP for species coverage.
Greater Sandhill Crane		
GSC-1 (Greater Sandhill Crane Surveys)	This species is formally protected under CESA and MBTA.	<i>More frequently applied.</i> Instead of potentially being applied only on discretionary actions, this AMM would be applied consistently to any project that would like to use the SSHCP for species coverage.
GSC-2 (Greater Sandhill Crane Pre-Construction Surveys)	This species is formally protected under CESA and MBTA.	<i>More frequently applied.</i> Instead of potentially being applied only on discretionary actions, this AMM would be applied consistently to any project that would like to use the SSHCP for species coverage.
GSC-3 (Greater Sandhill Crane Roosting Buffer)	This species is formally protected under CESA and MBTA.	<i>More frequently applied.</i> Instead of potentially being applied only on discretionary actions, this AMM would be applied consistently to any project that would like to use the SSHCP for species coverage.
GSC-4 (Greater Sandhill Crane Visual Barrier)	This species is formally protected under CESA and MBTA.	<i>More frequently applied.</i> Instead of potentially being applied only on discretionary actions, this AMM would be applied consistently to any project that would like to use the SSHCP for species coverage.
GSC-5 (Greater Sandhill Crane Roosting Buffer Monitoring)	This species is formally protected under CESA and MBTA.	<i>More frequently applied.</i> Instead of potentially being applied only on discretionary actions, this AMM would be applied consistently to any project that would like to use the SSHCP for species coverage.
Western Burrowing Owl		
WBO-1 (Western Burrowing Owl Surveys)	This species is formally protected under MBTA. Protections can be required under project-by-project permitting efforts by local land use authorities but are not regular or predictable.	<i>More frequently applied.</i> Instead of potentially being applied only on discretionary actions, this AMM would be applied consistently to any project that would like to use the SSHCP for species coverage.
WBO-2 (Western Burrowing Owl Pre-Construction Surveys)	This species is formally protected under MBTA. Protections can be required under project-by-project permitting efforts by local land use authorities but are not regular or predictable.	<i>More frequently applied.</i> Instead of potentially being applied only on discretionary actions, this AMM would be applied consistently to any project that would like to use the SSHCP for species coverage.
WBO-3 (Burrowing Owl Avoidance)	This species is formally protected under MBTA. Protections can be required under project-by-project permitting efforts by local land use authorities but are not regular or predictable.	<i>More frequently applied.</i> Instead of potentially being applied only on discretionary actions, this AMM would be applied consistently to any project that would like to use the SSHCP for species coverage.

Table 2-6. Comparison of AMMs Under the Proposed Action/Proposed Project Alternative and the No Action/No Project Alternative

Proposed Action/Proposed Project Alternative Measure	No Action/No Project Alternative Regulatory Environment	Conclusion of SSHCP AMM Comparison with No Action/No Project Alternative Regulatory Environment
WBO-4 (Burrowing Owl Construction Monitoring)	This species is formally protected under MBTA. Protections can be required under project-by-project permitting efforts by local land use authorities but are not regular or predictable.	<i>More frequently applied.</i> Instead of potentially being applied only on discretionary actions, this AMM would be applied consistently to any project that would like to use the SSHCP for species coverage.
WBO-5 (Burrowing Owl Passive Relocation)	This species is formally protected under MBTA. Protections can be required under project-by-project permitting efforts by local land use authorities but are not regular or predictable.	<i>More frequently applied.</i> Instead of potentially being applied only on discretionary actions, this AMM would be applied consistently to any project that would like to use the SSHCP for species coverage.
WBO-6 (Burrowing Owl Timing of Maintenance Activities)	This species is formally protected under MBTA. Protections can be required under project-by-project permitting efforts by local land use authorities but are not regular or predictable.	<i>More frequently applied.</i> Instead of potentially being applied only on discretionary actions, this AMM would be applied consistently to any project that would like to use the SSHCP for species coverage.
WBO-7 (Rodent Control)	None.	<i>New.</i>
Covered Raptor Species		
RAPTOR-1 (Raptor Surveys)	This species is formally protected under MBTA. Protections can be required under project-by-project permitting efforts by local land use authorities but are not regular or predictable.	<i>More frequently applied.</i> Instead of potentially being applied only on discretionary actions, THIS AMM would be applied consistently to any project that would like to use the SSHCP for species coverage.
RAPTOR-2 (Raptor Pre-Construction Surveys)	This species is formally protected under MBTA. Protections can be required under project-by-project permitting efforts by local land use authorities but are not regular or predictable.	<i>More frequently applied.</i> Instead of potentially being applied only on discretionary actions, this AMM would be applied consistently to any project that would like to use the SSHCP for species coverage.
RAPTOR-3 (Raptor Nest/ Roost Buffer)	This species is formally protected under MBTA. Protections can be required under project-by-project permitting efforts by local land use authorities but are not regular or predictable.	<i>More frequently applied.</i> Instead of potentially being applied only on discretionary actions, this AMM would be applied consistently to any project that would like to use the SSHCP for species coverage.
RAPTOR-4 (Raptor Nest/ Roost Buffer Monitoring)	This species is formally protected under MBTA. Protections can be required under project-by-project permitting efforts by local land use authorities but are not regular or predictable.	<i>More frequently applied.</i> Instead of potentially being applied only on discretionary actions, this AMM would be applied consistently to any project that would like to use the SSHCP for species coverage.

Table 2-6. Comparison of AMMs Under the Proposed Action/Proposed Project Alternative and the No Action/No Project Alternative

Proposed Action/Proposed Project Alternative Measure	No Action/No Project Alternative Regulatory Environment	Conclusion of SSHCP AMM Comparison with No Action/No Project Alternative Regulatory Environment
<i>Western Red Bat</i>		
BAT-1 (Winter Hibernaculum Surveys)	None.	<i>New.</i>
BAT-2 (Winter Hibernaculum Pre-Construction Surveys)	None.	<i>New.</i>
BAT-3 (Winter Hibernaculum Buffer)	None.	<i>New.</i>
BAT-4 (Bat Eviction Methods)	None.	<i>New.</i>

The SSHCP Biological Goals and Their Associated Measurable Objectives and Conservation Actions

Biological Goals provide the broad guiding principles of any HCP Conservation Strategy and must be included in all regional HCPs (USFWS and NMFS 2000). The SSHCP Conservation Strategy is guided by the following five Biological Goals:

- **Biological Goal 1:** Preserve and link intact landscapes that include the highest-quality habitat for Covered Species within the Planning Area.

The intent of Biological Goal 1 is to maintain the existing heterogeneity of natural land covers (and their associated geologic formations and landforms) present within the Planning Area, minimize habitat fragmentation, and maintain landscape ecosystem functions by establishing a system of large and interconnected preserves.

- **Biological Goal 2:** Maintain or improve physical, chemical, and biological functions of aquatic resources within the Planning Area.

The intent of Biological Goal 2 is to avoid or minimize impacts of future Covered Activities on Planning Area aquatic resources and to ensure no net loss of aquatic resources and aquatic functions by preserving existing aquatic resources and by re-establishing or establishing aquatic resources within the Planning Area.

- **Biological Goal 3:** Preserve, re-establish, or establish natural land covers (including Cropland and Irrigated Pasture-Grassland) that provide habitat for Covered Species.

The intent of Biological Goal 3 is to ensure that adequate acreage of each natural land cover remains in the Planning Area to provide necessary breeding, foraging, and/or sheltering habitat for the Covered Species and other Planning Area native species that are associated with that land cover type.

- **Biological Goal 4:** Maintain or improve habitat value of natural land covers (including Cropland and Irrigated Pasture-Grassland) that are preserved within the Planning Area.

Biological Goal 4 provides appropriate management and monitoring of lands preserved by the SSHCP to ensure that natural communities remain functional in perpetuity for the benefit of Covered Species and other Planning Area native species.

- **Biological Goal 5:** Maintain or expand the existing distribution of each Covered Species within the Planning Area.

The intent of Biological Goal 5 is to ensure that each Covered Species persists within the Planning Area in perpetuity, and that unoccupied but suitable habitat for each Covered Species is preserved or re-established to provide for future Covered Species population growth and dispersal.

Biological Goals are often “stepped down” to smaller, more understandable and directly Measurable Objectives. Measurable Objectives are a condition to be met or a change to be achieved relative to the existing condition (USFWS and NMFS 2000). Each Measurable Objective should include all of the following: a species or habitat indicator, a location, an action, a quantity/state, and the timeframe needed to achieve the objective. Therefore, Measurable Objectives are quantitative and clearly state a desired result, as shown in Table 2-7. A Biological Goal is achieved by collectively implementing its Measurable Objectives (USFWS and NMFS 2000). For each Measurable Objective, the SSHCP also provides conservation actions that specify how the Measurable Objective would be achieved (Table 2-7). Additional information about the SSHCP Biological Goals, Measurable Objectives, and conservation actions is presented in the SSHCP (Chapter 7).

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
<i>Biological Goal 1: Preserve and link intact landscapes that include the highest-quality habitat for Covered Species within the Planning Area.</i>	
Objective L1. Establish a minimum Preserve System of 36,282 acres of natural land covers that preserves 34,495 acres and re-establishes or establishes 1,787 acres of habitat for Covered Species and other native biota as a component of the Preserve System. Of the 34,495 acres of preservation, at least 6,941 acres will be within the UDA. Of the 1,787 acres of re-establishment or establishment, at least 130 acres will be within the UDA. Preserves will be assembled in accordance with the conservation actions in this table.	Conservation Action L1.1. The minimum land acquisition required under the SSHCP for natural land cover types is 33,796 acres. Additional minimum land acquisition requirements will apply to some conservation analysis zones and for aquatic land cover types, as described in this table. Actual acquisition of some land cover types will likely be greater than the combined minimum requirements because parcel boundaries typically do not follow ecological boundaries, and the boundaries of acquired parcels will include land cover types that are not specified by acquisition requirements (e.g., minor roads, aqueducts). In addition, qualitative requirements for habitat connectivity or preservation of plant occurrences could require additional acreage. All SSHCP land acquisitions must be accomplished by Year 45 of the permit term to ensure that all preserve lands have at least 5 years to be managed, enhanced, and monitored according to the terms of the SSHCP. This time period will enable the Permitting Agencies to closely monitor the final land acquisitions to ensure that the Implementing Entity will complete the land acquisition strategy and achieve the final Biological Goals and Measurable Objectives. Management of these lands, however, will occur in perpetuity. Refer to objectives under Biological Goal 3 for minimum preservation and re-establishment/establishment requirements for individual SSHCP natural land cover types. Re-establishment/establishment requirements are separate and distinct from preservation requirements and cannot overlap.
Objective L2. Establish a minimum of 11 Linkage Preserves that provide interconnections between the Landscape, Core, Minor, and Satellite Preserves or existing preserves. Linkage Preserves will have a minimum width of 600 feet and will be located as described in Section 7.5. (Minor variations on minimum width may be allowed where there are physical constraints in the environment, in accordance with the process outlined in Chapter 10.)	Conservation Action L2.1. The Implementing Entity will acquire lands to link SSHCP Preserves and existing preserves in the Planning Area via Linkage Preserves. Linkage Preserves will have a minimum width of 600 feet. The Implementing Entity will select Linkage Preserve sites considering the following criteria: <ul style="list-style-type: none"> • Connects SSHCP Preserves together or connects SSHCP Preserve to existing preserves. • Provides known connectivity for Covered Species and other native terrestrial species. • Includes Covered Species modeled habitat.
<i>Biological Goal 2: Maintain or improve physical, chemical, and biological functions of aquatic resources within the Planning Area.</i>	
Objective W1. Ensure that during implementation of Objective L2 (establishing minimum of 11 Linkage Preserves). The Linkage Preserves that include creeks or streams will include the creek plus a minimum 300-foot setback on each side of the creek.	Conservation Action W1.1. Implement Stream Setback requirements in the UDA pursuant to Table 5-1 of the SSHCP.

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
<p>Objective W2. Covered Activities will implement the following, as outlined in Section 5.4.2:</p> <ul style="list-style-type: none"> • Incorporate the SSHCP Design Avoidance and Minimization Measures (LID and ROAD AMMs) • Implement ground disturbance AMM BMPs and ROAD AMMs 	<p>Conservation Action W2.1. Each Urban Development Covered Activity will implement LID AMMs in accordance with Section 5.4.</p>
	<p>Conservation Action W2.2. Each ground-disturbing Covered Activity will implement BMP measures (see Section 5.4).</p>
	<p>Conservation Action W2.3. Each urban development road construction and rural transportation Covered Activity will implement ROAD and BMP measures for road siting, design, pre-construction, construction, post-construction, and maintenance requirements (see Section 5.4).</p>
<p>Objective W3. Ensure Covered Activities will implement Stream Setback requirements in the UDA for creeks and streams, as described in AMMs STREAM-1, STREAM-2, and STREAM-3. Covered Activities will implement Preserve Setback requirements in the UDA as described in AMM EDGE-3.</p>	<p>Conservation Action W3.1. Implement AMMs STREAM-1, STREAM-2, STREAM-3, and STREAM-4.</p>
<p>Objective W4. Ensure that aquatic resources are preserved during assembly of the SSHCP Preserve System and are managed in perpetuity (see Objectives VG1, VP1, VP3, VP4, SW1, FWM1, SC1, OW1, and RIP1).</p>	<p>Conservation Action W4.1. The Implementing Entity will select preserve sites for Valley Grassland within the Vernal Pool ecosystem considering the following criteria:</p> <ul style="list-style-type: none"> • Known to include herbaceous native plant species. • Includes Covered Species modeled habitat. • Located adjacent to currently preserved lands. • Located on parcels 20 acres or greater and/or occurring within a larger open space area.
	<p>Conservation Action W4.2. The Implementing Entity will select preserve sites for Vernal Pool and Swale habitat considering the following criteria:</p> <ul style="list-style-type: none"> • Includes Covered Species modeled habitat. • Has naturally occurring high densities of vernal pools. • Has heterogeneity in vernal pool size, depth, and density. • Contains large or deep vernal pools. • Located adjacent to currently preserved lands. • Contains a soil type that is not currently preserved in the Planning Area or is underrepresented in the Preserve System. • Located on parcels 20 acres or greater and/or occurs in larger, open space areas. • Can be managed to enhance or restore natural Vernal Pool ecosystem processes.

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
	<p>Conservation Action W4.3. The Implementing Entity will select preserve sites for Seasonal Wetland and Stream/Creek (VPIH) habitat considering the following criteria:</p> <ul style="list-style-type: none"> • Links preserved vernal pools. • Includes Covered Species modeled habitat. • Located on parcels 20 acres or greater and/or occurs in larger, open space areas.
	<p>Conservation Action W4.4. The Implementing Entity will select preserve sites for Freshwater Marsh considering the following criteria:</p> <ul style="list-style-type: none"> • Includes Covered Species modeled habitat. • Can be managed to enhance or restore natural Freshwater Marsh ecosystem processes.
	<p>Conservation Action W4.5. The Implementing Entity will select preserve sites for Stream/Creek considering the following criteria:</p> <ul style="list-style-type: none"> • Located in modeled habitat for aquatic Covered Species (particularly giant garter snake and western pond turtle). • Is in proximity to the mouth of the Stream/Creek to benefit giant garter snake and western pond turtle. • Located adjacent to an existing preserve. • Has water present during early spring through mid-fall (April through October). • Can be managed to enhance or restore natural Stream/Creek ecosystem processes.
	<p>Conservation Action W4.6. The Implementing Entity will select preserve sites for Open Water considering the following criteria:</p> <ul style="list-style-type: none"> • Includes Covered Species modeled habitat. • Can be managed to enhance or restore natural Open Water ecosystem processes.
	<p>Conservation Action W4.7. The Implementing Entity will select preserve sites for riparian land cover types considering the following criteria:</p> <ul style="list-style-type: none"> • Includes Covered Species modeled habitat. • Located within 3 miles of foraging habitat for bird Covered Species that use riparian habitat for nesting and/or roosting. • Closed canopy consisting of multiple vegetation layers and includes mature trees. • Is large, relatively unfragmented, and connected to Valley Grassland and agriculture areas. • Can be managed to enhance or restore riparian land cover type ecosystem processes.
<p>Objective W5. Ensure that aquatic resources are re-established and/or established during assembly of the SSHCP Preserve System in compliance with conservation actions listed in this table (see Objectives VP2, VP5, SW2, FWM2, OW2, and RIP2).</p>	<p>Refer to Conservation Actions VP2.1, VP 5.1, SW2.1, FWM2.1, OW2.1, and RIP2.1.</p>

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
Objective W6. Ensure Covered Activities will avoid a minimum of 20% of first and second order tributaries to Elder Creek, Frye Creek, Gerber Creek, Morrison Creek, Paseo Central, and Sun Creek in the UDA.	Conservation Action W6.1. Required avoidance will comply with the requirements of AMM STREAM-3.
Objective W7. Ensure that, when re-establishing/establishing vernal pools, swales, and Freshwater Marsh, a minimum of 50 acres of Vernal Pool, 30 acres of Swale, and 50 acres of Freshwater Marsh re-establishment/establishment occur within the Morrison Creek Watershed.	Refer to Conservation Actions VP2.1, VP5.1, and FWM2.1.
<i>Biological Goal 3: Preserve, re-establish, or establish natural land covers (including Cropland and Irrigated Pasture-Grassland) that provide habitat for Covered Species.</i>	
Aquatic	
Objective VG1. Preserve a minimum of 22,014 acres of Valley Grassland land cover within the Vernal Pool Ecosystem. The preserves will be assembled in accordance with the conservation actions in this table and in accordance with Section 7.5.	Conservation Action VG1.1. Prioritize selection of preserve sites for Valley Grassland prioritized based on the following criteria: <ul style="list-style-type: none"> • Located in Vernal Pool ecosystem. • Known to support native herbaceous plants in uplands. • Located adjacent to currently preserved lands. • Located on parcels 20 acres or greater and/or occurring within larger open space area. • Management could enhance natural ecosystem processes of the Vernal Pool landscape.
Objective VP1a. Preserve a minimum of 966 acres of vernal pool in the Planning Area.	Conservation Action VP1a.1. Prioritize selection of preserve sites for vernal pools based on the following criteria: <ul style="list-style-type: none"> • Includes modeled habitat for Vernal Pool Covered Species. • Includes ecosystem functions of the uplands, micro-watersheds, and perched aquifer surrounding the vernal pools that are undisturbed. • Located adjacent to currently preserved lands. • Located on parcels 20 acres or greater and/or occurs in larger, open space areas. • Can be managed to maintain natural Vernal Pool ecosystem processes. • Has available water for grazing animals on preserves. • Depending on what is already preserved in the Planning Area, prioritize either naturally occurring high-density Vernal Pool complexes or more isolated pools to ensure heterogeneity of spatial patterns and connectivity. <p>Depending on what is already preserved in the Planning Area, prioritize preservation of pools with each of the different landforms, geologic formations, floristic assemblages, and vernal pool sizes/depths.</p>

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
<p>Objective VP1b. Impacts to vernal pool within or adjacent to (within 1 mile of) the MCRA and Cosumnes/Rancho-Seco Core Recovery Area will be mitigated within or adjacent to (within 1 mile of) the MCRA and/or Cosumnes/Rancho-Seco Core Recovery Area.</p>	<p>Conservation Action VP1b.1. Prioritize selection of preserve sites for vernal pools in Core Recovery Areas based on the following criteria:</p> <ul style="list-style-type: none"> • Is within the MCRA or Cosumnes/Rancho-Seco Recovery Area. • If not within the Core Recovery Areas, is within 1 mile of one of the two Core Recovery Areas. • Includes modeled habitat for Vernal Pool Covered Species. • Ecosystem functions of the uplands, micro-watersheds, and perched aquifer surrounding the vernal pools are undisturbed. • Adjacent to currently preserved lands. • On parcels 20 acres or greater and/or occurs in larger, open space areas. • Can be managed to maintain natural Vernal Pool ecosystem processes. • Depending on what is already preserved in the Plan Area, prioritize either naturally occurring high-density vernal pool complexes or more isolated pools to ensure heterogeneity of spatial patterns and connectivity. • Depending on what is already preserved in the Plan Area, prioritize preservation of pools with each of the different landforms, geologic formations, floristic assemblages, and vernal pool sizes/depths. <p>Has available water for grazing animals on preserves</p>
<p>Objective VP2. Re-establish and/or establish a minimum of 389 acres of functional Vernal Pool, including at least 50 acres within or adjacent to (within 1 mile of) the MCRA.</p>	<p>Conservation Action VP2.1. Implement Vernal Pool re-establishment and establishment consistent with the requirements of AMMs RE-ESTABLISHMENT/ESTABLISHMENT-1 and -2. Adhere to specific protocols, described in detail in the ARP, and outlined in Title 33 of the Code of Federal Regulation, Part 325, Sections 332.4(c)(2) through (c)(14), of the USACE's Mitigation Rule.</p>
<p>Objective VP3. Preserve a minimum of 278 acres of Swale. The preserves will be assembled in accordance with the conservation actions in this table and in accordance with Section 7.5.</p>	<p>Conservation Action VP3.1. Prioritize selection of preserve sites for Swale or Stream/Creeks (VPIH) based on the following criteria:</p> <ul style="list-style-type: none"> • Located in Vernal Pool ecosystem. • Links existing preserved Vernal Pool areas. • Includes Covered Species modeled habitat. • Located on parcels 20 acres or greater and/or occurs in larger, open space areas.
<p>Objective VP4. Preserve a minimum of 26 acres of Swale or Stream/Creek (VPIH) land cover type for impacts to the Stream/Creek (VPIH) land cover type. The preserves will be assembled in accordance with the conservation actions in this table and in accordance with Section 7.5.</p>	<p>Conservation Action VP4.1. Prioritize selection of preserve sites for Swale or Stream/Creek (VPIH) based on the following criteria:</p> <ul style="list-style-type: none"> • Located in Vernal Pool ecosystem. • Has Swale preservation preferred over preservation of Stream/Creek (VPIH). • Links existing preserved Vernal Pool areas. • Includes Covered Species modeled habitat.

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
	<ul style="list-style-type: none"> Located on parcels 20 acres or greater and/or occurs in larger, open space areas.
Objective VP5. Re-establish and/or establish a minimum of 256 acres of Swale or Vernal Pool for impacts to the Swale and Stream/Creek (VPIH) land covers. Re-establishment and/or establishment will occur in accordance with the conservation actions in this table.	Conservation Action VP5.1. Prioritize selection of re-establishment/establishment sites for Swale based on the following criteria: <ul style="list-style-type: none"> Located in Vernal Pool ecosystem. Links existing preserved Vernal Pool areas. Includes Covered Species modeled habitat. Located on parcels 20 acres or greater and/or occurs in larger, open space areas.
Objective VP6. Re-establish and/or establish a minimum of 300 acres of functional Vernal Pool ecosystem within or adjacent to (within 1 mile of) the MCRA.	Refer to Conservation Action VP2.1.
Objective SW1. Preserve a minimum of 105 acres of Seasonal Wetland. The preserves will be assembled in accordance with the conservation actions in this table and in accordance with Section 7.5.	Conservation Action SW1.1. Prioritize selection of preserve sites for Seasonal Wetland based on the following criteria: <ul style="list-style-type: none"> Includes Covered Species modeled habitat. Located on parcels 20 acres or greater and/or occurs in larger, open space areas, to the maximum extent feasible.
Objective SW2. Re-establish and/or establish a minimum of 105 acres of Seasonal Wetland. Re-establishment and/or establishment will occur in accordance with the conservation actions in this table.	Conservation Action SW2.1. Prioritize selection of re-establishment and/or establishment sites for Seasonal Wetland based on the following criteria: <ul style="list-style-type: none"> Links existing preserved areas of Seasonal Wetland or other aquatic land cover types that provide modeled species habitat. Located on parcels 20 acres or greater and/or occurs in larger, open space areas, to the maximum extent feasible. Supports soils and topography modeled for re-establishing and/or establishing Seasonal Wetland.
Objective FWM1. Preserve a minimum of 127 acres of Freshwater Marsh. The preserves will be assembled in accordance with the conservation actions in this table and in accordance with Section 7.5.	Conservation Action FWM1.1. Prioritize selection of preserve sites for Freshwater Marsh based on the following criteria: <ul style="list-style-type: none"> Includes Covered Species modeled habitat. Currently exhibits hydrology sufficient to support perennial Freshwater Marsh habitat. Currently supports emergent vegetation such as tules and cattails.
Objective FWM2. Re-establish and/or establish a minimum of 127 acres of functional Freshwater Marsh. Re-establishment and/or establishment will occur in accordance with the conservation	Conservation Action FWM2.1. Prioritize selection of re-establishment and/or establishment sites for Freshwater Marsh based on the following criteria: <ul style="list-style-type: none"> Has historically supported Freshwater Marsh habitat. Has soils and topography consistent with the Freshwater Marsh land cover type modeled for re-establishment and/or establishment of Freshwater Marsh.

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
actions in this table.	<ul style="list-style-type: none"> Links existing preserve areas of Freshwater Marsh other aquatic land cover types that provide modeled species habitat. After re-establishment and/or establishment, would provide Covered Species modeled habitat. Has hydrology sufficient to support perennial Freshwater Marsh habitat or a water source to re-establish historical hydrology of the site.
Objective SC1. Preserve a minimum of 117 acres of the Stream/Creek land cover. The preserves will be assembled in accordance with the conservation actions in this table and in accordance with Section 7.5.	Conservation Action SC1.1. Prioritize selection of preserve sites for Stream/Creek based on the following criteria: <ul style="list-style-type: none"> Has potential to support Covered Species (particularly giant garter snake and western pond turtle). Proximity to the mouth of the Stream/Creek. Adjacent to an existing preserve. Water present during early spring through mid-fall (April through October). Management can be used to enhance natural stream and creek ecosystem processes.
Objective SC2. Re-establish and/or establish a minimum of 117 acres of the Stream/Creek land cover. Re-establishment and/or establishment will occur in accordance with the conservation actions in this table.	Conservation Action SC2.1. Prioritize selection of re-establishment and/or establishment sites for Stream/Creek based on the following criteria: <ul style="list-style-type: none"> Has potential to support Covered Species (particularly giant garter snake and western pond turtle). Links existing preserve areas of aquatic land cover types that provide modeled species habitat. Proximity to the mouth of the Stream/Creek. Adjacent to an existing preserve. Water present during early spring through mid-fall (April through October). Management can be used to enhance natural stream and creek ecosystem processes.
Objective OW1. Preserve a minimum of 155 acres of Open Water (or a land cover that provides equivalent or better habitat for Covered Species affected by the loss of Open Water, as determined by the Technical Advisory Committee (TAC)). The preserves will be assembled in accordance with the conservation actions in this table and in accordance with Section 7.5.	Conservation Action OW1.1. Prioritize selection of preserve sites for Open Water based on the following criteria: <ul style="list-style-type: none"> Includes Covered Species modeled habitat. Links existing preserved land cover types that provide modeled species habitat. Management can be used to enhance or restore natural ecosystem processes.
Objective OW2. Re-establish and/or establish a minimum of 155 acres of Open Water (or a land cover that provides equivalent or better habitat value for Covered Species affected by the loss of Open Water, as determined by the TAC). Re-establishment and/or establishment	Conservation Action OW2.1. Prioritize selection of re-establishment and/or establishment sites for Open Water based on the following criteria: <ul style="list-style-type: none"> Links existing preserve areas of aquatic land cover that provide Covered Species modeled habitat. Management can be used to enhance or restore natural ecosystem processes.

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
will occur in accordance with the conservation actions in this table.	
<p>Objective RIP1. Preserve a minimum of 964 acres of Mixed Riparian Woodland and/or Mixed Riparian Scrub for impacts to Mixed Riparian Woodland, Mixed Riparian Scrub, and Mine Tailings Riparian Woodland land cover type. The preserves will be assembled in accordance with the conservation actions in this table and in accordance with Section 7.5.</p>	<p>Conservation Action RIP1.1. Prioritize selection of preserve sites for Mixed Riparian Woodland or Mixed Riparian Scrub based on the following criteria:</p> <ul style="list-style-type: none"> • Includes Covered Species modeled habitat. • Located within 3 miles of foraging habitat for Covered Species that use riparian habitat for nesting and/or roosting. • Has closed canopy consisting of multiple vegetation layers and includes mature trees. • Is large, relatively unfragmented, and connected to Valley Grassland and agriculture areas. • Management can be used to enhance or restore natural ecosystem processes.
<p>Objective RIP2. Re-establish and/or establish a minimum of 591 acres of Mixed Riparian Woodland and/or Mixed Riparian Scrub for impacts to Mixed Riparian Woodland, Mixed Riparian Scrub, and Mine Tailings Riparian Woodland land cover type. Re-establishment and/or establishment will occur in accordance with the conservation actions in this table.</p>	<p>Conservation Action RIP2.1. Prioritize selection of re-establishment and/or establishment sites for Mixed Riparian Woodland or Mixed Riparian Scrub based on the following criteria:</p> <ul style="list-style-type: none"> • Potential re-establishment/establishment sites will fill gaps between existing Mixed Riparian Woodland or Mixed Riparian Scrub land cover sites, or establish a link between existing Riparian Woodland or Mixed Riparian Scrub land cover sites. • Includes Covered Species modeled habitat. • Located within 3 miles of foraging habitat for Covered Species that use riparian habitat for nesting and/or roosting. • Closed canopy consisting of multiple vegetation layers, including mature trees. • Large, unfragmented, and connected to Valley Grassland and agriculture areas. • Management can be used to enhance or restore natural ecosystem processes. • Re-establishment sites will be located along existing riparian corridors where habitat likely existed in the past, such as areas along the Cosumnes River, Deer Creek, South Laguna Creek, Willow Slough, North Badger Creek, South Badger Creek, Deadman's Gulch, or Skunk Creek. • Re-establishment will avoid locations preserved or restored for giant garter snake. • Establishment of riparian communities will avoid locations that historically did not support riparian vegetation. • Establishment of riparian communities will avoid any existing Vernal Pool landscapes. • Re-establishment will use the historical signature of riparian communities and aim to restore the historical conditions. • Re-establishment and establishment sites will be located within an SSHCP Preserve. • Re-establishment and establishment sites will support soils and topography modeled for re-establishment and/or establishment of riparian communities. • Re-established and established riparian communities will be designed and constructed to avoid or minimize direct or indirect impacts on existing functioning habitat.

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
<i>Terrestrial</i>	
Objective BOW1. Preserve a minimum of 47 acres of Blue Oak Woodland and/or Blue Oak Savanna for direct impacts to Blue Oak Woodland and Blue Oak Savanna. The preserves will be assembled in accordance with the conservation actions in this table and in accordance with Section 7.5.	Conservation Action BOW1.1. Prioritize selection of preserve sites for Blue Oak Woodland/Savanna that expand on or link to the Deer Creek Hills Preserve to the maximum extent feasible.
Objective BOW2. Re-establish and/or establish a minimum of 47 acres of Blue Oak Woodland and/or Blue Oak Savanna for direct impacts to Blue Oak Woodland and Blue Oak Savanna. Re-establishment and/or establishment will occur in accordance with the conservation actions in this table.	Conservation Action BOW2.1. Prioritize selection of re-establishment/establishment sites for Blue Oak Woodland/Savanna that will expand the existing Deer Creek Hills Preserve to the maximum extent feasible or will establish a habitat link between an SSHCP Preserve and the existing Deer Creek Hills Preserve. Any potential re-establishment/establishment sites will fill gaps between existing preserved mixed Blue Oak Woodland or Blue Oak Savanna land covers or would link existing preserved Blue Oak Woodland or Blue Oak Savanna land covers. Re-establishment is preferred over establishment.
Objective AG1. Preserve a minimum of 9,696 acres of Cropland and/or Irrigated Pasture-Grassland, including 1,000 acres outside the 100-year floodplain in accordance with Objective GS6. The preserves will be assembled in accordance with the conservation actions in this table and in accordance with Section 7.5.	Conservation Action AG1.1. The Implementing Entity will select preserve sites with existing agriculture land covers considering certain criteria, including the following: <ul style="list-style-type: none"> • Contains margins that support suitable nesting trees and/or could support plantings of additional trees and shrubs for future use as nesting or perching habitat and/or habitat for prey. • Contains soils identified in the soil survey of Sacramento County as highly productive. • Has an existing irrigation system that is engineered to provide for crop production. • Supports high prey densities for avian Covered Species or is capable of supporting crops that support high prey densities. • Management can be used to enhance or restore natural ecosystem processes.
<i>Biological Goal 4: Maintain or improve habitat value of natural land covers (including Cropland and Irrigated Pasture-Grassland) that are preserved within the Planning Area.</i>	
Objective HAB1. Develop PMPs for the benefit of Covered Species.	Conservation Action HAB1.1. Prepare a PMP for each preserve within 1 year of acquisition. The PMPs will identify preserve-specific preservation objectives for Covered Species and habitats and will be consistent with the Preserve System Management Program.
Objective HAB2. Assess whether SSHCP Preserves are being managed and maintained for the benefit of Covered Species.	Conservation Action HAB2.1. Individual PMPs will be reviewed periodically (e.g., every 3–5 years) after development in coordination with the Preserve System Management Program. If preserve sites are not meeting habitat success standards as determined by the TAC, modifications, such as remedial actions (e.g., adaptive management) or other additional preservation actions (e.g., adding acreage), will be implemented.

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
Objective HAB3. Record management history for preserve parcels as they are obtained. Consider management history when developing an initial PMP.	Conservation Action HAB3.1. The Implementing Entity will interview individuals, to the maximum extent feasible, that have been involved in management of acquired parcels. This could include landowners, property managers, ranch managers, and any others with management responsibility. For parcels that are part of a group (e.g., a ranch), separate reports for each parcel do not need to be prepared, but any variation in management treatment between the component parcels should be noted. To the maximum extent feasible, interviews will be audio or video recorded and summarized in a memorandum. Those memoranda will be reviewed, and any relevant information should be included as appendices in the initial and individual PMP. Preserve Managers will not change the management approach from existing management without a sound scientific basis for the change.
Objective HAB4. Develop and implement an early detection and eradication program for invasive species within the Planning Area. The program will include regular weed assessment and mapping within the UDA and a comprehensive weed detection and abatement plan for the Planning Area, including training of road crews to identify and report weeds.	Conservation Action HAB4.1. Include invasive plant and wildlife control strategies in all PMPs. These strategies may include site-specific grazing regimes, controlled burning protocols, and mowing/mechanical maintenance guidelines consistent with native plant re-establishment needs, invasive plant and wildlife removal, and consideration of endemic plant and wildlife species population needs.
Objective HAB5. Monitor preserves for edge effects (e.g., weeds, noise, hydrology, litter).	Conservation Action HAB5.1. Include in PMPs a requirement to regularly monitor noise and light intensity, frequency and quantity of trash, qualitative hydrology changes, and other issues along a transect from the boundary toward the interior. Preserve Managers will include this information in annual reports, noting any changes in these attributes over time. Quantitative monitoring for edge effects will occur on the same preserves hosting permanent plots for vernal pool plants and invertebrate species, and will be timed to allow for correlational analysis between edge effects and species presence or abundance over the long term.
Objective HAB6. Collect weather data throughout Sacramento County to assist in developing status and trends and tracking climate change and data.	Conservation Action HAB6.1. During assembly of the SSHCP Preserve System, install weather stations at selected preserves for fine-scale monitoring of climate trends and combine with data from existing weather stations to provide a comprehensive weather dataset. Preserves will be selected to receive weather stations based on gaps in geographic coverage of existing weather stations in Sacramento County.
Objective HAB7. Monitor vegetation biomass within grassland land covers.	Conservation Action HAB7.1. During assembly of Flexible Preserves (Valley Grassland, Blue Oak Savanna), measure vegetation biomass. Measurement will be by releve, residual dry matter, or similar technique. The technique selected will be used consistently across preserves on an annual basis at the end of the growing season (i.e., September or October).
Objective AG2. Of the 9,696 acres preserved under Objective AG1, maintain at least 2,000 of those acres of high-quality foraging crops (such as corn, alfalfa, or wheat) preferred by tricolored blackbird (<i>Agelaius tricolor</i>), greater sandhill crane, and the covered raptor species. The	Conservation Action AG2.1. Maintain a minimum of 2,000 acres as food plots that are planted with crops that are preferred by avian Covered Species as foraging habitat such as corn, alfalfa, or wheat. Food plots will be distributed throughout PUs 4, 5, or 6 at a minimum of 10 different locations, none of which will be less than 20 acres.

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
2,000 acres will be distributed in strategic locations throughout PPUs 4, 5, or 6 in plots of 20 acres or more. The preserves will be assembled in accordance with the conservation actions in this table and in accordance with Section 7.5.	
Objective AG3. Maintain or increase raptor prey availability and improve raptor foraging habitat by strategically planting 10,000 linear feet of shrub or other substrate that provides cover and refugia for fossorial mammals and other prey species.	Conservation Action AG3.1. Plant 10,000 linear feet of shrub or other substrate that provides cover and refugia for fossorial mammals and other small prey (e.g., amphibians, reptiles) within and on the borders of Cropland Preserves within PPUs 4, 5, and/or 6 to increase prey availability for covered avian species. In total, 100 linear feet of hedgerow will be planted each year until 5,000 linear feet is established within the Planning Area. Planting of hedgerows can be delayed for up to 5 years after issuance of permits to allow time to acquire preserves where hedgerows can be planted. At least 1,000 feet must be planted within 10 years after issuance of permits. Acceptable hedgerow plants include native trees, shrubs, and grasses, as approved by the TAC. Hedgerows must grow to be at least 5 feet in width and must be located on upland areas not prone to inundation from normal irrigation practices. Hedgerows that fail to establish or succumb to disease or other causes will be replaced within 1 year of removal or failure. Providing refuge habitat for prey species adjacent to agricultural settings will allow areas that have been harvested or with temporarily reduced or eliminated populations of prey to re-establish more quickly.
Objective RIP5. Monitor the groundwater table as it relates to status and trends for riparian habitat.	<p>Conservation Action RIP5.1. During assembly of the SSHCP Preserve System, identify parcels that have existing water wells. To the maximum extent feasible, obtain history of depth to the groundwater table from property owners or managers. During assembly of the SSHCP Preserve System, take a reading of depth to groundwater at each existing well. Repeat measurement annually at a consistent time of year to allow comparison between years, and monitor any groundwater depletion or recharge.</p> <p>Conservation Action RIP5.2. During assembly of the SSHCP Preserve System, ensure availability of water for grazing animals on preserves, Cropland Preserves, and habitat restoration.</p>
<i>Biological Goal 5: Maintain or expand the existing distribution of each Covered Species within the Planning Area.</i>	
Plant Covered Species	
Objective VPP1. Protect one currently documented unreserved occurrence of Ahart's dwarf rush in the Planning Area. Prior to take of any occurrence of Ahart's dwarf rush, protect six currently unreserved ¹³ and "biologically equivalent	Conservation Action VPP1.1. Conduct surveys in modeled habitat (and suitable habitat identified by the approved project biologist at the time of the survey) during the appropriate time of year when Ahart's dwarf rush is observable. If detected in an area proposed to be disturbed by a Covered Activity, prior to take of Ahart's dwarf rush, identify one unprotected occurrence of the species and protect the occurrence within a new preserve.

¹³ Includes occurrences in the SSHCP GIS database (January 2014) and any future occurrences found in the SSHCP Planning Area.

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
or superior” (as defined by the TAC) occurrences of Ahart’s dwarf rush within the Planning Area. After six currently unpreserved occurrences are protected, prior to take of an occurrence of Ahart’s dwarf rush, protect one currently unpreserved and “biologically equivalent or superior” (as defined by the TAC) occurrence of Ahart’s dwarf rush within the Planning Area.	
Objective VPP2. Prior to take of any occurrence of Boggs Lake hedge-hyssop, protect one currently unpreserved ¹ and “biologically equivalent or superior” (as defined by the TAC) occurrence of Boggs Lake hedge-hyssop within the Planning Area.	Conservation Action VPP2.1. Conduct surveys in modeled habitat (and suitable habitat identified by the approved biologist at the time of the survey) during the appropriate time of year when Boggs Lake hedge-hyssop is observable. If detected in an area proposed to be disturbed by a Covered Activity, prior to take of Boggs Lake hedge-hyssop, identify one unprotected occurrence of the species and protect the occurrence within a new preserve.
Objective VPP3. Prior to take of any occurrence of dwarf downingia, protect one currently unpreserved ¹ and “biologically equivalent or superior” (as defined by the TAC) occurrence of dwarf downingia within the Planning Area.	Conservation Action VPP3.1. Conduct surveys in modeled habitat (and suitable habitat identified by the approved project biologist at the time of the survey) during the appropriate time of year when dwarf downingia is observable. If detected in an area proposed to be disturbed by a Covered Activity, prior to take of dwarf downingia, identify one unprotected occurrence of the species and protect the occurrence within a new preserve.
Objective VPP4. Protect and maintain in perpetuity a minimum of 14 occurrences of legenere within the SSHCP Preserve System. Legenere occurrences will be preserved in accordance with the conservation actions described in this table. Prior to take of any occurrence of legenere, one currently unpreserved and “biologically equivalent or superior” (as defined by the TAC) occurrence of legenere will be preserved and maintained within the Planning Area.	Conservation Action VPP4.1. Preserve and maintain in perpetuity at least 14 occurrences of legenere within the SSHCP Preserve System. Conduct surveys in modeled habitat (and suitable habitat identified by the approved biologist at the time of the survey) during the appropriate time of year when legenere is observable. If detected in an area proposed to be disturbed by a Covered Activity, prior to take of legenere, identify one unprotected occurrence of the species and protect within the occurrence a new preserve.

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
Objective VPP5. Prior to take of any occurrence of pincushion navarretia, protect one currently unpreserved ¹⁴ and “biologically equivalent or superior” (as defined by the TAC) occurrence of pincushion navarretia within the Planning Area.	Conservation Action VPP5.1. Conduct surveys in modeled habitat (and suitable habitat identified by the approved biologist at the time of the survey) during the appropriate time of year when pincushion navarretia is observable. If detected in an area proposed to be disturbed by a Covered Activity, prior to take of pincushion navarretia, identify one unprotected occurrence of the species and protect the occurrence within a new preserve.
Objective VPP6. Protect and maintain in perpetuity all known currently unprotected occurrences of Sacramento Orcutt grass in the Planning Area to preserve existing distribution and any currently unknown sites discovered in locations subject to an SSHCP Covered Activity.	Conservation Action VPP6.1. Preserve and maintain in perpetuity all known occurrences of Sacramento Orcutt grass in the Planning Area. Prior to proposed disturbance of a site associated with a Covered Activity, conduct surveys in modeled habitat (and suitable habitat identified by the approved project biologist at the time of the survey) during the appropriate time of year when Sacramento Orcutt grass is observable. Over the permit term, all plant surveys will comply with CDFW's most recent survey protocols for sensitive plants. If a species is found, the project proponent will protect the occurrence within a minimum satellite-sized preserve that encloses the entire Vernal Pool watershed. Surveys will be conducted after the first year of preservation and every 5 years thereafter to monitor persistence. If, after the first year, or any 5-year interval thereafter, Sacramento Orcutt grass is not persisting, the preservation effort will be deemed to have failed. Remediation (e.g., re-establishment at another location) must occur within 1 year after efforts are deemed unsuccessful.
Objective VPP7. Protect and maintain in perpetuity all known currently unprotected occurrences of slender Orcutt grass in the Planning Area to preserve existing distribution and any currently unknown sites discovered in locations subject to an SSHCP Covered Activity.	Conservation Action VPP7.1. Preserve and maintain in perpetuity all known occurrences of slender Orcutt grass in the Planning Area. Prior to the proposed disturbance of a site associated with a Covered Activity, conduct surveys in modeled habitat (and suitable habitat identified by the approved project biologist at the time of the survey) during the appropriate time of year when slender Orcutt grass is observable. Over the permit term, all plant surveys will comply with CDFW's most recent survey protocols for sensitive plants. If the species is found, the project proponent will protect the occurrence within a minimum satellite-sized preserve that encloses the entire Vernal Pool micro-watershed. Surveys will be conducted after the first year of preservation and every 5 years thereafter to monitor persistence. If, after the first year, or any 5-year interval thereafter, slender Orcutt grass is not persisting, the preservation effort will be deemed to have failed. Remediation (e.g., re-establishment at another location) must occur within 1 year after efforts are deemed unsuccessful.
Objective SA1. Prior to take of an occurrence of Sanford's arrowhead, protect one currently unpreserved ¹⁵ and “biologically equivalent or superior” (as defined by the TAC) occurrence of Sanford's arrowhead within the Planning Area.	Conservation Action SA1.1. Conduct surveys in modeled habitat (and suitable habitat identified by the approved biologist at the time of the survey) during the appropriate time of year when Sanford's arrowhead are observable. If detected in an area proposed to be disturbed by a Covered Activity, prior to take of Sanford's arrowhead, identify one unprotected occurrence of the species and protect within a new preserve.

¹⁴ Includes occurrences in the SSHCP GIS database (January 2014) and any future occurrences found in the Planning Area.

¹⁵ Includes occurrences in the SSHCP GIS database (January 2014) and any future occurrences found in the Planning Area.

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
Objective SA2. During re-establishment and/or establishment of Seasonal Wetland, Freshwater Marsh, Open Water, and Stream/Creek, translocate impacted Sanford's arrowhead from other sites.	<p>Conservation Action SA1.2. The Implementing Entity will select translocation sites for Sanford's arrowhead in emergent marsh vegetation, including the margins of rivers, streams, ponds, reservoirs, irrigation and drainage canals, ditches, stock-ponds, and Freshwater Marsh, considering certain criteria, including the following:</p> <ul style="list-style-type: none"> • Known to support Sanford's arrowhead. • Proposed for re-establishment/establishment. • Can be re-established to support Sanford's arrowhead populations and natural ecosystem processes.
Aquatic Animal Covered Species	
Objective VPI1. Protect and maintain in perpetuity 1,270 acres of vernal pool tadpole shrimp modeled aquatic habitat within the Planning Area to preserve existing distribution.	<p>Conservation Action VPI1.1. The Implementing Entity will select preserve sites containing modeled habitat for vernal pool invertebrates considering certain criteria, including the following:</p> <ul style="list-style-type: none"> • Includes vernal pool complexes with known occurrences of covered vernal pool invertebrates. • Represents diversity of vernal pool depth, size, density, geologic formations, and soil types within the Planning Area. • Includes vernal pool habitats embedded in Valley Grassland within Vernal Wetland Acre/Density Index Category 1–3 land analysis units that provide high-quality Vernal Pool habitat. • Located adjacency of other suitable habitat. • Has modeled habitat within the USFWS Core Recovery Areas and Critical Habitat for vernal pool invertebrate species.
	Conservation Action VPI1.2. Preserve a minimum of 90% of the watershed of each preserved Vernal Pool and maintain a minimum 50-foot setback outside the preserve boundary.
Objective VPI2. Protect and maintain in perpetuity 1,270 acres of vernal pool fairy shrimp modeled aquatic habitat within the Planning Area to preserve existing distribution.	See Conservation Actions VPI1.1 and VPI1.2.
Objective VPI3. Protect and maintain in perpetuity 1,059 acres of mid-valley fairy shrimp modeled aquatic habitat within the Planning Area to preserve existing distribution.	See Conservation Actions VPI1.1 and VPI1.2.
Objective VPI4. Protect and maintain in perpetuity 1,245 acres of Ricksecker's water scavenger beetle modeled aquatic habitat within the Planning Area to preserve existing distribution.	See Conservation Actions VPI1.1 and VPI1.2.

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
Objective VPI5. Ensure that, during implementation of Objective VP2, re-established or established vernal pools are inoculated with soils from impacted vernal pools within 1 mile of re-establishment/establishment in accordance with the conservation actions in this table.	Conservation Action VPI5.1: Implement Vernal Pool re-establishment and establishment consistent with the requirements of AMMs RE-ESTABLISHMENT/ESTABLISHMENT-1 and -2.
Objective CTS1. Preserve at least five occupied California tiger salamander breeding ponds.	<p>Conservation Action CTS1.1. The Implementing Entity will select breeding ponds for preservation considering certain criteria, including the following:</p> <ul style="list-style-type: none"> • Located within USFWS Critical Habitat. • Has surveys that indicate active use of breeding pond within each of prior 3 years. • Has breeding ponds that can sustain inundation for a minimum of 70 days during an average rainfall year. • Has surrounding uplands that no more than 0.5 mile away containing Blue Oak Savanna, Blue Oak Woodland, and Valley Grassland with adequate burrows and refugia sites. • Has no predatory fish and American bullfrog (<i>Rana catesbeiana</i>) on site.
<p>Objective CTS2. During assembly of the SSHCP Preserve System, ensure that modeled aquatic and upland habitat for California tiger salamander is preserved. Minimum preservation will total 141 acres of aquatic habitat and 1,677 acres of upland habitat. Ensure that mitigation for modeled high-value habitat impacted within California tiger salamander Critical Habitat occurs within California tiger salamander Critical Habitat (see Objectives BOW1, VP1, SW1, and VG1).</p>	<p>Conservation Action CTS2.1. Preserve California tiger salamander aquatic habitat (Vernal Pool and Seasonal Wetland). The Implementing Entity will select preserve sites considering certain criteria, including the following:</p> <ul style="list-style-type: none"> • Located in modeled habitat within USFWS Critical Habitat. • Contains modeled wetlands and surrounding uplands no more than 0.5 mile from aquatic habitat. • Has wetlands that must be able to sustain inundation for a minimum of 70 days during an average rainfall year. • Has permanent impoundments that are appropriate as long as predatory fish and bullfrogs are absent.
	<p>Conservation Action CTS2.2. Preserve California tiger salamander upland habitat (Blue Oak Woodland, Blue Oak Savanna, and Valley Grassland). The Implementing Entity will select preserve sites considering certain criteria, including the following:</p> <ul style="list-style-type: none"> • Located in modeled habitat within USFWS Critical Habitat. • Contains Blue Oak Savanna, Blue Oak Woodland, and Valley Grassland no more than 0.5 mile from known breeding pond. • Contains burrows that are dry during the summer and fall months in open grassland or under isolated oaks. • Supports fossorial mammals to create upland burrows. • Located within 1.5 miles of Vernal Pool and Seasonal Wetland that are considered aquatic habitat.
	<p>Conservation Action CTS2.3. Preserve California tiger salamander aquatic or upland habitat at a ratio of 1 acre for every 1 acre that is lost (1:1) within PPU 7. Conduct surveys after the first year and every 5 years thereafter to monitor the occupancy of the habitat.</p>

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
<p>Objective CTS3. Rural transportation project Covered Activities within California tiger salamander modeled habitat will be designed to allow California tiger salamander movement across the roadway area.</p>	<p>Conservation Action CTS3.1. The Implementing Entity will retain an approved biologist to prepare targeted species mobility studies to determine if California tiger salamander mobility between breeding ponds or between breeding ponds and upland refugia will be affected by rural transportation Covered Activities within California tiger salamander modeled habitat. Data relevant to determining California tiger salamander movement must be collected for at least 3 years, and the study will be updated through new data collection and consultation with USFWS and CDFW every 10 years. The mobility study methodology will be prepared in consultation with USFWS and CDFW and will need approval from USFWS and CDFW prior to implementation. The data will be used by the project proponent to select the most appropriate design requirements to maintain and facilitate California tiger salamander movement. Modeled habitat near each of the following roadways will be the subject of targeted species mobility studies for California tiger salamander:</p> <ul style="list-style-type: none"> • Twin Cities Road east of State Route 99 • Lone Road within PPU 7 • Clay Station Road from Dillard Road south to Sacramento County line with San Joaquin County (Planning Area boundary) <p>After construction is complete, California tiger salamander movement across and along the road will be monitored to assess how their movement changed in response to the project and if additional design considerations will be used as future projects are implemented along the roadway.</p>
<p>Objective WS1. During assembly of the SSHCP Preserve System, ensure that modeled aquatic and upland habitat for western spadefoot is preserved. Minimum preservation will total 1,531 acres of aquatic habitat and 22,044 acres of upland habitat. Ensure that mitigation for modeled high-value habitat impacted within the MCRA or Cosumnes/Rancho Seco Core Recovery Area occurs within the Core Recovery Areas (see Objectives BOW1, VP1, VP3, SW1, SC1, OW1, and VG1).</p>	<p>Conservation Action WS1.1. The Implementing Entity will select preserve sites for aquatic and adjacent upland habitat considering certain criteria, including the following:</p> <ul style="list-style-type: none"> • Habitat is located in the MCRA or Cosumnes/Rancho-Seco Core Recovery Areas. • Aquatic habitat will include temporary pools and drainages. • Aquatic habitat will include quiet streams that form following winter or spring rains. • Upland habitat should surround aquatic breeding sites. • Upland habitat will include friable soils suitable for burrow creation. • Upland habitat will include soils maintaining some degree of moisture. • Aquatic and upland habitat is located away from areas that are subject to vibrations that simulate rainfall, such as roadways with heavy traffic.
<p>Objective WS2. During assembly of the SSHCP Preserve System, ensure that modeled aquatic habitat for western spadefoot is re-established and/or</p>	<p>Conservation Action WS2.1. The Implementing Entity will select re-establishment and establishment sites considering certain criteria, including the following:</p> <ul style="list-style-type: none"> • Habitat is located in the MCRA or Cosumnes/Rancho-Seco Core Recovery Areas. • Aquatic habitat will include temporary pools and drainages.

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
<p>established. Minimum re-establishment and/or establishment will total 906 acres of aquatic habitat.</p> <p>Ensure that mitigation for modeled high-value habitat impacted within the MCRA or Cosumnes/Rancho Seco Core Recovery Area occurs within the Core Recovery Areas (see Objectives VP2, SW2, and OW2).</p>	<ul style="list-style-type: none"> Habitat will include quiet streams that form following winter or spring rains. Habitat will include upland habitat available no more than 500 feet away from preserved aquatic habitat. Habitat will include friable soils suitable for burrow creation. Habitat will include soils that maintain some degree of moisture. Site links existing natural land covers that provide Covered Species modeled habitat. Habitat is located away from areas that are subject to vibrations that simulate rainfall, such as roadways with heavy traffic. <p>Surveys will be conducted after the first year and every 5 years thereafter to monitor success. If, after the first year or any 5-year interval thereafter, the restored habitat is not meeting re-establishment criteria standards, the efforts will be deemed to have failed. Remediation of failed re-establishment/establishment efforts must occur within 1 year after efforts are deemed unsuccessful.</p>
<p>Objective GGS1. During assembly of the SSHCP Preserve System, ensure that modeled habitats for giant garter snake are preserved along the following creeks (or other creeks that are determined by the TAC to provide similar giant garter snake habitat value):</p> <ul style="list-style-type: none"> Lower Laguna Creek, mainly between Twin Cities Road (State Route 104) and Miess Road Skunk Creek, which flows into the Cosumnes River northwest of the City of Galt Willow Creek and tributaries of Badger Creek, which are to the north of the lower Laguna Creek and west of the Folsom South Canal Badger Marsh <p>Mitigation for impacts to modeled habitats for giant garter snake that occur along Badger Creek and Stone Lakes will occur along these drainages.</p>	<p>Conservation Action GGS1.1. The Implementing Entity will select preserve sites for aquatic modeled habitat considering certain criteria, including the following:</p> <ul style="list-style-type: none"> Stream/Creek, Freshwater Marsh, Open Water, and Seasonal Wetland located entirely inside or within 0.25 mile of the following reaches: <ul style="list-style-type: none"> A prominent drainageway on the Elliot mitigation site, which links to Stone Lakes NWR and is wet year-round. Drainage canals south of Elk Grove, which have a past occurrence and link to Stone Lakes NWR; the perennial segments of these canals are suitable habitat. Badger Creek and all other creeks that drain into the marsh at the Cosumnes River Preserve, which are likely high-quality habitat due to proximity and connectivity to a significant population of giant garter snakes; the perennial segments of these creeks are suitable habitat. The perennial segments of Laguna Creek (south) and tributaries are suitable habitat due to presence of Freshwater Marsh habitat and proximity to known documented occurrences. The perennial segments of drainages and canals leading from the Cosumnes River Preserve, including Deadman's Gulch, which provides suitable habitat. Contains adequate water during the snake's active season (early spring through mid-fall) to provide food and cover. Emergent, herbaceous wetland vegetation for escape cover and foraging habitat during the active season. Grassy banks and openings in waterside vegetation for basking. <p>Conservation Action GGS1.2. The Implementing Entity will select preserve sites with stream reaches that contain upland modeled habitat within 200 feet of the stream, including Mixed Riparian Scrub and Valley Grassland, considering the following criteria:</p> <ul style="list-style-type: none"> Contains a stream reach at least 600 feet in length. Located near foraging and breeding habitat.

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
<p>Minimum preservation will total 170 acres of giant garter snake high-value aquatic habitat and 2,323 acres of giant garter snake high-value upland habitat (see Objectives AG1, FWM1, SW1, SC1, OW1, RIP1, and VG1).</p>	<ul style="list-style-type: none"> • Supports higher elevation uplands for cover. • Provides refuge from flood waters during the species' dormant season in the winter. • Contains upland habitat that can link isolated and disjunct giant garter snake aquatic habitat. • Contains a minimum 300-foot setback on at least one side of stream reaches.
<p>Objective GGS2. During assembly of the SSHCP Preserve System, ensure that modeled habitats for giant garter snake are re-established and/or established along the following creeks (or other creeks that are determined by the TAC to provide similar habitat value):</p> <ul style="list-style-type: none"> • Lower Laguna Creek, mainly between Twin Cities Road (State Route 104) and Miess Road • Skunk Creek, which flows into the Cosumnes River northwest of the City of Galt • Several creeks north of Lower Laguna Creek and west of the Folsom South Canal— Willow Creek and tributaries of Badger Creek • Badger Marsh <p>Mitigation for impacts to modeled habitats for giant garter snake that occur along Badger Creek and Stone Lakes will occur along these drainages.</p> <p>Minimum re-establishment and/or establishment will total 170 acres of high-value aquatic habitat and 134 acres of high-value upland habitat (see Objectives SW2, OW2, and RIP2).</p>	<p>Conservation Action GGS2.1. The Implementing Entity will select re-establishment and establishment sites for aquatic habitat that include Freshwater Marsh, Open Water, Stream/Creek, and Seasonal Wetland considering the following criteria:</p> <ul style="list-style-type: none"> • Contains a supply of perennial water that can maintain emergent vegetation. • Located near (within 250 meters) the mouth of streams/creeks that is near potential upland habitat and adjacent to existing modeled upland habitat. • Can link isolated and disjunct giant garter snake habitat. • Includes re-established sites located along those portions of a stream corridor that have been identified as preserves for giant garter snake that provide upland habitat modeled for aestivation and/or basking at intervals no greater than 600 feet. <p>Giant garter snake habitat re-establishment or establishment will occur only where non-modeled habitat is converted to modeled habitat defined by the following criteria:</p> <ul style="list-style-type: none"> • Located in intervals along the stream channel that are no closer to one another than 300 feet. • Are at least 0.2 acre at any given location along the stream channel but not to exceed 1 acre. • Provides perennial aquatic habitat. • Provides emergent vegetation (i.e., tules and/or cattails). • Provides grassy banks and openings in the waterside vegetation (e.g., bulrush, cattails, waterweed, or other floating vegetation). • Supports soils and topography modeled for re-establishing target habitat. • Designed and constructed to avoid or minimize direct or indirect impacts on existing functioning habitat. • Provides a minimum 300-foot setback on at least one side of re-established stream reaches. <p>Surveys will be conducted after the first year and every 5 years thereafter to monitor success. If, after the first year or any 5-year interval thereafter, the restored habitat is not meeting re-establishment or establishment criteria standards, the efforts will be deemed to have failed. Remediation of failed re-establishment/establishment efforts must occur within 1 year after efforts are deemed unsuccessful.</p> <p>Conservation Action GGS2.2. The Implementing Entity will select re-establishment or establishment sites for aquatic habitat that include Mixed Riparian Scrub and Valley Grassland considering the following criteria:</p> <ul style="list-style-type: none"> • Directly connects to (and within 0.25 mile of) aquatic habitat. • Includes higher elevation uplands to provide refuge from flood waters during the species' dormant season in the winter.

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
	<ul style="list-style-type: none"> • Can link isolated and disjunct giant garter snake habitat. • Located along those portions of a stream corridor that have been identified as preserves for giant garter snake that provide upland habitat modeled for aestivation and/or nesting. <p>Giant garter snake habitat re-establishment or establishment will occur only where non-modeled habitat is converted to modeled habitat defined by the following criteria:</p> <ul style="list-style-type: none"> • Supports soils and topography modeled for restoring target habitat. • Designed and constructed to avoid or minimize direct or indirect impacts on existing functioning habitat. <p>Surveys will be conducted after the first year and every 5 years thereafter to monitor success. If, after the first year or any 5-year interval thereafter, the re-established or established habitat is not meeting re-establishment or establishment criteria standards, the efforts will be deemed to have failed. Remediation of failed re-establishment or establishment efforts must occur within 1 year after efforts are deemed unsuccessful.</p>
Objective GGS3. Plan Permittees will conduct a study to establish hydrologic baseline conditions along Badger Creek to identify what level of hydrology is necessary to support giant garter snake and to acquire a water source to maintain the minimum level of hydrology during the summer months when agricultural runoff may wane.	<p>Conservation Action GGS3.1. Measure hydrologic parameters (e.g., flow rate, temperature) within Badger Creek in locations known to be occupied by giant garter snake. Three monthly hydrologic measurements will be made during the dry season of an average or better rainfall year. Each recording will occur over a full week to identify any regular interruptions in flow or changes in conditions due to diversions or inflows.</p> <p>Conservation Action GGS3.2. Acquire water rights adequate to maintain baseline dry season flows within Badger Creek, as determined during measurements obtained pursuant to Conservation Action GGS3.1.</p>
Objective WPT1. During assembly of the SSHCP Preserve System, ensure that modeled aquatic and upland habitat for western pond turtle is preserved. Minimum preservation will total 315.35 acres of aquatic habitat and 10,971 acres of upland habitat (see Objectives FWM1, OW1, RIP1, VG1, BOW1, and SC1).	<p>Conservation Action WPT1.1. The Implementing Entity will select preserve sites for aquatic habitat, including Freshwater Marsh, Open Water, and Stream/Creek considering the following criteria:</p> <ul style="list-style-type: none"> • Contains slow-moving or quiet water with emergent aquatic vegetation and deep pools with undercut banks for refugia. • Contains basking sites such as rocks, logs, matted floating vegetation, terrestrial islands within the aquatic habitat, and human-made debris. • Will allow a minimum 300-foot setback on at least one side of the stream reaches that are preserved for western pond turtle. • Located where a stream reach is at least 600 feet in length. <p>Conservation Action WPT1.2. The Implementing Entity will select preserve sites for upland habitat, including Blue Oak Savanna, Blue Oak Woodland, Mixed Riparian Woodland, Mixed Riparian Scrub, and Valley Grassland considering the following criteria:</p> <ul style="list-style-type: none"> • Allows for a 400-foot setback along both sides of the stream reaches identified for western pond turtle outside of the UDA. • Allows for a 300-foot corridor along each side of North Laguna Creek to the maximum extent feasible, as measured from the ordinary high water mark of the creek, with a minimum stream corridor width of 600 feet plus the width of the creek,

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
	<p>with additional setbacks as defined by local government ordinances.</p> <p>In segments of Laguna Creek where a 300-foot corridor on one side of the creek is not possible due to existing development and constraints, 300 feet may be used as an average for a defined length of the creek. However, the corridor on either side of Laguna Creek will be a minimum of the mapped Federal Emergency Management Agency 100-year floodplain of 2014.</p>
<p>Objective WPT2. During assembly of the SSHCP Preserve System, ensure that modeled aquatic habitat for western pond turtle is re-established and/or established. Minimum re-establishment and/or establishment will total 315 acres of aquatic habitat (see Objectives RIP2, FWM2, and OW2).</p>	<p>Conservation Action WPT2.1. The Implementing Entity will select re-establishment and/or establishment sites for foraging and breeding habitat that includes Freshwater Marsh, Open Water, and Stream/Creek considering the following criteria:</p> <ul style="list-style-type: none"> • Contains slow-moving or quiet water with emergent aquatic vegetation and deep pools with undercut banks for refugia. • Contains or has high potential to create basking sites such as rocks, logs, matted floating vegetation, terrestrial islands within the aquatic habitat, and human-made debris. <p>Western pond turtle aquatic habitat re-establishment or establishment will occur only where non-modeled habitat is converted to modeled habitat, defined by the following criteria:</p> <ul style="list-style-type: none"> • Located in intervals along the stream channel that are no closer to one another than 300 feet. • Includes re-establishment or establishment sites within modeled habitat area at least 600 feet in length. • Contains at least 0.2 acre at any given location along the stream channel but will not exceed 1 acre. • Provides perennial aquatic habitat. • Provides emergent vegetation (i.e., tules and/or cattails). • Provides grassy banks and openings in the waterside vegetation (e.g., bulrush, cattails, waterweed, or other floating vegetation). • Supports soils and topography modeled for restoring target habitat. • Designed and constructed to avoid or minimize direct or indirect impacts on existing functioning habitat. • Provides a minimum 300-foot setback on at least one side of restored stream reaches. <p>Surveys will be conducted after the first year and every 5 years thereafter to monitor success. If, after the first year or any 5-year interval thereafter, the restored habitat is not meeting re-establishment criteria standards, the efforts will be deemed to have failed. Remediation of failed re-establishment/establishment efforts must occur within 1 year after efforts are deemed unsuccessful.</p>
Terrestrial Invertebrate Covered Species	
<p>Objective VELB1. Relocate or replace each impacted elderberry shrub (<i>Sambucus</i> spp.) according to USFWS <i>Conservation Guidelines for the Valley Elderberry Longhorn Beetle</i> (1999b). Mitigation will occur in locations that are not inundated for 2 continuous weeks, as determined by the TAC.</p>	<p>Conservation Action VELB1.1. Implement the following measures to avoid or minimize impacts to occupied valley elderberry longhorn beetle habitat:</p> <ul style="list-style-type: none"> • Conduct protocol-level surveys for valley elderberry longhorn beetle if elderberry shrubs are located within 100 feet of construction activities. • Avoid direct impacts to occupied elderberry shrubs defined as shrubs within 20 feet of construction. • Avoid indirect impacts of occupied elderberry shrubs defined as shrubs between 20 and 100 feet of construction. • Compensate for direct loss of elderberry shrubs according to USFWS <i>Conservation Guidelines for the Valley Elderberry Longhorn Beetle</i> (1999b).

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
	<ul style="list-style-type: none"> Conduct surveys after the first year and every 5 years thereafter to monitor success. If, after the first year or any 5-year interval thereafter, the restored habitat is not meeting re-establishment criteria standards of 60% survivorship of occupied shrubs, the effort will be deemed to have failed. Remediation of failed re-establishment efforts must occur within 1 year after efforts are deemed unsuccessful.
Objective VELB2. During implementation of riparian habitat re-establishment and/or establishment, strategically include elderberry shrub in the planting palette (see Objective RIP2).	Conservation Action VELB2.1. In riparian habitat re-establishment and establishment sites that include modeled habitat for valley elderberry longhorn beetle (i.e., Mixed Riparian Woodland and Mixed Riparian Scrub or Valley Grassland with elderberry shrubs along a riparian corridor), include elderberry shrubs in plantings to create habitat characteristics associated with valley elderberry longhorn beetle occupancy. These characteristics include density of elderberry shrubs, shrub size, number of stems, and range of branch sizes (Talley et al. 2007).
Bird Covered Species	
Objective CH1. During assembly of the SSHCP Preserve System, ensure that a minimum of 974 acres of modeled foraging and nesting habitat for Cooper's hawk is preserved in accordance with the conservation actions described in this table (see Objectives RIP1 and BOW1).	Conservation Action CH1.1. The Implementing Entity will select preserve sites for nesting and foraging habitat considering certain criteria, including the following: <ul style="list-style-type: none"> Includes Blue Oak Woodland characterized by dense canopy closure (typically stands consisting of at least six trees with sparse ground cover). Includes stands with trees approximately 26 to 49 feet high and 8 to 20 inches in diameter at breast height. Has proximity to foraging habitat with dense prey populations. Located outside of the UDA.
Objective CH2. During assembly of the SSHCP Preserve System, ensure that a minimum of 601 acres of modeled foraging and nesting habitat for Cooper's hawk is re-established and/or established (see Objective RIP2).	Conservation Action CH2.1. Refer to Conservation Action RIP2.1. The Implementing Entity will select re-establishment or establishment sites for modeled foraging and nesting habitat considering certain criteria, including the following: <ul style="list-style-type: none"> Located near known nesting territories. Connects disjunct segments of riparian habitats. Has proximity to modeled foraging areas with abundant prey populations. Cooper's hawk Mixed Riparian Woodland and Mixed Riparian Scrub habitat establishment and re-establishment will occur only where a non-modeled land cover is converted to Mixed Riparian Woodland and Mixed Riparian Scrub. Re-establishment or establishment criteria for modeled Cooper's hawk habitat will also include the following: <ul style="list-style-type: none"> Trees will be planted to encourage dense canopy closure of the mature stand. Planting of 10 acorns for each tree to establish oak trees will occur. Survivorship of at least six trees pursuant to stand will occur. Surveys will be conducted after the first year and every 5 years thereafter to monitor success. If, after the first year or any 5-year interval thereafter, the established or re-established habitat is not meeting re-establishment or establishment criteria standards, the efforts will be deemed to have failed. Remediation of failed re-establishment or establishment efforts must occur within 1 year after efforts are deemed unsuccessful.

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
Objective CH3. During assembly of the SSHCP Preserve System, ensure that a minimum of 38 acres of modeled foraging habitat for Cooper's hawk is preserved in accordance with the conservation actions described in this table (see Objectives RIP1 and BOW1).	Conservation Action CH3.1. The Implementing Entity will select preserve sites for foraging habitat aquatic modeled habitat considering certain criteria, including the following: <ul style="list-style-type: none"> • Includes Blue Oak Savannah containing trees approximately 26 to 49 feet high and 8 to 20 inches in diameter at breast height. • Includes presence of dense prey populations. • Located outside of the UDA.
Objective FH1. During assembly of the SSHCP Preserve System, ensure that a minimum of 25,881 acres of modeled foraging habitat for ferruginous hawk is preserved, including 19,625 acres in PPU's 5 and/or 7 (see Objectives AG1, VG1, VP1, VP3, and SW1).	Conservation Action FH1.1. The Implementing Entity will select preserve sites for foraging habitat considering certain criteria, including the following: <ul style="list-style-type: none"> • Known to already support populations of prey species, including rabbits, ground squirrels, and pocket gophers. • Includes moderate to dense vegetative cover (particularly grasses). • Includes topographic variation with shorter vegetation.
Objective FH2. During assembly of the SSHCP Preserve System, ensure that a minimum of 729 acres of modeled foraging habitat for ferruginous hawk is re-established and/or established (see Objectives VP2 and SW2).	Conservation Action FH2.1. The Implementing Entity will select re-establishment/establishment sites for foraging habitat considering certain criteria, including the following: <ul style="list-style-type: none"> • Includes moderate to dense vegetative cover (particularly grasses). • Includes topographic variation with shorter vegetation.
Objective SH1. During assembly of the SSHCP Preserve System, ensure that a minimum of 31,033 acres of modeled foraging habitat for Swainson's hawk is preserved (see Objectives AG1, AG2, SW1, VP1, VP3, and VG1). Ensure that mitigation for high-value modeled habitat impacted within PPU's 4, 6, or 8 occurs within PPU's 4, 6, or 8.	Conservation Action SH1.1. The Implementing Entity will select preserve sites that include foraging habitat considering certain criteria, including the following: <ul style="list-style-type: none"> • Includes presence of irrigation systems that are engineered to provide for alfalfa production. • Includes agricultural lands that have existing trees or could support plantings of additional trees for future use as Swainson's hawk nest trees. • Located within 3 miles of active nest sites, where the record of the nest site is not older than 5 years, unless confirmed to be currently active by new surveys. • Has proximity to large, contiguous area of open space that provides foraging habitat. • Has proximity to stream riparian corridors containing large trees that potentially provide nesting habitat. Preserves can include sites supporting Vineyard and Orchard as long as vines and trees are removed within 2 years of acquisition.
Objective SH2. At least 2,000 acres of Cropland habitat within high-value habitat within PPU's 4, 6, and 8 will be preserved in fee title to ensure that intensive	Conservation Action SH2.1. Preserve 2,000 acres (1:1 ratio) of Cropland habitat within 2 miles of at least two active nesting sites in fee title to ensure that intensive management actions can be taken that may be infeasible on preserve easement lands. Land held in fee title will be restricted to growing fields or row crops. Fee title lands must maintain, at a minimum, an average of 50% of their crop cover type in alfalfa over a period of 5 years. Other crop types or land covers may be substituted for alfalfa if a

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
management actions can be taken. Land held in fee title will be restricted to growing field or row crops. Fee title lands must maintain, at a minimum, an average of 50% of their crop cover-type in alfalfa. Other crop types or land covers may be substituted for alfalfa if the TAC determines that such other crop types or land cover types are of the same or better quality foraging habitat as alfalfa.	Swainson's hawk expert determines that such other crop types or land cover types are of the same or better quality foraging habitat as alfalfa.
Objective SH3. During assembly of the SSHCP Preserve System, ensure a minimum of 746 acres of modeled nesting habitat for Swainson's hawk is preserved (see Objective RIP1).	Conservation Action SH3.1. The Implementing Entity will select preserve sites that contain modeled nesting habitat considering certain criteria, including the following: Presently supports nesting activity. Located within or near (preferably within 4.2 miles) productive foraging habitat such as Prime Farmland, Statewide Farmland (most productive), and current agriculture land cover types (i.e., alfalfa; other crop types or land covers may be substituted for alfalfa if the TAC determines that such other crop types or land cover types are of the same or better quality foraging habitat as alfalfa). Support large mature trees (e.g., taller than 50 feet) that are preferred nesting sites. Located in rural areas unlikely to be affected by high levels of human activities.
Objective SH4. During assembly of the SSHCP Preserve System, ensure that a minimum of 373 acres of modeled riparian nesting habitat for Swainson's hawk is re-established and/or established. Ensure that mitigation for modeled nesting habitat impacted within PPU's 4, 6, or 8 occurs within PPU's 4, 6, or 8 (see Objective RIP2).	Conservation Action SH4.1. Re-establish or establish riparian habitat along stream or river channels near known nesting territories. Establishment and re-establishment will target areas that connect disjunct segments of riparian habitat to the maximum extent feasible. Surveys will be conducted periodically for 10 years to monitor success, including habitat quality and use by nesting Swainson's hawk. During the first year, established or re-established habitat will be monitored monthly, with more frequent monitoring during summer months or periods of drought to ensure that new plantings are kept moist. During the second and third years, habitat will be monitored quarterly. For the remainder of the monitoring period, restoration habitat will be monitored every 6 months. If there are extended periods of drought within the monitoring period, or if established or re-established habitat becomes flooded for an extended period during the monitoring period, the habitat will be monitored more frequently to assess the impacts of and remediate for these extreme weather conditions. If, after 10 years, the established or re-established habitat is not meeting re-establishment or establishment criteria standards in terms of modeled habitat quality, the efforts will be deemed to have failed. Absence of nesting Swainson's hawks over the 10-year period will not be a criterion for failure as long as the riparian habitat has otherwise achieved the re-establishment or establishment standards. If, at any time during the monitoring period, restored habitat is declining beyond remediation, dying, or dead, efforts will be deemed to have failed. Remediation of failed re-establishment efforts must occur within 1 year after efforts are deemed unsuccessful.
Objective SH5. For each of the 36 known nesting trees within the UDA, plant 10 trees	Conservation Action SH5.1. Plant nesting trees on properties protected by the SSHCP and within proximity to protected foraging habitat. Tree species will be selected based on known suitability as nesting habitat for Swainson's hawk. To minimize temporal

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
that are modeled for Swainson's hawk nesting within SSHCP Preserves. Plant nesting trees on properties protected by the SSHCP within PPUs 4, 6, and 8, and near protected foraging habitat. Tree species will be selected based on known suitability as nesting habitat for Swainson's hawk, and the planted trees must be maintained and/or replaced in perpetuity.	loss, a mix of tree species will be planted at each site to include fast- and slow-growing species. Trees that are acceptable for planting include Fremont's cottonwood (<i>Populus fremontii</i>), valley oak (<i>Quercus lobata</i>), blue oak (<i>Q. douglasii</i>), interior live oak (<i>Q. wislizenii</i>), western sycamore (<i>Platanus racemosa</i>), red willow (<i>Salix laevigata</i>), and Northern California black walnut (<i>Juglans hindsii</i>). Clusters of five trees must be established and maintained for every 40 acres of agricultural Cropland preserved and must include at least two different species, one of which must be a fast-maturing tree such as Fremont's cottonwood or red willow. Trees will be placed at the edges of agricultural fields. To help ensure survivorship, acorns will be used to establish oak trees, and at least 10 acorns will be planted for each required tree (i.e., if a cluster is to be composed of two cottonwoods and three valley oaks, then 30 valley oak acorns must be planted).
Objective SH6. During assembly of the SSHCP Preserve System, ensure that a minimum of 729 acres of modeled foraging habitat for Swainson's hawk is re-established and/or established (see Objective RIP2).	Conservation Action SH6.1. The Implementing Entity will select re-establishment/establishment sites for foraging habitat considering certain criteria, including the following: <ul style="list-style-type: none"> • Includes presence of irrigation systems that are engineered to provide for alfalfa production. • Includes agricultural lands that could support plantings of additional trees for future use as Swainson's hawk nest trees. • Located within 3 miles of active nest sites where the record of the nest site is not older than 5 years, unless confirmed to be currently active by new surveys. • Has proximity to large, contiguous area of open space that provides foraging habitat. • Has proximity to stream riparian corridors containing large trees that potentially provide nesting habitat.
Objective WK1. During assembly of the SSHCP Preserve System, ensure that a minimum of 31,205 acres of modeled foraging habitat for white-tailed kite is preserved (see Objectives VG1, AG1, RIP1, SW1, VP1, VP3, and BOW1).	Conservation Action WK1.1. The Implementing Entity will select preserve sites for foraging habitat considering certain criteria, including the following: <ul style="list-style-type: none"> • Includes agricultural lands that support perennial crops (e.g., alfalfa) rather than annual crops. • Known to be used by white-tailed kite for foraging. • Located on parcels 20 acres or greater and/or occurs in larger, open space areas. • Linked or adjacent to currently preserved lands. • Located where management can be used to enhance or re-establish natural ecosystem processes and attract Covered Species.
Objective WK2. During assembly of the SSHCP Preserve System, ensure that a minimum of 974 acres of modeled nesting or nesting/foraging habitat for white-tailed kite is preserved (see Objectives RIP1 and BOW1).	Conservation Action WK2.1. The Implementing Entity will select preserve sites for nesting habitat, including Blue Oak Woodland, Mixed Riparian Woodland, and Mixed Riparian Scrub, considering certain criteria, including the following: <ul style="list-style-type: none"> • Includes large, unfragmented patches connected to grassland and agriculture areas known to support high prey densities. • Includes closed canopy consisting of multiple vegetation layers, including mature trees. • Known to support nesting white-tailed kite. • Located on parcels 20 acres or greater and/or occurs in larger, open space areas. • Linked or adjacent to currently preserved lands. • Located where management can be used to enhance or re-establish natural ecosystem processes and attract Covered Species.

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
<p>Objective WK3. During assembly of the SSHCP Preserve System, ensure a minimum of 767 acres of modeled foraging habitat for white-tailed kite is re-established and/or established (see Objectives VP2, RIP2, and SW2).</p>	<p>Conservation Action WK3.1. Implement Conservation Actions VP2.1, RIP2.1, and SW2.1. Foraging habitat re-establishment or establishment will involve establishing habitat, including vegetation structure modeled for voles (<i>Microtus californicus</i>) where the species historically occurred but no longer exists due to loss of or changes in ecological factors. White-tailed kite foraging habitat re-establishment or establishment will occur only where non-modeled habitat is converted to modeled habitat.</p> <p>Conservation Action WK3.2. Re-establish or establish nesting habitat in areas that have a range of riparian plant assemblages that include large trees such as cottonwood and valley oak, as well as an understory of Mixed Riparian Scrub. The Implementing Entity will select re-establishment/establishment sites for nesting habitat considering certain criteria, including the following:</p> <ul style="list-style-type: none"> • Located along existing riparian corridors where nesting habitat likely existed in the past, such as along the Cosumnes River and Deer Creek. • Located within a new or existing preserve or habitat corridor. Created riparian woodland areas must be able to support a wide variety of species. • Located in areas within at least 0.5 mile of modeled foraging habitat. • Supports soil and topography modeled for restoring target habitat. • Located at least 500 feet from urban land uses, including structures and roads. • Includes avoidance of locations that historically did not support riparian woodland. • Includes avoidance of locations within the existing Vernal Pool landscape. <p>Surveys will be conducted after 1 year and every 5 years thereafter to monitor prey abundance. If, after the first year or any 5-year interval thereafter, the re-established habitat is not meeting re-establishment criteria standards, the efforts will be deemed to have failed. Remediation of failed re-establishment efforts must occur within 1 year after efforts are deemed unsuccessful.</p>
<p>Objective WK4. During assembly of the SSHCP Preserve System, ensure that a minimum of 601 acres of modeled nesting or nesting/foraging habitat for white-tailed kite is re-established and/or established (see Objective RIP2).</p>	<p>See Conservation Action WK2.1.</p>
<p>Objective NH1. During assembly of the SSHCP Preserve System, ensure that a minimum of 1,245 acres of modeled foraging habitat for northern harrier is preserved (see Objectives VG1, AG1, VP1, VP3, FWM1, and SW1).</p>	<p>Conservation Action NH1.1. The Implementing Entity will select preserve sites for foraging habitat considering certain criteria, including the following:</p> <ul style="list-style-type: none"> • Includes open habitats with dense, tall (12 to 38 inches) vegetation. • Known to support high prey densities (small mammals). • On parcels 20 acres or greater and/or occurs in larger, open space areas. • Linked or adjacent to currently preserved lands. • Potentially support other Covered Species. • Located where management can be used to enhance or re-establish natural ecosystem processes and attract Covered Species.

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
Objective NH2. During assembly of the SSHCP Preserve System, ensure that a minimum of 30,048 acres of modeled nesting/foraging habitat for northern harrier is preserved (see Objectives VG1 and AG1).	<p>Conservation Action NH2.1. The Implementing Entity will select preserve sites for nesting/foraging habitat considering the following criteria:</p> <ul style="list-style-type: none"> • Includes open habitats with dense, tall (12 to 38 inches) vegetation. • Includes wet or moist sites for nesting. • Known to support high prey densities (small mammals). • Located on parcels 20 acres or greater and/or occurs in larger, open space areas. • Linked or adjacent to currently preserved lands. • Potentially supports other Covered Species. • Located where management can be used to enhance or re-establish natural ecosystem processes and attract Covered Species.
Objective NH3. During assembly of the SSHCP Preserve System, ensure that a minimum of 856 acres of modeled foraging habitat for northern harrier is re-established and/or established (see Objectives VP2, FWM2, and SW2).	<p>Conservation Action NH3.1. The Implementing Entity will select re-establishment/establishment sites for foraging habitat considering certain criteria, including the following:</p> <ul style="list-style-type: none"> • Has historically contained intact foraging habitat. • Located on parcels 20 acres or greater and/or occurs in larger, open space areas. • Linked or adjacent to currently preserved lands. • Could potentially support other Covered Species. • Located where management can be used to enhance or re-establish natural ecosystem processes and attract Covered Species.
Objective BO1. Preserve seven occupied western burrowing owl sites (commensurate with 20% of the estimated number of sites within the UDA as of 2014), preserve at least 200 acres of land surrounding each occupied burrow site, and maintain modeled habitat for western burrowing owl within 0.4 mile of breeding sites.	<p>Conservation Action BO1.1. The Implementing Entity will select preserve sites that include nesting habitat land cover types considering certain criteria, including the following:</p> <ul style="list-style-type: none"> • Known to support breeding burrowing owls. • Located within 3 miles of a known nesting site or modeled nesting habitat. • Known to support high rodent populations during the breeding season. • Expands upon or links already preserved lands and will not be bisected by new roadways or incur impacts from any other infrastructure developments. • Located on parcels 20 acres or greater and/or occurs in larger, open space areas. • Potentially support other Covered Species. • Located where management can be used to enhance or re-establish natural ecosystem processes and attract Covered Species.
	Conservation Action BO1.2. Preserve modeled nesting habitat within PPU 4, 6, and/or 8.

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
Objective BO2. For each burrowing owl or burrowing owl pair passively excluded, protect 200 acres of modeled habitat for western burrowing owl and establish a ground squirrel (<i>Spermophilus (Otospermophilus) beecheyi</i>) colony and augment with artificial burrows as appropriate (determined by TAC). Artificial burrows will be established at appropriate locations throughout the Preserve System pursuant to CDFW (California Department of Fish and Game 2012 guidelines) or as otherwise determined by the TAC.	Conservation Action BO2.1. Select preserve sites in areas with known species occurrences and that contain modeled habitat. Manage these locations to maintain the following: <ul style="list-style-type: none"> ○ Open, well-drained terrain with low risk of flooding. ○ Short, sparse vegetation. ○ Underground burrows or burrow facsimiles. ○ Modeled foraging habitat within 0.4 mile of breeding sites. ○ Enhanced foraging habitat quality through the following: <ul style="list-style-type: none"> ▪ Promoting fossorial mammal populations in areas that are modeled foraging habitat. ▪ Providing sentinel posts or mounds near burrows.
Objective LS1. During assembly of the SSHCP Preserve System, ensure that a minimum of 9,152 acres of modeled foraging habitat for loggerhead shrike is preserved (see Objectives VG1, AG1, SW1, VP1, and VP3).	Conservation Action LS1.1. The Implementing Entity will select preserve sites for foraging habitat considering certain criteria, including the following: <ul style="list-style-type: none"> • Are open with sparse vegetation for foraging. • Available hunting perches with an open view. • Located on parcels 20 acres or greater and/or occurs in larger, open space areas. • Known to support loggerhead shrike and other Covered Species. • Linked or adjacent to currently preserved lands. • Located where management can be used to enhance or re-establish natural ecosystem processes and attract Covered Species.
Objective LS2. During assembly of the SSHCP Preserve System, ensure that a minimum of 22,014 acres of modeled nesting/foraging habitat for loggerhead shrike is preserved (see Objectives VG1 and RIP1).	Conservation Action LS2.1. The Implementing Entity will select preserve sites for nesting/foraging habitat considering certain criteria, including the following: <ul style="list-style-type: none"> • Are open with sparse vegetation for foraging interspersed with scattered or isolated low trees or large shrubs for nest sites. • Available hunting perches with an open view. • Located on parcels 20 acres or greater and/or occurs in larger, open space areas. • Known to support loggerhead shrike and other Covered Species. • Linked or adjacent to currently preserved lands. • Located where management can be used to enhance or re-establish natural ecosystem processes and attract Covered Species.
Objective LS3. During assembly of the SSHCP Preserve System, ensure that a minimum of 592 acres of modeled nesting	Conservation Action LS3.1. The Implementing Entity will select re-establishment/establishment sites for nesting habitat considering certain criteria, including the following: <ul style="list-style-type: none"> • Possess or can be planted with scattered or isolated low trees or large shrubs for nest sites.

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
habitat for loggerhead shrike is re-established and/or established (see Objective RIP2).	<ul style="list-style-type: none"> • Located on parcels 20 acres or greater and/or occurs in larger, open space areas. • Has potential to support loggerhead shrike and other Covered Species after re-establishment and/or establishment. • Linked or adjacent to currently preserved lands. • Located where management can be used to enhance or re-establish natural ecosystem processes and attract Covered Species. <p>Loggerhead shrike habitat re-establishment will only occur where habitat historically occurred but no longer exists due to loss of or changes in ecological factors.</p>
Objective LS4. During assembly of the SSHCP Preserve System, ensure that a minimum of 965 acres of modeled nesting habitat for loggerhead shrike is preserved (see Objective RIP2).	See Conservation Action LS2.1.
Objective LS5. During assembly of the SSHCP Preserve System, ensure that a minimum of 729 acres of modeled foraging habitat for loggerhead shrike is re-established and/or established (see Objective SW2).	<p>Conservation Action LS5.1. The Implementing Entity will select re-establishment/establishment sites for foraging habitat considering certain criteria, including the following:</p> <ul style="list-style-type: none"> • Located on parcels 20 acres or greater and/or occurs in larger, open space areas. • Has potential to support loggerhead shrike and other Covered Species after re-establishment and/or establishment. • Linked or adjacent to currently preserved lands. • Located where management can be used to enhance or re-establish natural ecosystem processes and attract Covered Species. <p>Loggerhead shrike habitat re-establishment will only occur where habitat historically occurred but no longer exists due to loss of or changes in ecological factors.</p>
Objective GS1. During assembly of the SSHCP Preserve System, ensure that a minimum of 257 acres of modeled roosting or roosting/foraging habitat for greater sandhill crane is preserved. Roosting habitat will be preserved and maintained within PPU 4, 6, and 8, with a minimum of 75% within PPU 6 (see Objectives VP1, SW1, and FWM1).	<p>Conservation Action GS1.1. The Implementing Entity will select preserve sites for roosting habitat considering certain criteria, including the following:</p> <ul style="list-style-type: none"> • Includes known roost sites. • Located within 2 miles of modeled foraging habitat outside the UDA. • Includes 20 acres or greater and/or occurs in larger, open space areas. • Linked or adjacent to currently preserved lands. • Potentially supports other Covered Species or where management can be used to enhance or re-establish natural ecosystem processes and attract other Covered Species. • Located at least 1,000 feet from disturbances such as roads or other operations that may disturb roosting. • Free of fences and power lines. • Has Seasonal Wetland present from September to mid-March. • Supports natural drainage inflows or water delivery mimics natural hydrologic cycles.

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
<p>Objective GS2. During assembly of the SSHCP Preserve System, ensure that a minimum of 7,751 acres of modeled foraging habitat for greater sandhill crane is preserved (see Objectives AG1, AG2, and VG1).</p>	<p>Conservation Action GS2.1. The Implementing Entity will select preserve sites for foraging habitat considering certain criteria, including the following:</p> <ul style="list-style-type: none"> • Includes modeled foraging habitat located within 2 miles of known roost sites or modeled roosting habitat outside the UDA. • Located on parcels 20 acres or greater and/or that occurs in larger, open space areas. • Linked or adjacent to currently preserved lands. • Potentially supports other Covered Species or where management can be used to enhance or re-establish natural ecosystem processes and attract other Covered Species. • Free of fences and power lines. • Contains available sources of “grit,” including gravel and dirt roads or rocky uplands.
<p>Objective GS3. During assembly of the SSHCP Preserve System, ensure that a minimum of 184 acres of modeled roosting habitat or roosting/foraging habitat for greater sandhill crane is established and/or re-established. Re-establish two new roost sites (minimum of 90 acres of Freshwater Marsh/Seasonal Wetland complex each) every 2 miles in the gap between the Cosumnes population and the Stone Lakes’ population or other strategic locations if that gap is closed by another HCP or conservation project (see Objectives VP2, SW2, and FWM2).</p>	<p>Conservation Action GS3.1. Implement conservation actions for Objectives SW2 and FWM2. Select re-establishment or establishment sites outside the UDA based on the same criteria used for preservation sites in Conservation Actions GS1.1 and GS2.1. Habitat re-establishment and establishment will only occur where it replaces low-quality foraging or roosting habitat, including the following features:</p> <ul style="list-style-type: none"> • Replacement of unmodeled agriculture uses such as orchards and vineyards with habitats supporting high prey abundance (e.g., vole), including Grassland, suitable Croplands, Irrigated Pasture-Grassland, and Wet Meadow. • Removal of physical structures that can cause collisions during takeoff and flying, including fences, distribution lines, and other built structures. • Removal of human disturbances from otherwise modeled foraging and roosting habitat. • Establishment of suitable hydrologic regimes at roosting sites. • Grit sources near foraging areas.
<p>Objective GS4. Create a visual screen of woody vegetation near human disturbances such as buildings, bridges, and paved roads from permanent roosting habitat within PPU 6. Screens should be located as appropriate to not interfere with habitat usage by greater sandhill crane.</p>	<p>Conservation Action GS4.1. Plant visual screens of woody vegetation in known and potential roosting sites within PPU 6 where there are nearby human disturbances, including roads, bridges, and dwellings.</p>
<p>Objective GS5. As part of the 2,000 acres preserved under Objective AG2, establish and maintain 10 food plots in strategic</p>	<p>Conservation Action GS5.1. Maintain the 200 acres among the 10 food plots as Irrigated Pasture-Grassland or planted with crops preferred by greater sandhill crane as foraging habitat. Crops may include alfalfa, corn, wheat, or rice. The 10 food plots will be distributed throughout PPU 6 at a minimum of five locations, each at least 20 acres in size. Food plots must be within 1.5 miles</p>

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
locations totaling a minimum of 200 acres within an agricultural setting for greater sandhill crane foraging habitat within PPU 6. Maintain the 200 acres among the 10 food plots as Irrigated Pasture-Grassland or planted with crops preferred by greater sandhill crane as foraging habitat. Crops may include alfalfa, corn, wheat, or rice. Strategic placement of food plots will include locations for food plots in upland areas above the floodplain.	of Irrigated Pasture-Grassland or other pasture and within 2 miles of known roosting sites. Crops must not be harvested or removed until March.
Objective GS6. During assembly of the SSHCP Preserve System, ensure that a minimum of 1,000 acres of high-value modeled foraging habitat for greater sandhill crane outside the 100-year floodplain is preserved (see Objectives VP1, SW1, and FWM1).	Conservation Action GS6.1. The Implementing Entity will select preserve sites for high-value foraging habitat outside the 100-year floodplain considering certain criteria, including the following: <ul style="list-style-type: none"> • Include modeled high-value foraging habitat that is located outside the 100-year floodplain. • Located within 2 miles of known roost sites or modeled roosting habitat outside the UDA. • Located on parcels 20 acres or greater and/or that occurs in larger, open space areas. • Is recorded as supporting greater sandhill crane foraging during previous flood events. • Linked or adjacent to currently preserved lands. • Potentially supports other Covered Species or where management can be used to enhance or re-establish natural ecosystem processes and attract other Covered Species. • Free of fences and power lines. • Contains available sources of “grit,” including gravel and dirt roads or rocky uplands.
Objective TB1. During assembly of the SSHCP Preserve System, ensure that a minimum of 4,149 acres of modeled foraging habitat for tricolored blackbird is preserved (see Objectives AG1, AG2, FWM1, VG1, VP1, VP3, OW1, and SW1).	Conservation Action TB1.1. The Implementing Entity will select preserve sites for foraging habitat considering certain criteria, including the following: <ul style="list-style-type: none"> • Expands on or links already preserved lands and is not bisected by new roadways or incurs impacts from any other infrastructure developments. • Located within 1 mile of a known nesting site or modeled nesting habitat (Note: Intensive row crops, vineyards, and orchards generally do not provide modeled foraging habitat). • Contains vegetation with a potential for high insect populations during the breeding season (April through July). • Located on parcels 20 acres or greater and/or occurs in larger, open space areas. • Located where management can be used to enhance or re-establish natural ecosystem processes and attract tricolored blackbird.

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Measurable Objectives	Conservation Actions
<p>Objective TB2. During assembly of the SSHCP Preserve System, ensure that a minimum of 27,532 acres of modeled nesting/foraging habitat for tricolored blackbird is preserved, including a minimum of 402 acres of Freshwater Marsh and Seasonal Wetland (see Objectives AG1, AG2, VG1, FWM1, and SW1).</p>	<p>Conservation Action TB2.1. The Implementing Entity will select preserve sites for aquatic nesting/foraging habitat, including Seasonal Wetland and Freshwater Marsh land cover types considering certain criteria, including the following:</p> <ul style="list-style-type: none"> • Has nesting substrate (e.g., tules, cattails) in an extensive area (minimum 2 acres) to accommodate large tricolored blackbird colonies. • Known to currently or historically support a tricolored blackbird colony. • Located within 3 miles of a known foraging site or modeled foraging habitat (Note: Intensive row crops, vineyards, and orchards generally do not provide modeled foraging habitat). • Includes Open Water (e.g., canal, lakeshore, or farm pond) within 1,640 feet of nesting substrate to provide a water source for nestlings. • Located on parcels 20 acres or greater and/or occurs in larger, open space areas. • Located where management can be used to enhance or re-establish natural ecosystem processes and attract Covered Species. Management for tricolored blackbird will include maintaining young, lush growth of emergent wetland (cattails or tules). <p>Conservation Action TB2.2. The Implementing Entity will select preserve sites for upland nesting/foraging habitat, including Cropland, Valley Seasonal Wetland, and Freshwater Marsh land cover types considering certain criteria, including the following:</p> <ul style="list-style-type: none"> • Has upland nesting substrate (e.g., Himalayan blackberry (<i>Rubus armeniacus</i>) thickets) in an extensive area (minimum 2 acres) to accommodate large tricolored blackbird colonies. • Known to currently or historically support a tricolored blackbird colony. • Located within 3 miles of a known foraging site or modeled foraging habitat (note: intensive row crops, vineyards, and orchards generally do not provide modeled foraging habitat). • Includes pen water (e.g., canal, lakeshore, or farm pond) within 1,640 feet of nesting substrate to provide a water source for nestlings. • Located on parcels 20 acres or greater and/or occurs in larger, open space areas. • Located where management can be used to enhance or re-establish natural ecosystem processes and attract Covered Species. Management for tricolored blackbird will include maintaining young, lush growth of emergent wetland (cattails or tules).
<p>Objective TB3. During assembly of the SSHCP Preserve System, ensure that a minimum of 917 acres of modeled foraging habitat for tricolored blackbird is re-established and/or established (see Objectives FWM2, SW2, OW2, and VP2).</p>	<p>Conservation Action TB3.1. Implement Conservation Actions FWM2.1, SW2.1, OW2.1, and VP2.1. The Implementing Entity will select re-establishment/establishment sites for aquatic modeled habitat considering certain criteria, including the following:</p> <ul style="list-style-type: none"> • Occurs within 1,000 feet of a nesting colony that is occupied at the time of re-establishment/establishment or that was recorded as an occupied nesting colony at any time since 2008. Sources for occupied nesting colonies are the California Natural Diversity Database, Tricolored Blackbird Portal, eBird, or other data sources approved by the Wildlife Agencies. • Includes all or a mix of Irrigated Pasture-Grassland, Cropland, Vernal Pool, Seasonal Wetland, Swale, Freshwater Marsh, Open Water, and/or Valley Grassland, preferably situated within a mosaic of foraging habitat (as opposed to on

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
	<p>the edge of foraging habitat) and providing adequate insect prey.</p> <p>Tricolored blackbird habitat establishment/re-establishment will occur only where currently non-modeled habitat is converted to modeled habitat (e.g., conversion of a current non-wetland to a wetland). Modeled nesting substrate includes flooded, thorny, spiny, or “visually” but not actually spiny vegetation.</p> <p>Surveys will be conducted after the first year and every 5 years thereafter to monitor success. If, after the first year or any 5-year interval thereafter, the established or re-established habitat is not meeting re-establishment or establishment criteria standards, the efforts will be deemed to have failed. Remediation of failed re-establishment or establishment efforts must occur within 1 year after efforts are deemed unsuccessful.</p>
<p>Objective TB4. During assembly of the SSHCP Preserve System, ensure that a minimum of 232 acres of modeled nesting/foraging habitat for tricolored blackbird is re-established and/or established (see Objectives FWM2 and SW2).</p>	<p>Conservation Action TB4.1. The Implementing Entity will select re-establishment/establishment sites for nesting/foraging habitat, including Valley Grassland, Seasonal Wetland, and Freshwater Marsh land cover types considering certain criteria, including the following:</p> <ul style="list-style-type: none"> • Known to historically support a tricolored blackbird colony. • Located within 1 mile of a known foraging site or SSHCP land cover type that provides modeled nesting and foraging habitat (Valley Grassland, Freshwater Marsh, Seasonal Wetland (Section 3.4.5)). Intensive row crops, vineyards, and orchards generally do not provide modeled foraging habitat. • Includes Open Water (e.g., canal, lakeshore, or stock pond) to provide water for nestlings within 1,640 feet of area where upland nesting substrate can be re-established and/or established. • Located on parcels 20 acres or greater and/or occurs in larger, open space areas. • Located where management can be used to enhance or re-establish natural ecosystem processes and attract Covered Species. <p>Management for tricolored blackbird will include maintaining young, lush growth of emergent wetland (cattails or tules) or for upland sites, blackberry bushes or other suitable spiny bushes.</p>
<p>Objective TB5. Provide mitigation for loss of any tricolored blackbird nesting colony site that is occupied at the time of Covered Activity implementation or was recorded as an occupied nesting colony at any time since 2008. Sources for occupied nesting colonies are the California Natural Diversity Database, Tricolored Blackbird Portal, eBird, or other data sources approved by the Wildlife Agencies. Minimum mitigation is to protect one extant unprotected occurrence of a nesting colony prior to take of one nesting</p>	<p>Conservation Action TB5.1. Protect at least one extant unprotected occurrence of a nesting colony prior to take of one nesting colony of tricolored blackbird. Each of the extant occurrences preserved will meet the following criteria:</p> <ul style="list-style-type: none"> • Has supported a minimum of 200 individual tricolored blackbirds during one or both of the survey years preceding the project application. • Includes protected nesting substrate (including wetlands that are flooded March to July, and thorny, spiny, or “visually” but not actually spiny vegetation). • Includes open, accessible water within 1,640 feet of the nesting substrate. • Located within 1 mile of at least 500 acres of a known foraging site or SSHCP land cover type that provides modeled nesting and foraging habitat (Valley Grassland, some Cropland, Freshwater Marsh, Seasonal Wetland (Section 3.4.5)). This requirement targets lands with adequate insect forage. Intensive row crops, vineyards, and orchards generally do not provide modeled foraging habitat.

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
colony of tricolored blackbird. Ensure that at least five extant tricolored blackbird colonies that were occupied in recent years are maintained and managed within the SSHCP Preserve System.	One or more of the three elements (nesting substrate, access to Open Water as a water source for nestlings, and modeled foraging habitat) may be provided through re-establishment or establishment through Conservation Action TB3.1. If re-establishment is included, surveys will be conducted the first year and every 5 years thereafter to monitor success. If, after the first year or any 5-year interval thereafter, the restored habitat is not meeting re-establishment criteria standards, the efforts will be deemed to have failed. Remediation of failed re-establishment efforts must occur within 1 year after efforts are deemed unsuccessful.
Objective TB6. Conduct an experimental study to identify management actions to protect tricolored blackbird colonies (e.g., coarse netting to reduce nest predation or impact of pesticides).	Conservation Action TB6.1. Select one or more existing tricolored blackbird colonies as experimental populations. If a large colony is available, test several potential feasible management actions within that one colony. If results of experimental treatments indicate a measurable and biologically significant decrease in nest predation or increased fledgling success and that treatments are feasible, include these management actions within PMPs for preserves that include historic or current tricolored blackbird colonies.
Objective TB7. Ensure that at least one large tricolored blackbird colony (i.e., one that has historically (from 1950 onward) supported a minimum of 1,500 individuals) is protected.	<p>Conservation Action TB7.1. Each of the large colonies preserved will meet the following criteria:</p> <ul style="list-style-type: none"> • Has supported a minimum of 1,500 individual tricolored blackbirds during a survey year since 1950. • Includes a protected nesting substrate (including flooded, thorny, spiny, or “visually” but not actually spiny vegetation). • Includes open accessible water to provide a water source for nestlings within 1,640 feet of the nesting substrate. • Includes at least 500 acres of modeled foraging habitat (that may include any combination of irrigated pasture alfalfa, Vernal Pool, Valley Grassland, Seasonal Wetland, Swale, and Freshwater Marsh) providing adequate insect prey within a 1-mile radius of the nesting colony. <p>One or more of the three elements (nesting substrate, access to Open Water, and modeled foraging habitat) may be provided through re-establishment or establishment through Conservation Action TB3.1. If re-establishment is included, surveys will be conducted the first year and every 5 years thereafter to monitor success. If, after the first year or any 5-year interval thereafter, the restored habitat is not meeting re-establishment criteria standards, the efforts will be deemed to have failed. Remediation of failed re-establishment efforts must occur within 1 year after efforts are deemed unsuccessful.</p>
Objective TB8. For any tricolored blackbird nesting colony that is removed by a Covered Activity, re-establish and/or establish three new colonies within SSHCP Preserves. Re-established and/or established colonies can be in aquatic (Freshwater Marsh, Seasonal Wetland) or upland (Annual Grassland) habitat types, and must be within 0.5 mile of appropriate agricultural forage crops (especially alfalfa) or annual grasslands that provide adequate	<p>Conservation Action TB8.1. When re-establishing and/or establishing aquatic nesting colony sites, the Implementing Entity will consider the following in their design:</p> <ul style="list-style-type: none"> • Avoid management of properties for fall and winter waterfowl habitat. Maintain flooded marshes from spring into July through irrigation or impoundment (8–12 inches standing water through spring). As necessary, use graywater or recycled water sources for spring irrigation. • Plant mixture of cattails and tules (cattails more abundant) in Seasonal Wetland and Freshwater Marshes if absent. Manage the wetlands for large patches of cattails (at least 100 feet in width) spaced away from the shoreline. Refresh cattails by mowing/disking or burning, not less than every 3 years in fall and winter. • Protect the colony site from encroachment by trees or high shrubs to eliminate perching sites for avian nest predators. • Select sites for re-establishment/establishment of aquatic nesting habitat that must be within 0.5 mile of appropriate agricultural forage crops (especially alfalfa) or annual grasslands. Agricultural operations or grasslands should ideally be

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
foraging opportunities.	<p>protected in SSHCP Preserves, but if not, must be free from pesticide use so that insect populations are not reduced.</p> <ul style="list-style-type: none"> • Encourage cattle grazing near suitable breeding colony sites if possible. Grazing increases insect abundance and the short grass increases tricolored blackbird access to insects. As an alternative to cattle grazing, conduct prescribed burns every 5 years. The preferred grass height to maintain by grazing is less than 15 inches. • Near the aquatic nesting colony site, promote insect production in early spring through irrigation or other methods. Preferred insect prey include grasshoppers and caterpillars, but aquatic insect larvae can also provide food. • Tules or cattails will be cut down or removed after each season to allow for growth of new tules and cattails. <p>Conservation Action TB8.2. When re-establishing and/or establishing upland nesting colony sites, the Implementing Entity will consider the following in their design:</p> <ul style="list-style-type: none"> • Provide native spiny, thorny, thick substrate such as California blackberry (<i>Rubus ursinus</i>), prickly lettuce (<i>Lactuca serriola</i>), nettles (<i>Urtica dioica</i>), California rose (<i>Rosa californica</i>), sandbar willow (<i>Salix exigua</i>), and mugwort (<i>Artemisia douglasiana</i>). • Protect existing patches of non-native Himalayan blackberry and milk thistle (<i>Silybum marianum</i>) patches and allow planting in select areas. These provide superior upland habitat compared to native species as they are more thick and spiny. • Protect the colony site from encroachment by trees or high shrubs to eliminate perching sites for avian nest predators. Patches should remain in the open to avoid predator access from trees and shrubs. • Target establishment of high-density patches with height of 4 to 10 feet in existing pastureland and rangeland. Irrigating in March–April can help increase the height and density of the plants if the winter has been dry. • Do not prune or mow patches until after the nesting season. • Select sites for re-establishment/establishment of upland nesting habitat that must be within 0.5 mile of appropriate agricultural forage crops (especially alfalfa) or annual grasslands. Agricultural operations or grasslands should ideally be protected in SSHCP Preserves, but if not, must be free from pesticide use so that insect populations are not reduced. • Ensure a water source is available within 1,500 feet of a target upland colony site throughout the breeding season. Water sources can include ponds, marshes, canals, stock ponds, and streams.
Mammal Covered Species	
Objective AB1. During assembly of the SSHCP Preserve System, ensure that a minimum of 23,171 acres of modeled habitat for American badger is preserved (see Objectives BOW1, VG1, VP1, VP3, and SW1).	<p>Conservation Action AB1.1. The Implementing Entity will select preserve sites for modeled habitat considering certain criteria, including the following:</p> <ul style="list-style-type: none"> • Includes large areas (e.g., relatively undisturbed by human activity). • Supports friable soils. • Known to support high prey densities, particularly ground squirrels and pocket gophers. • Located where management can be used to enhance or re-establish natural ecosystem processes.

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
<p>Objective AB2. During Preserve Assembly, ensure that a minimum of 767 acres of modeled habitat for American badger is re-established and/or established (see Objectives VP2 and SW2).</p>	<p>Conservation Action AB2.1. The Implementing Entity will select re-establishment/establishment sites for modeled habitat considering certain criteria, including the following:</p> <ul style="list-style-type: none"> • Includes arge areas (e.g., relatively undisturbed by human activity). • Supports friable soils. • Known to support high prey densities, particularly ground squirrels and pocket gophers. • Located where management can be used to enhance or re-establish natural ecosystem processes.
<p>Objective WR1. During Preserve Assembly, ensure that a minimum of 23,910 acres of modeled foraging habitat for western red bat is preserved (see Objectives BOW1, RIP1, AG1, VG1, VP1, VP3, SW1, OW1, FWM1, and SC1).</p>	<p>Conservation Action WR1.1. The Implementing Entity will select preserve sites for foraging habitat considering certain criteria, including the following:</p> <ul style="list-style-type: none"> • Includes foraging areas known to be used by western red bats. • Located within 2–3 miles of permanent water. • Includes areas known or having potential to support high insect prey densities. • Includes few or no human disturbances. • Located on parcels 20 acres or greater and/or occurs in larger, open space areas. • Linked or adjacent to currently preserved lands. • Absent of or few habitat-fragmenting features, including roads and other infrastructure. • Located where management can be used to enhance or re-establish natural ecosystem processes and attract other Covered Species.
<p>Objective WR2. During assembly of the SSHCP Preserve System, ensure that a minimum of 841 acres of modeled roosting/foraging habitat for western red bat is preserved (see Objectives BOW1 and RIP1).</p>	<p>Conservation Action WR2.1. The Implementing Entity will select preserve sites for roosting/foraging habitat considering certain criteria, including the following:</p> <ul style="list-style-type: none"> • Includes active roosting sites, especially maternity sites (note that buildings, bridges, and other built structures may be used for roosting). • Located within 2–3 miles of foraging habitat and permanent water. • Includes foraging areas known to be used by western red bat. • Includes areas known or having potential to support high insect prey densities. • Includes few or no human disturbances. • Located on parcels 20 acres or greater and/or occurs in larger, open space areas. • Linked or adjacent to currently preserved lands. • Absent of or few habitat-fragmenting features, including roads and other infrastructure. • Located where management can be used to enhance or re-establish natural ecosystem processes and attract other Covered Species.

Table 2-7. Biological Goals and Measurable Objectives of the SSHCP Conservation Strategy

Measurable Objectives	Conservation Actions
<p>Objective WR3. During assembly of the SSHCP Preserve System, ensure that a minimum of 1,317 acres of modeled foraging habitat for western red bat is re-established and/or established (see Objectives VP2, SW2, OW2, FWM2, and RIP2).</p>	<p>Conservation Action WR3.1. The Implementing Entity will select re-establishment/establishment sites for foraging habitat considering certain criteria, including the following:</p> <ul style="list-style-type: none"> • Includes areas known or having potential to support high insect prey densities. • Located within 2–3 miles of permanent water. • Includes few or no human disturbances. • Located on parcels 20 acres or greater and/or occurs in larger, open space areas. • Linked or adjacent to currently preserved lands. • Absent of or few habitat-fragmenting features, including roads and other infrastructure. • Located where management can be used to enhance or re-establish natural ecosystem processes and attract other Covered Species.
<p>Objective WR4. During assembly of the SSHCP Preserve System, ensure that a minimum of 450 acres of modeled roosting/foraging habitat for western red bat is re-established and/or established (see Objective RIP2).</p>	<p>Conservation Action WR4.1. The Implementing Entity will select re-establishment/establishment sites for roosting/foraging habitat considering certain criteria, including the following:</p> <ul style="list-style-type: none"> • Includes areas known or having potential to support high insect prey densities. • Located within 2–3 miles of foraging habitat and permanent water. • Includes few or no human disturbances. • Located on parcels 20 acres or greater and/or occurs in larger, open space areas. • Linked or adjacent to currently preserved lands. • Absent of or few habitat-fragmenting features, including roads and other infrastructure. • Located where management can be used to enhance or re-establish natural ecosystem processes and attract other Covered Species.

Notes:

¹ Includes occurrences in the SSHCP GIS database (January 2014) and any future occurrences found in the Planning Area.

SSHCP Preserve System

The Biological Goals and Measurable Objectives of the Proposed Action/Proposed Project Alternative (SSHCP) require the assembly, monitoring, and management of an interconnected SSHCP Preserve System of at least 36,282 acres to conserve species and natural communities currently present within each Planning Area PPU. The SSHCP Preserve System would be incrementally assembled during the 50-year permit term by the SSHCP acquisition of land in fee title and through acquisition of conservation easements.

The SSHCP Preserve System described in the Proposed Action/Proposed Project Alternative includes the following preserve categories:

- **Landscape Preserve:** This category includes preserves that are at least 10,500 acres in size and that contain extensive areas of contiguous natural land covers where natural ecological functions can continue to operate, typically without extensive land management activities. Because existing development has already fragmented much of the remaining habitat within the UDA, the one Landscape Preserve would be located outside the UDA.
- **Core Preserve:** This category includes preserves that are at least 800 acres in size and contain extensive areas of contiguous habitat. The conceptual preserve system would include three Core Preserves in the UDA.
- **Minor Preserve:** This category includes preserves that are between 250 and 800 acres in size that contain populations that are important to the viability of a Covered Species have unusually high biological diversity, and/or have a high concentration of sensitive biological resources. Minor Preserves would be required to connect to existing preserves and/or to the new SSHCP Core Preserves via Linkage Preserves. The conceptual preserve system includes eight Minor Preserves, three of which are located within the UDA.
- **Satellite Preserve:** This category includes preserves that are smaller than Core and Minor Preserves (i.e., less than 250 acres) but contain populations that are important to the viability of a Covered Species in the Planning Area or have a particularly high concentration of sensitive biological resources. Satellite Preserves may not have the biological diversity of Core and Minor Preserves and may or may not be connected to other preserves by habitat linkages due to other planning constraints such as existing development. The conceptual preserve system would include 10 Satellite Preserves, and all but a portion of one would be located in the UDA.
- **Linkage Preserve:** This category includes preserves that are generally more linear-shaped landscape features that connect large habitat blocks (e.g., Core and Minor Preserves) and are designed to provide for dispersal and movement of species between preserve areas and hydrologic connectivity/water quality. These Linkage Preserves would follow stream channels, where possible, to maintain hydrologic connectivity and wildlife movement. The final width and length of each Linkage Preserves would depend on several factors,

including habitat types in the linkage, the ecological function (or functions) the linkage is designed to serve (e.g., overland wildlife movement, drainage), and adjacent land uses. However, the minimum width of any Linkage Preserves is 600 feet. The Preserve System would include 11 Linkage Preserves, most of which would be in the UDA.

- **Wildlife Movement Corridor:** There would be a minimum of two Wildlife Movement Corridor Preserves. The Laguna Creek Wildlife Movement Corridor Preserve is an important landscape feature in PPUs 1 and 3 in the Planning Area, and preservation of habitat along this corridor would be an important way the Preserve System would maintain wildlife movement and habitat for resident wildlife, preserving riparian habitat and maintaining hydrologic connections between preserves inside the UDA. Outside the UDA, the Cosumnes River/Deer Creek Wildlife Movement Corridor Preserve would serve a similar function traversing east to west through PPU 5 and connecting to the Cosumnes River floodplain in PPU 6.
- **Cropland Preserve:** This category includes preserves consisting of existing agricultural lands, mostly located in PPU 6, and have been identified as uniquely important foraging and roosting habitat in the Planning Area for some Covered Species, including Swainson's hawk, white-tailed kite (*Elanus leucurus*), and greater sandhill crane. Cropland Preserves could be any acreage or shape. The Preserve System would include approximately 6,500 acres of Cropland Preserve, most of which would be in the outside the UDA in PPU 6.

In addition to these seven main preserve categories, 500 acres of Flexible Preserve would be added to other SSHCP Preserves or existing preserves in the Planning Area. Flexible Preserves could be of any SSHCP Preserve size category (e.g., Core, Minor, Satellite, Linkage) but must be within 1 mile of the MCRA in PPUs 1, 2, or 3 and adjacent to an SSHCP Preserve or existing preserve. The 500 acres of Flexible Preserve is primarily intended to preserve existing vernal pool ecosystem, but Flexible Preserve could also be used to preserve areas that previously supported vernal pools that can be used for Vernal Pool re-establishment/establishment.

Setbacks

The SSHCP includes two types of setbacks between new urban development and existing natural resources. The first type is a Stream Setback, in which the footprint of a new UDA development project must be set back a certain number of feet from the top of the bank of streams and creeks, as stated in AMMs STREAM-1, STREAM-2, and STREAM-3.

The second type of setback is a Preserve Setback, which is required by AMM EDGE-1, EDGE-2, EDGE-3, under which the footprint of new UDA must be no closer than 50 feet from the boundary of existing and SSHCP Preserves. Preserve Setbacks are required for most Covered Activities in the UDA (refer to Section 2.3.3).

AMM EDGE-3 would provide a Preserve Setback by requiring all UDA development projects and activities be permanently “set back” at least 50 feet outward from the boundary of any existing or conceptual preserve. The lead agencies estimate that approximately 625 acres of habitat will be protected from development of urban structures within Preserve Setback along 105 linear miles of existing and potential preserve boundaries. The natural land covers within the minimum 50-foot-wide Preserve Setbacks would remain in its natural state and function as a transition area between new urban development and the natural resources of the preserves. However, a limited number of specific Covered Activities could be allowed within SSHCP Preserve Setbacks, as described in Table 2-3 in Section 2.3.3.

AMM STREAM-1 and STREAM-2 require that project developers or the Implementing Entity design of Covered Activity shall establish Stream Setbacks surrounding particular streams in the UDA. Stream Setbacks at least 100 feet wide measured from the top of the bank would be established on both sides of the following UDA streams, creeks, and drainages: Elder Creek, Frye Creek, Gerber Creek, Morrison Creek, Sun Creek, and the Paseo Central drainage. A Stream Setback of at least 150 feet wide measured from the top of the bank would be established on both sides of Laguna Creek. The primary purpose of a Stream Setback is to minimize indirect effects of adjacent urban development Covered Activities on Planning Area waterway hydrologic functions, including water quality, and to avoid or reduce associated adverse effects on Covered Species aquatic habitats. Finally, under AMM STREAM-3, a 12.5-foot setback would be established from each side of the top of the bank along avoided first- and second-order tributaries to Elder Creek, Frye Creek, Gerber Creek, Morrison Creek, Sun Creek, Laguna Creek, and the Paseo Central drainage.

Expected Preserve System Under the Proposed Action/Proposed Project Alternative

Implementation of the SSHCP Conservation Strategy over the 50-year permit term would result in a Preserve System totaling a minimum of 36,282 acres of new preservation, which would then be managed in perpetuity. A project alternative that was not carried forward subsequent to the release of the Notice of Preparation and Notice of Intent anticipated a larger preserve area (50,310 acres). The preserve size was scaled back (along with the UDA) when the City of Elk Grove and Aerojet properties opted out of participation in the SSHCP. Table 2-8 presents a scenario for a conceptual preserve system developed for the SSHCP totaling 36,282 acres of natural land covers. This Preserve System would preserve approximately 18,388 acres of vernal pool ecosystem in the Planning Area, or 51% of the Preserve System.

**Table 2-8. Minimum Preservation of Natural Land Categories Under the Proposed Action/
Proposed Project Alternative**

Land Cover Category ¹	Preserved Land (acres)		
	Inside UDA (acres)	Outside UDA (acres)	Total (acres)
All natural land covers ²	7,030	27,465	34,495
Vernal pool ecosystem ³ land covers	5,618	12,125	17,743
Wetland land covers ⁴ and other water land covers	605	1,169	1,774

¹ The rows in the table are not additive because the land cover categories include some overlapping land cover types (e.g., Vernal Pool is included in "all natural land covers," "Vernal Pool Ecosystem land covers," and "wetland land covers and other water land covers.")

² Planning Area land cover types were defined by the SSHCP preparers during development of the SSHCP. To allow for better comparison of impacts between the EIS/EIS alternatives, the EIS/EIR uses these same land cover types in discussions of all alternatives. The natural land covers include Blue Oak Savanna, Blue Oak Woodland, Cropland, Freshwater Marsh, Irrigated Pasture-Grassland, Mine Tailings Riparian Woodland, Mixed Riparian Scrub, Mixed Riparian Woodland, Open Water, Orchard, Seasonal Wetland, Stream/Creek, Stream/Creek (VPIH), Swale, Valley Grassland, Vernal Pool, and Vineyard, as discussed in Table 8-1.

³ The Vernal Pool Ecosystem includes three aquatic land cover types (Vernal Pool, Swale, and Stream/Creek (VPIH)) and hydrologically connected Valley Grassland.

⁴ Wetland land covers include the following aquatic land cover types: Freshwater Marsh, Seasonal Wetland, Open Water, Stream/Creek, Vernal Pool, Swale, and Stream/Creek (VPIH).

To assist with development of an adequate SSHCP Conservation Strategy, the Plan Area was further divided into eight Preserve Planning Units (PPUs) that encompass areas where important Covered Species resources are present and where habitat preservation would occur (see Figure 2-1). These eight SSHCP PPUs are geographic subdivisions of the Plan Area and were delineated to ensure that adequate Biological Goals for the SSHCP would be developed for biological resources in all parts of the Plan Area, including the location and implementation of the Preserve System.

PPUs 1–3 cover roughly the eastern half of the UDA. PPUs 4–7 cover most of the Planning Area outside the UDA. PPU 8 covers the City of Galt and Galt's SOI. The western portion of the UDA and a small area outside of the UDA in the extreme northeastern portion of the Planning Area are not within PPUs. Although geopolitical or physical landmarks were used to delineate some PPU boundaries, this was done for ease of mapping and to make locating PPU boundaries in the field easier. The PPUs capture specific habitat or agricultural land cover types or areas identified as being important for a specific suite of species. For instance, the Biological Goals and Measurable Objectives (Table 2-7) describe specific requirements for species habitat preservation and aquatic resource re-establishment and establishment in PPUs.

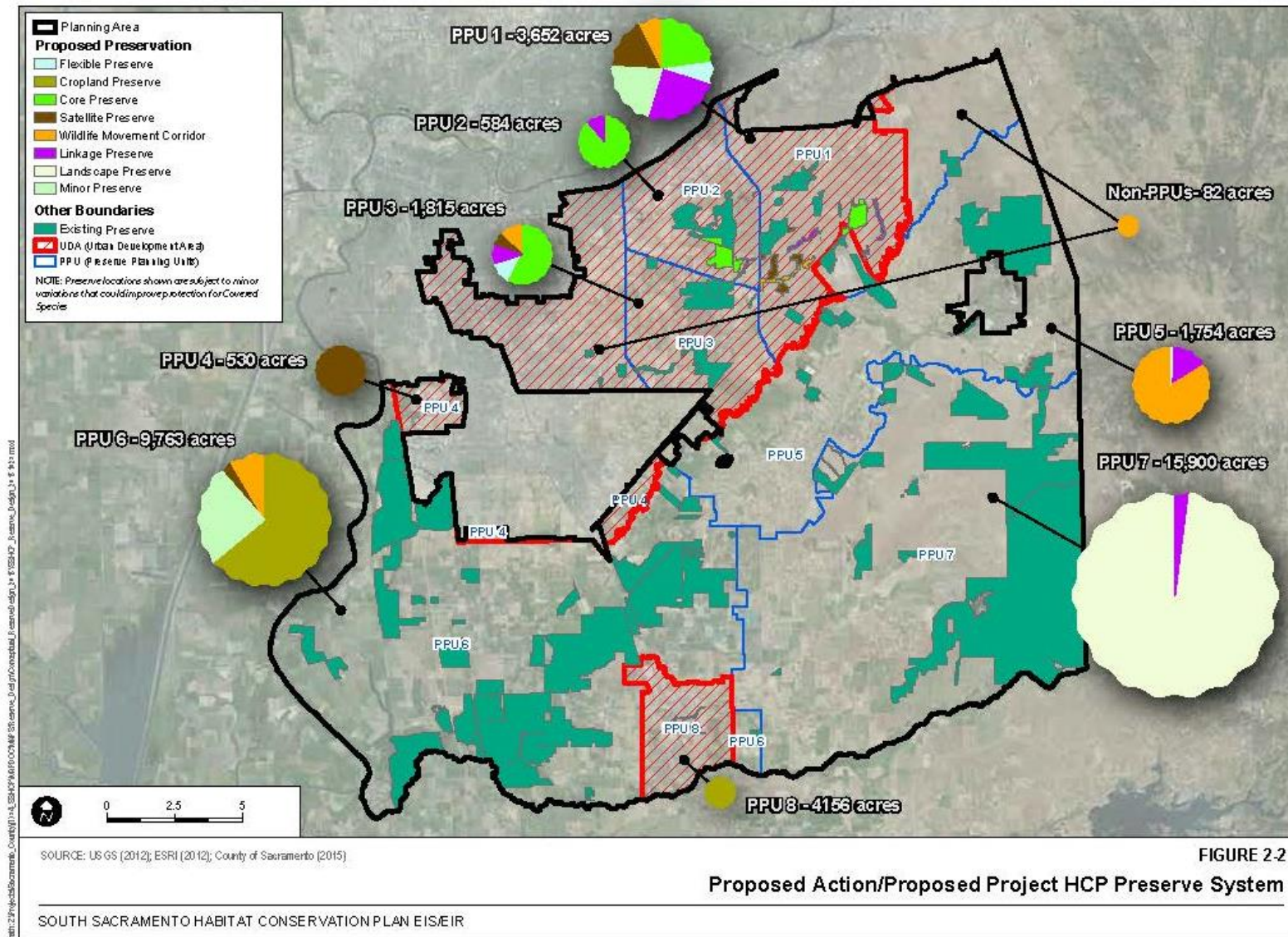
The Proposed Action/Proposed Project Alternative would preserve important corridors for wildlife movement through the Planning Area, the Laguna Creek Wildlife Movement Corridor Preserve and the Cosumnes River/Deer Creek Wildlife Movement Corridor Preserve. These corridors connect across multiple PPUs. The Laguna Creek Wildlife Movement Corridor Preserve would include approximately 520 acres inside the UDA. Approximately 4 miles and 440 acres of the Laguna Creek Wildlife Movement Corridor Preserve would be within PPUs 1 and 3, and the

remaining approximately 1 mile and 82 acres would be in the portion of the UDA that was not included in a PPU. The Laguna Creek Wildlife Movement Corridor Preserve would provide habitat, connectivity, and wildlife movement between the new Core Preserve in PPU 1 and the Core Preserves in PPU 3. The Cosumnes River/Deer Creek Wildlife Movement Corridor Preserve would preserve an extensive area surrounding Deer Creek and the Cosumnes River across PPU 5 from Rancho Murieta southeast to the broader Cosumnes River floodplain in PPU 6. Both of the Wildlife Movement Corridor Preserves would, in addition to facilitating plant and wildlife habitat functions, preserve riparian habitat and maintain hydrologic connections between conceptual preserve areas.

The final spatial configuration of the conceptual preserve system is not known at this time because it would be assembled over time and would rely on purchasing lands or easements from buyers who are willing to sell at the time. However, a description of the conceptual preserve is provided in the following text based on the SSHCP Biological Goals and Measurable Objectives and conservation actions specified for each Planning Area PPU. Figure 2-2 displays the conceptual preserve system elements for each Planning Area PPU.

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Figure 2-2 Proposed Action/Proposed Project HCP Preserve System



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Inside the UDA, existing development has fragmented much of the remaining natural land covers, and planned urban development places further constraints on the possible locations and sizes for preserves. Therefore, the Conservation Strategy in the UDA identifies the highest-quality natural land covers remaining and establishes Linkage Preserves to connect those natural land covers to other new or existing preserves. Three minimum 800-acre Core Preserves would be established inside the UDA. Preserves in the UDA would be well connected. New Linkage Preserves would ensure that habitat connectivity is maintained between the three Core Preserves, three Minor Preserves, nine Satellite Preserves, several existing preserves, and the Laguna Creek Wildlife Movement Corridor Preserve. The locations for some preserves in the UDA were known at the time of SSHCP preparation, and those are shown on Figure 2-2 as “Proposed Preservation.” The following text describes the proposed preservation areas:

PPU 1: PP1 is the easternmost portion of the UDA and includes approximately 15,800 acres of the MCRA. New preserves in PPU 1 would include one Core Preserve of approximately 840 acres, three Minor Preserves totaling approximately 785 acres, and seven Satellite Preserves totaling approximately 600 acres. These preserves would be located to enclose intact Vernal Pool ecosystem and known occurrences of rare plants such as Sacramento Orcutt grass and slender Orcutt grass. At least seven new Linkage Preserves totaling approximately 920 acres would also be established in PPU 1 and would connect the new Core, Minor, and Satellite Preserves to each other and to existing preserves.

The conceptual preserve design for PPU 1 would maintain habitat connectivity with the Cosumnes River/Deer Creek Wildlife Movement Corridor Preserve inside PPU 1 and 3 and provide connectivity in the UDA to existing preserves both within and south of the UDA. This connectivity in PPU 1 would be accomplished by portions of a Minor Preserve and a Core Preserve that are mostly located in the UDA portion of PPU 1.

PPU 2: PP2 is an important portion of the MCRA, and is adjacent to the existing Mather Preserve. New preserves in PPU 2 are one Core Preserve of approximately 520 acres as shown on Figure 2-2, and two Linkage Preserves that would connect the new Core Preserve to existing preserves located to the east and south, including a connection across Jackson Highway between PPU 1 and 3. The new Core Preserve in PPU 2 would preserve the intact Vernal Pool ecosystem and abut the existing Mather Preserve to the north.

PPU 3: PP3 preserves would be acquired to preserve existing high-quality habitat that is present between two large existing preserves (Figure 2-2). This is done to maintain landscape functions of the remaining Vernal Pool ecosystem; capture known occurrences of rare plants such as Sacramento Orcutt grass and slender Orcutt grass; and maintain north-south wildlife movement between Jackson Highway, Laguna Creek, and Calvine

Road in PPU 3. PPU 3 would establish a 1,050-acre Core Preserve. Two Satellite Preserves that would provide connectivity between existing preserves and the Laguna Creek Wildlife Movement Corridor would also be located in PPU 3, and a single Linkage Preserve would connect the new preserves in PPU 3 from Grant Line Road through an area surrounded by a large-lot agricultural residential development to the Cosumnes River/Deer Creek Wildlife Movement Corridor.

PPU 4: PPU 4 is a small area west of Elk Grove and northeast of the Stone Lakes NWR. The goal of PPU 4 would be to augment the existing Stone Lakes NWR. PPU 4 would include preserves totaling approximately 530 acres composed primarily of Valley Grassland that connects to the refuge. Although the total size of this preserve would typically make it a Minor Preserve, it was classified by the Permit Applicants as a Satellite Preserve because it would be fragmented by existing development in the area.

Flexible Preserve: At least 500 acres of Flexible Preserves would be established next to other preserves within the conceptual preserve system or to existing preserves inside the UDA. The purpose of the Flexible Preserve category is to assure that the operational Preserve System is providing the species conservation benefits of functions of the Vernal Pool ecosystem within the MCRA, as anticipated by the Permit Applicants at the time of SSHCP preparation. Flexible Preserve acres would be adjacent to existing or new preserves and must be within the MCRA or located within 1 mile of the MCRA.

Outside the UDA, land is largely undeveloped and composed of large parcels under the existing conditions. This condition would allow the SSHCP Conservation Strategy to assemble larger preserves, such as a more than 10,000-acre Landscape Preserve in PPU 7. The undeveloped nature of the area outside the UDA would also allow the Conservation Strategy to identify areas in PPU 6 for Cropland Preserves in the southwest of the Planning Area that would protect existing agricultural habitat for species such as Swainson's hawk and greater sandhill crane.

PPU 5: PPU 5 is outside the UDA in the west-central part of the Planning Area. Approximately 1,691 acres in PPU 5 would be preserved under the Proposed Action/Proposed Project Alternative. The preserve design focus in PPU 5 would be to provide habitat linkages among preserves both outside and inside the UDA, primarily along the Cosumnes River/Deer Creek Wildlife Movement Corridor Preserve. Approximately 1,500 acres would be preserved in PPU 5 along the Cosumnes River/Deer Creek Wildlife Movement Corridor Preserve, an expanse of Valley Grassland, Riparian, Stream/Creek, and Cropland land cover types enclosing the Cosumnes River that extends for 16 miles in PPU 5 and ranges in width from approximately 500 feet to 1 mile. The Cosumnes River/Deer Creek Wildlife Movement Corridor Preserve in PPU 5 would be

connected to the Laguna Creek Wildlife Movement Corridor Preserve to the northwest in PPU 3 by a wide 260-acre Linkage Preserve.

PPU 6: PPU 6 is outside the UDA in the southwest part of Planning Area. Approximately 9,750 acres would be preserved in PPU 6, and the preserve design focus in PPU 6 would be to preserve existing agricultural lands that provide habitat for the broad-ranging Swainson's hawk, greater sandhill crane, and white-tailed kite. Approximately 8,500 acres of Cropland Preserve in PPU 6 would be established under the Proposed Action/Proposed Project Alternative. Other natural land covers could also be preserved in each Cropland Preserve, but these would be preserved and managed primarily for the benefit of Covered Species that forage in the row crop or irrigated pastures, and would generally be adjacent to existing agricultural fields. Smaller acreages of Riparian, Vernal Pool, and other aquatic land covers would also be preserved in PPU 6. These smaller areas would be managed differently than the Cropland Preserves and would likely be the sites of Vernal Pool re-establishment and/or establishment through conversion of Irrigated Pasture-Grassland or Valley Grassland. Most of these smaller preserves would fill gaps near existing preserves or between existing preserves and conceptual SSHCP Preserves. Approximately 4 miles and 800 acres of the Cosumnes River/Deer Creek Wildlife Movement Corridor would be preserved within PPU 6, connecting to the Cosumnes River/Deer Creek Wildlife Movement Corridor described previously in PPU 5. In PPU 6, the Cosumnes River/Deer Creek Wildlife Movement Corridor would include mostly Mixed Riparian Woodland and agricultural lands.

PPU 7: PPU 7 is located outside the UDA in the southeastern portion of the Planning Area and was delineated to encompass large areas of the Vernal Pool ecosystem in the Cosumnes/Rancho Seco Core Recovery Area. Approximately 15,900 acres would be preserved in PPU 7, including a Landscape Preserve of at least 10,500 acres and 300 acres of Linkage Preserve that would connect the Landscape Preserve to the Cosumnes River/Deer Creek Corridor in PPU 5. The preserve design focus in PPU 7 would be to preserve natural land covers in a large Landscape Preserve. SSHCP Preserves in PPU 7 would target Vernal Pool and Valley Grassland in areas that are adjacent to or near existing preserves, such as the 12,500-acre Chance Ranch.

PPU 8: New habitat preservation in this PPU would include 415 acres of Cropland Preserve located in the northwest of the PPU and in the south of the PPU along Dry Creek. This Cropland Preserve would focus on preserving high-value Swainson's hawk foraging habitat and a greater sandhill crane roosting pond.

2.3.6 SSHCP Preserve Management and Monitoring Programs

The Proposed Action/Proposed Project Alternative would include two separate programs for monitoring and tracking implementation of the SSHCP and the SSHCP Conservation Strategy, including progress toward achieving each SSHCP Biological Goal and Measurable Objective. The two programs are described as follows:

Permit Compliance and AMM Effectiveness Monitoring Program

The first SSHCP monitoring program, the Permit Compliance and AMM Effectiveness Monitoring Program, would track compliance with the Covered Activities and acres of impacts, acres of conservation required by each Measurable Objective, and any other permit term and condition. This program would include the following components:

- **HCP Compliance Monitoring:** HCP Compliance Monitoring would track the status of Covered Activity implementation and Measurable Objective implementation and document that all requirements of the SSHCP and the ITPs are being met.
- **AMM Compliance Monitoring:** AMM Compliance Monitoring would ensure required AMMs are implemented at Covered Activity project sites and implemented correctly. In this way, AMM Compliance Monitoring would ensure that adverse effects of Covered Activities on Covered Species and natural land cover types that provide habitat for Covered Species (including aquatic resources) will not exceed the impacts assumed during the development of the SSHCP.
- **AMM Effectiveness Monitoring:** The effectiveness of AMMs in avoiding or reducing adverse effects of Covered Activities would be tracked through AMM Effectiveness Monitoring. The results of AMM Effectiveness Monitoring would be used to adaptively modify or change AMMs if AMMs are not avoiding or minimizing impacts to Covered Species as anticipated. The adaptive modification of AMMs over the permit term assures that the maximum adverse effects of the SSHCP will not exceed the amounts analyzed by this EIS/EIR.

Preserve System Management and Monitoring Program

The Preserve System Management and Monitoring Program would monitor effectiveness of the SSHCP Preserve System (described in Section 2.3.5) and operational Conservation Strategy to ensure that it is achieving the expected conservation of Covered Species within the Planning Area.

The Preserve System Management and Monitoring Program would also link preserve monitoring results to decisions about adaptive land management action on preserves to improve both management and monitoring for the benefit of Covered Species.

The Proposed Action/Proposed Project Alternative would include a program to manage the Preserve System, described in Section 2.3.5, and to monitor the effectiveness of the land management activities implemented on each individual preserve in the Preserve System.

The Preserve System Management and Monitoring Program would integrate the monitoring results into an adaptive management process to have one cohesive program where monitoring would inform changes in management actions and continually improve Covered Species habitat on each preserve.

The Preserve System Management and Monitoring Program document would provide a single framework document from which the SSHCP Implementing Entity (Section 2.3.7) would develop a separate individual Preserve Management Plan (PMP) for each SSHCP Preserve. The Preserve System Management and Monitoring Program document would be developed by the Implementing Entity within 18 months of permit issuance.

The Preserve System Management and Monitoring Program framework document would include the following:

- A template to be used by the Implementing Entity to prepare initial PMPs for new preserves. Initial PMPs would address immediate short-term management needs such as trash removal, fence repair, and invasive species control.
- A template to be used by each Preserve Manager (Section 2.3.7) to prepare individual PMPs. Each individual PMP would include a “decision tree” for using preserve monitoring data and other data to adjust preserve management actions.
- A comprehensive management and monitoring “toolbox” to be used by the Preserve Manager to prepare and then implement an individual PMP for each preserve in the larger Preserve System. The toolbox would include a set of adaptive management methods that can be used by preserve staff on preserves. The Preserve System Management and Monitoring Program would also provide protocols for routine preserve management actions and activities that could be required for any SSHCP Preserve, including regular patrols, trash removal, fence/gate installation and repairs, and other maintenance activities.

2.3.7 SSHCP and ARP Implementation

Implementation of the SSHCP and ARP would protect ecological diversity and aquatic resource function in Southern Sacramento County, while allowing planned urban growth and development in accordance with approved General Plans and applicable laws.

Responsibility for implementing the permitted SSHCP would jointly rest with all Permit Applicants. SSHCP implementation would be directed by the SSHCP Implementing Entity, a Joint Powers Authority composed of the Sacramento County, Galt, and Rancho Cordova (the Land Use Authority Applicants).

The Implementing Entity would be composed of a Joint Powers Authority Governing Board, an Implementation Committee, and an Executive Director and staff, such as Preserve Managers, to help with day-to-day implementation of the Plan. Refer to Chapter 9.3 of the SSHCP document for further details on the proposed Implementing Entity structure and the responsibilities of each Implementing Entity element.

The ARP would be implemented by the Permit Applicants in conjunction with the SSHCP, for the purpose of improving the protection and management of Planning Area aquatic resources. The SSHCP Conservation Strategy and the ARP assure a watershed-level approach to aquatic resources ~~and~~, with a better evaluation of cumulative impacts to aquatic resources. The ARP would be implemented locally, and would use the comprehensive, landscape, and project-level Conservation Strategy for aquatic resources, as described in Appendix I.

In the event that circumstances change during implementation of the SSHCP, the SSHCP has identified changed circumstances that are reasonably foreseeable, and provides planned responses to address the changed circumstances, as required by the ESA Section 10 incidental take permit issuance criteria (40 CFR 17.22(b)). SSHCP changed circumstances include floods, drought, changes in water availability, wildfire, invasive species, covered species disease, long-term changes in precipitation and temperature, new species listing, and new designation of Critical Habitat. The planned responses to these events, if needed, would be Covered Activities by the SSHCP. Examples of planned responses include inspections of affected conservation lands within a specific time from the end of the event (e.g., 30 days); evaluation of the extent of the damage; purchasing of additional water supplies, if necessary, to maintain crops supporting habitat functions; and habitat restoration and enhanced recovery of affected habitat area.

2.4 REDUCED PERMIT TERM ALTERNATIVE

The Reduced Permit Term Alternative was carried forward for detailed study because, within the Planning Area, the General Plan durations range from 16 years to more than 30 years (Table 2-9). The lead agencies determined that the underlying needs in the Planning Area and the purposes and objectives of implementing a Habitat Conservation Plan in south Sacramento County could generally be achieved within incidental-take permit terms shorter than the term that requested under the Proposed Action/Proposed Project Alternative. A 30-year permit term is analyzed because that term generally coincides with the durations of the adopted General Plans and other

local planning documents of the Permit Applicants, including most reasonably foreseeable master plan projects in those jurisdictions (see Section 2.1).

Table 2-9. Local Planning Documents and Time Horizons Relevant to the Permit Term

Document	Date Produced	Projection/Time Horizon	Plan Duration
2030 Galt General Plan: Policy Document	2009	2030	16 years
City of Rancho Cordova General Plan	2006	2030/2050	16–36 years
Sacramento County General Plan of 2005–2030	1993; updated 2011	2030	16 years
County of Sacramento General Plan USB	1993	At least until 2060	46 years

Sources: City of Galt 2009; City of Rancho Cordova 2006; County of Sacramento 2011.

As with the Proposed Action/Proposed Project Alternative, this alternative consists of issuance of ITPs by USFWS and CDFW for species take resulting from Covered Activities; the implementation of a HCP Conservation Strategy for the Planning Area by the Permit Applicants, including an ARP; and the development of a CWA 404 permit strategy by the USACE for future Covered Activities that result in fill or discharge to waters of the U.S. However, the term of ITPs and the use of the CWA 404 permit strategy would end after 30 years.

Under the Reduced Permit Term Alternative, the Permit Applicants (future Plan Permittees) would implement the same types or categories of Covered Activities that are discussed in Section 2.3.3. Under the Reduced Permit Term Alternative, the Permit Applicants would request ESA and CESA take coverage for the same Covered Species as listed in Section 2.3.4.

2.4.1 Expected Regulatory Environment under the Reduced Permit Term Alternative

Under the Reduced Permit Term Alternative, a HCP that includes an ARP would allow expedited CESA, ESA, and CWA 404 permitting processes for HCP Covered Activities, as was described above for the Proposed Action/Proposed Project Alternative in Section 2.3.1. The implementation of the regional HCP, including implementation of HCP Covered Activities under the ITPs would occur over a 30-year permit term.

The regulatory environment under Reduced Permit Term Alternative would be different from the regulatory environment expected under the No Action/No Project Alternative described in Section 2.2.2. During the 30-year permit term, the Covered Activity permitting and entitlement process would be similar to the process described for the Proposed Action/Proposed Project in Section 2.3.1.

Federal ESA and CESA Compliance

Under the Reduced Permit Term Alternative, an ESA ITP would be issued to the Permit Applicants (the future Plan Permittees) by the USFWS, and a CESA ITP would be issued to the Permit Applicants by the CDFW.

Individual Covered Activity projects and activities that comply with the SSHCP would also comply with the ESA and CESA incidental take permits. Third party project proponents implementing a SSHCP Covered Activity project would pay “development fees” to the local Land Use Authority Permittee (i.e., Sacramento County, Galt, or Rancho Cordova), or to the SSHCP Implementing Entity, whoever has jurisdiction over the project site.

Under the Reduced Permit Term Alternative, the regional HCP would include a Conservation Strategy that provides a regional plan for conserving native species, natural communities, and aquatic resources in the Planning Area. Because the HCP Conservation Strategy was developed by the Permit Applicants and the regulatory agencies, it evaluates and prioritizes the regional importance of the existing species habitat and existing aquatic resources in the Planning Area.

Therefore, the importance (or lack of importance) of a specific Planning Area location or parcel to the conservation of listed species, ecosystem functions, and aquatic resources of the region would have already been determined by USFWS, CDFW, and USACE during the development of the HCP, as described above in Section 2.3.1 for the Proposed Action/Proposed Project Alternative.

Therefore, each project proponent would not need to spend time or money preparing draft and final ESA biological assessment documents, because the ESA consultation on the project’s impacts would have been done when the Biological Opinion was prepared for the regional HCP and the ITP was issued.

Further, each Covered Activity that meets the requirements of the SSHCP would be in compliance with the ESA, and any incidental take of federally listed species or impacts to Critical Habitat by the Covered Activity would be covered by the SSHCP ESA incidental take permits. Therefore, **it is envisioned that in most cases**, the USACE would not be required to initiate ESA Section 7 consultation with the USFWS before providing CWA 404 authorizations to a proposed project that is a SSHCP Covered Activity. Similarly, for CESA, a project proponent would not need to consult individually with CDFW, apply for a project-specific species permit from CDFW, negotiate project avoidance measures with CDFW, or negotiate type or amounts of species mitigation with CDFW. These elements of the Reduced Permit Term Alternative would substantially reduce the timeline for the proposed project.

The Reduced Permit Term Alternative’s Conservation Strategy would address cumulative impacts to vernal pools **species** within the MCRA. ~~Cumulative impacts within the MCRA~~

~~identified in the Sunridge ROD (see Section 2.2.2) would be addressed through implementation of the Reduced Permit Term Alternative Conservation Strategy (described below in Section 2.4.5).~~

The Reduced Permit Term Alternative HCP would meet Sacramento County's obligations in the 2004 Zone 40 MOU to prepare a regional HCP that addresses the indirect effects of the operational Freeport Regional Water Project and the Zone 40 water delivery contracts. Therefore, new urban development projects inside Zone 40 that are seek entitlements from a local jurisdiction would be able to rely on the Freeport Regional Water Project as the project's water source, without first obtaining project-level ESA approvals from the USFWS.

CWA 404 Compliance

During the 30-year permit term, Covered Activity compliance with CWA 404 would be similar to the process described in Section 2.3.1 for the Proposed Action/Proposed Project Alternative. Each Covered Activity that meets the requirements of the HCP would be in compliance with the ESA, and any incidental take of federally listed species would be covered by the 30-year ESA incidental take permit. Therefore, **it is envisioned that in most cases** during the 30-year permit term, the USACE would not be required to initiate ESA Section 7 consultation with the USFWS before authorizing a Covered Activity project under CWA 404. This will shorten project timelines and reduce project costs, as was described for the Proposed Action/Proposed Project Alternative.

Under the Reduced Permit Term Alternative, the Permit Applicants would also use the HCP Conservation Strategy to prepare a local Aquatic Resources Program (ARP) which proposes a locally based 30-year program for permitting future HCP Covered Activities that impact aquatic resources, including wetlands and other waters. The HCP Conservation Strategy and the ARP would provide compensatory mitigation (e.g., re-establishment or establishment) for unavoidable impacts to aquatic resources, which provides to the minimum 1:1 compensatory mitigation ratios required by the 2008 Compensatory Mitigation Rule. Pursuant to the 2008 Compensatory Mitigation rule, the Permit Applicants would request the establishment of a 30-year in-lieu fee (ILF) program that would work in conjunction with the HCP's Covered Activity fee structure. The Permit Applicants would then be responsible for the CWA 404 compensatory mitigation requirements of the Covered Activity projects and activities.

Because the HCP Conservation Strategy, ~~and the ARP,~~ **and proposed In Lieu Fee program** will allow the USACE and RWQCB the ability to evaluate individual project impacts, ~~and evaluate~~ proposed locations for compensatory mitigation using a watershed and regional-scale approach, wetland regulatory agencies would be better able to ~~determine if individual projects are adequately mitigating~~ **plan for adequate compensatory mitigation** for aquatic resource impacts in ecologically

appropriate locations, as was described for the Conservation Strategy of the Proposed Action/Proposed Project Alternative.

Because the ARP would discuss and explain the regional HCP Preserve System (and other elements of the HCP Conservation Strategy) in terms of a unified watershed strategy for improving the protection and management of Planning Area aquatic resources, the ARP allows the USACE to develop a multilevel CWA 404 permitting strategy for the future HCP Covered Activities (similar to the Proposed Action/Proposed Project Alternative). Under the HCP and ARP, the USACE compensatory mitigation decisions can be based on the well-planned regional perspective for compensatory mitigation that is outlined in the Reduced Permit Term HCP and ARP documents.

The HCP and ARP would integrate avoidance, minimization, and compensatory mitigation into a comprehensive uniform regional strategy that would preserve more of the MCRA than would occur under the No Action/No Project Alternative. Aquatic resource compensatory mitigation strategy outlined in the HCP and the ARP would be predictable, and would provide 1:1 mitigation of direct impacts of the Covered Activities

The HCP AMMs implemented during the 30-year permit term would provide equal or stronger AMMs when compared to avoidance measures required by individual projects on a project-by-project basis under the No Action/No Project Alternative.

Project Compliance with Porter Cologne Water Quality Control Act and CWA 401

As discussed above in Section 2.2.2, under CWA 401 and the Porter-Cologne Act, projects and activities in California that require authorization, a federal license, or a permit for the discharge of a pollutant into wetlands and other waters must also obtain a CWA 401 water quality certification from the RWQCB with local jurisdiction.

The HCP and ARP would facilitate the Central Valley RWQCB's development of water quality certification strategies for future SSHCP Covered Activities, in conjunction with USACE's development of a CWA 404 permitting strategy for future Covered Activities (see Appendix C).

Parallel to the USACE's CWA 404 permitting strategy, the RWQCB would have opportunities to increase the efficiency of their CWA 404 permitting processes while improving the protection and management of aquatic resources in the Planning Area. The RWQCB could issue a programmatic CWA 401 water quality certification for the USACE's general permit(s) and could adopt a more efficient water quality certification approach for Covered Activity projects associated with USACE's Letter of Permission and standard permit processes. The RWQCB could also adopt a more efficient waste discharge requirement approach for wetlands and other waters of the state.

California Fish and Game Code Section 1600 Master Streambed Alteration Agreement

The ARP and HCP address future impacts and provides for the conservation of streams and riparian habitat and other water bodies in the Planning Area that are regulated by CDFW. Under the Proposed Action/Proposed Project Alternative, CDFW would work with the land use authority Permit Applicants (Sacramento County, Galt, and Rancho Cordova) to develop a 30-year process to streamline authorization of Covered Activity projects and activities that affect the bed and bank of streams, ponds, and lakes under Section 1602 of the California Fish and Game Code, as discussed in Section 1.5.3.

In the streamlined process, the Land Use Authority Permittee Applicant or the SSHCP Implementing Entity may act as a “clearinghouse” for the notification forms, and would conduct an initial screening process to verify the project’s consistency with the SSHCP and ARP, and the aquatic protection ordinances. Under the MSAA or Long-Term Streambed Alteration Agreement scenario, an expedited process of review with CDFW would allow each Covered Activity project proponent to submit a request for verification to the local Land Use Authority Permittees or Implementing Entity, whoever has jurisdiction, who would verify project consistency with the regional HCP and ARP.

The local Land Use Authority Permit Applicant or the HCP Implementing Entity would then submit appropriate paperwork to CDFW, who would review and approve the activity requests under the MSAA or Long-Term Streambed Alteration Agreement. This would remove the need for project developers to coordinate with CDFW for Section 1600 permits. It would also expedite the Section 1600 permitting process because CDFW would have pre-determined that consistency with the regional HCP and ARP satisfies the requirements for a Streambed Alteration Agreement.

Prior to processing a Lake or Streambed Alteration (LSA) Notification, CDFW must collect the fee for each LSA Notification submitted by the SSHCP Implementing Entity or by an individual third-party project proponent. CDFW is solely responsible for determining whether a LSA Agreement is required.

Local Environmental Policies

The existing County Swainson’s Hawk Ordinance, discussed in Section 2.2.2, only applies to portions of Sacramento County that are not included in an approved HCP that includes Swainson’s hawk as a Covered Species. Therefore, under the Proposed Action/Proposed Project Alternative, the Swainson’s Hawk Ordinance would no longer be available as an option for projects to mitigate impacts to Swainson’s hawk.

2.4.2 Permit Term Under the Reduced Permit Term Alternative

Within the Planning Area, the General Plan durations range from 16 years to more than 30 years (Table 2-9). The five master plan projects and the Capital Southeast Connector Project are expected to be completed within a 30-year time period. The HCP permit term of 30 years, which coincides with planned development and local General Plans. This permit term is considered by some permitting agencies to be more desirable because uncertainties increased under the longer 50-year permit term. Based on these reasons and the General Plan durations listed in Table 2-9, the lead agencies determined that a 30-year Reduced Permit Term Alternative should be analyzed in this EIS/EIR to inform and support future decisions related to the most appropriate term for the SSHCP. The 30-year permit term would provide adequate time for the HCP Implementing Entity to purchase lands and easements needed for the HCP Preserve System within the USB and monitor wetland re-establishment/establishment performance.

2.4.3 Covered Activities/Projects Under the Reduced Permit Term Alternative

The types or categories of Covered Activities for the Reduced Permit Term Alternative would be the same as described under the Proposed Action/Proposed Project Alternative in Section 2.3.1. Similarly, most of the Covered Activities would implement new urban development, which would be constructed and operated inside the UDA portions of the Planning Area only. In the portion of the Planning Area located outside the UDA, Covered Activities would consist of the same limited number of roadway and recycled water infrastructure projects that are described for the Proposed Action/Proposed Project Alternative in Section 2.3.2.

Removal of Natural Land Covers During the 30-Year Permit Term

As discussed in Section 2.2.2, there are five known master plan developments currently proposed within the MCRA portion of the UDA: Cordova Hills, Arboretum, Jackson Township, NewBridge, and SunCreek. Sacramento County and Rancho Cordova expect these five master plan developments to be completed within the next 30-years. Approximately 5,600 acres of the 24,245-acre MCRA would have new development during the 30-year permit term.

Outside the UDA, the road and pipeline projects described as Covered Activities under the Proposed Action/Proposed Project Alternative, including the Capital Southeast Connector Project, would be completed during the 30-year permit term, pursuant to Sacramento County General Plan Circulation Element and facilities master plans.

The 30 years of construction or implementation of the urban development Covered Activities within the UDA described previously and the other types of regional HCP Covered Activities

expected outside the UDA in the next 30 years would remove a total of approximately 19,275 acres of natural lands in the Planning Area under the Reduced Permit Term Alternative (Table 2-10).

Table 2-10. Maximum Loss of Natural Land Categories Under the Reduced Permit Term Alternative

Land Cover Category ¹	Maximum Acres Lost		
	Inside UDA (acres)	Outside UDA (acres)	Planning Area Total (acres)
All natural land covers ²	17,831	1,444	19,275
Vernal pool ecosystem ³ land covers	9,968	322	10,290
Wetland land covers ⁴ and other water land covers	674	74	748

¹ The rows in the table are not additive because the land cover categories include some overlapping land cover types (e.g., Vernal Pool is included in "all natural land covers," "Vernal Pool ecosystem land covers," and "wetland land covers and other water land covers.")

² Planning Area land cover types were defined by the SSHCP preparers during development of the SSHCP. To allow for better comparison of impacts between the EIS/EIS alternatives, the EIS/EIR uses these same land covers and definitions in discussions of all alternatives. The natural land covers include Blue Oak Savanna, Blue Oak Woodland, Cropland, Freshwater Marsh, Irrigated Pasture-Grassland, Mine Tailings Riparian Woodland, Mixed Riparian Scrub, Mixed Riparian Woodland, Open Water, Orchard, Seasonal Wetland, Stream/Creek, Stream/Creek (VPIH), Swale, Valley Grassland, Vernal Pool, and Vineyard, as discussed in Table 8-1.

³ Vernal Pool Ecosystem includes three aquatic land cover types (Vernal Pool, Swale, and Stream/Creek (VPIH)) and hydrologically connected Valley Grassland.

⁴ Wetland land covers include the following aquatic land cover types regulated under the CWA: Freshwater Marsh, Seasonal Wetland, Open Water, Stream/Creek, Vernal Pool, Swale, and Stream/Creek (VPIH).

The Reduced Permit Term Alternative (i.e., 30-year permit) is 60% of the time frame compared to the 50-year permit term of the Proposed Action/Proposed Project Alternative. Coincidentally, the area¹⁶ projected to be urbanized within the UDA during the 30-year term constitutes approximately 58%–60% of full buildout of the UDA. Therefore, approximately 60% of the development acres assumed in the full buildout scenario would be permitted via the Reduced Permit Term Alternative.

The Reduced Permit Term Alternative would directly impact approximately 1,741 acres of aquatic resources within the UDA and 115 acres of aquatic resources outside the UDA (Table 8-12), which is 122 acres less than direct impacts to aquatic resources under the No Action/No Project Alternative (Table 8-4).

2.4.4 Covered Species Under the Reduced Permit Term Alternative

The Reduced Permit Term Alternative would include the same 28 Covered Species as for the Proposed Action/Proposed Project Alternative (see Table 2-5 for lists of Covered Species). The Reduced Permit Term Alternative, through the implementation of the an HCP Conservation Strategy during the 30-year permit term, including the Biological Goals and Measurable Objectives, implementation of the AMMs, and the ARP would provide additional avoidance

¹⁶ This area includes the Five Master Plans, County UPA, Rancho Cordova SOI, and Galt SOI.

measures not included in the No Action/No Project Alternative, which are expected to lessen the potential adverse effects to Covered Species relative to the No Action/No Project Alternative.

2.4.5 Conservation Strategy Under the Reduced Permit Term Alternative

The Reduced Permit Term Alternative includes a 30-year Conservation Strategy, which would include similar Biological Goals for the Planning Area as the Proposed Action/Proposed Project SSHCP. The Biological Goals for the Planning Area under the Reduced Permit Term Alternative would provide the same guiding principles as those identified for the Proposed Action/Proposed Project Alternative in Section 2.3.5, including the permanent conservation of each Covered Species within the Planning Area and the conservation of watershed ecosystem functions (including groundwater recharge) as some of the guiding principles.

However, the Reduced Permit Term Alternative would establish a smaller and less interconnected HCP Preserve System in the Planning Area, but would include a comprehensive preserve management program for those preserves. Active management of the preserve system established during the 30-year permit term of the Reduced Permit Term Alternative combined with 30 years of AMMs and particularly greater setbacks along streams, creeks, and minor tributaries will limit indirect impacts from urbanization, such as spread of invasive plants, establishment of informal trails, and use by people and domestic animals. AMM EDGE-1 requires compatible land uses included in the Covered Activities (e.g., designated open space such as parks and ball fields, detention basins, and other land uses with less-intensive human activity) to be located in areas immediately adjacent to existing or conceptual preserve boundaries. The compatible land uses established during the 30-year permit term will provide buffering of preserves from potential indirect effects of adjacent urban development during the permit term and beyond.

The Reduced Permit Term Alternative would also require each Covered Activity to implement the same resource-impact avoidance and minimization measures (AMMs) that the Proposed Action/Proposed Project Alternative requires. The implementation of these AMMs (see Table 2-6) would reduce direct and indirect impacts of the Covered Activities implemented during the 30-year permit term, when compared to the direct and indirect impacts of the No Action/No Project Alternative.

The Reduced Permit Term Alternative would also require the Permit Applicants to review of AMM effectiveness annually for the 30-year permit term and provide a process to make adaptive changes of any AMM that is not effective at avoiding impacts to aquatic resources or species. This additional layer of oversight of AMM implementation and oversight of AMM effectiveness under the Reduced Permit Term Alternative increases avoidance and minimization of impacts, when compared to the impacts of the No Action/No Project Alternative.

However, less new urban development would occur during the 30-year permit term of the Reduced Permit Term Alternative, and fewer development fees would be collected; thus, fewer financial resources would be available to the HCP to establish a HCP Preserve System within the Planning Area. Therefore, the acres preserved under the Measurable Objectives for Biological Goal No. 3 (to preserve and re-establish/establish natural land covers that provide Covered Species habitat) and Biological Goal No. 4 (to maintain or improve the habitat value of natural land covers that are preserved under Goal 3)) would be less under the Reduced Permit Term Alternative when compared to the Proposed Action/Proposed Project Alternative.

For each Measurable Objective, the SSHCP also provides Conservation Actions that specify how the Measurable Objective would be achieved (Table 2-7). The categories HCP Conservation Actions that would implement each Measurable Objectives in Table 2-7 would be the same for the Reduced Permit Term Alternative. However, Conservation Actions AG2.1, AG3.1, SH2.1, and GS5.1 would match the acreages that would be preserved under the Reduced Permit Term Alternative Measureable Objectives.

Under the Reduced Permit Term Alternative, the Permit Applicants would also use the HCP Conservation Strategy to prepare an Aquatic Resources Plan, as described for the Proposed Action/Proposed Project Alternative.

Expected HCP Preserve System under the Reduced Permit Term Alternative

As compared to the on-site avoidance and preserves that would result from the project-by-project regulatory review expected under the No Action/No Project Alternative, the 30-year term of the Reduced Permit Term Alternative HCP would assemble a more interconnected Preserve System both within and outside the UDA, and that features a larger minimum preserve size and greater habitat connectivity to existing preserves and between new preserves (Figure 2-3).

The Reduced Permit Term Alternative HCP Preserves would total approximately 20,044 acres of natural lands (compared to the approximately 23,430 acres preserved under the No Action/No Project Alternative, and the 34,495 acres of natural lands that would be preserved under the Proposed Action/Proposed Project Alternative). The Reduced Permit Term Alternative would preserve 4,752 acres of natural lands in the UDA (compared to the 7,030 acres preserved in the UDA under the Proposed Action/Proposed Project Alternative and the 6,814 acres preserved under the No Action/No Project Alternative). It should be noted that this comparison of acreages compares preserves established over 30-year period in the Reduced Permit Term Alternative with those established over 50 years in the No Action/No Project Alternative and the Proposed Action/Proposed Project Alternative.

As shown on Figure 2-3, many of the Reduced Permit Term Alternative HCP Preserves in the UDA would be similar in size, location, and connectivity to the UDA preserves described for the conceptual preserve system of the Proposed Action/Proposed Project Alternative (Section 2.3.5).

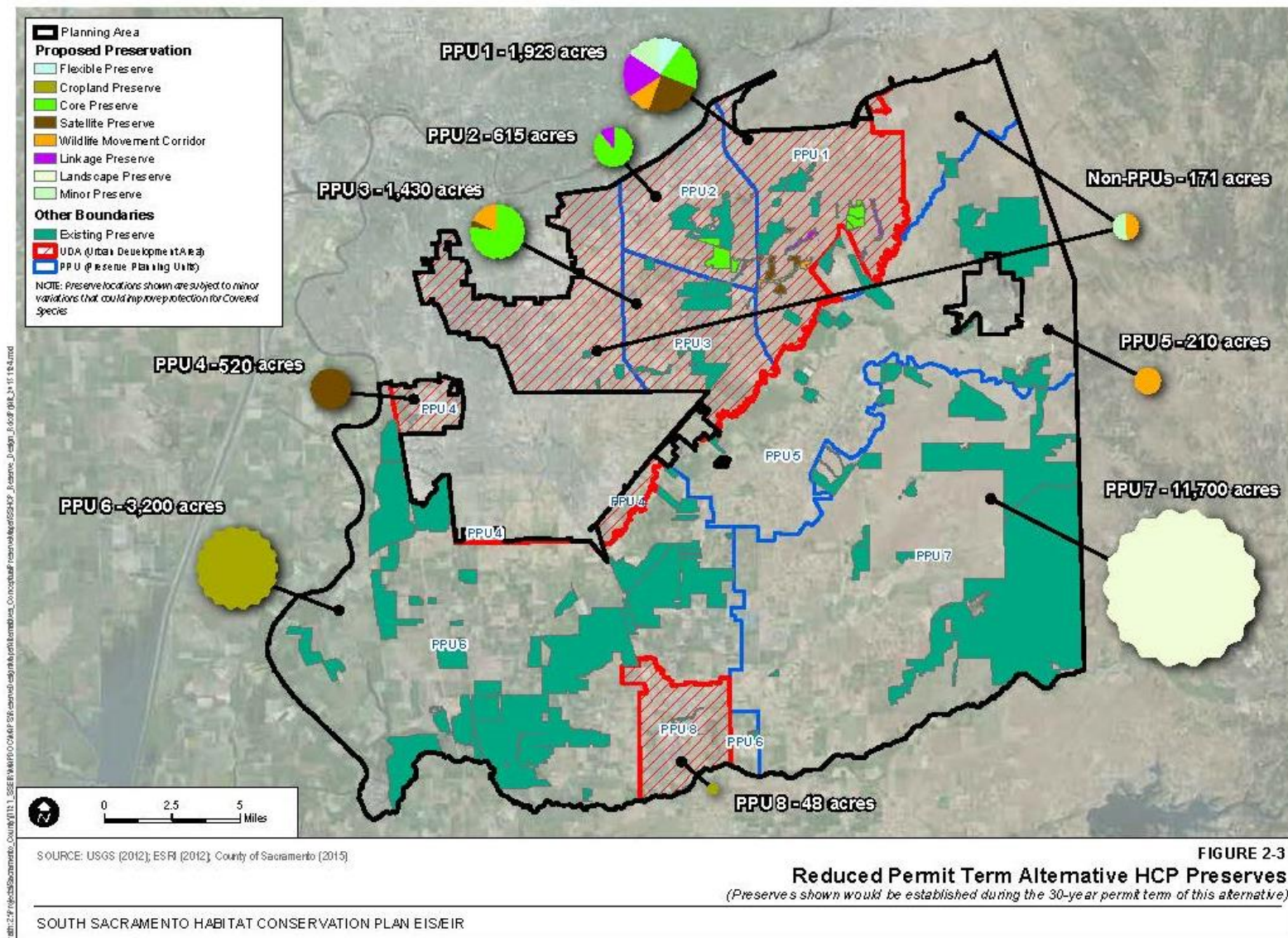
However, less urban development would occur under the Reduced Permit Term Alternative HCP over a 30-year permit term compared to the Proposed Action/Proposed Project Alternative 50-year permit term. As a result, development fees collected will also be less under the Reduced Permit Term Alternative than under the Proposed Action/Proposed Project Alternative.

Under the Reduced Permit Term Alternative and the Proposed Action/Proposed Project Alternative, most of the Preserve System established inside the UDA would be associated with the development of the five large Master Plans discussed in Sections 2.3.3 and 2.3.4. Therefore, the Preserve System established inside the UDA under the Reduced Permit Term Alternative is expected to be very similar to the Preserve System established inside the UDA under the Proposed Action/Proposed Project Alternative.

However, the shorter duration of Reduced Permit Term Alternative and the lower amount of urban development and associated development fees collected by the Reduced Permit Term Alternative HCP would not allow the HCP's Implementing Entity to establish as many acres of new preserves in the Planning Area as would occur under the Proposed Action/Proposed Project Alternative's 50-year permit term, and relatively few new preserves are expected to be established outside the UDA under the Reduced Permit Term Alternative.

As further described in the Reduced Permit Term Alternative's conceptual preserve system description, the shorter duration of Reduced Permit Term Alternative and the lower amount of development fees collected would not allow the Implementing Entity to acquire as much preserve land as under the Proposed Action/Proposed Project Alternative.

Figure 2-3 Reduced Permit Term Alternative HCP Preserves



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As noted in Section 2.3.5, the Laguna Creek Wildlife Movement Corridor is a major part of the conceptual preserve system inside the UDA and would provide habitat, connectivity, and wildlife movement between the new Core Preserve in PPU 1 and the Core Preserves in PPU 3. The Laguna Creek Wildlife Movement Corridor would include approximately 520 acres inside the UDA. Approximately 4 miles and 440 acres of the Laguna Creek Wildlife Movement Corridor would be within PPUs 1 and 3, and the remaining approximately 1 mile and 82 acres would be in the portion of the Planning Area that was not included in a PPU (refer to Section 2.3.5). The following text summarizes the PPUs:

PPU 1 is the easternmost portion of the UDA and includes approximately 15,800 acres of the MCRA. New preserves in PPU 1 would include one Core Preserve of approximately 359 acres, three Minor Preserves totaling approximately 271 acres, and seven Satellite Preserves totaling approximately 434 acres. These Preserves would enclose intact Vernal Pool ecosystem and known occurrences of rare plants such as Sacramento Orcutt grass and slender Orcutt grass. At least seven new Linkage Preserves totaling approximately 353 acres would also be established in PPU 1 and would connect the new Core, Minor, and Satellite Preserves to each other and to existing preserves. The small portion of PPU 1 outside the UDA would have no new preserves under the Reduced Permit Term Alternative.

The conceptual preserve design for PPU 1 would maintain habitat connectivity with the Cosumnes River/Deer Creek Wildlife Movement Corridor Preserve inside PPUs 1 and 3 and provide connectivity in the UDA to existing preserves within and south of the UDA. This connectivity in PPU 1 would be accomplished by an approximately 85-acre Flexible Preserve and portions of a Minor Preserve and a Core Preserve that are mostly located in the UDA portion of PPU 1.

PPU 2 is an important portion of the MCRA and is adjacent to the existing Mather Preserve. New preserves in PPU 2 are one Core Preserve of approximately 520 acres, as shown on Figure 2-3, and two Linkage Preserves that would connect the new Core Preserve to existing preserves located to the east and south, including across Jackson Highway between PPUs 1 and 3. The new Core Preserve in PPU 2 would preserve intact Vernal Pool ecosystem and abut the existing Mather Preserve to the north.

PPU 3 preserves would acquire existing, high-quality habitat present between two large existing preserves (Figure 2-3) to maintain landscape functions of the remaining Vernal Pool ecosystem; capture known occurrences of rare plants such as Sacramento Orcutt grass and slender Orcutt grass; and maintain north–south wildlife movement between Jackson Highway, Laguna Creek, and Calvine Road in PPU 3. PPU 3 would establish a

1,025-acre Core Preserve. One Satellite Preserve would provide connectivity between existing preserves and the new Core Preserve.

PPU 4 is a small area west of Elk Grove and northeast of the Stone Lakes NWR. The goal within PPU 4 would be to augment the existing Stone Lakes NWR. PPU 4 would include one preserve totaling approximately 530 acres and composed primarily of Valley Grassland that connects to the Refuge. Although the total size of this preserve would typically make it a Minor Preserve; however, it was classified by the Permit Applicants as a Satellite Preserve because it would be fragmented by existing development in the area.

Flexible Preserve: At least 170 acres of Flexible Preserve would be established next to other preserves within the conceptual preserve system or to existing preserves inside the UDA. The purpose of the Flexible Preserve category is to assure that the operational Preserve System is providing the species conservation benefits of functions of the Vernal Pool ecosystem within the MCRA as anticipated by the Permit Applicants at the time of SSHCP preparation. Flexible Preserve acres would be located adjacent to existing or new preserves and must be within the MCRA or located within 1 mile of the MCRA.

PPU 5 is outside the UDA in the west-central part of the Planning Area. Under the Reduced Permit Term Alternative, new preserves in PPU 5 would be limited to approximately 210 acres of natural land covers along the Cosumnes River/Deer Creek Wildlife Movement Corridor. Most of the Cosumnes River/Deer Creek Wildlife Movement Corridor that would be preserved under the Proposed Action/Proposed Project Alternative would not be preserved under the Reduced Permit Term Alternative.

PPU 6 is outside the UDA in the southwestern part of Planning Area. Approximately 3,200 acres would be preserved in PPU 6 under the Reduced Permit Term Alternative, all of which would be Cropland Preserves. The preserve design focus for these Cropland Preserves would be to preserve existing agricultural lands that provide habitat for the broad-ranging Swainson's hawk, greater sandhill crane, and white-tailed kite. Other natural land covers could also be preserved in each Cropland Preserve, but these would be preserved and managed primarily for the benefit of Covered Species that forage in the row crop or irrigated pastures, and would generally be adjacent to existing agricultural fields.

PPU 7 is located outside the UDA in the southeastern portion of the Planning Area and was delineated to encompass large areas of the Vernal Pool ecosystem in the Cosumnes/Rancho Seco Core Recovery Area. Approximately 11,700 acres would be preserved in PPU 7. The preserve design focus in PPU 7 would be to preserve natural land covers in a large Landscape Preserve. SSHCP Preserves in PPU 7 would target Vernal Pool

and Valley Grassland in areas that are adjacent to or near existing preserves, such as the 12,500-acre Chance Ranch.

PPU 8: New habitat preservation in this PPU would include 48 acres of Cropland Preserve located at the southern edge of the Planning Area just outside Galt, along Dry Creek. This Cropland Preserve would focus on preserving high-value Swainson’s hawk foraging habitat and a greater sandhill crane roosting pond.

Given the assumptions for development and preservation described previously, the lead agencies developed a Conservation Strategy for the Reduced Permit Term Alternative. This scenario provides a reasonable estimate of habitat preservation likely to occur, but is only one of many potential ways that development and preservation could proceed under this alternative. Table 2-11 provides a summary of the potential Preserve System by land cover type inside and outside of the UDA for the Reduced Permit Term Alternative.

Table 2-11. Minimum Acres of New Preserves Under the Reduced Permit Term Alternative

Land Cover Category ¹	Preserved Land (acres)		
	Inside UDA (acres)	Outside UDA (acres)	Total (acres)
All natural land covers ²	4,752	15,293	20,044
Vernal pool ecosystem ³ land covers	3,674	7,042	10,716
Wetland land covers ⁴ and other water land covers	404	770	1,174

¹ The rows in the table are not additive because the land cover categories include some overlapping land cover types (e.g., Vernal Pool is included in “all natural land covers,” “Vernal Pool Ecosystem land covers,” and “wetland land covers and other water land covers.”)

² Planning Area land cover types were defined by the SSHCP preparers during development of the SSHCP. To allow for better comparison of impacts between the EIS/EIS alternatives, the EIS/EIR uses these land cover definitions in discussions of all alternatives. The natural land covers include Blue Oak Savanna, Blue Oak Woodland, Cropland, Freshwater Marsh, Irrigated Pasture-Grassland, Mine Tailings Riparian Woodland, Mixed Riparian Scrub, Mixed Riparian Woodland, Open Water, Orchard, Seasonal Wetland, Stream/Creek, Stream/Creek (VPIH), Swale, Valley Grassland, Vernal Pool, and Vineyard, as discussed in Table 8-1.

³ Vernal Pool Ecosystem includes three aquatic land cover types (Vernal Pool, Swale, and Stream/Creek (VPIH)) and hydrologically connected Valley Grassland.

⁴ Wetland land covers include the following aquatic land cover types: Freshwater Marsh, Seasonal Wetland, Open Water, Stream/Creek, Vernal Pool, Swale, and Stream/Creek (VPIH).

2.4.6 Preserve Management and Monitoring Programs under the Reduced Permit Term Alternative

The Reduced Permit Term Alternative would include the Compliance and AMM Effectiveness Monitoring Program and the Preserve System Management and Monitoring Program described in Section 2.3.6 for the Proposed Action/Proposed Project Alternative. As with the Proposed Action/Proposed Project Alternative, management and monitoring of preserves would continue in perpetuity after the end of the permit period.

2.4.7 HCP Implementation

Implementation of the Reduced Permit Term Alternative would occur over a 30-year permit term. The responsibilities of the Permit Applicants (future Plan Permittees) and the proposed structure and organization of the HCP Implementing Entity would be the same as described for the Proposed Action/Proposed Project Alternative above in Section 2.3.7.

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CHAPTER 3 – INTRODUCTION TO CHAPTERS 4 THROUGH 17

The National Environmental Policy Act (NEPA) regulations and the California Environmental Quality Act (CEQA) Guidelines identify required content for Environmental Impact Statement (EIS) and Environmental Impact Report (EIR) documents (40 CFR 1502.10; CEQA Guidelines Sections 15120–15132). However, the format and organization of a NEPA or CEQA document is not mandated by these regulations and guidelines. Chapter 3 explains the format and organization of required EIS and EIR content that will be presented in Chapters 4 through 17.

Chapter 3 also provides a single location for the EIS/EIR to present terms, definitions, and concepts that will be used in the remaining EIS/EIR chapters. Chapters 4 through 17 refer to information presented in Chapter 3 to avoid duplication or repetition of the same information in each of the EIS/EIR resource impact analyses presented in Chapters 4 through 17.

Specific concepts presented in Chapter 3 include discussions of the approach taken, the information used, and general assumptions that will be made to estimate the direct, indirect, and cumulative impacts of each EIS/EIR alternative on the separate resource topics addressed in Chapters 4 through 17.

3.1 NEPA AND CEQA TERMS

As described in Chapters 1 and 2, NEPA and CEQA require analysis of potential environmental effects of proposed actions (and alternatives to those actions) before government agency approval. While many concepts are common to NEPA and CEQA, there are differences between the two in terminology, some of the required content, and certain elements of the impact analyses. Table 3-1 compares NEPA and CEQA terms that will be used in the remaining EIS/EIR chapters.

Table 3-1. Similar NEPA and CEQA Terms

NEPA Term	CEQA Term
Lead Agency	Lead Agency
Cooperating Agency	Responsible Agency Trustee Agency
Environmental Impact Statement (EIS)	Environmental Impact Report (EIR)
Notice of Intent (NOI)	Notice of Preparation (NOP)
Environmental Impact Statement (EIS)	Environmental Impact Report (EIR)
Action	Project
Purpose and Need for Action	Project Objectives
No Action Alternative	No Project Alternative
Affected Environment	Environmental Setting
Environmental Consequences	Environmental Impacts
Environmentally Preferred Alternative	Environmentally Superior Alternative
Notice of Availability (NOA)	Notice of Availability (NOA) Notice of Completion (NOC)
Record of Decision (ROD)	Findings of Fact and Statement of Overriding Considerations/Project Approval Notice of Determination (NOD)

3.2 RESOURCE TOPICS EVALUATED IN THE REMAINING CHAPTERS

Using the scoping processes discussed in Section 1.4, the lead agencies identified the following resource areas as deserving of study in this EIS/EIR. Required content and analysis for each of these resource topics will be presented together, in a single EIS/EIR chapter:

- **Chapter 4—*Land Use*** analyzes effects of each alternative on existing and planned land use conditions, consistency with applicable planning documents, and compatibility with existing and planned land uses. This chapter also includes a land use compatibility analysis of airports in the Planning Area.
- **Chapter 5—*Soils, Geology, and Mineral Resources*** analyzes effects of each alternative on geology, soils, and mineral resources within the Planning Area. Issues addressed include existing geologic and soil conditions, seismic and soils-related hazards (e.g., earthquake, landslide, erosion), accessibility of important mineral resources, and the potential for unsafe human exposure to naturally occurring asbestos.
- **Chapter 6—*Agriculture*** analyzes effects on agricultural resources and agricultural activities within the Planning Area.
- **Chapter 7—*Hydrology and Water Quality*** analyzes effects of each alternative on hydrology and water quality conditions within the Planning Area. The analysis focuses on potential short- and long-term effects of implementing each alternative on drainage, runoff, and pollutant discharges.
- **Chapter 8—*Natural Land Cover Habitat Types, and Associated Plant and Animal Communities*** analyzes effects of each alternative on land cover types, including sensitive natural communities, and the common plant and animal species that use them.
- **Chapter 9—*Special-Status Species, Including HCP Covered Species*** analyzes effects of each alternative on special-status terrestrial and aquatic species occurring in the Planning Area, including the 28 species specifically addressed in the South Sacramento Habitat Conservation Plan (SSHCP) (the SSHCP Covered Species).
- **Chapter 10—*Aquatic Resources*** analyzes effects of each alternative on wetlands and other types of aquatic resources within the Planning Area. The analysis focuses on impacts to aquatic resources that might be jurisdictional under Section 404 of the Clean Water Act (CWA 404); aquatic resources that might be jurisdictional under CWA 401 and/or state of California regulations; and aquatic resources (including riparian areas, lakes, or streambeds) that are jurisdictional or might be jurisdictional under section 1600 of the California Fish and Game Code.
- **Chapter 11—*Paleontological, Cultural, and Historical Resources*** analyzes effects of the alternatives on paleontological, cultural, and historical resources within the Planning Area. For this EIS/EIR, cultural resources include tribal resources.

- **Chapter 12—*Public Services and Facilities*** analyzes effects of each alternative on public services and facilities within the Planning Area. Services and facilities assessed include fire protection, law enforcement, water supply, wastewater treatment, solid waste (landfill capacity), parks and recreation, energy services (natural gas and electricity), and mosquito abatement.
- **Chapter 13—*Traffic and Circulation*** analyzes effects of each alternative on traffic and circulation within the Planning Area. The analysis focuses on impacts to transportation systems that support the movement of goods and people. These systems include roads and freeways that support motorized vehicles; railways; public transit; and non-motorized travel, including bicycles and pedestrians.
- **Chapter 14—*Air Quality*** analyzes effects of each alternative on air quality within the Planning Area. General topics addressed include existing air quality conditions and construction and operational air emissions. Air quality impacts are evaluated for emissions of criteria air pollutants, fugitive dust, toxic air contaminants, and odors.
- **Chapter 15—*Greenhouse Gases and Climate Change*** analyzes effects of each alternative on global climate change, as well as impacts of global climate change on each alternative.
- **Chapter 16—*Population and Housing, Socioeconomics, and Environmental Justice*** analyzes effects of each alternative on population and housing, socioeconomics, and environmental justice within the Planning Area. Included in this chapter is the regulatory setting for population and housing, socioeconomics, and environmental justice, which identifies the laws and policies that govern the decision-making processes of relevant federal, state, and local agencies with a role in implementing the alternatives. This chapter provides an overview of social and economic conditions, demographics, and the characteristics of minority and low-income populations in the Planning Area that are relevant for analysis of environmental justice effects.
- **Chapter 17—*Other Required Analysis for CEQA and NEPA*** identifies significant effects that cannot be avoided, potentially significant effects that could be avoided, and effects found not to be significant; discusses the relationship between short-term uses of the environment and enhancement of long-term productivity; identifies irreversible and irretrievable commitments of resources, as well as significant irreversible environmental changes; discusses growth inducement and related effects; and discusses compliance with relevant executive orders. In addition, the list of EIS/EIR preparers that is required by NEPA regulation and the CEQA Guidelines is presented as EIS/EIR Chapter 18.

Although aesthetic resources and noise are included on the CEQA Guidelines Appendix G Environmental Checklist Form, these issues were not identified during the EIS/EIR internal scoping or the public scoping processes (see Section 1.4) as significant environmental issues deserving of study (40 CFR 1500.4(g)). In addition, the effects of the two EIS/EIR action

alternatives described in Sections 2.3 and 2.4 on aesthetic resources and on noise are anticipated to be essentially the same as anticipated future changes in aesthetics and noise that would occur under the No Action condition (i.e., the future conditions in south Sacramento County if an HCP is not permitted or implemented). Therefore, relative to the expected No Action future conditions, the EIS/EIR action alternatives would not have an effect on future noise or future aesthetic resources (see Initial Study Checklist in Appendix F). Therefore, to help narrow the scope of this EIS/EIR and concentrate on the issues that are truly significant to the decisions in question (pursuant to 40 CFR 15001.1, 40 CFR 1501.1(d), 40 CFR 1501.7(a)(3), and CEQA Guidelines Section 15063(c)(3)), noise and aesthetic resources are not studied further in this EIS/EIR.

3.3 FORMAT AND CONTENT OF CHAPTERS 4 THROUGH 16

Some of the EIS content required by NEPA regulation 40 CFR 1502.10 and some EIR content required by CEQA Guidelines Sections 15120–15132 were presented in EIS/EIR Chapter 1, including a description of the project location, the purpose and need for action and a statement of project objectives, and identification of the decision(s) to be made.

Required descriptions of the alternatives analyzed, including descriptions of the No Action/No Project Alternative and the Proposed Action/Proposed Project Alternative, were presented in EIS/EIR Chapter 2. Chapter 2 also provided brief discussions of the alternatives that were eliminated from detailed study and the reasons for their elimination. NEPA regulations and the CEQA guidelines also require EISs and EIRs to describe the existing environmental conditions present in the vicinity of the proposed project and the alternatives (i.e., the Affected Environment/Environmental Setting), and also require EISs and EIRs to describe and analyze the environmental impacts of the proposed project and each alternative (i.e., the Environmental Consequences/Environmental Impacts). The SSHCP EIS/EIR organizes that content by resource topic as listed in Section 3.2. In this manner, the existing conditions of an environmental resource as well as the potential impacts on that environmental resource will be presented together in one EIS/EIR chapter.

The resource-topic chapters (Chapters 4 through 16) are organized into two primary sections: the Affected Environment/Environmental Setting section and the Environmental Consequences/Environmental Impacts section:

- **Affected Environment/Environmental Setting**
 - *Regulatory Framework*
 - *Existing Conditions*

- **Environmental Consequences/Environmental Impacts**
 - ***Methodology for Assessing Impacts of Each Alternative*** on the chapter’s resource topic
 - Study Area (if different than the Planning Area)
 - Impact Methodology
 - Significance Criteria and Thresholds of Significance
 - ***No Action/No Project Alternative***
 - Direct and Indirect Effects of the Alternative
 - Cumulative Effects Analysis of the No Action/No Project Alternative
 - ***Proposed Action/Proposed Project Alternative***
 - Direct and Indirect Effects of the Proposed Action/Proposed Project
 - Significance of Direct and Indirect Effects
 - Cumulative Effects of the Proposed Action/Project Alternative
 - ***Reduced Permit Term Alternative***
 - Direct and Indirect Effects of the Alternative
 - Significance of Direct and Indirect Effects
 - Cumulative Effects of the Reduced Permit Term Alternative

3.4 PREVIOUS PLANNING AREA ENVIRONMENTAL REVIEWS

Under certain circumstances, NEPA and CEQA regulations allow information or analysis previously presented in another document to be incorporated by reference into an EIS or EIR. If the analysis and assumptions used in the referenced document are determined by the lead agencies to be appropriate for the EIS/EIR analysis, a brief summary or description of the incorporated information or analysis will be provided, including pertinent page numbers and other relevant identifying information, pursuant to 40 CFR 1502.21, 43 CFR 46.135, and CEQA Guidelines, Section 15150(c).

The sections titled “Environmental Consequences/Environmental Impacts” in Chapters 4 through 16 may incorporate by reference certain information or analysis available from previous environmental documents. Three of these previous documents are the EIRs prepared for the Sacramento County, City of Galt, and City of Rancho Cordova General Plans, which identify policies and land use priorities to guide future development in those jurisdictions. The Sacramento County, Galt, and Rancho Cordova General Plans were updated relatively recently, and those jurisdictions overlap with the EIS/EIR Planning Area, although both the Sacramento County and the Rancho Cordova General Plans include lands that are outside the EIS/EIR Planning Area boundary. The General Plans provide a broad outline of future land use patterns within the

Planning Area. In addition, within the Galt and Rancho Cordova city limits and within Sacramento County's Urban Policy Area (UPA),¹ urban land use designations and intensities are identified.

The urban development Covered Activities that are included in the Proposed Action/Proposed Project Alternative and also included in the Reduced Permit Term Alternative (Sections 2.3 and 2.4) are consistent with future urban development patterns, infrastructure, and other elements described in the three General Plans. The planned future urban development, infrastructure, and the other elements described in the three adopted General Plans were also closely considered by the lead agencies when identifying and describing the No Action/No Project Alternative's activities, projects, and the expected future condition of the Planning Area (Section 2.2).

3.4.1 Sacramento County General Plan

The *Sacramento County General Plan of 2005–2030* (Sacramento County General Plan) (Sacramento County 2011) includes goals and policies that help ensure that future population growth in the County will have adequate housing, employment, public services, and other necessities (Sacramento County 2011, p. 12). As part of the Sacramento County General Plan, the County adopted two growth boundaries to create a logical progression of urban development—the Urban Services Boundary (USB) and the UPA. The USB indicates the ultimate boundary of the urban area in the unincorporated County, while the UPA defines the area within the USB expected to receive urban levels of public infrastructure and services within the General Plan's 25-year planning period.

Several elements of the Sacramento County General Plan were developed in a manner that anticipated the approval and implementation of an HCP in south Sacramento County (see Sacramento County 2011, Land Use Element, pp. 36, 136–137; Open Space Element, pp. 4, 17, 18; Agricultural Element, p. 9; Conservation Element, pp. 20, 35, 37, 38, 41, 45, 47, 57, 68).

The Sacramento County General Plan Land Use Element policies give priority to residential development on vacant or underutilized sites within existing urban areas that have infrastructure available, support completion of existing planned communities located within the current UPA, and support infill development within the UPA (Policies LU-4 through LU-11). The Land Use Element also contains policies allowing urban development within new growth areas that are contiguous to but outside the existing UPA (Policy LU-3). New growth areas outside the existing UPA can only be developed if the County first approves a specific plan, a comprehensive plan, or other master plan for the new growth areas (Sacramento County 2011,

¹ The Urban Policy Area (UPA) defines the area expected to receive urban levels of public infrastructure and services within the planning horizon by providing the geographic basis for the provision of urban services and infrastructure to the unincorporated County (Sacramento County 2011b).

Land Use Element, p. 35). The Sacramento County General Plan also introduced a new process by which the County would consider requests to expand the UPA; it requires any UPA expansion to meet a series of “smart growth” performance criteria (Sacramento County 2011, Land Use Element Policies LU-119 and LU-120). Although all of the land located between the current UPA boundary and the USB boundary is expected to be developed in the future, the current Sacramento County General Plan does not assign specific land use designations or development density targets to this area.

The *Final Environmental Impact Report: Sacramento County General Plan Update* (Sacramento County General Plan EIR) (Sacramento County 2010) analyzed the effects of population growth and urban development that could occur under the General Plan over 25 years. The EIR considered several different alternatives, which included (or excluded) various potential new growth areas for urban development. Ultimately, the County adopted a General Plan that did not include any new growth areas, but instead included policies directing how such areas could be developed following a master planning process; the adopted General Plan most closely resembled the Mixed Use Alternative analyzed in the General Plan EIR. One of the other EIR alternatives, the original staff proposal, included new growth areas within the SSHCP’s Urban Development Area (UDA). The inclusion of these new growth areas, primarily within the Jackson Highway corridor (see also Section 3.7.2 regarding proposed future development within the Jackson Highway Corridor), makes this original staff proposal alternative more closely resemble the development scenario assumed by the SSHCP than does the adopted alternative. For this reason, this EIS/EIR utilizes the General Plan EIR analyses associated with the original staff proposal rather than the analyses associated with the Mixed Use Alternative when citing the Sacramento County General Plan EIR. However, the analysis in the General Plan EIR included nearly 300,000 additional acres of Sacramento County that are not included in the SSHCP EIS/EIR Planning Area. Therefore, the significance conclusions presented in the Sacramento County General Plan EIR include impacts from development outside the EIS/EIR Planning Area.

3.4.2 Galt General Plan

The *2030 Galt General Plan: Policy Document* (Galt General Plan) (Galt 2009a) contains statements of goals, policies, standards, implementation programs, and quantified objectives that constitute the formal policy of Galt about future land use, development, and environmental quality in Galt and its sphere of influence (SOI) through the year 2030. The Galt General Plan covers an area beyond its current SOI to an area north of Twin Cities Road, which the Galt expects would be annexed to it if needed for development.

The *Final Environmental Impact Report for the 2030 Galt General Plan* (Galt General Plan EIR) (Galt 2009b) analyzed the effects of expected population growth and urban development under the Galt General Plan over 20 years to the year 2030. The Galt General Plan EIR assumed full

buildout² within the existing City boundaries (Figure 1-1) by 2030, and assumed that locations of future development would conform to the “Preferred Land Use Diagram” included in the General Plan (Galt 2009b, p. LU-5). The EIR also assumed that a proposed SOI expansion would be approved by the Sacramento Local Agency Formation Commission.

The proposed Galt SOI is within the SSHCP EIS/EIR Planning Area and is part of the UDA,³ as shown on Figure 1-1.

3.4.3 Rancho Cordova General Plan

The *City of Rancho Cordova General Plan* (Rancho Cordova General Plan) (Rancho Cordova 2006a) is the only general plan adopted by Rancho Cordova since Rancho Cordova was incorporated as a new city in 2003. The Rancho Cordova General Plan provides policies to plan for new urban growth over a 20-year period ending in 2030. Similar to the Sacramento County General Plan, the Rancho Cordova General Plan includes a land use map and multiple “elements,” each of which includes goals and policies that guide future development, infrastructure, and conservation (Rancho Cordova 2006a). The Rancho Cordova General Plan provides projections for development by 2030, and full buildout of the development allowed by the General Plan within Rancho Cordova and its approved SOI by the year 2050.

The *City of Rancho Cordova General Plan Final Environmental Impact Report* (Rancho Cordova General Plan EIR) (Rancho Cordova 2006b) evaluated effects of the new urban development planned in the City of Rancho Cordova between the year 2006 and 2030, including development of the City’s approved SOI. In addition, the Rancho Cordova General Plan EIR also evaluated full buildout of the Rancho Cordova city boundary and full buildout of Rancho Cordova’s approved SOI, but did not identify a year when that full buildout would occur.

The study area for the Rancho Cordova General Plan EIR included areas outside the EIS/EIR Planning Area, including the portion of the City north of Highway 50 and the land owned by Aerojet northeast of the Planning Area (see EIS/EIR Planning Area discussion in Section 1.1.1). Therefore, the significance conclusions presented in the Rancho Cordova General Plan EIR include impacts from development outside the EIS/EIR Planning Area.

² “Full Buildout” means all currently undeveloped lands that are zoned for or are ultimately planned/contemplated for future urban development (in the adopted General Plans of the Permit Applicants) would become developed. Full buildout will include some open space and conservation lands within the areas planned for urban development.

³ As discussed in Section 1.1.1, the UDA is an area that includes the portion of the Sacramento County Urban Services Boundary (USB) that is located within the EIS/EIR Planning Area, the portion of the incorporated City of Rancho Cordova that is located within the EIS/EIR Planning Area, and all the City of Galt and Galt’s Sphere of Influence (SOI) (see Figure 1-1).

3.4.4 Sacramento Area Council of Governments Metropolitan Transportation Plan and Sustainable Communities Strategy

The Sacramento Area Council of Governments (SACOG) Metropolitan Transportation Plan (MTP) is a 20-year regional plan for transportation projects, such as bikeway, road, sidewalk, and transit projects in the six-county region of Sacramento, Yuba, Sutter, Yolo, Placer, and El Dorado Counties. Any transportation projects in the six-county region using federal and state funding must be included in the MTP. Since the adoption of Senate Bill 375 in 2008, each Metropolitan Planning Organization, including SACOG, is also required to include a Sustainable Communities Strategy (SCS) as part of its regional transportation plan. The SCS must demonstrate how development patterns and transportation network, policies, and programs can work together to achieve greenhouse gas emission reduction targets set by the California Air Resources Board for cars and light trucks, if there is a feasible way to do so. The SACOG MTP/SCS was adopted on February 18, 2016 (SACOG 2016a).

The *Final Environmental Impact Report for the 2016 Metropolitan Transportation Plan/Sustainable Communities Strategy* (MTP/SCS EIR) (SACOG 2016b) evaluated effects associated with implementation of the MTP/SCS over a 6,036-square-mile plan area. The study area for the MTP/SCS EIR includes the six-county region described above, and the analysis and conclusions reached by the MTP/SCS EIR are based on development and population growth across a much larger area than the EIS/EIR Planning Area.

3.4.5 Capital Southeast Connector

The Capital Southeast Connector is a proposed 35-mile multimodal transportation roadway extending from Interstate 5, south of Elk Grove, northeast through the UDA, to U.S. Highway 50 in El Dorado County. The Capital Southeast Connector will link existing communities in Sacramento and El Dorado Counties, including Elk Grove, Rancho Cordova, Folsom, and El Dorado Hills. Much of the project footprint of the Capital Southeast Connector (26.5 miles) is within the Planning Area.

Generally, the Capital Southeast Connector includes the following project segments:

- A four-lane expressway segment from the Interstate 5/Hood-Franklin Road Interchange easterly along an extension of Kammerer Road to the existing Kammerer Road/Bruceville Road intersection
- A four- to six-lane thoroughfare segment east of the Kammerer Road/Bruceville Road intersection along Kammerer Road, and then northeast on Grant Line Road to its intersection with Bond Road (note: this road segment is within the UDA)

- A four-lane limited access rural thoroughfare along Grant Line Road from the intersection of Bond Road, northeasterly to the intersection of Calvine Road (note: this road segment is within the UDA)
- A four- to six-lane expressway segment on Grant Line Road from its intersection with Calvine Road, northeasterly to the intersection of White Rock Road, and then on White Rock Road from its intersection with Grant Line Road easterly to the Sacramento County–El Dorado County Line
- A four- to six-lane thoroughfare segment on White Rock Road from the Sacramento County–El Dorado County line northeasterly to the intersection with the U.S. Highway 50 interchange at Silva Valley Parkway (note: this segment and interchange are outside of the Planning Area, so are not SSHCP Covered Activities and are not covered by the SSHCP permits).

The construction and future operation of the 26.5-mile portion of the Capital Southeast Connector located within the Planning Area is a Covered Activity of the two EIS/EIR action alternatives (see Sections 2.3 and 2.4).

The *Capital Southeast Connector Project Final Program Environmental Impact Report* (Connector EIR) (Connector JPA 2012) analyzed effects associated with the selection of a maximum 1,000-foot-wide general alignment along the 35-mile corridor between Interstate 5 in Elk Grove and U.S. Highway 50 in El Dorado County. Project design guidelines were included as assumptions to help define the general scope of the project and estimate potential impacts of the project in the Program EIR, but the document was not intended to provide environmental clearance for full project design, and subsequent project-level analyses will be completed in the future. As described previously, the study area for the Connector EIR included areas outside the EIS/EIR Planning Area; therefore, the significance conclusions presented in the Connector EIR include impacts from project development outside the EIS/EIR Planning Area.

3.5 CONTENTS OF THE AFFECTED ENVIRONMENT/ ENVIRONMENTAL SETTING SECTIONS OF CHAPTERS 4 THROUGH 16

NEPA regulations require that each EIS describe the Affected Environment, defined as the existing environment of the area to be affected by the alternatives under consideration (40 CFR 1502.15). Similarly, under CEQA, each EIR is required to describe the existing Environmental Setting and the physical environmental conditions in the vicinity of the project (from both a local and regional perspective), as it exists at the time the Notice of Preparation (NOP) is published (CEQA Guidelines, Section 15125). As discussed in Section 1.4.1, the NOP for this EIS/EIR was published in 2013.

NEPA regulations and CEQA Guidelines both require the description of the existing environmental conditions be no longer than is necessary to understand and describe the effects of the proposed action/proposed project and the alternatives.

The Affected Environment/Environmental Setting sections of Chapters 4–16 (see preliminary discussion in Section 3.3) include a description of the existing regulatory environment typical in the Planning Area for proposed projects that could affect that resource topic. The Affected Environment/Environmental Setting sections identify the Planning Area’s existing laws, regulations, and local policies that apply to that resource topic. Any environmental analyses, studies, or surveys of the resource topic that would be required by the existing Regulatory Framework are explained in this section. In addition, relevant permits, licenses, and other entitlements that must be obtained to implement the alternatives are presented in this section of Chapters 4–16, as required by NEPA regulation 40 CFR 1502.25.

The Affected Environment/Environmental Setting sections also describes the existing physical environmental conditions of that resource within the EIS/EIR Planning Area, and existing conditions within the EIS/EIR study area of that resource topic, if the study area of the resource topic is larger than the EIS/EIR Planning Area (see study area discussion in Section 3.6.2).

3.6 CONTENTS OF ENVIRONMENTAL CONSEQUENCES/ ENVIRONMENTAL IMPACT SECTIONS IN CHAPTERS 4 THROUGH 16

As outlined in Section 3.3, the potential environmental impacts of implementing the No Action/No Project Alternative, the Proposed Action/Proposed Project Alternative, and the Reduced Permit Term Alternative are presented in separate subsections of each resource-topic chapter (Chapters 4 through 16).

In Chapters 4 through 16, the level of detail used when describing environmental impacts for each resource-topic varies in proportion to their significance, meaning that severe impacts are described in more detail than less consequential impacts, as required by 40 CFR 1502.2(b) and by CEQA Guidelines, Section 15126.2(a). This is intended to help decision makers and the public focus on each alternative’s key effects. CEQA requires that an EIR be prepared with a sufficient degree of analysis to provide decision makers with information that enables them to make a decision that intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project under CEQA need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible (CEQA Guidelines, Section 15151).

The analysis of the proposed action and each alternative must include an analysis of the direct, indirect, and cumulative effects of the proposed action or alternative, as well as analysis of the effects of any appropriate mitigation measures and best management practices (43 CFR 46.130a). Under NEPA regulations, those mitigation measures and best management practices can be analyzed either as elements of the alternatives or in a separate discussion of mitigation (43 CFR 46.130a). Because mitigation, conservation, minimization, and avoidance measures are key components of the SSHCP, each of the Environmental Consequences/Environmental Impact sections of Chapters 4–16 concurrently analyze both the adverse impacts of the alternative and the beneficial impacts of the mitigation, conservation, minimization, and avoidance measures that are also included in the description of the alternative (see Section 2.2, 2.3, and 2.4). Under CEQA, an EIR is required to distinguish between the measures that are proposed by project proponents to be included in the project and other mitigation measures that the lead agency determines could reasonably be expected to reduce significant adverse impacts; the EIR is required to identify mitigation measures for each significant environmental effect identified (CEQA Guidelines, Section 15126.4).

Therefore, this EIS/EIR will recommend additional mitigation measures, as appropriate, when an impact determination finds that a significantly adverse effect would result from an action alternative (see additional discussion of impact significance in Section 3.8).

3.6.1 EIS/EIR Environmental Baseline

Under NEPA, the impacts of the proposed action and each alternative are usually discussed and evaluated in comparison to the expected future conditions that would occur without an action/project (CEQ 1981, Question #3; 43 CFR 46.4.15[b][1]). The future conditions without the action/project are the same future environmental conditions described for the No Action Alternative. Therefore, the expected future condition for each of the resource areas studied in this EIS/EIR (see Section 3.2) is described in the No Action/No Project Alternative sections of Chapters 4–16 (see Section 3.3). As indicated in those sections, the expected No Action/No Project's future conditions are always described and discussed relative to the existing conditions of that resource topic.

Under CEQA, the impacts of the proposed project and each alternative are usually described relative to the existing environmental conditions at the time the NOP is issued (CEQA Guidelines, Section 15125(a)). The existing environmental condition of the resources in the Planning Area at the time of NOP issuance are presented in the Affected Environment/Environmental Setting sections of Chapters 4–16.

However, under both NEPA regulations and the CEQA Guidelines, lead agencies have discretion in some situations to use a different baseline for describing and assessing environmental effects

of a proposed project and alternatives. As discussed previously, the CEQA baseline for describing impacts and assessing significance of project impacts is normally the environmental setting (the existing conditions) at the time an NOP is issued (CEQA Guidelines, Section 15125[a]). However, CEQA case law has clarified that in some situations, this typical approach may not be appropriate. In the 2013 California Supreme Court decision, *Neighbors for Smart Rail v. Exposition Metro Line Construction Authority*, the court clarified that lead agencies preparing EIRs have the discretion to use a future-condition baseline when a comparison to the existing conditions would be misleading or uninformative. That court decision noted the following points: (1) that a CEQA analysis needs to “employ a realistic baseline that will give the public and decision makers the most accurate picture practically possible of the project’s likely impacts;” (2) “CEQA imposes no ‘uniform, inflexible rule for determination of the existing conditions baseline,’ instead leaving to a sound exercise of agency discretion the exact method of measuring the existing environmental conditions upon which the project will operate;” and (3) a lead agency may “omit an analysis of impacts on existing conditions when inclusion of such an analysis would detract from an EIR’s effectiveness as an informational document, either because an analysis based on existing conditions would be uninformative or because it would be misleading to decision makers and the public” (*Neighbors for Smart Rail v. Exposition Metro Authority* [2013] 57 Cal.4th 439, 507). Also, the court indicated that “nothing in CEQA law precludes an agency from considering both types of baseline—existing and future conditions—in its primary analysis of the project’s significant adverse effects.”

For this EIS/EIR, the lead agencies determined that using the existing condition as the baseline to describe and determine the significance of each action alternative’s expected impacts would be misleading. This determination was made because the two action alternatives include, as Covered Activities, future urban development and infrastructure projects that are also reasonably expected to occur under the No Action/No Project Alternative. Although the details of this future development are not completely known at this time, it is anticipated that new urban development under all of the EIS/EIR alternatives would accommodate the same population and development growth, and that this urban growth would occur in areas where public infrastructure and services are planned for the 50-year EIS/EIR study period (i.e., within the spheres of influence for the Cities of Galt and Rancho Cordova and within Sacramento County’s USB). As a result, the types of new urban development and associated infrastructure would be the same, and the general locations and the acres of new urban development would be very similar for all alternatives. Therefore, using existing conditions as the baseline for describing the effects of each action alternative and for determining the significance of those effects would misrepresent the impacts of the action alternative because that development would occur whether or not an HCP is approved and implemented in south Sacramento County.

Further, the future urban development and infrastructure Covered Activity projects and activities are not part of the “project” under CEQA that is subject to approval by the CEQA lead agency and by the other HCP Permit Applicants (see Section 1.5), are not part of the “project” under CEQA that would be subject to permitting by the California Department of Fish and Wildlife (CDFW) (see Section 1.5), and are not part of the “action” under NEPA that would be subject to permitting by the U.S. Fish and Wildlife Service (USFWS) (see Section 1.5). The EIS/EIR “project” (under CEQA) and “action” (under NEPA) consists of the approval and implementation of the HCP, SSHCP Aquatic Resources Plan (ARP), and issuance of associated take permits, but not the actual construction of or the discretionary entitlements of urban development projects and activities. Thus, the future environmental impacts of new urban development in the Planning Area would not result from the decisions to be made about the Proposed Action/Proposed Project (Section 1.5). For these reasons, the EIS/EIR basis of comparison (the EIS/EIR baseline) for describing the environmental impacts of each action alternative is the future condition of the Planning Area expected to occur under the No Action/No Project Alternative.

3.6.2 Geographic Study Area of Resource Topics Analyzed in Chapters 4 through 16

For most of the resource topics analyzed in Chapters 4–16, the geographic study area for direct, indirect, and cumulative effects of each alternative is the same as the Planning Area boundary (see Section 1.1.1). However, for some resource areas, the study area is larger than the Planning Area because the effects of the Proposed Action/Proposed Project would act synergistically with impacts in the larger area to affect the resource. For example, for EIS/EIR Chapter 14, Air Quality, the impact study area for that resource topic consists of the Sacramento Valley Air Basin because emissions generated in the Planning Area are distributed throughout that air basin. In Chapter 8, Natural Land Cover Habitat Types, and Associated Plant and Animal Communities, the study area for impacts to the vernal-pool land cover and the vernal-pool ecosystem considers cumulative impacts to those aquatic resources within the boundary of the Southeastern Sacramento Valley Vernal Pool Region (Keeler-Wolf et al. 1998; USFWS 2005), which extend beyond the EIS/EIR Planning Area to include other portions of Sacramento County, and portions of Placer, Yuba, San Joaquin, Calaveras, Amador, and Eldorado Counties. For Chapter 9, Special-Status Species, Including HCP Covered Species, the study area for cumulative impacts varies depending on the species because some species have very limited ranges, while others have extensive ranges.

When the study area for a resource topic is different from the Planning Area boundary, the section titled “Methodology for Assessing Impacts of Each Alternative” (see Section 3.3) defines the study area and provides a reasonable explanation for the geographic area used in the cumulative analysis (CEQA Guidelines, Section 15120 [b][3]).

3.6.3 EIS/EIR Study Period

The Proposed Action/Proposed Project requests a 50-year Incidental Take Permit (ITP) permit term (see Section 2.4.1). During the proposed 50-year permit term, all Covered Activities would be constructed, the entire SSHCP Preserve System would be established, and the other parts of the proposed Conservation Strategy would be completed. Therefore, a 50-year EIS/EIR study period is reasonable for the Proposed Action/Proposed Project because that period will cover the amount of time anticipated by the Permit Applicants for full build-out of the UDA to occur, and the amount of time anticipated for assembly of the interconnected SSHCP Preserve System and implementation of the proposed SSHCP Conservation Strategy.

To allow for a coequal analysis of all EIS/EIR alternatives, as required by NEPA regulation (40 CFR 1502.14), the EIS/EIR also uses the same 50-year analysis study period to evaluate the No Action/No Project Alternative and to evaluate the Reduced Permit Term Alternative.

3.6.4 Addressing Incomplete or Unavailable Information in Chapters 4 through 16

CEQA recognizes that drafting an EIR necessarily involves some degree of forecasting. While foreseeing the unforeseeable is not possible, an agency must use its best efforts to determine and disclose all that it reasonably can (CEQA Guidelines, Section 15144). The courts have looked not for perfection but for adequacy, completeness, and a good-faith effort at full disclosure (CEQA Guidelines, Section 15151).

Likewise, NEPA regulations direct that when a lead agency is evaluating a reasonably foreseeable effect in an EIS and there is incomplete or unavailable information, the EIS shall always be clear that such information is lacking (40 CFR 1502.22). Further, if information relevant to a reasonably foreseeable adverse impact cannot be obtained because the means to obtain it are not known, or the costs of obtaining the information are exorbitant, the EIS shall: (1) state that such information is incomplete or is unavailable; (2) state why the missing information is relevant to evaluating the foreseeable adverse impact; (3) summarize the existing information and credible scientific evidence which is relevant to evaluating the reasonably foreseeable adverse impact; and (4) the lead agency's evaluation of the foreseeable adverse impact with incomplete or unavailable information shall be based upon theoretical approaches or methods that are generally accepted in the scientific community (40 CFR 1502.22(b)).

The description of the three EIS/EIR alternatives in Chapter 2, including the types, amounts, locations, and timing of future development forecasted in the Planning Area under each alternative, was based on information obtained from three primary sources: (1) the adopted

General Plans (see Section 3.4); (2) the Master Plan development applications currently being processed by the local land use authorities (see Section 2.2.1 and Table 2-3), and (3) the professional judgment of the planning departments of Sacramento County, Galt, and Rancho Cordova. These sources of information provide the best available information about the types, amounts, locations, and timing of future development expected in the Planning Area under each of the three EIS/EIR alternatives, and they provide the foundation for the impact analysis of each EIS/EIR alternative presented in Chapters 4 through 16.

However, information about the precise amounts, specific locations, and actual timing of future development projects under each EIS/EIR alternative over the 50-year EIS/EIR study period is incomplete. Furthermore, current forecasts of Planning Area economic conditions, population trends, and other factors that stimulate and drive urban development have some uncertainty, so the future population growth and economic conditions over the next 50 years may be different from the current predictions. In addition, as discussed in Section 2.2.2 for the No Action/No Project Alternative, there is also some uncertainty about future regulatory requirements for new development projects within parts of the UDA and how those requirements may affect species habitat and aquatic resource avoidance, minimization, and preservation over the next 50 years.

The EIS/EIR identifies where specific information about the future conditions of an EIS/EIR alternative is incomplete or unavailable at this time. The EIS/EIR then explains how any incomplete or unavailable information was addressed by the lead agencies to forecast the likely future conditions under an EIS/EIR alternative and to determine the environmental impacts of each EIS/EIR alternative.

3.6.5 GIS Methodology Used in Chapters 4 through 16 to Estimate Direct Impacts of Each EIS/EIR Alternative

Direct impacts are effects caused by the action or project and occur at the same time and place as the action or project (40 CFR 1508.8; CEQA Guideline, Section 15358). Direct impacts are also discussed as primary impacts under CEQA.

Chapters 4–16 estimate the permanent direct effects of each EIS/EIR alternative using geographical information system (GIS) technology. GIS is a computer and software system designed to collect, store, manage, present, analyze, and manipulate spatial or geographically referenced data (i.e., information or data identified by its location). GIS spatial data represents locations of real objects (such as roads, land use, elevation, vegetation, and waterways) as points, lines, and polygons.

The majority of natural-resource spatial data used by the SSHCP EIS/EIR came from aerial photographs of the Planning Area that were digitized or scanned by the Permit Applicants to

produce digital data sets. Existing spatial data from other sources was also used, including spatial data from the CDFW Natural Diversity Database to locate species survey data and known species occurrences within the Planning Area, maps of streams and creeks from the National Hydrological Dataset, state maps of important farmland, and other publicly available geographic datasets. GIS can be used to combine several spatial datasets to create a new output vector dataset (or new map overlay), which is visually similar to stacking several paper maps of the same area. The new map overlay can be similar to a mathematical Venn diagram of overlays for the same area—for example, a union overlay combines geographic features into a single new output; an intersect overlay defines the area where inputs overlap, and a symmetric difference overlay defines an output that includes the total of both inputs, except for the overlapping areas.

The impact analysis in this EIS/EIR included use of GIS digital map overlays of the planned new urban development and infrastructure footprints expected under the each alternative. The GIS map overlay of urban development projects and activities expected under each EIS/EIR alternative (described in Sections 2.2, 2.3, and 2.4) includes UDA Master Plan development projects and infrastructure projects that are currently in the planning process (see Table 2-9), and the other anticipated urban development and infrastructure discussed in the adopted General Plans (see Section 3.4), including the road and utility infrastructure projects that are planned by Capital Southeast Connector JPA and the Sacramento Regional County Sanitation District.

The EIS/EIR then used GIS technology to compare the spatial data overlay of planned urban development for each EIS/EIR alternative to the spatial data overlays of existing resources for this Planning Area.

Where the GIS comparison of the map overlays showed an intersection or overlap between the alternative's planned-development footprint and an existing environmental resource, the Environmental Consequences/Environmental Impact analysis assumes that the environmental resources present within the area of overlap would be removed, and new urban development would occur in that area. GIS was used to quantify these acres of overlap, and the Environmental Consequences/Environmental Impact analysis analyzed those acres of existing land cover or natural resource as permanently impacted and removed (lost).

The GIS software can make precise calculations. However, the map overlay of the new urban development expected under each alternative included many assumptions about the specific locations, types, timing, quantity, and total area of future urban development and associated infrastructure. As discussed in Section 3.6.4, the assumptions made by the lead agencies to develop the data overlay of each EIS/EIR alternative were based on information from the General Plans described in Section 3.4, on information in the Master Plan development applications currently being processed by the local land use authorities, and on the professional judgment of the planning departments of Sacramento County, Galt, and Rancho Cordova. As

further discussed in Section 3.6.7, these sources of information provide the best available information about the types, amounts, locations, and timing of future urban development in the Planning Area. Use of the best available scientific and commercial information during the preparation of the EIS/EIR is discussed in Section 3.6.7.

3.6.6 Methodology Used in Chapters 4–16 to Estimate Indirect Impacts of EIS/EIR Alternatives

NEPA defines indirect impacts as effects of the action that occur later in time, or are farther removed in distance, but are still reasonably foreseeable (40 CFR 1508.8). Similarly, CEQA describes indirect effects as those that are caused by a project but occur later in time or at some distance from the project site, but are still reasonably foreseeable. Indirect impacts are also referred to as secondary effects under CEQA (CEQA Guidelines, Section 15064[d]). CEQA further states that “An indirect physical change in the environment is a physical change in the environment which is not immediately related to the project, but which is caused indirectly by the project. If a direct physical change in the environment in turn causes another change in the environment, then the other change is an indirect change in the environment” (CEQA Guidelines, Section 15064 [d][2]).

New urban development and associated new infrastructure are known to produce environmental stressors that can permanently impact existing environmental resources over time and/or can permanently impact environmental resources that are located outside the development project site. As discussed below, these stressors result from urban development’s physical changes to existing landscapes and watersheds, removal or changes to existing vegetation, the construction and long-term maintenance of buildings and infrastructure, new or increased human activities of all types, and increased vehicle traffic.

Each EIS/EIR resource chapter (Chapters 4–16) identifies the environmental stressors of the EIS/EIR alternatives that could indirectly impact the resources analyzed in that chapter. For most resources studied in Chapters 4–16, the exact location and the exact quantity or intensity of the future indirect effects that would be caused by those environmental stressors cannot be accurately quantified at this time. Therefore, most indirect impacts of each EIS/EIR alternative are described and analyzed qualitatively in Chapters 4–16. Discussions of the duration, general locations, expected extent, and relative intensity of the indirect effects of each EIS/EIR alternative on the chapter’s resource topic are included in each qualitative indirect impact analyses presented in Chapters 4–16.

However, to prepare the Endangered Species Act (ESA) incidental take permit (see Section 1.1), the USFWS must evaluate the total acres of vernal-pool species habitat within the Planning Area that would be permanently impacted, including all indirectly impacted acres. Therefore,

the Environmental Consequences/Environmental Impact sections of Chapter 8 and Chapter 9 also quantify acres of indirect impacts to three aquatic land cover types that provide aquatic habitat for vernal-pool species (i.e., vernal pool, swale, and the stream/creek land cover types). As detailed in Sections 8.2.1 and 9.2.1, the Permit Applicants used LIDAR technology to create digital maps of individual vernal pool microwatersheds from aerial photo data, and then quantified the indirect impacts of each action alternative on vernal pools, swales, and stream/creeks land covers using GIS methodology, as described in Section 3.6.4.

Known environmental stressors of new urban development could result in the following indirect impacts to existing environmental resources.

Hydrologic Alterations. As new development occurs, increased runoff from new impermeable surfaces (e.g., roads, parking lots) and from irrigated landscapes (e.g., yards, sports fields, golf courses) can occur. Urban runoff from developed areas has the potential to add water to the natural hydrologic system and can change the existing hydrographs of creeks, streams, and waterways in the project site and in the surrounding region. Constructing barriers such as berms or raised beds, which are often built to support roadways and railroad tracks, changes hydrology by blocking waterways and creating impoundments where water can collect. These kinds of impoundments can also alter and degrade downgradient waters by fragmenting the local watershed, resulting in premature drying of downstream aquatic resources and can lead to permanent loss of aquatic habitat. Urban development in a part of a watershed may alter the hydrology of the remaining aquatic resources. Long-term effects on water quality caused by runoff from new impermeable surfaces potentially include pollution from petroleum products, fertilizers, pesticides and herbicides, soil erosion, increased turbidity, and increased sedimentation. Soil erosion and chemical and toxic compound pollution (e.g., fuel, oil, lubricants, paints, release agents, and other materials) also affect water quality and aquatic habitats.

Pollution. New urban development increases the potential for point and non-point source pollutants to enter the natural landscape through both surface and subterranean water flows, through windblown trash accumulation, through windblown dispersion of chemicals, and through illegal dumping of industrial and household trash and garden waste in natural areas. Pesticides, herbicides, and fertilizers can enter adjacent landscapes through runoff from irrigated landscapes or from storm events. Contaminants from automobile traffic that collect on roadways, parking lots, and driveways, and enter natural landscapes during storm events include oil, gas, brake dust, and other automobile fluids. Roadway materials, vehicle leaks, and spills in a development also contaminate adjacent or downstream aquatic resources and aquatic and semiaquatic habitats, including riparian habitat. Illegal dumping of unwanted items such as trash, tires, and appliances in natural or open space areas directly crush vegetation and restrict photosynthesis by blocking the sun. Discarded electronics (i.e., e-waste) can introduce various toxic chemicals into the environment, including heavy metals that may leach into soil,

groundwater, and surface waterways. These waste materials may also disrupt natural hydrology by forming obstructions and blocking flows and may create habitat for pest species such as non-native rats.

New urban development and associated increased presence of humans and vehicle use also typically increases air pollution. One effect of air pollution is increased nitrogen deposition (N-deposition), which, in turn, facilitates the growth of non-native plant species and degrades existing habitats of native plant and wildlife species. Future development in the Planning Area will likely increase local sources of nitrogenous air pollutants, primarily due to traffic and new demand for electricity generation.

Pesticides, fertilizers, fungicides, herbicides, and rodenticides used in developed areas may directly affect adjacent or downstream vegetation communities and habitat quality, be directly toxic to species or indirectly toxic to species through prey vectors, or reduce prey abundance. These substances may penetrate open spaces through urban runoff from residential and commercial landscape areas and golf courses, overspray, wind, direct applications in interface areas, soil penetration, and wildlife vectors. Pesticides, for example, can act in several ways—the original pesticide can be toxic, its decomposed elements can be even more toxic, and it can “bioaccumulate,” whereby the contaminant concentrates further in each successive link of the food chain, thus reaching higher concentrations at higher levels of the food chain. Fertilizers, as discussed previously, can enter wetland and riparian systems and cause eutrophication (excessive nutrients in water bodies) and result in large algae blooms and can enhance growth of non-native aquatic weeds.

Increased Human Activity and Recreation. These stressors indirectly affect open spaces from increased foot, equestrian, bicycle, and off-road vehicle traffic (including unauthorized uses), and can result in trampled vegetation, compacted soils, impaired hydrology, invasive plant and animal introduction and facilitation, and increased trash and debris. Increases in human activity along the interface of open spaces and new urban development may result in trampling of vegetation and compaction of soils. Trampling of vegetation and compaction of soils can decrease the rate of rainfall interception and evapotranspiration, soil moisture, water penetration pathways, surface flows, and erosion. Recreational off-road vehicle use in particular, especially during the wet season, can create large ruts in natural land covers, damage soil profiles, reduce native vegetative cover, and promote invasion by non-native plants. Off-leash pets may harass and kill wildlife and introduce disease and parasites (e.g., from fecal material). Human and pet presence or activity can alter wildlife behavior and can cause wildlife to permanently avoid suitable habitat areas or abandon occupied nesting/breeding sites. Accidental and intentional wildfire ignitions may also increase from human recreation.

Altered Fire Regimes. Urbanization and changed land uses (e.g., changes in grazing patterns of an open space) can alter natural wildfire regimes by increasing the frequency and intensity of fires, but also change tactical approaches for fighting wildfires. In most cases, wildfires in new urban development are quickly suppressed for public safety and to protect property, but in some cases, wildfires become uncontrollable and catastrophic, in part because past wildfire suppression in increasingly urbanized areas has resulted in much greater fuel loads in open space areas than occurred under pre-development conditions. Altered wildfire regimes, and particularly increased incidence of fires in urbanizing areas, are a result of human activities at the open space–urban interface, including accidental ignitions from sparks from equipment (e.g., mowers striking rocks), cigarettes, children playing with matches, and intentional arson ignitions. However, wildfires may also be ignited by downed or arcing from new power lines, or from cars starting fires along new roadsides.

Traffic and Vehicle Collisions. New roadways and increased capacity of improved roadways can increase the risk of vehicle collisions where wildlife use or attempt to cross roadways, impact current traffic patterns, increase emissions, and affect air quality of the surrounding region.

Invasive Plants and Animals. New development, including new roadways, new utility corridors, and other infrastructure, can increase numbers and promote movement and dispersal of invasive, non-native plant and wildlife species, ultimately changing ecological functions in open spaces and reducing numbers and diversity of native species. As development and infrastructure encroach into natural landscapes, newly disturbed areas and/or the interface between developed areas and native habitats provide an opportunity for invasive plant species to establish and eventually invade natural habitat settings, degrading habitat and potentially expatriating native plant species. Increases in non-native invasive plant species can alter ecosystem processes, such as nutrient cycling, hydrologic cycles, frequencies of wildfires, and erosion and sediment deposition. Invasive plants further interfere in ecosystem functions by outcompeting and displacing native plants and wildlife, providing refuge for non-native animals, and hybridizing with native species.

Mesopredators. An indirect consequence of habitat fragmentation by new development and isolation of habitat by new development is an increase in abundance of urban-adapted or urban-tolerant mesopredators, such as raccoons, skunks, opossums, and foxes (*Urocyon cinereoargenteus*, *Vulpes* spp.). Non-native mesopredators may also include free-roaming stray and feral cats and dogs, which can have the same effects as wild mesopredators. These mesopredator species can outcompete smaller native species for available resources and increase predation rates on the smaller native species, thus reducing the distribution and populations of vulnerable native species in the region.

Aboveground Utilities. New power lines, transmission towers, and utility poles can also cause collisions, entanglements, and electrocution of bats and large birds, especially raptors. Other potential indirect effects associated with operation and maintenance and repair of utility transmission lines are similar to short-term construction-related effects, including hydrologic and water quality alterations, soil erosion, chemical and toxic compounds pollution, dust, noise, vibration, lighting, increased human activity, temporary fencing, accidental clearing, trampling, grading, oak tree root effects, and trash and other debris.

Disease. The increased human and associated pet population can increase the risk of disease transmission to native wildlife. For example, free-ranging domestic cats and dogs can transmit new diseases to wild animals.

Lighting. New lighting may affect wildlife orientation/disorientation and attraction/repulsion, reproduction, and communication at the behavioral and population ecology level, and competition and predation at the community ecology level. Ecological light pollution from new development can include increased ambient light and direct glare from sky glare, lighted buildings, streetlights, and security lights would generally be chronic.

Microclimate Changes. New urban development may introduce microclimate changes at the open space–urban edge, such as alterations in wind, solar radiation and light exposure, and water. Increased wind exposure at the open space–urban interface may result in direct physical damage to natural vegetation (e.g., windpruning and/or loosening of bark) or increase evapotranspiration, reduce humidity, and increase desiccation of plants that require adequate soil moisture for regeneration. Increased wind may also increase dust levels and seed transport, potentially interfering with photosynthesis and introducing non-native species. Alterations in solar radiation and light exposure can have numerous effects on adjacent natural habitats. Daytime temperatures can be higher and nighttime temperatures lower than areas within intact natural vegetation patches, resulting in greater temperature ranges of the soil and increased chance of frost. Soil nutrient cycling, soil moisture retention, invertebrate communities, and predator/prey relations also may be affected by altered soil temperatures. Temperature alterations may also occur in aquatic habitats that exceed species' (e.g., fish, amphibians, or crustaceans) tolerances. Hydrologic alterations and related effects from new development include changes in the rates of rainfall interception and evapotranspiration; changes in soil moisture, water penetration pathways, surface flows, subsurface flows, and soil erosion; movement of salts, nutrients, and pesticides; and habitat alterations for ground-dwelling species.

Habitat Fragmentation and Isolation. New urban development often fragments existing natural lands that provide habitat for native plants and animals. Habitat fragmentation and isolation of plant and wildlife populations, including effects on wildlife movement and dispersal as well as effects on plant pollinators and seed dispersal, may cause extinction of local

populations. At the larger landscape scale, change in regional abundance and distribution of habitat may change the migration and habitat use patterns of some wildlife species, which in turn alters multiple landscape-scale ecological functions. Fragmentation also decreases the functional size of conserved habitat patches. As remaining habitat areas diminish in size, the ratio of vulnerable edge to preserved interior area increases. Increased edge effects heighten species' vulnerability to stochastic disturbances, pollution, and invasion by non-native plant and animal species.

3.6.7 Specific Assumptions Used in the Environmental Impact Analysis of Each EIS/EIR Alternative

The EIS/EIR presents information and assumptions specific to the impact analysis of individual EIS/EIR alternatives here in Chapter 3 to avoid repeating the same information in each resource topic chapter's Environmental Consequences/Environmental Impact analysis for that alternative.

3.6.7.1 Analysis of the No Action/No Project Alternative

As discussed in Section 2.2.2, the No Action/No Project Alternative assumes up to approximately 1,900 acres of new development might be displaced from the current USB and would occur within five areas outside the existing USB (Section 2.2.2). The potential impact of the development displaced to areas outside the USB was estimated based on the existing land cover types present within those five areas.

The No Action/No Project Alternative uses GIS map layers (discussed in Section 3.6.4) to determine the acres of existing land cover types present within these five areas. The No Action/No Project Alternative assumes that the 1,900 acres of new development displaced to these five areas would impact land cover types at the same proportion that those land covers currently exist in those areas. For example, if the five potential displaced development areas currently consist of 40% grassland, then the EIS/EIR analysis assumed 40% of the approximately 1,900 acres of displaced development, or 760 acres, would occur on that existing land cover type.

3.6.7.2 Analysis of the Reduced Permit Term Alternative, After the End of the Permit Term (Years 31–50)

As described in Section 2.4, the Reduced Permit Term Alternative would have a 30-year permit term for the ITPs and expedited CWA permit strategy, during which time the SSHCP would be implemented and the various Covered Activities would be constructed. However, this EIS/EIR uses a 50-year analysis study period to evaluate all alternatives (see Section 3.6.3); this study period extends beyond the end of the permit term for this alternative. Therefore, the analysis of the Reduced Permit Term Alternative also considers the period of time (Years 31–50)

following the end of the permit term. This section describes assumptions specific to this post-permit period of time for the Reduced Permit Term Alternative.

To determine the environmental impacts of the Reduced Permit Term Alternative in Chapters 4–16, the lead agencies assume that at the end of the alternative’s proposed 30-year HCP permit term, the existing project-by-project CWA permit process, and the related ESA Section 7 consultation processes (described in Section 2.2.2) would resume again for any additional projects and activities implemented after the end of the 30-year permit term. As discussed in Section 2.2.2, the impact analysis for the Reduced Permit Term Alternative assumes that each new development project implemented after year 30 would again seek individual project-by-project regulatory approvals from multiple local, state, and federal agencies, and there would not be a coordinated approach to designing new preserves or a plan to connect new preserves to existing preserves.

The impact analyses for the Reduced Permit Term Alternative assumes that after the end of the alternative’s 30-year permit term, additional urban development would occur inside the UDA, causing full buildout of the UDA by the end of the EIS/EIR’s 50-year study period. However, development within the Mather Core Recovery Area (MCRA) portion of the UDA would be limited by the availability of vernal pool resources within the MCRA to serve as mitigation for development impacts because the regulatory environment in years 31–50 of the Reduced Permit Term Alternatives would presumably be similar to the regulatory environment described for the No Project Alternative in Sections 2.2.2 and 2.2.3.

Of the 23,500 acres of the MCRA located within the UDA, approximately 1,300 acres are already developed and approximately 4,600 acres are in existing established preserves. As discussed in Section 2.4, approximately 6,700 acres of the MCRA are expected to be impacted by new urban development during this alternative’s 30-year permit term, and approximately 3,800 acres of permanent preserves established within the MCRA during this alternative’s 30-year permit term. This would leave approximately 7,100 acres of the MCRA still available for potential future development at year 30.

Based on the Reduced Permit Term Alternative’s assumptions for ESA and CWA regulatory requirements in the MCRA for years 31–50 (which are the same regulatory assumptions as for the No Action/No Project Alternative—see Section 2.2.2), the lead agencies estimated how much undeveloped land remaining inside the MCRA (and the rest of the UDA) at year 30 would reasonably be developed by the Reduced Permit Term Alternative in years 31–50 of the EIS/EIR 50-year study period.

Some speculation and assumptions were necessary to estimate acres of future mitigation that could be implemented under the expected MCRA regulatory environment of years 31–50 of the

Reduced Permit Term Alternative. The lead agencies made those assumptions by considering the trends in ESA and CWA mitigation that have occurred within Sacramento County since the designation of the MCRA in 2005 (USFWS 2005), and used the best available scientific information on the status of the species and aquatic resources in the MCRA and elsewhere in the UDA. The lead agencies concluded that further urban development of the MCRA in years 31–50 would be restricted primarily to areas of the MCRA where development could occur without causing direct impacts to vernal pools, largely through the use of on-site avoidance areas and/or on-site preserves.

As with the No Project Alternative (see Section 2.2.3), it is not possible to determine with accuracy a complete picture of possible future urban development and mitigation that would occur in the UDA during years 31–50 of the Reduced Permit Term Alternative. This is because of the incomplete information on individual development projects in the Planning Area over the next 50 years and uncertainty regarding economic conditions and population trends that drive urban development over such a long time. In addition, as discussed in Section 2.2.2 for the No Action/No Project Alternative, there is also uncertainty about future regulatory requirements for new urban development and future increases in avoidance, minimization, and preservation of aquatic resources and species habitats within the UDA over the next 50 years.

3.7 CUMULATIVE EFFECTS ANALYSIS IN RESOURCE CHAPTERS 4 THROUGH 16

NEPA regulations define a cumulative effect as the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7; 43 CFR 46.115). Similarly, CEQA cumulative impacts are defined as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts” (CEQA Guidelines, Section 15355). Under CEQA, the lead agency must consider whether the cumulative impact is significant, and whether a project’s incremental effect, although individually limited, is cumulatively considerable. “Cumulatively considerable” means that the incremental effect of an individual project is significant when viewed in connection with the effects of the past projects, the effects of other current projects, and the effects of probable future projects (CEQA Guidelines, Section 15064[h][1]).

As outlined in Section 3.3, the Environmental Consequences/ Environmental Impact analysis of each EIS/EIR Alternative first presents the direct and indirect effects of the alternative on that chapter’s resource topic. Then, those incremental direct and indirect impacts are considered

together with the impact of past, present, and probable (reasonably foreseeable) “other” future projects and activities in a cumulative analysis.

Each cumulative analysis presented in Chapters 4–16 first reviews the effects of all past and present actions on the resource topic analyzed in that chapter. In most chapters, the Existing Condition description presented in the Affected Environment/Environmental Setting section of the chapter (see Section 3.3) has already provided a thorough and adequate description of the impacts of all past and current actions within the chapter’s study area. Each cumulative effects analysis then discusses additional impacts that would result from the reasonably foreseeable projects and activities within the chapter’s study area, including those described in Section 3.7.2. The cumulative analysis adds the incremental direct and indirect effects expected from the alternative to the aggregate effects of all past and present actions and the reasonably foreseeable future actions.

As stated in CEQA Guidelines Section 15130(b)(1), the following elements are necessary to an adequate discussion of significant cumulative impacts:

- A. A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency.
- B. A summary of projections contained in an adopted local, regional, or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. Such plans may include a general plan, regional transportation plan, or plans for the reduction of greenhouse gas emissions. A summary of projections may also be contained in an adopted or certified prior environmental document for such a plan. Such projections may be supplemented with additional information. Any such document shall be referenced and made available to the public at a location specified by the lead agency.

Previously approved land use documents, including general plans, specific plans, regional transportation plans, plans for the reduction of greenhouse gas emissions, and local coastal plans, may be used in cumulative impact analysis. A pertinent discussion of cumulative impacts contained in one or more previously certified EIRs may be incorporated by reference (CEQA Guidelines, Section 15130[d]).

The analysis of cumulative impacts is evaluated at a level of detail sufficient for the lead agencies to use as a reasonable basis for decision making in selecting between the alternatives.

3.7.1 Past and Present Actions in the Planning Area

To minimize repetition of information in Chapters 4–16, this section provides a brief summary of these past and ongoing present actions that are relevant to cumulative impact analyses of the EIS/EIR alternatives.

3.7.1.1 Past and Present Agriculture and Urban Development

As described in Section 1.3.1, past development and conversion of natural lands in the Planning Area included the conversion of natural lands to farmland, the subsequent conversion of farmland to urban and rural development, and direct conversion of natural lands in to urban and rural developments.

Urban development in the Planning Area intensified in the 1940s and again between 1950 and 1960, with new growth occurring primarily near the City of Sacramento and in smaller cities such as Folsom, Galt, and Isleton. Urban development continued at a moderate rate between 1960 and 1990, resulting in an expansion of urban land use patterns and infrastructure into the southern and eastern portions of Sacramento County. Development slowed in the early 1990s, picked up again in the early 2000s, and softened or slowed considerably from 2007 to 2012. Since 2012, development activity has again intensified in the Planning Area. In total, urban development comprises approximately 54,000 acres of the Planning Area.

In the eastern portion of the Planning Area, existing agricultural activities primarily consist of ranching and grazing. Livestock grazing of native annual grassland landscapes has altered plant species composition of the grasslands, but has had little effect on the ecology of the grassland landscapes or wildlife species. Appropriately managed grazing and rangeland is compatible with the habitat needs of many species, including vernal pool species.

The central portion of the Planning Area supports more irrigated pasture relative to the eastern portion of the Planning Area, while the southwestern portion of the Planning Area supports more vineyards and croplands. In total, these farming and related activities currently comprise approximately 100,000 acres of the Planning Area (not counting non-irrigated natural grasslands that are often used for grazing).

Croplands in the Planning Area are an altered landscape that retains little of the historical (pre-European settlement) conditions. Formerly consisting of extensive open grasslands, wetlands, broad riparian systems, and oak woodlands, the conversion to cropland has removed most of the historical native communities. The development of row crops, orchards, and vineyards has reduced or eliminated habitat for many native species (especially native plant species) whose habitat requirements are not compatible with these crops.

In addition, the land disturbances associated with past farming practices have contributed to sedimentation of waterways in the Planning Area, and past and current use of fertilizers and pesticides (including rodenticides) have also have contributed to existing water quality issues, which may have directly and indirectly contributed to past aquatic species mortality.

However, while generally supporting less diversity of wildlife compared to most natural landscapes, some cropland types continue to support wildlife and can provide essential breeding, foraging, or roosting habitat for several resident and migrant wildlife species. Although farming has resulted in substantial changes to the historical landscapes in the Planning Area, some cropland provides essential habitat by native wildlife species, including giant garter snake (*Thamnophis gigas*) using agricultural ditches; western pond turtle (*Actinemys marmorata*) using agricultural ditches and canals; Swainson's hawk (*Buteo swainsoni*) foraging in hay, grain, and row crops; burrowing owl (*Athene cunicularia*) using various agricultural types that include ground squirrel (*Sciuridae*) burrows; white-tailed kite (*Elanus leucurus*) foraging in hay and grain; and tricolored blackbird (*Agelaius tricolor*) foraging in hay and grain fields.

Farming and grazing are expected to continue in and around portions of the Planning Area currently used for agriculture (Sacramento County 2011; Rancho Cordova 2006a; Galt 2009a). Farmlands are subject to continuing changes in crop types depending on various factors, including, local, national, and global economic conditions.

3.7.1.2 Past and Present Infrastructure Development and Operation

The agricultural and urban development described in Section 3.7.1.1 has been accompanied by infrastructure to support these land development uses. Some of the major infrastructure constructed and operated in the Planning Area is described below.

Water Supply. Most of the water supply for existing urban development in the Planning Area is sourced from groundwater wells, with a limited amount of surface water used. Groundwater is pumped by individual users and by Planning Area water districts from two groundwater basins that underlay the Planning Area: the Central Area basin and the South (Galt) Area basin. The Central Basin is managed by the Sacramento Central Groundwater Authority, which has also adopted a management plan, consistent with the Sacramento Water Forum objectives, that addresses groundwater decline and quality in the Central Basin. Some of the water purveyors located within the Central Basin rely entirely on groundwater pumping, and some purveyors' production wells have been affected by groundwater decline and contamination.

The surface water supply used by existing urban development in the Planning Area is diverted from the Sacramento River west of the Planning Area and from the American River north of the Planning Area.

A recently constructed and operating major surface water project in the Planning Area is the Freeport Regional Water Project, which includes the following components constructed in the Planning Area between 2007 and 2011:

- Vineyard Surface Water Treatment Plant, a water treatment plant located in central Sacramento County on an 80-acre parcel at the northeast corner of Florin and Knox Roads, and 1 mile east of Bradshaw Road, with existing capacity to treat up to 50 million gallons of drinking water per day and future capacity to treat up to 100 million gallons per day
- A terminal facility located at the point of delivery to the Folsom South Canal
- A canal pumping plant located at the Folsom South Canal terminus
- A series of settling basins
- Four underground pipelines carrying the water from the intake facility to the Vineyard Surface Water Treatment Plant and (via the Folsom South Canal) to the Mokelumne Aqueducts outside the Planning Area.

Surface waters are also diverted from the American River into the Folsom South Canal, a 26.7-mile-long concrete-lined canal that traverses the Planning Area from north to south. The Folsom South Canal, part of the larger Central Valley Project, is used to supply water for irrigation and municipal and industrial use in Sacramento and San Joaquin Counties. With a bottom width of 34 feet and maximum water depth of 17.8 feet, the Folsom South Canal presents a substantial barrier to east–west movement and dispersal of native terrestrial wildlife species in the Planning Area.

Flood Control. Within the UDA, many of the streams have small levees constructed adjacent to the channels, and these streams primarily converge into the Morrison Creek channel near the Sacramento River. Outside the UDA, many streams also have levees constructed adjacent to their channels, and most of these streams converge with the Cosumnes River, which eventually flows into the Mokelumne River. The South County Streams Group Project is a federally authorized flood control project implemented by the U.S. Army Corps of Engineers, Central Valley Flood Protection Board, and Sacramento Area Flood Control Agency for lower Morrison Creek and its principal tributaries (i.e., Florin Creek, Elder Creek, and Unionhouse Creek); the project consists of levee improvements starting south of the town of Freeport, running easterly along the southern edge of the urbanized area, and extending up four creeks. The easternmost portion of improvements planned for Florin Creek and Morrison Creek (east of Highway 99) are within the Planning Area.

Morrison Creek conveys flow to the low-lying Beach/Stones Lake Basin adjacent to the Sacramento River levee, where during wet weather events, most excess flow is pumped into the Sacramento River and some flows drain further south into Snodgrass Slough and to the Mokelumne River.

South of the Morrison Creek system (in the Planning Area outside the USB), important floodplain areas include Deer Creek, Cosumnes River, Laguna Creek (which conveys much of the drainage from the City of Galt), and Dry Creek. These streams are all contained by constructed levees that are managed by local reclamation districts.

Two major dams upstream of the Planning Area allow for storage of upstream runoff for release during the summer season in and downstream of the Planning Area. These dams are Folsom Dam and Nimbus Dam on the American River, both outside the Planning Area to the northeast. The Cosumnes River is unique in that it is the only west-slope Sierra river that does not have a dam constructed on the main-stem of the river.

Urban Wastewater. The large majority of municipal wastewater generated in the UDA is collected and conveyed to the Sacramento Regional Wastewater Treatment Plant (SRWTP) operated by the Sacramento Regional County Sanitation District (Regional San). The SRWTP provides service for 1.4 million people located within the Cities of Sacramento, West Sacramento, Rancho Cordova, Citrus Heights, Elk Grove, and Folsom; unincorporated areas of Sacramento County; and the communities of Courtland and Walnut Grove. The SRWTP currently treats approximately 141 million gallons per day of inflow and produces secondary treated effluent that is discharged to the Sacramento River near the town of Freeport. As a result of permit requirements adopted by the Central Valley Regional Water Quality Control Board in 2010, and subsequent amendments, Regional San is underway with construction of treatment process improvements at the SRWTP for improved contaminant removal performance, including additional nutrient removal (i.e., ammonia and nitrate reduction) and tertiary filtration on a seasonal basis during the dry season to increase pathogen removal (Regional San 2014). Construction of the new SRWTP is scheduled to be completed in 2023.

Also in the Planning Area, the City of Galt wastewater treatment plant currently produces about 2.3 million gallons per day of tertiary treated effluent and discharges to Laguna Creek, which flows to the lower Cosumnes River.

Roadways. Interstate 5 and State Route 99 are two existing major highways running north–south in the western part of the Planning Area. U.S. Highway 50, serving east–west traffic, is located on the northern edge of the Planning Area. State Route 16 (Jackson Road) and State Route 104 (Twin Cities Road) cross the southern part of the Planning Area and provide east–west traffic connectivity.

Other major roadways existing within the Planning Area are four-lane thoroughfares or heavily used two-lane arterial roads, including Folsom Boulevard, White Rock Road, Gerber Road, Kiefer Boulevard, Scott Road, Ione Road, Excelsior Road, Bradshaw Road, Vineyard Road, Elk Grove-Florin Road, South Watt Avenue, French Road, Power Inn Road, Stockton Boulevard, Florin Road, Jackson Highway, Grant Line Road, Calvine Road, Wilton Road, Dillard Road, Clay Station Road, Hood-Franklin Road, Bruceville Road, Franklin Boulevard, and Twin Cities Road .

Within the City of Galt, existing major roadways include a section of Twin Cities Road (State Route 104), Walnut Avenue, Elm Avenue, Simmerhorn Road, Boessow Road (C Street), A Street, New Hope Road, Lincoln Way, and Carillion Boulevard.

Within the portion of the City of Rancho Cordova located within the Planning Area, existing major streets include Sunrise Boulevard, White Rock Road, International Drive/Mather Field Road, Douglas Road, Grant Line Road, Zinfandel Drive, Rancho Cordova Parkway/Jaeger Road, Folsom Boulevard, Nike Road, and Bradshaw Road.

Airports. Two public-use airports are located within the Planning Area—Mather Airport and Franklin Field. Mather Airport, which was formerly the Mather Air Force Base, is located in the UDA portion of the Planning Area and is adjacent to the City of Rancho Cordova. The airport was first constructed in the early 1900s and is currently owned and operated by Sacramento County. Redevelopment activities on the former base property have included airport-related, commercial, and industrial uses (Sacramento County 2010). Mather Airport is surrounded to the north and west by residential and commercial development and to the south and east by undeveloped land and agricultural operations with applications in to the County of Sacramento for master-planned communities. Since its conversion from a military airfield to a public/commercial facility, non-military flights have increased at this facility, specifically air cargo. During 2012, Mather Airport supported 79,786 flight operations, including cargo, general aviation, air taxi, and military. Over the 5 years from 2008 to 2012, an average of 79,535 flight operations occurred annually (FAA 2013). The *Mather Airport Master Plan* update for the continued operation and maintenance of the airport was adopted by the Board of Supervisors in August 2014 (Sacramento County 2014).

Franklin Field is located in southern Sacramento County approximately 1 mile northeast of the intersection of Twin Cities Road and Franklin Boulevard (see Figure 4-4). Franklin Field is currently a public-use airport owned and operated by the County of Sacramento, and was the site of bomber training during World War II. Franklin Field is surrounded by agricultural operations, including row crops and grazing lands. The facility is considered an uncontrolled airport since it does not have an air traffic control tower or personnel. There were approximately 36,000 operations in 2008 at Franklin Field, including flight training. The Airport

Master Plan Working Paper anticipates that operations at this airport will increase over time, reaching approximately 64,000 operations by 2027 (Sacramento County Airport System 2008).

3.7.1.3 Past and Present Mining Operations in the Planning Area

As mentioned in Section 1.3.1, gold has been mined in Sacramento County since 1849 by various lode and placer methods such as hydraulic mining, drift mining, drag-line dredging, and bucket-line dredging. The vast majority of gold recovered in Sacramento County has been from large placer operations. Dredging operations in Sacramento County began in 1899 in the vicinity of Folsom, located northeast of the Planning Area. The Folsom Dredge Field is one of the most extensive historic dredging operations in California. When combined with other dredged and hydraulically mined areas in Sacramento County, an estimated total area of 54.4 square miles was disturbed by placer mining operations in north-central and northeastern Sacramento County, including large areas within the Planning Area. As of 1999, an estimated 80% of these dredged areas Countywide had been reclaimed for other land uses (Division of Mines and Geology 1999). Those remnants that remain in the Planning Area typically support minimal vegetation, but may include bands of the Mine Tailing Riparian land cover type interspersed among or between mounds of dredge spoiling (see Chapter 8 for discussion of Planning Area land cover types).

All of the currently permitted mining operations in unincorporated Sacramento County are located within the Planning Area. Aggregate mining occurs both inside and outside the UDA, with 24 permitted aggregate mines, 21 of which are currently active. Additionally, one application for an additional aggregate mine is being processed by the County. Clay is currently being surface mined in four locations within the County, including along the Cosumnes River, topsoil is currently mined near the Cosumnes River, and there is one existing pumice pit.

The lead agencies anticipate mining in existing permitted locations would continue in the Planning Area inside and outside the UDA for the next 20 to 50 years. Therefore, the impacts of mines in those locations are considered by this EIS/EIR cumulative analysis to be a continuation of present conditions.

3.7.1.4 Past and Present Preservation of Natural Lands in the Planning Area

The Planning Area includes several established existing preserves both inside and outside of the UDA. Existing preserves within the Planning Area total approximately 64,500 acres and include a national wildlife refuge, large and small nature preserves, lands under conservation easements as well as conservation bank lands, and individual mitigation sites preserved in perpetuity by past projects that were authorized or permitted under the CWA, ESA, California Endangered Species Act (CESA), and/or local environmental regulations. Of the approximately

64,500 acres of existing preserves, approximately 3,170 acres are inside the UDA and about 61,330 acres are outside the UDA.

Inside the UDA, most existing preserves occur near the Sacramento Valley Vernal Pool Prairie Preserve, in an area located south of Jackson Highway between Excelsior and Eagles Nest roads and north of Grant Line Road. These include lands under conservation easement or owned by the Sacramento Valley Conservancy, two mitigation banks (Arroyo Seco and Bryte Ranch), and several mitigation sites established by past projects or activities. Other sites with permanent conservation easements are more scattered inside the UDA, including at locations along northern Laguna Creek, locations within the City of Rancho Cordova, and at the Keifer Landfill Bufferlands. In addition, the 2,650 acres of preserved lands at the Sacramento Regional County Sanitation District Bufferlands, located in the western part of the UDA, have “termed” conservation easements, meaning those acres are currently preserved, but might not be preserved in perpetuity. In addition, the ~~2,650~~**2,150** acres of preserved lands at the ~~Sacramento Regional County Sanitation District~~ **Regional San** Bufferlands, located in the western part of the UDA, have “termed” conservation easements, meaning those acres are currently preserved, but might not be preserved in perpetuity.

Outside of the UDA, relatively large areas have been preserved in the Planning Area west of Interstate 5, within the Cosumnes River floodplain, and in the eastern part of the Planning Area outside the UDA. Existing preserves larger than 500 acres include the Stone Lakes National Wildlife Refuge, Deer Creek Hills, Chance Ranch, Borden Ranch, Snyder Preserve, Clay Station Conservation Bank, Laguna Terrace Conservation Bank, Gill Ranch Conservation Bank, Elliot mitigation site, Delta Meadows, Sacramento Municipal Utilities District mitigation bank, and the Cosumnes River Preserve. Smaller conservation sites are distributed within the Cosumnes River and Deer Creek corridor, eastern Sacramento County grasslands, and agricultural lands west of State Route 99. In addition to these relatively large preserves, several smaller mitigation and conservation banks have been authorized by the USFWS and/or U.S. Army Corps of Engineers in the Planning Area outside the UDA.

3.7.2 Reasonably Foreseeable Other Actions

Reasonably foreseeable future “other actions” are actions that would affect the environment in the future, and are not activities that would occur as part of the proposed action and other action alternatives (CEQ 1997). The planned development and infrastructure described in the adopted General Plans and other documents presented in Section 3.4, including the expected “full build-out” of the UDA, are reasonably foreseeable within this Planning Area. However, those future development projects and activities are Covered Activities under the two EIS/EIR action alternatives, and the No Action/No Project Alternative includes similar future urban development projects and activities. Therefore, the EIS/EIR list of reasonably foreseeable future

“other” actions in or near the Planning Area is limited to foreseeable new projects or activities not included as part of the descriptions of the No Action/No Project Alternative (Section 2.2) or the description of the two action alternatives (Sections 2.3 and 2.4).

For this EIS/EIR, reasonably foreseeable future other actions were identified based on information extracted from existing environmental documents, and investigation of future project plans by other state and federal agencies and private entities (CEQA Guidelines, Section 15130[a][1]).

3.7.2.1 Other Urban Development by Elk Grove and by Rancho Murieta

Urban development is expected to continue adjacent to the EIS/EIR Planning Area within the existing boundaries of the community of Rancho Murieta and the City of Elk Grove (Figure 1-1). Although these communities are outside the current Planning Area boundary, past, present, and new urban development in these locations would be included in the cumulative impact study area for several resource topics analyzed in Chapters 4–16, including hydrology, water quality, natural communities, species habitat, wetlands and waters, transportation, air quality, and climate change.

“Rancho Murieta North” was originally proposed in 2014, and an EIR for that new development project is under preparation (Sacramento County 2015). The project would be located on approximately 770 acres, which is most of the remaining land within the Rancho Murieta Planned Development, as approved in 1969. The entire Rancho Murieta Planned Development is outside the EIS/EIR Planning Area. The Rancho Murieta North project would include approximately 300 acres of new residential development, 430 acres of Park/Recreation/Open Space, and 40 acres of General Commercial land uses.

It is reasonably foreseeable that the City of Elk Grove will eventually annex land south and southwest of their current SOI boundary. As of the writing of this EIS/EIR, landowners south of the current Elk Grove city boundary have submitted a proposal to the Local Agency Formation Commission to expand the Elk Grove SOI that includes approximately 1,150 acres of land currently under County jurisdiction (LAFCO 2016). This proposed SOI expansion is located south of Kammerer Road and west of Highway 99, outside the UDA but within the Planning Area. New urban development is proposed for the majority of that approximately 1,150-acre area.

Additionally, the City of Elk Grove has submitted a proposal to LAFCO to simultaneously expand its SOI and annex approximately 560 acres of land southeast of its current boundary (LAFCO 2016). This proposed 560-acre expansion is located within the UDA portion of the Planning Area south of Grantline Road and east of the Union Pacific Railroad tracks, and is currently under County jurisdiction. Under the City of Elk Grove’s proposal, this land is intended to be used for public uses, including a large soccer complex.

3.7.2.2 Other Future Rural Residential Development

Low-density rural development would continue to occur outside the UDA within the approximately 19,600 acres of designated Agriculture Residential areas in Sacramento County, consistent with the County's General Plan (Sacramento County 2011). Within areas designated as Agricultural Residential by the Sacramento County General Plan, construction of new residential structures may occur, along with associated grading, landscaping, and accessory structures.

3.7.2.3 Future Agricultural Conversion

Changes in farmland and other agricultural land uses are not proposed as Covered Activities but are reasonably expected to occur in the future in areas outside the UDA that are zoned for agricultural uses. It is not possible, however, to predict how crop types or agricultural uses may change over the 50-year permit term. Nonetheless, some conversion of rangeland that supports Valley Grasslands and Vernal Pool Ecosystem to a more intensively managed agricultural use (such as cropland, vineyards, or orchards) would be expected over the 50-year study period. This conversion of rangeland to orchards or vineyards would include "deep-ripping" of soils, which would remove the existing soil structure that forms the perched aquifer and supports the ecology of the Vernal Pool Ecosystem. Changes to more intensively managed agricultural uses would result in the types of effects similar to those discussed in Section 3.7.1.1 and Appendix G. Grading or construction of new structures to support future changes in agricultural use, such as barns, corrals, and fences, would also be expected in areas zoned for agricultural uses.

3.7.2.4 California High-Speed Rail

Construction of a high-speed train through the Planning Area is a reasonably foreseeable project that could occur within the next 50 years (California High Speed Rail Authority and Federal Railroad Administration 2005; California High Speed Rail Authority 2013). The Federal Railroad Administration and the California High-Speed Rail Authority have adopted a state-wide program EIR/EIS (California High Speed Rail Authority and Federal Railroad Administration 2005), which studied various alignment options for the train system. The exact alignment within Sacramento County is not yet determined, but up to 35 linear miles of the Merced to Sacramento segment of the high-speed rail line could bisect the Planning Area (California High Speed Rail Authority 2013). The standard width of the high-speed rail line's right-of-way would be 600 feet, but the right-of-way width would be substantially wider in locations where the rail line crosses existing roadways. Existing roadways will be elevated and bridges installed where the rail line would cross, requiring rights-of-way of up to 900 feet wide to allow construction of the new roadway embankments and bridge footings (DiGegoria, pers. comm. 2016).

3.7.2.5 Wilton Rancheria Casino

The Miwok tribe is proposing to develop a casino resort at one of two sites in Sacramento County (BIA 2015). As of June 2016, the tribe's preferred site is within the City of Elk Grove outside the Planning Area, but another potential location is on a 282-acre site in the City of Galt SOI. If the Galt SOI site were selected, the casino resort would cover approximately 76 acres of the 282-acre parcel and would include a 12-story hotel tower, convention center, spa, restaurants, and a 110,000-square-foot gambling floor. The project could generate the equivalent of 1,750 full-time jobs and host up to 14,000 patrons per day, according to the Draft EIS prepared for the federal Bureau of Indian Affairs (BIA 2015).

3.7.2.6 California WaterFix

The California WaterFix project (CDWR and USBOR 2015) is a proposed water conveyance facility with three new intakes on the Sacramento River at the western edge of the Planning Area and dual tunnels to convey water to existing state and federal pumping plants located in San Joaquin County. Approximately 12 miles of the proposed pipeline route would be located within the southwestern portion of the Planning Area. California WaterFix was previously part of the Bay Delta Conservation Plan, but the project no longer includes mitigation or conservation activities through an HCP. Instead, the project proponent, the California Department of Water Resources, proposes to mitigate construction and future direct and indirect operation impacts of the California WaterFix project by restoring approximately 2,300 acres of habitat and preserving up to 13,300 acres of habitat in the Delta. The locations of the habitat restoration and preservation associated with California Waterfix are not certain, but most are expected to be located outside the western boundary of the EIS/EIR Planning Area within the legal boundary of the Sacramento-San Joaquin River Delta. However, some California WaterFix project restoration or preservation actions might occur in the southwest part of the EIS/EIR Planning Area in the small portion of the Cosumnes River floodplain that overlaps with the legal boundary of the Sacramento-San Joaquin River Delta (CDWR and USBOR 2015).

3.7.2.7 Preservation of Natural Lands in the Planning Area (Not Project Mitigation)

Other entities are expected to continue to preserve lands within the Planning Area. The existing Stone Lakes National Wildlife Refuge has an 18,000-acre planning boundary that is located in the western part of the Planning Area outside the USB (USFWS 2007). At the time of EIS/EIR preparation, Stone Lakes National Wildlife Refuge has preserved 6,420 acres through fee-title acquisitions and conservation easements. Although there are no official projections about how quickly the refuge would be able to acquire land, the No Action/No Project Alternative assumes that by the end of the 50-year study period, the entire 18,000-acre refuge planning area would

be acquired and preserved by the Stone Lakes National Wildlife Refuge. This addition to Stone Lakes National Wildlife Refuge would provide an additional 11,580 acres of habitat preservation compared to the existing condition.

The Draft EIS/EIR assumes that Stone Lakes National Wildlife Refuge (NWR) would enroll properties at the same rate that it has since its creation. Since the adoption of the approximately 18,000-acre refuge boundary in 1992, Stone Lakes NWR has enrolled 6,550 acres. That amounts to an average rate of acquisition of 262 acres per year. Extending that same rate of acquisition over the proposed 50-year permit term of the SSHCP, Stone Lakes NWR would acquire an additional 13,100 acres. That amount would more than complete the approximately 18,000-acre approved refuge boundary.

The existing Cosumnes River Preserve is located in the south part of the Planning Area, outside the USB. The Cosumnes River Preserve currently preserves approximately 46,000 acres of blue oak woodlands, valley grassland, vernal pool, freshwater marsh, and cropland along the Cosumnes River or in the floodplain of the Cosumnes River. The *Cosumnes River Preserve Management Plan* (Cosumnes River Preserve 2008) describes plans to acquire an additional 5,450 acres of riparian habitat that is currently unprotected along the Cosumnes River by 2028.

Other nongovernmental organizations, such as the Sacramento Valley Conservancy, Audubon Society, and others have previously preserved approximately 13,900 acres in the Planning Area under the existing conditions. The No Action/No Project Alternative assumes that these organizations will continue to preserve lands in the Planning Area, specifically the areas identified on the “Twenty-First Century Open Space Vision” map (Sacramento Valley Conservancy 2014).

There are eight approved mitigation or conservation banks in the Planning Area totaling 5,320 acres. Additional mitigation or conservation banks may be established in the Planning Area during the study period, but specific acreages are not known.

3.7.2.8 Proposed Urban Development in the Planning Area That is Not Included in the EIS/EIR Alternatives

Several properties within the UDA have already obtained local entitlements and have obtained, or are close to obtaining, individual CESA, ESA, and CWA authorizations from the USFWS, CDFW, and U.S. Army Corps of Engineers. These properties include those in the Rio Del Oro Specific Plan area and those in the Mather Field Specific Plan area. Therefore, while these properties are located within the EIS/EIR Planning Area, they are not included in the EIS/EIR impact analyses because future projects and activities within these areas will not obtain their ESA, CESA, or CWA authorizations through the proposed SSHCP or one of the other EIS/EIR alternatives. However, future impacts on these properties will be included in the cumulative impact analysis of each EIS/EIR alternative.

3.8 SIGNIFICANCE OF IMPACTS THAT ARE PRESENTED IN CHAPTERS 4 THROUGH 16

3.8.1 Significance Thresholds

NEPA regulations require that the determination of significance consider both context and intensity of the impacts (40 CFR 1508.27). “Context” means that the significance of an impact must be analyzed in several contexts, including the affected region, locality, affected interests, and society as a whole. “Intensity” refers to the severity of the impact and must consider: (1) both beneficial and adverse effects; (2) the degree to which the action affects public health and safety; (3) unique characteristics of the area, including cultural resources, parks, farmland, wetlands and critical areas; (4) if the effects are likely to be controversial; (5) if there are any unique or unknown risks; (6) if the action is precedent setting; (7) if the action is related to other actions or are cumulatively significant; (8) the degree that the action affects districts, highways, structures, objects eligible for the National Register of Historic Places, or cause loss of scientific, cultural, or historical resources; (9) the degree to which the action affects endangered or threatened species or their critical habitat; and (10) whether the action threatens a violation of federal, state, or local laws or requirements imposed to protect the environment (40 CFR 1508.27).

Under CEQA, a significant impact on the environment is defined as a “substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by a project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance” (CEQA Guidelines, Section 15382). As provided under CEQA Guidelines Section 15143, and consistent with NEPA regulation 40 CFR 1508.7, each determination of significance will consider the context, intensity or severity of the impact, and probability of occurrence. An economic or social change by itself shall not be considered a significant effect on the environment, but a social or economic change related to a physical change may be considered in determining whether the physical change is significant (CEQA Guidelines, Section 15382). In general, an EIR should define the thresholds of significance and explain the criteria used to judge whether an impact is above or below that threshold (CEQA Guidelines, Section 15064[f]).

A “threshold of significance” is an identifiable quantitative, qualitative, or performance level of a particular environmental effect. Determining whether a project may have significant effect on the environment calls for careful judgement on the part of the lead agencies. The decision should be based to the extent possible on the best available scientific and factual data. However, a single ironclad definition of “significant effect” is not possible because the significance of an effect may vary with setting (CEQA Guidelines, Section 15064[b]). In determining the significance of the environmental effects, the lead agency shall consider direct

and indirect physical changes in the environment that may be caused by the project. Tools for determining the threshold of significance include the CEQA mandatory findings of significance (CEQA Guidelines, Section 15065), Appendix G of the CEQA Guidelines (the model Initial Study Checklist), agency regulatory standards, consultations with other agencies, and a lead agency's specific thresholds of significance.

As outlined in Section 3.3, the Environmental Consequences/Environmental Impact sections of Chapters 4–16 include a Methodology subsection, which explains the criteria considered and identifies the thresholds of significance used to determine the significance of impacts to the resource topics evaluated in that chapter. The criteria used and the thresholds for determining the significance of impacts on each resource topic are based on Appendix G of the CEQA Guidelines, and on the resource-specific sources described in the Methodology section. Some of the Appendix G thresholds were modified where appropriate to meet the circumstances of that resource topic within this Planning Area.

3.8.2 Impact Findings and Mitigation of Significant Impacts

As discussed in Section 1.1, one purpose of an EIS is to provide a full and fair discussion of the environmental impacts, and to inform decision makers and the public of reasonable alternatives (40 CFR 1502.1). Under CEQA, however, the significance of each impact disclosed in an EIR must be determined. CEQA further requires that, whenever possible, agency decision makers must adopt feasible mitigation to avoid or substantially lessen any significant impact (California Public Resources Code, Section 21002).

The impact analyses presented in Chapters 4–16 compare the impacts of each alternative to the thresholds of significance established for that resource topic. As required by CEQA, if an impact meets or crosses a threshold of significance, the EIS/EIR must identify feasible mitigation measures, which could minimize the significant adverse impact. An EIR must also identify those significant environmental effects that can be mitigated but not reduced to a level of insignificance (CEQA Guidelines, Section 15126.2[b]). Therefore, the Environmental Consequences/Environmental Impact analyses in Chapters 4–16 first present a statement of each impact's significance, before considering any additional mitigation measures that might be added by the EIS/EIR. If an impact is found to be significant, then a second statement of each impact's significance is presented after the analysis considers the additional mitigation measures added by the EIS/EIR.

Although NEPA regulations do not require lead agencies to reduce EIS significant impacts to a less-than-significant level, the practice to include feasible mitigation whenever possible to reduce a significant impact is consistent with NEPA's definition of mitigation (40 CFR 1508.20) and is consistent with NEPA regulations requiring agencies to include appropriate mitigation

measures not already included in the description of the proposed action or an alternative (43 CFR 1502.14[f]), and the requirement that the Environmental Consequences section of an EIS must discuss means to mitigate adverse environmental impacts (40 CFR 1502.16[h]).

As discussed in Section 3.6.1, the baseline (the basis of comparison) used in this EIS/EIR to describe and evaluate the significance of each environmental impact of the action alternatives is the No Action/No Project Alternative (i.e., the expected future condition of the Planning Area without an HCP implemented in south Sacramento County).

The potential impact findings used in this EIS/EIR are defined below.

- **No Impact/Effect.** This impact would cause no discernible adverse or beneficial change in the physical environment of the chapter's resource topic.
- **Less Than Significant Adverse Effect.** This impact would cause a discernible, but not substantial, adverse change in the physical environment of the chapter's resource topic.
- **Significant Adverse Effect.** This impact would cause a substantial, or potentially substantial, adverse change in the physical condition of the chapter's resource topic within the area affected. Therefore, the EIS/EIR would identify additional mitigation measures, if feasible, to reduce the adverse impact to less than significant. Impacts are determined to be significant based on the criteria and thresholds of significance identified for that resource topic. Significant impacts fall into two categories: (1) those adverse impacts for which there is feasible mitigation available that would avoid or reduce the environmental impacts to less-than-significant levels, and (2) those adverse impacts for which there is either no feasible mitigation available or for which, even with implementation of feasible mitigation measures, there would remain a significant adverse impact on the environment. Those impacts that cannot be reduced to a less-than-significant level by mitigation are identified as significant and unavoidable adverse effects.
- **Significant and Unavoidable Adverse Effect.** This impact would cause a substantial adverse change in the environment of the chapter's resource topic and cannot be avoided or mitigated to a less-than-significant level if the action is implemented. Even when the impact finding remains significantly adverse after the application of mitigation measures, the project proponent is still obligated to incorporate all feasible measures to reduce the severity of the impact.
- **Minor Beneficial Effect.** The impact would result in a discernible improvement of the chapter's resource topic, when compared to the environmental conditions of the baseline (see Section 3.6.1).
- **Significant Beneficial Effect.** The impact would result in a substantial or significant improvement of the chapter's resource topic when compared to the environmental conditions of the baseline (see Section 3.6.1).

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CHAPTER 4 – LAND USE

This chapter presents the potential impacts of each Environmental Impact Statement/Environmental Impact Report (EIS/EIR) alternative on existing and planned land use conditions, consistency with applicable planning documents, and compatibility with existing and planned land uses.

This chapter also includes a land use compatibility analysis of Franklin Field and Mather Airport, which are within the Planning Area, and the Sacramento Executive, Rancho Murieta, and Eagle’s Nest Airports, which are located outside of but within the vicinity of the Planning Area.

The land use compatibility analysis evaluates the potential for airport safety concerns associated with the implementation of an alternative’s activities or projects within any of the adopted airport Comprehensive Land Use Plans (CLUPs).

4.1 AFFECTED ENVIRONMENT/ENVIRONMENTAL SETTING

This section describes the regulatory and physical environmental setting for land use planning and existing land uses within the Planning Area.

4.1.1 Regulatory Framework

This section includes a summary of applicable federal, state, and local regulations, policies, and the planning documents for those agencies that have land use authority or are involved with land use decisions within the Planning Area. Pursuant to 40 Code of Federal Regulations (CFR) 1502.25, these applicable policies and plans helped to determine the appropriate scope of analysis included in Chapter 4. There are no tribal plans available that pertain to land use in the Planning Area; therefore, tribal plans are not discussed.

4.1.1.1 Federal Regulations and Policies

Wildlife Hazard Mitigation Program, Hazardous Wildlife Attractants

The Federal Aviation Administration (FAA) issued an Advisory Circular titled “Hazardous Wildlife Attractants on or Near Airports” (FAA 2007). The FAA released this Advisory Circular as part of its Wildlife Hazard Mitigation Program. The FAA recommends the guidance in this Advisory Circular for land use planners and developers of projects, facilities, and activities on or near airports. The FAA requires airports that receive federal grant-in-aid assistance to follow this guidance. Three of the airports within the Planning Area (Mather Airport and Franklin Field) or nearby (Sacramento Executive Airport) receive federal grant-in-aid assistance and are therefore subject to these guidelines (FAA 2007).

This Advisory Circular recommends that local planning efforts evaluate the potential for hazardous wildlife attractants on or near airports since wildlife–aircraft collisions are a serious economic and public safety issue and jeopardize future airport expansions. The Advisory Circular provides guidance to assess and address development projects and land use planning near airports with respect to their potential to attract wildlife or increase airport wildlife hazards.¹ Land uses that could attract hazardous wildlife include aquatic resources, agricultural activities, landfills, public parks, and landscaping (FAA 2007). The Advisory Circular recommends that hazardous wildlife attractants be located no closer than 5,000 feet at airports that serve piston-powered aircraft, 10,000 feet between airports that serve turbine-powered aircraft, and 5 miles from airports when the attractant could cause hazardous wildlife movement into or across the approach or departure airspace. The Advisory Circular also contains multiple recommendations on how to minimize hazardous wildlife attractants, such as rapid stormwater detention basin drainage, steep-sided, narrow ponds, and elimination of vegetation (FAA 2007).

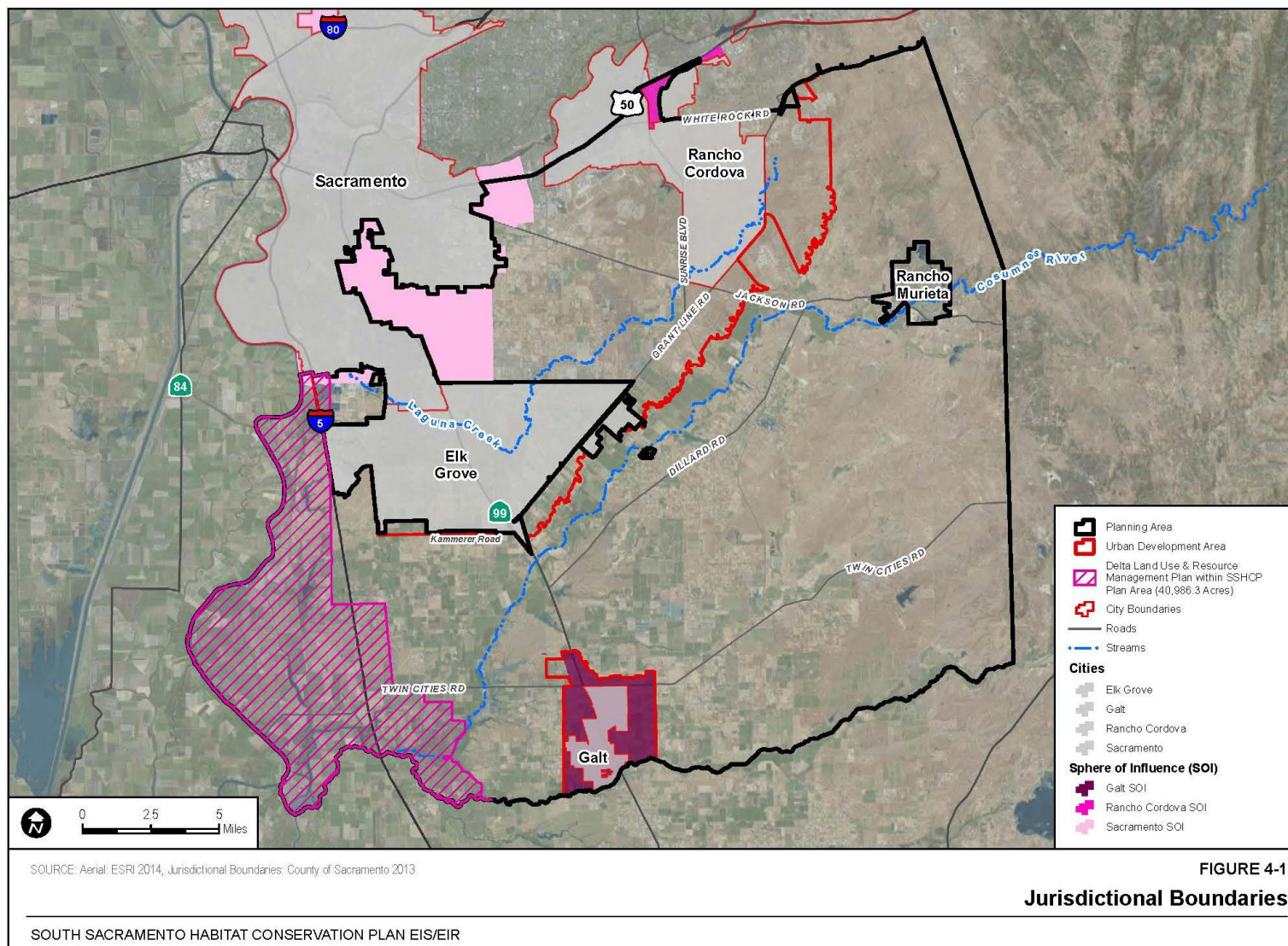
4.1.1.2 State Regulations and Policies

Delta Protection Act and the Land Use and Resource Management Plan for the Primary Zone of the Delta

The islands, marshes, waterways, and lands located at the confluence of the Sacramento River and the San Joaquin River, including the Suisun Marsh, were defined as “the Delta” in 1959 with the passage of the Delta Protection Act (CDWR 1993). The Delta is a network of inland channels and inland “islands” that cover approximately 738,000 acres. The Delta Protection Act identifies a Primary Zone of approximately 500,000 acres where a comprehensive resource management plan, the Delta Plan (Delta Stewardship Council 2013), is applied (see the discussion under the heading “Delta Reform Act of 2009 and the Delta Plan” below). **originally enacted in 1992, established the Delta Protection Commission and designated the Land Use and Resource Management Plan as a comprehensive resource management plan for the approximately 500,000-acre Primary Zone.** The southwestern-most portion of the Planning Area in Preserve Planning Unit (PPU) 6, totaling approximately 32,000 acres west of Interstate 5, is within the Primary Zone (Figure 4-1). An additional approximately 9,000-acre portion of PPU 6 east of Interstate 5 is within the Delta Secondary Zone. The Secondary Zone is defined by the Delta Protection Act as being within the legal Delta, but is subject to the land use authority of a local government. The Delta Protection Commission comments on projects in the Secondary Zone that have the potential to impact the Primary Zone, but does not have jurisdiction over projects in the Secondary Zone.

¹ Wildlife hazards include airplane collisions with birds (e.g., seagulls, owls, ducks, geese, crows) and mammals (e.g., deer, coyotes).

Figure 4-1 Jurisdictional Boundaries



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The Delta Protection Commission prepared the *Land Use and Resource Management Plan for the Primary Zone of the Delta* (Land Use and Resource Management Plan), which was last updated in 2010 (Delta Protection Commission 2010). The Land Use and Resource Management Plan includes policies for development of land within the Primary Zone of the Delta. Within 180 days of the Delta Protection Commission's adopting, updating, or changing the Land Use and Resource Management Plan, local governments must submit amendments to their general plans that make them consistent with the Land Use and Resource Management Plan. Applicable policies from the Land Use and Resource Management Plan are identified below (Delta Protection Commission 2010).

Policy P-2: Local government general plans, as defined in Government Code Section 65300 et seq., and zoning codes shall continue to promote and facilitate agriculture and agriculturally-supporting commercial and industrial uses as the primary land uses in the Primary Zone; recreation and natural resources land uses shall be supported in appropriate locations and where conflicts with agricultural land uses or other beneficial uses can be minimized.

Policy P-3: New non-agriculturally oriented residential, recreational, commercial, habitat, restoration, or industrial development shall ensure that appropriate buffer areas are provided by those proposing new development to prevent conflicts between any proposed use and existing adjacent agricultural parcels. Buffers shall adequately protect integrity of land for existing and future agricultural uses and shall not include uses that conflict with agricultural operations on adjacent agricultural lands. Appropriate buffer setbacks shall be determined in consultation with local Agricultural Commissioners, and shall be based on applicable general plan policies and criteria included in Right-to-Farm Ordinances adopted by local jurisdictions.

Policy P-8: Local government policies regarding mitigation of adverse environmental impacts under the California Environmental Quality Act may allow mitigation beyond county boundaries, if acceptable to reviewing fish and wildlife agencies and with approval of the recipient jurisdiction, for example in approved mitigation banks or in the case of agricultural loss to mitigation.² Mitigation in the Primary Zone for loss of agricultural lands in the Secondary Zone may be appropriate if the mitigation program

² This portion of Policy P-2 conflicts with the South Sacramento Habitat Conservation Plan (SSHCP) proposed requirements that Covered Activity mitigation occur within the Planning Area (see EIS/EIR Proposed Action/Proposed Project Alternative description in Section 2.3.5). However, the remainder of Policy P-8 remains applicable to all alternatives analyzed in the EIS/EIR, so Policy P-8 has been retained as part of the regulatory environment considered by the lead agencies when determining the scope of the analysis in Chapter 4, pursuant to 40 CFR 1502.25(b).

supports continued farming in the Primary Zone. California Government Code Section 51256.3 (Assembly Bill 797) specifically allows an agricultural conservation easement located within the Primary or Secondary Zone of the Delta to be related to Williamson Act contract rescissions in any other portion of the secondary zone without respect to County boundary limitations.

Delta Reform Act of 2009 and the Delta Plan

The Delta Reform Act created the Delta Stewardship Council and directed the council to complete the Delta Plan (Delta Stewardship Council 2013). The Delta Plan includes land use policies that encourage the location of new development in areas within the Delta where existing infrastructure is available and land is designated for development (Delta Stewardship Council 2013). Local governments whose jurisdiction falls within the legal boundary of the Delta and Suisun Marsh must certify to the council that certain agency decisions—such as approval of a development project or land use policy—are consistent with the Delta Plan. Individuals who disagree with that certification may file an appeal with the council, and if the appeal is upheld, the project or policy must be revised to enable a new certification to be granted.

Approximately 41,000 acres within the southwestern portion of the Planning Area falls within the Primary Zone or Secondary Zone of the Delta Plan (Delta Stewardship Council 2013).

Relevant policies from the Delta Plan (Delta Stewardship Council 2013) include the following:

Locate New Urban Development Wisely

- a. New residential, commercial, and industrial development must be limited to the following areas, as shown in Appendix 6 and Appendix 7 [of the Delta Plan]:
 - (1) Areas that city or county general plans as of May 16, 2013, designate for residential, commercial, and industrial development in cities or their spheres of influence;
 - (4) The unincorporated Delta towns of Clarksburg, Courtland, Hood, Locke, Ryde, and Walnut Grove.
- b. Notwithstanding subsection (a), new residential, commercial, and industrial development is permitted outside the areas described in subsection (a) if it is consistent with the land uses designated in county general plans as of May 16, 2013, and is otherwise consistent with this element of the Delta Plan.
- c. For purposes of Water Code section 85057.5(a)(3) and section 5001(j)(1)(E), this policy covers proposed actions that involve new residential, commercial, and industrial development that is not located within the areas described in subsection (a).

- d. This policy is not intended in any way to alter the concurrent authority of the Delta Protection Commission to separately regulate development in the Delta's Primary Zone.

Respect Local Land Use When Siting Water or Flood Facilities or Restoring Habitats

- a. Water management facilities, ecosystem restoration, and flood management infrastructure must be sited to avoid or reduce conflicts with existing uses or those uses described or depicted in city and county general plans for their jurisdictions or spheres of influence when feasible, considering comments from local agencies and the Delta Protection Commission. Plans for ecosystem restoration must consider sites on existing public lands, when feasible and consistent with a project's purpose, before privately owned sites are purchased. Measures to mitigate conflicts with adjacent uses may include, but are not limited to, buffers to prevent adverse effects on adjacent farmland.
- b. For purposes of Water Code section 85057.5(a)(3) and section 5001(j)(1)(E) of this Chapter [of the Delta Plan], this policy covers proposed actions that involve the siting of water management facilities, ecosystem restoration, and flood management infrastructure.

ER P3. Protect Opportunities to Restore Habitat

- a. **Within the priority habitat restoration areas depicted in Appendix 5 of the Delta Plan, significant adverse impacts to the opportunity to restore habitat as described in section 5006, must be avoided or mitigated.**
- b. **Impacts referenced in subsection (a) will be deemed to be avoided or mitigated if the project is designed and implemented so that it will not preclude or otherwise interfere with the ability to restore habitat as described in section 5006.**
- c. **Impacts referenced in subsection (a) shall be mitigated to a point where the impacts have no significant effect on the opportunity to restore habitat as described in section 5006. Mitigation shall be determined, in consultation with the California Department of Fish and Wildlife, considering the size of the area impacted by the covered action and the type and value of habitat that could be restored on that area, taking into account existing and proposed restoration plans, landscape attributes, the elevation map shown in Appendix 4, and other relevant information about habitat restoration opportunities of the area.**

- d. For purposes of Water Code section 85057.5(a)(3) and section 5001(j)(1)(E) of this Chapter, this policy covers proposed actions in the priority habitat restoration areas depicted in Appendix 5 of the Delta Plan. It does not cover proposed actions outside those areas.

Delta Plan Policy G P1. Delta Plan Policy G P1 requires that actions not exempt from CEQA and subject to Delta Plan regulations must include applicable feasible mitigation measures consistent with those identified in the Delta Plan EIR or substitute mitigation measures that are equally or more effective. Delta Plan Policy G P1 also states that actions subject to Delta Plan regulations must document use of the best available science as relevant to the purpose and nature of the project. Finally, Delta Plan Policy G P1 requires that ecosystem restoration and water management covered actions include adequate provisions for continued implementation of adaptive management, appropriate to the scope of the action. This requirement is satisfied through A) the development of an adaptive management plan that is consistent with the framework described in Appendix 1B of the Delta Plan, and B) documentation of adequate resources to implement the proposed adaptive management plan.

Delta Plan Policies DP P1 and DP P2. Delta Plan Policy DP P1 states that new residential, commercial or industrial development is permitted outside the urban boundaries only if it is consistent with the land use designated in the relevant county general plan. It is intended to strengthen existing Delta communities while protecting farmland and open space, providing land for ecosystem restoration needs, and reducing flood risk. Delta Plan Policy DP P2 states that plans for ecosystem restoration must be sited to avoid or reduce conflicts with existing uses when feasible.

Delta Plan Policy ER P2. Delta Plan Policy ER P2 states that habitat restoration must be consistent with Appendix 3 of the Delta Plan regulations and that restoration will occur at appropriate elevations.

Delta Plan Policy ER R2. This policy states, for the Cosumnes-Mokelumne Confluence: “Allow these unregulated and minimally regulated rivers to flood over their banks during winter and spring frequently and regularly to create seasonal floodplains and riparian habitats that grade into tidal marsh and shallow subtidal habitats.”

Delta Plan Policy ER P3. This policy requires that, within the priority habitat restoration areas depicted in Appendix 5 of the Delta Plan, significant adverse impacts to the opportunity to restore habitat must be avoided or mitigated. Much of the overlap between the Legal Delta and the SSHCP Plan Area includes the Cosumnes-Mokelumne Confluence PHRA.

Delta Plan Policies RR P2, RR P3, and RR P4. Policy RR P2 requires flood protection for residential development in rural areas. Policy RR P3 restricts encroachment in floodways. Policy RR P4 restricts encroachment in floodplains, including the Cosumnes-Mokelumne Confluence. Policy RR P4 specifically states that “no encroachment shall be allowed or constructed unless it can be demonstrated by appropriate analysis that the encroachment will not have a significant impact on floodplain values and functions.”

Delta Plan Policy ER P5. Policy ER P5 calls for avoiding introductions and habitat improvements for invasive nonnative species or mitigating these potential impacts in a manner that appropriately protects the ecosystem. Analysis on this matter should address both nonnative wildlife species as well as terrestrial and aquatic weeds. To the maximum extent practicable, design of habitat restoration and creation actions should avoid or minimize effects that would lead to the establishment of nonnative invasive species populations on site before relying on mitigation measures. In the event that mitigation is warranted, those mitigation and minimization measures should be equally or more effective than the Delta Plan mitigation measure 4-1.

4.1.1.3 Regional Regulations and Policies

Metropolitan Transportation Plan/Sustainable Communities Strategy

The Sacramento Area Council of Governments (SACOG) is an association that includes the Counties of El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba, as well as 22 cities, including two of the South Sacramento Habitat Conservation Plan (SSHCP) Permit Applicants (the City of Galt and the City of Rancho Cordova). As a metropolitan transportation organization, SACOG is required to prepare a long-range transportation plan for all modes of transportation—including public transit, automobile, bicycles, and pedestrians—every 4 years for the six-county area. SACOG is also required to integrate land use, housing, and transportation strategies into a Sustainable Communities Strategy (SCS) that achieves the California Air Resources Board emissions reduction targets for greenhouse gases.

The *Metropolitan Transportation Plan/Sustainable Communities Strategy 2036* (the 2036 MTP/SCS) (SACOG 2016) was prepared to establish regional access and to identify mobility goals; identify present and future transportation needs, deficiencies, and constraints within the transportation system; analyze potential solutions; estimate available funding; propose investments; and achieve regional targets for reducing greenhouse gas emissions. The 2036 MTP/SCS plan does not present requirements for urban development within the Planning Area; rather, it forms the foundation for regional transportation investments, as described in the *Regional Housing Needs Plan 2013–2021* (SACOG 2012), and provides regional compliance with federal air quality and state greenhouse gas emissions requirements.

Sacramento Region Blueprint Transportation and Land Use Plan

In recognizing future regional environmental effects of continuing the historical pattern of growth in the six-county area—including loss of habitat, agricultural land, and open space, as well as an increase in traffic congestion and pollution— SACOG initiated preparation of the *Sacramento Region Blueprint Transportation and Land Use Plan* in 2002 to identify the region’s housing/employment needs through year 2050, and to propose different scenarios for future urban development to accommodate those housing/employment needs. SACOG identified a “base-case” representing development trends at that time and projecting development trends out to year 2050. Alternative future urban development strategies were developed, each implementing differing levels of “smart growth” strategies. After extensive outreach and public involvement, the SACOG Board of Directors adopted the preferred blueprint scenario in December 2004 (SACOG 2004). The preferred blueprint scenario represents a balanced approach that emphasizes infill and revitalization, and relies on smart growth principles to encourage development at higher densities, while offering a wide choice of housing options (SACOG 2004).

Recent SACOG documents, such as the 2036 MTP/SCS (SACOG 2016) described previously, use the preferred blueprint scenario as the land use basis for future transportation investments.

4.1.1.4 Local Regulations, Policies, and Plans

Land uses in the Planning Area are governed by the general plans and other local plans and policies of Sacramento County, Galt, and Rancho Cordova. The general plans of these three jurisdictions guide the location and type of land use by establishing each community’s planning goals, objectives, and policies.

Land uses in the Planning Area are also influenced by the 2036 MTP/SCS and by the Airport Land Use Compatibility Plans of each public-use airport located in or adjacent to the Planning Area.

Sacramento County General Plan

The Land Use Element of the adopted *Sacramento County General Plan of 2005–2030* (Sacramento County General Plan) (Sacramento County 2011) identifies a goal of establishing “an orderly pattern of land use that concentrates urban development, enhances community character and identity through the creation and maintenance of neighborhoods, is functionally linked with transit, promotes public health, and protects Sacramento County’s natural, environmental and agricultural resources” (Sacramento County 2011, p. 17).

The Land Use Element also establishes Sacramento County’s growth boundary system, which it describes as the “backbone of Sacramento County’s urban planning philosophy” (Sacramento County 2011, p. 18). Sacramento County has two growth boundary designations: the Urban Service Boundary (USB), which indicates the ultimate boundary of the urban area in the

unincorporated county and the Urban Policy Area, which identifies the areas where urban development will occur through the year 2030. Please see Chapter 1 for a detailed description of these plan boundaries. While the USB is intended to be a permanent boundary, the Urban Policy Area is adjusted incrementally as needed to ensure that Sacramento County can accommodate anticipated growth throughout the 25-year planning cycle. The area between the two lines is reserved for future urbanization.

As discussed in Section 1.1.1, the term Urban Development Area (UDA) is used by the EIS/EIR to discuss all lands where urban development Covered Activity projects or activities could occur under the action alternatives. Therefore, the term “UDA” means all lands within Sacramento County’s USB boundary that are also within the Planning Area (including lands within the Rancho Cordova city limits that are within the Planning Area), all lands within Galt’s city limits, and all lands within Galt’s sphere of influence (SOI) (see Figure 1-1).

The Sacramento County General Plan and the current County Urban Policy Area boundary assume that most growth in the unincorporated areas of Sacramento County would occur east of the City of Sacramento, north of the City of Elk Grove, and southwest of the City of Rancho Cordova. In addition, expansion of the Urban Policy Area to create several new communities within the Mather Core Recovery Area (MCRA) (USFWS 2005) was anticipated in the General Plan, which notes that stringent criteria for expanding the Urban Policy Area would require such proposals to demonstrate “high quality design and the creation of complete communities that offer a range of housing, employment, commercial uses, transportation choices and community amenities” (Sacramento 2011, Executive Summary, p. 3).

The Sacramento County General Plan Land Use Element establishes an objective of allowing “limited agricultural–residential land use expansion outside the USB that does not compromise objectives for protecting prime agricultural lands and open space, and avoids groundwater overdraft and contamination” (Sacramento County 2011, p. 72).

Policies relevant to this EIS/EIR from Sacramento County’s Land Use Element include the following (Sacramento County 2011):

Policy LU-2: The County shall maintain an Urban Service Boundary that defines the long-range plans (beyond twenty-five years) for urbanization and extension of public infrastructure and services, and defines important areas for protecting as open space and agriculture.

Policy LU-15: Planning and development of new growth areas should be consistent with Sacramento County-adopted Habitat Conservation Plans and other efforts to preserve and protect natural resources.

Policy LU-120: The County shall only consider approval of a proposed Urban Policy Area expansion and/or Master Plan outside of the existing Urban Policy Area if the Board finds that the proposed project is planned and will be built in a manner that meets specific standards such as density, jobs-housing balance, financing, mix of uses, etc., specified in the policy (note: this is a summary of this policy. See pages 124 through 135 of the Land Use Element).

Policy LU-122: The Urban Policy Area is intended to provide an adequate supply of developable land sufficient to accommodate projected growth. The Urban Policy Area shall also include additional preserve lands to ensure an appropriate supply of open space. It is the policy and intent of the County to evaluate the Urban Policy Area at a minimum of five-year intervals, to determine if an expansion is needed to maintain a constant adequate supply of land.

- Guidelines to be considered by the Board in determining the expansion of the Urban Policy Area include:
- Buildout rates by type of use, unit type and density for the previous 5-year period.
- Infill trends and opportunities.
- Population and job growth projections as reflected by a minimum of three independent sources.
- Evidence that the infrastructure capacity and service availability exist or can be extended to the property.
- Evidence that the proposed expansion is consistent with Sacramento County adopted Habitat Conservation Plan goals and objectives, or where such a draft or adopted Plan does not exist, evidence that important natural resources lands, agricultural lands, and open space lands will be protected and integrated into a cohesive and interconnected network of open space within the Urban Policy Area.

Policy LU-127: The County shall not expand the Urban Service Boundary unless:

- There is inadequate vacant land within the USB to accommodate the projected 25-year demand for urban uses; and
- The proposal calling for such expansion can satisfy the requirements of a master water plan as contained in the Conservation Element; and
- The proposal calling for such expansion can satisfy the requirements of the Sacramento County Air Quality Attainment Plan; and
- The area of expansion does not incorporate open space areas for which previously secured open space easements would need to be relinquished; and

- The area of expansion does not include the development of important natural resource areas, aquifer recharge lands or prime agricultural lands;
- The area of expansion does not preclude implementation of a Sacramento County-adopted Habitat Conservation Plan; OR
- The Board approves such expansion by a 4/5ths vote based upon a finding that the expansion would provide extraordinary environmental, social or economic benefits and opportunities to the County.

Galt General Plan

The *2030 Galt General Plan: Policy Document* (Galt General Plan) (Galt 2009) Land Use Element establishes a goal of expanding the City of Galt “as necessary in an orderly pattern consistent with economic, social, and environmental needs” (Galt 2009). Several policies include requirements to protect habitat and open space, including areas proposed for development within the Galt’s SOI. Galt General Plan policies relevant to this EIS/EIR include the following (Galt 2009):

Policy LU-1.10: The City shall coordinate habitat preservation efforts with Sacramento County to maintain critical species habitat preservation zoning on open space north of the Planning Area³ and within the proposed South Sacramento County Habitat Conservation Plan. The City shall continue to mitigate impacts on special habitats and endangered species in consultation with applicable Federal and State agencies prior to adoption of the South Sacramento County Habitat Conservation Plan.

Policy LU-9.1: The City should participate in regional efforts to establish a permanent agriculture, open space, and wildlife habitat greenbelt between the northern boundary of the Planning Area and the City of Elk Grove.

Rancho Cordova General Plan

The Land Use Element in the *Rancho Cordova General Plan* (Rancho Cordova 2006a) focuses on development of the predominantly urban land uses anticipated within Rancho Cordova’s limits, with a vision of creating a “series of walkable neighborhoods, villages, and districts, each with a center of activity that promotes interactions between residents, employees, and visitors.” The Rancho Cordova General Plan also recognizes the need to preserve natural resources as an important community feature. It establishes Rancho Cordova’s goals of achieving a “balanced

³ The Galt General Plan uses “Planning Area” to describe the geographic area that will be directly addressed by the General Plan, and typically encompasses the city limits and potentially annexable land within its SOI (Galt 2009, p. 3).

and integrated land use pattern” and participating in the “decision-making on land-use, circulation, and park issues outside the City limits that have an impact on the City” (Rancho Cordova 2006a). Other elements of the Rancho Cordova General Plan do include relevant policies, as noted below.

The Rancho Cordova General Plan Natural Resources Element identifies the Rancho Cordova’s specific goals and policies intended to position Rancho Cordova as “a leader in natural resource conservation, managing natural resources to ensure long-term sustainability while evaluating new opportunities and techniques in conservation” (Rancho Cordova 2006a). The Natural Resources Element contains goals related to protecting and preserving diverse wildlife and plant habitat and natural aquatic resources and several supporting policies. Those policies that relate to land use and are relevant to this EIS/EIR are as follows (Rancho Cordova 2006a):

Policy NR.1.2: Conserve Swainson’s hawk habitat consistent with State policies and Department of Fish and Wildlife guidelines.

Policy NR.1.6: Participate in the development of a habitat conservation plan to address the unique biological resources in Rancho Cordova.

Airport Plans and Guidelines

Three of the public airports located within the Planning Area (Mather Airport, Franklin Field, and Sacramento Executive Airport) have adopted a CLUP. An airport CLUP addresses airport noise, land use compatibility, and safety. The Rancho Murieta Airport and Eagle’s Nest Airport (which is located within Amador County, immediately adjacent to the eastern edge of the Planning Area) do not have adopted CLUPs; similar guidance is provided through the *Airport Land Use Commission Policy Plan* (Airport Land Use Commission 1992) and the *California Airport Land Use Planning Handbook* (Airport Handbook) (State of California Department of Transportation 2011). Each of the airport land use plans define compatible and incompatible land uses within three airport safety zones: the “Clear Zone,” “Approach–Departure Zone,” and “Overflight Zone.”⁴ Figures 4-3 through 4-7 depict each of the airports and include the limits of the airport, Overflight Zones, and 5-mile radii. There are multiple factors that are included in the airport land use plans that provide direction on compatible land uses adjacent to or nearby airports. Given the nature of the SSHCP as a conservation-planning tool, these airport land use compatibility analyses focus on the presence of or increase/decrease of natural areas that may attract wildlife, either on the

⁴ The “Clear Zone” is near the end of the runway and carries the most restrictions in terms of compatible land uses. The “Approach–Departure Zone” is located under the takeoff and landing slopes and is slightly less restrictive than the “Clear Zone” but more restrictive than the “Overflight Zone.” The “Overflight Zone” is the area under the air traffic pattern and is the least restrictive (SACOG 1997, p. 30). The “Overflight Zone” roughly corresponds to the “Airport Operations Area,” as defined in FAA Advisory Circular 150/5200-33B.

ground or in flight, or result in microclimatic conditions that may affect navigation. In all of the airport land use plans, open space and natural areas, including natural water areas, are compatible only if they do not result in the possibility that a water area may cause ground fog, a wildlife strike hazard from species such as deer or geese that are attracted to grazing opportunities, or a bird–aircraft collision hazard. These plans allow existing incompatible land uses to continue; however, no existing incompatible land use may be changed to another incompatible land use except by a 4/5 majority vote of the County Board of Supervisors.

4.1.2 Existing Conditions

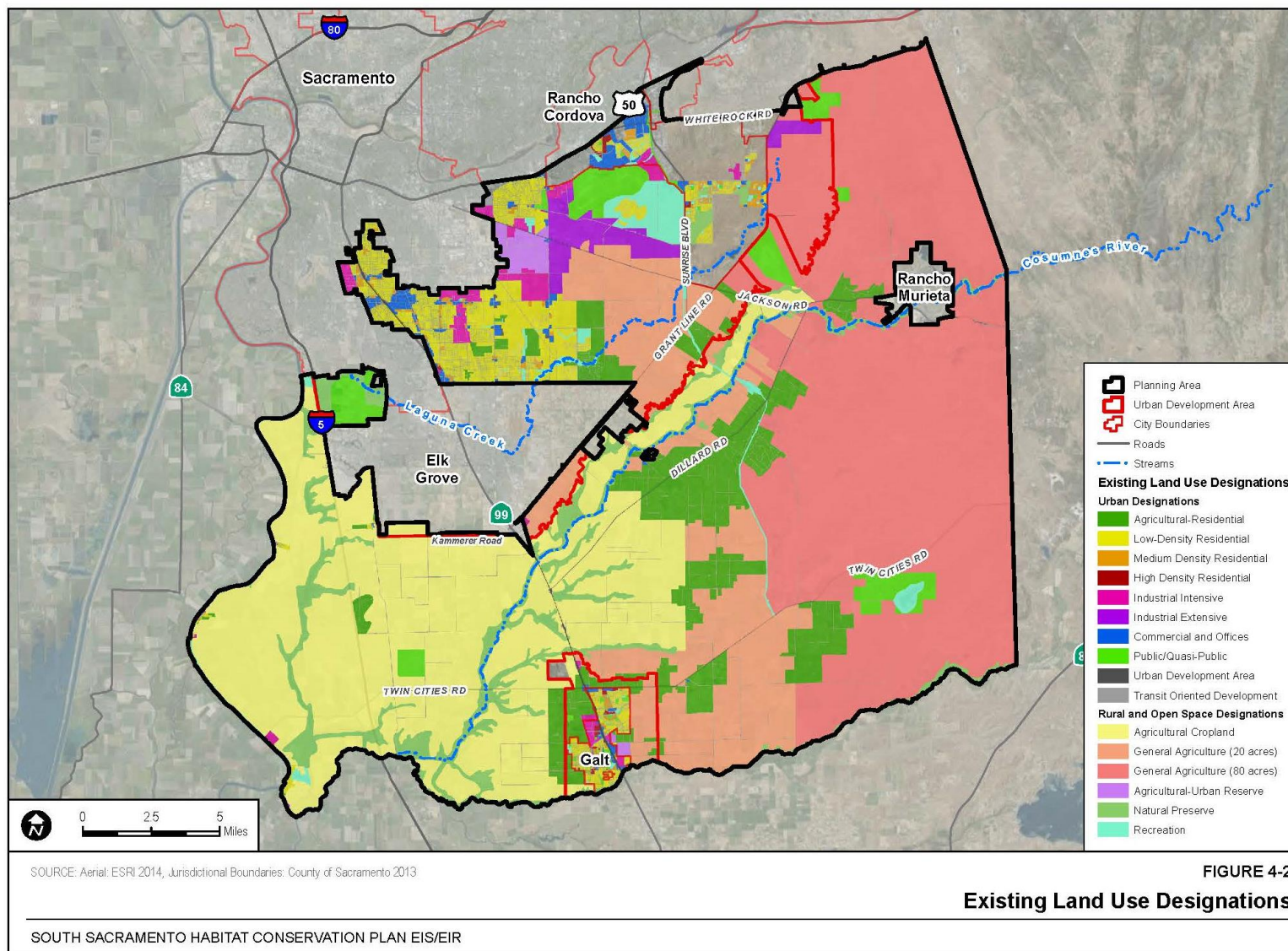
Figure 4-1 illustrates the city and county jurisdictional boundaries, including the SOI for each city, within the EIS/EIR Planning Area. Table 4-1 identifies the acreage of the Planning Area within Sacramento County, Galt, and Rancho Cordova.

**Table 4-1. Acreage of Sacramento County, Galt, and Rancho Cordova
within the EIS/EIR Planning Area**

Jurisdiction	Acreage within the Planning Area
Sacramento County (unincorporated)	307,142
City of Galt	2,009
City of Rancho Cordova	8,504
Total Acres in the Planning Area	317,655

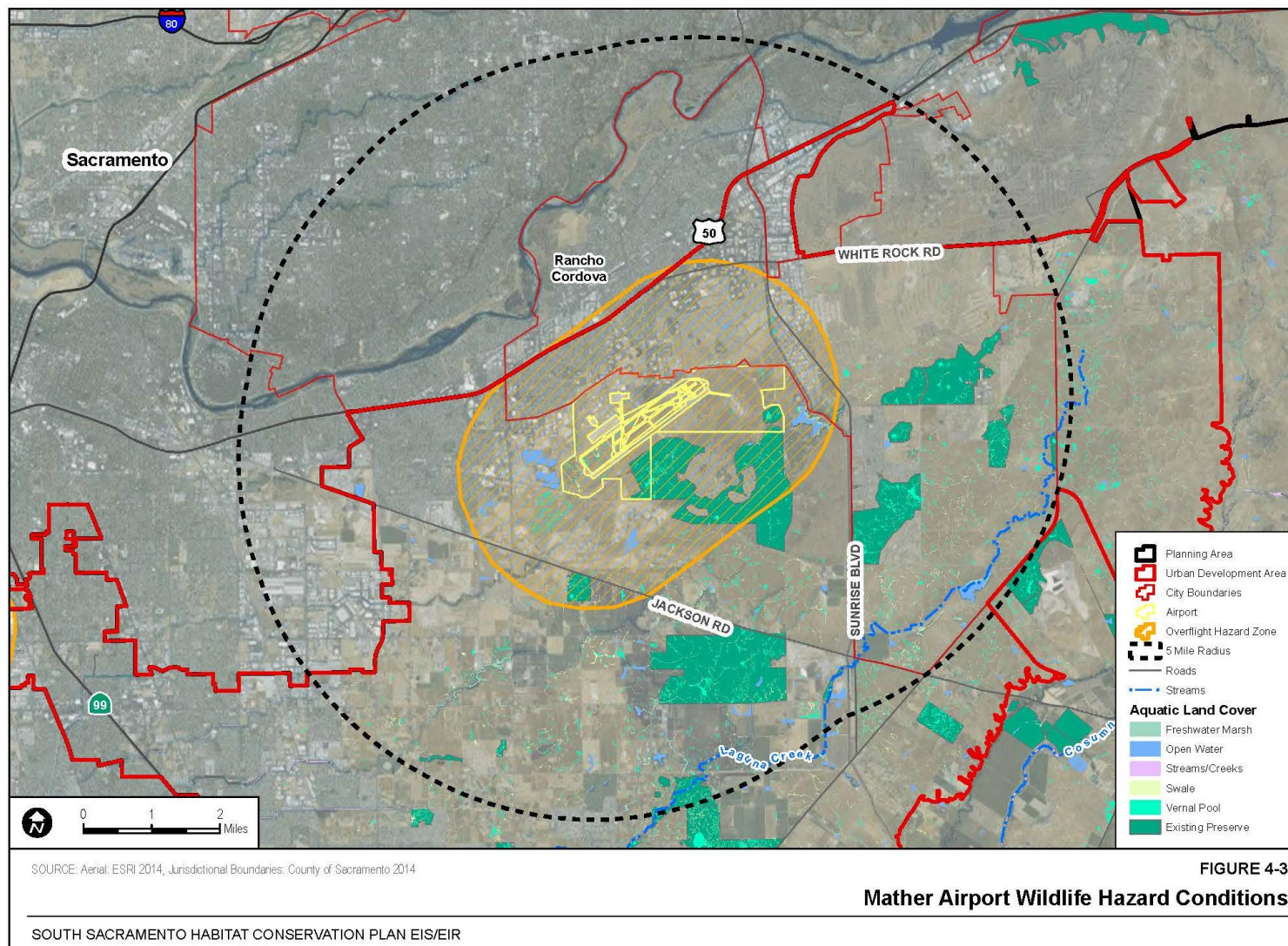
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Figure 4-2 Existing Land Use Designations



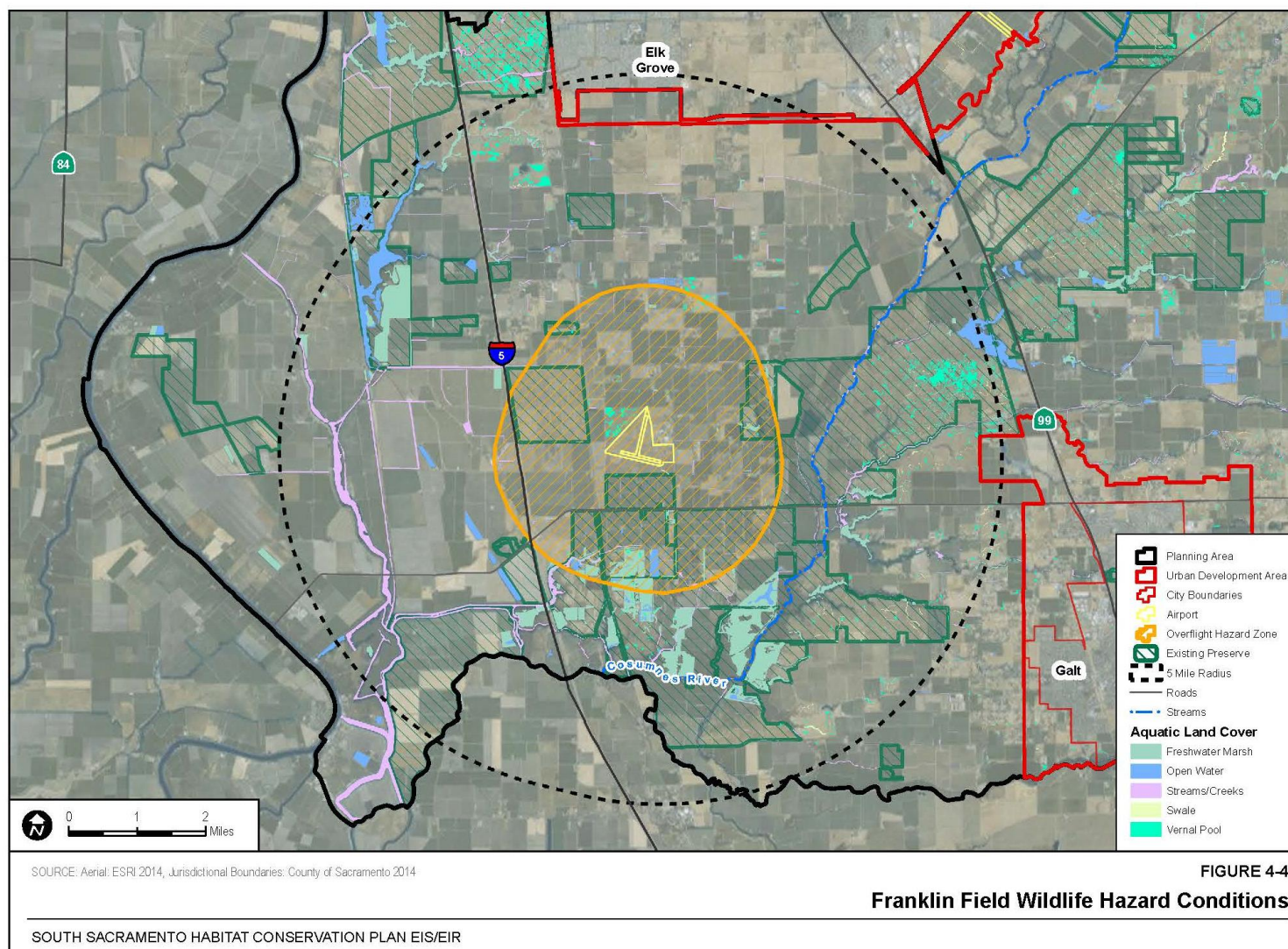
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Figure 4-3 Mather Airport Wildlife Hazard Conditions



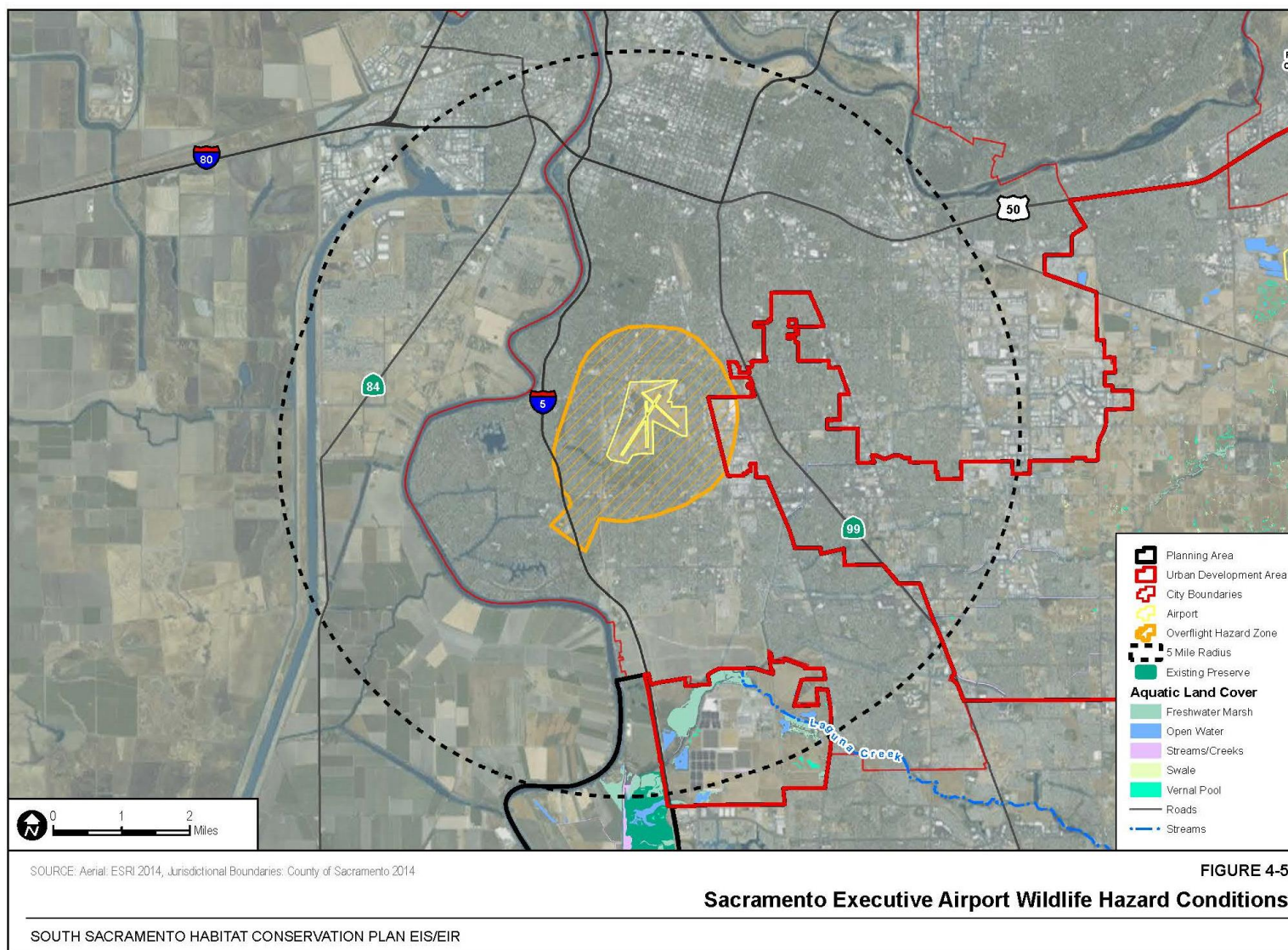
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Figure 4-4 Franklin Field Wildlife Hazard Conditions



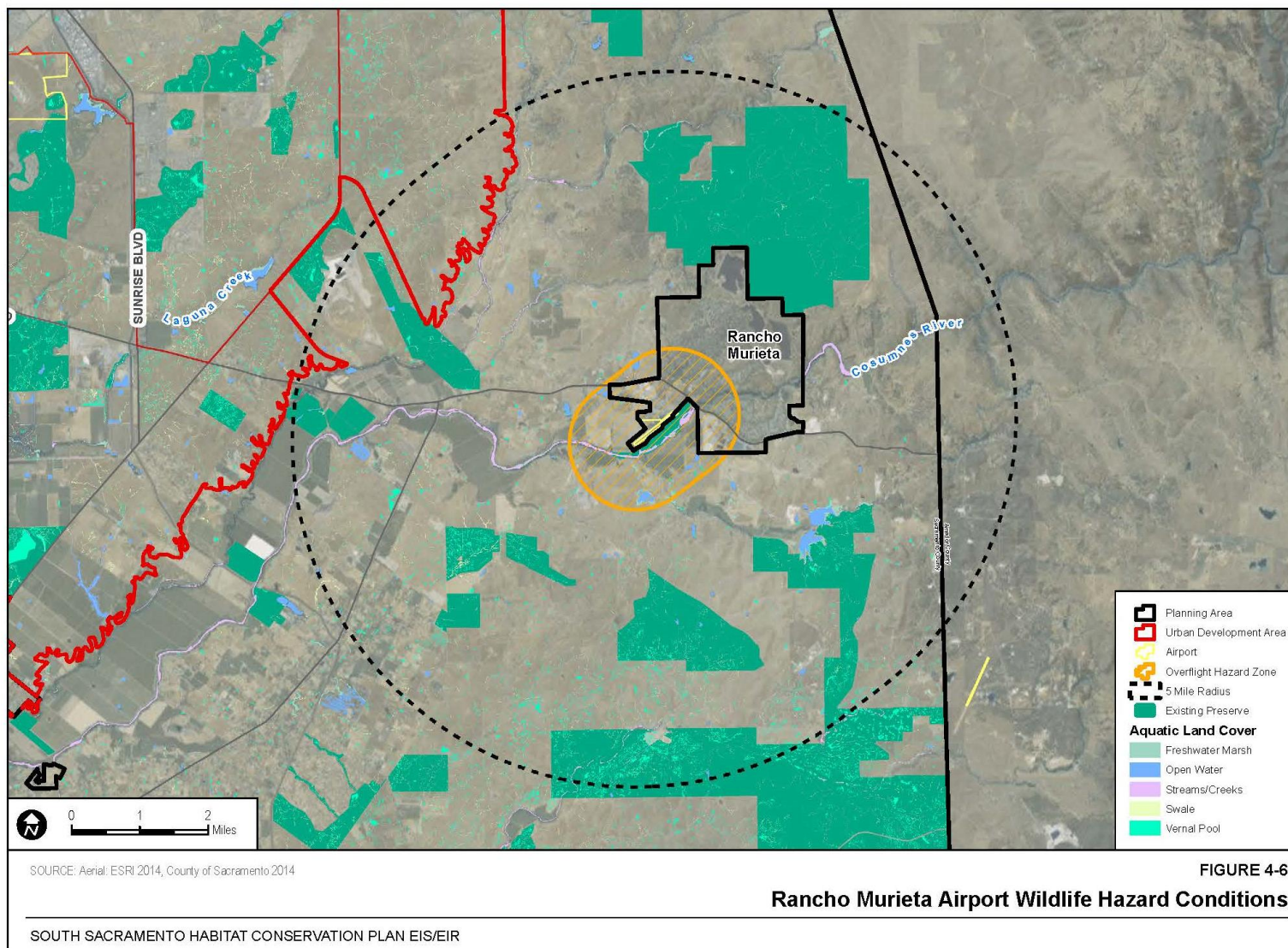
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Figure 4-5 Sacramento Executive Airport Wildlife Hazard Conditions



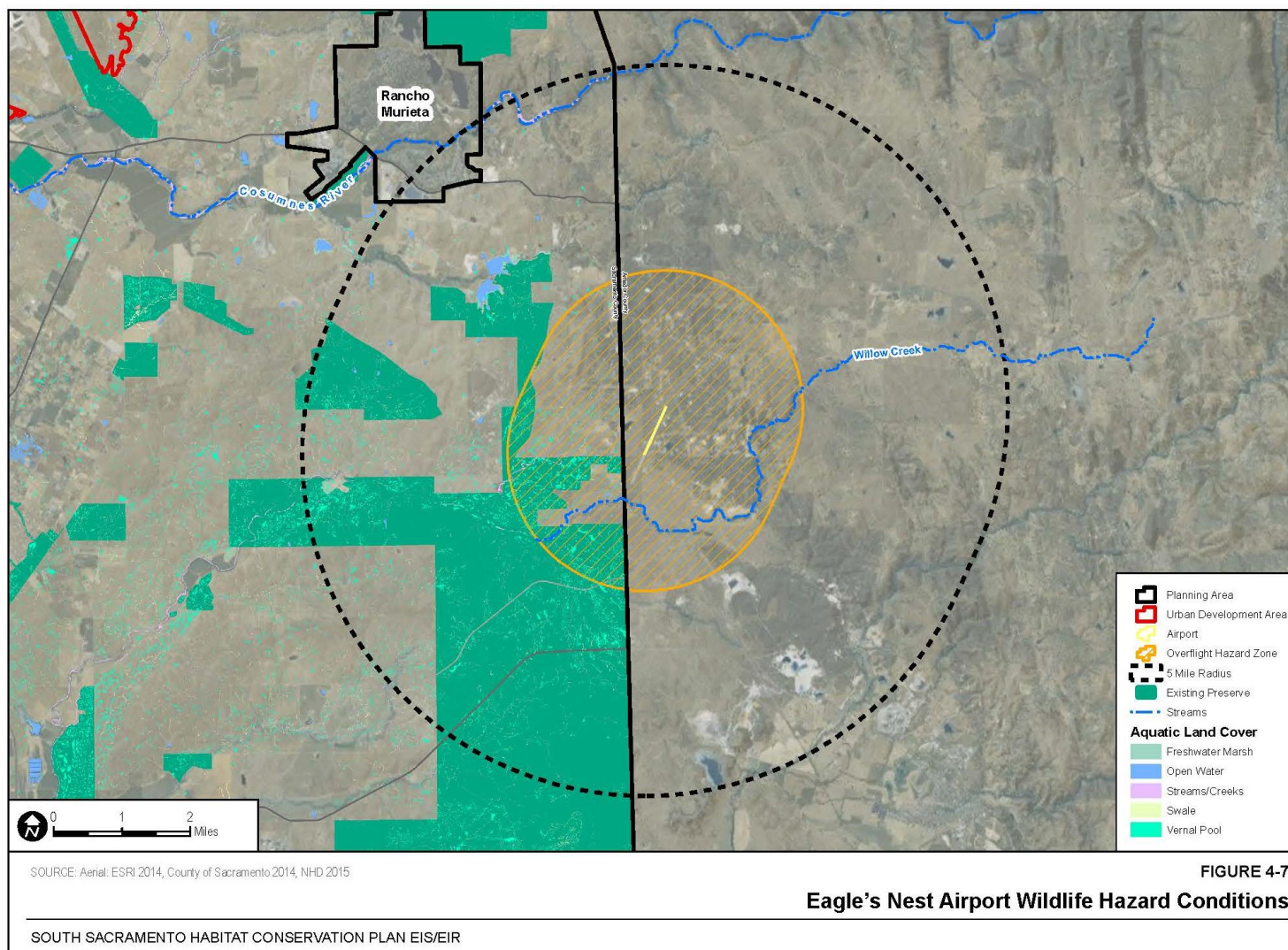
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Figure 4-6 Rancho Murieta Airport Wildlife Hazard Conditions



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Figure 4-7 Eagle's Nest Airport Wildlife Hazard Conditions



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4.1.2.1 Past and Current Land Use in the Planning Area

Sacramento County was formed in 1850 as one of the original 27 counties of the State of California. As discussed in Sections 1.3.1 and 3.7.1, Sacramento County has a strong agricultural history. Agriculture and grazing lands dominated the landscape throughout the early twentieth century. Urbanization increased in the 1940s and again between 1950 and 1960, with new growth occurring primarily near the City of Sacramento and in smaller cities such as Folsom, Galt, and Isleton. Growth continued at a moderate rate between 1960 and 1990, resulting in an expansion of urban land use patterns and infrastructure into the southern and eastern portions of Sacramento County. Development slowed in the early 1990s, picked up again in the early 2000s, and softened or slowed considerably from 2007 to 2009. Approximately 46,000 people lived in the Sacramento metropolitan region in 1900. The population in Sacramento County reached one million between 1980 and 1990, and in 2010 the population was 1.4 million (Sacramento County 2011).

Sacramento County covers approximately 990 square miles and includes seven incorporated cities—Sacramento, Elk Grove, Citrus Heights, Folsom, Galt, Isleton, and Rancho Cordova—and many other unincorporated communities. Communities within the Planning Area, located primarily in the central and western portions of the unincorporated County, typically include land designated for agricultural uses with minimum parcel sizes of 20, 40, or 80 acres. These communities include Alta Mesa, Clay Station, Herald, Point Pleasant, Sloughhouse, and Wilton. These six Planning Area communities are located outside of the UDA, in the southern and eastern portions of the Planning Area, where the Sacramento County General Plan provides for continuation of the historically agricultural-based land use patterns (Sacramento County 2011). Although it is not included in the Planning Area, the unincorporated community of Rancho Murieta is also located in the southeastern portion of Sacramento County outside the UDA (Figure 4-2).

Unincorporated areas of Sacramento County located within the UDA include Florin, Rosemont, Mather, and Vineyard. These areas include existing residential, commercial, and industrial development. The Sacramento County General Plan land use diagram (Sacramento County 2011) indicates that a majority of new urban (residential, commercial, and industrial) land uses would be located north of Elk Grove and east of Sacramento (residential and commercial), while new industrial land uses would be located south of Mather Airport.

4.1.2.2 Land Use Designations in the Planning Area

Table 4-2 provides a summary of the existing land use designations in the Planning Area, also depicted on Figure 4-2. The existing land uses were compiled from the Rancho Cordova, City of Galt, and Sacramento County General Plan land use maps (Sacramento County 2011; Galt 2009; Rancho Cordova 2006a). However, specific land use designations for each Planning Area local jurisdiction were somewhat different. To create a uniform list of Planning Area land use

designations, the EIS/EIR assigned the land use designations used in each general plan to one of the 18 land use designations listed in Table 4-2.

Table 4-2. Existing Land Use Designations within the Planning Area

Land Use Designation¹	Acres	% of Total Planning Area (approximate)
Agricultural Cropland	82,279	25.9
Agricultural Residential	24,926	7.8
Agricultural Urban Reserve	1,907	0.6
General Agriculture (20 Acres)	38,720	12.2
General Agriculture (80 Acres)	106,692	33.6
<i>Total Agriculture</i>	<i>254,524</i>	<i>80.1</i>
Low Density Residential	6,263	2.0
Medium Density Residential	687	0.2
High Density Residential	223	0.1
Commercial and Offices	2,272	0.7
Industrial Extensive	4,362	1.4
Industrial Intensive	3,408	1.1
Specific Plan Area	7,008	2.2
Transit Oriented Development	70	0.0
Misc. Urban Development Area ²	72	0.0
<i>Total Urban</i>	<i>24,365</i>	<i>7.7</i>
Natural Preserve	18,556	5.8
Public/Quasi-Public	8,896	2.8
Recreation	3,328	1.0
Rights-of-Way ³	7,986	2.5
Planning Area TOTAL	317,655	100

¹ Land use designations used in Chapter 4 are closely based on the land use designations in Sacramento County 2011.

² The Misc. Urban Development Area designation is included to capture the entirety of the Planning Area.

³ The “rights-of-way” designation represents areas of roadways, utility corridors, and other areas where a local land use authority has granted rights-of-way, and no land use designation was retained.

SACOG predicts that the region will continue to experience strong growth over the EIS/EIR 50-year study period discussed in Section 3.6.3 (SACOG 2004). SACOG has forecasted that Sacramento County will see an increase in population from 1,223,499 in 2000 to 1,695,498 by 2025 and over 2 million by 2050 (SACOG 2005, 2009, as cited in Sacramento County et al. 2017). The six-county Sacramento region is predicted to see an increase in population from 1,886,165 in 2000 to 2,814,254 in 2025. A large portion of this growth is expected to occur within the Planning Area in southern and eastern Sacramento County (Sacramento County et al. 2017). The general planning processes conducted by Sacramento County, Galt, and Rancho Cordova have taken into account these regional population estimates and have laid out land use frameworks to accommodate this projected population increases. As indicated in Table 4-2, generally, the land use designations for Sacramento County, Galt, and Rancho Cordova include

agriculture (including different parcel sizes and land use intensities), urban development (including different residential densities, commercial, and industrial uses), natural preserve, public or quasi-public, and recreational.

4.1.2.3 Airports

There are two public-use airports located within the Planning Area (Mather Airport and Franklin Field) and another three (Sacramento Executive, Rancho Murieta, and Eagle's Nest) located outside of the Planning Area, but within the project vicinity. In addition, there are several private airports within the Planning Area. Private airports are not part of the national air transportation network and serve private individuals, including agricultural spraying operators. Private airports in the Planning Area vary in size from single dirt airstrips to paved runways with hangars. Private airports in the Planning Area include Boeckmann Ranch Airport, Bottimore Ranch Airport, Flying B Ranch Airport, Flying R Airport, Lucchetti Ranch Airport, Mosier Airport, Mustang Airport, Sky Way Estates Airport, and Van Vleck Airport. All of the private airports are located outside of the UDA.

Mather Airport

Mather Airport, which was formerly the Mather Air Force Base, is located in the UDA portion of unincorporated Sacramento County, adjacent to Rancho Cordova (Figure 4-3). The airport is owned and operated by Sacramento County. Current redevelopment activities on the former base property include airport-related, commercial, and industrial uses (Sacramento County 2010). Mather Airport is bordered to the north and west by residential and commercial development and to the south and east by undeveloped land and agricultural operations.

Water bodies and other land uses that attract birds near Mather Airport include Mather Lake, located in Mather Regional Park approximately 2 miles east of the airport. The American River also flows approximately 3 miles northwest of the airport. Several smaller water bodies are present within Mather Airport's airport safety zone (which includes the Clear, Approach–Departure, and Overflight Zones), as are extensive areas of vernal pools. Within the airport's 5-mile separation zone are additional seasonally wet vernal pool areas to the east and south; the American River to the northwest (as noted above); and other open water/aquatic resources to the west, south, and east, including Laguna Creek. In addition, another bird attractant is the 1,084-acre Kiefer Landfill, located approximately 4.5 miles southeast of the airport.

Since its conversion from a military airfield to a public/commercial facility, non-military operations have increased at this facility, specifically air cargo, as have issues relative to local

development. During 2012, Mather Airport, a controlled airport,⁵ supported 79,786 flight operations, including cargo, general aviation, air taxi, and military. Over the 5 years from 2008 to 2012, an average of 79,535 flight operations occurred annually (FAA 2013a). The Mather Airport CLUP (SACOG 1997), as noted above, defines compatible and incompatible land uses within three airport safety zones: Clear Zone, Approach–Departure Zone, and Overflight Zone.⁶ Open space and natural areas, including natural water areas, are compatible in all three zones only if they do not result in a possibility that a water area may cause a wildlife hazard. The Mather Airport Master Plan update was adopted by the Board of Supervisors in August 2014.

Franklin Field

Franklin Field is located outside the UDA, in southern Sacramento County, approximately 1 mile northeast of the intersection of Twin Cities Road and Franklin Boulevard (see Figure 4-4). Franklin Field is currently a public-use airport owned and operated by Sacramento County.

Franklin Field is surrounded by agricultural land uses, including row crops and grazing lands. Existing drainage canals separate many of the agricultural fields, and similar canals elsewhere in the Planning Area provide habitat and resources for birds and other wildlife. Stone Lakes National Wildlife Refuge is located less than 5 miles northwest of Franklin Field and contains over 11,000 acres of publicly owned land that comprises freshwater sloughs, wetlands, vernal pools, riparian forest, and grasslands (USFWS 2013). Additional sloughs are located to the east and south of Franklin Field, which ultimately drain into the San Pablo Bay west of Vallejo. Several smaller water bodies are located within Franklin Field’s airport safety zone (which includes the Clear, Approach–Departure, and Overflight Zones), as described previously. Within the 5-mile separation zone are additional vernal pool areas to the north and east; streams and drainages along the eastern and western portions of the 5-mile separation zone; the Cosumnes River along the east and south; Stones Lakes National Wildlife Refuge to the west (as noted previously); and other open water/aquatic resources, including freshwater marshes to the south and west.

Franklin Field is considered an uncontrolled airport since it does not have an air traffic control tower or personnel. There were approximately 36,000 operations in 2008 at Franklin Field, including flight training. The Airport Master Plan Working Paper anticipates that operations at this airport will increase over time, reaching approximately 64,000 operations by 2027 (Sacramento County Airport System 2008). Currently, Franklin Field has prepared a CLUP, which was amended in 1992 (SACOG 1992). The Franklin Field CLUP (SACOG 1992), as noted in Section 4.1.1, defines compatible and incompatible land uses within the following same three airport

⁵ A controlled airport is an airport that has an operating airport traffic control tower. An uncontrolled airport does not include a traffic control tower.

⁶ See footnote 4 for a definition of each zone.

safety zones as the Mather Airport CLUP: Clear Zone, Approach–Departure Zone, and Overflight Zone. Open space and natural areas, including natural water areas, are compatible in all three zones only if they do not result in a possibility that a water area may cause a wildlife hazard.

Sacramento Executive Airport

Sacramento Executive Airport is a controlled general aviation airport located in the City of Sacramento on Freeport Boulevard, outside of but within the vicinity of the Planning Area (Figure 4-5). Over 30 businesses operate at this airport, offering a wide variety of aviation-related services, including a full-service fixed-base operator, flight schools, aircraft maintenance, avionics, and aerial photography (Sacramento County 2010).

Sacramento Executive Airport is completely surrounded by urban development, including residential and commercial land uses. Reichmuth Park is located approximately 1 mile west of the runway, and Bing Maloney golf course is adjacent to the southern edge of the airport. Neither Reichmuth Park nor Bing Maloney golf course contains any water bodies. The Sacramento River is approximately 1.5 miles west of the airport at its closest point. Few aquatic resources are present within the Sacramento Executive Airport’s safety zone (which includes the Clear, Approach–Departure, and Overflight Zones). Within the 5-mile separation zone are the Sacramento River and the Sacramento River Deep Water Ship Channel, which are located to the west, and other open water/aquatic resources, including Laguna Creek to the south.

Although Sacramento Executive Airport is located outside of the Planning Area, its area of influence extends into the Planning Area.⁷ This airport is approximately 540 acres, and much of it is already developed or in a Clear (Safety) Zone. During 2012, Sacramento Executive Airport supported 88,619 flight operations, including air carrier, air taxi, general aviation, and military. Over the 5 years from 2008 to 2012, an average of 91,784 flight operations occurred annually (FAA 2013b). Sacramento Executive Airport has a CLUP that was amended in 1999 (SACOG 1999). The Sacramento Executive Airport CLUP (SACOG 1999), as noted previously, defines compatible and incompatible land uses within the same three airport safety zones as the Mather Airport CLUP: Clear Zone, Approach–Departure Zone, and Overflight Zone. Open space and natural areas, including natural water areas, are compatible only if they do not result in a possibility that a water area may cause a wildlife hazard.

⁷ “Area of Influence” is defined as the airport planning boundaries where height, noise, or safety restrictions are imposed. Height standards for defining obstructions to air navigation are established by the FAA and are defined in Federal Aviation Regulation, Part 77, Objects Affecting Navigable Airspace. Noise restrictions are governed by California Administrative Code, Title 21, Subchapter 6. Airport safety areas are determined by the Airport Land Use Commission. The total area encompassed by these three sets of boundaries is referred to as the “Airport Area of Influence” (SACOG 1999, p. 8).

Rancho Murieta Airport

Rancho Murieta Airport is an uncontrolled airport located approximately 1 mile west of the business district of Rancho Murieta in eastern Sacramento County. The community of Rancho Murieta, including the Rancho Murieta Airport, is excluded from the Planning Area (Figure 4-6). Although this airport is not within the Planning Area, its area of influence extends into the Planning Area. The Rancho Murieta Airport is approximately 76 acres and has been active since 1970.

The airport is predominantly surrounded by residential development or agriculture to the north, east, and west. An existing riparian preserve is located adjacent to and south of the airport as part of the Cosumnes River. Thus, the Cosumnes River, as well as other open water/aquatic resources located to the south and northwest, is a major riparian resource within the Rancho Murieta airport safety zone (which includes the Clear, Approach–Departure, and Overflight Zones). Within the 5-mile separation zone are other creeks, including the continuation of the Cosumnes River, which passes in an east–west direction; vernal pools located in all directions around the airport; and other open water/aquatic resources that are located to the southeast, west, and northwest.

Rancho Murieta Airport has two relatively short runways, which are approximately 3,800 feet long (FAA 2013c), and can only accommodate smaller aircraft. It has no control tower. On average, there are 73 aircraft operations daily (based on data for the 12-month period ending December 2015) (AirNav.Com 2016a). There is no CLUP for this airport, but instead the Airport Land Use Commission Policy Plan (Airport Land Use Commission 1992) governs activity at this facility. This plan, as noted in Section 4.1.1, defines compatible and incompatible land uses within the same three airport safety zones as the Mather Airport CLUP: Clear Zone, Approach–Departure Zone, and Overflight Zone. Open space and natural areas, including natural water areas, are compatible only within all three zones if they do not result in a possibility that a water area may cause a wildlife hazard.

Eagle's Nest Airport

Eagle's Nest Airport is an uncontrolled private airport located approximately 1 mile east of the Planning Area, in the town of Lone in Amador County (Figure 4-7). It has been open since 1988 and covers approximately 600 acres. Low-density commercial and residential land uses composed of grasslands, oak woodlands, and scattered vernal pools are located in proximity and to the west and south of the airport. Willow Creek is approximately 1 mile south of the southern end of the runway. Thus, vernal pools and Willow Creek are aquatic resources within the Eagle's Nest airport safety zone (which includes the Clear, Approach–Departure, and Overflight Zones). Within the 5-mile separation zone are other creeks, including the Cosumnes River to the north; vernal pools located generally in the north, west, and south; and other open water/aquatic resources to the northwest of the airport.

Eagle’s Nest Airport has a single 4,000-foot-long runway and is used by smaller aircraft. It has no control tower and averages 21 aircraft operations per week (AirNav.Com 2016b). The lead agencies could not confirm if a CLUP was adopted for this airport but assumes the airport is operating in compliance with the Airport Land Use Commission Policy Plan (Airport Land Use Commission 1992). This plan, as noted previously, defines compatible and incompatible land uses within the same three airport safety zones as the Mather Airport CLUP: Clear Zone, Approach–Departure Zone, and Overflight Zone. Open space and natural areas, including natural water areas, are compatible within all three zones only if they do not result in a possibility that a water area may cause a wildlife hazard.

Airport Hazards

There are many hazards associated with airports that are applicable in regional land use planning. Location of new urban development must be planned in the context of airport height restrictions, noise compatibility, and wildlife hazard considerations. Given the fact that the SSHCP is a conservation planning document, the focus of this analysis is on wildlife hazards.

Birds frequently use airports and surrounding habitats because there is open space, food resources, perches, and often ponds or other aquatic resources. The use of aquatic resources by wildlife in the vicinity of airports depends greatly on the species that are present and their behaviors. Some species are resident year-round, while others are only present during migration in the spring or fall or during summer months. Species that present the greatest wildlife-strike hazard for aircraft include waterfowl and gulls, raptors, blackbirds, and other passerines (Blackwell et al. 2008).

Wildlife collisions with airplanes have increased in frequency as air traffic has increased, with approximately 11,520 wildlife collisions reported in California since 1999 (FAA 2013d). Birds are a management concern for airports, airlines, the military, and wildlife managers. Wildlife strikes on aircraft result in annual damage costs of at least \$400 million, the loss of human life, and the deaths of at least 65,000 birds (Sodhi 2002; Blackwell et al. 2008). There has been a marked increase in the incidence of avian strikes in recent decades, which may be attributable to larger, wider-bodied aircraft that are quieter, which makes evasion by birds more difficult (Sodhi 2002).

Therefore, the FAA regulates the management of wildlife attractants within air operation areas to reduce the risk of wildlife collisions. Most (66%) of bird strikes that damaged aircraft occurred less than 500 feet from the ground and within 1.5 miles of the airfield. Almost all (95%) of bird strikes occur within 3,280 feet from the ground and within 11.5 miles of the airfield (Dolbeer 2006). Analysis of this data indicates that the collisions that occur within 1.5 miles of the airfield likely result from birds that reside in the immediate vicinity of the airport.

Although it is not required by regulations or policies, the FAA Office of Airports encourages general aviation airports to conduct wildlife hazard assessments to determine what, if any, measures are needed to reduce wildlife hazards to aircraft. As part of these wildlife hazard assessments, airports would identify potential wildlife attractants within a 5-mile radius of the airport and develop measures to reduce any threats posed to aircraft by the attractant, such as issuing notices to airmen regarding the hazard or changing approach and departure paths to avoid the attractant. This can also include collaborating with the owner or proponent of the attractant to notify the airport when potentially hazardous wildlife, especially migratory waterfowl, are present at off-site locations. The FAA supports general aviation airports by making Airport Improvement Program grants available to conduct a wildlife hazards assessment.

The risk of wildlife strikes is generally increased by the presence of aquatic resources near airports, which attract large waterfowl such as ducks and geese. Waterfowl populations in managed wetlands in Central Valley flood basins can reach extremely dense concentrations, with thousands of large waterfowl covering an area of just a few acres (Silveira 1998). By contrast, vernal pools are generally relatively small, often isolated, wetlands that support only small numbers of waterfowl, shorebirds, and other water birds and only for a short period of time because vernal pools dry quickly. Often, only a single bird or pair of birds is observed at an inundated vernal pool (Silveira 1998). Vernal pools with a large surface area are reported to receive greater waterfowl use than smaller pools (Baker et al. 1992, as cited in Silveira 1998), which may be related to the large pools' longer inundation period.

4.2 ENVIRONMENTAL CONSEQUENCES/ ENVIRONMENTAL IMPACTS

4.2.1 Methodology for Assessing Impacts of Each Alternative on Land Use

The change in land use conditions anticipated under each alternative is evaluated and compared to the existing and planned land uses within the Planning Area. Impacts are identified where the actions or projects associated with an EIS/EIR alternative would be incompatible with an existing land use or would conflict with an adopted land use plan.

Potential ways the alternatives could affect land use would be by introducing uses that would be incompatible and/or inconsistent with applicable land use plans, goals, and policies. This includes assessing safety hazards of airports by assessing potential conflicts between proposed activities, including lands proposed for preservation, existing land uses, and goals and policies contained in airport planning documents.

The future projects and activities expected under each EIS/EIR alternative are described in Chapter 2. As discussed in Sections 3.6.5, the EIS/EIR impact methodology uses geographic information system (GIS) datasets that were prepared using the best available information about the amounts and locations of ground disturbance from the future projects and activities

expected under each alternative. The impact analyses presented in Sections 4.2.2, 4.2.3, and 4.2.4 are described using the Planning Area land use designations listed in Table 4-1. The analysis of each alternative also incorporates by reference certain impact analyses from the planning documents listed in Section 3.4. In accordance with NEPA regulation 43 CFR 46.135(b), where a prior analysis is incorporated, the source document, including pertinent page numbers, is cited, and the analysis is briefly described. The study period used in the Chapter 4 impact analyses is described in Section 3.6.3.

In addition, a land use compatibility analysis was also performed for each EIS/EIR alternative to identify potential incompatible uses near airports. The primary consideration was locations of aquatic land covers, which tend to be most attractive for large-bodied birds, including gulls and waterfowl, and which can also cause formation of ground fog. Using GIS, the Overflight Zones for each airport were compared to the potential locations of future preserves. The Overflight Zones identify a 10,000-foot radius from the center of each end of primary surface runways and incorporate the Clear Zone and Approach–Departure Zone. The GIS analysis then evaluated changes to any aquatic land covers within those preserves that would be potentially attractive to birds, resulting in an incompatible use within the aircraft separation zones.

The cumulative analysis of impacts from each EIS/EIR alternative was evaluated using the methodology generally described in Section 3.7. The Sacramento County, Galt, and Rancho Cordova General Plan EIRs (Sacramento County 2010; Galt 2008; Rancho Cordova 2006b) evaluated the cumulative effects of the future urban development planned by that jurisdiction. (However, the Sacramento County General Plan (2011) did not analyze new development outside the current Urban Policy Area boundary but instead established policies for how such future development could be considered.) Where the cumulative impact analysis and assumptions used in a general plan EIR document was determined by the lead agencies to be appropriate for use in the impact analyses of an EIS/EIR alternative, a brief summary or description of the incorporated analysis is provided. As discussed in Section 3.4, the three General Plan EIRs used different study periods ending in 2030 (Galt 2008), 2030 (Rancho Cordova 2006b), and 2050 (Sacramento County 2010). However, the 50-year study period for this EIS/EIR ends in 2065 (Section 3.6.3). Therefore, additional urban development can be expected to occur within Galt, Rancho Cordova, and Sacramento County in the years after their General Plan EIR study period ends but before this EIS/EIR's study period ends in 2065. Consequently, the impact analyses and conclusions incorporated from the three General Plan EIRs may not have considered all of the future urban development that is included in the project description of each EIS/EIR alternative. Therefore, when determining the significance of each impact described in the EIS/EIR, the lead agencies considered the impact analysis and the conclusions incorporated by reference from the General Plan EIRs, along with the effects of all urban development activities and projects that are included in the description of each EIS/EIR alternative.

The study area used in Chapter 4 for the cumulative analysis of each EIS/EIR alternative on land use is the EIS/EIR Planning Area plus lands within the City of Elk Grove, the City of Elk Grove's SOI, and the community of Rancho Murieta (see Figure 1-1).

Determination of Impact Significance

As discussed in Section 3.8.1, the criteria used to evaluate the significance of each alternative's impacts on land use are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.) and on typical thresholds used to evaluate land use effects and incompatibilities in recent EIRs prepared by Sacramento County. Based on these sources, a significant adverse impact would occur if the alternative would:

1. Conflict with any applicable adopted land use plan, policy or regulation of a federal, state or local agency with jurisdiction over the project (including but not limited to a general plan, specific plan or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect;
2. Physically disrupt or divide an established community;
3. Result in a safety hazard for people residing or working in the vicinity of an airport/airstrip;
4. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks; or
5. Displace substantial amount of existing housing, necessitating the construction of replacement housing elsewhere.

Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.) does not provide suggested criteria for determining a beneficial effect. The following criteria and thresholds were developed by the lead agencies:

A beneficial effect to land use would occur if the alternative would:

1. Reduce existing conflicts with an applicable adopted land use plan, policy, or regulation of a federal, state, or local agency with jurisdiction over the project (including but not limited to a general plan, specific plan, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect;
2. Reduce physical disruption or division of an established community;
3. Reduce a safety hazard for people residing or working in the vicinity of an airport/airstrip;
4. Reduce changes in air traffic patterns, including either an increase in traffic levels or a change in location that reduces substantial safety risks; or

5. Reduce displacement of existing housing, necessitating less construction of replacement housing elsewhere.

4.2.2 No Action/No Project Alternative

The No Action/No Project Alternative is described in Section 2.2.

4.2.2.1 Direct and Indirect Effects of the Alternative

Anticipated changes to the existing land use designations within the Planning Area are shown in Table 4-3.

Table 4-3. Changes to Existing Land Use Designations under the No Action/No Project Alternative

Land Use Designation	Existing Land Use Designations in Planning Area (acres)	Existing % of Planning Area	Land Use Designations Removed from Development (acres)	New Land Use Designations in Planning Area (acres)	New % of Planning Area
Agricultural Cropland	82,279	25.9	2,263	80,016	25.19
Agricultural Residential	24,926	7.8	3,484	21,442	6.75
Agricultural Urban Reserve	1,907	0.6	709	1,198	0.38
General Agriculture (20 Acres)	38,720	12.2	9,528	29,192	9.19
General Agriculture (80 Acres)	106,692	33.6	6,453	100,239	31.56
<i>Total Agriculture</i>	<i>254,524</i>	<i>80.1</i>	<i>22,437</i>	<i>232,087</i>	<i>73.06</i>
Low Density Residential	6,263	2.0	2,958	3,305	1.04
Medium Density Residential	687	0.2	156	531	0.17
High Density Residential	223	0.1	17	206	0.06
Commercial – Office	2,272	0.7	536	1,736	0.55
Industrial Extensive	4,362	1.4	1,787	2,575	0.81
Industrial Intensive	3,408	1.1	1,139	2,269	0.71
Specific Plan Area	7,008	2.2	3,647	3,361	1.06
Other Mixed-Use Development	142	0.0	45	97	0.03
Urban (Future) ¹	0	0	3,794	37,484	11.80
<i>Total Urban</i>	<i>24,365</i>	<i>7.7</i>	<i>14,079</i>	<i>51,564</i>	<i>16.23</i>
Natural Preserve	18,556	5.8	390	18,166	5.72
Public/Quasi-Public	8,896	2.8	1,876	7,020	2.21
Recreation	3,328	1.0	461	2,867	0.90
Rights-of-Way ³	7,986	2.5	2,035	5,949	1.87
TOTAL³	317,655	100.0	37,484	317,655	100.0

Notes:

¹ Urban (future) represents the total area of projected urban development under the No Action/No Project Alternative; The land use designation of these areas after development is not known at this time.

² The “rights-of-way” designation represents areas of roadways, utility corridors, and other areas where a local land use authority has granted rights-of-way, and no land use designation was retained.

³ Table columns may not total precisely due to rounding.

As described in Section 2.2.2, the urban development expected under the No Action/No Project Alternative (Table 4-3) would occur under the General Plans of Sacramento County, Rancho Cordova, and Galt. The General Plan EIRs, described in Sections 3.4.1, 3.4.2, and 3.4.3, analyzed the compatibility of land uses and consistency with general plan policies within Sacramento County, Galt, and Rancho Cordova. The land use analyses from each of these General Plan EIRs provide the foundation of the impact analysis for the No Action/No Project Alternative. The relevant land use impact analyses from each General Plan EIR are summarized and incorporated by reference below.

The impact analyses presented in the *Final Environmental Impact Report: Sacramento County General Plan Update* (Sacramento County General Plan EIR) (Sacramento County 2010) determined the following within Sacramento County:

- Proposed future land uses would not conflict with existing adjacent land use plans or programs or divide an existing community resulting in a less-than-significant impact (Sacramento County 2010, pp. 3-22 to 3-66).
- General plan policies for expansion of the UPA would conflict with some smart growth principles, and the physical effects of the policy conflicts could result in significant impacts related to loss of open space and development outside of the urban environment (Sacramento County 2010, pp. 3-22 to 3-66).
- Displacement of housing due to roadway expansions would result in a less-than-significant impact (Sacramento County 2010, pp. 3-22 to 3-66).
- Compliance with the airport CLUPs would ensure airport safety impacts would be less than significant (Sacramento County 2010, pp. 3-22 to 3-66).
- Planned urban growth within the Jackson Highway Corridor⁸ would conflict with “smart growth principles” that direct development towards existing urbanized areas and away from open space, and this urban growth would result in a significant and unavoidable impact to existing land use policy (Sacramento County 2010, pp. 3-22 to 3-66).

The impact analysis presented in the *City of Galt General Plan Update: 2030 Final EIR* (Galt General Plan EIR) (Galt 2008) determined the following within the City of Galt SOI:

- Planned Urban development described in the Galt General Plan (Galt 2009) would not physically divide an established community, or conflict with an adopted land use plan

⁸ As described further in Section 3.4.1, the proposed project analyzed within the Sacramento County General Plan EIR assumed development within a designated “Jackson Highway Corridor New Growth Area” that was not a part of the alternative ultimately selected by the County. However, the County is currently processing Master Plans in the Jackson Highway Corridor, so the referenced conclusions from the proposed project analysis are relevant to the No Action/No Project Alternative.

including a habitat conservation plan, resulting in a less-than-significant impact (Galt 2008, pp. 4-1 to 4-9).

- Planned Urban development along Highway 99 would be located within one mile of Mustang Airport which could result in a land use conflict. The addition of a new policy requiring using the Caltrans Airport Land Use Planning Handbook when reviewing projects within a mile of the airport would reduce impacts to less than significant (Galt 2008, pp. 4-1 to 4-9).

The Galt General Plan EIR did not address displacement of existing housing that would necessitate the construction of replacement housing elsewhere.

The impact analysis presented in the *City of Rancho Cordova General Plan Final EIR* (Rancho Cordova General Plan EIR) (Rancho Cordova 2006b), determined the following within Rancho Cordova:

- New urban development would not divide an established community, conflict with a habitat conservation plan, or result in incompatible land uses based on compliance with general plan land use policies resulting in a less-than-significant impact (Rancho Cordova 2006b, pp. 4.1-1 to 4.1-62).
- Conflicts with other land use plans, policies and regulations would occur with the Mather Airport CLUP, Sacramento County General Plan, and the Mather Field Specific Plan resulting in a significant and unavoidable impact (Rancho Cordova 2006b, pp. 4.1-1 to 4.1-62).
- New urban development would not result in the displacement of existing housing resulting in a less-than-significant impact (Rancho Cordova 2006b, p. 4.3-14).

The 50-year study period for this EIS/EIR ends in 2065, which is after the study periods of the three previously referenced General Plan EIRs. Consequently, additional urban development not analyzed in the three General Plan EIRs would occur between the end of the three General Plan EIRs' analysis periods and the end of the EIS/EIR's study period. This additional development would include the displacement or shifting of 1,900 acres of urban development outside the UDA under the No Action/No Project Alternative (as described in Section 2.2.3) and would result in longer or increased vehicle trips, an increase in air pollutants (Chapter 14), and a potential loss of agricultural land (Chapter 6). Because the No Action/No Project Alternative would be inconsistent with regional transportation plans (Chapter 13) and result in extension of development beyond the existing USB, the No Action/No Project Alternative is inconsistent with the 2036 MTP/SCS (SACOG 2016). Similarly, because the *Sacramento Region Blueprint Transportation and Land Use Plan* (SACOG 2004) emphasizes infill and other revitalization and relies on smart growth principles, the shift or displacement of 1,900 acres of new development to locations beyond the current USB would also conflict with the *Sacramento Region Blueprint Transportation and Land Use Plan*.

Development outside the current UDA would also be inconsistent with Sacramento County and Rancho Cordova's adopted general plans, specifically smart growth policies discussed in Section 4.1.1. For example, Sacramento County's Policy LU-122 (Sacramento County 2011) specifically states the "Urban Policy Area is intended to provide an adequate supply of developable land sufficient to accommodate projected growth," and Sacramento County will "evaluate the UPA at a minimum of five-year intervals, to determine if an expansion is needed to maintain a constant adequate supply of land." Policy LU-127 states that Sacramento County shall not expand the USB unless specific conditions are met or that Sacramento County finds the expansion "would provide extraordinary environmental, social or economic benefits and opportunities to the County" (Sacramento County 2011, pp. 132, 134). The intent of these policies is to ensure any expansion of the UPA or USB is done thoughtfully to avoid inconsistencies with potential impacts to adjacent areas. An inconsistency with smart growth policies would contribute further to the already significant, unavoidable impacts described in the Sacramento County and Rancho Cordova General Plan EIRs discussed previously.

Consistency with the Delta Plan was not analyzed as part of the EIRs for the General Plans of Sacramento County, Galt, and Rancho Cordova. Based on a review of the Delta Plan screening criteria⁹ (Delta Stewardship Council 2014) that local land use authorities would use to make this determination and the fact that most new development under the No Action/No Project Alternative would be located outside the southwestern portion of the Planning Area that is within the Primary or Secondary Zones of the Delta Plan, few of the projects and activities implemented under the No Action/No Project Alternative would be subject to Delta Plan consistency. However, urban development outside the UDA could potentially conflict with Policy P-3 that requires buffers between urban development and agricultural operations. This would be a less-than-significant, adverse impact to consistency with adopted plans and policies.

As explained in Section 2.2, under the No Action/No Project Alternative, mitigation for impacts to listed species or existing aquatic resources from new urban development would continue to include avoidance and compensation, including establishment of on-site or off-site preserves. As discussed in Section 2.2.5, management of mitigation preserves and mitigation banks could continue to include a variety of habitat management activities, such as livestock transportation for grazing management, fence repair, and visits by preserve managers for maintenance and monitoring. Many of these preserves established under the No Action/No Project Alternative would be located in the UDA and would eventually be

⁹ The screening criteria for this determination are available here: <http://deltacouncil.ca.gov/sites/default/files/2014/11/2014-11-25-Covered-Actions-Checklist.pdf>

surrounded by urban development. With that proximity to development, preserve management and monitoring activities could result in conflicts with existing and planned land uses. However, under the No Action/No Project Alternative management and monitoring activities on new preserves are not expected to be intensive relative to existing conditions, and management and monitoring activities would not result in incompatibility with adjacent land uses or inconsistencies with any applicable planning document. Therefore, mitigation preserves established under the No Action/No Project Alternative would not be incompatible with adjacent land uses or with any of the planning documents discussed in Section 4.1.1. Consequently, the No Action/No Project Alternative preserves would result in a less-than-significant impact to adjacent land uses and would not be inconsistent with existing planning documents. Agricultural compatibility is analyzed in Section 6.2.2.

Preserves established as mitigation under the No Action/No Project Alternative would not be located within any established community, and the Preserve System would not require physically changing or altering an existing developed area or adding a new population. Therefore, the No Action/No Project Alternative would not disrupt an established community or displace existing housing and would have **No Impact** on any established community or existing housing.

Depending on the location, establishment of new on-site or off-site mitigation preserves could contribute to potential safety hazards associated with wildlife strikes on aircraft. In general, the airports within or adjacent to the Planning Area, including Sacramento Executive, Mather, Franklin Field, Rancho Murieta, and Eagle's Nest, are located near urban development, undeveloped lands, and agricultural areas. The urban development that would occur under the No Action/No Project Alternative could eliminate some aquatic resources that currently attract hazardous wildlife, and re-established or established aquatic resources could create new hazardous wildlife attractants. As stated in Section 2.2.2, re-establishment and/or establishment to mitigate for impacts to aquatic resources under the Clean Water Act, Section 404, would typically occur at a 1:1 ratio; therefore, there would be no net change in wetlands acres in the Planning Area from activities and projects authorized under Clean Water Act, Section 404. Aquatic resources could be re-established or established in open space areas within the Overflight Zone to replace those wetlands lost due to development; however, the CLUPs and the Airport Land Use Commission Policy Plan note that open space and natural areas, including natural water areas, are compatible within all the airport safety zones only if the mitigation area does not cause a wildlife hazard (Airport Land Use Commission 1992; State of California Department of Transportation 2011). Therefore, the Clean Water Act, Section 404, compensatory mitigation for project impacts under the No Action/No Project Alternative could increase aquatic resources within existing airport safety zone areas, potentially creating an incompatible use due to increased wildlife hazards. Based

on the FAA's recent interest in projects near airports, the EIS/EIR assumes that local land use authorities in the Planning Area will continue to consider potential wildlife hazards when evaluating proposed projects in their jurisdictions, including wetland establishment and/or re-establishment. However, that oversight by local land use authorities would only occur if the project is subject to CEQA review. Otherwise, the project would likely proceed without consideration to wildlife hazards.

In summary, aquatic resources re-establishment and establishment mitigation expected under the No Action/No Project Alternative could potentially increase the safety hazards associated with wildlife strikes on aircraft if the location of re-established or established aquatic resources creates a greater risk of wildlife strike than the existing aquatic resources that are removed by the new development. However, it is equally likely that new aquatic resource locations will be farther away from airport safety zones. Therefore, the No Action/No Project Alternative would have a less-than-significant impact on airport safety.

4.2.2.2 Cumulative Effects of the Alternative

As discussed in Section 3.7.1 and 4.1.2.1, past and present agricultural operations; urban development; development of agricultural-residential neighborhoods and other rural development; mining operations; and construction of energy, water conveyance, flood control, and transportation infrastructure projects, such as facilities owned and managed by the California Department of Transportation and the Department of Water Resources, have altered land use throughout the study area. These past and present alterations have resulted in the existing conditions of land use described in Section 4.1.2.

The types of reasonably foreseeable future other projects, activities, and actions, described in Section 3.7.2, are similar to the types of past and present actions that occurred in the study area. The reasonably foreseeable future other actions in the study area (see Section 3.7.2 and 4.1.2.1) that were not included in the Section 2.2.2 description of the No Action/No Project Alternative include additional new urban development in Elk Grove and Rancho Murieta, master planned developments inside the UDA named Rio Del Oro and Mather South, further rural residential development outside the UDA, continued development of cultivated agricultural lands, expansion of existing preserves, and development of major infrastructure projects such as the California High-Speed Rail and the California WaterFix (see Section 3.7.2 for details of these projects). Some of these foreseeable "other" future actions are consistent with the existing land use plans discussed in Section 4.1.1.4; however, the buildout of the Elk Grove's future SOI expansion and development north of Rancho Murieta would affect the existing land use designations in the Planning Area outside the UDA. These other foreseeable developments would conflict with Sacramento County General Plan (Sacramento County 2011), the 2036 MTP/SCS (SACOG

2016), and the *Sacramento Region Blueprint Transportation and Land Use Plan* (SACOG 2004), which prioritize locating new development within the existing USB. These inconsistencies of past, present, and reasonably foreseeable future other projects and activities with existing land use plans would be a cumulatively significant adverse impact.

In addition, as discussed in Section 4.2.2, under the No Action/No Project Alternative, approximately 1,900 acres of planned urban development would be shifted or displaced to areas outside the current UDA, which would probably be to areas south of the Elk Grove SOI or areas near Rancho Murieta. This displaced development of the No Action/No Project Alternative would add to the land use impacts of reasonably foreseeable development in the Elk Grove SOI and Rancho Murieta areas. Because the No Action/No Project Alternative would add to the existing land use plan conflicts of past and present activities and the reasonably foreseeable future projects, the No Action/No Project Alternative would substantially contribute to the existing significant cumulative impact to land use from past, present, and reasonably foreseeable projects present in the study area.

4.2.3 Proposed Action/Proposed Project

The Proposed Action/Proposed Project Alternative is described in Section 2.3.

4.2.3.1 Direct and Indirect Effects of the Alternative

Under the Proposed Action/Proposed Project Alternative, approval, issuance of Incidental Take Permits, and implementation of the SSHCP would occur as described in Section 2.3.

As shown in Table 4-4, under the Proposed Action/Proposed Project Alternative, approximately 19.2% of the Planning Area (34,852 acres) would be developed with urban uses during the 50-year study period.

**Table 4-4. Changes to Existing Land Use Designations under the Proposed Action/
Proposed Project Alternative**

Land Use Designation	Existing Land Use Designations in Planning Area (acres)	Existing % of Planning Area	Land Use Designations Removed from Development (acres)	New Land Use Designations in Planning Area (acres)	New % of Planning Area
Agricultural Cropland	82,279	25.9%	1,601	80,679	25.4%
Agricultural Residential	24,926	7.8%	3,059	21,867	6.9%
Agricultural Urban Reserve	1,907	0.6%	845	1,062	0.3%
General Agriculture (20 Acres)	38,720	12.2%	9,125	29,595	9.3%
General Agriculture (80 Acres)	106,692	33.6%	5,568	101,123	31.8%
<i>Total Agriculture</i>	<i>254,524</i>	<i>80.1%</i>	<i>20,198</i>	<i>234,325</i>	<i>73.8%</i>
Low Density Residential	6,263	2.0%	3,191	3,071	1.0%
Medium Density Residential	687	0.2%	160	527	0.2%
High Density Residential	223	0.1%	17	206	0.1%
Commercial – Office	2,272	0.7%	528	1,745	0.5%
Industrial Extensive	4,362	1.4%	1,414	2,949	0.9%
Industrial Intensive	3,408	1.1%	1,219	2,190	0.7%
Specific Plan Area	7,008	2.2%	3,420	3,589	1.1%
Other Mixed Use Development	142	0.0%	44	98	0.02%
Urban (Future) ¹	0	0.0%	0	34,852	11.0%
<i>Total Urban</i>	<i>24,365</i>	<i>7.7%</i>	<i>9,993</i>	<i>49,227</i>	<i>19.1%</i>
Natural Preserve	18,556	5.8%	555	18,001	5.7%
Public/Quasi-Public	8,896	2.8%	1,856	7,040	2.2%
Recreation	3,328	1.0%	457	2,871	0.9%
Rights-of-Way ²	7,986	2.5%	1,792	6,192	2.0%
TOTAL³	317,655	100.0%	34,852	317,655	100.0%

Notes:

- ¹ Urban (future) represents the total area of projected urban development under the Proposed Action/Proposed Project Alternative, which would be located primarily within the UDA. The land use designation of these areas after development is not known at this time.
- ² The "rights-of-way" designation represents areas of roadways, utility corridors, and other areas where a local land use authority has granted rights-of-way, and no land use designation was retained.
- ³ Table columns may not total precisely due to rounding.

The Covered Activities of the Proposed Action/Proposed Project Alternative include the same types of urban development projects and activities that are discussed under the No Action/No Project Alternative. However, under the Proposed Action/Proposed Project Alternative, 1,900 acres of urban development would not be "displaced" outside of the UDA. The Proposed Action/Proposed Project Alternative would not result in urban development replacing agricultural lands outside the UDA, and therefore, would not result in the inconsistencies with existing general plans that are described for the No Action/No Project Alternative in Section 4.2.2.

As discussed in Section 2.3.5, the Proposed Action/Proposed Project Alternative would include an interconnected and coordinated SSHCP Preserve System. Within the UDA, the locations of some individual preserves of the future SSHCP Preserve System are already known because they are proposed as part of pending projects. Both inside and outside of the UDA, other preserves needed to complete the Preserve System would be acquired by following certain criteria to preserve existing habitat for Covered Species, including preservation of currently undeveloped lands that support vernal pools. Although the Proposed Action/Proposed Project Alternative does not identify the specific locations of lands that would be acquired for the Preserve System, it is anticipated that preserves would be located on undeveloped or agricultural lands with high quality habitats or special-status species populations or on lands natural land that connect existing preserve areas. Such potential preserve sites would be non-urbanized and typically outside of established communities, and therefore, it is not anticipated that the establishment of new preserves under the Proposed Action/Proposed Project Alternative would affect established communities.

However, the Proposed Action/Proposed Project Alternative would allow for more development in the MCRA than the No Action/No Project Alternative (refer to Section 2.2.2). This would allow urban development Covered Activities within the MCRA and the rest of the UDA to be implemented consistently with the Sacramento County General Plan and the Rancho Cordova General Plan without urban development shifting or being displaced to locations outside the current USB.

The Proposed Action/Proposed Project Alternative has been designed to complement and help implement the goals and policies of the Sacramento County General Plan and of ordinances adopted for the protection of resources, as discussed in Section 4.1.1.4. The Proposed Action/Proposed Project Alternative provides a means to implement several of the policies in the Land Use Elements of the Sacramento County General Plan, Rancho Cordova General Plan, and Galt General Plan, contributing to consistency with these plans. These include, but are not limited to, Sacramento County General Plan Policy CO-58 (Sacramento County 2011), which ensures no net loss of wetlands, riparian woodlands, and oak woodlands, and Sacramento County General Plan Policy CO-65 (Sacramento County 2011), which requires the creation of a network of preserves linked by wildlife movement corridors (see Section 4.1.1.4). The Sacramento County General Plan (Sacramento County 2011) also includes numerous conservation and open space policies to ensure resources and habitat are identified and protected as development occurs and specifically supports the goals and objectives of the SSHCP.

The Galt General Plan (Galt 2008) and the Rancho Cordova General Plan (Rancho Cordova 2006a) include policies designed to protect species habitat and aquatic resources as Galt and Rancho Cordova continue to develop, and the Proposed Action/Proposed Project

Alternative would be consistent with those policies. Specifically, the Galt General Plan (Galt 2008) includes Policy LU-1.10, which requires working with Sacramento County to coordinate habitat preservation efforts, and Policy LU-9.1, which states that Galt will participate in establishing a permanent agriculture, open space, and wildlife habitat greenbelt between Galt and Elk Grove. The Rancho Cordova General Plan (Rancho Cordova 2006a) includes several policies to conserve natural resources within Rancho Cordova and specifically supports the goals and objectives of the SSHCP. Rancho Cordova General Plan Policy NR.1.1 requires the protection of rare, threatened, and endangered species and their habitats in compliance with federal and state law; Rancho Cordova General Plan Policy NR.1.6 requires participation in the development of an HCP; and Rancho Cordova General Plan Policy NR.2.1 requires “no net loss” of wetlands consistent with current federal and state aquatic resource regulations (discussed in Section 4.1.1.4) (Rancho Cordova 2006a).

As discussed in Section 4.1.1, approximately 41,000 acres within the southwestern portion of the Planning Area falls within the Primary Zone of the Delta Plan. The Proposed Action/Proposed Project Alternative’s stated biological goals (Section 2.3) are consistent with the Delta Plan policies for restoring, protecting, and enhancing the Delta ecosystem and water supply (Section 4.1.1). Therefore, the Proposed Action/Proposed Project Alternative would be less likely to result in inconsistencies with the Delta Plan, relative to the No Action/No Project Alternative. Because projected urban development described under the adopted general plans would be accommodated within the existing UDA, the Proposed Action/Proposed Project Alternative would result in fewer potential conflicts with existing general plans than under the No Action/No Project Alternative, in which approximately 1,900 acres of planned urban development could be shifted or displaced to areas outside the current USB (see Section 4.4.4).

Further, the Proposed Action/Proposed Project Alternative would implement more of the natural resource protections included in the Sacramento County General Plan (Sacramento County 2011), the Delta Plan (Delta Stewardship Council 2013), and the Land Use and Resource Management Plan for the Primary Zone of the Delta (Delta Protection Commission 2010) compared to the No Action/No Project Alternative. Therefore, the Proposed Action/Proposed Project Alternative would result in a **Minor Beneficial** effect to land use plan compatibility compared to the land use plan compatibility expected under the No Action/No Project Alternative.

As indicated in Section 2.3.5, the Proposed Action/Proposed Project Alternative includes a large, interconnected Preserve System and a comprehensive preserve management program. Most preserve land management activities would maintain existing land uses (e.g., grazing, agriculture), with only minor modifications to enhance quality of species habitat. As with the No Action/No Project Alternative, preserve management under the Proposed Action/Proposed Project Alternative would also include a variety of habitat management activities, including transportation of sheep, goats, or cattle for grazing management; fence repair; wildlife or vegetation surveys; and visits by preserve managers for maintenance and monitoring (Table 2-3, Section 2.3.6). Similar to the No

Action/No Project Alternative, preserves located inside the UDA would eventually be surrounded by urban development. With that proximity to development, preserve management and monitoring have potential to conflict with existing and planned land uses. However, a preserve management plan would be prepared for each SSHCP preserve located inside the UDA, which would avoid or minimize preserve activities potential effects on surrounding areas. The preserve management plan would provide a coordinated way to minimize incompatibilities with existing or planned land uses or conflicts with existing land use plans. Avoidance and Minimization Measure (AMM) EDGE-1 would prioritize compatible adjacent uses next to SSHCP preserves. The Proposed Action/Proposed Project Alternative would include an interconnected Preserve System, which includes larger core preserves (rather than the often smaller and more isolated preserves that would be established without a coordinated process under the No Action/No Project Alternative) (see Section 2.3.5). The Proposed Action/Proposed Project Alternative preserve design would reduce conflicts between urban uses and open space/wildlife uses when compared to the conflicts expected under the No Action/No Project Alternative. Therefore, there would be either no difference to or a minor benefit to (i.e., reduction in) land use impacts from preserve activities under the Proposed Action/Proposed Project Alternative when compared to land use impacts expected under the No Action/No Project Alternative. Therefore, the Proposed Action/Proposed Project Alternative preserve system would have a **Minor Beneficial** effect on land use plan compatibility relative to the land use plan compatibility of the No Action/No Project Alternative. Agricultural compatibility is analyzed in Section 6.2.3.

The interconnected Preserve System would not be located within any established community, and the Preserve System would not require physically changing or altering an existing developed area or adding a new population. Therefore, the Proposed Action/Proposed Project Alternative would have **No Impact** on disrupting an established community or displacing existing housing compared to the No Action/No Project Alternative baseline condition.

The Proposed Action/Proposed Project Alternative includes acquisition, monitoring, and management of a Preserve System. The Preserve System would create habitat to support a variety of natural land covers and species habitats in the Planning Area. The creation or establishment of new aquatic habitats or the re-establishment of aquatic habitats could contribute to the potential for airport safety hazards (e.g., wildlife strikes) to occur. An analysis is provided below that addresses this potential safety concern for airports within or adjacent to the Planning Area (see Figures 4-3 through 4-7 and the existing condition of each Planning Area airport presented in Section 4.1.2).

Aquatic habitat is a focus of the airport wildlife hazard assessment because it has potential to attract water birds that are considered hazardous to aircraft. The assessments include evaluation of the potential for collisions by birds with aircraft above the Planning Area and elsewhere as a result of synergistic effects between new and existing aquatic resources or other wildlife attractants.

As indicated in EIS/EIR Chapters 8 and 10, the Proposed Action/Proposed Project Alternative would prioritize re-establishment/establishment of vernal pools in the MCRA rather than freshwater marsh or open water aquatic resources. As discussed in Section 4.1.2.3, vernal pools hold water for only a few weeks or months and for much shorter periods than freshwater marsh, seasonal wetlands, and other aquatic resources, and thus, attract water birds for less time per year than other wetland types. Therefore, wildlife attractants near Mather Field in the MCRA may be reduced under the Proposed Action/Proposed Project Alternative compared to the No Action/No Project Alternative baseline condition.

Further, AMM AIRPORT-1 indicates that, prior to any re-establishment or establishment of wetlands that would result in a net increase in area of freshwater marsh or open water in the Preserve System or a substantial increase in the proximity of open water or freshwater marsh to airports, an approved biologist must evaluate the proposed establishment/re-establishment activity and the types of wildlife that it will attract (including types/quantities of birds or other wildlife), and provide recommendations on how to reduce wildlife hazards, if feasible. Therefore, AMM AIRPORT-1 would further reduce potential impacts on aircraft hazards and improve the coordination between aquatic resource re-establishment/establishment projects and the Sacramento County Department of Airports.

The Preserve System of the Proposed Action/Proposed Project Alternative would not re-establish or establish aquatic resources within the safety zones of Sacramento Executive Airport. Thus, there would not be an increased risk of wildlife strike hazards at Sacramento Executive Airport compared to the No Action/No Project Alternative baseline condition.

The Proposed Action/Proposed Project Alternative could result in additional preserves being established within the Overflight Zones or 5-mile separation zones for other airports within or adjacent to the Planning Area. Aquatic resources, especially vernal pools, would be re-established and/or established within the Preserve System. The CLUPs and FAA's latest Advisory Circular note that open space and natural areas, including natural wetland areas, are compatible within all the airport safety zones only if wetland areas or preserves do not cause a wildlife hazard. Relative to freshwater marsh or open water wetland, vernal pools rarely hold water, and thus, are only occasionally used by water birds (Silveira 1998). During preserve planning, the planning for re-establishment or establishment of aquatic resources would comply with the policies and regulations of the relevant airport safety zone (see Sections 4.1.1.1, 4.1.1.4, and 4.1.2.1). The Proposed Action/Proposed Project Alternative's adherence to wildlife hazard policies in the CLUPs or FAA Advisory Circular would ensure that established or re-established aquatic resources do not result in wildlife hazards at any Planning Area airport. Potential increases in wildlife strike hazards at these airports would also be reduced through the planning process described for AMM AIRPORT-1 in Chapter 5 of the SSHCP document (EIS/EIR Appendix D).

In addition to wildlife strike hazard, aquatic resources located within the Overflight Zone and/or 5-mile separation zone can generate ground fog. The analysis for the potential of ground fog creation is based on the elevation of the water area, the distance from the runway, and the prevailing winds. AMM AIRPORT-1 in the SSHCP (Appendix D) would ensure that the design of preserve areas, including wetlands, takes into consideration the potential for ground fog creation.

The Proposed Action/Proposed Project Alternative would result in less potential for inconsistencies with the adopted airport CLUPs and other relevant policies relative to inconsistencies expected under the No Action/No Project Alternative condition. The Proposed Action/Proposed Project Alternative would also not increase the risk of wildlife strike hazards at the airports in the Planning Area compared to the No Action/No Project Alternative. Therefore, the Proposed Action/Proposed Project Alternative would have a **Minor Beneficial** effect on airport safety when compared to airport safety under the No Action/No Project Alternative baseline condition.

Significance of Direct and Indirect Impacts

Compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project Alternative would include the following actions:

- Avoid inconsistencies with existing land use plans
- Minimize potential conflicts of preserve management and monitoring activities by siting compatible uses near preserves and by providing a coordinated way to minimize incompatibilities with existing or planned land uses or conflicts with existing plans
- Improve compatibility with airports and minimize potential airport safety hazards by implementing a planning process that coordinates wetlands re-establishment/establishment with airport planning staff

Therefore, when considering the totality of direct and indirect effects discussed previously, the Proposed Action/Proposed Project Alternative would result in **Minor Beneficial** effects to land use when compared to the No Action/No Project Alternative baseline condition.

4.2.3.2 Cumulative Effects of the Proposed Action/Proposed Project Alternative

As described in Sections 3.7.1 and 4.1.2.1, past and present human activities in the Planning Area converted much of the historically undeveloped lands to agricultural use, and then some of that agricultural use has been converted to developed land. These and other past and present human activities are reflected in the acres of existing land use described in Table 4-2.

The types of reasonably foreseeable future other projects, activities, and actions described in Section 3.7.2 are similar to the types of past and present actions that occurred in the Planning

Area. These foreseeable “other” projects, activities, and actions include new urban development within the City of Elk Grove and within Rancho Murieta, master planned developments in the UDA named “Rio Del Oro” (3,828 acres) and “Mather South” (885 acres) further rural residential development outside the UDA, continued urban development on cultivated agricultural lands, expansion of existing preserves, and development of major infrastructure projects such as the California High-Speed Rail and the California WaterFix.

Two of the reasonably foreseeable future projects described in Section 3.7, the buildout of the City of Elk Grove’s future SOI expansion and new development north of Rancho Murieta, would ultimately affect the planned land uses outside the UDA. These two foreseeable other projects would conflict with the Sacramento County General Plan (Sacramento County 2011), the 2036 MTP/SCS (SACOG 2016), and the *Sacramento Region Blueprint Transportation and Land Use Plan* (SACOG 2004), which are all land use planning documents that prioritize new urban development within the existing USB. The types and amounts of urban development Covered Activities (including associated transportation and recycled water Covered Activities) described under the Proposed Action/Proposed Project Alternative (Section 2.3.3) are very similar to the planned urban development described within the General Plans for Sacramento County, Galt, and Rancho Cordova. The changes in land use designations to allow the urban development and infrastructure Covered Activities of the Proposed Action/Proposed Project Alternative would be consistent with the 2036 MTP/SCS, the *Sacramento Region Blueprint Transportation and Land Use Plan*, and the Delta Plan because they would confine urban development to the UDA. Further, the changes in land use designations under the Proposed Action/Proposed Project Alternative to allow urban development and infrastructure Covered Activities are consistent with the Sacramento County, Galt, and Rancho Cordova General Plan land use policies that encourage development projects to evaluate conservation to minimize or avoid impacts to biological resources.

As identified in Section 4.2.2, the incremental impacts of the No Action/No Project Alternative on existing land use designations, when considered together with changes to land use designations resulting from past, present, and reasonably foreseeable projects and activities in the cumulative study area, would have a significant adverse cumulative effect on land use by conflicting with up to six existing land use plans. As discussed in Section 3.6.1, this EIS/EIR evaluates the future impacts of the two action alternatives relative to the future conditions expected under the No Action/No Project Alternative. Because the Proposed Action/Proposed Project Alternative would not conflict with any existing land use plans, the Proposed Action/Proposed Project Alternative would have a smaller incremental contribution to the Planning Area’s cumulative conflicts with existing land use plans. Therefore, the Proposed Action/Proposed Project Alternative would result in a **Minor Beneficial Cumulative** effect when compared to the No Action/No Project Alternative baseline condition.

4.2.4 Reduced Permit Term Alternative

The Reduced Permit Term Alternative is described in Section 2.4.

4.2.4.1 Direct and Indirect Effects of the Alternative

As described in Section 2.4, the Reduced Permit Term Alternative would include similar types of new urban development as the No Action/No Project Alternative (Section 4.2.2) and the Proposed Action/Proposed Project Alternative (Section 4.2.3).

As shown in Table 4-5, under the Reduced Permit Term Alternative, approximately 16.2% of the Planning Area (37,398 acres) would be developed with urban uses by the end of the 50-year study period.

Table 4-5. Changes in Existing Land Use Designation under the Reduced Permit Term Alternative

Land Use Designation	Existing Land Use Designations in Planning Area (acres)	Existing % of Planning Area	Land Use Designations Removed from Development (acres)	New Land Use Designations in Planning Area (acres)	New % of Planning Area
Agricultural Cropland	82,279	25.9	1,667	80,612	25.4
Agricultural Residential	24,926	7.8	3,232	21,694	6.8
Agricultural Urban Reserve	1,907	0.6	845	1,062	0.3
General Agriculture (20 Acres)	38,720	12.2	9,811	28,909	9.1
General Agriculture (80 Acres)	106,692	33.6	6,476	100,216	31.6
<i>Total Agriculture</i>	<i>254,524</i>	<i>80.1</i>	<i>22,031</i>	<i>232,493</i>	<i>73.2</i>
Low Density Residential	6,263	2.0	3,166	3,097	1.0
Medium Density Residential	687	0.2	160	527	0.2
High Density Residential	223	0.1	17	206	0.06
Commercial – Office	2,272	0.7	528	1,744	0.6
Industrial Extensive	4,362	1.4	1,752	2,609	0.8
Industrial Intensive	3,408	1.1	1,219	2,189	0.7
Specific Plan Area	7,008	2.2	3,524	3,484	0.1
Other Mixed Use Development	142	0.0	44	98	0.03
Urban (Future)	0	0	0	37,398	11.8
<i>Total Urban¹</i>	<i>24,365</i>	<i>7.7</i>	<i>10,412</i>	<i>51,351</i>	<i>16.2</i>
Natural Preserve	18,556	5.8	552	18,004	5.7
Public/Quasi-Public	8,896	2.8	1,867	7,030	2.2
Recreation	3,328	1.0	475	2,853	0.9
Rights-of-Way ²	7,986	2.5	2,061	5,925	1.9
TOTAL³	317,655	100.0	37,398	317,655	100.0

Note: The GIS mapping exercise conducted for the Reduced Permit Term Alternative was focused on identifying the areas of development impacts to natural land covers and did not include all potential redevelopment of existing developed land covers.

¹ Urban (future) represents the total area of projected urban development under the Proposed Action/Proposed Project Alternative, which would be located primarily within the UDA. The land use designation of these areas after development is not known at this time.

² The “rights-of-way” designation represents areas of roadways, utility corridors, and other areas where a local land use authority has granted rights-of-way, and no land use designation was retained.

³ Tables may not total precisely due to rounding.

Under the Reduced Permit Term Alternative, new urban development would occur inside the UDA, as directed by the General Plans of Sacramento County, Rancho Cordova, and Galt, and no new urban development would “shift” or be displaced to areas outside the UDA. The Reduced Permit Term Alternative would result in only 210 acres of less direct impact to natural land covers than the No Action/No Project Alternative. However, 896 acres more of direct impacts to natural land covers would occur in the MCRA portion of the UDA, and 597 acres more of direct impacts to natural land covers would occur in the UDA outside the MCRA when compared to the direct impacts of the No Action/No Project Alternative. Compared to the No Action/No Project Alternative, 406 fewer acres of lands with agricultural land use designations would be changed to urban development under the Reduced Permit Term Alternative (Table 4-5). By avoiding a shift or a displacement of new development to areas outside the UDA, the Reduced Permit Term Alternative would have a **Minor Beneficial** effect on compatibility with existing land use plans when compared to the No Action/No Project Alternative baseline condition.

As with the No Action/No Project Alternative, preserve management activities under the Reduced Permit Term Alternative would include grazing management, fence repair, trash removal, mowing and/or vegetation removal to control thatch and invasive species, and visits by preserve managers for maintenance and monitoring. These activities would neither conflict with applicable land use policies from Sacramento County or Galt and Rancho Cordova nor would they physically divide an existing community or displace residents. However, the preserve system established during the 30-year Reduced Permit Term Alternative would have more intensive management and monitoring than the preserves established during the same period of the No Action/No Project Alternative. Many of the preserves under the Reduced Permit Term Alternative would be located in the UDA and thus, would be near urban development. The management and monitoring of these preserves could result in some conflicts with existing or planned land uses. However, a preserve management plan would be prepared for each preserve and would take into account how preserve activities affect surrounding areas. That preserve management plan would provide a coordinated way to minimize incompatibilities with existing or planned land uses or conflicts with existing plans. AMM EDGE-1 would prioritize compatible adjacent uses next to preserves established during the 30-year permit term. Overall, there would be either no difference or a minor benefit in land use impacts from preserve activities when compared to the No Action/No Project Alternative. Therefore, the preserve system would have a **Minor Beneficial** effect on land use plan compatibility compared to the No Action/No Project Alternative baseline condition. Agricultural compatibility is analyzed in Section 6.2.4.

Potential impacts on wildlife strike hazard to aircraft would be essentially the same for years 1–30 as for the Proposed Action/Proposed Project Alternative (Section 4.2.3). Effects on aircraft strike hazard would be reduced through implementation of AMM AIRPORT-1, which

would ensure coordination between airport planners and the entities siting wetland re-establishment/establishment projects. From years 31–50, the potential impacts would be essentially the same as for the No Action/No Project Alternative (Section 4.2.2). Because of the enhancement coordination with airport planners during the 30-year permit term, the Reduced Permit Term Alternative would have a **Minor Beneficial** effect on wildlife strike hazard compared to the No Action/No Project Alternative baseline condition.

Significance of Direct and Indirect Impacts

Compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would include the following actions:

- Avoid inconsistencies with existing land use plans by avoiding urban development outside the UDA
- Minimize potential conflicts of preserve management and monitoring activities by siting compatible uses near preserves and by providing a coordinated way to minimize incompatibilities with existing or planned land uses or conflicts with existing plans during years 1–30 of the EIS/EIR study period
- Improve compatibility with airports and minimize potential airport safety hazards by implementing a planning process during years 1–30 of the EIS/EIR study period that coordinates wetlands re-establishment/establishment with airport planning staff

Therefore, when considering the totality of direct and indirect effects discussed previously, the Reduced Permit Term Alternative would result in **Minor Beneficial** effects to land use compared to the No Action/No Project Alternative baseline condition.

4.2.4.2 Cumulative Effects of the Alternative

As described in the No Action/No Project Alternative, the Planning Area has transitioned from undeveloped land to agriculture to developed land, and this transition is reflected in the land use designations described in Table 4-2. The adopted General Plans of Sacramento County, Galt, and Rancho Cordova have attempted to minimize the adverse effects of future urban development land use changes (e.g., increased traffic, increased loss of agricultural lands) through zoning and land use designations that minimize incompatible land uses (Section 4.1.1).

Reasonably foreseeable future actions, as described in Section 3.7.2, consist of actions that are similar in nature to the past and present actions in the Planning Area, including additional urban development in Elk Grove and Rancho Murieta, master planned development at Rio Del Oro and Mather South, further rural residential development outside the UDA, continued development of

cultivated agricultural lands, expansion of existing preserves, and development of major infrastructure projects such as the California High-Speed Rail and the California WaterFix.

The buildout of the City of Elk Grove's future SOI expansion and the development north of Rancho Murieta, which are reasonably foreseeable future projects in Section 3.7, would affect the ultimate land use mixture outside the UDA. These developments would conflict with the Sacramento County General Plan, MTP/SCS, and the *Sacramento Region Blueprint Transportation and Land Use Plan*, which prioritize development within the existing USB.

Urban development (including transportation and recycled water Covered Activities) described under the Reduced Permit Term Alternative is very similar to urban development included within the General Plans of Sacramento County, Galt, and Rancho Cordova General Plans and would be consistent with the 2036 MTP/SCS, the *Sacramento Region Blueprint Transportation and Land Use Plan*, and the Delta Plan, which provide frameworks for coordinated land use planning. Further, the Reduced Permit Term Alternative is consistent with the Sacramento County, Galt, and Rancho Cordova General Plan land use policies that encourage development projects to evaluate conservation to minimize or avoid impacts to biological resources.

As identified in Section 4.2.2, the land use changes outside the UDA under the No Action/No Project Alternative, when considered together with land use changes resulting from past, present, and reasonably foreseeable projects and activities in the study area, would have a significant adverse cumulative effect on land use by conflicting with existing land use plans. The Proposed Action/Proposed Project Alternative has been designed to complement and help implement the goals and policies of the Sacramento County General Plan and of ordinances adopted for the protection of resources, as discussed in Section 4.1.1.4 and other chapters of this EIS/EIR.

However, this EIS/EIR evaluates the impacts of the No Action/No Project Alternative relative to the existing conditions but evaluates the impacts of the two action alternatives relative to the future conditions expected under the No Action/No Project Alternative (see Section 3.6.1). Because the Reduced Permit Term Alternative would result in less development outside the UDA than the No Action/No Project Alternative, it would have a smaller cumulative contribution to conflicts with existing land use plans. Therefore, the Reduced Permit Term Alternative would result in a **Minor Beneficial Cumulative** effect when compared to the No Action/No Project Alternative baseline condition.

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CHAPTER 5 – SOILS, GEOLOGY, AND MINERAL RESOURCES

This chapter presents the existing conditions and the potential effects of each Environmental Impact Statement/Environmental Impact Report (EIS/EIR) alternative on geology, soils, and mineral resources. Issues analyzed include existing geology and geologic conditions; soil conditions; seismic and soils hazards from earthquake, landslide, and erosion; important mineral resources; and naturally occurring asbestos. However, paleontological resources, the potential occurrence of which is closely related to geologic features, are addressed in EIS/EIR Chapter 11, Paleontological, Cultural, and Historical Resources.

Geology and geologic conditions are the result of processes occurring over millions of years involving large-scale changes in physical landforms such as the formation of the Sierra Nevada or the filling of valleys from erosion. The effects of past geologic process are reflected in an area's topography, the types of deep underlying soil or rock present, and conditions such as the presence or absence of seismic faults. The analysis of soils includes conditions near the ground surface, typically no deeper than 10 feet. Processes that develop soils, such as erosion of surrounding rock material and inputs of organic material from vegetation, usually occur within a timescale of tens of thousands of years. Environmental impact documents analyze geology and soils because they are related to issues such as earthquake risk, erosion potential, and naturally occurring health hazards such as naturally occurring asbestos. These types of issues can be important factors in a project's siting, design, and implementation.

Mineral resources are marketable materials that are extracted from the earth, such as precious metals, petroleum products such as natural gas and oil, and sand and gravel used for construction. Environmental impact documents analyze mineral resources because a project or activity, such as placing housing over a gravel deposit suitable for construction aggregate, can limit or prevent future access to these resources.

5.1 AFFECTED ENVIRONMENT/ENVIRONMENTAL SETTING

As discussed in Chapter 3, Section 3.5, Contents of the Affected Environment/Environmental Setting Sections of Chapters 4 through 16, this section describes the existing regulatory conditions and the existing physical conditions of the geology, soils, and mineral resources within the Planning Area, and the existing conditions of hazards related to earthquakes, landslides and erosion, and naturally occurring asbestos.

5.1.1 Regulatory Framework

There are several federal, state, and local agency requirements that apply to soils, geological resources, and/or mineral resources within the Planning Area. This section summarizes the statutes, regulations, policies, and agency planning documents that are relevant to the approval, issuance of permits permitting, or implementation of the alternatives analyzed in

this EIS/EIR. This section also identifies any relevant federal permits or other entitlements that must be obtained prior to implementing the alternatives. To the extent possible, the analyses or studies required by these regulations and policies are integrated into the environmental effects analyses presented in Section 5.2, Environmental Consequences/Environmental Impacts (40 CFR 1502.25).

5.1.1.1 Federal

International Building Code

The design and construction of engineered facilities in California must comply with the requirements of the International Building Code (International Code Council 2014) and the adoptions to that code adopted by the State of California (see California Building Standards Code below).

Clean Water Act

The federal Clean Water Act (CWA) is discussed in detail in Chapters 7 and 10. However, because CWA Sections 401 and 402 are directly relevant to grading activities, it is also discussed here in Chapter 5.

Under CWA Section 401, projects and activities that may result in the discharge of a pollutant into wetlands and other waters of the United States and require authorization by federal license or federal permit must first obtain a CWA Section 401 water quality certification from the state in which the discharge would originate. In California, the U.S. Environmental Protection Agency has delegated the authority to grant water quality certifications to the State Water Resources Control Board, which are typically processed by the Regional Water Quality Control Boards with local jurisdiction. A water quality certification requires the project or activity to evaluate its potential impacts and implement appropriate measures to protect water quality and comply with regulatory water quality standards.

Under CWA Section 402 (CWA 402), the National Pollutant Discharge Elimination System (NPDES) program regulates the discharge of waste into wetlands and other waters of the United States. The NPDES permit regulations apply to broad categories of discharges, including point-source municipal wastewater discharges and nonpoint-source stormwater runoff. NPDES permits typically identify the following:

- Effluent and receiving-water limits on allowable concentrations and/or mass emissions of pollutants contained in the discharge
- Prohibitions on discharges not specifically allowed under the permit

- Provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities

The California State Water Resources Control Board administers the NPDES permit program in California. Projects that disturb 1 or more acres of soil must obtain coverage under the state's NPDES General Permit for Discharges of Storm Water Associated with Construction Activity. A stormwater pollution prevention plan must be developed and implemented that provides specific construction-related best management practices (BMPs) to prevent soil erosion and loss of topsoil. The required components and BMPs commonly included in a stormwater pollution prevention plan are described in greater detail in Chapter 7, Hydrology and Water Quality.

5.1.1.2 State

California Building Code

The California Building Code (CBC) (24 CCR) is based on the International Building Code. The International Building Code Seismic Zone Map of the United States places the Planning Area within Seismic Hazard Zone III, which corresponds to an area that may experience damage due to earthquakes having moderate intensities of V or more on the Modified Mercalli Scale, which corresponds to maximum momentum magnitudes of 4.9 or greater. The CBC has been modified for California conditions with more detailed and/or more stringent regulations. Specific minimum seismic safety and structural design requirements are set forth in Chapter 16 of the CBC. The CBC identifies seismic factors that must be considered in a structural design. For example, Chapter 18 of the CBC regulates the excavation of foundations and retaining walls, while Chapter 18A regulates construction on unstable soils, such as expansive soils and areas subject to liquefaction. Appendix J of the CBC regulates grading activities, including drainage and erosion control.

Alquist-Priolo Earthquake Fault Zoning Act

The intent of the Alquist-Priolo Earthquake Fault Zoning Act (California Public Resources Code, Section 2621–2630) is to reduce the risk to life and property from surface fault rupture during earthquakes by regulating construction in active fault corridors and prohibiting the location of most types of structures intended for human occupancy across the traces of active faults in California. The act defines criteria for identifying active faults, giving legal support to terms such as active and inactive, and establishing¹ a process for reviewing building proposals in Earthquake Fault Zones. Before a project can be permitted in a designated Alquist-Priolo Earthquake Fault Zone, cities and counties must require a geologic investigation to demonstrate

¹ Note that in the context of this Plan, the word “establish” is synonymous with “create.”

that proposed buildings would not be constructed across active faults. However, no Alquist-Priolo Zones are mapped within the Planning Area (CGS 2017).

Seismic Hazards Mapping Act

The intent of the Seismic Hazards Mapping Act (PRC Section 2690–2699.6) is to reduce damage resulting from earthquakes in California. While the Alquist-Priolo Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, including strong ground shaking, liquefaction, and seismically induced landslides. The act's provisions are similar in concept to those of the Alquist-Priolo Act: the state is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other corollary hazards, and cities and counties are required to regulate development within mapped Seismic Hazard Zones. Seismic Hazard Zones must incorporate standards specified by California Geological Survey (CGS) Special Publication 117a, *Guidelines for Evaluating and Mitigating Seismic Hazards* (CGS 2008). However, no Seismic Hazard Zones are mapped in the Planning Area.

Surface Mining and Reclamation Act

The State of California Surface Mining and Reclamation Act (SMARA) (California Public Resources Code Sections 2710–2719), is the primary regulation governing mining operations and mine reclamation. Its purposes are to ensure that adverse environmental effects are prevented or minimized; mined lands are reclaimed to a useable condition; production and conservation of minerals are encouraged while giving consideration to recreational, ecological, and aesthetic values; and residual hazards to public health and safety are eliminated. Local agencies are responsible for ensuring compliance with SMARA requirements for mine operation and reclamation.

SMARA mandates that the Mineral Resources Project, which is administered by the CGS and provides objective geologic expertise and information about California's diverse non-fuel mineral resources, classify lands throughout the state that contain regionally significant mineral resources (California Public Resources Code, Division 2, Chapter 9, Section 2710 et seq.). Through the SMARA Mineral Land Classification Project, the State Geologist identifies and maps mineral resources of the state (not including oil and gas) to show where economically significant mineral deposits occur and where they are likely to occur based upon the best available scientific data (CDOC 2007).

Mineral resources classified under the Mineral Land Classification Project include metals; industrial minerals; and construction aggregate, which includes sand, gravel, and crushed stone. Special emphasis has been given to construction aggregate because it is the state's most important mineral commodity in terms of tonnage, value, and societal infrastructure. Local

agencies are required to use the classification information when developing local land use plans and when making land use decisions (CDOC 2007).

SMARA also requires the State Geologist to classify lands within California based on mineral resource availability. The State Geologist is responsible for classifying lands subject to urban development by Mineral Resource Zones (MRZs) according to the presence or absence of significant sand, gravel, stone, or other deposits of value that may be suitable for mining. The process is based solely on underlying geology without regard to existing land use or land ownership. The primary goal of mineral land classification is to ensure that local government decision makers recognize and consider the mineral potential of the land before making land use decisions that could preclude mining.

The CGS has established the following MRZ classification system to denote both the location and significance of key extractive resources:

- **MRZ-1** – Areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence
- **MRZ-2** – Areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists
- **MRZ-3** – Areas containing mineral deposits, the significance of which cannot be evaluated from existing data
- **MRZ-4** – Areas where available information is inadequate for assignment to any other MRZ zone

Asbestos Airborne Toxic Control Measure (for Construction, Grading, Quarrying, and Surface Mining Operations)

The California Air Resources Board has adopted an Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations (17 CCR 93105). This statewide regulation requires use of control measures to minimize emissions of asbestos-laden dust. The Asbestos Airborne Toxic Control Measure applies to any size construction project although there are more stringent mitigation requirements for projects that exceed 1 acre. Naturally occurring asbestos is known to be present in eastern Sacramento County (CDOC 2006). In the Planning Area, the Sacramento Metropolitan Air Quality Management District has regulatory authority to ensure compliance with the Asbestos Airborne Toxic Control Measure.

5.1.1.3 Local

Sacramento County

Sacramento County 2030 General Plan

The *Sacramento County General Plan of 2005–2030* (Sacramento County General Plan) (Sacramento County 2011) Safety Element includes goals, objectives, and policies related to seismic and geologic hazards; the Agricultural Element includes goals, objectives, and policies that address the conservation of soil resources; and the Conservation Element addresses extraction of mineral resources. Applicable goals and policies include the following:

Goal: Minimize the loss of life, injury, and property damage due to seismic and geological hazards.

Policy SA-1: The County shall require geotechnical reports and impose the appropriate mitigation measures for new development located in seismic and geologically sensitive areas.

Policy SA-3: The County shall support efforts by Federal, State, and other local jurisdictions to investigate local seismic and geological hazards and support those programs that effectively mitigate these hazards.

Policy SA-4: The County shall prohibit development on ground surfaces which exceed 40 percent in slope, such as the bluff areas along the American River. Development shall be set back from these slopes at a distance established by the Zoning Code.

Goal: Protect important farmlands from conversion and encroachment and conserve agricultural resources.

Policy AG-28: The County shall actively encourage conservation of soil resources.

Goal: Mineral resources protected for economic extraction with minimal adverse impacts.

Policy CO-38: Sewer interceptor and trunk alignments shall be routed to avoid areas planned for aggregate resource mining to the extent practical. Where such alignments are impractical, they shall be designed to minimize aggregate resources which would be precluded from mining, and make reasonable attempt to preserve the future use of mined areas for flood control or recharge purposes.

Policy CO-39: Surface mining operations shall be subject to appropriate mitigation measures and shall avoid creating any significant nuisances, hazards, and adverse

environmental impacts, unless the Board of Supervisors makes the findings to override as required by [the California Environmental Quality Act] CEQA Guidelines Section 15091.

Policy CO-41: Surface mining shall not be allowed without adequate plans for reclamation of mined areas. Reclamation plans should be based on a plan for post-mining land use that is consistent with the land use strategies of the General Plan.

Policy CO-44: Due to the predicted shortages of aggregates in Sacramento County, mining of mineral resources within the Urban Services Boundary (USB) is encouraged, where consistent with Habitat Conservation Plans or other County initiated conservation programs and where such mining does not preclude successful completion of these plans, to avoid the potential loss of these mineral resources as a result of potential urban development. This policy is not intended to preclude mining outside the USB.

Sacramento County Land Grading and Erosion Control Ordinance

The Sacramento County Land Grading and Erosion Control Ordinance (Sacramento County Code, Chapter 16.44) was established to minimize damage to surrounding properties and public rights-of-way; limit degradation to the water quality of watercourses; and avoid disrupting drainage system flow during clearing, grubbing, grading, filling, and excavating activities. The ordinance establishes administrative procedures, minimum standards of review, and implementation and enforcement procedures for the control of erosion and sedimentation that are directly related to land grading activities.

Sacramento County NPDES Municipal Stormwater Permit Program

Stormwater discharges to the municipal separate storm sewer systems in Sacramento County and the Cities of Sacramento, Galt, Rancho Cordova, Elk Grove, Folsom, and Citrus Heights are regulated under an NPDES Municipal Stormwater Permit issued by the Central Valley Regional Water Quality Control Board (Order No. R5-2015-0023, NPDES No. CAS082597). This NPDES permit is renewed every 5 years, most recently in April 2015. Ground-disturbing projects or activities within these jurisdictions must implement required BMPs to avoid or reduce stormwater run-off, soil erosion, and the corresponding discharge of pollutants to downstream surface waters, to the maximum extent practicable. The Sacramento County NPDES permit is discussed in more detail in Chapter 7.

2030 Galt General Plan

The *2030 Galt General Plan: Policy Document* (Galt General Plan) (Galt 2009a) contains goals and policies in the Safety and Seismic, Public Facilities and Services, and Conservation Elements to minimize risk from seismic and geologic hazards, limit erosion and siltation, and

express the community's priorities regarding mining activities. Applicable goals and policies include the following:

Goal SS-2: To minimize the loss of life, injury, hardships, and property damage due to seismic and geological hazards.

Policy SS-2.1: Geologic and Soils Information. The City of Galt shall require soils reports for new projects and use the information to determine appropriate permitting requirements.

Policy SS-2.2: Seismically-Engineered Public Structures. The City of Galt should ensure that all existing and future public structures, such as buildings and water storage tanks, are of sufficient construction to withstand seismically induced ground shaking and related geologic hazards.

Policy SS-2.3: Grading/Erosion Control. The City of Galt shall require grading and erosion control plans to be prepared by a qualified engineer or land surveyor.

Goal PSF-4: To collect and dispose of stormwater in a manner that protects the city's residents and property from the hazards of flooding, manage stormwater in a manner that is safe and environmentally sensitive, and enhances the environment.

Policy PFS-4.5: Grading During the Rainy Season. The City of Galt shall prohibit grading activities during the rainy season, unless adequately mitigated, to avoid sedimentation of storm drainage facilities.

Policy PFS-4.6: Erosion Control Plan. The City of Galt requires new development projects to prepare an erosion control plan.

Goal COS-4: To preserve and enhance open space lands to maintain the natural resources of the Galt area.

Policy COS-4.7: Mining Activities. The City of Galt shall prohibit mining activities in the City limits and strongly oppose mining activity proposals within the Galt General Plan Planning Area.

Rancho Cordova General Plan

The *City of Rancho Cordova General Plan* (Rancho Cordova General Plan) (Rancho Cordova 2006a) contains goals and policies in the Safety Element to minimize risk from seismic and geologic hazards and in the Natural Resources Element to address mineral extraction. Applicable goals and policies include the following:

Goal S.3: Reduce the Risk of Adverse Effects to Residents or Businesses as a Result of Geologic or Seismic Instability.

Policy S.3.1: Support efforts by federal, State, and local jurisdictions to investigate local seismic and geologic hazards and support those programs that effectively mitigate these hazards.

Policy S.3.2: Ensure that new structures are protected from damage caused by geologic and/or soil conditions to the greatest extent feasible.

Goal NR.6: Support the Environmentally Sensitive Extraction of Minerals and the Subsequent Reclamation of Mined Areas.

Policy NR.6.1: Ensure that the environmental effects of mining and reclamation on aquifers, streams, scenic views, and surrounding residential uses are prevented or minimized.

Policy NR.6.3: While mining activities are anticipated to be phased out within the City of Rancho Cordova, the City recognizes the right of these uses to continue and will require setbacks, buffers, screening, and other appropriate measures to allow for the continued operation of mining activities.

5.1.2 Planning Area Geologic Environment Existing Conditions

This section provides information on existing locations and condition of geologic resources, surface soils, and minerals in the Planning Area, as well as the existing geological hazards in the Planning Area.

Additional information about the interrelationships between Planning Area landforms, geologic formations, and associated soils is included to provide context for discussions and analysis of vernal pools and other aquatic resources that will be presented in subsequent chapters in this EIS/EIR, including Chapter 8 (Natural Land Cover Habitats, and Associated Plant and Animal Communities), Chapter 9 (Special-Status Species Including HCP Covered Species), and Chapter 10 (Aquatic Resources).

The present landscape of Sacramento County has been shaped over time by the ongoing processes of erosion and deposition. Material eroded from the ancestral Sierra Nevada, formed over 100 million years ago, was deposited in an ancient sea that once occupied the Sacramento Valley floor. The Sacramento Valley is the area of the Central Valley north of the Sacramento–San Joaquin River Delta that is drained by the Sacramento River. Approximately 10 million to 15 million years ago, tectonic uplifts altered the geomorphology of the Sierra Nevada. Glaciation, volcanism, and erosion followed the uplifting, adding layers of sediment to the Sacramento Valley floor. Under the present geologic conditions, the alteration of the local geomorphology

continues through stream erosion of the Sacramento Valley sediments and subsequent deposition in adjacent floodplains (Sacramento County 2011).

These past processes are evident in the topography of the Planning Area, which is generally flat in the central and western portions of the Planning Area, and transitions to rolling hills in the eastern portion approaching the Sierra Nevada foothills.

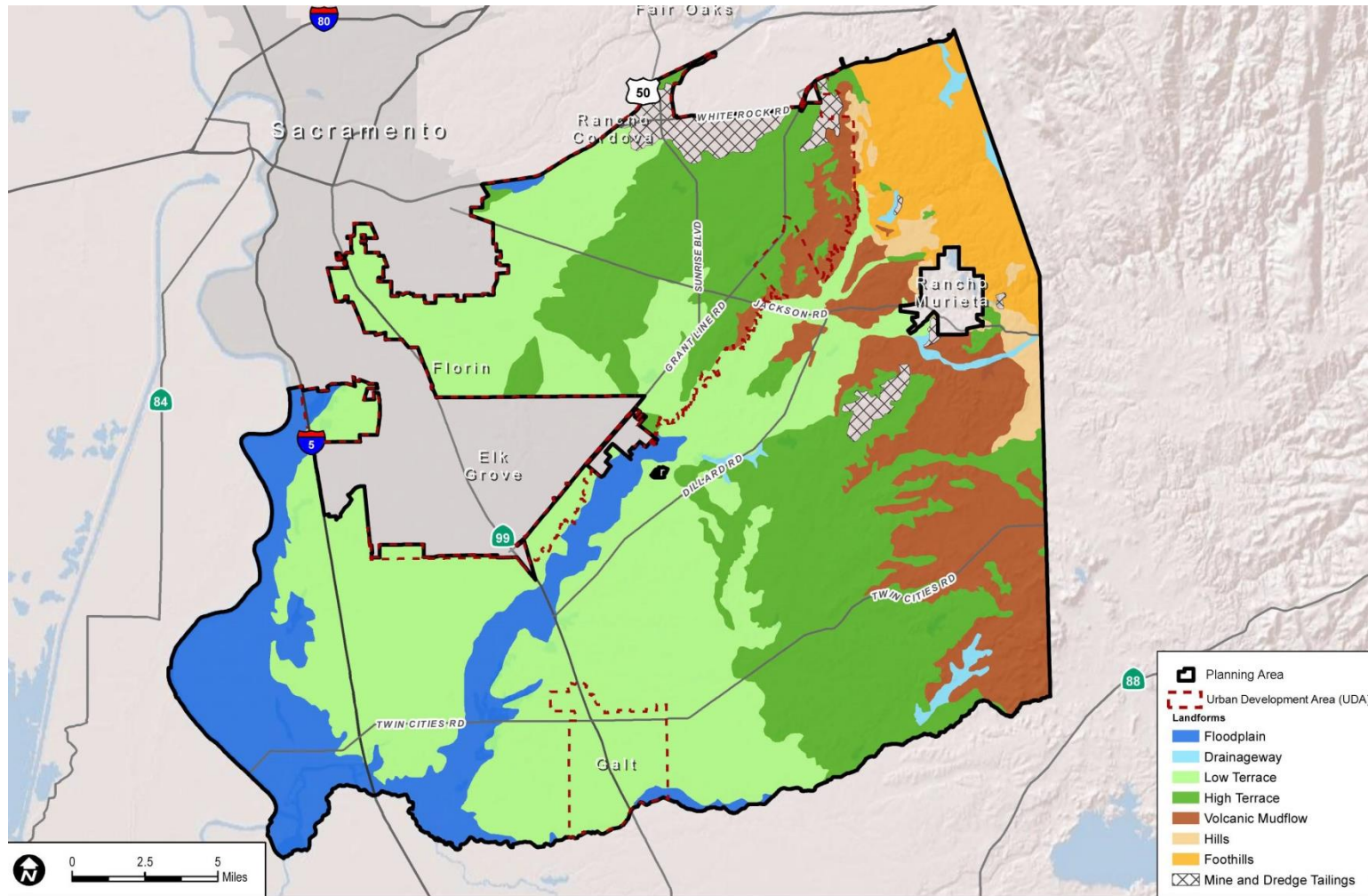
Planning Area Geomorphic Provinces. The Planning Area is located within portions of two distinct geomorphic provinces. A geomorphic province is an area that has a relatively consistent geologic origin and erosional/depositional history. The majority of the Planning Area lies within the Great Valley Province, which extends from Redding in the north to approximately Bakersfield in the south and is bounded by the coastal mountain ranges on the west and the Sierra Nevada to the east (CGS 2002). The Great Valley Province is generally flat and low-lying, consisting largely of alluvial and sedimentary deposits that have been eroded from the adjacent mountain ranges and that make up the Sacramento Valley floor. The eastern region of Sacramento County lies within the Sierra Nevada Province, and is differentiated from the Great Valley Province portion of the Planning Area by the presence of outcroppings of metamorphic rock strata, increasing elevations, and undulating topography (CGS 2002).

Planning Area Landforms. A landform is a geomorphological unit and is largely defined by its surface form and location in the landscape. As part of the terrain, a landform is an element of topography. Landforms are categorized by characteristic physical attributes such as elevation, slope, orientation, stratification, rock exposure, and soil type. The development of the existing landforms in the Planning Area took place during the Pleistocene (1.6 million to 10,000 years ago) and Holocene (10,000 to 200 years ago) Epochs.

The seven predominant landforms in the Planning Area are floodplain (low and high), drainageway, low terrace, high terrace, volcanic mudflow, hills, and foothills (Figure 5-1) (Jones and Stokes 1990; USDA 1993; Smith and Verrill 1998). These landforms are discussed below in order of their geographic placement on the landscape from the lowest elevation (newest surfaces) to highest elevation (oldest surfaces).

Figure 5-1 also identifies mine and dredge tailings, which is not a natural landform. These are human-formed features in Sacramento County that are composed almost entirely of rounded river rock that was excavated from ancient riverbeds during gold mining activities in the early 1900s through approximately 1960. The dredged rock, after being processed to extract the gold, was disposed of in large rows or piles at several locations in the Planning Area (Figure 5-1).

Figure 5-1 Geographic Landforms



SOURCE: County of Sacramento 2014, CA Geologic Survey 1981

FIGURE 5-1
Geographic Landforms

SOUTH SACRAMENTO HABITAT CONSERVATION PLAN EIS/EIR

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Planning Area Geologic Formations. Each of the seven geomorphological landforms in the Planning Area (discussed previously) also supports specific geologic surficial deposits (geological formations). A geologic formation is a geomorphic feature on the Earth's surface during an episode of landscape development. Geologic formations are differentiated by various criteria, including age, physical structure, layering of materials, compaction, texture, depositional history, geomorphology, and soil-profile development (Smith and Verrill 1998). The geologic formations described below are from the Geologic Map of the Sacramento Quadrangle prepared by the CGS (CGS 1981) (see Figure 5-2). Like Figure 5-1, Figure 5-2 also identifies areas of human-created mine and dredge tailings, which are not a natural geologic formation.

As discussed in the introduction to Section 5.1.2, Planning Area Geologic Environmental Existing Conditions, the locations and ecology of vernal pools are closely correlated to the geologic formation and soils. Of the 17 geologic formations found within the Planning Area, 15 contain vernal pools. Of the 15 Planning Area geologic formations that contain vernal pools, there are 5 primary geologic formations that support the majority of vernal pools remaining in the Planning Area: the Laguna, Riverbank, Modesto-Riverbank, Mehrten, and Valley Springs Formations. These five formations are each described in detail in Sections 5.1.2.2 to 5.1.2.5, beginning with Planning Area geologic formations with the most vernal pool acres to the geologic formations with the fewest vernal pool acres.

Planning Area Soils. Many different kinds of soils are found within the Planning Area with a wide range of characteristics, including depth to rock, the presence of hardpans, erodibility, clay content, and soil slopes. Soils in the Planning Area vary from very deep, nearly level alluvial soils to undulating shallow soils over restrictive duripans or clay-rich soil horizons to shallow hilly soils overlying bedrock. These soils also vary from well-drained to poorly drained mineral soils, and to a lesser extent, organic soils. Individual soil units are organized into map units called soil associations, which consist of soil units of the same texture and composition that occur in a geographic position (USDA 1993).

Planning Area soils series with support vernal pools are soils that include an impermeable layer. The impermeable soil layer can be formed of claypan, a cemented hardpan (duripan), rock, or a combination of these. Certain soil series in the Planning Area consistently coincide with the occurrence of vernal pools. Most of the soil series with vernal pools are strongly associated with a specific geologic formation, although some soil series may occur on two or more geologic formations. The six most prominent soil series within the Planning Area are discussed in Sections 5.1.2.2 to 5.1.2.5. The locations of these key Planning Area soil series are shown in Figure 5-3.

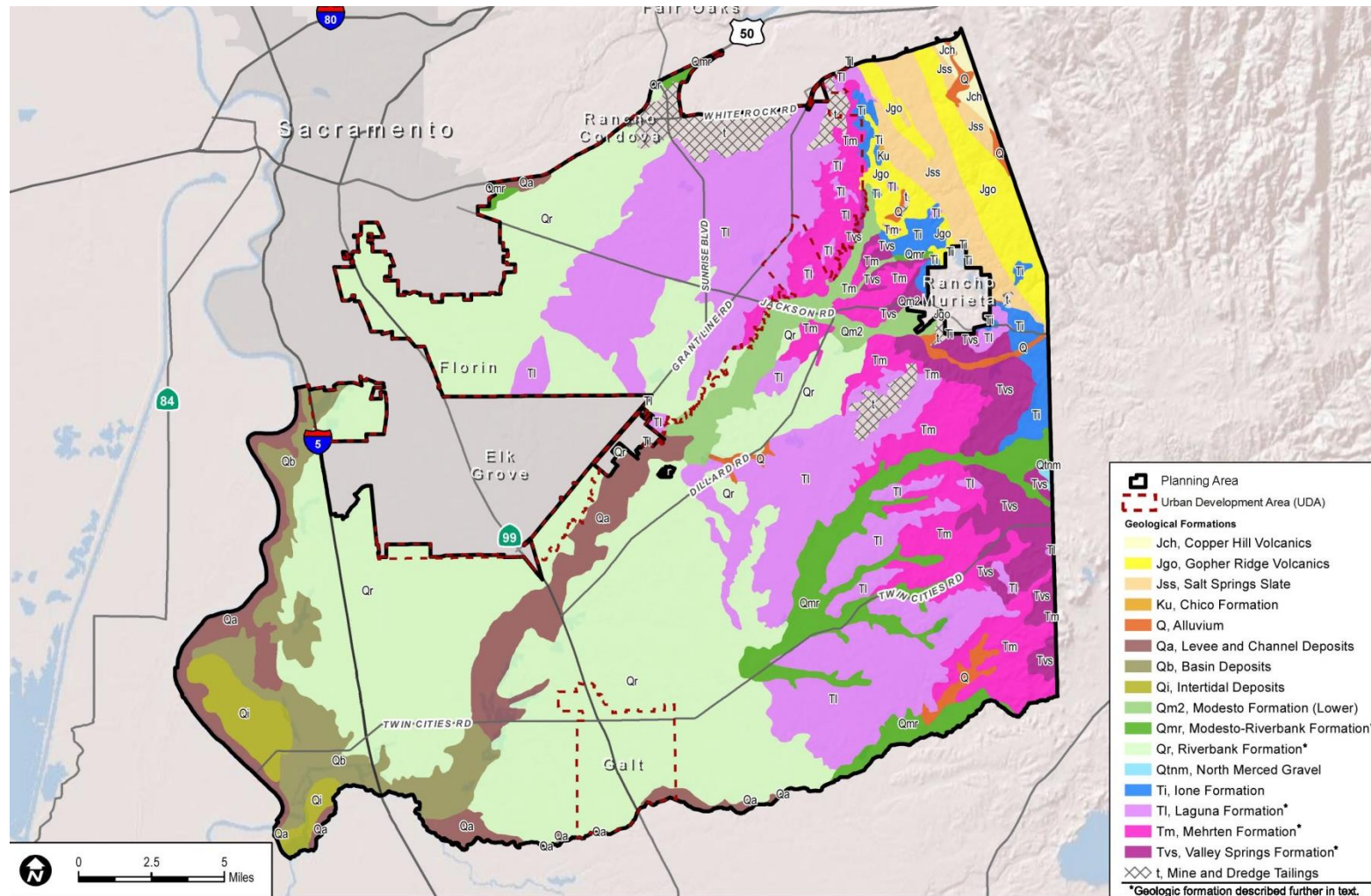
5.1.2.1 Floodplain Landform (Low and High Floodplains)

The youngest and lowest landform surface in the Planning Area is the low floodplains. This is an active surface with component landforms that include nearly level floodplains bordering the Sacramento, American, and Cosumnes Rivers; each river's tributaries; and the many smaller channels in the Planning Area. The low floodplains are frequently inundated unless they are protected by levees or upstream dams. The landscape is dynamic as new channels are formed and old channels become inactive. Alluvium moving downstream on the low floodplains in the Planning Area has buried older geomorphic surfaces. High floodplains are also an active surface but somewhat older than the low floodplains. Unless protected by human-made levees or upstream dams, all floodplains occasionally or frequently flood. The components of this surface include backswamps, which are the sections of floodplain where silts and clays settle out; the edges of backswamps; and natural levees and floodplains along the rivers and other channels. All of these surface components are nearly level (Jones and Stokes 1990; USDA 1993; Smith and Verrill 1998). Vernal pools are not found on the Floodplain Landform within the Planning Area.

5.1.2.2 Drainageway Landform and Geologic Formations

The drainageway landform is composed of relatively recent alluvial deposits at the base of toe slopes (i.e., depositional material at the base of a slope) and of stream terraces (i.e., deposits of old floodplain material oriented parallel to the stream) adjacent to floodplains and incised channels of active waterways, and occur on top of other older geologic formations. These are the second-youngest landform surfaces in the Planning Area and are present where active streams, creeks, and rivers traverse the other landforms found in the Planning Area. Consequently, vernal pools that formed on drainageway deposits are relatively young but are often associated with another older vernal pool type on the adjacent higher ground and terraces (terrace landforms are discussed below). In contrast to vernal pools found on the low terrace, high terrace, and mudflow landforms, the vernal pools found on the drainageway landform fill and drain relatively rapidly and may depend more on overland runoff and direct precipitation to maintain their hydrology (Jones and Stokes 1990). Soils above the restricting claypan or hardpan layers in these pool types may be too deep for perched water tables (i.e., an area of saturated soil near the ground surface and separated from deeper groundwater aquifers by an impermeable layer of rock, clay, or other material) to become exposed in shallow vernal pools. Additionally, the basins of these types of pools are often shallow, increasing susceptibility to evaporation, or slightly sloped, which encourages drainage.

Figure 5-2 Geologic Formations



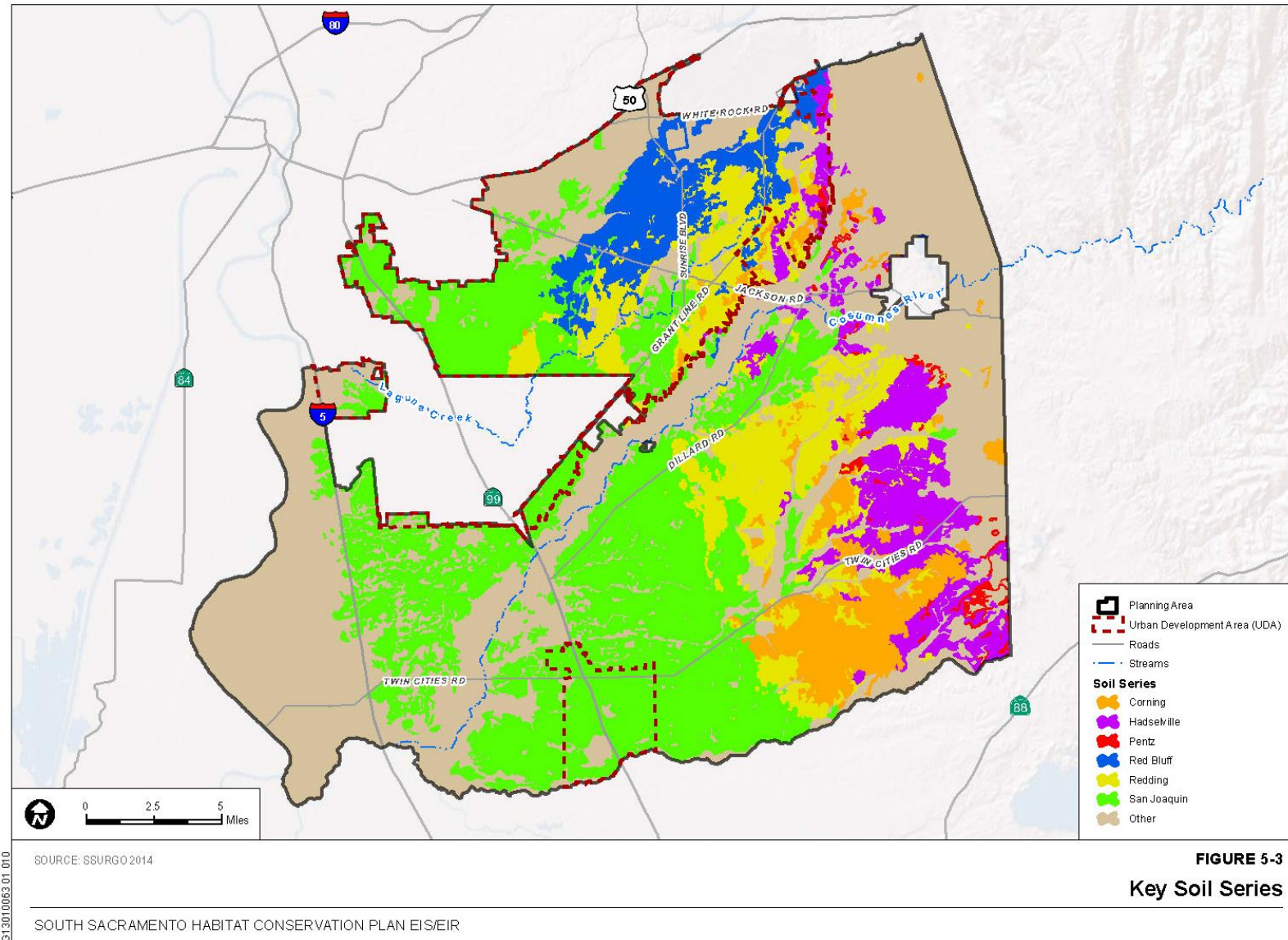
SOURCE: County of Sacramento 2014, CA Geologic Survey 1981

FIGURE 5-2
Geologic Formations

SOUTH SACRAMENTO HABITAT CONSERVATION PLAN EIS/EIR

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Figure 5-3 Key Soil Series



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Modesto-Riverbank Geologic Formation

The Modesto-Riverbank Formations (i.e., Modesto Formation (lower) and Modesto-Riverbank Formation) are dominantly andesitic, late- to middle-Pleistocene alluvium composed of gravel, sand, silt, and clay derived from deposition from various streams (CGS 1981). The Modesto-Riverbank Formations are generally confined to the southeastern portion of the Planning Area forming on either side of Laguna Creek (south) and its tributaries, and on either side of Dry Creek. Widths vary from approximately 0.25 mile wide along the tributaries of Laguna Creek (south) to about 1 mile wide along the main channel of Laguna Creek and Dry Creek. These formations extend west from the Planning Area's boundary with Amador County to a nondescript area east of Galt.

There are a number of soil series that are associated with the Modesto-Riverbank Formations, including, but not limited to, the Corning complex, Hicksville loam, Madera loam, Redding gravelly loam, and Tehama loam (CGS 1981).

The Modesto-Riverbank Formations cover the fifth largest area in the Planning Area, with a total of 14,688 acres, with 567 acres inside the Urban Development Area (UDA²) and 14,121 acres outside the UDA. It comprises nearly 5% of the total Planning Area.

The Modesto-Riverbank Formations encompass 5,272 or about 9% of the total number of vernal pools within the Planning Area. All 5,272 vernal pools occurring on this formation are outside of the UDA. The Modesto-Riverbank Formations rank fourth in importance in terms of total number of vernal pools. Approximately 11% (503 acres) of the total vernal pool acreage within the entire Planning Area occurs on the Modesto-Riverbank Formations. All 503 acres of Modesto-Riverbank formation vernal pools are found outside of the UDA.

5.1.2.3 Low Terrace Landform, Geologic Formations, and Soil Series

Low terraces (also referred to as "young terrace"), are of relatively recent geologic origin (Jones and Stokes 1990). They contain late Pleistocene-age (100,000 years ago) geomorphic surfaces that are underlain by older stream alluvium. Low terrace landforms occur on the broad, nearly level plain of alluvial deposits that make up the Sacramento Valley floor. Low terrace landforms are relatively young when compared to the high terrace or the mudflow landforms (Smith and

² As discussed in Section 1.1.1, Geographic Scope of the EIS/EIR Planning Area, the term Urban Development Area (UDA) is used by the EIS/EIR to discuss all lands where urban development Covered Activity projects or activities could occur under the action alternatives. Therefore, the term "UDA" means all lands within Sacramento County's USB boundary that are also within the Planning Area (including lands within the Rancho Cordova city limits that are within the Planning Area), all lands within Galt's city limits, and all lands within Galt's sphere of influence (see Figure 1-1).

Verrill 1998). Low terrace soils are younger and not as well developed when compared to high terrace landforms, but have been forming long enough to have undergone significant pedogenesis (soil forming processes), and claypans and duripans are common.

Vernal pools occur extensively in certain areas of the low terraces. Low terrace soils commonly form seasonal “perched aquifers” (the same as the perched water table identified previously in the description of the drainageway landform). Vernal pools found within the low terrace landforms do not exhibit the same richness of flora or specialized species when compared to vernal pools on high terrace landforms. Most young terrace sites have been plowed, graded, or heavily grazed because of the arable soils that are present and the proximity to reliable water. This and the relatively young age of the vernal pools may also account for the unspecialized flora in these pools in the Planning Area. Many low terrace pools are shallow or have poorly defined basins.

Riverbank Geologic Formation

The Riverbank Formation is located on the low (young) terrace landform. The Riverbank Formation was deposited on a plain of stream alluvium that has been partially dissected. The upper surface of this plain, in most places, represents the upper surface of the Riverbank Formation. The upper surface is characterized by a gently undulating surface. In the vicinity of Elk Grove, the Riverbank Formation is about 10 miles wide from west to east. To the east, it laps onto older materials composed of the Laguna Formation. To the west, it is in turn overlain by younger alluvial materials. The Riverbank Formation is generally confined to the central and western portions of the Planning Area and occurs on either side of the Cosumnes River.

The Riverbank Formation is the largest geologic formation in the Planning Area, with a total of 122,228 acres (35,401 acres inside the UDA and 86,827 acres outside the UDA). It comprises just over 38% of the total Planning Area (Figure 5-2). Although the Riverbank Formation dominates the Planning Area, large portions have been converted for agriculture or developed for urban uses because of the arable soils that are present and the proximity to reliable water. In addition, most undeveloped portions of the Riverbank Formation were plowed or leveled in the past. Consequently, young-terrace vernal pools are not as common in the Planning Area as the extent of the Riverbank Formation might suggest (Jones and Stokes 1990).

Soils with claypans and duripans are common in the Riverbank Formation, as are vernal pools (Smith and Verrill 1998). As discussed below, the San Joaquin soil series is most closely associated with the Riverbank Formation. Other associated soil series in the Planning Area include Redding, Red Bluff, and Corning.

The Riverbank Formation encompasses 12,367, or 20%, of the total number of vernal pools within the Planning Area, with 2,800 located inside the UDA and 9,567 outside the UDA. The Riverbank Formation ranks second in total number of Planning Area vernal pools.

Approximately 34% (1,533 acres) of the total vernal pool acres within the entire Planning Area occurs on the Riverbank Formation, with 289 acres of vernal pool within the UDA and 1,244 acres outside the UDA.

Soil Series

San Joaquin. The San Joaquin soil series is the most extensive vernal pool soil in the Planning Area. This soil series, as well as other soils with which it is geographically associated (e.g., Fiddymment, Galt, Madera, and Rocklin), developed in the Riverbank Formation on young (low) alluvial terraces along the eastern flank of the Central Valley (in the later Pleistocene, 100,000 to 200,000 years old). San Joaquin soils formed in old alluvium on hummocky topography. A cemented hardpan (duripan) typically 2 feet to 4 feet beneath the surface restricts roots and water percolation. The soil series consists of well-drained and moderately well-drained soils above the duripan that formed in alluvium derived from mixed but dominantly granitic rock sources. Seasonal perched aquifers form above the duripan. The San Joaquin series is found on undulating low terraces with slopes of 0% to 9%. Some areas have been leveled. San Joaquin soils account for approximately 17% of soils within Sacramento County, and San Joaquin soil complexes comprise an additional 8%, for a total of approximately 25% of Sacramento County. San Joaquin soils are the predominant soil series on the Riverbank Formation occurring on both the high floodplain and low terrace landforms in Sacramento County.

Vernal pools tend to form in mound-intermound areas and depressional features within the San Joaquin soil series. Together, the San Joaquin, Redding, and Corning soil series are the primary soils for northern hardpan vernal pools. However, there are several dozen additional soil series (but of more limited distribution) that share the cemented duripan, reddish color, and landscape position that characterize northern hardpan vernal pool soils (Solomeshch et al. 2007).

5.1.2.4 High Terrace Landform, Geologic Formations, and Soil Series

The high terrace landform (also referred to as “old terrace”) is restricted to the east side of the Central Valley (Smith and Verrill 1998; Jones and Stokes 1990; Reiner and Swenson 2000). The high terrace landform was laid down from 600,000 to over 1 million years ago in the mid- to early Pleistocene to late Pliocene (5 million years ago), and lies topographically above low terraces. In the Planning Area, high terraces are ancient deposits of the Pleistocene-era American River, which was located south of its present-day site (Jones and Stokes 1990). Very strong soil development has occurred in relatively flat areas on these terraces where the geomorphic

surfaces are very old. The most pronounced erosion-induced mound-depression microtopography and vernal pool landscapes are found on the high terraces. Similar to the low terrace landform, the soil-restrictive layers form perched aquifers in high terrace landform soils. The soils and vernal pools of the high terrace landform have essentially been developing for more than a half-million years. Consequently, the high terrace landform exhibits well-developed soils and floristically rich habitat. Vernal pools on high terrace landforms typically support more specialized species than vernal pools found within any other landform (Jones and Stokes 1990).

In the Planning Area, the high terrace landform supports the Laguna Formation and Arroyo Seco gravels. Little of the Arroyo Seco gravels have been farmed because irrigation water is lacking and many sites are not arable. Consequently, vernal pools are abundant on level surfaces. However, much of the Planning Area with Laguna Formation high-terrace pools was dryland farmed with wheat or oats for relatively short periods in the past. This activity appears to have had little effect on vernal pools in some areas, such as at the Sunrise-Douglas development area, while in other areas the plowing appears to have disrupted surface hydrology (Jones and Stokes 1990).

Laguna Geologic Formation

The Laguna Formation is located on the High Terrace Landform (Smith and Verrill 1998; Jones and Stokes 1990; Reiner and Swenson 2000). The Laguna Formation, ranging in age from late Miocene to early Pliocene, rests over the older Mehrten Formation (described below). The Laguna Formation is composed of interbedded alluvial gravel, sand, and silt deposited from ancient river channels draining from the Sierra Nevada range, including the Feather, Yuba, American, Cosumnes, and Merced Rivers (Helley and Harwood 1985).

The exposed Laguna Formation occurs in a band several miles wide running north to south along the eastern half of the Planning Area. The Laguna Formation is exposed in the eastern and central portions of the Planning Area. The formation's eastern outcrop extends northward from Dry Creek (southern boundary of the Planning Area), where its area of exposure is about 6 miles wide, to its northernmost exposure along Meiss Road. Its central outcrop extends northward from Deer Creek to its northernmost exposure along U.S. Route 50. The Redding soil series and Red Bluff-Redding complex are the characteristic soil series associated with the Laguna Formation north of the Cosumnes River (soils types are described further below). South of the Cosumnes River to the headwaters of Badger Creek, the Redding series and Red Bluff-Redding complex are the main soils, and they give way to Corning and Hadselville-Pentz complexes south of Badger Creek to Dry Creek at the Sacramento–San Joaquin County line.

The Laguna Formation is the second-most extensive geologic formation in the Planning Area, totaling 61,282 acres (23,608 acres are inside the UDA and 37,674 acres are outside the UDA). It comprises just over 19% of the total Planning Area.

The Laguna Formation ranks first in total number of Planning Area vernal pools. The Laguna Formation encompasses 26,684 vernal pools or 43% of the total number of vernal pools within the Planning Area. Of the 26,684 vernal pools occurring on this formation, 7,734 are located inside the UDA and 18,950 are outside the UDA.

The Laguna Formation supports a variety of vernal pool sizes and densities, including some of the greatest vernal pool densities and most of the very large vernal pools remaining within the Planning Area, primarily within the UDA portion of the Planning Area (Dittes et al. 2007). Dittes et al. 2007 also found significantly lower density of vernal pools, smaller sizes of individual vernal pools, and a different category of “vernal pool complexes” on Laguna Formation soils located outside of the UDA when compared to vernal pools on Laguna Formation soils inside the UDA. Approximately 34% (1,554 acres) of the total vernal pool acreage within the entire Planning Area occurs on the Laguna Formation: 603 acres within the UDA and 951 acres outside the UDA.

Soil Series

Red Bluff. The Red Bluff soil series consists of very deep, well-drained loamy mineral soils formed in high (older) terraces of the Laguna Formation. Red Bluff soils are dominant on high and intermediate terraces and have 0% to 9% slopes in elevations of 75 to 1,500 feet above mean sea level (amsl). Soil horizons nearest the surface may have maximum clay contents of 3% to 10%, and deeper soil horizons have clay content ranging from 27% to 60%. The restrictive layer in the Red Bluff series is claypan at a depth of approximately 35 inches (Jones and Stokes 1990). A high content of clay, reddish color, and a significant amount of iron and manganese staining distinguish these soils from other soils in the Planning Area. The soil between a depth of 7 and 21 inches is dry in all parts from June to October, and moist in some or all parts the rest of the year. Red Bluff soils are among the oldest soils in Sacramento County. Parent materials for Red Bluff soils are gravelly and cobbly alluvium from mixed sources and laid down by an ancestral channel of the American River. This parent material consists of rounded pebbles and cobbles including dark metamorphic, quartzitic, and volcanic rocks in a granitic sand matrix. These American River channel pebbles are approximately 600,000 years old, consequently, they are of mid-Pleistocene age. Soils on hills in the eastern part of Sacramento County also are estimated to be of mid-Pleistocene age.

Corning. Corning soils are gravelly loam formed from the Laguna Formation and Arroyo Seco gravels on high terraces and terrace remnant landforms. Corning soils are characterized by mound-intermound microrelief and on smooth terrace side slopes. They are very deep. They

are well drained on the mounds and moderately well drained in the intermound areas. Typically, the surface layer is gravelly fine sandy loam. The restrictive layer is a claypan at approximately 28 inches in depth (Jones and Stokes 1990). The substratum is stratified gravelly sandy clay loam and gravelly sandy loam. It formed in old valley fill from mixed sources. Typically, the surface layer is reddish-brown, yellowish-red, and red gravelly loam about 22 inches thick. The subsoil is red and dark red clay about 18 inches thick. The substratum to a depth of 60 inches is strong brown clay loam. Permeability is very slow. Surface runoff is slow or medium. The hazard of erosion is slight or moderate. After intense rainstorms, the soil is saturated for a short time. Slopes are 0% to 30%. Elevations are 75 to 1,300 feet amsl. Slopes are 0% to 30%. The soils formed in gravelly alluvium derived from mixed rock sources.

Redding. Redding and Corning soil series developed on older, higher alluvial terrace landforms of the Laguna Formation (Pliocene to early-Pleistocene age). The Corning soil series is described in the previous paragraph. The Redding soil series is a well-drained, gravelly loam mineral soil that is moderately deep over a hardpan and supports primarily annual grassland. It formed in gravelly old valley fill from mixed sources but primarily derives from the Laguna Formation. The hardpan occurs at a depth of 2 to 4 feet below surface level. The series is found on nearly level or dissected and undulating to hilly high terraces. Slopes are 0% to 30%.

Typically, the Redding series surface layer is strong brown gravelly loam about 7 inches thick. The upper part of the subsoil is yellowish-red loam and gravelly loam. The lower part is a claypan of reddish brown and yellowish-red gravelly clay about 8 inches thick, at about 20 inches depth with a weighted average clay content of 35% to 60%. Below this to a depth of 66 inches is a very gravelly hardpan that is strongly cemented with silica. Therefore, the Redding soil series restrictive layer is both a claypan and a hardpan. In some areas, the surface layer is gravelly sandy loam, loam, or sandy loam. The shrink–swell potential is high. Surface runoff is very slow or slow. The hazard of water erosion is slight to moderate. Permeability is very slow in the Redding soil. Water is perched above the claypan/hardpan for short periods after seasonal rainfall in winter and early spring. The soil between depths of 4 and 18 inches is usually dry all of the time from June until September or early October and is moist in some or all parts the rest of the year. Redding soils are on nearly level or dissected and undulating to hilly high terraces. Microrelief may be hummocky. Gravel and cobbles tend to concentrate in the intermound in hummocky areas. Vernal pools are common in areas with slopes of 0% to 3%. Elevations are 40 to 2,000 feet amsl. This soil is used as rangeland or for dryland crops such as wheat. Redding soils may provide wetland functions and services.

Redding soils account for approximately 6% of Sacramento County, predominantly in the eastern portion of Sacramento County. Redding soils are the predominant soil series occurring on the Laguna Formation on low and high terraces.

5.1.2.5 Volcanic Mudflow Landform Geologic Formations and Soil Series

The northern Sierra Nevada was once covered by extensive volcanic mudflows believed to have arisen east of the sierra crest. These ancient mudflow formations were exposed at the base of the Sierra Nevada foothills, and then overlain by a thin soil derived from alluvial material, colluvial material (a loose deposit of rock debris accumulated through the action of gravity at the base of a cliff or slope), and eroded elements of the parent mudflow parent material (Jones and Stokes 1990). The mudflow landform ranges in age from early Pleistocene to Oligocene (37 to 24 million years ago) (Smith and Verrill 1998; Jones and Stokes 1990). The mudflow formation exists today as low, nearly level to gently sloping ridges and fans along the eastern edge of the Planning Area. The mudflow formation is characterized by a thin, shallow layer of soil over impermeable bedrock.

In the Planning Area, areas of the mudflow landform support the Mehrten Formation and the Valley Springs Formation (see geologic formation discussion below). Valley Springs formed in the Oligocene, and Mehrten formed in the Miocene (10 to 25 million years ago) or Pliocene. Soils on the mudflow formation are shallow, extremely rocky, excessively drained by surface runoff and high water infiltration rates, and underlain by impervious mudflow that impedes the downward movement of water and upon which a perched aquifer periodically forms during the wet season (Jones and Stokes 1990).

Mehrten Geologic Formation

The Mehrten Formation consists of eroded, high-standing remnants of volcanic mudflow fans that were deposited during the Pliocene and Miocene and is located on the volcanic mudflow landform. Vernal pools tend to be located on the western edge of the Mehrten Formation in the Sacramento Valley because the eastern portion increases in slope, precluding development of soil processes that formed vernal pools (Smith and Verrill 1998). Vernal pools classified as Northern Volcanic Mudflow Vernal Pools (Sawyer and Keeler-Wolf 1995) are often found on Mehrten Formation soils. Several outcrops of the Mehrten Formation are exposed in a discontinuous band that runs north–south in the eastern portion of the Planning Area in a stratum that underlies the Laguna Formation and overlies the Valley Springs Formation. The exposed band of the Mehrten Formation extends from the south County boundary at Dry Creek, where it is about 4 miles wide, north to U.S. Route 50, where it is less than 1 mile wide.

In the Planning Area, the Mehrten Formation is characterized by the mound-intermound soil series and complexes such as Hadselville-Pentz, Red Bluff-Redding, Corning-Redding, and Pardee-Rancho Seco. The Corning-Redding and Red Bluff-Redding complexes are predominant north of the Cosumnes River, while the Hadselville-Pentz and Pardee-Rancho Seco complexes are predominant south of the Cosumnes River.

The Mehrten Formation is the third largest of the exposed geologic formations in the Planning Area, with a total of 26,459 acres (3,863 acres inside the UDA and 22,596 acres outside the UDA). It comprises just over 8% of the total Planning Area.

The Mehrten Formation encompasses 10,275 vernal pools, or about 17% of the total number of vernal pools within the Planning Area, with 648 located inside the UDA and 9,627 outside the UDA. The exposed Mehrten Formation ranks third in total number of vernal pools in the Planning Area. In addition, approximately 11% (478 acres) of the total vernal pool acreage within the Planning Area occurs on the Mehrten Formation, with 32 acres of vernal pool in the UDA and 446 acres outside the UDA.

Valley Springs Geologic Formation

The Valley Springs Formation is also on the mudflow landform but is slightly older than the Mehrten Formation. The Valley Springs Formation is made up of eroded, high-standing remnants of rhyolitic (a fine-grained volcanic rock similar to granite) volcanic mudflow fans that were deposited 20–35 million years ago. Vernal pools tend to be located on the western edge of the formation in the Sacramento Valley because the eastern portion increases in slope, precluding soil processes that allow vernal pool development (Smith and Verrill 1998).

The Valley Springs Formation is exposed along the southeastern portion of the Planning Area from the southeastern corner along Dry Creek, northward to the headwaters of Carson Creek. The formation is generally exposed over an area from 1 to 2 miles in width. Its widest exposure is along Arkansas Creek, where it is exposed for about 4 miles from east of Lone Road, west to the Cosumnes River. There may be expansive clays present, especially in fine-grained material. The Amador-Gillender, Hadselville-Pentz, and Pardee-Rancho Seco soil complexes predominate on the Valley Springs Formation.

The Valley Springs Formation is the seventh largest geologic formation exposed in the Planning Area, with a total of 13,690 acres, 141 acres inside the UDA and 13,549 acres outside the UDA. It comprises just over 4% of the total Planning Area.

The Valley Springs Formation contains 4,139 vernal pools, or about 7% of the total number of vernal pools within the Planning Area. Of the 4,139 vernal pools occurring on this formation, 10 are located inside the UDA and 4,129 are outside the UDA. The Valley Springs Formation ranks fifth in importance in terms of total number of Planning Area vernal pools. Approximately 6% (265 acres) of the total vernal pool acreage within the Planning Area occurs on the Valley Springs Formation. With the exception of 0.16 acre, almost all of the vernal pool acreage on this formation occurs outside of the UDA.

Soil Series

Pentz. The Pentz soil series consists of shallow loamy, well-drained soils formed in material weathered from weakly consolidated basic andesitic tuffaceous sediments primarily from the Mehrten Formation on exposed, upturned edges of mudflow formations at the base of the Sierra Nevada foothills (Jones and Stokes 1990). Pentz soils form mound-intermound microrelief and are found on hills and on backslopes of hills. Pentz soils are on the mound position. Slopes are 2% to 50%. The restrictive layer is bedrock. Much of the soil is dry in most years from May 15 to October 15, is moist in all parts from December 1 to May 1, and moist in some parts the rest of the year. The weighted average clay content ranges from 10% to 20%. Coarse fragments are subrounded or rounded metamorphic rock, quartz, or quartzite. Content of coarse fragments is 0% to 35%, with 0% to 25% cobbles or stones. Organic matter in the upper 7 inches mixed is 1% to 3%. Pentz soils are on undulating to hilly hills and on steep backslopes of hills, with mound-intermound microrelief. The microrelief is most strongly expressed on slopes of less than 20%. Elevation is 110 to 600 feet amsl.

The Pentz soil is shallow and well drained. Typically, the surface layer is brown fine sandy loam about 9 inches thick. The subsoil also is brown fine sandy loam. It is about 7 inches thick. Weakly consolidated tuffaceous sandstone is at a depth of about 16 inches. In some areas, the surface layer is gravelly sandy loam, sandy loam, or loam. In other areas, a thin hardpan caps the bedrock. Permeability is moderately rapid in the Pentz soil. Runoff is medium. The hazard of water erosion is slight or moderate.

Hadselville. The Hadselville soil series consists of very shallow loamy, moderately well-drained intermound soils formed in material weathered from weakly consolidated basic andesitic tuffaceous sediments (compacted volcanic ash varying in size from fine sand to coarse gravel) primarily from the Mehrten Formation on exposed, upturned edges of mudflow formations at the base of the Sierra Nevada foothills (Jones and Stokes 1990). The Hadselville and Pentz soils (Pentz soils are described above) are on hills with a mound-intermound microrelief topography. Hadselville soils are in the intermound position, and slopes are 2% to 30%. Soil depth ranges from 4 to 10 inches. The restrictive layer is bedrock. The soil is dry at the bottom depth in most years for a period of 120 to 150 days from May 15 to October 1, moist in all parts for a period of 135 to 165 days from November 15 to April 15, and moist in some parts the rest of the year. Organic matter content ranges from 1% to 2% throughout the profile and is higher than the underlying material. Elevation is 110 to 350 feet amsl.

The Hadselville soil is very shallow and moderately well drained. Typically, the surface layer is grayish-brown sandy loam about 7 inches thick. Weakly consolidated tuffaceous sandstone is at a depth of about 7 inches. In some areas, the surface layer is gravelly sandy loam. In other

areas, a thin hardpan caps the bedrock. Permeability is moderately rapid in the Hadselville soil. Runoff is very slow or medium. The hazard of water erosion is slight or moderate.

5.1.2.6 Hill Landform

A hill landform has a raised surface above a surrounding level plain and is distinguished by its sloping sides and defined peak. Hill landforms can be formed through the geologic processes of faulting and erosion. Within the Planning Area, both processes likely played a role in the formation of the hill landform, which is associated with the Pliocene (5 million years ago) uplift of the Sierra Nevada mountains to the east of the Planning Area. These processes continue to shape the hill landform into present day. Within the Planning Area, the hill landform can be found in a narrow band immediately west of the foothills (Figure 5-1). As shown in Figure 5-2, the Lone Formation, an Eocene-age (55 to 33 million years ago) weathered sedimentary formation primarily comprises the hill landform in the Planning Area (Smith and Verrill 1998; Creely and Force 2007). Vernal pools are not found on the hill landform within the Planning Area.

5.1.2.7 Foothill Landform

The foothill landform is a surface defined by a gradual increase in elevation at the base of a mountain range. They form the transition zone between hills and higher elevation mountains. The foothill landform is associated with the Pliocene (5 million years ago) uplift of the Sierra Nevada mountains to the east of the Planning Area and is found along the far eastern margin of the Planning Area (Figure 5-1). Uplift from active geologic faults, erosion, and dissection by active stream channels draining the mountain range are the primary forces that shape this landform. Vernal pools are not found on the foothill landform. Within the Planning Area, the Copper Hill Volcanic, Gopher Ridge Volcanic, and Salt Springs Slate geologic formations are found on the foothill landform (Figure 5-2).

5.1.2.8 Existing Hazards

Soil Subsidence

Subsidence is the gradual settling or sinking of the Earth's surface with little or no horizontal motion. Lands in Sacramento County may be affected by five types of subsidence: compaction of unconsolidated soils by earthquake shaking, compaction by heavy structures, the erosion of peat soils, peat oxidation, and fluid withdrawal. As discussed below, the likelihood for substantial seismic activity in the Planning Area is low; thus, earthquake shaking is not a major source of subsidence. Subsidence in peat soils from heavy structures has not been an issue in the Planning Area. The pumping of water for residential, commercial, and agricultural uses from aquifers is the most common cause of subsidence in the Planning Area via the fluid

withdrawal mechanism. Known subsidence areas occur in the far western portions of Sacramento County, including the portion of the Planning Area west of Interstate (I)-5 (see Figure II-7 of the Sacramento County General Plan [Sacramento County 2011]). Although subsidence has caused substantial problems in portions of the Delta and in the San Joaquin Valley, it is not a major concern in the Planning Area.

Expansive Soils

Expansive soils contain shrink-swell clays that are capable of absorbing water. As water is absorbed, the clays increase in volume. This change in volume is capable of exerting enough force on subsurface portions of buildings and other structures to damage foundations and underground utilities. Damage can also occur as the soils dry and contract.

Expansive soils are associated with approximately one-third of all soil types in Sacramento County. However, in the Planning Area, only the Valley Springs Formation (Figure 5-2) is described as having the potential to contain expansive soils (Sacramento County 2010). Expansive soils are largely composed of clays, which greatly increase in volume when water is absorbed and shrink when dried. Expansive soils are primarily of concern for building foundations that may rise during the rainy season and fall during the dry season in response to the clay's action. If soil movement varies under different parts of the building, the result is that foundations crack, structural portions of the building are distorted, and doors and windows are warped so that they do not function properly (Sacramento County 2010).

Landslides

A landslide is the downhill movement of masses of earth material under the force of gravity. The factors contributing to landslide potential are steep slopes, unstable terrain, and proximity to earthquake faults. This process typically involves the surface soil and an upper portion of the underlying bedrock. As discussed above, expansive soils tend to shrink and swell in response to moisture content changes. When expansive soils are located on slopes, gravity tends to work the soil downslope during this shrinking and swelling process. Movement may be very rapid or so slow that a change of position can be noted only over a period of weeks or years (creep). The size of a landslide can range from several square feet to several square miles.

Almost all of the topography in the Planning Area is relatively flat and would not be subject to landslides. In the Planning Area, only a narrow strip along the eastern boundary of Sacramento County, east of Rancho Murieta and north of the Cosumnes River, is considered by the Sacramento County to have landslide potential (Sacramento County 2011). As identified above, expansive soils may contribute to landslide risk where they occur on slopes. Only the Valley Springs Formation has the potential to contain expansive soils, and occurrences of the Valley

Spring Formation (Figure 5-2) are south and west of landslide potential area identified by Sacramento County. This indicates that the locations of the Valley Springs Formation are not on steep enough slopes for the potential expansive soils to increase landslide risk.

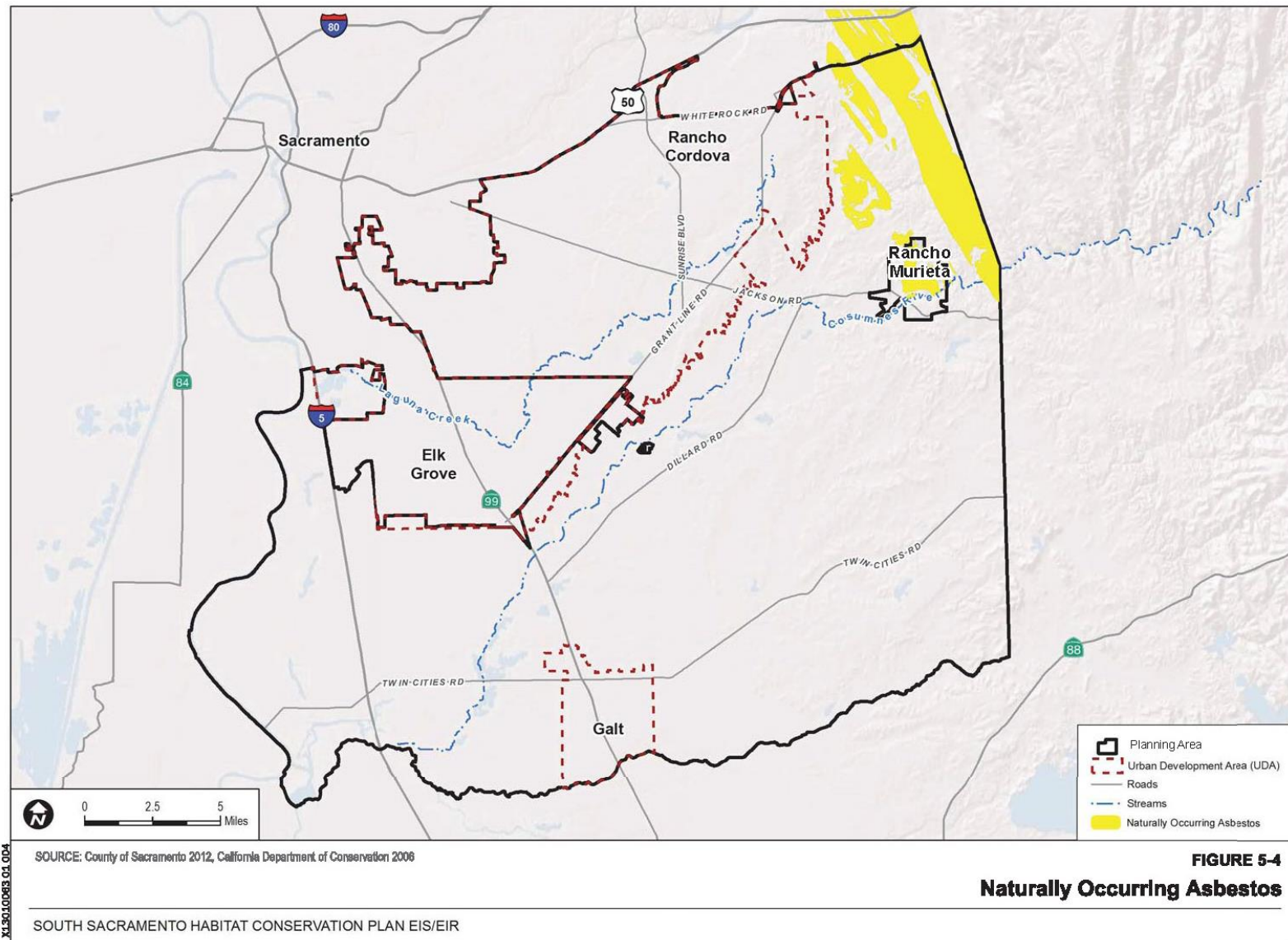
Naturally Occurring Asbestos

Asbestos is a naturally occurring mineral that is classified as a known human carcinogen. In California, serpentinite and ultramafic rock (two specific rock types) may contain asbestos minerals, especially near fault zones. Asbestos can also be associated with other rock types in California, though much less frequently than serpentinite and/or ultramafic rock.

Asbestos poses a health risk only when it becomes friable, which means that it can be easily broken into tiny pieces, which can then become airborne and then inhaled. All types of asbestos are hazardous and may cause lung disease and cancer. Asbestos may be released to the atmosphere due to vehicular traffic on unpaved roads, during grading, and at quarry operations (broken or crushed serpentinite and ultramafic rocks) (Sacramento County 2010). All of these activities may have the effect of releasing potentially harmful asbestos into the air.

The Sacramento Metropolitan Air Quality Management District has determined that naturally occurring asbestos is present within areas of eastern Sacramento County (SMAQMD 2006). Sacramento Metropolitan Air Quality Management District commissioned the CGS to test for and map all areas of potential naturally occurring asbestos within eastern Sacramento County (CDOC 2006). The map depicts locations within eastern Sacramento County that are known to or likely to contain naturally occurring asbestos (Figure 5-4). Locations of naturally occurring asbestos in the Planning Area are associated with the foothill landform discussed in Section 5.1.2.7, Foothill Landform (Figure 5-2). Based on available California Department of Conservation information, the western and central portions of the Planning Area, including the UDA, are unlikely to contain naturally occurring asbestos (CDOC 2000) (Figure 5-4).

Figure 5-4 Naturally Occurring Asbestos



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Geologic Hazards

Seismicity and Earthquake

The intensity of seismic shaking, or strong ground motion, during an earthquake is dependent on the distance and direction from the epicenter of the earthquake, the magnitude of the earthquake, and the geologic conditions of the surrounding area. Ground shaking could potentially result in the damage or collapse of buildings, levees, and other structures. Most earthquakes occur along faults, which are fractures or geological areas of weakness, along which rocks on one side have been displaced with respect to those on the other side. Most faults are the result of repeated displacement that may have taken place suddenly and/or by slow creep over many years.

No major active faults transect Sacramento County (CDOC 2013), and Sacramento County has experienced relatively little seismic activity. While it is possible for the Planning Area to be subject to seismic shaking, the probability for seismic shaking in the Planning Area is low (CGS 2008).

Soil Liquefaction

Soil liquefaction occurs when ground shaking from an earthquake causes a sediment layer saturated with groundwater to lose strength and take on the characteristics of a fluid. Factors determining the liquefaction potential are soil type, the level and duration of seismic ground motions, the type and consistency of soils, and the depth to groundwater. Loose sands and peat deposits are susceptible to liquefaction, while clayey silts and silty clays are generally stable under the influence of seismic ground shaking (CGS 2008). Liquefaction poses a hazard to engineered structures. The loss of soil strength can result in bearing capacity insufficient to support foundation loads, increased lateral pressure on retaining or basement walls, and slope instability. Sites underlain by relatively loose sandy soils and saturated deposits of fill combined with a shallow groundwater table, which typically are located in alluvial river valleys/basins and floodplains, are susceptible to liquefaction.

Sacramento County has two areas that may pose liquefaction problems: the downtown area of Sacramento and lands within the legal Delta (Sacramento County 2011). The Planning Area excludes Sacramento but includes a small portion of the legal Delta (see Section 4.1.1.2, State Regulations and Policies, and Figure 4-1). Approximately 40,986 acres of the Planning Area are within the legal Delta, and therefore, are subject to potential liquefaction. The legal Delta in the Planning Area is located west of I-5, and an adjacent portion of the Cosumnes and Mokelumne River floodplain east of I-5 (in the southwestern portion of the Planning Area) (Figure 4-1). However, as stated in the preceding section, the Planning Area has very small seismic risk, and associated risk of soil liquefaction damage is also very small.

5.1.2.9 Existing Mineral Resources

As discussed in Section 5.1.1, Regulatory Framework, the State Mining and Geology Board has designated certain mineral deposits as being regionally significant to satisfy future needs. The California Geological Survey has designated the majority of the Planning Area as MRZ-3, i.e., areas containing mineral deposits, the significance of which cannot be evaluated from existing data.

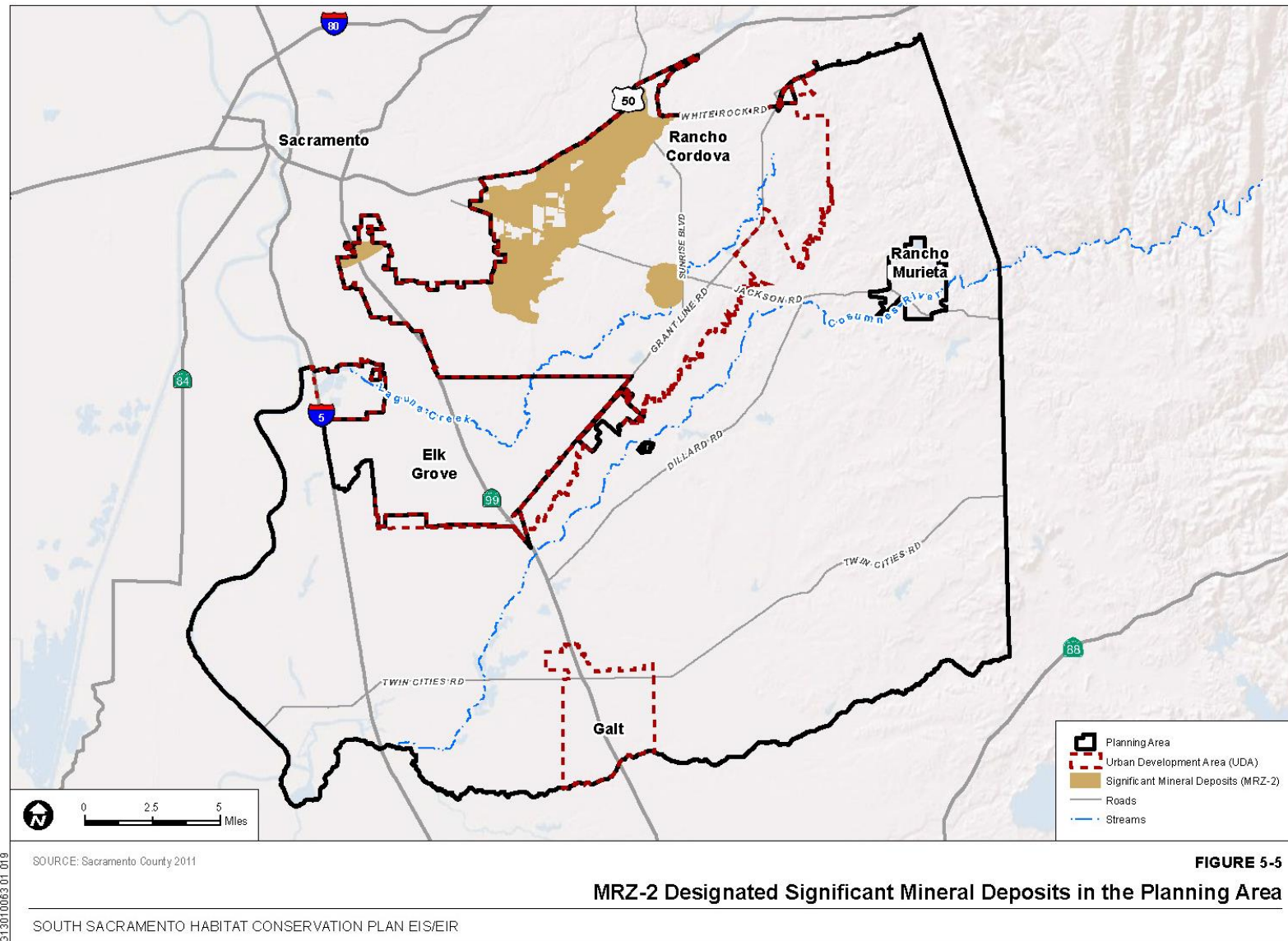
A few areas located within the eastern and southwestern portions of the Planning Area are designated as MRZ-1—areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence.

Two primary locations within the UDA portion of the Planning Area are designated as MRZ-2 (Figure 5-5)—areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists. The larger area is located along the north–central boundary of the Planning Area, and a smaller area is located northwest of the intersection of Sunrise Boulevard and Grant Line Road. These are areas that are known to contain substantial aggregate resources. The primary mineral resource in the Planning Area that is currently in production is aggregate. As discussed in Section 3.7.1.3, Past and Present Mining Operations in the Planning Area, there are several active aggregate mining operations both inside and outside the UDA, with 24 permitted aggregate mines, 21 of which are currently active. Additionally, one application for an additional aggregate mine is being processed by Sacramento County. The presence of aggregate mines outside the UDA indicates that there are commercially viable aggregate resources in locations designated MRZ-3.

Clay is currently being surface mined in four locations within Sacramento County, including along the Cosumnes River. Topsoil is currently mined near the Cosumnes River, and there is one existing pumice pit.

Other known Planning Area mineral resources that have, or could, support commercial operations include gold, silver, lignite, natural gas, and petroleum (Sacramento County 2011).

Figure 5-5 MRZ-2 Designated Significant Mineral Deposits in the Planning Area



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5.2 ENVIRONMENTAL CONSEQUENCES/ ENVIRONMENTAL IMPACTS

5.2.1 Methodology for Assessing Impacts of Each Alternative on Soils, Geology, and Mineral Resources

This section describes and analyzes the potential impacts of each EIS/EIR alternative on the geologic conditions, soil conditions, and mineral resources, and geological hazards within the Planning Area. Potential ways that an EIS/EIR alternative could affect these resources include soil erosion or loss of access to important soil, geologic, or mineral resources. The impact analysis also evaluates whether an EIS/EIR alternative could affect human exposure to naturally occurring asbestos or to existing seismic and soils hazards (e.g., earthquake, landslide).

The projects and activities expected under each EIS/EIR alternative, including expected or conceptual preserves, are described in Chapter 2, Alternatives, Including the Proposed Action/Proposed Project. As discussed in Chapter 3, Section 3.6.5, GIS Methodology Used in Chapters 4–16 to Estimate Direct Impacts of Each EIS/EIR Alternative, the EIS/EIR impact methodology uses geographic information system (GIS) datasets that were prepared using the best available information about the amounts and locations of ground disturbance from future projects and activities expected under each alternative. GIS datasets of Planning Area soils, geology, and mineral resources, and datasets of geological hazards were prepared using existing studies and using best available state and local sources of information, summarized above in Sections 5.1.1 and 5.1.2. The GIS methodology was used to compare these datasets and to quantitatively estimate the direct impacts of each EIS/EIR alternative on the resources and hazards studied in Chapter 5.

As discussed in Section 5.1.2, the natural geologic conditions, landforms, and soils within the “mine and dredge tailings” areas shown on Figures 5-1, 5-2, and 5-3 have been substantially altered by past human activities. Therefore, potential impacts of the EIS/EIR alternatives on the “mine and dredge tailings” areas are not discussed in Section 5.2.2, No Action/No Project Alternative; Section 5.2.3, Proposed Action/Proposed Project Alternative; or Section 5.2.4, Reduced Permit Term Alternative.

The analysis of each EIS/EIR alternative in Section 5.2 assumes that new building and facility construction implemented under each alternative would comply with the applicable federal, state, and local regulations and policy requirements for structural design, construction techniques, and other aspects of the engineering and construction process, discussed previously in Section 5.1.1. The study period and the study area used in the Chapter 5 impact analyses are described in Section 3.6.2, Geographic Study Area of Resource Topics Analyzed in Chapters 4 Through 16, and Section 3.6.3, EIS/EIR Study Period. The lead agencies determined

that an appropriate geographic scale for evaluating the impacts of each EIS/EIR alternative on soils, geology, and mineral resources should include the entire Planning Area.

As discussed in Section 3.7, Cumulative Effects Analysis in Resource Chapters 4 through 16, the Chapter 5 cumulative analyses of impacts to soils, geology, and mineral resources will consider the effects of past and present urban development within in the Planning Area (see Existing Conditions in Section 5.1.2) and will consider future impacts expected from reasonably foreseeable “other” projects in the Planning Area (see Section 3.7). The cumulative analysis of each EIS/EIR alternative will then determine if the incremental impacts of the alternative on soils, geology, and mineral resources would be significant (i.e., cumulatively considerable).

However, adverse effects on geology and soils are generally site specific rather than regional in nature; therefore, the geologic effects of multiple projects over large distances typically do not interact. However, if multiple actions or projects are proposed in close proximity, they may combine cumulatively, such as if erosion generated by two adjacent projects creates a larger cumulative, downstream erosion impact.

Given the low seismic risk in the Planning Area, the site-specific nature of seismic impacts, and the fact that any new urban development occurring within the Planning Area would be subject to, at a minimum, uniform site development and construction standards consistent with the CBC, cumulative impacts resulting from seismic risks are not considered further in Sections 5.2.2, 5.2.3, or 5.2.4.

As discussed Section 3.4, Previous Planning Area Environmental Reviews, the EIR documents previously prepared for the General Plans of Sacramento County, Galt, and Rancho Cordova (Sacramento County 2010³; Galt 2009b; Rancho Cordova 2006b) analyzed direct and cumulative impacts of urban growth planned within each jurisdiction, including impacts to geological resources and hazards. When the impact analysis or conclusions provided in these General Plan EIR documents were determined by the lead agencies to be appropriate for use in the analysis of the EIS/EIR alternatives, a brief summary or description of the incorporated information or analysis is provided in Sections 5.2.2, 5.2.3, and 5.2.4.

As discussed in Section 3.4, the three General Plan EIRs used different study periods—ending in 2030 (Galt 2009b), 2030 (Rancho Cordova 2006b), and 2050 (Sacramento County 2010). However, the 50-year study period for this EIS/EIR ends in 2065 (Section 3.6.3). Therefore, additional urban development can be expected to occur within Galt, Rancho Cordova, and

³ As described further in Section 3.4.1, Sacramento County General Plan, the proposed project analyzed within the Sacramento County General Plan EIR assumed development within a designated “Jackson Highway Corridor New Growth Area” that was not a part of the alternative ultimately selected by Sacramento County. However, Sacramento County is currently processing land use entitlements in the Jackson Highway Corridor, so the referenced conclusions from the proposed project analysis are relevant to the No Action/No Project Alternative.

Sacramento County in the years after each General Plan EIR study period ends but before this EIS/EIR's study period ends in 2065. Therefore, the impact analyses and conclusions incorporated from the three General Plan EIRs may not have considered all of the future urban development that is included in the project description of each EIS/EIR alternative. Consequently, when determining the significance of each impact described in the EIS/EIR, the lead agencies considered the impact analysis and the conclusions incorporated by reference from the General Plan EIRs, along with the effects of all urban development activities and projects that are included in the description of each EIS/EIR alternative.

5.2.1.1 Determination of Impact Significance

As discussed in Section 3.8.1, Significance Thresholds, the criteria used to evaluate the significance of each alternative's impacts on soils, geology, and mineral resources are based on Appendix G of the CEQA Guidelines and on typical thresholds used to evaluate effects to soils, geology, and mineral resources in recent EIRs prepared by Sacramento County. Based on these sources, a significant adverse effect could occur if the alternative would:

1. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault,
 - Strong seismic ground shaking,
 - Seismic-related ground failure, including liquefaction, or
 - Landslides;
2. Result in substantial soil erosion or the loss of topsoil;
3. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the action/project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;
4. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property;
5. Result in unsafe exposure to naturally occurring asbestos;
6. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater; or
7. Result in the obstruction of access to, or the removal of mineral resources. In particular, for aggregate resources, obstruction to access or removal of mineral resources delineated on a local general plan, specific plan, or other land use plan.

Appendix G of the CEQA Guidelines does not provide suggested criteria for evaluating a beneficial effect. The following criteria were developed by the lead agencies. A beneficial effect could occur if the alternative would:

1. Discernibly reduce compared to a baseline environmental condition, exposure of people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault;
 - Strong seismic ground shaking;
 - Seismic-related ground failure, including liquefaction;
 - Landslides; or
 - Unstable geologic units or soils that would become unstable and potentially result in landslide, lateral spreading, subsidence, liquefaction or collapse.
2. Discernibly reduce the potential for soil erosion or the loss of topsoil, or be discernibly more protective of topsoil, compared to a baseline environmental condition;
3. Discernibly reduce, compared to a baseline environmental condition, the amount of new urban development located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property;
4. Discernibly reduce or avoid unsafe exposure to naturally occurring asbestos compared to a baseline environmental condition;
5. Discernibly reduce, compared to a baseline environmental condition, the amount of new urban development located on soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater; or
6. Discernibly increase access to, or the removal of mineral resources, compared to a baseline environmental condition. In particular, for aggregate resources, increase access to or removal of mineral resources delineated on a local general plan, specific plan, or other land use plan.

The impact analysis for the three EIS/EIR alternatives will consider the context, intensity, and severity of potential impacts to each of these impact criteria and will present separate determinations of significance addressing each of these criteria.

5.2.2 No Action/No Project Alternative

The No Action/No Project Alternative is described in Section 2.2, No Action/No Project Alternative, of Chapter 2.

5.2.2.1 Direct and Indirect Effects of the Alternative

Much of the estimated future urban development expected under the No Action/No Project Alternative (Section 2.2) is also described and analyzed in the Sacramento County General Plan, the Galt General Plan, and the Rancho Cordova General Plan (see Section 3.4 and Section 5.2.1, Methodology for Assessing Impacts of Each Alternative on Soils, Geology, and Mineral Resources).

As discussed in Section 5.2.1, the relevant analyses from each of these EIRs are summarized and incorporated by reference into the analysis of the No Action/No Project Alternative.

The impact analysis presented in the *Final Environmental Impact Report: Sacramento County General Plan Update* (Sacramento County General Plan EIR) (Sacramento County 2010) determined that any impacts of planned future development on the existing geology and soil resources of Sacramento County would be less than significant because future projects would comply with applicable regulations and policies (Sacramento County 2010, pp. 13-24 to 13-36). However, the impact analysis presented in the Sacramento County General Plan EIR determined that future development would permanently obstruct access to existing mineral resources of Sacramento County, and this adverse impact would be significant and unavoidable (Sacramento County 2010, pp. 13-27 to 13-28). In addition, the EIR impact analysis determined that adverse impacts of future development in areas of Sacramento County with naturally occurring asbestos would be less than significant because all future development projects would comply with applicable regulations discussed on page 11-75 of the Sacramento County General Plan EIR (Sacramento County 2010).

The impact analysis presented in the *City of Rancho Cordova General Plan Final Environmental Impact Report* (Rancho Cordova General Plan EIR) (Rancho Cordova 2006b) similarly determined that impacts of future development to existing geology and soil resources would also be less than significant based on the combination of geologic and soils conditions in the Planning Area and because future projects would comply with applicable regulations and policies (Rancho Cordova 2006b, pp. 4.8-19 to 4.8-26). The impact analysis in the Rancho Cordova General Plan EIR also determined that impacts of future development on existing mineral resources would be significant and unavoidable because future development would permanently obstruct access to existing mineral resources (Rancho Cordova 2006b, pp. 4.8-26 to 4.8-27). The Rancho Cordova General Plan EIR does not analyze impacts resulting from future development in naturally occurring asbestos areas because soil types that could contain

naturally occurring asbestos are not found in the Planning Area. The impact analysis presented in the *City of Galt General Plan Update: 2030 Final EIR* (Galt General Plan EIR) (Galt 2009b), found that any adverse impacts from future development on the existing geology and soil resources, and on seismic hazards within Galt and the Galt sphere of influence (SOI) would be less than significant because future development projects would implement the general plan policies identified in the Galt General Plan EIR (Galt 2009b, pp. 8-24 to 8-25 and 10-13). The Galt General Plan EIR does not analyze impacts of future development on mineral resources as no mineral resources would be affected by General Plan Implementation or impacts resulting from exposure to naturally occurring asbestos because soil types that could contain naturally occurring asbestos are not found in the Planning Area.

As stated above in Section 5.2.1, the 50-year study period for this EIS/EIR extends to 2065, beyond the study periods for these three General Plans (to 2030 for Galt and Rancho Cordova and to 2050 for Sacramento County). The lead agencies anticipate that new urban development projects would continue to “build out” all of the UDA through the end of the EIS/EIR 50-year study period (2065). Therefore, additional urban development beyond that anticipated in the General Plans can be expected to occur within Galt, Rancho Cordova, and Sacramento County. The regulatory, geological, and soils conditions that support the less than significant impact conclusions for soils and geology in the three General Plan EIRs would continue to apply for buildout of the UDA. For example, as identified in Section 5.1.2.8, Existing Hazards, there are no locations that could contain expansive soils or naturally occurring asbestos in the UDA and no areas of landslide risk.

In addition, future development projects that would occur over the EIS/EIR 50-year study period but that were not explicitly addressed in the Galt, Rancho Cordova, or Sacramento County General Plan EIRs would comply with the General Plan regulations and policies for soils and geology (Section 5.1.1.3, Local). An example is the Capital Southeast Connector Project (see Section 3.4.5, Capital Southeast Connector), which was not originally contemplated in the Sacramento County General Plan (Sacramento County 2011), but is included in the project description for the No Action/No Project Alternative. The Capital SouthEast Connector Project EIR identified potentially significant adverse impacts in areas subject to liquefaction and erosion (Connector JPA 2012). However, the Capital Southeast Connector Project would implement site-specific mitigation to reduce these adverse impacts to less than significant (Connector JPA 2012, pp. 8-9 to 8-11). The significant and unavoidable adverse impacts of planned urban development on mineral resources identified in the Sacramento County and Rancho Cordova General Plan EIRs would also occur under the No Action/No Project Alternative. The additional urban development included in the No Action/No Project Alternative beyond that anticipated in the Rancho Cordova and Sacramento County General Plans, particularly any additional development in designated

MRZ-2 significant mineral deposits (Figure 5-5) would result in further potential for future development to permanently obstruct access to existing mineral resources.

Shifted or displaced development. As explained in Section 2.2.2, Expected Regulatory Environment Under the No Action/No Project Alternative, and Section 2.2.3, Loss of Natural Lands Under the No Action/No Project Alternative, the regulatory environment of the No Action/No Project Alternative is expected to restrict the ability of local jurisdictions to permit up to approximately 1,900 acres of urban development planned in the Mather Core Recovery Area (MCRA), and therefore, this future development could shift or be displaced to areas outside of Sacramento County's USB boundary. Sacramento County planners identified four locations outside the USB where this development may shift or be displaced: (1) in the northeast portion of the Planning Area, south of White Rock Road; (2) in the north-central portion of the Planning Area, south of Kammerer Road; (3) in the east-central portion of the Planning Area, expanding Rancho Murieta to the west or northwest; and (4) in the south-central portion of the Planning Area, expanding the rural towns of Wilton and Herald.

Locations No. 2 and 4 are in topographically flat areas, far from locations potentially containing expansive soils (Figure 5-2), naturally occurring asbestos (Figure 5-4), or significant mineral deposits (Figure 5-5). If any development is shifted or displaced to these locations, impacts from this development on soils, geology, and mineral resources would be less than significant based on the combination of physical conditions in these locations and because future projects would comply with applicable regulations and policies.

If any of the 1,900 acres of planned development is shifted or displaced from the MCRA to the northeast portion of the Planning Area outside the USB, Locations No. 1 and 3 identified above, new development in these areas would encounter steeper topography compared to land within the MCRA and, therefore, has a greater risk of causing erosion. Neither location intersects the Sacramento County identified landslide risk area, but portions of the area northwest of Rancho Murieta contains the Valley Spring Formation (Figure 5-2) that could contain expansive soils. However, this impact analysis of the No Action/No Project Alternative assumes that all future development projects would comply with applicable policies and regulations identified in the General Plans for Rancho Cordova and Sacramento County (see Section 5.1.1.3). Consequently, any adverse effects of new development on the existing geology, soils, risk of soil erosion, and risk of expansive soils would be less than significant, similar to the determinations made in the General Plan EIRs for Rancho Cordova and Sacramento County.

If development displaced from the MCRA is shifted to locations to the northeast portion of the Planning Area, Locations No. 1 and 3 identified above, that new development would also be more likely to encounter areas of natural occurring asbestos (Figure 5-4). However, risks to human health under the No Action/No Project Alternative would be less than significant

because future development projects implemented anywhere within Sacramento County must comply with applicable policies and regulations discussed in Section 5.1.1.3 and in the Sacramento County General Plan EIR (Sacramento County 2010 p. 11-75).

Any of the 1,900 acres development that would shift from the MCRA to areas outside Sacramento County USB boundary could also preclude or inhibit access to mineral resources under, or near where the shifted development occurs. However, there are no designated MRZ-2 significant mineral deposits (Figure 5-5) in the four potential locations for where development might be shifted or displaced outside the USB under the No Action/No Project Alternative (see Section 2.2.3 and Section 5.1.2). There are no designated MRZ-2 significant mineral deposits anywhere outside the USB. Therefore, the 1,900 acres of shifted or displaced development, or any other elements of the No Action/No Project Alternative outside the USB, would not add to the significant impacts to mineral resource access that were identified in the General Plan EIRs discussed above.

Project mitigation and conservation expected under the No Action/No Project Alternative are described in Section 2.2.2 Expected Regulatory Environment Under the No Action/No Project Alternative; Section 2.2.4, Preservation of Natural Lands Under the No Action/No Project Alternative; and Section 2.2.5, Preserve Management and Monitoring Under the No Action/No Project Alternative. Purchasing of credits at an approved mitigation bank or through an established in-lieu fee program, or establishing on-site or off-site mitigation Preserves, would not result in activities that could increase seismic risk, landslide risk, erosion potential, unsafe exposure to naturally occurring asbestos, or other effects to geology and soils.

Furthermore, project compensatory-mitigation activities associated with the re-establishment or establishment of vernal pools and other aquatic resources on Preserves may require use of heavy equipment and grading or excavation of soil to depths up to 3 feet, which could increase potential for erosion to occur or could mobilize naturally occurring asbestos. However, re-establishment/establishment of vernal pools would occur only on specific soil types that form seasonal perched aquifers (see Chapter 8), which are not found on steep slopes. Therefore, vernal pool and other aquatic resources re-establishment and establishment activities would not occur on steep slopes that are susceptible to erosion and would be unlikely to disturb rock types containing naturally occurring asbestos found in the northeastern part of Sacramento County (Exhibit 5-4). In addition, where aquatic resources re-establishment and establishment activities are of sufficient size to require a County grading permit (over an acre of disturbance or over 300 cubic yards of soil are moved), implementation of existing policies and regulations related to construction would be required (see Section 5.1.1.3), which would prevent significant adverse effects resulting from erosion. If an aquatic resources re-establishment/establishment project were to be undertaken in an area that contains rock types containing naturally occurring asbestos, applicable regulations and policies to prevent hazardous exposure to

naturally occurring asbestos would be implemented. Therefore, the less than significant conclusion for adverse effects from erosion and from naturally occurring asbestos presented in the General Plan EIRs would not be changed by these mitigation activities. The less than significant conclusion for adverse effects from erosion and from naturally occurring asbestos from the General Plan EIRs remains applicable to the impacts from erosion and from naturally occurring asbestos expected under the No Action/No Project Alternative.

However, the establishment of on-site or off-site mitigation Preserves could preclude or substantially inhibit the extraction of any mineral resources present within the lands that are preserved. The impacts to mineral resources presented in the General Plan EIRs (Sacramento County 2010; Galt 2009b; Rancho Cordova 2006b) included impacts from the various categories of open-space that would be required by the jurisdiction, including on-site parks, outdoor recreation areas, green belts, and any on-site mitigation Preserves. However, the impact analyses in the General Plan EIRs may not have considered impacts to mineral resources present at any off-site mitigation preserve sites. Although policies in the Sacramento County General Plan (Sacramento County 2011) and Rancho Cordova General Plan (Rancho Cordova 2006a) are designed to preserve access to mineral resources, and the location of future off-site preserves under the No Action/No Project Alternative may be reviewed by the applicable jurisdiction, there is the potential for future off-site mitigation preserves to be located in an area with mineral resources. This may result in some additional loss of access to mineral resources. Therefore, the significant and unavoidable adverse effects to mineral resources identified in the Sacramento County and the Rancho Cordova General Plan EIRs continues to be applicable to the mineral-resource impacts expected under the No Action/No Project Alternative.

5.2.2.2 Cumulative Effects of the No Action/No Project Alternative

The past and present urban development and associated infrastructure projects and human activities discussed in Section 3.7.1 have altered the EIS/EIR Planning Area geologic resources, including surface soils, landforms, and landscapes; altered access to important minerals resources; and have altered human exposure to naturally occurring asbestos and human exposure to soils hazards from earthquake, landslide, and erosion. These past and present alterations have resulted in the existing conditions of Planning Area described in Section 5.1.2. The effects of the past and present actions on soils and geology in the study area represent a less than significant adverse effect on the soils and geology within the study area. However, the effects of the past and present actions represent a significant adverse effect on access to important mineral resources in the study area. The past and present actions described in Section 3.7.1 have increased the potential for human exposure to naturally occurring asbestos, but various policies and regulations minimize the risk for exposure resulting in a less than significant adverse effect.

The types of future reasonably foreseeable “other” projects, activities, and actions, described in Section 3.7.2, Reasonably Foreseeable Other Actions, are similar to the types of past and present actions that occurred in the study area. The other reasonably foreseeable future actions in the study area (see Section 3.7.2) that were not included in the Section 2.2.2 description of the No Action/No Project Alternative include additional new urban development in the Elk Grove SOI and in Rancho Murieta, development of the Wilton Rancheria Casino, master planned developments named Rio Del Oro and Mather South inside the UDA, further rural residential development outside the UDA, continued urban development of cultivated agricultural lands, major infrastructure projects such as California High-Speed Rail and California WaterFix, and expansion of the existing National Wild Refuge and the Cosumnes River Preserve (see Section 3.7.2 for details of these projects). Like the activities analyzed in the General Plan EIRs for Galt, Rancho Cordova, and Sacramento County, these reasonably foreseeable other projects would comply with applicable regulations and policies addressing geology and soils and human exposure to naturally occurring asbestos. Either through implementation of applicable regulations and policies, or because a future reasonably foreseeable other project does not affect a particular resource, for example, urban development in the Elk Grove SOI does not intersect any rock types that could contain natural occurring asbestos, the reasonably foreseeable other projects would not contribute to adverse effects on geology and soils or human exposure to naturally occurring asbestos. None of the future reasonably foreseeable other projects intersect areas mapped as MRZ-2 significant mineral deposits (Figure 5-5); however, the Rio Del Oro and Mather South master planned developments are very close to these designated deposits. As identified earlier in Section 5.1.2.9, Existing Mineral Resources, the presence of aggregate mines outside the UDA in the Planning Area indicates that there are commercially viable aggregate resources in locations designated MRZ-3. Therefore, these master planned developments, or other future reasonably foreseeable other projects, could limit access to aggregate resources that are outside the mapped MRZ-2 significant mineral deposits. Therefore, they may contribute to the significant adverse effect on access to mineral resources in the study area. As described above, projects and activities included in the No Action/No Project Alternative would not have an adverse effect on geology and soils or human exposure to naturally occurring asbestos because of the combination of geologic and soils conditions in the Planning Area and because future projects would comply with applicable regulations and policies. Therefore, when the incremental effects of the No Action/No Project Alternative are viewed in connection with the effects of the past, present, and reasonably foreseeable future other actions, the No Action/No Project Alternative would not cause, or make a considerable contribution, to a significant cumulative impact on geology and soils or human exposure to naturally occurring asbestos. The No Action/No Project Alternative would result in a ***Less Than Significant Adverse Cumulative*** effect to geology and soils or human exposure to naturally occurring asbestos.

As also described previously, the direct and indirect impacts of No Action/No Project Alternative would adversely affect access to mineral resources. Therefore, when the incremental effects of the No Action/No Project Alternative are viewed in connection with the effects of the past, present, and reasonably foreseeable future other actions, the No Action/No Project Alternative would make a considerable contribution, to a significant cumulative impact on access to mineral resources. The No Action/No Project Alternative would result in a ***Significant Adverse Cumulative*** effect to access to mineral resources.

5.2.3 Proposed Action/Proposed Project Alternative

The Proposed Action/Proposed Project Alternative is described in Section 2.3, Proposed Action/Proposed Project.

5.2.3.1 Direct and Indirect Effects of the Alternative

As described in Section 2.3.3, Covered Activities and Loss of Natural Land Covers Under the Proposed Action/Proposed Project Alternative, the Proposed Action/Proposed Project Alternative Covered Activities include the same types of urban development as the No Action/No Project Alternative. Covered Activities under the Proposed Action/Proposed Project Alternative would result in urban development projects and activities on approximately 33,500 acres of natural landscapes in the Planning Area (Section 2.3.3). A large majority of this urban development, approximately 32,000 acres, would occur inside the UDA. The remaining roughly 1,500 acres of natural land covers removed outside the UDA would result, in large part, from various transportation and infrastructure projects. None of the urban development, transportation, or infrastructure projects inside or outside the UDA intersect landslide risk areas identified by Sacramento County (see Section 5.1.2.8) or locations that could contain naturally occurring asbestos (Figure 5-4). Projects and activities included in the Proposed Action/Proposed Project Alternative would comply with applicable regulations and policies to minimize erosion, seismic risk, and other geology and soils impacts. Some urban development in the UDA would occur over areas designated as MRZ-2 significant mineral deposits containing aggregate (Figure 5-5), preventing future access to the aggregate in these locations.

Under the Proposed Action/Proposed Project Alternative, there are approximately 2,000 fewer acres of new urban development projects on natural landscapes than the No Action/No Project Alternative. Therefore, there is less potential for urban development to expose native soils during construction and contribute to risks of erosion, although implementation of applicable regulations and policies under all alternatives substantially decreases the risk of harmful erosion.

The Proposed Action/Proposed Project Alternative includes urban development Covered Activities within the MCRA portion of the UDA to be implemented consistent with the approved

Sacramento County and Rancho Cordova General Plans without urban development shifting or being displaced to locations outside the UDA (Section 2.3.3). As a result, none of the new urban development of the Proposed Action/Proposed Project Alternative could occur in areas outside the UDA where there is naturally occurring asbestos, or where topography can increase the risk of erosion (Figures 5-3 and 5-4). The potential increased risks of erosion and human exposure to naturally occurring asbestos identified in Section 5.2.2.1, Direct and Indirect Effects of the Alternative, for the No Action/No Project Alternative, for the two potential displaced development locations in the northeast portion of the Planning Area, would not occur under the Proposed Action/Proposed Project Alternative.

The SSHCP includes Avoidance and Minimization Measures (AMMs) that would be included in all Covered Activity projects and activities implemented over the 50-year permit term (Table 2-6). SSHCP AMMs BMP-1, BMP-4, and BMP-9 would require development projects and activities to implement BMPs that control erosion and erodible materials and implement soil compaction BMPs. As discussed above in Sections 5.1.1 and 5.2.2, the No Action/No Project Alternative's projects and activities would implement construction standard BMPs, which are similar to these SSHCP BMP AMMs. However, the Proposed Action/Proposed Project Alternative includes additional on-site monitoring and measurement of the effectiveness of each AMM implemented, and annual reporting of the effectiveness of each AMM. The Proposed Action/Proposed Project Alternative includes processes for annual review of AMM effectiveness and a process for making adaptive changes to an AMM that is not effective at avoiding impacts to soils and geology. This additional layer of oversight of AMM implementation and AMM effectiveness under the Proposed Action/Proposed Project Alternative increases avoidance and minimization of impacts to geology and soils from construction activities. The SSHCP AMMs also provide new AMMs that would not occur under the No Action/No Project Alternative (Table 2-6), and these new measures are expected to lessen the potential adverse effects to soils and geology, compared to the effects of the No Action/No Project Alternative.

Differences in the locations of development in the UDA between the Proposed Action/Proposed Project Alternative and the No Action/No Project Alternative are primarily within the MCRA. Only small portions of the MCRA intersect with lands designated as MRZ-2 significant mineral deposits. The increased amount of urban development in the MCRA under the Proposed Action/Proposed Project Alternative could result in a slight increase in development over designated MRZ-2 significant mineral deposits.

Preserves. As discussed in Section 2.3.5, Conservation Strategy Under the Proposed Action/Proposed Project Alternative, the Proposed Action/Proposed Project Alternative includes the establishment of an interconnected Preserve System in the Planning Area, and a comprehensive Preserve management program that would be implemented in perpetuity. The

Preserve System under the Proposed Action/Proposed Project Alternative would be more contiguous and more connected over the Planning Area than the project-by-project Preserves that would be established under the No Action/No Project Alternative.

However, the number, size, and configuration of future Preserves is not an important factor in determining the effects of any EIS/EIR alternative on geology and soils because most preserve activities have little to no potential to generate adverse effects to geological resources and soils.

Where aquatic resource re-establishment and establishment is undertaken on Preserves, if earth moving is required, there is increased potential for erosion. Also, if earth moving is conducted where rock types that contain naturally occurring asbestos occur, there could be an increased risk of human exposure to naturally occurring asbestos. However, as discussed in Section 5.2.2.1 for aquatic resources re-establishment and establishment under the No Action/No Project Alternative, it is highly unlikely that these activities would occur in locations with steep slopes susceptible to erosion, or where naturally occurring asbestos might be encountered. This would also apply to aquatic resource re-establishment and establishment under the Proposed Action/Proposed Project Alternative. Applicable policies and regulations that would minimize erosion and potential mobilization of naturally occurring asbestos would be enforced across all alternatives. However, under the Proposed Action/Proposed Project Alternative, SSHCP AMMs that call for implementation of BMPs that control erosion and erodible materials, and soil compaction BMPs would be applied to earth moving associated with aquatic resource re-establishment/establishment, potentially further lessening possible adverse effects from soil erosion.

The SSHCP Preserve System would preclude the extraction of any mineral resources located under the new Preserves. Therefore, there is the potential for the loss of access to mineral resources as a result of future Preserves. However, there are only very small areas considered for Preserves under the SSHCP that intersect with designated MRZ-2 significant mineral deposits (Figure 5-5). If any Preserves established under the Proposed Action/Proposed Project Alternative were located on designated MRZ-2 significant mineral deposits, the area affected would be minor. Because the precise locations of all Preserves is not known at this time, it cannot be determined whether the Proposed Action/Proposed Project Alternative would result in more or less acres of Preserves established over designated MRZ-2 significant mineral deposits compared to the No Action/No Project Alternative. However, given that there are limited locations suitable for Preserves in the MRZ-2 area due to past disturbance and development over much of the area, it is unlikely that there would be substantial differences between the two alternatives.

Therefore, because the Proposed Action/Proposed Project Alternative will not shift or displace development outside the USB, because fewer acres of natural landscapes would be developed,

and because the SSHCP AMMs provide additional mechanisms to minimize effects from soil erosion during ground-disturbing activities, the Proposed Action/Proposed Project Alternative would result in a **Minor Beneficial** effect on geology and soils and risks to human health from naturally occurring asbestos when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

Increased urban development in the MCRA under the Proposed Action/Proposed Project Alternative compared to the No Action/No Project Alternative could result in a slight increase in development over designated MRZ-2 significant mineral deposits. The potential for Preserve lands to limit access to MRZ-2 significant mineral deposits would not be substantially different between the two alternatives. Therefore, the Proposed Action/Proposed Project Alternative would result in a **Less Than Significant Adverse** effect on access to mineral resources when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

5.2.3.2 Significance of Direct and Indirect Effects

In summary, compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project Alternative would result in the following:

- Reduced potential for adverse effects from erosion and landslide from development activities and Preserve System establishment and establishment
- A slightly reduced risk of exposure to naturally occurring asbestos
- A slightly more removal of access to important mineral resources by new urban development or associated infrastructure
- Similar removal of access to important mineral resources by new Preserves

Therefore, after considering the significance of effects from the Proposed Action/Proposed Project Alternative on all of the geological resources impact-criteria, the Proposed Action/Proposed Project Alternative would result in **Minor Beneficial** effects to Planning Area geological resources, soils, and human exposure to geological hazards compared to the impacts that would occur under the No Action/No Project Alternative baseline condition. The Proposed Action/Proposed Project Alternative would result in a **Less Than Significant Adverse** effect to access to mineral resources when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

5.2.3.3 Cumulative Effects of the Alternative

The effect of past, present, and reasonably foreseeable future actions on soils, geology, and mineral resources were described above in Section 5.2.2. As discussed in Section 5.2.2, the

incremental effects of the No Action/No Project Alternative on geology and soils and exposure to naturally occurring asbestos were determined to be less than significant and not contribute to a significant adverse cumulative impact when viewed in connection with the effects of the past, present, and foreseeable other projects. The incremental effects of the No Action/No Project Alternative on access to mineral resources were determined to be significant and contribute to a significant adverse cumulative impact when viewed in connection with the effects of the past, present, and foreseeable other projects.

As discussed in Section 5.2.3.2, Significance of Direct and Indirect Effects, the Proposed Action/Proposed Project Alternative would result in reduced impacts to geology and soils (i.e., erosion potential and landslide risk) and reduced potential for exposure to naturally occurring asbestos compared to the No Action/No Project Alternative. Consequently, the incremental effects of the Proposed Action/Proposed Project Alternative would have a minor beneficial impact to geology and soils and risk of exposure to naturally occurring asbestos compared to the incremental effects of the No Action/No Project Alternative baseline condition. Therefore, the incremental effects of Proposed Action/Proposed Project Alternative are individually limited and would not make a cumulatively considerable contribution to any adverse cumulative impact of the past, present, and reasonably foreseeable future projects. The Proposed Action/Proposed Project Alternative would result in a ***Minor Beneficial Cumulative*** effect to geology and soils and risk of exposure to naturally occurring asbestos compared to the No Action/No Project Alternative baseline condition.

As described in Section 5.2.3.2, the effects of the Proposed Action/Proposed Project Alternative on access to mineral resources from urban development would be slightly more than those identified for the No Action/No Project Alternative. Effects from Preserve activities would be similar to those identified for the No Action/No Project Alternative. Consequently, the incremental effects of the Proposed Action/Proposed Project Alternative would have a less than significant impact to access to mineral resources when compared to the incremental effects of the No Action/No Project Alternative baseline condition. Therefore, the incremental effects of Proposed Action/Proposed Project Alternative are individually limited and would not make a cumulatively considerable contribution to the significant adverse effect of the past, present, and reasonably foreseeable future projects when compared to the No Action/No Project Alternative. The Proposed Action/Proposed Project Alternative would result in a ***Less than Significant Cumulative*** effect to access to mineral resources compared to the No Action/No Project Alternative baseline condition.

5.2.4 Reduced Permit Term Alternative

As described in Section 2.3.3, the Reduced Permit Term Alternative includes the same types of new urban development and infrastructure as those anticipated under the No Action/No Project Alternative.

Under the Reduced Permit Term Alternative, the core of the Preserve System established inside the UDA would be associated with the development of five large land use entitlements, as discussed in Section 2.3.4, Covered Species Under the Proposed Action/Proposed Project Alternative, for the Reduced Permit Term Alternative, and also discussed in Section 2.3.3 for the Proposed Action/Proposed Project Alternative. Because the core of the Preserve System inside the UDA under both EIS/EIR action alternatives is associated with the same five large land use entitlements, approximately 70% of the UDA Preserves established under the Reduced Permit Term Alternative would have similar sizes, boundaries, and locations as the UDA Preserves established under the Proposed Action/Proposed Project Alternative. However, the shorter duration of the Reduced Permit Term Alternative—and the smaller amount of urban development and associated development fees collected by the Reduced Permit Term Alternative HCP—would not allow the SSHCP Implementing Entity to establish as many acres of new Preserves in the Planning Area as would occur under the Proposed Action/Proposed Project Alternative's 50-year permit term. Therefore, fewer new Preserves would be established under the Conservation Strategy of the Reduced Permit Term Alternative. This difference would be especially pronounced outside the UDA.

As described in Section 2.4, Reduced Permit Term Alternative, the federal Endangered Species Act and California Endangered Species Act Incidental Take Permits and the CWA permit strategy for SSHCP Covered Activities would be valid only during the 30-year permit term of the Reduced Permit Term Alternative HCP, and the Reduced Permit Term Alternative HCP's Conservation Strategy would be implemented only during this 30-year term. The urban development Covered Activities and Conservation Strategies associated with the five land use entitlements would be implemented inside the UDA during this 30-year period. However, the EIS/EIR uses a 50-year analysis study period to evaluate all alternatives (see Section 3.6.3), so the EIS/EIR study period extends beyond the end of the 30-year permit term for the Reduced Permit Term Alternative. Therefore, as described in Section 3.6.7.2, Analysis of the Reduced Permit Term Alternative, After the End of the Permit Term (Years 31–50), the EIS/EIR analysis of the Reduced Permit Term Alternative also considers future urban development that is not part of the project description of the Reduced Permit Term Alternative but is still expected to occur within the Planning Area after the end of the permit term (i.e., in Years 31–50 of the EIS/EIR study period).

As described in Section 3.6.7.2, Analysis of the Reduced Permit Term Alternative, After the End of the Permit Term (Years 31–50), project mitigation Preserves established after the end of the

30-year Reduced Permit Term Alternative would be established under a project-by-project process for obtaining individual authorizations under the CWA, federal Endangered Species Act, California Endangered Species Act, and Section 1600 of the California Fish and Game Code. Consequently, mitigation Preserves established in Years 31–50 of the EIS/EIR study period would not be established using a regional, landscape-based approach that balances new urban development with the need for conservation, as would be provided by an HCP. Therefore, much of the Preserve System inside the UDA would be very similar under the two action alternatives, but the Preserve System outside the UDA would be substantially different between the Reduced Permit Term Alternative and the Proposed Action/Proposed Project Alternative. Under the Reduced Permit Term Alternative, it is unlikely that mitigation Preserves established outside the UDA would be contiguous or would be interconnected, and it is unlikely that a large, contiguous 10,500-acre landscape-size Vernal Pool Preserve would be established in the southwestern portion of the Planning Area. Likewise, the No Action/No Project Alternative also would not result in contiguous, interconnected Preserves outside the UDA, and would not establish a 10,500-acre Vernal Pool Preserve in the Planning Area. In these ways, the new mitigation Preserves established outside the UDA under the Reduced Permit Term Alternative and the No Action/No Project Alternative would be similar.

5.2.4.1 Direct and Indirect Effects of the Alternative

As described in Section 2.4.4, Covered Species Under the Reduced Permit Term Alternative, the Reduced Permit Term Alternative would include similar types of new urban development and infrastructure as those anticipated under the No Action/No Project Alternative. Covered Activities under the Reduced Permit Term Alternative would result in urban development projects and activities on approximately 19,300 acres of natural landscapes in the Planning Area (Section 2.4.4). A large majority of this urban development, approximately 17,000 acres would occur inside the UDA. The remaining roughly 1,500 acres of natural land covers removed outside the UDA would result, in large part, from various transportation and infrastructure projects. None of the urban development, transportation, or infrastructure projects inside or outside the UDA intersect landslide risk areas identified by Sacramento County (see Section 5.1.2.8, Existing Hazards) or locations that could contain naturally occurring asbestos (Figure 5-4). Projects and activities included in the Proposed Action/Proposed Project Alternative would comply with applicable regulations and policies to minimize erosion, seismic risk, and other geology and soils impacts. Some urban development in the UDA would occur over areas designated as MRZ-2 significant mineral deposits containing aggregate (Figure 5-5), preventing future access to the aggregate in these locations. Under the Reduced Permit Term Alternative, there are approximately 18,500 fewer acres of new urban development projects on natural landscapes than the No Action/No Project Alternative. Therefore, there is less potential for urban development to expose native soils during construction and contribute to risks of

erosion, although implementation of applicable regulations and policies under all alternatives substantially decreases the risk of harmful erosion.

The Reduced Permit Term Alternative includes urban development Covered Activities within the MCRA without urban development shifting or being displaced to locations outside the UDA (Section 2.4.3, Covered Activities/Projects Under the Reduced Permit Term Alternative). As a result, none of the new urban development under the Reduced Permit Term Alternative would occur in areas outside the UDA where there is naturally occurring asbestos or where topography can increase the risk of erosion (Figures 5-3 and 5-4). The potential increased risks of erosion and human exposure to naturally occurring asbestos identified in Section 5.2.2.1 for the No Action/No Project Alternative for the two potential displaced development locations in the northeast portion of the Planning Area, would not occur under the Reduced Permit Term Alternative.

During the 30-year permit term under the Reduced Permit Term Alternative, AMMs like those included in the SSHCP would be included in all Covered Activity project and activities implemented within the Planning Area. As summarized in Table 2-6 in Chapter 2 of this EIS/EIR, AMMs BMP-1, BMP-4, and BMP-9 would require development projects and activities to implement BMPs that control erosion and erodible materials, and to implement soil compaction BMPs. As discussed above in Sections 5.1.1 and 5.2.2, the No Action/No Project Alternative's projects and activities would implement construction standard BMPs that are similar to these SSHCP BMP AMMs. However, implementation of the AMMs under the Reduced Permit Term Alternative would include additional on-site monitoring and measurement of the effectiveness of each AMM implemented and annual reporting of the effectiveness of each AMM. The Reduced Permit Term Alternative would include processes for annual review of AMM effectiveness and for making adaptive changes to an AMM that is not effective at avoiding impacts to soils and geology. This additional layer of oversight of AMM implementation and AMM effectiveness during the 30-year permit term under the Reduced Permit Term Alternative increases avoidance and minimization of impacts to geology and soils from construction activities. The AMMs also provide new AMMs that would not occur under the No Action/No Project Alternative (Table 2-6), and these new measures are expected to lessen the potential adverse effects to soils and geology compared to the effects of the No Action/No Project Alternative.

Differences in the locations of development in the UDA between the Reduced Permit Term Alternative and the No Action/No Project Alternative are primarily within the MCRA. Only small portions of the MCRA intersect with lands designated as MRZ-2 significant mineral deposits. The increased amount of urban development in the MCRA under the Reduced Permit Term Alternative could result in a slight increase in development over designated MRZ-2 significant mineral deposits.

Preserves. The Reduced Permit Term Alternative includes an interconnected Preserve System established during the 30-year permit term and a comprehensive Preserve management program for those Preserves to be implemented in perpetuity. The Preserve System established during the 30-year permit term under the Reduced Permit Term Alternative would be consolidated and linked (similar to the Proposed Action/Proposed Project Alternative). As described in Section 2.4.5, Conservation Strategy Under the Reduced Permit Term Alternative, in Chapter 2, continued establishment of a coordinated Preserve management and monitoring program would cease after the end of the 30-year permit term. The interconnected Preserve System established during the permit term would remain intact, whereas future mitigation Preserves established during Years 31–50 of the EIS/EIR study period would not be established in as consolidated a manner and would resemble mitigation Preserve establishment patterns under the No Action/No Project Alternative. The resulting scenario would be such that a portion of Preserves would reflect a more interconnected Preserve System, although fewer acres as compared to the Proposed Action/Proposed Project Alternative, and a portion would reflect an establishment pattern like the No Action/No Project Alternative.

As described above for the Proposed Action/Proposed Project Alternative, the number, size, and configuration of future Preserves would not be an important factor in determining effects on geology and soils because most Preserve activities have little to no potential to generate adverse effects to geology and soils, and Preserves would be established consistent with applicable regulations (see Section 5.1.1) under all alternatives.

Where aquatic resource re-establishment and establishment is undertaken on Preserves, if earth moving is required, there is increased potential for erosion. Also, if earth moving is conducted where rock types that contain naturally occurring asbestos occur, there could be an increased risk of human exposure to naturally occurring asbestos. However, as discussed in Section 5.2.2.1, Direct and Indirect Effects of the Alternative, for aquatic resources re-establishment and establishment under the No Action/No Project Alternative, it is highly unlikely that these activities would occur in locations with steep slopes susceptible to erosion, or where naturally occurring asbestos might be encountered. This would also apply to aquatic resource re-establishment and establishment under the Reduced Permit Term Alternative. Applicable policies and regulations that would minimize erosion and potential mobilization of naturally occurring asbestos would be enforced across all alternatives. However, during the 30-year permit term under the Reduced Permit Term Alternative, AMMs that call for implementation of BMPs that control erosion and erodible materials, and soil compaction BMPs would be applied to earth moving associated with aquatic resource re-establishment/establishment, potentially further lessening possible adverse effects from soil erosion.

The Preserve System created as part of the Reduced Permit Term Alternative would preclude the extraction of any mineral resources located under the new Preserves. Therefore, there is

the potential for the loss of access to mineral resources as a result of future Preserves. However, there are only very small areas considered for Preserves under the Reduced Permit Term Alternative that intersect with designated MRZ-2 significant mineral deposits (Figure 5-5). If any Preserves established under the Reduced Permit Term Alternative were located on designated MRZ-2 significant mineral deposits, the area affected would be minor. Because the precise locations of all Preserves are not known at this time, it cannot be determined whether the Reduced Permit Term Alternative would result in more or less acres of Preserves established over designated MRZ-2 significant mineral deposits compared to the No Action/No Project Alternative. However, given that there are limited locations suitable for Preserves in the MRZ-2 area due to past disturbance and development over much of the area, it is unlikely that there would be substantial differences between the two alternatives.

Therefore, because the Reduced Permit Term Alternative will not shift or displace development outside the USB, because fewer acres of natural landscapes would be developed, and because implementation of AMMs during the 30-year permit term provides additional mechanisms to minimize effects from soil erosion during ground-disturbing activities, the Reduced Permit Term Alternative would result in a **Minor Beneficial** effect on geology and soils and risks to human health from naturally occurring asbestos when comparing the Reduced Permit Term Alternative to the No Action/No Project Alternative baseline condition.

Increased urban development in the MCRA under the Reduced Development Alternative compared to the No Action/No Project Alternative could result in a slight increase in development over designated MRZ-2 significant mineral deposits. The potential for Preserve lands to limit access to MRZ-2 significant mineral deposits would not be substantially different between the two alternatives. Therefore, the Reduced Permit Term Alternative would result in a **Less Than Significant Adverse** effect on access to mineral resources when comparing the Reduced Permit Term Alternative to the No Action/No Project Alternative baseline condition.

5.2.4.2 Significance of Direct and Indirect Effects

In summary, compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would result in the following:

- Reduced potential for adverse effects from erosion and landslide from development activities and Preserve System establishment
- A slightly reduced risk of exposure to naturally occurring asbestos
- Slightly more removal of access to important mineral resources by new urban development or associated infrastructure
- A similar potential for removal of access to important mineral resources from new Preserves

Therefore, after considering the significance of effects from the Reduced Permit Term Alternative on all of the geological resources impact criteria, the Reduced Permit Term Alternative would result in **Minor Beneficial** effects to Planning Area geological resources, soils, and human exposure to geological hazards compared to the impacts that would occur under the No Action/No Project Alternative baseline condition. The Reduced Permit Term Alternative would result in a **Less Than Significant Adverse** effect to access to mineral resources compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

5.2.4.3 Cumulative Effects of the Alternative

The effect of past, present, and reasonably foreseeable future actions on soils, geology, and mineral resources were described in Section 5.2.2. As discussed in Section 5.2.2, the incremental effects of the No Action/No Project Alternative on geology and soils and exposure to naturally occurring asbestos were determined to be less than significant and not contribute to a significant adverse cumulative effect when viewed in connection with the effects of the past, present, and foreseeable other projects. The incremental effects of the No Action/No Project Alternative on access to mineral resources were determined to be significant and contribute to a significant adverse cumulative effect when viewed in connection with the effects of the past, present, and foreseeable other projects.

As discussed in Section 5.2.4.2, the Reduced Permit Term Alternative would result in reduced impacts to geology and soils (i.e., erosion potential and landslide risk) and reduced potential for exposure to naturally occurring asbestos compared to the No Action/No Project Alternative. Consequently, the incremental effects of the Reduced Permit Term Alternative would have a minor beneficial effect to geology and soils and risk of exposure to naturally occurring asbestos compared to the incremental effects of the No Action/No Project Alternative baseline condition. Therefore, the incremental effects of Reduced Permit Term Alternative are individually limited and would not make a cumulatively considerable contribution to any adverse cumulative impact of the past, present, and reasonably foreseeable future projects. The Reduced Permit Term Alternative would result in a **Minor Beneficial Cumulative** effect to geology and soils and risk of exposure to naturally occurring asbestos compared to the No Action/No Project Alternative baseline condition.

As described in Section 5.2.4.2, the effects of the Reduced Permit Term Alternative on access to mineral resources from urban development would be slightly more than those identified for the No Action/No Project Alternative. Effects from Preserve activities would be similar to those identified for the No Action/No Project Alternative. Consequently, the incremental effects of the Reduced Permit Term Alternative would have a less than significant effect to access to mineral resources when compared to the incremental effects of the No Action/No Project Alternative baseline condition. Therefore, the incremental effects of the Proposed Action/Proposed Project

Alternative are individually limited and would not make a cumulatively considerable contribution to the significant adverse effect of the past, present, and reasonably foreseeable future projects when compared to the No Action/No Project Alternative. The Proposed Action/Proposed Project Alternative would result in a ***Less than Significant Cumulative*** effect to access to mineral resources compared to the No Action/No Project Alternative baseline condition.

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CHAPTER 6 – AGRICULTURE

This chapter presents the existing conditions and the potential environmental effects of each Environmental Impact Statement/Environmental Impact Report (EIS/EIR) alternative on the agricultural resources and agricultural activities within the Planning Area. The agricultural resources discussed and analyzed in this chapter include farmlands such as row crops, orchards, and vineyards and the Planning Area's natural grasslands that are used for grazing and other agricultural activities.

6.1 AFFECTED ENVIRONMENT/ENVIRONMENTAL SETTING

6.1.1 Regulatory Framework

This section includes a summary of applicable federal, state, and local regulations; policies for the agencies that have regulatory responsibilities for the protection of agricultural resources; and activities within the Planning Area. Pursuant to Title 40 of the Code of Federal Regulations, Section 1502.25, these applicable policies and plans helped to determine the appropriate scope of analysis included in Chapter 4, Land Use. This section discusses the basic responsibilities of these agencies, explains the relevant agency regulations, and describes the planning documents that are relative to the Planning Area.

6.1.1.1 Federal

Farmland Protection Policy Act of 1984

The Farmland Protection Policy Act requires federal agencies to consider how their activities or responsibilities that involve financing or assisting construction of improvement projects or acquiring, managing, or disposing federal land and facilities may affect farmland. Planned development or infrastructure projects must assess their potential effects on the loss or conversion of farmland.

The federal lead agency must consult with the U.S. Department of Agriculture's Natural Resources Conservation Service to complete a Land Evaluation and Site Assessment for the affected area. As part of the Land Evaluation and Site Assessment process, the federal lead agency is responsible for coordinating completion of the Farmland Conversion Impact Rating Form with the Natural Resources Conservation Service. A Land Evaluation and Site Assessment process may be required for some of projects, and if required, is prepared at the time an application for development is filed with the lead agency.

Safe Harbor Agreements

Private property owners can voluntarily enter into a Safe Harbor Agreement with the U.S. Fish and Wildlife Service and engage in activities that are beneficial to endangered species on their property. In turn, property owners are provided assurances that new land use restrictions will not be required on the property, even if the population of listed species on the subject property increases. The assurances are provided by the U.S. Fish and Wildlife Service through an Enhancement of Survival Permit issued to the property owner and under the authority of Section 10(a)(1)(A) of the federal

Endangered Species Act. This permit authorizes incidental take of species that may result from actions undertaken by the landowner under the Safe Harbor Agreement, provided that the landowner is following the provisions of said agreement by providing a net conservation benefit that contributes to the recovery of the subject Covered Species. The contribution toward recovery varies from case to case. The Safe Harbor Agreement does not have to provide permanent conservation for the enrolled property. Safe Harbor Agreements would be applicable for lands within the Planning Area where protected species or protected habitat are present.

6.1.1.2 State

Farmland Mapping and Monitoring Program (FMMP)

The State of California Department of Conservation Farmland Mapping and Monitoring Program (FMMP) produces maps and statistical data for use in analyzing impacts to agricultural resources in the state (CDOC 2013). The FMMP Important Farmland Maps include the defined mapping categories listed in Table 6-1.

Table 6-1. Important Farmland Mapping Categories

Category	Definition
Prime Farmland (P)	Farmland with the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.
Farmland of Statewide Importance (S)	Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.
Unique Farmland (U)	Farmland of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the 4 years prior to the mapping date.
Farmland of Local Importance (L)	Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.
Grazing Land (G)	Land on which the existing vegetation is suited to the grazing of livestock.
Urban and Built-Up Land (D)	Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, and public administration uses; railroad and other transportation yards; cemeteries; airports; golf courses; sanitary landfills; sewage treatment; water control structures; and other developed purposes.
Other Land (X)	Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry, or aquaculture facilities; strip mines; borrow pits; and water bodies smaller than 40 acres. Vacant and non-agricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.
Water (W)	Perennial water bodies with an extent of at least 40 acres.

Source: CDOC 2013.

California Land Conservation Act (Williamson Act)

The California Land Conservation Act, commonly referred to as the Williamson Act, is the state's primary program for restricting the uses of agricultural and open space lands to farming and ranching. The Williamson Act is a voluntary program that offers reduced property taxes on lands that have been placed under a Williamson Act contract, which requires that the land remain available for agricultural use for a minimum of 10 years.

Land Use and Resource Management Plan for the Primary Zone of the Delta

Policies contained in the Agricultural chapter of the *Land Use and Resource Management Plan for the Primary Zone of the Delta* (Delta Protection Commission 2010) relevant to the EIS/EIR alternatives apply to the areas of the EIS/EIR Planning Area that are west of Interstate 5. Relevant policies include the following (Delta Protection Commission 2010):

Policy P-2: Conversion of land to non-agriculturally-oriented uses should occur first where productivity and agricultural values are lowest.

Policy P-4: Support agricultural programs that maintain economic viability and increase agricultural income in accordance with market demands, including but not limited to wildlife-friendly farming, conservation tillage and non-tillage.

Policy P-5: Local governments shall encourage implementation of the necessary plans and ordinances to: maximize agricultural parcel size; reduce subdivision of agricultural lands; protect agriculture and related activities; protect agricultural land from conversion to non-agriculturally-oriented uses. An optimum package of regulatory and incentive programs could include: (1) an urban limit line; (2) minimum parcel size consistent with local agricultural practices and needs; (3) strict subdivision regulations regarding subdivision of agricultural lands to ensure that subdivided lands will continue to contain agriculturally-oriented land uses; (4) require adequate buffers between agricultural and non-agricultural land uses particularly residential development outside but adjacent to the Primary Zone; (5) an agriculture element of the general plan; (6) a Right-to-Farm ordinance; and (7) a conservation easement program.

Policy P-6: Encourage acquisition of agricultural conservation easements from willing sellers as mitigation for projects within each county. Promote use of environmental mitigation in agricultural areas only when it is consistent and compatible with ongoing agricultural operations and when developed in appropriate locations designated on a countywide or Delta-wide habitat management plan.

Policy P-7: Encourage management of agricultural lands which maximize wildlife habitat seasonally and year-round, through techniques such as fall and winter flooding, leaving crop residue, creation of mosaic of small grains and flooded areas, wildlife friendly farming, controlling predators, controlling poaching, controlling public access, and others.

Policy P-8: Encourage the protection of agricultural areas, recreational resources and sensitive biological habitats, and the reclamation of those areas from the destruction caused by inundation.

California Right to Farm Act

The “Right to Farm Act” (California Civil Code Sections 3482.5, 3482.6, 3483, and 3484 collectively) is a statewide agricultural protection act. Similar to Sacramento County Code Chapter 14.05 (the Right to Farm Ordinance, discussed below), the Right to Farm Act helps protect agricultural operations, activities, facilities, etc. from nuisance complaints. Unlike the County Code, the Right to Farm Act has a broader sweep of protections with the intention of shielding agricultural processing activities, operations, and facilities, such as the processing of dairy products, the production of wine, the processing of meat and egg products, the drying of fruits and grains, the packing and cooling of fruits and vegetables, and the processing for wholesale and retail markets of agricultural products. The Planning Area has many of these processing facilities and operations. The Right to Farm Act prevails over contrary provisions of any city or county ordinance.

6.1.1.3 Local

Sacramento County General Plan

The *Sacramento County General Plan of 2005–2030* (Sacramento County General Plan) (Sacramento County 2011) includes an Agriculture Element, which identifies Sacramento County’s overall agricultural goals of protecting the County’s agricultural lands, maintaining the productivity of those lands, and promoting/supporting agricultural activities as an integral part of the Sacramento County economy. The Agriculture Element also includes specific Objectives and Implementation Measures to allow achievement of the stated goals.

The Sacramento County General Plan’s Conservation Element (Sacramento County 2011) also contains goals and policies related to agriculture. Specifically, this element directs that preserves established¹ to protect ecological resources should be planned and managed to avoid conflicts with adjacent agricultural activities. It also directs that sensitive habitat areas on public lands should be protected from exposure to pesticides and other similar chemical applications.

¹ Note that in the context of this Plan, the word “establish” is synonymous with “create.”

Finally, this element notes that ranching and grazing may be compatible activities with preserves established to protect and conserve vernal pool habitat and that native vegetative habitats should be protected from improper grazing activities on public lands.

The Sacramento County General Plan Agriculture Element contains the following policies relevant to agriculture in the Planning Area (Sacramento County 2011):

Policy AG-1: The County shall protect Prime, Statewide Importance, Unique and Local Importance farmlands located outside of the [urban services boundary] USB from urban encroachment.

Policy AG-3: The County shall permit agricultural uses on buffers, provided such uses are conducted in a manner compatible with urban uses. Buffers shall be used to separate farming practices incompatible with adjacent urban uses. Any homeowners' association or similar entity within the development shall assist in determining compatible use. Buffers shall not adversely conflict with agricultural uses on adjoining property.

Policy AG-5: Projects resulting in the conversion of more than fifty (50) acres of farmland shall be mitigated within Sacramento County, except as specified in the following text, based on a 1:1 ratio, for the loss of the following farmland categories through the specific planning process or individual project entitlement requests to provide in-kind or similar resource value protection (such as easements for agricultural purposes):

- Prime, Statewide Importance, Unique, Local Importance, and Grazing farmlands located outside the USB;
- Prime, Statewide Importance, Unique, and Local Importance farmlands located inside the USB.

The Board of Supervisors retains the authority to override impacts to Unique, Local, and Grazing farmlands, but not with respect to Prime and Statewide farmlands.

However, if that land is also required to provide mitigation pursuant to a Sacramento County endorsed or approved Habitat Conservation Plan (HCP), then the Board of Supervisors may consider the mitigation land provided in accordance with the HCP as meeting the requirements of this section including land outside of Sacramento County.²

² Note: This policy is not tied to any maps contained in the Agriculture Element. Instead, the most current Important Farmland map from the Department of Conservation should be used to calculate mitigation.

Policy AG-10: The County shall balance the protection of Prime, Statewide Importance, Unique, and Local Importance farmlands and farmlands with intensive agricultural investments with the preservation of natural habitat so that the protection of farmland can also serve to protect habitat.

Policy AG-11: Cooperation shall be encouraged between landowners of Prime, Statewide Importance, Unique, and Local Importance farmlands or land with intensive agricultural investments and landowners of natural resource preserves, including mitigation banks, mitigation sites, and wildlife refuges, so that both habitat preservation and standard farming practices mutually benefit.

Policy AG-12: The County will cooperate with landowners of agriculturally zoned properties to promote the placing of natural preserve/mitigation amenities on land, such as trees and other biota enhancing improvement, by making sure amenities are assets to both the natural preserve/mitigation areas and agriculture practices.

Policy AG-13: Indemnification against property losses from recreational users should be provided to agricultural property owners adjacent to mitigation banks, environmental mitigation sites, wildlife refuges, or other natural resource preserves provided loss is proven to be a direct and exclusive result of new recreational access provided by the establishment of, and occurring through, such sites, and provide law enforcement access to such sites.

Policy AG-14: The County shall initiate intergovernmental agreements with state and federal wildlife management authorities in order to mitigate loss of Prime, Statewide Importance, Unique, and Local Importance farmlands or land with intensive agricultural investment due to natural habitat conversion.

Policy AG-15: The County shall pursue opportunities to create mitigation banks, environmental mitigation sites, wildlife refuges, or other natural resource preserves wherein substantial agricultural activities that are compatible with protection of high habitat values continue, but incompatible activities and conversion for development are precluded by conservation easements.

Policy AG-16: Maintain private ownership by coordinating with non-profit organizations to acquire conservation easements for preserving farmlands.

Policy AG-17: The establishment of conservation easements combining preservation of agricultural uses, habitat values, and open space on the same property should be encouraged where feasible.

Policy AG-19: Recreational trails shall be designed in cooperation with adjacent property owners to minimize adverse impacts on farming practices.

Policy AG-20: Public recreation trails adjacent to permanent agriculture shall be designed to provide appropriate vehicle access for law enforcement needs.

Policy AG-21: The County encourages the preservation of Prime, Statewide Importance, Unique, and Local Importance farmlands, including opposing any residential or commercial development for the Cosumnes River or Deer Creek riparian areas which are not compatible with agricultural uses.

Policy AG-22: If land within the Cosumnes River watershed is developed for non-agricultural purposes, the County should actively pursue easement dedication for equestrian trails and bikeways within such development as a condition of approval.

Policy AG-23: The County seeks to minimize agricultural/trail-user conflicts by recommending and seeking buffer zones between trails and nearby agricultural land and by locating trails away from the Cosumnes and Deer Creek riparian areas.

Policy AG-25: Outside the Urban Service Boundary, the County shall encourage landowners to enter into Williamson Act contracts or, as appropriate, to rescind Notices of Nonrenewal. Provide support to keep property in the Williamson Act by allowing agricultural-friendly land use practices that include additional economic incentives, and support replacing existing Williamson Act contracts with amended contracts that include agricultural-friendly land use practices.

Policy AG-28: The County shall actively encourage conservation of soil resources.

Sacramento County Code

The Sacramento County Code Chapter 14.05 (2016) establishes the County's "Right-to-Farm" ordinance, which states the right of landowners to continue agricultural activities in the vicinity of non-agricultural land uses. The ordinance prioritizes commercially productive agricultural land uses and protects these uses from potential issues of land use compatibility that may arise due to the development of non-agricultural land uses adjacent to existing agricultural land. The agricultural activity, operation, or facility must have been in operation for more than 3 years, not been declared a nuisance at the time it began, and operate consistently with accepted agricultural customs and standards in order to be protected under the ordinance.

Galt General Plan

The Conservation Element of the *2030 Galt General Plan: Policy Document* (Galt General Plan) (Galt 2009a) identifies agricultural lands surrounding Galt as a valuable component of the City’s open space resources, and establishes a goal of preserving and enhancing these lands. The policy included in the Galt General Plan that addresses agricultural lands includes the following (Galt 2009a):

Policy COS-4.1: Prime Agricultural Land Preservation. The City shall work to preserve prime agricultural lands surrounding the Planning Area from future development by creating a clear and sensitive urban transition to minimize land use conflicts and protect long-term agriculture.

The Galt Municipal Code does not include a “Right-to-Farm” ordinance or other mechanism to protect agricultural uses if land use compatibility issues arise.

Rancho Cordova General Plan

Rancho Cordova has only a limited amount of agricultural land, and the *City of Rancho Cordova General Plan* (Rancho Cordova General Plan) (Rancho Cordova 2006a) recognizes that most areas that currently support agriculture within the City limits will be developed with urban and suburban uses. The Rancho Cordova General Plan includes policies and measures that recognize the right of existing agricultural uses to continue as long as the landowner/farmers desire, to minimize land use conflicts/impacts to urban and agricultural uses through the use of buffers and other similar methods, and to mitigate for the loss of farmland through the preservation of an equal amount of land that is of equal or higher agricultural value.

Applicable policies in the Rancho Cordova General Plan include the following (Rancho Cordova 2006a):

Policy LU.1.8: While agricultural uses are anticipated to be phased out within the City limits, the City recognizes the right of these uses to continue as long as their individual owners/farmers desire.

Policy LU.1.9: The City shall require development to protect 1 acre of existing farmland of equal or higher quality for each acre of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance that would be converted to non-agricultural uses. This protection may consist of the establishment of farmland conservation easements, farmland deed restrictions, or other appropriate farmland conservation in perpetuity, but may also be utilized for compatible wildlife conservation efforts. The farmland to be preserved shall be located within Sacramento County and must have adequate water

supply to support agricultural use. As part of the consideration of land areas proposed to be protected, the City shall consider the benefits of preserving farmlands in proximity to other protected lands.

Policy LU.1.10: The City shall ensure that the following standards are met regarding agricultural conservation easement content:

- Provisions of an accurate legal document that prohibits any activity that substantially impairs or diminishes the agricultural productivity of the land;
- Protection of any existing water rights necessary to maintain agricultural uses and retain such water rights for ongoing use on the agricultural land; and
- Interests in the agricultural land shall be held in trust by the City and/or an entity acceptable to the City, in perpetuity.

Rancho Cordova Municipal Code

The Rancho Cordova Municipal Code Chapter 14.05 (2016) establishes a “Right-to-Farm” ordinance protecting agricultural land uses in the vicinity of non-agricultural land uses. While agricultural production may generate noise, odor, dust, and other undesirable effects to adjacent non-agricultural land uses, the ordinance considers these effects acceptable in the furtherance of General Plan goals intended to preserve and enhance agricultural production. The agricultural activity, operation, or facility must have been in operation for more than 3 years, not been declared a nuisance at the time it began, and operate consistent with accepted agricultural customs and standards to be protected under the ordinance. Chapter 23.904 of the Rancho Cordova Municipal Code (2016) sets forth development and operating standards for agricultural activities to mitigate potential adverse effects of agricultural activities on adjacent and surrounding land uses.

6.1.2 Planning Area Agricultural Resources and Activities

This section describes the existing agricultural resources (farmland) and activities (i.e., active farming or grazing) that occur within the EIS/EIR Planning Area. In the eastern portion of the Planning Area, agricultural activities primarily consist of ranching and grazing. The central portion of the Planning Area supports more irrigated pasture and grassland. The southwestern portion of the Planning Area supports more vineyards and croplands and includes the Cosumnes River floodplain. Figure 6-1 shows the locations of Important Farmlands within the Planning Area.

6.1.2.1 Important Farmlands

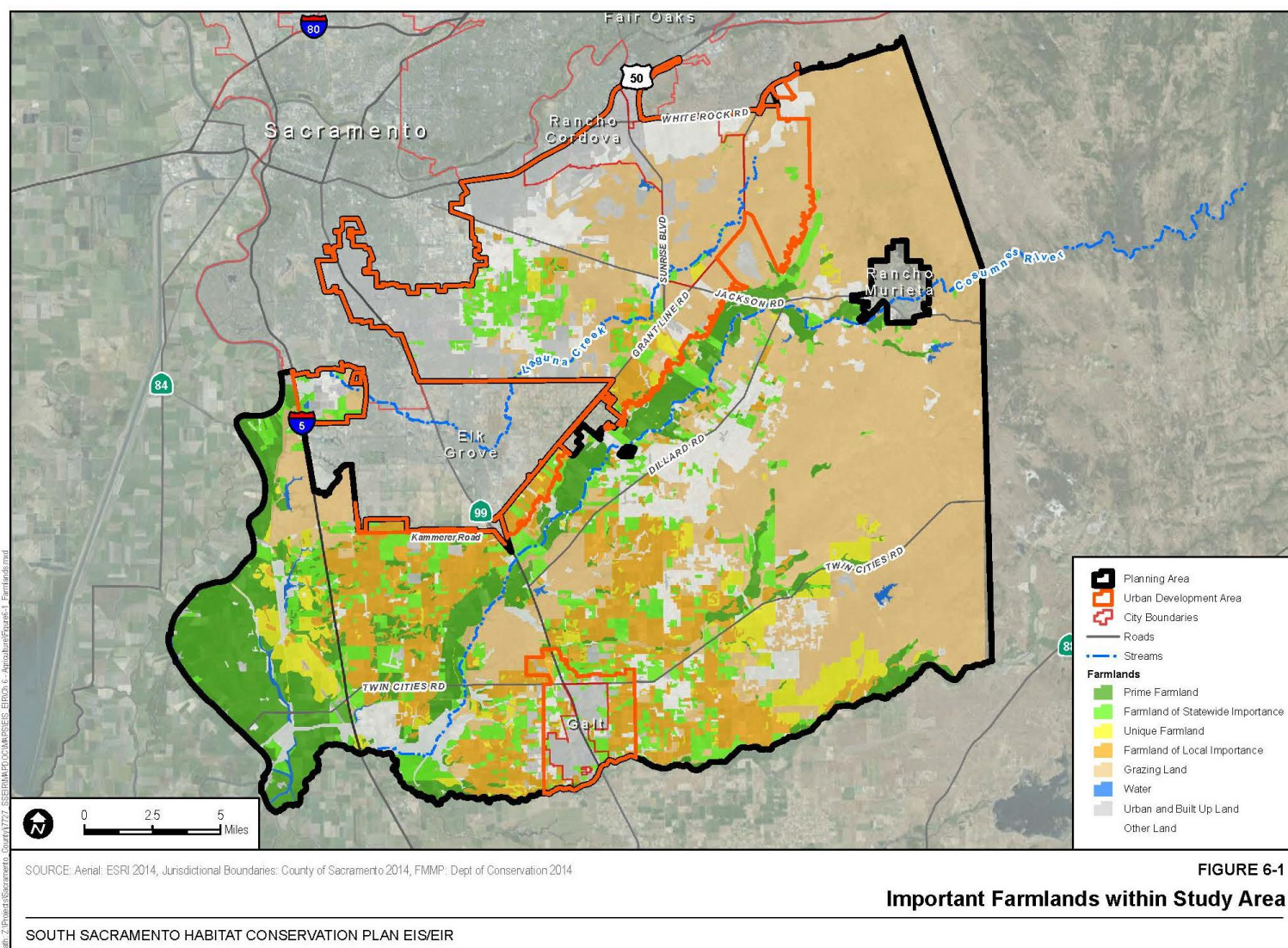
According to current FMMP data (CDOC 2014), approximately 256,832 acres of the 317,655-acre Planning Area are considered Important Farmland (Table 6-2). As indicated on Figure 6-1, more than half of this Important Farmland is used for grazing lands and is not actively cultivated.

Table 6-2. Important Farmland within the Planning Area

Agricultural Land	Area of Each Farmland Type (acres)			
	<i>Sacramento County</i>	<i>Rancho Cordova</i>	<i>Galt</i>	<i>Total for Planning Area</i>
Prime Farmland	35,769	15	35	35,819
Unique Farmland	13,899	159	0.4	14,058
Farmland of Statewide Importance	39,653	22	248	39,923
Farmland of Local Importance	32,611	242	379	33,231
Grazing Land	128,858	4,867	76	133,801
Total	250,790	5,305	737	256,832

Source: CDOC 2014.

Figure 6-1 Important Farmlands within Study Area



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6.1.2.2 Types of Agricultural Activities

A variety of agricultural activities occur within the Planning Area, primarily outside the Urban Development Area (UDA).³ In general, these activities include cultivation of row crops, irrigated pasture, fruit and nut orchards, and vineyards. Agricultural lands within the Planning Area can generally be described as follows:

- **Row and Field Crops:** Many row and field crops are concentrated in the portion of the Cosumnes River floodplain that is in the southwest of the Planning Area. Row and field crops include all non-orchard and non-vineyard agricultural crops, such as rice and other small grains, corn, tomatoes, melons, peppers, safflower, sunflower, and short-term perennial crops (e.g., asparagus, alfalfa).
- **Irrigated Pasture and Grasslands:** Irrigated pasture and grasslands occur in a scattered distribution generally in the central portion of the Planning Area. Irrigated pasture and grasslands includes hay production (wheat, oats, clovers, mixed grasses), seasonal summer pasture for livestock (primarily cattle), and year-round pasture for livestock (primarily cattle or horses). Seasonal pasture appears to be the most common use. Irrigated pasture and grasslands are typically seeded, cut/grazed, and reseeded on a regular basis on an approximately 5- to 7-year cycle before the fields are left fallow to rest and the cycle is started over again. Irrigated pasture and grasslands do not encompass dry grazing, as noted in the following text.
- **Fruit and Nut Orchards:** Orchards are scattered throughout the Planning Area, with the largest concentration along the western boundary. Fruit tree orchards include apples, cherries, pears, apricots, chestnuts, kiwi, nectarines, olives, peaches, and plums. Nut tree orchards include walnuts, almonds, pecans, pistachios, and chestnuts.
- **Vineyards:** Vineyards are located in many areas of the Planning Area, with concentrations north and south of Twin Cities Road in Preserve Planning Unit 7, west of Interstate 5 in Preserve Planning Unit 6, and near the UDA boundary southeast of Grant Line Road. In Sacramento County, vineyards are primarily established for wine grape production, with some minor table grape producers. Vineyards are primarily “clean cultivated,” meaning no other vegetation is allowed to grow between the rows or on the edges of fields and irrigation ditches.

³ As discussed in Section 1.1.1, Geographic Scope of the EIS/EIR Planning Area, the term Urban Development Area (UDA) is used by the EIS/EIR to discuss all lands where urban development Covered Activity projects or activities could occur under the action alternatives. Therefore, UDA means all lands within Sacramento County’s USB boundary that are also within the Planning Area (including lands within the Rancho Cordova city limits that are within the Planning Area), all lands within Galt’s city limits, and all lands within Galt’s sphere of influence (SOI) (see Figure 1-1).

In addition to these agricultural lands, ranchers use extensive areas of non-irrigated valley grassland within the Planning Area for livestock grazing.

6.1.2.3 Williamson Act Lands

Approximately 139,890 acres within the Planning Area is currently under active Williamson Act contracts (CDOC 2016). Approximately 10,400 acres of these active contracts is identified for nonrenewal. Figure 6-2 shows lands under Williamson Act contracts that are in the Planning Area.

6.2 ENVIRONMENTAL CONSEQUENCES/ ENVIRONMENTAL IMPACTS

6.2.1 Methodology for Assessing Impacts of Each Alternative on Agricultural Resources

This section describes the potential impacts of the actions and projects associated with each EIS/EIR alternative on the agricultural resources and activities in the Planning Area. Potential ways that the EIS/EIR alternatives could affect agricultural resources or activities include converting agricultural lands designated as Important Farmland to a developed land cover type or limiting or eliminating the ability of active farming or grazing activities to continue.

As discussed in Section 3.6.4, Addressing Incomplete or Unavailable Information in Chapters 4 through 16, geographic information system methodology was used to quantitatively estimate the direct impacts of each EIS/EIR alternative on Important Farmland and on lands with Williamson Act contracts. Geographic information system datasets of future projects and activities expected under each EIS/EIR alternative were digitally overlaid (compared) to separate geographic information system datasets of FMMP of Important Farmlands and Williamson Act lands.

~~It is appropriate to consider impacts to certain environmental resources within the context of other impacts occurring in the surrounding landscape, community, or region (see Section 3.6.2, Geographic Study Area of Resource Topics Analyzed in Chapters 4 through 16).~~

The study area used to analyze direct and indirect effects of the alternatives on agriculture is the Planning Area. The lead agencies determined that an appropriate geographic scale for evaluating the **cumulative** impacts of each EIS/EIR alternative on agriculture lands and activities should include all agricultural resources and activities within the Sacramento Area Council of Government's six-county region (SACOG 2016), which includes all of Sacramento, Placer, El Dorado, Sutter, Yolo, and Yuba Counties.

As discussed in Section 3.7, Cumulative Effects Analysis in Resource Chapters 4 through 16, the Chapter 6 cumulative analyses of impacts to agriculture resources will consider (1) the effects of past and present urban development within in the Planning Area (see Existing Conditions in Section 6.1.2, Planning Area Agricultural Resources and Activities) and within the larger six-county study area, and (2) future impacts expected from other reasonably foreseeable projects in the Planning Area (see Section 3.7) and other reasonably foreseeable projects within the larger six-county study area. The cumulative analysis of each EIS/EIR alternative will then consider whether the incremental impacts of the alternative on agricultural resources and agricultural activities would be significant (i.e., would be cumulatively considerable).

As discussed in Section 3.4, Previous Planning Area Environmental Reviews, and Section 6.1.1.3, Local, the EIR documents previously prepared for the General Plans of Sacramento County, Galt, and Rancho Cordova (Sacramento County 2010; Galt 2009b; Rancho Cordova 2006b) analyzed direct and cumulative impacts of urban growth planned within their jurisdictions, including impacts to agricultural resources and agricultural activities. When the impact analyses or conclusions provided in these General Plan EIR documents were determined by the lead agencies to be appropriate for use in the analysis of the EIS/EIR alternatives, a brief summary or description of the incorporated information or analysis is provided in Sections 6.2.2, No Action/No Project Alternative; 6.2.3, Proposed Action/Proposed Project Alternative; and 6.2.4, Reduced Permit Term Alternative.

As discussed in Section 3.8.1, Significance Thresholds, the criteria used to evaluate the significance of each alternative's impacts on agricultural resources and activities are based on the California Environmental Quality Act (CEQA) Guidelines (Appendix G) (14 CCR 15000 et seq.) and on typical thresholds used to evaluate agricultural impacts in recent EIRs prepared by Sacramento County. Based on these sources, a significant adverse impact could occur if the alternative would:

1. Convert more than 50 acres of Prime Farmland, Unique Farmland, Farmland of Statewide Importance, Farmland of Local Importance, Grazing Land, or areas containing prime soils to uses not conducive to agricultural production;
2. Conflict with an existing Williamson Act contract; or
3. Introduce incompatible uses in the vicinity of existing agricultural uses.

The CEQA Guidelines (Appendix G) (14 CCR 15000 et seq.) does not provide suggested criteria for evaluating a beneficial effect. The following criteria were developed by the lead agencies. A beneficial impact could occur if the alternative would:

1. Restore more than 50 acres of agricultural production in areas containing prime soils;
2. Reduce or eliminate a conflict with an existing Williamson Act contract; or

3. Reduce or eliminate incompatible uses in the vicinity of existing agricultural uses.

The impact analysis for the three EIS/EIR alternatives will consider the context, intensity, and severity of potential impacts to each of these agricultural resource impact criteria and will present a separate determination of significance for each of these criteria.

6.2.2 No Action/No Project Alternative

The No Action/No Project Alternative is described in Section 2.2, No Action/No Project Alternative.

6.2.2.1 Direct and Indirect Effects of the Alternative

Under the No Action/No Project Alternative, future urban development and associated infrastructure would convert approximately 30,570 acres of the approximately 256,832 acres of existing Important Farmland in the Planning Area to non-agricultural uses (Table 6-3). Nearly all of these impacts would be within the UDA. However, as explained in Section 2.2, approximately 1,900 acres of planned urban development would be shifted or displaced to locations outside the UDA under the No Action/No Project Alternative. Conversion (loss) of Important Farmland to a developed land cover type and conflicts between existing agricultural activities and new urban uses would occur on these 1,900 acres of “displaced” urban development.

Table 6-3. Impacts on Important Farmland Expected Under the No Action/No Project Alternative

Important Farmland Type	Existing Acres within Planning Area	Acres Removed from Agricultural Use Under This Alternative	New Total within Planning Area at the End of Study Period (acres)
Prime Farmland	35,819	398	35,421
Unique Farmland	14,058	742	13,316
Farmland of Statewide Importance	39,923	6,636	33,287
Farmland of Local Importance	33,231	7,165	26,066
Grazing Land ¹	133,801	17,264	116,537
Total	256,832	32,205	224,627

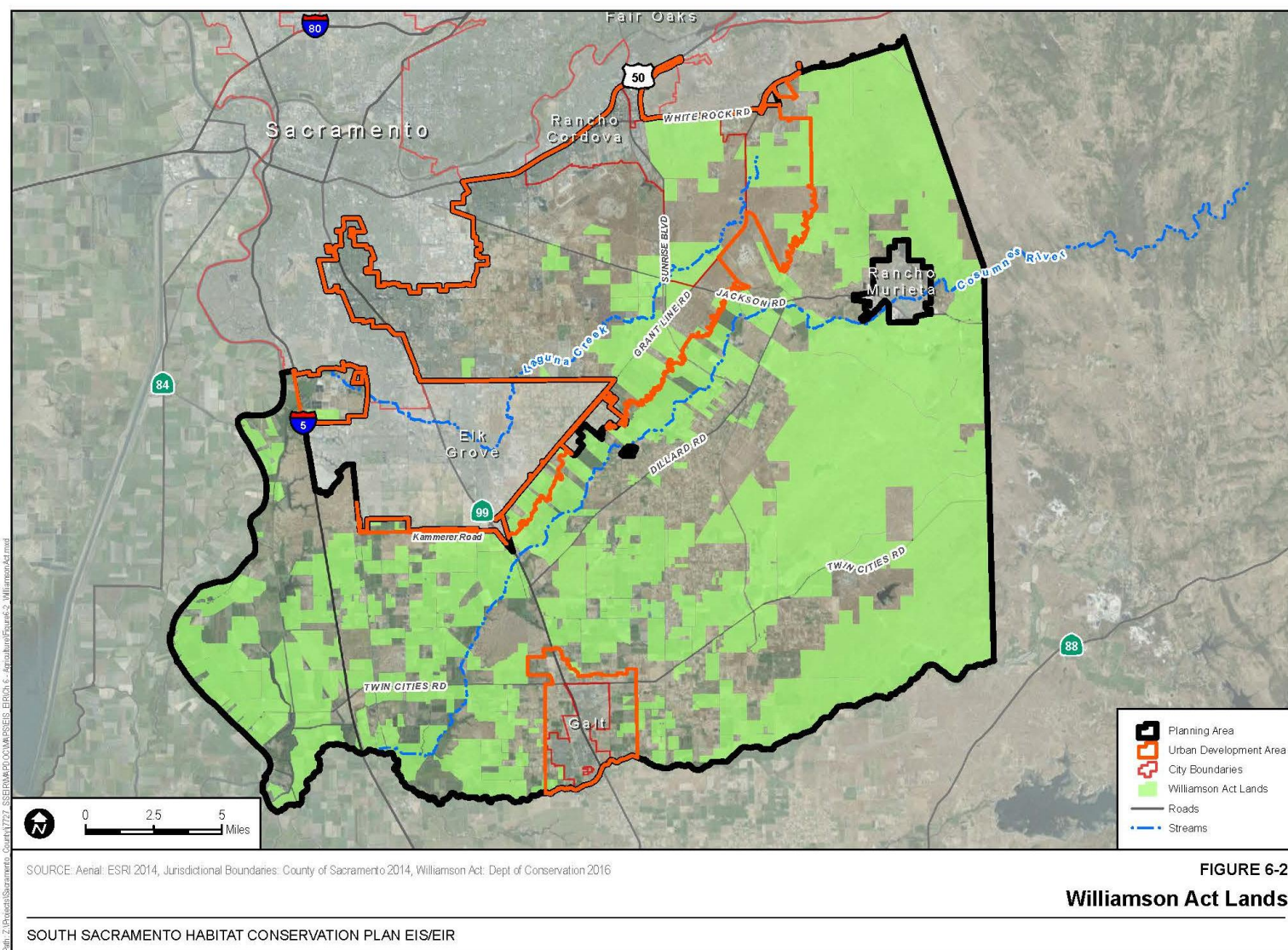
Source: CDOC 2014.

¹ The Sacramento County General Plan Policies (2011) do not require mitigation for impacts to Grazing Land within the USB according to Policy AG-5. However, these acres are still included in the impact total because they are mapped as Important Farmland.

The effects on agriculture of future urban development within Sacramento County, Galt, and Rancho Cordova were evaluated in the analysis of the General Plan EIRs discussed in Section 3.4 and Section 6.1.1, Federal (Sacramento County 2011; Galt 2009b; Rancho Cordova 2006b).

As discussed in Section 6.2.1, Methodology for Assessing Impacts of Each Alternative on Agricultural Resources, the relevant analyses from each of these EIRs are summarized and incorporated by reference into the analysis of the No Action/No Project Alternative.

Figure 6-2 Williamson Act Lands



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The impact analysis presented in the *Final Environmental Impact Report: Sacramento County General Plan Update* (Sacramento County General Plan EIR) (Sacramento County 2010) determined the following within Sacramento County:

- Future development within Sacramento County would result in conversion of 8,645 acres of Important Farmland,^[4] beyond the level than can be mitigated through in-kind mitigation; this would be a significant and unavoidable adverse impact (Sacramento County 2010, pp. 3-47 to 3-60)
- The encouragement of non-renewal of Williamson Act contracts is considered a significant adverse impact (Sacramento County 2010, pp. 3-47 to 3-60)

The Sacramento County General Plan EIR (Sacramento County 2010) did not address compatibility of designated land uses (e.g., residential) with adjacent agricultural uses.

The impact analysis presented in the *City of Galt General Plan Update: 2030 Final EIR* (Galt General Plan EIR) (Galt 2009b) determined the following within the Galt sphere of influence (SOI):

- Planned development consistent with the Galt General Plan would convert up to 3,200 acres of Important Farmland, a significant and unavoidable adverse impact (Galt 2009b, pp. 8-25 to 8-28)
- Impacts to any lands under Williamson Act contracts would be less than significant adverse; however, planned development in the Galt SOI would require annexation and re-zoning of parcels under Williamson Act contracts (Galt 2009b, pp. 8-25 to 8-28)
- Impacts associated with introducing incompatible land uses in the vicinity of existing agricultural uses would be less than significant adverse with implementation of the Galt General Plan policies that would protect agricultural uses and establish a green belt (Galt 2009b, pp. 8-25 to 8-28)

The impact analysis presented in the *City of Rancho Cordova General Plan Final Environmental Impact Report* (Rancho Cordova General Plan EIR) (Rancho Cordova 2006b) determined the following within Rancho Cordova:

- Conversion of most if not all of the Important Farmlands in the City due to planned development would result in a significant and unavoidable adverse impact (Rancho Cordova 2006b, pp. 4.2-17 to 4.2-24)

⁴ As described further in Section 3.4.1, Sacramento County General Plan, the proposed project analyzed within the Sacramento County General Plan EIR assumed development within a designated “Jackson Highway Corridor New Growth Area” that was not a part of the alternative ultimately selected by the County. However, the County is currently processing land use entitlements in the Jackson Highway Corridor, so the referenced conclusions from the proposed project analysis are relevant to the No Action/No Project Alternative.

- Urban development would surround the one parcel in the City under a Williamson Act contracts, impeding the ability of the landowner to farm the land according to the Williamson Act contract and potentially violating the contract; this would result in a significant and unavoidable adverse impact (Rancho Cordova 2006b, pp. 4.2-17 to 4.2-24)
- Agriculture/urban interface conflicts such as farm equipment and vehicle conflicts on area roadways, potential trespassing and vandalism to active farmlands, and growth pressures on farmland near urban uses in the City would occur resulting in a significant and unavoidable adverse impact (Rancho Cordova 2006b, pp. 4.2-17 to 4.2-24)

As discussed in Section 3.4 and Section 6.1.3, Local, the three General Plan EIRs used different study periods ending in 2030 (Galt 2009b), in 2030 (Rancho Cordova 2006b), and 2050 (Sacramento County 2010). However, the 50-year study period for this EIS/EIR ends in 2065 (Section 3.6.3, EIS/EIR Study Period). Therefore, additional urban development can be expected to occur within Galt, Rancho Cordova, and Sacramento County in the years after their General Plan EIR study periods end and when this EIS/EIR's study period ends in 2065. Therefore, the impact analyses and conclusions incorporated from the three General Plan EIRs may not have considered all of the future urban development that is included in the project description of each EIS/EIR alternative. Consequently, when determining the significance of each impact described in the EIS/EIR, the lead agencies considered the impact analysis and the conclusions incorporated by reference from the General Plan EIRs, along with the effects of all urban development activities and projects included in the description of each EIS/EIR alternative.

The conversion of Important Farmlands to developed uses would contribute further to the already significant, unavoidable indirect adverse impacts to agricultural resources from new incompatible uses described in the environmental documents for the General Plans of Sacramento County, Galt, and Rancho Cordova. The description of the No Action/No Project Alternative (Section 2.2) assumes that project compliance with the existing General Plan policies, such as Sacramento County General Plan Policies AG-5 and AG-25 and Rancho Cordova General Plan Policy LU.1.9, as well as compliance with existing agricultural protection ordinances identified in Section 6.1.1, Regulatory Framework, would continue under the No Action/No Project Alternative, and these local policies and ordinances would reduce but not eliminate indirect impacts related to incompatible land uses.

As explained in Section 2.2.2, under the No Action/No Project Alternative, mitigation for impacts to listed species or aquatic resources from new urban development that cannot be avoided would continue to require avoidance, minimization, and compensatory mitigation. As discussed in Section 2.2.2, project Clean Water Act Section 404 compensatory mitigation and/or federal Endangered Species Act and California Endangered Species Act mitigation under the No Action/No Project Alternative could include purchase of credits in existing mitigation banks,

payment of in-lieu fees, and establishment of on-site or off-site preserves by the Permittees. High-priority locations for project mitigation preserves would include sites that have soils and hydrology that support vernal pools or that include riparian areas. These high-priority mitigation sites could contain Important Farmland or be under active Williamson Act contracts. However, mitigation preserves would not result in the loss of farmland or farming activities to developed uses, but instead, change how the land is used (e.g., fallow versus active farming). Therefore, including agricultural lands within mitigation preserves, including Important Farmland agricultural lands, would not require mitigation under existing Sacramento County, Galt, or Rancho Cordova policies. Potential impacts from allowing incompatible uses to be developed adjacent to existing agricultural lands would be mitigated, if necessary, through compliance with applicable Sacramento County, Galt, or Rancho Cordova General Plan policies.

On-site or off-site mitigation preservation could also include foraging habitat for species such as Swainson's hawk (*Buteo swainsoni*) or greater sandhill crane (*Grus canadensis*). As discussed in Chapter 9, Special-Status Species Including HCP Covered Species, habitat for these species includes open fields that contain row or field crops and grazing land. Species conservation easements on these agricultural lands may include restrictions that limit the type of crops grown or harvest times to ensure appropriate species habitat is preserved within the conservation easement. Conservation easements proposed on lands under existing Williamson Act contracts would be reviewed to ensure the terms of the contract do not conflict with the language of the conservation easement. Therefore, any limitation on types of crops and/or harvest times that are included in a new conservation easement would not result in significant adverse effects to Important Farmland or Williamson Act contracts.

Therefore, under the No Action/No Project Alternative, habitat re-establishment/establishment would not result in **No Impact** to agricultural operations.

6.2.2.2 Cumulative Effects of the No Action/No Project Alternative

As discussed in Section 3.7.1, Past and Present Actions in the Planning Area, and Section 6.2.1, past and present urban development and associated infrastructure project and activities in the EIS/EIR Planning Area have replaced much of the land historically used for agricultural production, especially within the UDA portion of the EIS/EIR Planning Area. Other developing areas within the study area (see Section 6.2.1) such as the Cities of Davis, El Dorado Hills, Yuba City, and Wheatland have also replaced formerly productive agricultural lands with urban development land covers.

Reasonably foreseeable future projects in the EIS/EIR Planning Area that could remove Important Farmland include expansion of Rancho Murieta development, urban development in the Elk Grove SOI, development of the Wilton Rancheria Casino, and construction of the

California High-Speed Rail and the California WaterFix projects (Section 3.7.2, Reasonably Foreseeable Other Actions). Outside the EIS/EIR Planning Area in the remainder of the study area, SACOG (2016) projects that urban development, rural residential development, and transportation projects have the potential to impact 2,466 acres of Prime Farmland, 746 acres of Unique Farmland, and 2,243 acres of Farmland of Statewide Importance for a combined potential impact to 5,455 acres of FMMP-designated farmland.

To address the loss of farmland, many state and local laws and requirements to protect farmland resources have been enacted (see Section 6.1.1). In Sacramento County, these requirements prescribe actions such as a 1:1 replacement for projects that convert more than 50 acres of Important Farmland and the encouragement to support the Williamson Act program to ensure a temporary protection of farmland resources. Based on Sacramento County General Plan Policy AG-5 (Sacramento County 2011), each conversion of less than 50 acres of Important Farmland as part of present and reasonably foreseeable actions would be considered a less-than-significant adverse impact not requiring mitigation. However, the cumulative effects of multiple conversions of less than 50 acres of Important Farmland would be cumulatively significant. Significant adverse cumulative effects from current and reasonably foreseeable future activities would be identified and mitigated according to General Plan policies. However, even with these policies in place, as indicated in the incorporated impact analysis from the General Plan EIRs for Sacramento County (2010), Galt (2009b), and Rancho Cordova (2006b), the cumulative effects of planned urban growth on existing Important Farmlands would result in a cumulatively significant and unavoidable adverse impact on agriculture resources.

Under the No Action/No Project Alternative, approximately 1,900 acres of planned urban development is expected to be shifted or displaced to locations outside the UDA. The areas expected to receive this urban development include south of the Elk Grove SOI and near Rancho Murieta. These components of the No Action/No Project Alternative would further increase conflicts with land use plans and make a cumulatively considerable (i.e., significant) contribution to the cumulatively significant and unavoidable adverse impact to agriculture that was identified in the General Plan EIRs for Sacramento County (2010), Galt (2009b), and Rancho Cordova (2006b). Therefore, the No Action/No Project Alternative would result in a significant and unavoidable adverse cumulative effect to agricultural resources and agricultural activities.

6.2.3 Proposed Action/Proposed Project Alternative

The Proposed Action/Proposed Project Alternative is described in Section 2.3, Proposed Action/Proposed Project Alternative.

6.2.3.1 Direct and Indirect Effects of the Proposed Action/Proposed Project Alternative

Under the Proposed Action/Proposed Project Alternative, Covered Activity projects and activities would convert approximately 31,105 acres of the approximately 256,832 acres of Important Farmland in the Planning Area to non-agricultural uses (Table 6-4). As discussed in Section 2.3, nearly all of these effects would be within the UDA. Of the approximately 31,105 acres of Important Farmland that would be converted to a non-agricultural use under the Proposed Action/Proposed Project Alternative, approximately 4,799 acres are under an active Williamson Act contract.

The remainder of Important Farmland in the Planning Area, including approximately 225,727 acres outside the UDA, would not be adversely affected by the Proposed Action/Proposed Project Alternative, including 9,642 acres of Cropland and Irrigated Pasture-Grassland that would be conserved as part of the SSHCP Preserve System (see the following text).

Table 6-4. Impacts on Important Farmland Expected Under the Proposed Action/Proposed Project Alternative

Important Farmland Type	Existing Acres within Planning Area	Acres Removed from Agricultural Use Under this Alternative	New Total within Planning Area at End of Study Period (acres)
Prime Farmland	35,819	275	35,544
Unique Farmland	14,058	1,004	13,054
Farmland of Statewide Importance	39,923	6,049	33,874
Farmland of Local Importance	33,231	7,743	25,488
Grazing Land ¹	133,801	16,035	117,766
Total	256,832	31,105	225,727

Source: CDOC 2014.

¹ The Sacramento County General Plan (Sacramento County 2011) does not require mitigation for impacts to Grazing Land within the USB according to Policy AG-5. However, these acres are still included in the impact total because they are mapped as Important Farmlands.

As described in Section 2.3, the Proposed Action/Proposed Project Alternative would allow urban development Covered Activities within the Mather Core Recovery Area portion of the UDA to be implemented consistently with the approved Sacramento County and Rancho Cordova General Plans without urban development shifting or being displaced to locations outside the UDA. As a result, Important Farmland converted to urban uses outside the UDA would be less under the Proposed Action/Proposed Project Alternative than under the No Action/No Project Alternative. Therefore, the Proposed Action/Proposed Project Alternative would have a **Minor Beneficial** effect on agricultural resources and activities compared to the No Action/No Project Alternative baseline condition.

As indicated in Section 2.3, under the Proposed Action/Proposed Project Alternative, cropland conservation easements or preserves would be established to allow for continued agricultural production on areas that provide foraging and nesting habitat for several Covered Species, including Swainson’s hawk, white-tailed kite (*Elanus leucurus*), and greater sandhill crane.

The Proposed Action/Proposed Project Alternative would preserve approximately 9,642 acres of Cropland and Irrigated Pasture-Grassland under conservation easements or in-fee titles from willing sellers (as part of the approximately 36,038 acres of natural land covers included within the Preserve System). The protected Cropland and Irrigated Pasture-Grassland would generally be located outside the UDA and west of State Route 99 in the Cosumnes River floodplain.

~~Avoidance and Minimization Measure (AMM) EDGE 1 would prioritize compatible adjacent uses next to SSHCP Preserves, such as parks, nature trails, roads, or other uses that would not convert or introduce incompatible land uses or conflict with any existing Williamson Act contracts.~~ Some of the land included within the Preserve System may include Important Farmland or land currently enrolled in a Williamson Act contract; however, establishment of preserves would not convert Important Farmland to developed uses or prevent farmers/ranchers from using their agricultural land for agricultural purposes. Therefore, the Proposed Action/Proposed Project Alternative would have a **Minor Beneficial** effect to agriculture resources and agricultural activities relative to the No Action/No Project Alternative baseline condition. Further, under the Proposed Action/Proposed Project Alternative, the “Right-to-Farm” ordinances and General Plan policies enacted by Sacramento County and Rancho Cordova (described in Section 6.1.1) would also still apply and protect agricultural operations from indirect effects of urban development and incompatible uses.

Much, if not all, of the Cropland Preserves would include Important Farmland. That would also be true for many acres of other preserve types established under the Proposed Action/Proposed Project Alternative. Similarly, many of the areas protected under conservation easement or in fee-title preserves would be under a Williamson Act contract. Each Williamson Act contract is unique, and some may restrict the possible terms allowed for a conservation easement. If a conservation easement were proposed for land that is in a Williamson Act contract, the future Permittees would review the specifics of the Williamson Act contract to ensure that the establishment of a conservation easement is allowable.

Cropland Preserves would be established primarily by purchase of conservation easements from willing landowners. The conservation easement would identify the types of crops to provide habitat for Covered Species, timing for harvest, crop rotations, or other measures that benefit targeted Covered Species, as agreed to in the conservation easement purchase and as described in the SSHCP document. Active agricultural lands placed under a conservation easement would be kept in active agricultural use. Management plans would be developed

with landowners and would be periodically reviewed, which could provide landowners the opportunity to adaptively manage land management activities.

Of the Important Farmland included in the proposed SSHCP Preserve System, a substantial amount would be located on lands that the state's FMMP designates as Grazing Land (CDOC 2013, 2014). Generally, grazing on SSHCP Preserves would continue because grazing is beneficial for the Vernal Pool Ecosystem (see Chapter 8, Natural Land Cover Habitat Types and Associated Plant and Animal Communities). Existing grazing leases or licenses on the properties that become part of the SSHCP Preserve System would remain in effect, and the current grazing regimen would be continued until a Preserve Management Plan (Section 2.3.6, SSHCP Preserve Management and Monitoring Programs) is prepared. The Preserve Management Plan would specify the timing of grazing, how many animals can graze at one time, the duration of grazing, and how much vegetation should be present on a grazed area, and would be reviewed annually with the livestock operator. Therefore, establishment of preserves under the Proposed Action/Proposed Project Alternative would not convert Important Farmland to developed uses or prevent farmers/ranchers from using their agricultural land for agricultural purposes. A small amount of Cropland or Irrigated Pasture-Grassland may be converted to an aquatic resource land cover type from the re-establishment or establishment of Riparian Woodland, Vernal Pools, or Seasonal Wetlands under the Proposed Action/Proposed Project Alternative. Although these changes in land cover type are not considered agricultural conversion under the Sacramento County, Galt, or Rancho Cordova General Plans, under the Proposed Action/Proposed Project Alternative, the change in land cover would be mitigated as a loss of species habitat. Establishment of preserves under the Proposed Action/Proposed Project Alternative would have **No Impact** on agriculture, which is the same for preserves established under the No Action/No Project Alternative baseline condition.

Preservation, re-establishment/establishment, and management of species habitat may result in the expansion (colonization or increased numbers) of some Covered Species. The SSHCP includes a Good Neighbor Program (refer to Chapter 11 in the SSHCP document) that extends Incidental Take Permit coverage for willing participants on any agricultural lands within 0.5 mile of an SSHCP Preserve. Therefore, this would be a **Minor Beneficial** effect to agricultural activities relative to the No Action/No Project Alternative baseline condition.

6.2.3.2 Significance of Direct and Indirect Effects

Compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project Alternative would result in the following:

- Conversion of approximately 1,100 fewer acres of Important Farmland to non-agricultural uses

- New land uses that conflict with 32 more acres of land that have existing Williamson Act contracts
- Fewer incompatible uses near existing agricultural uses by not displacing 1,900 acres of new urban development to locations outside the UDA
- Fewer incompatible uses near existing agricultural by implementing an AMM that emphasizes placement of compatible uses adjacent to Cropland Preserves

Therefore, after considering the significance of impacts from the Proposed Action/Proposed Alternative on all of the agricultural resource impact criteria, the Proposed Action/Proposed Project Alternative would result in ***Minor Beneficial*** effects to agriculture when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

6.2.3.3 Cumulative Effects of the Proposed Action/Proposed Project Alternative

As described in Sections 3.7, past and present urban development projects and activities have resulted in loss of Important Farmland in the study area. The EIRs prepared for the Sacramento County, Galt, and Rancho Cordova General Plans (Sacramento County 2010; Galt 2009b; Rancho Cordova 2006b) concluded that development consistent with these plans would result in significant and unavoidable adverse cumulative impacts to Important Farmland.

Reasonably foreseeable future projects that could remove additional Important Farmland include expansion of the Rancho Murieta development, urban development in the Elk Grove SOI, development of the Wilton Rancheria Casino, and construction of the California High-Speed Rail and the California WaterFix projects. Outside the EIS/EIR Planning Area in the remainder of the study area, SACOG (2016) projects that urban development, rural residential development, and transportation projects have the potential to impact 2,466 acres of Prime Farmland, 746 acres of Unique Farmland, and 2,243 acres of Farmland of Statewide Importance for a combined potential impact to 5,455 acres of FMMP designated farmland.

Present and reasonably foreseeable other projects in the Planning Area would comply with policies of Sacramento County, Galt, and Rancho Cordova described in Section 6.1.1. Those policies are designed to protect agricultural resources and require agencies or project proponents to mitigate for the loss of Important Farmland, which would provide a mechanism to ensure that potential impacts associated with the loss of farmland are appropriately addressed. However, the loss of Important Farmland from past, present, and reasonably foreseeable future projects under the Proposed Action/Proposed Project Alternative would still be considered cumulatively significant adverse, which is the same as the cumulative impact analysis of the No Action/No Project Alternative.

Urban development under the Proposed Action/Proposed Project Alternative would contribute to cumulative impacts by converting 32,060 acres of natural land in the UDA, including areas with Important Farmland. Compared to the No Action/No Project Alternative, the Proposed Action/Proposed Project Alternative would not result in shifting or displacement of new development to areas located outside the UDA, such as south of the Elk Grove SOI where nearly all of the land is currently in agricultural production. In addition, the Proposed Action/Proposed Project Alternative would result in mitigation for all Covered Activity impacts to agricultural lands. Under the No Action/No Project Alternative, existing Sacramento County General Plan Policy AG-5 (Sacramento County 2011) only requires mitigation for loss of agricultural lands for projects converting more than 50 acres of Important Farmland. Therefore, urban development under the Proposed Action/Proposed Project Alternative would have a smaller incremental contribution to cumulative impacts on agriculture and agricultural activities than the No Action/No Project Alternative baseline condition.

Establishment and management of preserves under the Proposed Action/Proposed Project Alternative would not contribute substantially to cumulative effects on agriculture because any changes to existing agricultural operations within SSHCP Preserves would be minor and would not substantially change agricultural use of study area croplands. Further, compared to the No Action/No Project Alternative baseline conditions, the Proposed Action/Proposed Project Alternative would preserve 10,000 acres more of Valley Grassland outside the UDA in perpetuity, and these 10,000 acres would be kept available for grazing.

Because the Proposed Action/Proposed Project Alternative would not result in urban development shifted or displaced to outside the UDA, and would result in more preservation of Important Farmlands and grazing lands as compared to the No Action/No Project Alternative, the Proposed Action/Proposed Project Alternative's incremental contribution to cumulative impacts on agriculture resources would be less than that described for the No Action/No Project Alternative in Section 6.2.2.2, Cumulative Effects of the No Action/No Project Alternative. Therefore, the Proposed Action/Proposed Project Alternative would have a ***Minor Beneficial Cumulative*** effect on agriculture compared to the No Action/No Project Alternative baseline condition.

6.2.4 Reduced Permit Term Alternative

The Reduced Permit Term Alternative is described in Section 2.4, Reduced Permit Term Alternative. Section 6.2.4.1, Direct and Indirect Effects of the Alternative, presents separate determinations for each of the adverse and beneficial criterion (listed in Section 6.2.1). Section 6.2.4.2, Significance of Direct and Indirect Effects, weighs all of those separate determinations to present one "bottom-line" determination statement for the significance of the direct and indirect effects of the Reduced Permit Term Alternative on agriculture. Finally, Section 6.2.4.3,

Cumulative Effects of the Reduced Permit Term Alternative, describes the cumulative effects of past, present, and reasonably foreseeable other projects in the cumulative study area, and then considers the incremental contribution made by the Reduced Permit Term Alternative to those cumulative effects.

6.2.4.1 Direct and Indirect Effects of the Alternative

Under the Reduced Permit Term Alternative, Covered Activities would convert approximately 30,485 acres of the approximately 256,946 acres of Important Farmland in the Planning Area to non-agricultural uses (Table 6-5). Of the approximately 30,485 acres of Important Farmland that would be converted to a non-agricultural use under the Reduced Permit Term Alternative, approximately 4,900 acres are currently under an active Williamson Act contract.

The remainder of Important Farmland in the Planning Area, including acres of active cropland that would be conserved as part of the Preserve System established during the 30-year permit term, would not be adversely affected by the Reduced Permit Term Alternative.

Table 6-5. Impacts on Important Farmland due to Covered Activities under the Reduced Permit Term Alternative

Important Farmland Type	Existing Acres within Planning Area	Impacts on Each Farmland Type (acres)			New Total within Planning Area (acres)
		Years 1–30	Years 31–50	Total	
Prime Farmland	35,731	237	83	321	35,410
Unique	14,060	274	464	738	13,322
Farmland of Statewide Importance	39,998	1,280	4,746	6,027	33,971
Farmland of Local Importance	33,316	4,751	2,167	6,917	26,399
Grazing Land ¹	133,841	9,570	6,912	16,482	117,358
Total	256,946	16,113	14,372	30,485	226,460

Source: CDOC 2014.

¹ The Sacramento County General Plan (Sacramento County 2011) does not require mitigation for impacts to Grazing Land in the USB according to Policy AG-5. However, these acres are still included in the impact total because they are mapped as Important Farmland.

Under the Reduced Permit Term Alternative, approximately 896 acres more of natural land covers within in the Mather Core Recovery Area would be directly impacted, and 597 acres more of direct impacts to natural land covers in the UDA outside the Mather Core Recovery Area compared to the No Action/No Project Alternative would occur. As described in Section 2.4, the Reduced Permit Term Alternative would allow urban development Covered Activities within the Mather Core Recovery Area portion of the UDA to be implemented consistent with the approved Sacramento County and Rancho Cordova General Plans, without urban development shifting or being displaced to locations outside the UDA. As a result, acres of Important Farmland

changed to urban development would be less under the Reduced Permit Term Alternative as compared to the No Action/No Project Alternative. Therefore, the Reduced Permit Term Alternative would have a **Minor Beneficial** effect on Important Farmland as compared to the impacts of the No Action/No Project Alternative baseline condition.

Under the Reduced Permit Term Alternative, the “Right-to-Farm” ordinances and General Plan policies enacted by Sacramento County and Rancho Cordova (described in Section 6.1.1.1) would apply and would protect agricultural operations from indirect effects of urban development during the EIS/EIR 50-year study period, including the 30-year permit term of the Reduced Permit Term Alternative. ~~Additional protections for agricultural operations would be provided by the Reduced Permit Term Alternative during the 30-year permit term by AMM EDGE-1, which would limit incompatible uses adjacent to Cropland Preserves.~~ This would be a **Minor Beneficial impact No Impact** to agricultural resources and agricultural activities relative to the No Action/No Project Alternative.

Much, if not all, of the Cropland Preserves would include Important Farmland. That would also be true for many acres of other preserve types established under the Reduced Permit Term Alternative. Similarly, many of the areas protected under conservation easement or in fee-title preserves would be under a Williamson Act contract. Each Williamson Act contract is unique, and some may restrict the possible terms allowed for a conservation easement. If a conservation easement were proposed for land that is in a Williamson Act contract, the future Permittees would review the specifics of the Williamson Act contract to ensure that the establishment of a conservation easement is allowable.

Of the Important Farmland included in the Reduced Permit Term Alternative’s Preserve System, a substantial amount would be located on lands that the state’s FMMP designates as Grazing Land (CDOC 2013, 2014). This would include the large landscape-scale preserve outside the UDA. Generally, grazing on SSHCP Preserves would continue because grazing is beneficial for the Vernal Pool Ecosystem (see Chapter 8). Existing grazing leases or licenses on the properties that receive conservation easements or are purchased in fee-title for SSHCP Preserves would remain in effect, and the current grazing regime would be continued until a management plan was prepared for the preserve. The Preserve Management Plan would specify the timing of grazing, how many animals can graze at one time, the duration of grazing, and how much vegetation should be present on a grazed area, and would be reviewed annually with the livestock operator. Therefore, establishment of preserves under the Reduced Permit Term Alternative would not convert Important Farmland to developed uses or prevent farmers/ranchers from using their agricultural land for agricultural purposes.

Cropland Preserves established during the 30-year permit term would be in large blocks to allow for continued agricultural production and would be protected through purchase of conservation

easements or fee-title purchases from willing sellers. Cropland Preserves established during the 30-year permit term (as part of the approximately 30,646 acres of natural land covers included within the Preserve System during the permit term) would include approximately 11,334 acres of row crops and Irrigated Pasture-Grassland. The Cropland Preserves would be almost entirely outside the UDA.

As outlined in Section 2.4.3, Covered Activities/Projects Under the Reduced Permit Term Alternative, after the 30-year permit term expires, mitigation preserves would continue to be established on a project-by-project basis as project mitigation for impacts to aquatic resources or listed species. It is expected that Cropland Preserves established after the end of the 30-year permit term (during Years 31–50 of the EIS/EIR 50-year study period) would comply with Sacramento County’s Swainson’s hawk ordinance to mitigate project effects on Swainson’s hawk habitat. During Years 31–50 of the EIS/EIR 50-year study period, Sacramento County’s agricultural protection ordinance (Section 6.1.2) would also continue to require that impacts to Important Farmland be mitigated by preserving Important Farmlands, preferably outside the USB boundary, when more than 50 acres are impacted by a project.

~~AMM EDGE-1 would prioritize compatible adjacent uses next to SSHCP Preserves, such as parks, nature trails, roads, or other uses that would not convert or introduce incompatible land uses or conflict with any existing Williamson Act contracts.~~ Some of the land included within the Preserve System may include important farmland or land currently enrolled in a Williamson Act contract; however, establishment of preserves would not convert Important Farmland to developed uses or prevent farmers/ranchers from using their agricultural land for agricultural purposes. Therefore, establishment of preserves under the Reduced Permit Term Alternative would have **No Impact** on agriculture compared to the No Action/No Project Alternative baseline condition.

Preservation, re-establishment/establishment, and management of species habitat may result in the expansion (colonization or increased numbers) of some Covered Species. As in the Proposed Action/Proposed Project Alternative, the Reduced Permit Term Alternative would include a Good Neighbor Program (refer to Chapter 11 in the SSHCP document) that extends Incidental Take Permit coverage for willing participants for any agricultural lands within 0.5 mile of an SSHCP Preserve. Therefore, this would be a **Minor Beneficial** effect to agricultural activities relative to the No Action/No Project Alternative baseline condition.

6.2.4.2 Significance of Direct and Indirect Effects

In summary, when compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would result in the following:

- Conversion of approximately 1,720 fewer acres of Important Farmland to non-agricultural uses

- Land uses that conflict with 133 more acres of land with existing Williamson Act contracts
- Fewer incompatible uses near existing agricultural uses by not displacing development outside the UDA and by implementing an AMM during the 30-year permit term that emphasizes placement of compatible uses adjacent to Cropland Preserves

Therefore, after considering the significance of impacts from the Reduced Permit Term Alternative on all of the agricultural resource impact criteria, the Reduced Permit Term Alternative would result in **Minor Beneficial** effects to agriculture compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

6.2.4.3 Cumulative Effects of the Reduced Permit Term Alternative

As described in Section 3.7, past and present urban development projects and activities have resulted in loss of Important Farmland in the agricultural resource study area. The EIRs prepared for the Sacramento County, Galt, and Rancho Cordova General Plans (Sacramento County 2010, Galt 2009b, Rancho Cordova 2006b) concluded that current and future development consistent with these plans would result in significant and unavoidable adverse impacts to Important Farmland (Sacramento County 2010, pp. 3-47 to 3-60; Galt 2009b, pp. 8-25 to 8-28; Rancho Cordova 2006b, pp. 4.2-17 to 4.2-24).

Reasonably foreseeable future projects, not included in the description of this alternative, that could remove additional Important Farmland include expansion of the Rancho Murieta development, urban development in the Elk Grove SOI, development of the Wilton Rancheria Casino, and construction of the California High-Speed Rail and the California WaterFix projects (see Section 3.7.2). SACOG (2016) projects that outside the EIS/EIR Planning Area in the remainder of the study area, urban development, rural residential development, and transportation projects have the potential to impact 2,466 acres of Prime Farmland, 746 acres of Unique Farmland, and 2,243 acres of Farmland of Statewide Importance for a combined potential impact to 5,455 acres of FMMP-designated farmland.

To address the loss of farmland, many state and local laws and requirements to protect farmland resources have been enacted (see Section 6.1.1). For example, in Sacramento County, these requirements prescribe actions such as a 1:1 replacement for projects that convert more than 50 acres of Important Farmland and the encouragement to support the Williamson Act program to ensure a temporary protection of farmland resources. Based on the Sacramento County General Plan Policy AG-5 (2011), each conversion of less than 50 acres of Important Farmland as part of present and reasonably foreseeable actions would be considered a less-than-significant adverse impact not requiring mitigation. However, the cumulative effects of multiple conversions of less than 50 acres of Important Farmland would be cumulatively significant. Significant adverse cumulative effects from current and reasonably foreseeable

future activities would be identified and mitigated according to General Plan policies. However, even with these policies in place, the cumulative effects of past, present, and reasonably foreseeable other projects on existing Important Farmland would result in a cumulatively significant adverse impact on agriculture resources.

Urban development under the Reduced Permit Term Alternative would contribute to cumulative impacts by converting approximately 35,367 acres of natural land, including areas with Important Farmland. Compared with the No Action/No Project Alternative, the Reduced Permit Term Alternative would not result in shifting or displacement of development to areas located outside the UDA, such as south of the Elk Grove SOI where nearly all of the land is currently in agricultural production. In addition, the Reduced Permit Term Alternative would result in mitigation for any Covered Activity impacts to agricultural lands during the 30-year permit term. Under the No Action/No Project Alternative, existing Sacramento County General Plan Policy AG-5 (2011) only requires mitigation for loss of agricultural lands for projects converting more than 50 acres of Important Farmland. Therefore, urban development under the Reduced Permit Term Alternative would have a smaller incremental contribution to cumulative impacts on agriculture and agricultural activities than the No Action/No Project Alternative baseline condition.

Establishment and management of mitigation lands, preserves, and open space under the Reduced Permit Term Alternative would not contribute substantially to cumulative effects on agriculture because the minor restrictions on agricultural operations within SSHCP Cropland Preserves would not substantially change agricultural use of Planning Area croplands. Further, under the Reduced Permit Term Alternative, more than 22,014 acres of Valley Grassland outside the UDA would be preserved during the 30-year permit term in perpetuity and kept available for grazing in compliance with an approved Preserve Management Plan.

Because the Reduced Permit Term Alternative would avoid urban development outside the UDA and increase preservation of Important Farmland and grazing lands compared to the No Action/No Project Alternative, the Reduced Permit Term Alternative's contribution to cumulative impacts on agriculture would also be less than that described for the No Action/No Project Alternative. Thus, the Reduced Permit Term Alternative would have a ***Minor Beneficial Cumulative*** effect to agriculture compared to the cumulative impact analysis of the No Action/No Project Alternative baseline condition.

6.3 REFERENCES CITED

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CHAPTER 7 – HYDROLOGY AND WATER QUALITY

Chapter 7 presents the existing conditions and analyzes the effects of each Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) alternative on groundwater hydrology, surface water hydrology, and the water quality of surface waters and groundwater.

The hydrology and water quality of the rivers, streams, creeks, and ephemeral drainages of the Planning Area are discussed and analyzed here in Chapter 7, but these land covers are also discussed and analyzed as natural habitat for native plants and animals in Chapter 8, Natural Land Cover Habitats and Associated Plant and Animal Communities, and in Chapter 10, Aquatic Resources, as aquatic resources regulated by the Clean Water Act, California Porter-Cologne Act, and by other federal, state, or local regulations and policies.

7.1 AFFECTED ENVIRONMENT/ENVIRONMENTAL SETTING

7.1.1 Regulatory Framework

Several federal, state, regional, and local agencies regulate project effects to hydrology and water quality within the Planning Area. This section summarizes the statutes, regulations, policies, and agency planning documents that are relevant to the approval, permitting, or implementation of the alternatives analyzed in this EIS/EIR. This section also identifies any relevant federal permits or other entitlements that must be obtained before implementing the alternatives. To the extent possible, the analyses or studies required by these regulations and policies are integrated into the environmental effects analyses presented in Section 7.2 (40 CFR 1502.25).

7.1.1.1 Federal and State

The federal and state regulations relevant to Planning Area project and activity effects on floodplain management and surface water quality are addressed together because the state is generally delegated authority to implement and enforce the federal regulations.

National Flood Insurance Program/Executive Order 11988 (Floodplain Management)

The Federal Emergency Management Agency (FEMA) is responsible for determining flood elevations based on available studies. Pursuant to the National Flood Insurance Program Final Rule, FEMA is also responsible for developing the Flood Insurance Rate Maps, which are used in the National Flood Insurance Program. The Flood Insurance Rate Maps denote the location of the federal 100-year flood area, 500-year flood area, and the base flood elevation. In a 100-year floodplain, there is a 1% chance of flooding in a given year, and in a 500-year floodplain, there is a 0.2% chance of flooding in a given year. If an area is within a 100-year floodplain, flood insurance is required by most mortgage companies. FEMA's existing 100-year floodplain map of the Planning Area is discussed below in Section 7.1.2. Under the National Flood Insurance Program, local land-use authority agencies typically cannot approve urban residential and

nonresidential development structures proposed within the regulatory floodplain (typically the 100-year floodplain), if that development is subject to, or results in, flood water over 1 foot in elevation. In addition, local land-use authority agencies cannot approve development in delineated floodways within the floodplain.

Executive Order 11988 (Carter 1977) applies to federally funded projects or activities and requires federal agencies to recognize the significant values of floodplains, avoid development within the 100-year floodplain where feasible, minimize and reduce flooding hazards, and consider the public benefits that would be realized from restoring and preserving floodplains.

State Plan of Flood Control

The Central Valley Flood Protection Act of 2008 (authorized by Senate Bill 5) directed the California Department of Water Resources (DWR) and the Central Valley Flood Protection Board to prepare a comprehensive flood protection plan for the California Central Valley. The resulting State Plan of Flood Control (DWR 2010) established a system-wide approach to improving flood management in the areas currently receiving some amount of flood protection from existing federal, state, and local flood control facilities. In addition, the State Plan of Flood Control provides recommended structural and nonstructural means for improving performance and eliminating the deficiencies of flood management facilities, while also addressing ecosystem and other water-related issues. The flood legislation also established the 200-year flood event (flood with a 1-in-200 chance of occurring in any year) as the minimum level of flood protection to be provided in urban and urbanizing areas. Additionally, cities and counties in the Central Valley must incorporate the data, policies, and implementation measures of the State Plan of Flood Control into their general plans (see discussion of Planning Area general plans in Section 3.4, Previous Planning Area Environmental Reviews). Development within designated floodways and floodplains must acquire an encroachment permit from the Central Valley Flood Protection Board.

Rivers and Harbor Act

The Rivers and Harbors Act addresses projects and activities in navigable waters and harbor and river improvements. Section 14 of the Rivers and Harbors Act (33 U.S.C. 408) provides that the secretary of the Army, on recommendation of the chief of engineers, may grant permission of the temporary or permanent occupation or alteration of any sea wall, bulkhead, jetty, dike, levee, wharf, pier, or other work built by the United States so long as the occupation or alteration is not injurious to the public interest and will not impair the usefulness of the project. This permission will be granted by an appropriate real estate instrument in accordance with existing real estate regulations. Reviews under 33 U.S.C. 408 are conducted by the U.S. Army

Corps of Engineers (USACE) Sacramento District's Flood Protection and Navigation Section. The USACE responses are provided to the Central Valley Flood Protection Board.

Clean Water Act

The Clean Water Act (CWA) is the federal statute addressing surface water quality; it does not address either groundwater or water quantity. It was enacted with the goal of restoring and maintaining "the chemical, physical, and biological integrity of the Nation's waters," which includes surface waters that are either navigable or connected to navigable water (33 U.S.C. 1251 et seq.). The CWA prohibits discharge of pollutants to surface waters from point and nonpoint sources unless authorized by appropriate permits. The law authorizes the U.S. Environmental Protection Agency (EPA) to set point-source effluent limitations for industry and publicly owned treatment works, and requires states (or U.S. EPA in the event of a state default) to set water quality standards for contaminants in surface waters. The provisions of the CWA are administered and regulated in the Planning Area primarily by the U.S. EPA, California EPA, USACE, and the State Water Resources Control Board (SWRCB).

Under CWA Section 303(d), states are required to develop lists of water bodies that would not attain water quality standards after implementation of required levels of treatment by point-source dischargers (municipalities and industries). CWA 303(d) requires that the state develop a total maximum daily load (TMDL) for each of the listed pollutants. The TMDL is the amount of loading that the water body can receive and still be in compliance with water quality objectives. The TMDL can also act as a plan to reduce loading of a specific pollutant from various sources to achieve compliance with water quality objectives. The TMDL prepared by the state must include an allocation of allowable loadings for point and nonpoint sources, with consideration of background loadings and a margin of safety to the allowable load.

Under CWA Section 402, the National Pollutant Discharge Elimination System (NPDES) program regulates the discharge of waste into waters of the United States. NPDES permit regulations apply to broad categories of discharges, including point-source municipal wastewater discharges and nonpoint-source stormwater runoff. NPDES permits typically identify the following:

- Effluent and receiving-water limits on allowable concentrations and/or mass emissions of pollutants contained in the discharge;
- Prohibitions on discharges not specifically allowed under the permit; and
- Provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities.

Under CWA Section 401, projects and activities that require federal authorization for the discharge of a pollutant into waters of the United States under CWA Section 404 must also obtain

a CWA Section 401 water quality certification from the state in which the discharge would originate. In California, U.S. EPA has delegated the authority to grant water quality certifications to the SWRCB, which are typically processed by the Regional Water Quality Control Boards with local jurisdiction. The Planning Area is located within the jurisdiction of the Central Valley Regional Water Quality Control Board (Central Valley RWQCB). A water quality certification requires the project or activity to evaluate its potential impacts and implement appropriate measures to protect water quality and comply with regulatory water quality standards. The issuance of CWA 404 authorizations by the USACE for the discharge of dredged and fill materials into waters of the United States is a typical federal action that requires CWA Section 401 water quality certification.

National Toxics Rule and California Toxics Rule

In 1992, pursuant to the CWA, the U.S. EPA promulgated the National Toxics Rule criteria to establish numeric criteria for priority toxic pollutants for California. At the time the National Toxics Rule was established, it provided water quality standards for 42 pollutants that were not covered under California's statewide water quality regulations. Additionally, a 1994 court order revoked California's statewide water quality control plan for priority pollutants. U.S. EPA subsequently developed and promulgated additional numeric water quality criteria for priority pollutants with the adoption of the California Toxics Rule (U.S. EPA 2000). The California Toxics Rule "carried forward" the promulgated criteria of the National Toxics Rule, thereby providing a single document listing California's fully adopted and applicable water quality criteria for 126 priority pollutants.

Porter–Cologne Water Quality Control Act

The Porter–Cologne Water Quality Control Act is the principal law regulating water quality in California; it also incorporates many provisions of the federal CWA. This act established the SWRCB and nine regions, each overseen by RWQCBs, for protection of the quality of the state's surface and groundwater supplies and enforcement of the CWA. Water quality control plans (i.e., "Basin Plans") for each region identify beneficial uses of water to be protected, and they establish water quality objectives necessary to support the designated beneficial uses of water resources. Basin Plans also contain implementing pollution control and resource management actions needed to maintain existing water quality conditions and bring water bodies into compliance with water quality objectives where impaired. Under the Porter–Cologne Water Quality Control Act, waste discharges that occur to water or land that have potential to affect water quality may be issued Waste Discharge Requirements by the Central Valley RWQCB, or they may be waived if the waste discharge does not significantly affect water quality.

The Planning Area is located within the jurisdiction of the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (Basin Plan) (CVRWQCB 2015a). The Basin Plan contains specific numeric water quality objectives for designated constituents of concern in surface water bodies. Constituents of concern generically refer to any type of physical property, chemical, or biological parameter in a water body (e.g., coliform bacteria, dissolved oxygen, pH, pesticides, electrical conductivity, total dissolved solids, temperature, turbidity, and trace elements) that may adversely affect a beneficial use (e.g., drinking water quality, industrial and agricultural water supplies, aquatic life, recreation). The Basin Plan includes numeric water quality objectives that apply basin-wide, as well as specific objectives applicable only in certain surface water bodies or portions of water bodies. Additionally, the Basin Plan contains narrative basin-wide surface water quality objectives that specify broad water quality goals and minimum acceptable water quality conditions.

Groundwater quality objectives specified in the Basin Plan (CVRWQCB 2015a) consist primarily of the statewide drinking water quality standards set forth in Title 22 of the California Code of Regulations. The Title 22 primary drinking water quality standards specify the maximum allowable concentrations for numerous constituents for the protection of human health (e.g., bacterial, inorganic compounds, trace metal, and organic parameters). Title 22 secondary drinking water standards are set for constituents of concern that pose nuisance, taste, or odor concerns (e.g., salinity, iron, manganese).

The state's antidegradation policy (SWRCB Resolution No. 68-16, Statement of Policy with Respect to Maintaining High Quality Waters in California) is designed to maintain high-quality waters in the state. The antidegradation policy requires protection of all existing beneficial uses that existed in 1968 at the time of the policy adoption, and it specifies that degradation of high-quality water is only permissible when it is demonstrated to the SWRCB that beneficial uses would not be unreasonably affected, and the highest quality water consistent with the maximum benefit to the state would be achieved.

California NPDES General Construction Stormwater Permit

The SWRCB adopted a statewide general NPDES permit for stormwater discharges associated with construction activity (Construction General Permit) in Order No. 2009-0009-DWQ (as amended by revised orders 2010-0014-DWQ and 2012-006-DWQ). The Construction General Permit applies to projects that involve soil disturbance of more than 1 acre, and includes specific requirements based on the "risk level" of erosion at the site. The risk level is dependent on the project's sediment runoff risk and risk to receiving water bodies. Obtaining coverage under the Construction General Permit requires filing of a Notice of Intent and preparing and implementing a stormwater pollution prevention plan, which specifies best management

practices (BMPs) to reduce or eliminate construction-related sediment and other pollutants in stormwater as well as non-stormwater discharges.

Central Valley RWQCB Irrigated Lands Regulatory Program

The Irrigated Lands Regulatory Program is administered by the Central Valley RWQCB to regulate discharges from irrigated agricultural lands. The Irrigated Lands Regulatory Program is relevant to the scope of the impact assessments presented in Section 7.2 because it addresses water quality for substantial areas of land that might contribute to waste discharges that contribute to surface and groundwater conditions. The Central Valley RWQCB issues Waste Discharge Requirements to “third party” organizations of growers, which are designed to protect surface water and groundwater quality.

The Sacramento Water Quality Coalition is an organization of commercial agricultural operators (including nurseries and managed wetlands) in the northern Sacramento Valley, including the Planning Area. The Sacramento Water Quality Coalition was issued Waste Discharge Requirements under the Irrigated Lands Regulatory Program (Order R5-2014-0030-R1) (CVRWQCB 2015b). The Waste Discharge Requirements include development and implementation of constituent-specific Surface Water/Groundwater Quality Management Plans when monitoring indicates exceedances of water quality objectives.

7.1.1.2 Regional

The Water Forum Agreement

The Water Forum Agreement is an agreement established in 2000 among local governments, municipal water purveyors, agricultural water districts, businesses, and citizen groups in Sacramento County, western Placer County, and western El Dorado County. The purpose of the Water Forum Agreement is to facilitate these stakeholders’ ability to provide for reliable and safe water supplies, economic health, and planned development through the year 2030 while preserving the fishery, wildlife, recreational, and aesthetic values of the Lower American River. The Water Forum Agreement includes seven elements addressing surface water diversions, groundwater management, dry-year water supplies, water conservation, and instream flow standards and habitat management for the Lower American River (Sacramento City-County Office of Metropolitan Water Planning 1999).

Management of available groundwater resources in response to the future municipal (including industrial) and agricultural demands for groundwater is a key component of the Water Forum Agreement (and the Water Forum successor efforts), which have resulted in active groundwater planning and management efforts in the Planning Area and surrounding communities. The safe yield of an aquifer refers to the amount of groundwater that can be

used without resulting in adverse effects, such as wells going dry, land subsidence, and groundwater quality degradation. The safe yields of the Central and South Groundwater Basins (Figure 7-1) were identified in the Water Forum Agreement as 273,000 acre-feet per year (AFY) and 115,000 AFY, respectively. The Sacramento Central Groundwater Authority was formed and developed a groundwater management plan for the Central Basin (MWH et al. 2006). The South Area Water Council developed a similar groundwater management plan for the South Basin (Robertson-Bryan Inc. and WRIME 2011).

Sacramento Region NPDES Municipal Stormwater Permit

Sacramento County and the Cities of Sacramento, Galt, Rancho Cordova, Elk Grove, Folsom, and Citrus Heights are co-permittees under a single NPDES Municipal Stormwater Permit for stormwater discharges to their separate municipal storm sewer systems (Central Valley RWQCB Order No. R5-2015-0023, NPDES No. CAS082597). This stormwater discharge NPDES permit is renewed every 5 years, most recently in April 2015. The seven jurisdictions formed the Sacramento Stormwater Quality Partnership to cooperatively implement a Stormwater Quality Improvement Plan (SQIP), which was last updated in 2009 (2009 SQIP) (Sacramento County et al. 2009). The stormwater discharge NPDES permit requires ground-disturbing projects and activities to implement BMPs that avoid or reduce stormwater runoff, soil erosion, and the discharge of pollutants to surface waters to the “maximum extent practicable,” which is the performance standard specified in the CWA Section 402(p). Stormwater runoff from urbanized areas (i.e., also known as urban runoff) generally increases as development of additional impervious surfaces occur (e.g., pavement, roofs) that reduces infiltration of rainfall into the soil.

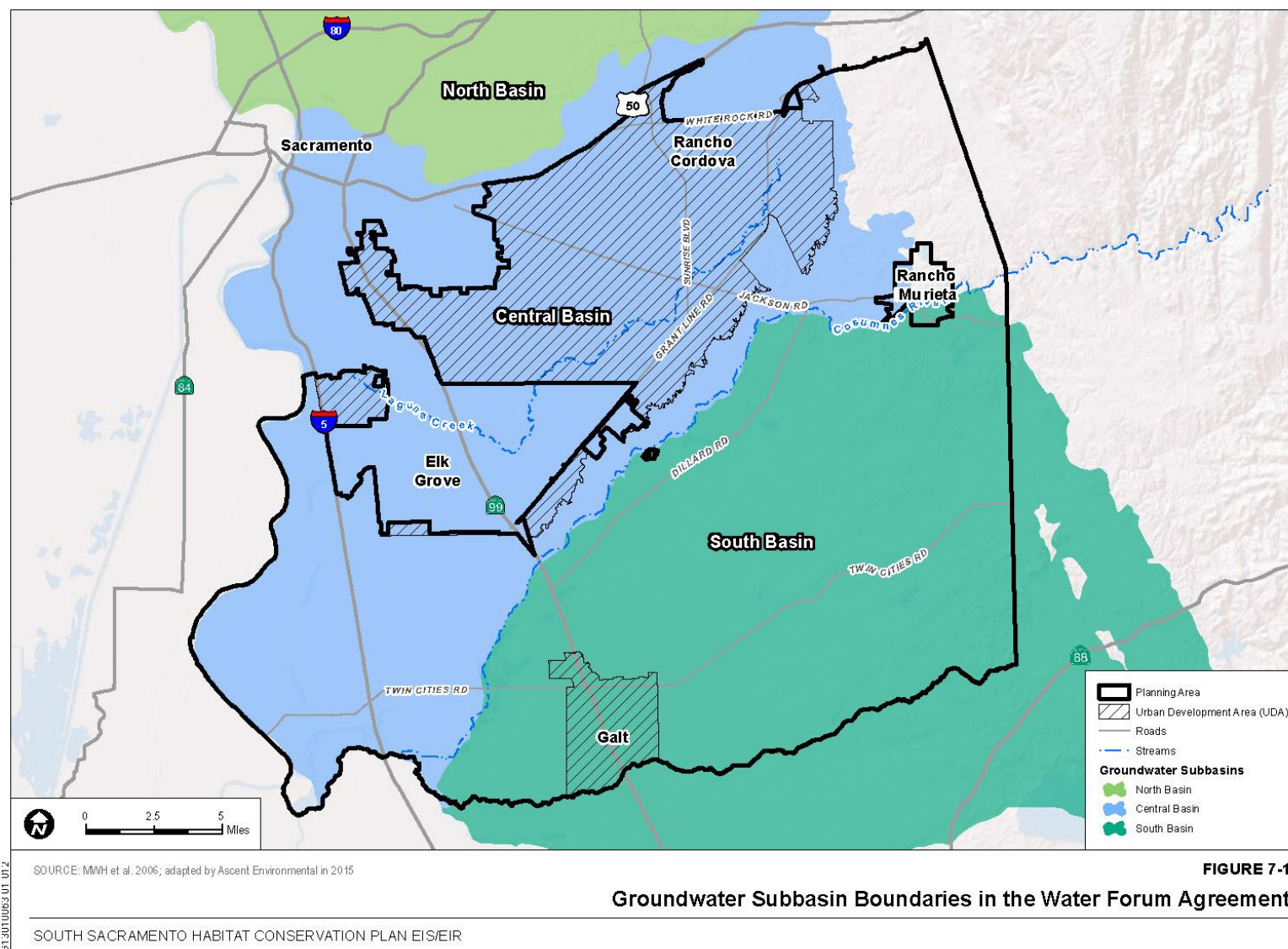
The 2009 SQIP describes the cooperatively implemented stormwater management actions of the Sacramento Stormwater Quality Partnership, as well as the individual stormwater agency programs. The 2009 SQIP addresses six minimum control elements: (1) public education and outreach, (2) public involvement and participation, (3) detection and elimination of illicit discharges, (4) construction stormwater control, (5) postconstruction stormwater control for new development and redevelopment, and (6) pollution prevention/good housekeeping for municipal operations. The 2009 SQIP identifies activities under each program element, performance standards, implementation schedule with milestones, and specific monitoring and assessment activities. The Sacramento Stormwater Quality Partnership develops and implements annual work plans, provides program management, identifies targeted pollutant reduction goals, and conducts commercial/industrial inspections public outreach, monitoring, effectiveness assessments, and reporting activities. The individual local jurisdictions also implement stormwater quality improvement activities, oversee construction of stormwater control facilities, conduct compliance activities, and review new development projects for planning and implementation of appropriate postconstruction stormwater controls.

Sacramento Stormwater Quality Partnership agencies implement construction site management program BMPs that avoid or minimize the amount of erosion, pollutant discharges, and urban runoff and off-site sedimentation resulting from individual development-project construction sites, which helps protect the water quality. Construction management is typically accomplished by each NPDES permittee through code enforcement at the planning and design review stages, ensuring project construction site compliance with the SWRCB's statewide NPDES Construction General Permit, and local enforcement of construction activities.

The Stormwater Quality Partnership has conducted planning and developed approaches and requirements for new development and significant redevelopment postconstruction stormwater control measures. The Sacramento Stormwater Quality Partnership jurisdictions have also prepared and adopted new development standards, developed improved guidance for design of source and treatment control measures specific to Sacramento conditions, added General Plan policies and actions for water quality and watershed protection, and conducted pollutant removal effectiveness studies of proprietary devices and control strategies. Stormwater quality design standards were first developed by the Sacramento Stormwater Quality Partnership in 2007, and most recently updated in the 2014 *Stormwater Quality Design Manual* (Sacramento Stormwater Quality Partnership 2014), which addresses stormwater runoff system hydrology and water quality design requirements for development and significant redevelopment projects.

Pursuant to its stormwater discharge NPDES permit, the Sacramento Stormwater Quality Partnership also developed a Hydromodification Management Plan in 2011 and updated it in October 2017, and it will be integrated into each NPDES permittee's development standards following approval by the Central Valley RWQCB. Hydromodification is defined in the NPDES permit as the "change in the natural watershed hydrologic processes and stormwater runoff characteristics (i.e., interception, infiltration, overland flow, interflow, and groundwater flow) caused by urbanization or other land use changes that result in increased stream flows and sediment transport" (Sacramento Stormwater Quality Partnership 2017)). In terms of the regulatory responsibility of the NPDES permit, hydromodification is primarily concerned with the increases in the magnitude, frequency, volume, and duration of stormwater runoff as a result of urban development that typically increases the amount of impervious surfaces that prevent infiltration of rainfall into the soil and increases amounts of stormwater runoff. The Hydromodification Management Plan outlines stormwater facility design approaches to minimize the changes in stormwater runoff, which in turn better protects receiving streams from increased potential for erosion and other adverse impacts.

Figure 7-1. Groundwater Subbasin Boundaries in the Water Forum Agreement



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The Coordinated Monitoring Program (CMP), a joint effort of the Sacramento Regional County Sanitation District (Regional San) and the Sacramento Stormwater Quality Partnership, has conducted comprehensive monitoring to evaluate the effects of urban runoff on water quality in the American River and Sacramento River since 1991, and at selected urban tributary stream locations routinely since 2003 (including two locations in Laguna Creek within the Urban Development Area (UDA) portion of the Planning Area). The intent of the CMP is to provide compliance with the NPDES Municipal Stormwater Permit and high-quality data that can be used to support development and implementation of water quality policies and regulations for urban runoff in the Sacramento area. Although the CMP data includes areas extending beyond the Planning Area, the CMP data provides comprehensive information that is representative of ambient and seasonal water quality conditions in the Planning Area.

7.1.1.3 Local

Sacramento County 2030 General Plan

The Agriculture (AG), Circulation (CI), Safety (SA), and Conservation (CO) elements of the *Sacramento County General Plan of 2005-2030* (Sacramento County General Plan) (Sacramento County 2011) specify goals and objectives for hydrology and water quality management and protection in the Planning Area. Applicable policies include the following:

Policy AG-29: The County shall minimize flood risks to agricultural lands resulting from new urban developments.

Policy CI-65: Incorporate Low Impact Design (LID) techniques to the greatest extent feasible to improve water quality, runoff and erosion control, infiltration, groundwater recharge, visual aesthetics, etc.

Policy SA-5: A comprehensive drainage plan for major planning efforts shall be prepared for streams and their tributaries prior to any development within the 100-year floodplain defined by full watershed development without channel modifications.

Policy SA-10: Fill within the 100-year floodplain of creeks outside of the Urban Service Boundary is permissible to accommodate structures (e.g., residential, commercial, accessory) and septic systems, and only when the Board of Supervisors finds that the fill will not impede water flows or stormwater runoff capacity. Such development shall not cause an increase in base flood elevation of the 100-year floodplain exceeding 0.10 feet, unless analysis clearly indicated that the physical and/or economic use of adjacent property within the floodplain would not be adversely affected. A permit is required if the fill is within the jurisdiction of the Central Valley Flood Protection Board.

Policy SA-14: The County shall require, when deemed to be physically or ecologically necessary, all new urban development and redevelopment projects to incorporate runoff control measures to minimize peak flows of runoff and/or assist in financing or otherwise implementing Comprehensive Drainage Plans.

Policy SA-16: Deny creation of parcels that do not have buildable areas outside the 100-year floodplain unless otherwise allowed in the Floodplain Management Ordinance.

Policy SA-17: For residential zoning, the area outside the 100-year floodplain must be contiguous or reasonably situated to provide buildable area for a residence and associated structures. Examples of structures include swimming pools, sheds, barns, detached garages, and other outbuildings that are normally associated with residential development. There may be exceptions (such as the Delta area) as allowed in the Floodplain Management Ordinance.

Policy SA-22: Areas within a 100-year floodplain shall not be upzoned to a more intensive use unless and until a Master Drainage Plan is prepared that identifies areas of the floodplain that may be developed.

Policy CO-7: Support the Water Forum Agreement Groundwater Management Element. Prior to approving any new development, a water supply plan shall be approved that demonstrates consistency with an adopted groundwater management plan.

Policy CO-8: Applicants proposing developments in areas with significant groundwater recharge characteristics shall evaluate the impact of said development on groundwater recharge and quality. This evaluation should recognize criteria defined in any broader Countywide determination and/or evaluation of groundwater recharge areas.

Policy CO-10: Support local watershed initiatives that enhance groundwater recharge.

Policy CO-11: Support local groundwater management efforts that are consistent with the Water Forum Agreement Groundwater Management Element.

Policy CO-12: Support groundwater recharge in surface mining reclamation plans where feasible.

Policy CO-22: Support water management practices that are responsive to the impacts of Global Climate Change such as groundwater banking and other water storage projects.

Policy CO-23: Development approval shall be subject to a finding regarding its impact on valuable water-supported ecosystems.

Policy CO-24: Comply with the Sacramento NPDES Municipal Stormwater Permit.

Policy CO-25: Support the preservation, restoration, and creation of riparian corridors, wetlands, and buffer zones.

Policy CO-26: Protect areas susceptible to erosion, natural water bodies, and natural drainage systems.

Policy CO-27: Support surface water quality monitoring programs that identify and address causes of water quality degradation.

Policy CO-28: Comply with other water quality regulations and NPDES permits as they apply to County projects or activities, such as the State's Construction General Permit and Aquatic Pesticides Permit.

Policy CO-29: Continue to support the County's participation in regional NPDES Municipal Permit compliance activities through collaborative efforts such as the Sacramento Stormwater Quality Partnership.

Policy CO-30: Require development projects to comply with the County's stormwater development/design standards, including hydromodification management and low impact development standards, established pursuant to the NPDES Municipal Permit.

Policy CO-31: Require property owners to maintain all required stormwater measures to ensure proper performance for the life of the project.

Policy CO-32: Support programs and activities conducted by watershed groups and citizen volunteers that help to ensure compliance with the NPDES Municipal Permit by increasing public awareness and encouraging stewardship of water resources.

Policy CO-88: Where removal of riparian habitat is necessary for channel maintenance, it will be planned and mitigated so as to minimize unavoidable impacts upon biological resources.

Policy CO-89: Protect, enhance and maintain riparian habitat in Sacramento County.

Policy CO-93: Discourage fill in the 100-year floodplain (Please also refer to CO-117).

Policy CO-94: Development within the 100-year floodplain and designated floodway of Sacramento streams, sloughs, creeks or rivers shall be:

- Consistent with policies to protect wetlands and riparian areas; and
- Limited to land uses that can support seasonal inundation.

Policy CO-95: Development within the 100-year floodplain should occur in concert with the development of the Floodplain Protection Zone (please refer to Land Uses Adjacent to Rivers and Streams for information on this Zone).

Policy CO-100: Encourage construction of structures for flood control and stormwater quality purposes using currently approved scientific methods to prevent erosion and stabilize the banks.

Policy CO-101: Stabilize the banks of rivers and streams in a manner that increases flood protection and increases riparian habitat functions.

Policy CO-105: Channel modification projects shall be considered for approval by the Board of Supervisors only after conducting a noticed public hearing examining the full range of alternatives, relative costs and benefits, and environmental, economic, and social benefits.

Policy CO-106: Realigned or modified channels should retain topographic diversity including maintaining meandering characteristics, varied berm width, naturalized side slope, and varied channel bottom elevation.

Policy CO-107: Maintain and protect natural function of channels in developed, newly developing, and rural areas.

Policy CO-109: Channel modifications should not prevent minimum water flows necessary to protect and enhance fish habitats, native riparian vegetation, water quality, or ground water recharge.

Policy CO-111: Channel modifications shall retain wetland and riparian vegetation whenever possible or otherwise recreate the natural channel consistent with the historical ecological integrity of the stream or river.

Policy CO-112: The use of concrete and impervious materials is discouraged where it is inconsistent with the existing adjacent watercourse and overall ecological function of the stream.

Policy CO-114: Protect stream corridors to enhance water quality, provide public amenities, maintain flood control objectives, preserve and enhance habitat, and offer recreational and educational opportunities.

Policy CO-115: Provide setbacks along stream corridors and stream channels to protect riparian habitat functions.

Policy CO-116: Encourage filter strips using appropriate native vegetation and substrate along riparian streambanks adjacent to irrigated croplands.

Policy CO-117: Public roads, parking, and associated fill slopes shall be located outside of the stream corridor, except at stream crossings and for purposes of extending or setting back levees. The construction of public roads and parking should utilize structural materials to facilitate permeability. Crossings shall be minimized and be aesthetically compatible with naturalistic values of the stream channel.

Policy CO-118: Development adjacent to waterways should protect the water conveyance of the system, while preserving and enhancing the riparian habitat and its function.

Policy CO-119: Preserve and enhance the Laguna Creek Parkway.

Policy CO-121: No grading, clearing, tree cutting, debris disposal or any other despoiling action shall be allowed in rivers and streams except for normal channel maintenance, restoration activities, and road crossings.

Policy CO-122: River and stream maintenance should allow natural vegetation in and along the channel to assist in removal of nutrients, pollutants, and sediment and to increase bank stabilization, while minimizing impacts on conveyance.

Policy CO-126: Prohibit obstruction or underground diversion of natural waterways.

Sacramento County Floodplain Management Ordinance, Improvement Standards, and Local Floodplain Management Plan

To participate in the National Flood Insurance Program, Sacramento County has adopted a Floodplain Management Ordinance that meets FEMA's standards and accompanying Improvement Standards, as well as the Local Floodplain Management Plan. The ordinance defines what types of development activities are allowed and how proposed development may be permitted with the intent of managing flooding to reduce damage to structures and infrastructure and to minimize the risk of human casualties. Land development activities within designated flood hazard areas (whether mapped by FEMA or a local floodplain management

agency) must obtain a Floodplain Management Permit from the Sacramento County Department of Water Resources. The Floodplain Management Ordinance specifies base flood elevation and flood proofing requirements for individual projects involving residential and nonresidential structures. For larger master plan development projects, stormwater runoff plans must be prepared to identify the existing base flood elevations and the post-project flood elevation conditions of the site, and pre- and post-project stormwater drainage channels and features, and assure that no adverse effects occur upstream or downstream of the site. Sacramento County imposes a policy of no net loss of floodplain storage volume as a result of development in the floodplains typical of the streams located in the Planning Area. Thus, development in flood hazard areas may need to offset any loss of floodwater storage space caused by placement of fill and structures in a floodplain by creating/excavating an equivalent volume of ground from below the base flood elevation. This can be accomplished by filling in the floodplain and compensating for the loss of flood storage by building a detention basin. Floodplain size is directly related to the overall health of a stream. Floodplains absorb and store floodwaters, reducing velocity and allow for the slow release to the stream. Floodplain trees and plants filter sediments and pollutants, and they help to anchor the riverbanks, preventing erosion and providing shade to reduce water temperatures.

Floodplains for many local water bodies and waterways are not mapped by FEMA because the focus of the FEMA Flood Insurance Rate Maps is to provide information for insurance programs. Some rural areas of the eastern part of Sacramento County with watersheds that are less than 1 square mile in size have not been mapped by FEMA. However, these local 100-year floodplains are still identified by Sacramento County and regulated by the provisions of the Sacramento County Floodplain Management Ordinance. Local floodplains in Sacramento County are typically mapped either in response to an area having flooding problems, or in response to a request by a property owner to make modifications to their parcel.

2030 Galt General Plan

The Conservation and Open Space (COS) and Public Facilities and Services (PFS) elements of *2030 Galt General Plan: Policy Document* (Galt General Plan) (Galt 2009) include policies that address design and implementation of future urban development to manage flood control, stormwater runoff, and protection of water quality and biological resource values associated with riparian corridors and floodplains. Applicable policies include the following:

Policy COS-1.1: Flood Control. The City shall require adequate natural floodway design to assure flood control in areas where stream channels have been modified and to foster stream enhancement, improved water quality, recreational opportunities, and groundwater recharge.

Policy COS-1.2: Flood Protection Ordinance. The City shall continue to implement the City's flood protection ordinance.

Policy COS-1.3: Inter-Agency Coordination. The City shall cooperate with FEMA, California Department of Water Resources, and other appropriate local, State, and Federal agencies to address local and regional flood issues.

Policy COS-1.4: Storm Flow Impacts. The City will continue to ensure, through the development review process, that future developments do not increase peak storm flows and do not cause flooding of downstream facilities and properties.

Policy COS-1.5: Water Quality Control Board Regulations Compliance. The City shall continue to comply with the Central Valley RWQCB's regulations concerning the operation of the City's wastewater treatment plant.

Policy COS-1.6: Underground Storage Tank Law Compliance. The City shall provide continued compliance with the Underground Storage Tank Law and all other laws relating to water quality.

Policy COS-1.7: Stormwater Quality Protection. The City shall, through the development review process, ensure compliance with federal and state stormwater quality standards and regulations.

Policy COS-1.8: Septic System Discouragement. The City shall protect groundwater resources by protesting urban development with septic systems in the unincorporated County on parcels less than 2 acres on the west side of the Planning Area and less than 5 acres on the north and east side of the Planning Area.

Policy COS-1.10: Ecological Features Retention. The City shall retain to the extent feasible the ecological features of the creeks, sloughs, and rivers in their natural state.

Policy COS-1.12: Best Management Practices. The City shall require all new development and redevelopment to implement BMPs to reduce pollutants to the maximum extent practicable. Additionally, the City shall require, as part of its Storm Water NPDES Permit and ordinances, to implement the Grading Plan, Erosion Control Plan, and Pollution Prevention Plan (SWPPP) during construction activities of any improvement plans, new development, and redevelopment projects for reducing pollutants to the maximum extent practicable.

Policy COS-1.14: Floodplain Dedication. The City should require property owners and developers to dedicate land within 100-year floodplains to the City, or other City-

designated entity for biological mitigation credit or similar purpose, when a development project is approved. In addition to the land requirement, the City should require public access adjacent to these areas, but outside the 100 year flood plain, via bicycle and pedestrian trails and related amenities with appropriate signage.

Policy COS-1.17: Floodplain Visual Accessibility. The City shall require visual accessibility to floodplains via direct, single frontage roadways, along the length of any particular stream and associated floodplain section being developed (on both sides).

Policy PFS-2.2: Groundwater Protection. The City should protect the groundwater basin from overdraft from city use of groundwater. To this end, the City shall study, working closely with other public and private entities as deemed appropriate, the safe yield¹ of the groundwater basin. Water management programs such as conjunctive use² and recharge programs should also be considered. The City should use this information to determine the most appropriate long-term water supply to serve Galt.

Policy PFS-2.3: Surface Water Protection. The City shall protect surface water resources, including rivers, creeks, streams, sloughs, and marshes, from development impacts.

Policy PFS-3.1: Treatment Facilities Safety. The City shall ensure that sewage treatment plant operations and sludge disposal do not result in a health or safety hazard to persons, wildlife, or livestock.

Policy PFS-3.4: Sewage Treatment. The City shall oppose urban development within the sphere of influence which is not sewered and shall oppose the use of “package treatment plants.” Urban development should be considered as less than 2 acre parcels on the west side of the Planning Area and less than 5 acre parcels on the north and east side of the Planning Area.

Policy PFS-3.9: Expand Use of Reclaimed Water. The City shall encourage the use of tertiary treated wastewater for irrigation of agricultural lands, large landscaped areas, and recreation/open space areas within close proximity to the City’s Waste Water Treatment Plant to help ensure ongoing compliance with Central Valley RWQCB requirements.

¹ Safe yield (also known as sustainable yield) is generally defined as the amount of groundwater that can be used from a groundwater basin (or specific aquifer) on a long-term annual average basis while maintaining a balance with the amount of groundwater (or aquifer) recharge from water sources.

² Conjunctive use is generally defined as the planned joint use of surface and groundwater to improve overall water supply reliability.

Policy PFS-4.3: Stormwater Quality. The City shall ensure compliance with federal and state clean water standards by continuing to monitor and enforce provisions to control non-point source and point source water pollution contained in the U.S. Environmental Protection Agency NPDES program.

Policy PFS-4.4: Project Design. The City should encourage project designs that minimize drainage concentrations and impervious surfaces.

Policy PFS-4.5: Grading During the Rainy Season. The City shall prohibit grading activities during the rainy season, unless adequately mitigated, to avoid sedimentation of storm drainage facilities.

Policy PFS-4.6: Erosion Control Plan. The City shall require new development projects to prepare an erosion control plan.

Policy PFS-4.7: Mitigating Stormwater Runoff. The City shall require projects that have significant impacts on the quantity and quality of surface water runoff to incorporate mitigation measures for impacts related to urban runoff.

Policy PFS-4.9: Detention Requirements. The City should require detention storage with measured release to ensure that the capacity of downstream creeks and sloughs would not be exceeded.

City of Galt Floodplain Management Regulations

Title 19 of Galt's Municipal Code establishes the City's requirements for floodplain management. It includes regulations to:

- A. Restrict or prohibit uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or flood heights or velocities.
- B. Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction.
- C. Control the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel floodwaters.
- D. Control filling, grading, dredging, and other development which may increase flood damage.
- E. Prevent or regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards in other areas.

Rancho Cordova General Plan

The Safety (S) Element of the *City of Rancho Cordova General Plan* (Rancho Cordova General Plan) (Rancho Cordova 2013) addresses flooding, stormwater runoff, and groundwater quality and establishes goals, policies, and actions related to supporting efforts to limit the potential for community flooding from the Cosumnes River or American River, discouraging new development in areas likely to flood, and preventing further groundwater contamination. The Natural Resources (NR) Element addresses current groundwater contamination issues associated with the Aerojet property, which is designated by the U.S. EPA as a Superfund site because the contamination has the potential to adversely affect human health and/or the environment. Applicable policies include the following:

Policy S.2.1: Support and encourage efforts to limit and reduce the potential for community flooding from the Cosumnes or American Rivers.

Policy S.2.2: Manage the risk of flooding by discouraging new development located in an area that is likely to flood.

Policy S.2.3: Discourage the creation of new parcels when the presence of easements, floodplain, marsh, or riparian habitat, and/or other features would leave insufficient land to build and operate structures. This policy shall not apply to open space lots specifically created for dedication to the City or another appropriate party for habitat protection, flood control, drainage, or wetland maintenance.

Policy S.2.4: Ensure that adequate drainage exists for both existing and new development.

Policy NR.3.2: In general, the City will encourage the preservation of existing location, topography, and meandering alignment of natural creeks. The modification, re-creation, and realignment of creek corridors shall recreate the character of the natural creek corridor to the extent feasible, appropriate, and consistent with other City policies. Channelization and the use of concrete within creek corridors shall be discouraged, but is not prohibited.

Policy NR.3.3: Encourage the creation of secondary flood control channels where the existing channel supports extensive riparian vegetation.

Policy NR.5.2: Encourage the use of treated wastewater to irrigate parks, golf courses, and landscaping.

Policy NR.5.3: Protect surface and ground water from major sources of pollution, including hazardous materials contamination and urban runoff.

Policy NR.5.4: Prevent contamination of the groundwater table and surface water, and remedy existing contamination to the extent practicable.

Policy NR.5.5: Minimize erosion to stream channels resulting from new development in urban areas consistent with State law.

Policy NR.5.7: Continue to cooperate and participate with the County, other cities, and the Regional Water Quality Control Board regarding compliance with the joint National Pollutant Discharge Elimination System Permit (NPDES No. CAS082597) or any subsequent permit and support water quality improvement projects in order to maintain compliance with regional, state, and federal water quality requirements.

Policy NR.5.8: The City shall require groundwater impact evaluations be conducted for the Grant Line West, Westborough, Aerojet, Glenborough, Mather and Jackson Planning Areas to determine whether urbanization of these areas would adversely impact groundwater remediation activities associated with Mather and Aerojet prior to the approval of large-scale development. Should an adverse impact be determined, a mitigation program shall be developed in consultation with applicable local, state, and federal agencies to ensure remediation activities are not impacted. This may include the provision of land areas for groundwater remediation facilities, installation/extension of necessary infrastructure, or other appropriate measures.

Local Stormwater Runoff, Grading, and Erosion Control Ordinances and Municipal Code Requirements

Sacramento County, Rancho Cordova, and Galt all include stormwater runoff, grading, and erosion control requirements within their municipal codes and ordinances. These ordinances serve to minimize adverse on-site and off-site effects of construction activities to degradation of the water quality, and the disruption of stormwater drainage caused by clearing, grubbing, grading, filling, and excavating land. The ordinances establish administrative procedures, minimum standards of review, and implementation and enforcement procedures for stormwater runoff, grading, and erosion control activities. The oversight of land development within the jurisdictions of these local agencies occurs during their project planning and reviews where they ensure project compliance with the ordinances, as well as with the construction-related plans and policies developed by the Sacramento Stormwater Quality Partnership to comply with their NPDES Municipal Stormwater Permit.

7.1.2 Existing Conditions

This section provides information on the existing conditions of groundwater hydrology; groundwater quality; surface water hydrology, including surface water runoff, urban runoff, and summer runoff; surface water quality; and municipal wastewater within the Planning Area.

7.1.2.1 Groundwater Hydrology Conditions

The Planning Area is entirely within the 20,000-square-mile Central Valley Aquifer³ System, which stretches from north of Redding to south of Bakersfield. The Central Valley Aquifer System is categorized into three sub-regions by DWR, and the Planning Area overlies two of them—the Sacramento Valley Groundwater Basin and the San Joaquin Valley Groundwater Basin (DWR 2003). The Planning Area north of the Cosumnes River overlies the South American River groundwater sub-basin, and the Planning Area south of the Cosumnes River overlies the Cosumnes sub-basin of the San Joaquin Valley Basin. The groundwater sub-basins underlying the Planning Area were also further categorized for the Water Forum Agreement process (Section 7.1.1.2) based on a combination of hydrologic features and municipal or water agency boundaries. With minor exceptions, the Planning Area north of the Cosumnes River is within the Water Forum Agreement’s Central Basin, and south of the Cosumnes is in the Water Forum Agreement’s South Basin (see Figure 7-1).

The geology of the Sacramento and San Joaquin basins are defined by deposits of continental origin (alluvial deposits eroded from the ancestral Sierra Nevada Mountains and ancient mudflows believed to have arisen east of the Sierra crest) that extend to about 20,000 feet below ground surface and overlie older marine sediments (DWR 2003). The Planning Area includes an upper layer of relatively young and unconsolidated floodplain deposits and alluvium to a depth of about 100 feet. Underlying the floodplain deposits, much of the Planning Area is characterized by are unconsolidated and poorly consolidated alluvial deposits of the Riverbank, Modesto-Riverbank, Modesto, and Laguna geologic formations, which extend to a depth of about 300 feet near the Sacramento River, and slope upward to the eastern margin of the Planning Area where these sediments contact the bedrock of the Sierra Nevada foothills (see Figure 5-2). The Modesto-Riverbank/Riverbank/Laguna formations are important freshwater aquifers in the Planning Area for shallow domestic and agricultural water supply wells, consisting of interlaced layers of coarse deposits along with variable amounts of sand, silt, and clay. Underlying the alluvial Riverbank/Laguna/Modesto-Riverbank formations is the deeper Mehrten Formation, an ancient volcanic mudflow now exposed at the base of the Sierra Nevada foothills (see Section 5.1.2.5, Volcanic Mudflow Landform Geologic Formations and Soil

³ An aquifer is generally defined as a groundwater bearing zone of the earth’s crust.

Series). The Mehrten Formation also serves as an important freshwater aquifer for the Planning Area, primarily for larger municipal and agricultural water supply wells. The Mehrten Formation extends to a depth of about 2,000 feet near the Sacramento River, and is separated from the overlying alluvial formations by a discontinuous clay layer that restricts groundwater movement between the overlying alluvial aquifer and the Mehrten Formation aquifer.

Groundwater in the Central basin and South basin (Figure 7-1) is the primary source of water for municipal and agricultural uses in the Planning Area (Robertson-Bryan Inc. and WRIME 2011; SCWA 2004). Most domestic groundwater wells in the Planning Area pump from aquifers (i.e., groundwater-bearing zone of the earth's crust) within the alluvial formations and pump from depths less than 200 feet deep. However, large capacity agricultural and municipal water supply wells are typically installed into the Mehrten Formation and pumped from depths up to 600 feet or more.

With population growth, increased municipal and industrial water use, and the advent of intensive irrigated agricultural activities in the Planning Area beginning in the 1940s (see Section 1.3, Purpose, Need, and Objectives), the depth to the saturated zones of the alluvial aquifers (i.e., groundwater table or groundwater level) across the Planning Area decreased from the 1940s through about 1980, and then generally stabilized at that level in the succeeding 20 years, leading up to the development of the Water Forum Agreement in 2000 (Sacramento City-County Office of Metropolitan Water Planning 1999; RMC Inc. 2014). However, during the drought of 1987–1992, rate of aquifer recharge was low, and groundwater levels across the Central Basin declined about 15 feet on average (Sacramento City-County Office of Metropolitan Water Planning 1999). After the end of the drought in 1992 through about 2007, groundwater levels generally recovered to the previous mid-1980s level. Since about 2007, groundwater levels in some wells have declined from extensive use of groundwater (RMC Inc. 2014; Robertson-Bryan Inc. and WRIME 2011). The extensive use of groundwater has also resulted in a large cone of groundwater depression (i.e., an area of lower groundwater levels relative to groundwater level in the surrounding areas of the aquifer, resulting from groundwater pumping) located west of Elk Grove in the Central basin, and a similar cone of depression east of Galt in the South basin. There is currently no evidence of substantial or adverse land surface subsidence in the Central Basin or South Basin as a result of these lowered groundwater levels (RMC Inc. 2014; Robertson-Bryan Inc. and WRIME 2011).

As discussed in Section 7.1.1.2, the Water Forum Agreement (established in 2000) and the South Basin Groundwater Management Plan identified the safe yield of the Central Basin as 273,000 AFY, and the safe yield of the South Groundwater Basin as 115,000 AFY. Estimates of groundwater extraction from the Central Basin were about 233,000 AFY in 2011 and 253,000 AFY in 2012, averaging about 243,000 AFY per year (RMC Inc. 2014). Groundwater extraction in the South Basin was approximately 115,000 AFY each year from 2000 to 2004. However, in

general, groundwater use had been less than the sustainable yield target, over the longer time period of 1980 to 2004 (Robertson-Bryan and WRIME 2011).

Additionally, current climate changes and related uncertainty in future precipitation and runoff conditions in the Central Valley and upper watersheds of the Sierra Nevada mountains is expected to affect existing and future water supply conditions, including groundwater in the Planning Area and surrounding region. Hydrologic modeling of the Sacramento County region was conducted by the Regional Water Authority to evaluate future land uses anticipated to occur under the Galt, Rancho Cordova, and Sacramento County General Plans, using projected 2030 urban and agricultural water demands and estimated effects of future climate change (Regional Water Authority 2013). The modeling indicates that, in contrast to modeling results for the Water Forum Agreement and the Zone 40 Water Supply Master Plan EIR (described above), the average annual municipal demand would increase by about 4,000 AFY and available surface water supplies could be reduced by up to 33,000 AFY (including water delivery cutbacks imposed to meet drought-related state water conservation regulations), compared to modeled future conditions without climate change. The modeling assumes that groundwater pumping would be used to make up the shortfall, which would occur primarily to meet agricultural demands, resulting in average groundwater level reductions by up to about 20 feet in agricultural areas. Groundwater would be sufficient to meet future water demands in normal water years based on the water rights and contracts of all water purveyors. However, future water shortages in single and multiple dry-year scenarios could be a concern to the water purveyors for long-term groundwater availability.

Additionally, current predictions for future climate change include warmer average air temperatures and somewhat less annual average precipitation over the long term in the Central Valley and in the Sierra Nevada Mountains, which contribute runoff to the streams in the Planning Area (i.e., primarily Deer Creek, Cosumnes River, and Dry Creek) (RMC Inc. 2015). However, the intensity and amount of rainfall during individual storm events is predicted to increase from climate change, and the amount of precipitation as snowfall in the Sierra Nevada Mountains east of the Planning Area will decrease. The combination of less snowfall, warmer temperatures currently expected to result in less Sierra Mountain snow fall in the winter, earlier Sierra Mountain snowmelt runoff in the spring, increased winter rainfall intensity in the Planning Area, and increased Sierra watershed areas exposed to rain rather than snow may result in increased downstream flood flows and flood volumes, including in the American River and Sacramento River that are adjacent to the Planning Area.

As discussed in Section 5.2.1, Methodology for Assessing Impacts of Each Alternative on Soils, Geology, and Mineral Resources, the Laguna, Riverbank, Modesto-Riverbank, Mehrten, and Valley Springs geologic formations include soils with an impermeable subsurface soil layer formed of cemented hardpan (duripan), claypan, rock, or a combination of these (Figure 5-2).

Winter rains saturate the upper soil layers, forming a seasonal perched aquifer that persists through the winter rainy season. This is an important category of groundwater in the analysis of the EIS/EIR alternatives because the Planning Area vernal pools and vernal pool ecosystems depend on the seasonal formation of the soil perched aquifer (see Section 8.1.2, Existing Conditions). However, the seasonal perched aquifers are not used for water supplies.

7.1.2.2 Groundwater Quality

Groundwater quality refers to the chemical and physical properties of groundwater, which affects the uses of the groundwater. Groundwater quality in the aquifers of the Planning Area's alluvial geologic formations and groundwater quality in the deeper aquifer of the volcanic Mehrten Formation, with few exceptions, are suitable for municipal, industrial, and agricultural water supply uses, which are the main uses of groundwater in the Planning Area (Sacramento City-County Office of Metropolitan Water Planning 1999). Groundwater quality in the seasonal perched aquifers is not discussed in Chapter 7 because this groundwater is not used for water supplies.

Throughout the Planning Area, the large majority of constituents of concern regulated by Title 22 of the California Code of Regulations (Section 7.1.1.1) are present in groundwater at concentrations below drinking water standards. However, arsenic, which is a contaminant of concern for public health, is present in some locations of the geologic formation aquifers and the aquifer of the Mehrten Formation (RMC Inc. 2014). Galt has wellhead treatment systems installed on several of its municipal wells to remove arsenic (Galt 2009). Elevated levels of iron, manganese, and odor also are present in the Mehrten Formation groundwater at levels above the secondary drinking water quality standards for taste and odor (RMC Inc. 2014).

Groundwater data collected by the Sacramento County Water Agency and Galt have shown that lower groundwater levels, such as the cones of groundwater depression in southern Sacramento County, may result in the migration of poorer-quality groundwater from the deeper Mehrten Formation to the overlying alluvial-formation aquifer, where it may increase manganese and arsenic (Sacramento County 2010).

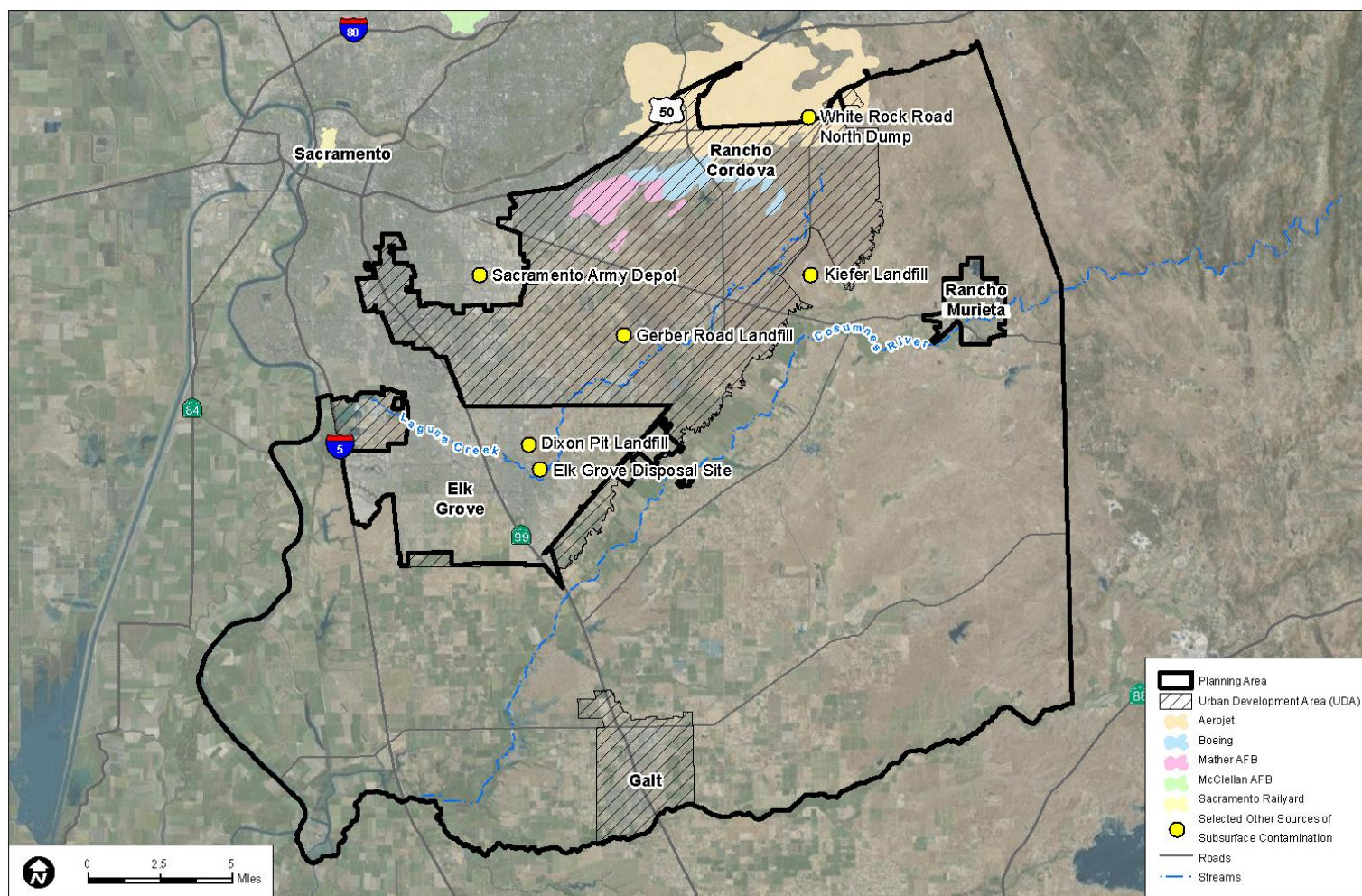
Groundwater management actions implemented by municipal water purveyors to manage arsenic and manganese include well-head treatment systems, blending water sources with elevated and low concentrations to achieve compliance, or abandoning affected wells.

Groundwater in the alluvial formation aquifers and the Mehrten Formation aquifer is typically low in total dissolved solids. Municipal water purveyors also manage total dissolved solids to achieve the Title 22 secondary drinking water standards for taste. Salinity intrusion from groundwater in the Delta does not occur in the Central Basin or in the South Basin (Figure 7-1) under the existing conditions (RMC Inc. 2014; Robertson-Bryan and WRIME 2011).

In addition to the naturally occurring groundwater constituents of concern (e.g., dissolved oxygen, pH, electrical conductivity, total dissolved solids, temperature, turbidity, and trace elements), there are six specific locations within or very near the UDA portion of the Planning Area where groundwater contamination has occurred as a result of past industrial activities. Substantial groundwater cleanup actions are being implemented to prevent or minimize movement of these contaminants, and prevent or minimize further degradation of groundwater quality (Figure 7-2). The U.S. EPA Superfund program was used at several of these locations to address cleanup activities for remediation of soil contamination and containment and treatment of contaminated groundwater. The groundwater contamination is known either by the company name associated with the industrial waste disposal activities or by geographical locations, as follows: Aerojet (property that also includes the White Rock Road-North Dump landfill), the former Mather Air Force Base (Mather AFB), and Boeing (property that also includes the Inactive Rancho Cordova Test Site) (Figure 7-2). The former Sacramento Army Depot is a federal Superfund cleanup site located outside of the Planning Area boundary but is shown on Figure 7-2 because it is nearby and within the same Central Groundwater Basin as the Planning Area. Figure 7-2 also shows the general footprint of the existing plumes of elevated contaminants in the groundwater near the Aerojet, Boeing, and Mather AFB locations, as mapped with groundwater data collected through 2007 (Sacramento Central Groundwater Authority 2014). The plumes of contamination spread in the groundwater as a result of contaminant diffusion, natural groundwater flow, and groundwater flow that is induced by local groundwater pumping.

The existing cleanup activities at the other soil and groundwater contamination locations in the Planning Area (Figure 7-2) have regulatory oversight provided by state agencies (Central Valley Regional Water Board and California Department of Toxic Substances Control). The existing cleanup activities at the active Kiefer Landfill and the inactive Gerber Road landfill contamination locations and are managed by the Sacramento County Department of Waste Management and Recycling. The Dixon Pit and Elk Grove landfills are locations of groundwater contamination located near the UDA portion of Planning Area in the Central Basin. The groundwater contaminants at these four landfill sites are a result of the solid waste disposal activities that occurred before federal and state regulations that now exclude disposal of hazardous waste in landfills, and they now require clay-lined or geotextile-lined landfill disposal areas and other measures that prevent percolation of contaminants to groundwater, prevent rainwater infiltration, and require the collection and treatment of landfill leachate.

Figure 7-2. Groundwater Contamination Locations and Plumes in the Planning Area



SOURCE: RMC 2014; adapted by Ascent Environmental in 2015

FIGURE 7-2**Groundwater Contamination Locations and Plumes in the Planning Area**

SOUTH SACRAMENTO HABITAT CONSERVATION PLAN EIS/EIR

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Of the six groundwater-contamination locations in or near the UDA, the most extensive areas of groundwater contamination are associated with the former Aerojet and Boeing operations (see Figure 7-2). Past rocket-development activities at these areas involved the surface discharge of rocket fuels and other waste products, which were carried by rainwater infiltration and percolation into the groundwater table. Groundwater constituents of concern discharged at the former Aerojet and Boeing operations include volatile organic carbon compounds, solvents (e.g., trichloroethylene, Freon, chloroform), and other compounds associated with rocket fuels (i.e., perchlorate and N-nitrosodimethylamine). Aerojet is currently monitoring groundwater quality and is operating numerous groundwater extraction wells and treatment systems that remove contaminants from the pumped groundwater. Aerojet discharges an average of 49.2 million gallons per day (mgd) of treated groundwater to the American River north of the Planning Area, and to multiple local streams in the UDA (e.g., Morrison Creek, Alder Creek, Buffalo Creek, and unnamed stormwater drainage channels) under an NPDES permit issued by the Central Valley RWQCB and last revised in December 2013 (Order R5-2013-0155).

Existing groundwater extraction wells and treatment systems are also operated in and around the Mather AFB property (Figure 7-2). Soil and groundwater contamination at Mather AFB occurred in association with past air base operations and maintenance activities, including waste pits, landfills, and leaking tanks that discharged petroleum oils and lubricants, solvents, and protective coatings. Groundwater extraction and treatment systems at Mather AFB primarily pump, treat, and reinject the treated water into the groundwater, but one system discharges approximately 0.5 mgd of treated water per day to Mather Lake (a man-made pond on the eastern side of the former base property). A recent annual monitoring report for the Mather AFB groundwater cleanup process indicates that the extraction wells are successfully stopping the spread of the contaminant plumes in the Central Basin (U.S. EPA 2015a).

The other groundwater contamination locations and plumes shown in Figure 7-2 affect relatively small areas compared to the much larger and complex contaminant issues at the Aerojet and Mather AFB properties. Extraction wells and treatment activities at the Sacramento Army Depot were completed, and the site is not a concern for further groundwater contamination (U.S. EPA 2015b).

The Keifer Landfill site involves groundwater contamination with volatile organic compounds associated with a former unlined landfill disposal area. The existing Keifer Landfill groundwater cleanup activities include the pumping of groundwater by extraction wells, groundwater treatment, and discharge of approximately 1.0 mgd of treated water per day to Deer Creek under an NPDES permit issued to by the Central Valley RWQCB and last revised in Order R5-2013-0002.

Water quality information for seasonal perched groundwater in the Planning Area has not been studied. However, as discussed in Chapter 8, because of proximity to existing urban development, several areas of perched seasonal groundwater within the UDA are susceptible to water quality degradation from infiltration of surface contaminants carried by urban runoff sources within the watershed of the perched groundwater.

7.1.2.3 Surface Water Hydrology

This section describes the existing condition of surface streams in the Planning Area and their watersheds. As discussed further in Section 10.1.2, Existing Conditions of Aquatic Resources, watersheds in the United States are delineated using a hierarchical system, which divides the United States into 21 regions, 221 sub-regions, 378 hydrologic accounting units, and 2,264 cataloging units (USGS 2013). Each hydrologic unit is identified by a unique Hydrologic Unit Code (HUC) consisting of 2 to 12 digits, which define successively smaller units within the classification system (USGS and NRCS 2009; USGS and NRCS 2013).

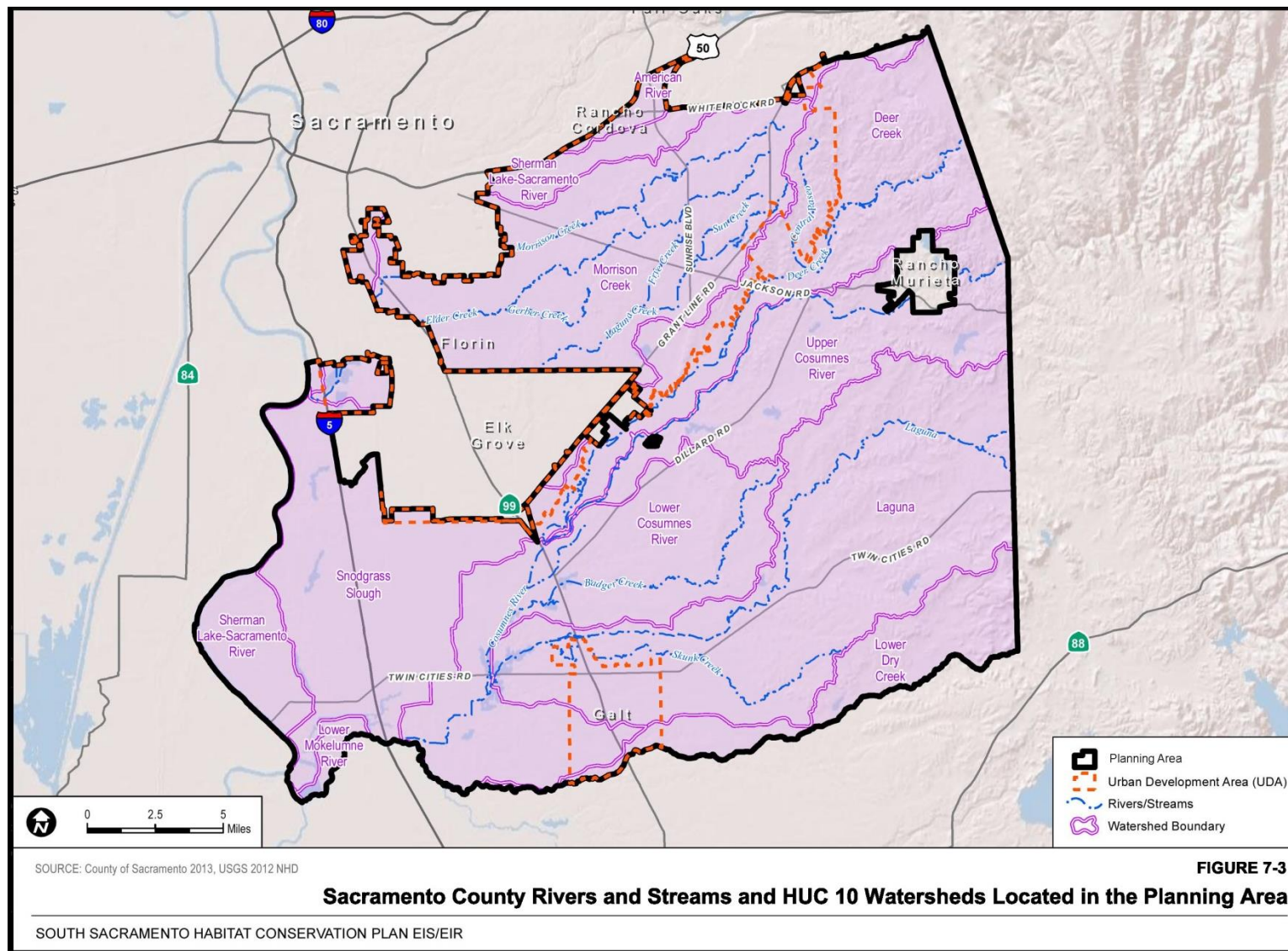
At the 10-digit HUC level, the Planning Area includes a portion or the entirety of 10 different watersheds (Figure 7-3). The small, northernmost portion of the Planning Area is within the Lower American River watershed and drains north to the American River. The north (largest) UDA portion of the Planning Area is primarily located within the Morrison Creek Watershed, which drains west through the City Elk Grove to ~~Beech~~ **Beach** Lake and the Sacramento River.

Portions of three HUC 10 watersheds located in the southeastern and south-central portion of the Planning area (i.e. Sherman Lake-Sacramento River, Snodgrass Slough, and Lower Consumes River) are within the legal Delta. Snodgrass Slough, the lower reaches of the Cosumnes River, and the section of the Mokelumne River bordering the Planning Area are tidally influenced (Figure 7-3).

Table 7-1 shows the names of the 10 Planning Area HUC 10 watersheds and associated HUC 12 watershed (i.e., smaller sub-watersheds), which are named by the largest waterway within the watershed or sub-watershed. Table 7-1 also presents the total size of each HUC 12 sub-watershed and the acres of each HUC 12 sub-watershed within the Planning Area.

Many of the waterways occurring in the Planning Area's HUC 12 watersheds are typically ephemeral with periods of no streamflow during the dry summer months, or only intermittently flow in the dry summer months. However, some of these historically ephemeral or intermittent waterways now have some water flow throughout the year as a result of irrigation run-off from urbanized areas, and from the discharges discussed in Section 7.1.2.2 (e.g., groundwater treatment discharges to drainages and tributaries of Morrison Creek, Alder Creek, Buffalo Creek, Deer Creek, American River, and Mather Lake, as well as the Galt municipal wastewater discharges to the Cosumnes River).

Figure 7-3. Sacramento County Rivers and Streams and HUC 10 Watersheds Located in the Planning Area



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Table 7-1. Watersheds and Sub-Watersheds of the Planning Area

Watershed (HUC 10)	Sub-Watershed(s) (HUC 12)	Total Acres in Sub- Watershed	Acres of Sub- Watershed within the Planning Area	% of Sub- Watershed within the Planning Area
American River	Lower American River	30,063	3,158	11%
	Upper American River	35,358	8,929	25%
Deer Creek	Lower Deer Creek	29,043	28,741	99%
	Carson Creek	20,773	11,021	53%
	Upper Deer Creek	33,166	7,067	21%
Laguna ¹	Middle Laguna	26,128	26,128	100%
	Upper Laguna	13,883	5,925	43%
	Willow Creek	14,377	377	3%
	Lower Laguna	31,149	31,149	100%
	Hadselville Creek	12,612	11,756	93%
Lower Cosumnes River	Badger Creek	13,835	13,835	100%
	North Fork Badger Creek	10,985	10,985	100%
	Grizzly Slough–Cosumnes River	22,492	22,492	100%
Lower Dry Creek	Liberty Cemetery–Dry Creek	12,667	4,489	35%
	Loch Lane–Dry Creek	24,572	13,568	55%
Lower Mokelumne River	South Mokelumne River–Mokelumne River	26,802	293	1%
	Hog Slough	30,375	3	0%
	Murphy Creek–Mokelumne River	39,395	1,707	4%
Morrison Creek	Lower Morrison Creek	10,383	7,018	68%
	Elder Creek	14,038	12,917	92%
	Laguna Creek ¹	30,784	29,514	96%
	Upper Morrison Creek	27,583	20,894	76%
Sherman Lake– Sacramento River	Beaver Lake–Sacramento River	28,434	9,254	33%
Snodgrass Slough	Sacramento Drainage Canal	14,134	14,134	100%
	South Stone Lake–Snodgrass Slough	37,652	37,580	100%
Upper Cosumnes River	Town of Wilton–Cosumnes River	16,451	16,451	100%
	Arkansas Creek–Cosumnes River	22,405	15,581	70%
	Indian Creek–Cosumnes River	24,116	46	0%

Source: USGS and NRCS 2013

¹ There are two Laguna Creeks in the Planning Area. The first Laguna Creek crosses the UDA and is a tributary to Morrison Creek and the Sacramento River. The second Laguna Creek is larger, located in the south part of the Planning Area, and is a tributary to the Cosumnes River and the Mokelumne River.

As discussed in Section 7.1.1.1, FEMA designates and delineates 100-year floodplain areas. The FEMA-designated 100-year floodplain areas in the Planning Area are primarily adjacent to major rivers, streams, and creeks of the Planning Area (Figure 7-4). However, FEMA 100-year floodplain mapping may not include small rural watersheds that are less than 1 square mile in size.

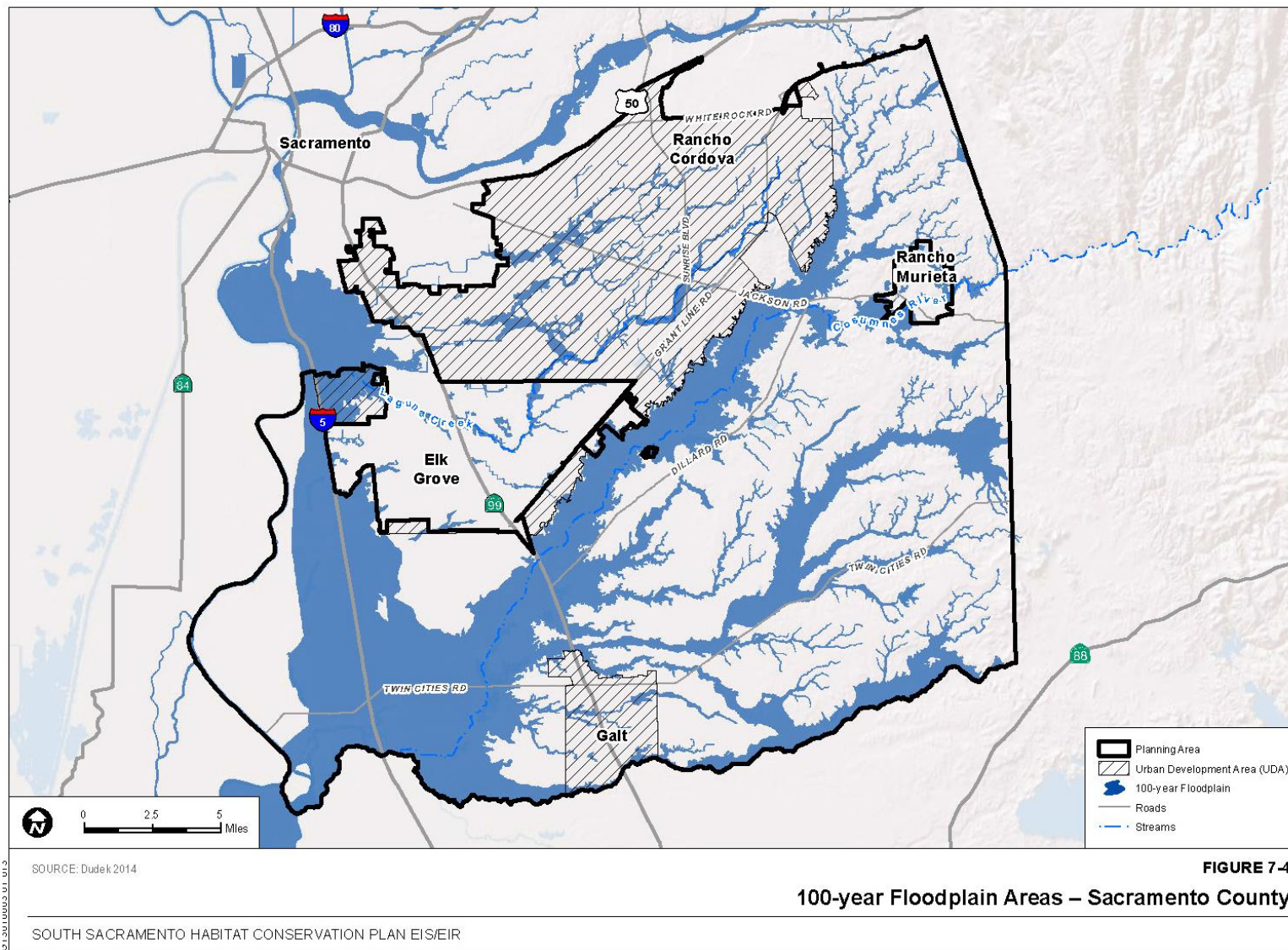
Within the UDA portion of the Planning Area, many of the streams have levees adjacent to the channels and primarily converge into the Morrison Creek channel, which is also contained within levees to its confluence with the Sacramento River. The South County Streams program of the Sacramento Area Flood Control Agency involves planning, construction, and operation of floodplain management facilities for Morrison Creek and its principal tributaries (i.e., Florin Creek, Elder Creek, the first Laguna Creek,⁴ and Unionhouse Creek) (Figure 7-3). The Sacramento Area Flood Control Agency's flood control facilities are mostly located in the lower reaches of these streams where the increased rates and volumes of channel flows during storm events combine to create potential flooding situations, which are then managed through appropriately sized levees, constructed channels, and pump stations to safely contain the flows. Morrison Creek conveys flow to the low-lying Beach Lake basin adjacent to the Sacramento River levee, where during wet weather events most excess flow is pumped into the Sacramento River near Clarksburg, but some flows drain south into Snodgrass Slough and to the Mokelumne River (Figure 7-3).

South of Morrison Creek in the Planning Area, floodplain areas include Deer Creek, Cosumnes River, Badger Creek, the second Laguna Creek,⁴ Skunk Creek, and Dry Creek on the south border of Sacramento County and the Planning Area. Most stormwater runoff from Galt is conveyed into the second Laguna Creek (Figure 7-3).

The existing stormwater facilities within the UDA were designed consistent with County and City requirements to include sufficient capacity. Urban drainage systems present in Galt, Rancho Cordova, and Sacramento County have been designed to ensure that people or structures would not be exposed to significant adverse flood hazards. Community designs typically include stormwater detention basins, underground drainage infrastructure, culverts and bridges in waterways, modifications of stream channels, and construction of new drainage channels. Detention basins with properly sized outlet pipes are required by local jurisdictions to provide flood control to limit discharge to receiving waters to the same flow rates within the tributaries as the existing condition flow rates.

⁴ There are two Laguna Creeks in the Planning Area. The first Laguna Creek crosses the UDA and is a tributary to Morrison Creek and the Sacramento River. The second Laguna Creek is larger, located in the south part of the Planning Area, and is a tributary to the Cosumnes River and the Mokelumne River.

Figure 7-4. 100-year Floodplain Areas – Sacramento County



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Natural bank erosion typically occurs intermittently as waterways meander or shift within their floodplain, and is a normal part of all fluvial ecosystems. Periodic erosion of the stream bank maintains patches of young riparian vegetation throughout the stream system, which provides habitat required by many riparian plant and animal species. However, natural waterway meandering and associated bank erosion in the UDA and other locations of the Planning Area have been prevented or minimized to create stability for land uses that are located in proximity to the stream bank. Currently, setbacks between new urban development and the banks of a stream or other natural waterway are not required in most land use zones, provided there is no existing flood hazard. Typically, only minor setbacks were required by local jurisdictions during the land use planning processes of most development projects within the Planning Area. Many natural waterways in the UDA and in other locations of the Planning Area have been physically modified to remain a relatively narrow corridor, and natural waterway meandering and associated ecosystem processes no longer occur.

Most streams and other waterways that run through existing communities within the UDA are now surrounded by urban activities. During the land use planning process, stream corridors have been incorporated with recreational land uses such as trails, parks, and golf courses; other times, stream corridors are designated as narrow strips of open space with no required setbacks from buildings or streets.

Many Planning Area streams are armored with concrete or rock slope protection to prevent downcutting and bank erosion. Without adequate setbacks, natural waterways rarely remain in their natural state in urban areas, since the natural hydrology changes, and downcutting and bank erosion occurs. Bank erosion and downcutting can be accelerated if upstream areas are channelized, which can increase the speed of flows and result in accelerated downstream erosion. In addition, banks can erode more quickly when people and domestic animals access the streams for recreation such as fishing, picnics, swimming, and playing fetch with water-loving dogs. In time, tree roots that once stabilized the banks become exposed and erosion accelerates, causing the stream to widen or change course. If adequate setbacks from buildings and roads were not incorporated into an urban stream corridor, the solution was to shore up the banks with concrete or rock slope protection to keep the stream in the narrow designated area. The installation of erosion control has typically included the removal of vegetation. Therefore, adverse impacts to the natural hydrologic function of streams have occurred in urban areas even in cases where the natural streambed was originally avoided. This is particularly true in cases where there are no designated setbacks from urban uses, and/or there is no management of the stream corridor designed to prevent adverse impacts to the stream from encroaching human activity. Without adequate setbacks, adverse impacts to the natural hydrologic function of streams will continue to occur within the Planning Area.

7.1.2.4 Surface Water Quality

Water quality conditions of the Planning Area surface waters are affected by conditions in the watersheds, including weather and temperature, groundwater inputs, atmospheric deposition, animal wastes, urban contaminants and emissions, seasonal rainwater runoff, and climatic patterns (e.g., droughts). The principal sources of potential contaminant discharges to surface waters in the Planning Area are associated with human-related activities and include urban stormwater runoff, agricultural runoff, and municipal wastewater treatment plant discharges.

Four waterways in the Planning Area (Morrison Creek, Elder Creek, Deer Creek, and the lower Cosumnes River), as well as the lower Sacramento River immediately downstream of the Planning Area, do not meet CWA Section 303(d) water quality standards and are included in the SWRCB's current list impaired water bodies (SWRCB 2011). The constituents of concern include legacy organochlorine pesticides products (i.e., no longer sold in the United States but present in soil and very resistant to decay in the environment), and diazinon and chlorpyrifos, which were banned for residential use in California (Table 7-2). Mercury is also a legacy constituent of concern that was used for gold mining in the Sierra Nevada Mountains and is present in waterways outside the Planning Area, including the Sacramento River and the legal Delta (Table 7-2).

Information about the existing conditions for the constituents of concern and contaminant sources for surface waters in the Planning Area are discussed below.

Table 7-2. 2010 CWA Section 303(d) Pollutants and Sources for the Planning Area

Pollutant/Stressor	Listed Source
Morrison Creek	Diazinon, pentachlorophenol, pyrethroid pesticides, sediment toxicity
Elder Creek	Chlorpyrifos, diazinon, pyrethroid pesticides, sediment toxicity
Deer Creek	Iron
Cosumnes River (below Michigan Bar; partly in Delta Waterways, eastern portion)	Escherichia coli (E. coli), invasive species
Sacramento River (Knights Landing to Delta)	Chlordane, DDT, dieldrin, mercury, polychlorinated biphenyl compounds (PCBs), unknown toxicity
Sacramento River–San Joaquin River Delta	Chlorpyrifos, DDT, diazinon, electrical conductivity, Group A (organochlorine) pesticides, invasive species, mercury, PCBs, unknown toxicity

Source: SWRCB 2011

Urban Runoff

Urban stormwater runoff and irrigation runoff may contain a wide variety of potentially harmful constituents of concern that can adversely affect beneficial uses in receiving waters, including aquatic life, recreational opportunities (e.g., aesthetics, fishing, swimming), and human health. Constituents of concern include elevated temperature discharges, organic oxygen demanding

substances, petroleum hydrocarbons, pathogens, pesticides, and trace metals. Urban runoff can enter and affect water bodies, including rivers, streams, creeks, marshes, swales, and vernal pools.

Contaminants accumulate on the ground surface in urban environments during California's summer dry season. In the winter wet season, surface runoff during the initial rainfall mobilize and transport those contaminants as a "first flush" effect, which refers to the typically higher concentrations of contaminants during the initial stormwater runoff events of the wet season.

Urban development increases impervious surfaces, which increases the volume of stormwater runoff to centralized drainage systems and can result in increased rates and volumes of runoff to receiving waters. This change in the hydrologic condition relative to the pre-development hydrologic condition is hydromodification, a process that can increase erosion in receiving waterways and increase sedimentation in downstream water bodies. Changes in surface runoff (i.e., drainage of land, changes in flow paths), hydromodification, and resulting erosion and channel scour can lead to the loss of riparian and aquatic resources, and result in water quality changes such as increased stream temperatures and reduced natural contaminant removal processes (e.g., settling and deposition, bacterial decay). Hydromodification can also redirect water away from aquatic habitats such as vernal pools and other wetlands, resulting in drying and lower habitat quality.

The most recent 2013/2014 CMP annual monitoring report prepared by the Regional San and Sacramento Stormwater Quality Partnership organization evaluated water quality in samples collected during three wet-weather events and one dry-weather period (Larry Walker Associates 2014). Ambient and stormwater quality conditions are evaluated in the annual report for a wide range of constituents of concern, typically within categories of compounds that are indicative of background conditions, increased soil erosion, and urban and industrial sources (e.g., automotive petroleum products, pet wastes, pesticides, fertilizers). The CMP report indicates that concentrations of most constituents of concern in the American River and Sacramento River are below (i.e., consistent with) applicable water quality objectives for drinking water and for aquatic life protection as a result of typically low constituent concentrations (i.e., low mineral content, organic matter, toxic metals, organic compounds, and pesticides) (Larry Walker Associates 2014). However, seasonal wet weather water quality conditions can exhibit temporary occurrences of elevated turbidity, suspended solids, pathogen indicator bacteria, and trace metals (e.g., copper and lead) and common use pesticides. For urban tributary streams, the data for wet weather samples indicate frequent detection of elevated concentrations of copper, polycyclic aromatic hydrocarbon compounds, and *E. coli* bacteria relative to applicable water quality objectives (Larry Walker Associates 2014, 2013).

Additionally, the Sacramento Stormwater Quality Partnership prepared an effectiveness assessment report of the stormwater management program being implemented for the NPDES

Municipal Stormwater Permit (Sacramento Stormwater Quality Partnership 2013), which summarized the findings of a decade of CMP monitoring data for constituents of concern in urban runoff including the sources, fate and transport characteristics, and status and trends with respect to applicable regulatory water quality objectives, as follows:

- Exceedances of water quality standards in the American River and Sacramento River are rare to infrequent.
- Water quality exceedances observed in the American River and Sacramento River are generally not linked to urban stormwater runoff discharges or sources.
- Long-term trends of either increasing or decreasing concentrations of most constituents of concern in urban stormwater runoff are not discernible in older urban areas; however, aquatic toxicity in urban tributaries appears to have decreased significantly over the monitoring period.
- The concentrations of most constituents of concern in urban stormwater runoff from newer developments are lower than runoff from older urban areas, indicating that new development design standards are effective in minimizing constituent of concern discharges.
- Urban tributaries are no longer impaired by diazinon and chlorpyrifos.
- Investigations of actions to control contaminant sources from entering stormwater for a variety of constituents of concern indicate the following:
 - Sediment control BMPs will help reduce the discharges of copper, lead, zinc, mercury, pathogens, polycyclic aromatic hydrocarbons, and other sediment-bound pollutants.
 - Mercury-containing products such as fluorescent lamps are the largest source of mercury in urban runoff; however, mercury discharges are very minor compared to legacy sources of mercury already in the waterways.
 - Sources of bacterial pathogen indicators are difficult to quantify; however, wild animals are likely to constitute a significant, yet largely uncontrollable, source.
 - The major source of copper in urban watersheds is brake pad wear.
 - The major source of pesticides is legal application of insecticides by licensed pest control operators. Pesticides also are the most important and only consistent source of aquatic toxicity in urban runoff.

Agricultural Runoff

Potential water quality sources and constituents of concern in the Planning Area include drainage and wet weather stormwater runoff from areas of irrigated agricultural and pasture land. Constituents of concern include suspended sediment and turbidity associated with routine soil disturbances (e.g., tilling, grazing), organic matter, organic oxygen demanding substances,

fertilizer nutrients (e.g., nitrogen and phosphorus), pesticides, and pathogens. Agricultural runoff can enter and affect off-site water bodies, including rivers, streams, and wetlands.

Agricultural operators in the Sacramento Valley Water Quality Coalition fund a receiving water-quality monitoring program for compliance with the Waste Discharge Requirements issued under the Central Valley RWQCB's Irrigated Lands Regulatory Program (CVRWQCB 2015b). The receiving water quality monitoring program collects water samples at 35 stream sites to study potential water quality effects of agricultural activities, including sites in the lower Cosumnes River, the second Laguna Creek (tributary to Cosumnes River), and Dry Creek in the south part of the Planning Area (Figure 7-2). The Sacramento Valley Water Quality Coalition's monitoring program collects samples quarterly, or monthly during the primary agricultural growing season, and includes periodic monitoring of wet weather conditions at all 35 stream sites. Samples are evaluated for water column and sediment toxicity; physical and conventional parameters in water and sediment; organic carbon, pathogen indicator bacteria, nutrients, and trace metals in water; and pesticides in water and sediment.

Based on Sacramento Valley Water Quality Coalition's monitoring data collected from 2005 through 2013, there are no major water quality problems associated with agricultural discharges or managed wetlands discharges in the Sacramento River Basin (Larry Walker Associates 2015). The majority of observed concentrations that are elevated relative to a water quality objective have been with conventional non-toxic constituents of concern (i.e., conductivity, temperature, dissolved oxygen, E. coli, pH, and nutrients [total ammonia and nitrate]). The monitoring data also indicate that in many of these instances, the observed exceedances may be substantially affected by natural processes and sources in the area (e.g., hydrology, temperature, algae growth) rather than agricultural activity. Concentrations are less frequently elevated for constituents such as copper (or other metals), pesticides, aquatic toxicity, and sediment toxicity when observed. In the 2013/2014 annual data, analysis of 56 receiving water sample sites for pesticides (i.e., organophosphate, carbamate, organochlorine, benzophenyl, and pyrethroid) and a variety of herbicides resulted in detection of 14 different compounds (Larry Walker Associates 2015). Approximately 70% of the samples had no detections of pesticides, and 98% of all pesticide tests were below analytical detection limits. Exceedances of objectives for three registered pesticides (chlorpyrifos, diazinon, and malathion) and DDT (or a DDT breakdown product) was observed in six Sacramento Valley Water Quality Coalition monitoring samples. Statistically significant toxicity was not observed in any of the 330 water column samples evaluated from 17 sample sites in 2013/2014. However, sediment toxicity was observed in five samples from three sample sites based on the 10-day percent survival toxicity test for *Hyalella* species. Only two of the sediment samples exhibited statistically significant toxicity above the threshold established for the program (i.e., $\geq 20\%$

reduction compared to the control), and follow-on testing indicated the pyrethroid pesticide bifenthrin as likely contributing to the observed sediment toxicity.

The Sacramento Valley Water Quality Coalition also evaluates long-term trends that may indicate long-term water quality degradation. Based on an assessment of 624 sample site-parameter combinations, a total of 31 results (i.e., approximately 5% of the beginning number of evaluations) were determined to have significant trends suggesting potential for long-term degradation to be occurring. Most of the significant trends were for physical parameters (i.e., conductivity, dissolved oxygen, pH, temperature, total organic carbon, and total suspended solids). Some of the parameters with trends (i.e., higher conductivity and pH, and lower dissolved oxygen) corresponded to dry year types with lower streamflow and higher temperatures, indicating that the conditions are likely affected primarily by background weather and hydrology rather than agricultural activity.

Contaminants contributed from agricultural activity and runoff in the Planning Area (e.g., pesticides, suspended sediment, pathogens, and nutrients) can affect surface water and groundwater quality. As noted in Table 7-2, numerous streams in the Planning Area and the Delta are listed as impaired by several constituents originating from urban or agricultural runoff sources.

Municipal Wastewater

As discussed in Section 7.1.1.1, municipal wastewater discharges are regulated by the Central Valley RWQCB through the NPDES permit program to ensure that the discharges comply with applicable surface water quality standards designed to protect aquatic life, municipal water supply, and other beneficial uses. Relative to background river concentrations, municipal wastewater discharges may contain elevated levels of salinity, organic matter, trace metals, synthetic organic compounds, human pathogens, and unregulated or emerging constituents of concern (e.g., pharmaceuticals, personal care products, and endocrine-disrupting compounds).

The large majority of municipal and industrial wastewater generated in Planning Area is generated in the UDA, and is collected and conveyed westward through sanitary sewer systems to the Sacramento Regional Wastewater Treatment Plant operated by Regional San. The Sacramento Regional Wastewater Treatment Plant provides wastewater collection and treatment for 1.4 million people inside and outside the Planning Area, including people in the cities of Sacramento, West Sacramento, Rancho Cordova, Citrus Heights, Elk Grove, and Folsom; unincorporated areas of Sacramento County; and the communities of Courtland and Walnut Grove. The Sacramento Regional Wastewater Treatment Plant currently treats approximately 141 mgd of inflow and produces secondary treated effluent, which is discharged to the Sacramento River near the town of Freeport. As a result of permit requirements adopted by the Central Valley RWQCB in 2010 and subsequent amendments, the Regional San is currently

constructing treatment process improvements at the Sacramento Regional Wastewater Treatment Plant, including additional nutrient removal (i.e., ammonia and nitrate reduction) and tertiary filtration on a seasonal basis during the dry season to increase pathogen removal (Ascent Environmental Inc. 2014). Construction of facility improvements at the Sacramento Regional Wastewater Treatment Plant is scheduled to be completed in 2023.

Galt also owns and operates a wastewater treatment plant in the Planning Area. Galt's wastewater treatment plant complies with the Central Valley RWQCB's regulations concerning the operation of the City's wastewater treatment plant. The Galt wastewater treatment plant currently produces about 2.3 mgd of tertiary treated effluent per day, and it discharges that treated effluent to the Laguna Creek that is a tributary to the lower Cosumnes River (Figure 7-3).

Urban development in the Planning Area contributes to wastewater discharge from Galt and the Sacramento Regional Wastewater Treatment Plant that affects the downstream Sacramento River and the Delta water quality conditions. Additionally, Delta water quality is affected by the municipal water demands in the Planning Area that are served by Water Forum Agreement purveyors with surface water from the American River basin. Use of American River basin surface water, along with other water diversions from Central Valley rivers and the Delta, contribute to reduced flows in the Lower American River flow, lower Sacramento River, and Delta inflow. Existing Delta water quality conditions assessed in operations modeling for the California WaterFix EIR/EIS (USBR and DWR 2015) indicate that the western Delta in particular is affected by elevated salinity levels that adversely affect municipal and agricultural water supplies. The California WaterFix EIR/EIS also indicates that existing Delta water quality conditions are adversely affected by mercury, dissolved organic carbon, dissolved oxygen, selenium, and Microcystis algae.

7.2 ENVIRONMENTAL CONSEQUENCES/ ENVIRONMENTAL IMPACTS

7.2.1 Methodology for Assessing Impacts of Each Alternative on Hydrology and Water Quality

The Environmental Consequences/Environmental Impact section identifies the potential impacts of the actions and projects associated with each EIS/EIR alternative on the groundwater hydrology, surface water hydrology, and the water quality of surface waters and groundwater in the Planning Area. The Chapter 7 analysis for each EIS/EIR alternatives relies on existing planning documents that have projected regional water demand.

Potential ways that the EIS/EIR alternatives could impact surface waters and groundwater hydrology and water quality include direct and indirect impacts from construction and

operations related to new urban development in the UDA, and the related transportation projects and other infrastructure projects outside the UDA that are expected to occur under each EIS/EIR alternative.

The future projects and activities expected under each EIS/EIR alternative are described in Chapter 2, Alternatives, Including the Proposed Action/Proposed Project. As discussed in Section 3.6.5, GIS Methodology Used in Chapters 4–16 to Estimate Direct Impacts of Each EIS/EIR Alternative, the EIS/EIR impact methodology uses geographic information system (GIS) datasets that were prepared using the best available information about the amounts and locations of ground disturbance from the future projects and activities expected under each alternative.

As discussed in Section 3.4 and in Section 7.1.1.3, the EIR documents previously prepared for the General Plans of Sacramento County, Galt, and Rancho Cordova (Sacramento County 2010; Galt 2009; Rancho Cordova 2006a) analyzed direct and cumulative impacts of urban growth planned within their jurisdictions, including impacts to surface waters and groundwater hydrology and water quality. When the impact analysis or conclusions provided in these General Plan EIR documents were determined by the lead agencies to be appropriate for use in the analysis of the EIS/EIR alternatives, a brief summary or description of the incorporated information or analysis is provided in Sections 7.2.2, 7.2.3, and 7.2.4.

However, as discussed in Section 3.4, the three General Plan EIRs used different study periods—ending in 2030 (Galt 2008), in 2050 (Rancho Cordova 2006a), and 2030 (Sacramento County 2010), and the 50-year study period for this EIS/EIR ends in 2065 (Section 3.6.3, EIS/EIR Study Period). As discussed in Section 3.4, the EIRs for Rancho Cordova General Plan and the Galt General Plan analyzed full buildout of those jurisdictions. However, additional urban development can be expected to occur within Sacramento County during the 35 years after the General Plan EIR study period ended, and before this EIS/EIR’s study period ends in 2065. Consequently, the impact analyses and conclusions incorporated from the Sacramento County General Plan EIR may not have considered all of the future urban development that is included in the project description of each EIS/EIR alternative presented in Chapter 2. Therefore, the lead agencies considered the impact analysis and the conclusions incorporated by reference from the three General Plan EIRs, along with the effects of all urban development activities and projects that are included in the description of each EIS/EIR alternative.

In addition to analysis and conclusions incorporated by reference from the three General Plan EIRs, relevant information and analysis of operations-related hydrologic effects and water quality effects of existing water and wastewater infrastructure projects in the Planning Area were incorporated into the analysis of the EIS/EIR alternatives from these final EIRs: *The Water Forum Proposal EIR* (Sacramento City-County Office of Metropolitan Water Planning 1999), *The 2002 Zone 40 Water Supply Master Plan EIR* (SCWA 2004), and *The Sacramento Regional County*

Sanitation District EchoWater Project EIR (Ascent Environmental Inc. 2014). In accordance with NEPA regulation 43 CFR 46.135(b), where a prior analysis is incorporated, the source document, including pertinent page numbers, is cited and the analysis is briefly described.

As discussed in Section 3.6.2, Geographic Study Area of Resource Topics Analyzed in Chapters 4 Through 16, it is appropriate to consider impacts to some environmental resources within the context of other impacts occurring to the resource within the surrounding landscape, community, or region. The General Plan EIRs and the three EIRs prepared for existing water and wastewater infrastructure projects in the Sacramento County region, by necessity, also addressed effects that would occur over a spatial area that extends beyond the Planning Area boundary. These local and regional hydrology and water quality effects are applicable to the cumulative impact analysis of each EIS/EIR alternative within the Planning Area because the local and regional changes to hydrology and water quality will occur as a result of the shared water resources and water/wastewater infrastructure among the municipal agencies in the urbanized areas of Sacramento County and western Placer and El Dorado Counties. In addition, the existing stormwater drainage and flood control facilities (i.e., levees, pump stations) discussed in Section 7.1.2.3 were developed based on watershed, level of development, watershed size, history, and trends in problem conditions. Several of the HUC 10 watershed boundaries discussed in Section 7.1.2 extend beyond the EIS/EIR Planning Area boundary (Figure 7-2). Consequently, the analysis of cumulative impacts to hydrology and water quality extends beyond the Planning Area. Accordingly, the lead agencies determined that an appropriate geographic scale for evaluating the impacts of each EIS/EIR alternative on surface water and water quality should include the Planning Area, the area of each HUC 10 watershed discussed in Section 7.1.2, the area of Sacramento County located outside the Planning Area, and the western portions of Placer and El Dorado Counties.

As discussed in Section 3.7, Cumulative Effects Analysis in Resource Chapters 4 through 16, the Chapter 7 cumulative analyses of impacts to surface waters and groundwater hydrology and water quality will consider the effects of past and present urban development within in the Planning Area (see existing conditions in Section 6.1.2, Planning Area Agricultural Resources and Activities) and within the larger study area, as well as impacts expected from reasonably foreseeable “other” projects in the Planning Area (see Section 3.7) and foreseeable “other” projects within the larger study area. The cumulative analysis of each EIS/EIR alternative will then consider whether the incremental impacts of the alternative on surface waters and groundwater hydrology and water quality would be significant (i.e., would be cumulatively considerable). The reasonably foreseeable “other” projects within the larger study area include the proposed Bay Delta Conservation Plan/California WaterFix EIR/EIS (USBR and DWR 2015).

The current effects and expected future effects of climate change were also considered in the analysis of cumulative impacts, using information presented in the American River Basin Integrated Regional Water Management Plan (Regional Water Authority 2013).

7.2.1.1 Determination of Impact Significance

As discussed in Section 3.8.1, Significance Thresholds, the criteria used to evaluate the significance of impacts expected from each EIS/EIR alternative on hydrology and water quality are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines, and on typical thresholds used to evaluate hydrology and water quality impact in recent EIRs prepared by Sacramento County. Based on these sources, a significant adverse impact would occur if the alternative would:

1. Result in a violation of any water quality standard or waste discharge requirement;
2. Substantially deplete groundwater supplies or substantially interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted);
3. Substantially alter the existing drainage pattern of an area, including through the modification of the course of a stream or river in a manner that would result in substantial erosion, siltation, and/or environmental harm;
4. Substantially alter the existing drainage pattern of an area and/or substantially increase the rate or amount of stormwater runoff in a manner that would result in flooding on- or off-site;
5. Create or contribute runoff which would exceed the capacity of existing or planned stormwater drainage systems.
6. Create or contribute to runoff water which would provide substantial additional sources of polluted runoff. Additional sources of polluted runoff or other degradation of water quality would be considered substantial if it is not in compliance with an applicable NPDES permit, or there is a net increase in any other pollution source of a CWA 303d impaired waterway;
7. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map, or other flood hazard delineation map;
8. Place structures within a 100-year flood hazard area that would impede or redirect flood flows;
9. Expose people or structures to a substantial risk of loss, injury or death involving flooding; or

Appendix G of the CEQA Guidelines does not provide suggested criteria for evaluating a beneficial effect. The following criteria were developed by the lead agencies. A beneficial impact could occur if the alternative would:

1. Discernibly reduce the consumption of groundwater or discernibly increase the potential for groundwater infiltration/recharge;
2. Discernibly reduce changes in existing drainage pattern of an area, including reducing modification of the course of a stream or river that would discernibly reduce or avoid erosion, siltation, and/or environmental harm;
3. Discernibly reduce changes to existing drainage pattern of an area or discernibly reduce the rate of stormwater runoff to avoid flooding on or off site;
4. Avoid or discernibly reduce runoff that would exceed the capacity of existing or planned stormwater drainage systems;
5. Avoid or discernibly reduce polluted runoff or discernibly Improve surface water quality; or
6. Discernibly improve groundwater quality.

The impact analysis for the three EIS/EIR alternatives will consider the context, intensity, and severity of potential impacts to each of these hydrology and water quality impact-criteria, and will present separate determinations of significance addressing each of these criteria.

7.2.2 No Action/No Project Alternative

The No Action/No Project Alternative is described in Section 2.2, No Action/No Project Alternative.

7.2.2.1 Groundwater Hydrology Effects of the No Action/No Project Alternative

Direct and Indirect Effects of the Alternative

As discussed in Section 2.2.3, Loss of Natural Lands Under the No Action/No Project Alternative, new urban development would occur on approximately 32,424 acres of existing natural land covers within the portion of UDA located north of the Cosumnes River as well as the portion of the UDA in the Galt sphere of influence (SOI). This planned urban development would increase impervious surfaces (e.g., buildings, roads, and parking lots) within the Upper Morrison Creek, Lower Morrison Creek, Elder Creek, Laguna Creek, and the Beaver Lake–Sacramento River HUC 12 watersheds in the north-central part of the Planning Area, and increase impervious surfaces in a portion of the Lower Cosumnes River and the Laguna watersheds in the south-central portion of the Planning Area.

This development and increase in impervious surfaces is expected to reduce the amount of rainfall infiltration through the soil relative to existing rainfall infiltration rates in those

watersheds, and would reduce the existing rate of groundwater recharge in the UDA portion of the Central Basin. Additionally, population growth from the approximately 32,424 acres of new development under the No Action Alternative would increase municipal and industrial water demands, and much of that demand may be met by groundwater.

The potential indirect adverse hydrologic effects of concern associated with reduced recharge and increased groundwater use include reduced long-term groundwater availability, increased depth of groundwater pumping and power consumption, reduced well yields and wells going dry, and land subsidence.

The remainder of this assessment analyzes the effects of the No Action/No Project Alternative on groundwater hydrology groundwater modeling studies in the Planning Area (which include effects of changes to impervious surfaces and groundwater supply uses) and the General Plan EIRs.

Groundwater is, and would continue to be, a primary water source used for municipal, industrial, and agricultural water supply in the Planning Area over the EIS/EIR study period (RMC Inc. 2014; Robertson-Bryan and WRIME 2011). Future groundwater hydrology will primarily be affected by future municipal and industrial uses because agricultural land uses are not expected to increase.

Within the northern portion of the UDA (the portion of the UDA that is within the Urban Services Boundary of Sacramento County) (Figure 1-1), most of the future planned urban development included in the No Action/No Project Alternative is within Sacramento County's Zone 40 water supply system service area, with smaller areas of the UDA lying within water service areas of Sacramento, Golden State Water Company, and California American Water Company. The *2002 Zone 40 Water Supply Master Plan* (SCWA and MWH 2005) plans future water supply facilities for about 47,000 acres of the 86,000-acre Zone 40 service area, which is the area within the Planning Area, with the majority of future planned urban development. Groundwater modeling conducted for the Zone 40 Water Supply Master Plan (and more recent modeling for water resource management and planning in the Central Basin [RMC Inc. 2014]), along with groundwater modeling for the South Basin (Robertson-Bryan and WRIME 2011), provide the best available information for describing the effects of the future No Action/No Project Alternative on future groundwater hydrologic conditions in the Planning Area.

The Zone 40 system is designed for conjunctive use of both surface water and groundwater, with maximum surface water use and minimal use of groundwater during wet years, which allows groundwater table in the aquifer to recover. During drier years when surface water is insufficient for municipal and industrial water demands, groundwater is used to a greater extent.

Groundwater modeling results for Zone 40 indicate that for the future 2030 condition, average groundwater levels in the northern region of the Zone 40 area would decrease and eventually stabilize at lower levels (compared to the 2000 baseline conditions) as a result of increased municipal groundwater uses, and the existing groundwater extraction, treatment, and discharge operations at the Aerojet, Mather AFB, and Boeing Superfund sites in Zone 40 (SCWA 2004). However, the existing groundwater cone of depression near Elk Grove would diminish by 2030, with groundwater levels modeled to rise by about 10 feet compared to the 2000 baseline conditions. The groundwater modeling for Zone 40 considered municipal and agricultural water demands for the entire Central Basin (Figure 7-1), which are projected to increase to about 450,000 AFY by 2030 compared to a baseline demand of about 375,000 AFY in 2000 (SCWA 2004; MWH et al. 2006).

In the South Basin (Figure 7-1), new urban development in Galt is projected to result in increased groundwater use up to 9,900 AFY in 2030 compared to the current use of approximately 5,900 AFY (Carollo Engineers 2013). As discussed in Section 7.1.2.1, the portion of the Planning Area within the South Basin is dominated by rural agricultural lands, where the future groundwater demand and supply balance is expected to remain similar to existing conditions. However, the South Basin is expected to have an increase in the acreage of vineyards that will be irrigated with drip irrigation systems, which is expected to reduce groundwater use compared to most other types of irrigated agriculture (Robertson-Bryan Inc. and WRIME 2011). Groundwater modeling indicates that current groundwater use in the South Basin is currently approximately 114,800 AFY and will decrease by an estimated 1,200 AFY in the future and remain consistent with the South Basin sustainable groundwater yield target established in the Water Forum Agreement (Robertson-Bryan Inc. and WRIME 2011). The current groundwater levels in the cone of depression near Galt are expected to remain similar to the baseline 1996 groundwater levels existing at the time of the *Water Forum Proposal EIR* (Robertson-Bryan Inc. and WRIME 2011).

The effects of future planned urban development on the existing groundwater conditions within the Planning Area were also evaluated in the Sacramento County and Galt General Plan EIRs (Sacramento County 2011; Galt 2009) based on the modeling results presented above; however, no groundwater hydrology impacts were identified for Rancho Cordova's General Plan. The relevant impact analysis and conclusions are summarized below and incorporated by reference:

- Significant and unavoidable groundwater hydrology impacts could occur in the Central Basin due to additional urban development planned for the Jackson Highway Corridor New Growth Area, from the planned Grant Line East New Growth Area, and from the

planned Easton New Growth Area (Sacramento County 2010, p. 6-53, Chapter 65, Water Supply). The effects of the water demands to groundwater will be assessed prior to approval of those projects pursuant to Senate Bill 610 and Senate Bill 221, which require a determination that the groundwater is reasonably available to meet demand. The analysis will be included in the CEQA document for the development projects and considered prior to approval of the development. The future water demands and impervious surfaces of these development areas were not considered in the 2002 Zone 40 Water Supply Master Plan or associated groundwater modeling.

- Significant and unavoidable groundwater hydrology impacts could occur in the South Basin due to long-term use of groundwater to meet municipal water demands, and reduced groundwater recharge, that would result in a net deficit in the existing aquifer volume or a lowering of the existing local groundwater levels (Galt 2008, p. 8-3, Chapter 8, Natural Resources).

As discussed in Section 7.2.1, additional urban development can be expected to occur within Sacramento County during the 35 years after the end of the Sacramento County General Plan EIR study period in 2050, and before the end of this EIS/EIR's study period in 2065 (see Section 3.6.3). Therefore, impacts of the No Action/No Project Alternative on existing groundwater conditions would be nearly identical to the significant and unavoidable impacts to groundwater hydrology identified in the General Plan EIRs (Sacramento County 2011; Galt 2009) at 2050. The lead agencies anticipate that the No Action/No Project Alternative impacts to groundwater from additional urban development after 2030 would be similar in nature but potentially greater due to additional population and increased municipal water demand. Therefore, the additional impacts of the No Action/No Project Alternative would further contribute to the significant and unavoidable impacts identified in the General Plan EIRs.

In addition, as discussed in Section 2.2.2, up to approximately 1,900 acres of planned urban development could be shifted or displaced to one or more locations outside the current Sacramento County Urban Service Boundary (USB) boundary under the No Action/No Project Alternative. This change in location of impervious surfaces and municipal groundwater use that would occur from the displaced development also was not considered in the groundwater modeling used in the Sacramento County General Plan EIR. However, the total municipal and agricultural water demand expected in the Planning Area would not change because of the displaced development. The displaced development may result in slightly more future

⁵ The Sacramento County General Plan EIR analyzed development within a designated "Jackson Highway Corridor New Growth Area" that was not a part of the alternative ultimately selected by Sacramento County. However, Sacramento County is currently processing Master Plans in the Jackson Highway Corridor, so the incorporated analysis and conclusions are relevant to the No Action/No Project Alternative.

groundwater use in the South Basin and slightly less groundwater use in the Central Basin. However, the 1,900 acres of displaced development is a relatively small area compared to the total size of the Planning Area. Therefore, the displacement of 1,900 acres of planned development to locations adjacent to the current Sacramento County USB boundary would not be expected to substantially change the conclusions presented in the General Plan EIRs. In addition, as discussed in Section 2.2.1, the South Sacramento County Agriculture and Habitat Lands Recycled Water Project (Regional Sanitation 2015) is also assumed to proceed under the No Action/No Project Alternative. This project would increase agriculture use of recycled water by approximately 50,000 AFY in the southwestern portion of the Planning Area outside the UDA, which is expected to reduce agricultural groundwater-pumping in that portion of the Central Basin by a similar amount (RMC Inc. 2015) (Figure 7-1). However, the Regional Water Authority's climate change modeling (Regional Water Authority 2013) used in the General Plan EIRs did not include the reduced groundwater pumping expected under this recycled water program. Therefore, the potential beneficial effects of the Recycled Water Project element of the No Action/No Project Alternative on the projected Central Basin groundwater levels, including the cone of groundwater depression located west of Elk Grove, are uncertain.

Establishment of preserves to mitigate development projects impacts under the Endangered Species Act (ESA), California Endangered Species Act (CESA), or CWA Section 404 would not be expected to directly or indirectly result in adverse changes to groundwater hydrologic conditions because groundwater use would not increase. In addition, the existing rainwater infiltration and associated groundwater recharge occurring at preserved lands would likely continue on those lands in perpetuity.

No Action/No Project Cumulative Effects on Groundwater Hydrology

As discussed in Section 3.7.1, Past and Present Actions in the Planning Area, past and present urban development, municipal use of groundwater, and irrigated agricultural uses of groundwater, have adversely impacted groundwater recharge and groundwater tables in the study area. These past and present alterations have resulted in the groundwater existing conditions described in Section 7.1.2.1. The past and present extensive use of municipal and agricultural water remain within the designated sustainable yields for the Central Basin and South Basin established by the Water Forum Agreement and the South Basin Groundwater Management Plan, which allows relatively lower groundwater levels compared to historical conditions, and existence of groundwater cones of depression. The types of future reasonably foreseeable "other" projects, activities, and actions, described in Section 3.7.2, Reasonably Foreseeable Other Actions, are similar to the types of past and present actions that occurred in the study area. The other reasonably foreseeable future actions in the study area (see Section 3.7.2) that were not included in the Section 2.2.2 description of the No Action/No Project Alternative include additional new urban development in the Elk Grove SOI and in Rancho

Murieta, development of the Wilton Rancheria Casino, master planned developments inside the UDA named Rio Del Oro and Mather South, further rural residential development outside the UDA, continued urban development of cultivated agricultural lands, major infrastructure projects such as California High-Speed Rail and the California WaterFix, and expansion of the existing National Wild Refuge and the Cosumnes River Preserve (see Section 3.7.2 for details of these projects). The water demands of these foreseeable other projects were generally included in the analysis of cumulative groundwater hydrology impacts incorporated from the General Plan EIRs. Hydrologic modeling of the entire Sacramento County region was conducted by the Regional Water Authority to evaluate future 2030 land uses anticipated to occur under the three General Plans, projected 2030 urban and agricultural water demands, and estimated effects of future climate change (Regional Water Authority 2013). The modeling assumes that groundwater would be used to make up the shortfall, which would occur primarily to meet agricultural demands, resulting in average groundwater level reductions by up to about 20 feet in agricultural areas. Groundwater would be sufficient to meet future water demands in normal water years based on the water rights and contracts of all water purveyors. However, future water shortages in single and multiple dry-year scenarios could be a concern for long-term groundwater availability. Consequently, the combination of past, present, and reasonably foreseeable future projects could result in groundwater use that may lead to significant cumulative effects to exceedance of the sustainable yields of the groundwater basins, groundwater level reductions affecting increased pumping energy use, occurrence of dry wells, or land subsidence.

The groundwater basins underlying the Planning Area are large and defined by the major hydrologic barriers of the American River to the north of the Central Basin, the Sacramento River to the west of the Central Basin, Dry Creek to the south of the South Basin, and the upgradient and bedrock formations of the Sierra Nevada Mountains to the east of these basins (Figure 7-1). Therefore, the existing/cumulative groundwater hydrology conditions in the Planning Area are generally localized to effects within these basins.

As discussed previously, the direct and indirect impacts of No Action/No Project Alternative would adversely affect existing groundwater conditions. However, the effects of future urban development/agricultural water demand in the Planning Area have been considered in the groundwater modeling studies of the Central and South Groundwater Basins. Therefore, the incremental contribution of the No Action/No Project Alternative effects would be significant and cumulatively considerable, when viewed in connection with the cumulative effects of the past projects, current projects, and probable other projects on the groundwater hydrology of the study area. The No Action/No Project Alternative's incremental effects are determined to be significant and cumulatively considerable, when viewed in connection with the significant cumulative impact of the past, present, and foreseeable other projects in the study area.

7.2.2.2 Surface Water Hydrology and Flooding Effects of the No Action/ No Project Alternative

Direct and Indirect Effects of the No Action/No Project Alternative

This impact analysis addresses the direct and indirect effects to surface hydrology, stormwater runoff, and flooding under the No Action/No Project Alternative. New urban development in the Planning Area would increase the amount of impervious surfaces in the UDA, and thus reduce the amount of rainfall infiltration into the soil, resulting in the potential for increased stormwater runoff, and in hydrologic changes to downstream or receiving waters.

Urban development stormwater facilities must be designed consistent with Sacramento County, Rancho Cordova, or Galt requirements (see Section 7.1.1) to include sufficient capacity. New development projects and activities under the No Action/No Project Alternative will not exceed the capacity of existing or planned urban stormwater drainage systems.

Designs for new master plan or specific plan developments would continue to include significant grading to moderate topographic changes in order to create level building areas, proper drainage, and adequate line of site for roads, which will continue to alter existing localized drainage conditions inside the UDA. New development projects and activities under the No Action/No Project Alternative would continue to include detention basins; underground drainage infrastructure; culverts and bridges in waterways; modifications of stream channels; construction of new drainage channels; and, often, encroachments into, or losses of, wetlands and other waters, riparian areas, and floodplains.

Detention basins with properly sized outlet pipes will be required to provide flood control and to slow discharges to receiving waters such that the receiving waters maintain the same flow rates within the tributaries as the pre-project condition flow rates. Therefore, the additional impervious surface area associated with build out of the UDA under the No Action/ No Project Alternative would not necessarily result in increased flooding or changes to the existing hydrology in UDA streams.

Under the No Action/No Project Alternative, setbacks between new urban development and the banks of a stream or other natural waterway will not be required in most Planning Area land use zones (see Chapter 4, Land Use), provided there is no existing flood hazard. At the most, only minor setbacks between new development and streambanks would be required by local jurisdictions during the land use planning processes of future development projects and activities within the Planning Area. Many of the remaining natural sections of streams and waterways in the UDA (Section 7.1.2.3) will be physically modified to remain a relatively narrow and stable corridor. Once stabilized, these streams and waterways will no longer meander over

time, reducing or eliminating many fluvial ecosystem processes currently present in these waterway sections.

Most remaining natural waterways within the UDA would become surrounded by urban activities under the No Action/No Project Alternative. During the local land use planning process, recreational land uses such as trails, parks, and golf courses stream corridors may be incorporated into these stream corridors. Most stream corridors would be narrow strips of open space with no required setbacks from buildings or streets.

Many natural waterways in the UDA may become armored with concrete or rock protection to prevent channel downcutting and bank erosion. Other natural waterways channels may be left in a natural state. The installation of erosion control would typically include removal of vegetation. Therefore, adverse impacts to the natural hydrologic and ecosystem functions of UDA streams may occur even in cases where the natural stream channel was originally avoided. In addition, newly urbanized stream channels and stream corridors would not be managed to prevent adverse impacts to the stream from encroaching human activity. Without adequate setbacks, adverse impacts to the natural hydrologic function of streams are expected to occur within the UDA under the No Action/No Project Alternative.

The effects on surface hydrology, stormwater runoff, and flooding from planned urban development within Sacramento County, Galt, and Rancho Cordova were evaluated in the analysis of the General Plan EIRs discussed in Section 3.4 and Section 7.2.1 (Sacramento County 2011; Galt 2009; Rancho Cordova 2006b). As discussed in Section 7.2.1, the relevant analyses from each of these EIRs are summarized and incorporated by reference into the analysis of the No Action/No Project Alternative:

- The planned urban development described in the Sacramento County General Plan through the year 2030 would be implemented in compliance with Sacramento County's Floodplain Management Ordinance, Improvement Standards, and General Plan policies. Therefore, planned development would not substantially increase the existing rate or amount of surface runoff in a manner that would cause flooding or exceed stormwater system capacity, thus resulting in a less-than-significant impact (Sacramento County 2010, p. 7-25, Chapter 7, Hydrology and Water Quality).
- Planned urban development would be implemented in compliance with Sacramento County's Floodplain Management Ordinance, Improvement Standards, and Sacramento County General Plan policies would ensure that no residences are placed within a flood hazard area, and that people or structures would not be exposed to a significant risk involving flooding, thus resulting in a less than significant impact (Sacramento County 2010, p. 7-45, Chapter 7, Hydrology and Water Quality).

- The Galt General Plan EIR determined that housing construction within a 100-year flood hazard area, or other structures that could impede or redirect flood flows, is a less-than-significant impact. Galt, in accordance with its policies, would preserve floodplain areas, limit development in hazardous areas, and implement a Storm Drainage Master Plan and a Pavement Management Plan to ensure that adequate levels of stormwater drainage infrastructure are provided (Galt 2008, p. 6-27, Chapter 6, Public Facilities).
- The exposure of people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam, is a less-than-significant impact in the Galt General Plan EIR (Galt 2008, p. 6-28, Chapter 6, Public Facilities).
- The Rancho Cordova General Plan contains policies and action items that adequately address stormwater drainage and flooding issues from planned new urban development. Therefore, the increased impervious surfaces, altered drainage conditions, and altered stormwater runoff rates (which could result in flooding effects) of planned urban development, would result in a less-than-significant impact (Rancho Cordova 2006a, p. 4.9-41, Chapter 4.9, Hydrology and Water Quality).

As discussed in Section 3.4 and in Section 7.2.1, the three General Plan EIRs used different study periods—ending in 2030 (Galt 2009), in 2050 (Rancho Cordova 2006a), and 2030 (Sacramento County 2010)—and the 50-year study period for this EIS/EIR ends in 2065 (Section 3.6.3). The Galt and Rancho Cordova General Plan EIRs analyzed buildout of their jurisdictions. However, additional urban development would occur within Sacramento County after the 2030 end of the General Plan EIR study period, until the expected buildout of the UDA at end of this EIS/EIR's study period in 2065. Consequently, the lead agencies considered the impact analysis and the conclusions incorporated by reference from the General Plan EIRs, along with the effects of the additional urban development activities and projects included in the description of each EIS/EIR alternative. The lead agencies extrapolated that the impacts of the additional urban development in the latter part of the 50-year EIS/EIR study period, including potential increases to stormwater runoff, stream and drainage channel modifications, or additional encroachment in floodplains, would be similar to the impacts of urban development implemented in the early part of the EIS/EIR study period, which was analyzed in the General Plan EIRs. Because existing regulations related to flood control and stormwater management (see Section 7.1.1) would continue over the 50-year EIS/EIR study period of the No Action/No Project Alternative, the impacts of new urban development constructed in the latter part of the EIS/EIR study period would also result in **Less Than Significant Adverse** effects to stormwater runoff, stormwater system capacity, flooding, flood hazards, flood flows, drainage, and stream channels, as was identified in the General Plan EIRs for new development implemented in the early part of the EIS/EIR study period. Structures and the human environment would not be

exposed to undue risk of flooding; natural watersheds and streams would continue to be modified within the UDA to fit within designated areas of communities.

Additionally, as described in Section 2.2.2, up to approximately 1,900 acres of planned urban development could be shifted or displaced from inside the MCRA to one or more locations outside the current Sacramento County USB boundary under the No Action/No Project Alternative. This displacement of new urban development would also shift the location of impervious surfaces outside the current USB boundary. Consequently, stormwater runoff-related effects within the MCRA boundary could be reduced compared to the effects described in the General Plan EIRs. However, the impervious surfaces constructed in the areas of displaced development would be expected to result in similar effects to stormwater runoff, and similar changes to stormwater drainage infrastructure as described in the General Plan EIRs, and would not substantially change the types or severity of hydrology, stormwater runoff, or flooding effects identified and analyzed in the three General Plan EIRs (see bullets above). The displaced urban development assumed in the No Action/No Project Alternative would contribute to, but would not substantially change, the ***Less Than Significant Adverse*** effects on surface hydrology, stormwater runoff, and flooding identified in the three General Plan EIRs.

Establishment of preserves under the No Action/No Project Alternative to mitigate development project-impacts under ESA, CESA, or CWA Section 404 would not be expected to directly or indirectly result in adverse changes to surface hydrology, stormwater runoff, or flooding conditions because the amount of any increase in impervious surfaces, or alteration of surface drainage features or stormwater runoff conditions, would likely be minimal at any one site.

No Action/No Project Cumulative Effects on Surface Water Hydrology and Flooding

As discussed in Section 3.7.1 and in Section 7.1.2, past and present urban development projects and activities have constructed impervious surfaces, re-aligned channels, and constructed other encroachments (e.g., bridges, culverts). These past and present alterations have resulted in the existing surface water hydrology conditions in the Planning Area (see Section 7.1.2). The effects of the past and present actions on surface water hydrology in the Planning Area were described in Section 7.2.2.2 and represent a significant adverse impact on the surface water hydrologic conditions within the study area.

The types of future reasonably foreseeable “other” projects, activities and actions, described in Section 3.7.2, are similar to the types of past and present actions that have occurred in the study area. The other reasonably foreseeable future actions in the study area (see Section 3.7.2) that were not included in the Section 2.2.2 description of the No Action/No Project Alternative include additional new urban development in the Elk Grove SOI and in Rancho Murieta, development of the Wilton Rancheria Casino, master planned developments inside the UDA named Rio Del Oro

and Mather South, further rural residential development outside the UDA, continued urban development of cultivated agricultural lands, major infrastructure projects such as California High-Speed Rail and the California WaterFix, and expansion of the existing National Wild Refuge and the Cosumnes River Preserve (see Section 3.7.2 for details of these projects). These reasonably foreseeable other projects have potential to effect existing surface hydrology, stormwater runoff, and flooding conditions. Additionally, predictions for future climate change include increased winter rainfall intensity in the Planning Area and increased Sierra Mountain areas exposed to rain rather than snow, which may result in increased downstream flood flows and frequency of flood volumes. However, as described in Section 7.1.1.3, the General Plans contain policies and implementation programs that require new urban development to adequately address stormwater runoff and flooding issues, considering both current and future hydrologic conditions and current and future infrastructure conditions.

Projects and activities included in the No Action/No Project Alternative (see Section 2.2.1, Future Projects/Activities Likely Under the No Action/No Project Alternative) with potential to affect surface hydrologic conditions are conversion of agricultural and undeveloped lands to new urban development. As described above and in Section 7.1.1, new urban development projects under the No Action/No Project Alternative would be required to adequately address stormwater runoff and flooding issues. Therefore, when the incremental effects of the No Action/No Project Alternative are viewed in connection with the effects of the past, present, and reasonably foreseeable future other actions, the No Action/No Project Alternative would not cause, or make a considerable contribution to, the significant cumulative impact on surface hydrology, stormwater runoff, or flooding conditions of the study area. The No Action/No Project Alternative would result in a ***Less Than Significant Adverse Cumulative*** effect on groundwater hydrology.

7.2.2.3 Surface Water Quality and Groundwater Quality Effects of the No Action/No Project Alternative

Direct and Indirect Effects of the No Action/No Project Alternative

This section describes the expected indirect effects on surface water quality and groundwater quality under the No Action/No Project Alternative as discussed in Section 2.2.1. The planned urban development under the No Action/No Project Alternative includes construction activities with potential to result in temporary discharges to surface water or impacts to groundwater quality in the Planning Area. Urban development construction activities typically involve vegetation removal, grubbing and grading, excavation, and a variety of other construction activities that may result in exposure of disturbed sites to rainfall and stormwater runoff events. If not conducted with appropriate stormwater quality control measures, construction activities can result in soil erosion and/or runoff of contaminants such as suspended sediment,

petroleum hydrocarbons, and other construction materials (e.g., concrete, paints, and coatings) to off-site or downstream areas. Other contaminants discharged in construction site runoff may include toxic organic compounds in petroleum products and trace metals (e.g., copper, zinc).

Potential indirect water quality effects of new urban development and infrastructure after construction is completed could include increased urban stormwater runoff into receiving waters, increased municipal wastewater discharges from the Sacramento Regional Wastewater Treatment Plant to the Sacramento River, and increased municipal wastewater from Galt discharged into the Cosumnes River. Inside the UDA, planned urban development has potential to increase stormwater runoff that discharges of stormwater contaminants that may adversely affect surface water and groundwater quality. Urban stormwater runoff often includes contaminants such as potentially toxic compounds (e.g., petroleum hydrocarbons, household pesticides, and trace metals [copper]), oxygen-demanding substances, nutrients, pet wastes, and trash, which would adversely water quality of Planning Area receiving waters, primarily in the UDA where new urban development will occur. The effects of the future planned urban development and infrastructure on surface water and groundwater quality were evaluated in the three General Plan EIRs (Galt 2009; Rancho Cordova 2006b; and Sacramento County 2011). The relevant conclusions from each of these EIRs are summarized below:

- The future development impacts on urban runoff and impacts from new sources of pollutants is a less than significant impact because compliance with Sacramento County Stormwater Ordinance, implementation of low-impact development (LID) standards, and construction runoff control measures would ensure that new development would not alter the course of local waterways in a manner that results in substantial erosion or sedimentation or result in substantial new sources of pollutants in urban runoff (Sacramento County 2010, p. 7-56, Chapter 7, Hydrology and Water Quality).
- The potential for municipal water supply groundwater pumping to result in migration of contaminants from the lower aquifers, or migration of the contaminant plumes at the groundwater cleanup sites in Sacramento County, is a less than significant impact. Compliance with Title 22 drinking water quality requirements by water purveyors would ensure that any extracted groundwater for distribution is treated to the appropriate standard (Sacramento County 2010, p. 6-71, Chapter 6, Water Supply).
- The impacts of new urban development on changes in the volume of stormwater runoff or to cause increases in stream bank and channel erosion is a less than significant impact because Galt General Plan policies, programs, and mitigation measures will be implemented (Galt 2008, p. 6-22, Chapter 6, Public Facilities and Services). Galt's mitigation for any unavoidable impacts includes monitoring and enforcement provisions to control nonpoint and point source water pollution requirements of the NPDES

Municipal Stormwater Permit, as well as continued implementation of its Stormwater Management Plan in coordination with the Stormwater Quality Partnership agencies.

- The new urban development has potential to result in increased levels of contaminants in stormwater runoff from the postconstruction activities, cause impairment of the beneficial uses of receiving waters or areas that provide water quality benefit, or cause substantial harm to the biological integrity of the waterways by the discharge of stormwater is a less than significant impact with implementation of Galt's General Plan policies, programs, and mitigation measures described in the bullet above (Galt 2008, p. 6-26, Chapter 6, Public Facilities).
- The urban development to result in increased discharge of stormwater from material storage areas, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas or loading docks, or other outdoor work areas is a less than significant impact with implementation of Galt's General Plan policies, programs, and mitigation measures described above in the first bullet (Galt 2008, p. 6-29, Chapter 6, Public Facilities).
- The potential for urban development to result in the discharge of polluted runoff that could cause harm to the biological integrity of waterways, exceed water quality standards, or otherwise substantially degrade surface water quality is a less than significant impact with implementation of Rancho Cordova's General Plan policies, programs, and mitigation measures (Rancho Cordova 2006a, p. 4.9-34, Chapter 4.9, Hydrology and Water Quality). In addition to the General Plan policies that generally address land use requirements and prevention/treatment provisions for stormwater and groundwater contamination, Rancho Cordova adopted mitigation measures to (a) continue coordination and implementation of the 2009 SQIP for the NPDES Municipal Stormwater Permit, and (b) require future land uses that utilize hazardous materials or generate hazardous wastes to provide adequate containment facilities to ensure that surface water and groundwater resources are protected.
- The potential for urban development to result in the degradation of groundwater quality is a less than significant impact with implementation of Rancho Cordova's General Plan policies, programs, and mitigation measures (Rancho Cordova 2006a, p. 4.9-39, Chapter 4.9, Hydrology and Water Quality). In addition to the General Plan policies that generally address measures to prevent groundwater contamination and require cleanup actions, Rancho Cordova's mitigation measure requires development project proponents to determine whether urbanization of these areas would adversely affect the Aerojet/Mather AFB groundwater remediation activities prior to Rancho Cordova's approval of large-scale development.

As discussed in Section 3.4 and Section 7.2.1, the Galt and Rancho Cordova General Plan EIRs analyzed buildout of their jurisdictions. However, additional urban development would occur within Sacramento County during the 35-year period after the end of the General Plan EIR study period (2030) and the buildout of the UDA expected at end of this EIS/EIR's study period in 2065. Consequently, the lead agencies considered the impact analysis and conclusions incorporated by reference from the General Plan EIRs, along with the effects of the additional urban development activities and projects included in the description of the No Action/No Project Alternative. The lead agencies extrapolated that the impacts of the additional urban development in the latter part of the 50-year EIS/EIR study period, including potential increases to nonpoint and point source waste discharges, and stormwater runoff effects would be similar to the impacts of urban development implemented in the early part of the EIS/EIR study period, which was analyzed in the General Plan EIRs. However, because existing regulations related to surface water quality and groundwater quality—including local ordinance requirements in the General Plans (Section 7.1.1.3), the NPDES Municipal Stormwater Permit provisions to minimize and avoid contaminant discharges, and the Central Valley RWQCB regulations for development of appropriate municipal wastewater treatment and disposal (Sections 7.1.1.2 and 7.1.1.3)—would continue over the 50-year EIS/EIR study period, the impacts of new urban development constructed in the latter part of the EIS/EIR study period would continue to result in ***Less Than Significant Adverse*** effects on surface water quality and groundwater quality, as was identified in the General Plan EIRs.

Additionally, as described in Section 2.2.2, Expected Regulatory Environment Under the No Action/No Project Alternative, up to approximately 1,900 acres of planned urban development could be shifted or displaced from inside the MCRA to one or more locations outside the current Sacramento County USB boundary under the No Action/No Project Alternative. This displacement of new urban development would also shift locations of potential discharges of contaminants from temporary construction activities and from long-term urban stormwater runoff to locations outside the current USB boundary. However, the approximately 1,900 acres of displaced development is relatively small compared to the total acres of planned new development analyzed in the General Plan EIRs, and the existing regulations related to surface water quality and groundwater quality (see Section 7.1.1) would also apply to urban development within areas of displaced development over the 50-year EIS/EIR study period.

The continued establishment of preserves under the No Action/No Project Alternative to mitigate development project impacts under ESA, CESA, or CWA Section 404 would not be expected to directly or indirectly result in adverse changes to surface water quality or groundwater. Projects that reestablish or establish aquatic resources on preserves would implement BMPs to avoid soil erosion or discharges of contaminants. Consequently, new

preserves and preserve activities would not be expected to exceed water quality objectives or degrade existing water quality.

Therefore, the No Action/No Project Alternative would not substantially change the types or severity of surface water and groundwater quality impacts identified in the General Plan EIRs. Consequently, the No Action/No Project Alternative would not change the less than significant surface water and groundwater quality impacts described in the General Plan EIR documents listed above.

No Action/No Project Cumulative Effects on Surface Water Quality and Groundwater Quality

As discussed in Sections 3.7.1 and 7.2.1, past and present urban development and associated infrastructure projects and activities in the EIS/EIR Planning Area have adversely altered water quality from agricultural and urban runoff with contaminants potentially harmful to aquatic life, human health, and harmful to recreational beneficial uses in surface water bodies (e.g., pesticides, petroleum products, trace metals, pathogens, nutrients, and suspended sediment) and groundwater quality for municipal uses. Urban development in the Planning Area has contributed to wastewater discharge from the Sacramento Regional Wastewater Treatment Plant to the Sacramento River and Delta. Contaminants have also been contributed from agricultural runoff in the Planning Area (e.g., pesticides, suspended sediment, pathogens, and nutrients). Additionally, downstream water quality is also affected by the municipal water demands in the Planning Area that are served by Water Forum Agreement purveyors with surface water from the American River basin. Use of American River basin surface water, along with other water diversions from Central Valley rivers and the Delta, contribute to reduced flows in the Lower American River flow, lower Sacramento River, and Delta inflow. These past and present alterations have resulted in the existing conditions of surface water quality and groundwater quality described above in Sections 7.1.2.2 and 7.1.2.4, and they represent a significant adverse impact on water quality in the study area.

The types of future reasonably foreseeable “other” projects, activities, and actions, described in Section 3.7.2, are similar to the types of past and present actions that occurred in the study area. The other reasonably foreseeable future actions in the study area (see Sections 3.7.2 and 4.1.2.1, Past and Current Land Use in the Planning Area) that were not included in the Section 2.2.2 description of the No Action/No Project Alternative include additional new urban development in Elk Grove and Rancho Murieta, master planned developments inside the UDA named Rio Del Oro and Mather South, further rural residential development outside the UDA, continued development of cultivated agricultural lands, and development of major infrastructure projects such as California High-Speed Rail and the California WaterFix (see Section 3.7.2 for details of these projects). These reasonably foreseeable other projects have potential to affect existing surface water quality and existing groundwater quality. However, these foreseeable projects and activities would be required

to meet the existing regulations and local policies for surface water quality and groundwater quality, as described in Section 7.1.1. Moreover, implementation of agricultural water quality monitoring and management programs for the Irrigated Lands Regulatory Program would be expected to result in improved water quality in ongoing agricultural drainage discharges in the Planning Area, compared to existing conditions.

Projects and activities included in the No Action/No Project Alternative (see Section 2.2.1) affecting surface water quality and groundwater quality would consist primarily of additional conversion of agricultural and undeveloped lands to urban development (and displaced development) and the related changes in urban and agricultural runoff of contaminants, as well as additional municipal water uses of groundwater and surface water supply sources in the Planning Area. As noted above, new urban development projects in the Planning Area (including development displaced to areas outside the existing USB) would be required to meet existing regulations and policies for water quality, including urban stormwater runoff controls and construction BMPs to meet stormwater quality regulatory requirements of the NPDES Municipal Stormwater Permit. Therefore, they are not expected to adversely contribute to the existing surface water quality or groundwater quality in the Planning Area. Additionally, as noted above, increased groundwater use in the Planning Area is not expected to adversely affect migration of contaminants from lower aquifers, or migration of the contaminant plumes at the groundwater cleanup sites in Sacramento County.

However, the additional municipal water uses projected by the Water Forum Agreement purveyors, including future development in the Planning Area, was considered in the recent modeling for the California WaterFix EIR/EIS (USBR and DWR 2015), which concluded that additional municipal water uses in the Central Valley and the WaterFix facilities operations will result in additional reductions to Delta inflow, and additional reductions in inflow from climate change will result in salinity intrusion in the western Delta. Consequently, the WaterFix EIR/EIS identifies that significant and unavoidable cumulative water quality effects are expected to continue to occur downstream from the Planning Area in the Delta for salinity parameters, mercury, dissolved organic carbon, selenium, and Microcystis algae (USBR and DWR 2015). However, the operational EchoWater Project will improve effluent water quality discharged from the Sacramento Regional Wastewater Treatment Plant to the Sacramento River for flows of up to 181 mgd, and the EchoWater Project has increased capacity to accommodate additional wastewater inflows expected from all future planned development in the Planning Area, including the full buildout of the UDA by 2065 assumed under the No Action/No Project Alternative. After the Regional San's EchoWater Project is fully operational, the contribution of the No Action/No Project Alternative to increased quantity of treated effluent and increased contaminant discharges to the downstream Sacramento River and Delta water quality were determined to be less than significant (Ascent Environmental 2014).

Therefore, the incremental effects of additional surface water in the Planning Area that would occur under the No Action/No Project Alternative would be individually limited and would not make a considerable contribution to the significant cumulative effect on downstream Delta water quality.

7.2.3 Proposed Action/Proposed Project Alternative

As described in Table 2-3 located in Section 2.3.3, Covered Activities and Loss of Natural Land Covers Under the Proposed Action/Proposed Project Alternative, the Proposed Action/Proposed Project Alternative includes the same types of new urban development and infrastructure as those anticipated under the No Action/No Project Alternative. As discussed in Section 2.3.3, the locations of UDA new urban development under the Proposed Action/Proposed Project Alternative would differ slightly, primarily related to the Conservation Strategy of the Proposed Action, which would consolidate project ESA, CESA, and CWA Section 404 into a managed interconnected South Sacramento Habitat Conservation Plan (SSHCP) Preserve System.

As discussed in Section 2.3.1, the Proposed Action/Proposed Project Alternative would allow urban development Covered Activities within the MCRA portion of the UDA to be implemented consistent with planned urban development described in the approved Sacramento County and Rancho Cordova General Plans, without urban development shifting or being displaced to locations outside the current USB boundary. Therefore, the Proposed Action/Proposed Project Alternative does not assume that approximately 1,900 acres of new urban development would be shifted or “displaced” to locations outside of the current USB boundary for Sacramento County.

As discussed in Section 2.3.5, Conservation Strategy under the Proposed Action/Proposed Project Alternative, and Table 2-6, one of the major benefits of the Proposed Action/Proposed Project Alternative to Planning Area hydrology and water quality compared to impacts expected under the No Action/No Project Alternative are the SSHCP Avoidance and Minimization Measures (AMMs) that will be implemented under each urban development Covered Activity project or activity, particularly the SSHCP AMMs related to Stream Setbacks (see Condition 7 AMMs, including STREAM-1, STREAM-2, and STREAM-3), which are described in EIS/EIR Appendix D).

7.2.3.1 Groundwater Hydrology Effects of the Proposed Action/ Proposed Project Alternative

Direct and Indirect Effects of the Alternative

The Proposed Action/Proposed Project Alternative includes full buildout of the UDA, without urban development Covered Activities occurring outside the UDA. Therefore, the potential for incidental changes in location of groundwater demand in the Central Basin and South Basin

identified for the No Action/No Project Alternative (Section 7.2.2.1) would not occur under the Proposed Action/Proposed Project Alternative. However, no significant impacts in groundwater use or groundwater recharge were identified for the No Action/No Project Alternative, including the effects of the displaced development.

The Proposed Action/Proposed Project Alternative includes a Conservation Strategy that has protection of watersheds and related ecosystem functions (including groundwater recharge) as one of the guiding principles. The SSHCP and Aquatic Resources Program (ARP) includes AMM LID-2, which requires the Implementing Entity to prioritize locations that are suitable for groundwater recharge incorporation when siting SSHCP Preserves containing Riparian, Open Water, or Freshwater Marsh SSHCP land cover types.

AMM LID-2 is not included in the No Action/No Project Alternative; therefore, there is a beneficial Impact associated with groundwater recharge under the Proposed Action/Proposed Project Alternative compared to the No Action/No Project Alternative baseline condition. The Proposed Action/Proposed Project Alternative provides greater preservation of aquatic resources and greater reestablishment and establishment of wetlands and other waters, and it provides greater management of preserved, reestablished, and establish aquatic resources relative to the No Action/No Project Alternative. Therefore, the Proposed Action/Proposed Project Alternative would result in better surface water conditions relative to the No Action/No Project Alternative, which would also benefit groundwater recharge and groundwater hydrology, relative to the No Action/No Project Alternative.

Significance of Direct and Indirect Effects

In summary, when compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project Alternative would:

- Result in groundwater demand that is consistent with the groundwater demand of the No Action/No Project Alternative.
- Result in impervious surfaces from development and associated effects to groundwater recharge consistent with the adverse effect of the No Action/No Project Alternative.
- Result in greater protection of groundwater recharge from larger and more contiguous preserves.
- Result in greater protection of groundwater recharge along streams and other waterways from required setbacks and larger setback between new development and natural waterways.
- Implement a regional Conservation Strategy that has protection of watersheds and related ecosystem functions (including groundwater recharge) as one of the guiding principles.

Therefore, after considering the impacts from the Proposed Action/Proposed Project Alternative on each of the impact criteria for groundwater hydrology, the Proposed Action/Proposed Project would result in **Minor Beneficial** effects on groundwater hydrology, when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

Proposed Action/Proposed Project Cumulative Effects on Groundwater Hydrology

The effects of past, present, and reasonably foreseeable other projects on groundwater hydrology in the Planning Area are described in Section 7.2.2.1, and represent a significant adverse cumulative impact on the groundwater hydrologic conditions within the study area. As discussed in Section 7.2.2.1, the incremental effects of the No Action/No Project Alternative were determined to be significant and cumulatively considerable, when viewed in connection with the effects of the past, present, and foreseeable other projects in the study area.

As described herein, implementation of the SSHCP Conservation Strategy, including the SSHCP AMMs, SSHCP ARP, and interconnected SSHCP Preserve System is expected to result in more consistent and frequent conservation of groundwater recharge compared to the No Action/No Project Alternative. Consequently, the incremental effects of Proposed Action/Proposed Project Alternative would have a **Minor Beneficial** effect on groundwater hydrology when compared to the incremental effects of the No Action/No Project Alternative baseline condition; therefore, the Proposed Action/Proposed Project does not result in a cumulatively considerable contribution to the significant adverse cumulative impacts on groundwater hydrology. The Proposed Action/Proposed Project Alternative would result in a **Minor Beneficial Cumulative Effect** on groundwater hydrology compared to the No Action/No Project Alternative baseline condition.

7.2.3.2 Surface Water Hydrology and Flooding Effects of the Proposed Action/Proposed Project Alternative

Direct and Indirect Effects of the Alternative

As described in Section 2.3.3, the Proposed Action/Proposed Project Alternative Covered Activities include the same types of urban development anticipated under the No Action/No Project Alternative. Under the Proposed Action/Proposed Project Alternative, the approval, issuance of Incidental Take Permits, and the implementation of the SSHCP would occur as described in Section 2.3, Proposed Action/Proposed Project. As described in Section 2.3.3, the Proposed Action/Proposed Project Alternative Covered Activities include the same types of urban development as those anticipated under the No Action/No Project Alternative. Approximately 32,059 acres of existing natural land covers would be converted to a developed land cover type inside the UDA, primarily within the Morrison Creek HUC 10 watershed.

Outside the UDA, associated infrastructure and transportation improvement projects outside would directly impact approximately 1,438 acres of natural land cover types, primarily in parts of Snodgrass Slough, Lower Cosumnes River, Upper Cosumnes River, and Laguna watersheds (Table 8-8 and Figure 7-3).

However, the Proposed Action/Project Alternative includes a Conservation Strategy that has protection of watersheds and their surface hydrologic functions as a guiding principle. SSHCP Biological Goal 2 would maintain or improve physical, chemical, and biological functions of aquatic resources within the Planning Area. As discussed in Section 2.3.5, Conservation Strategy under the Proposed Action/Proposed Project Alternative, the proposed SSHCP Conservation Strategy includes an interconnected and coordinated SSHCP Preserve System where further development of the watershed would not occur, and would include thousands of acres of surface waters (including vernal pool systems, seasonal wetlands, streams and creeks, riparian zones, marshes, and open water). The SSHCP Preserve System would be used by the ARP as part of a unified watershed strategy of avoidance, minimization, and compensatory mitigation for the Planning Area.

Inside the UDA and Morrison Creek watershed, approximately 7,030 acres of natural land covers would be permanently protected and managed (Table 8-9) through the designation of relatively large and contiguous Core, Minor, Satellite, and Linkage Preserves that would protect 605 acres of wetlands and other waters, as well as 74 acres of riparian land covers. In addition, one of the objectives of the Proposed Action/Proposed Project Alternative is to protect an additional 1,200 acres along the Laguna Creek Corridor located in the UDA. However, the majority of the total 34,495-acre SSHCP Preserve System (27,465 acres) will be located outside the UDA and would preserve agricultural lands and natural landscapes with natural intact sources of surface and sub-surface water influx and outflow.

The SSHCP Conservation Strategy outside the UDA within the Laguna Watershed would protect approximately 2,059 acres of surface waters by establishing a large Landscape Preserve on approximately 14,493 acres of contiguous preserves in the Laguna Creek watershed and portions of the Upper Cosumnes River Watershed to the north and the Lower Dry Creek to the south (Figure 7-3). This 14,493-acre SSHCP Landscape Preserve would will be located strategically to connect with and build upon the existing 12,500-acre Chance Ranch in the eastern part of the Laguna Watershed, resulting in a total contiguous Landscape preserve of between 33,500 and 34,000 acres in the southeastern portion of the Planning Area (Figure 7-3). In the southwestern portion of the Planning Area, approximately 610 acres of agricultural lands adjacent to the river and creek floodplains would be preserved in the Snodgrass Slough, Sherman Lake-Sacramento River, and Lower Consumes River Watersheds.

In addition to assembling a large network of interconnected preserves that preserve natural corridors and provide large blocks of contiguous habitat, the SSHCP Conservation Strategy includes AMMs that would be incorporated into the design of the SSHCP Covered Activities, or would be implemented during the construction and implementation of the SSHCP Covered Activities. These AMMs include requiring each development Covered Activity to incorporate LID design measures, implement BMPs during construction, comply with siting and design requirements, and provide setbacks between new urban development and existing streams and waterways (Stream and Preserve Setbacks) (see Table 2-6 and Appendix D). Additionally, the SSHCP ARP includes the same AMMs and mitigation requirements as the SSHCP Conservation Strategy. The proposed SSHCP Conservation Strategy and the ARP provide the following benefits to surface water resources and regional surface water functions:

- a. Provides a regional approach to balance conservation of aquatic resources and new urban development within the Planning Area;
- b. Avoids and minimizes impacts to aquatic resources to the greatest extent practicable;
- c. Implements compensatory mitigation of aquatic resources at a landscape level to protect watersheds; and
- d. Achieves an overall no net loss of aquatic resources functions and services.

The proposed SSHCP requires hydrologic resource AMMs (see Table 2-6 and Appendix D) be implemented during design, construction, and operation of urban development Covered Activities and projects within the Planning Area. For example, AMM LID-3 requires Covered Activities to incorporate avoidance of project-site natural aquatic features (such as creeks and streams) into the project design to retain natural hydrologic patterns and to retain habitat of aquatic Covered Species and other native species. Implementation of AMM LID-3 also preserves project site natural features to avoid or minimize adverse changes to existing surface hydrologic conditions.

AMM STREAM-1 would result in a minimum 300-foot-wide wildlife movement corridor along the northern Laguna Creek inside the UDA by requiring Covered Activities to be setback a minimum of 150 feet from the top of the bank on both sides of the creek. AMM STREAM-2 would require setbacks of 100 feet from the top of stream banks at Elder Creek, Frye Creek, Gerber Creek, Morrison Creek, Central Paseo, and Sun Creek in the UDA. AMM STREAM-3 would require a 25-foot setback of new urban development from the stream banks of all first- and second-order streams (minor tributaries) in the UDA. The primary objective of the Stream Setback AMMs is to reduce urban runoff and sediment and nutrient inputs from surface flows in new urban areas, to protect existing stream hydrology, and to protect water quality and habitat downstream. In addition, the Stream Setback AMMs would minimize physical modifications of stream channels, thereby reducing potential adverse changes to natural

hydrologic functions. As discussed in Section 7.2.2.2, there are no requirements for urban development projects to include these large setbacks under the No Action/No Project Alternative, except in areas that are zoned for open space. Existing regulations, including the Sacramento County Floodplain Management Ordinance, would continue to protect floodplains (see Section 7.1.1). However, as with the No Action/No Project Alternative, construction could still occur within an existing floodplain as long as the structure or facility does not cause or intensify flooding.

AMM BMP-1 through AMM BMP-11 of the Proposed Action/Proposed Project Alternative are similar to the standard BMP (e.g., erosion control measures) requirements that would be implemented during construction activities under the No Action/No Project Alternative. However, the Proposed Action/Proposed Project includes additional on-site monitoring and measurement of the effectiveness of each AMM implemented, and annual reporting of the effectiveness of each AMM. The Proposed Action/Proposed Project includes process for annual review of AMM effectiveness, and adaptive changes of any AMMs that are not fully effective at avoiding impacts to aquatic resources or species. This additional layer of oversight of AMMs implementation and effectiveness under the Proposed Action/Proposed Project Alternative increases avoidance and minimization of impacts to surface water hydrology and aquatic resources from construction activities.

The SSHCP Conservation Strategy implemented under the Proposed Action/Proposed Project Alternative, including the Biological Goals and Measurable Objectives, the SSHCP AMMs, and the ARP, provide additional measures not included in the No Action/No Project Alternative that are expected to reduce adverse effects to surface hydrology in the UDA and Planning Area when compared to the impacts to surface hydrology resources that would occur under No Action/No Project Alternative baseline condition.

Significance of Direct and Indirect Effects

In summary, when compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project Alternative would:

- Provide greater setbacks of new development from streams, creeks, and minor tributaries, which would maintain existing hydrologic functions of UDA streams and floodplains, and retain more of the stream's floodplain to provide better flood storage and flood flow.
- Provide greater protection of surface waters in each Planning Area HUC watershed by consolidating project avoidance and mitigation requirement into contiguous and interconnected preserves. Provide greater avoidance and protection of aquatic resources within the UDA, including in the MCRA portion of the UDA. Assemble a large

contiguous Landscape Preserve in the southeast portion of the Planning Area, totaling between 33,500 to 34,000 acres.

- Require implementation of additional AMMs to avoid or minimize surface hydrologic resources, and require consistent implementation of surface hydrology AMMs during all ground-disturbing Covered Activities.
- Result in better management of avoided aquatic resources and aquatic habitat to minimize indirect impacts of adjacent urbanization, and to maintain values and aquatic functions on preserved lands in perpetuity.
- Implement a regional Conservation Strategy that has protection of watersheds and related ecosystem functions as one of the guiding principles, while balancing regional housing and development needs.

Therefore, after considering the impacts from the Proposed Action/Proposed Project Alternative on all of the impact criteria for surface hydrology resources, the impacts of the Proposed Action/Proposed Project Alternative would result in **Minor Beneficial** effects to surface hydrologic resources when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

Cumulative Effects on Surface Water Hydrology and Flooding

The cumulative effect of past actions, present actions, and the reasonably foreseeable other actions on surface waters, stormwater runoff, and erosion in the study area were described in Section 7.2.2.2 and represent a significant adverse cumulative impact on the groundwater hydrologic conditions within the study area. As discussed in Section 7.2.2.2, because existing regulations related to flood control and stormwater management would continue over the 50-year EIS/EIR study period (see Section 7.1.1), the incremental effects of the No Action/No Project Alternative were determined to be individually limited and would result in a less than significant impacts to the existing surface hydrology, stormwater runoff, stormwater system capacity, flooding, flood hazards, flood flows, drainage, and stream channels, when viewed in connection with the effects of the past, present, and foreseeable other projects in the study area.

As discussed here in Section 7.2.3.2, the implementation of the SSHCP Conservation Strategy, including the interconnected SSHCP Preserve System, the Covered Activity AMMs, and the ARP, would result in larger areas of watershed preservation, consistent and more frequent implementation of AMMs, and would require larger setbacks and more conservation of natural waterways compared to the No Action/No Project Alternative. Consequently, the incremental effects of the Proposed Action/Proposed Project Alternative would have a **Minor Beneficial** effect on surface hydrology, stormwater runoff, and flooding conditions when compared to the incremental effects of the No Action/No Project Alternative baseline condition. Therefore, the

incremental effects of Proposed Action/Proposed Project are individually limited and would not make a cumulatively considerable contribution to the significant adverse impact of the past, present, and reasonably foreseeable future projects. The Proposed Action/Proposed Project Alternative would result in a ***Minor Beneficial*** cumulative effect to surface water hydrology and flooding compared to the No Action/No Project Alternative baseline condition.

7.2.3.3 Surface Water Quality and Groundwater Quality Effects of the Proposed Action/Proposed Project Alternative

Direct and Indirect Effects of the Alternative

Under the Proposed Action/Proposed Project Alternative, the approval, issuance of Incidental Take Permits, and implementation of the SSHCP would occur as described in Section 2.3. As described in Section 2.3, the Proposed Action/Proposed Project Covered Activities includes the same types of urban development as those anticipated under the No Action/No Project Alternative. As discussed in Chapter 8, approximately 32,059 acres of existing natural land covers would be converted to a developed land cover type by the urban development Covered Activities inside the UDA. Associated infrastructure and transportation improvement projects outside the UDA would directly impact approximately 1,438 acres of natural land cover types.

However, the Proposed Action/Project Alternative includes a Conservation Strategy that has protection of watersheds and their surface hydrologic functions as a guiding principle (SSHCP Biological Goal 2). As discussed in Section 2.3.5, the SSHCP Conservation Strategy includes an interconnected and coordinated SSHCP Preserve System that would preserve 7,030 acres of natural land covers inside the UDA and 27,465 acres outside the UDA. These preserve acres include thousands of acres of surface waters and areas of groundwater recharge.

The SSHCP Conservation strategy and the ARP would better minimize adverse water quality effects of urban development, compared to the No Action/No Project Alternative. The SSHCP requires each Covered Activity to implement SSHCP AMMs (see Table 2-6 and Appendix D). The AMMs for aquatic resources, particularly the establishment of setbacks at streams, creeks, and minor tributaries, combined with the active management of the large and interconnected SSHCP Preserve System, would limit indirect impacts to surface waters from new urban development such as spread of invasive plants, trespassing by people and domestic animals, and unauthorized trails. The AMM measures BMP-1 through BMP-4 and BMP-9 and BMP-10 require Covered Activities to implement construction BMPs to protect water quality through appropriate sediment and pollution control devices and practices.

The AMMs LID-1, LID-2, and LID-3 require the project design of urban development Covered Activities to incorporate avoidance of aquatic features such as creeks and streams, and to

design urban stormwater runoff management to avoid discharges of contaminants from completed development. As discussed in Section 7.2.3.2 for the Proposed Action/Proposed Project, the AMMs STREAM-1 through STREAM-5 requires setbacks between streams and new urban development. Stream setback widths required by these AMMs range from 25 to 150 feet from top of bank. As discussed in Section 7.2.2.2, the No Action/No Project Alternative has no requirements for all new urban development projects to include these large setbacks, except in areas that are zoned for open space. In addition, AMM EDGE-1 encourages new urban development Covered Activities to locate compatible land uses adjacent to new and existing SSHCP preserves, including parks, ball fields, detention basins, open space, and other land uses that have minimal ground disturbance. The soil surfaces in a compatible land use area may be re-contoured, but the soil restrictive layer will remain undamaged and most of the soil profile above the restrictive layer will remain intact. Therefore, AMM EDGE-1 places a larger buffer between deep construction grading and surface hydrology, maintains more of the seasonal perched aquifer, and maintains more of the microwatersheds of aquatic resources and species habitat present within a preserves. AMM EDGE-3 also requires setbacks between new UDA urban development and new or existing preserves, and these Preserve Setbacks are expected to contain aquatic resources. These stream and Preserve Setbacks requirements would reduce indirect impacts of operational urban developments on surface water quality and groundwater quality. In addition, the natural vegetation remaining within the setbacks acts to hold or settle out pollutants or silt rather than discharging to the stream or waterway. Setbacks help to maintain the natural floodplains of the stream or waterway, reducing erosion and sedimentation of streams. AMM EDGE-2 requires single-loaded streets adjacent to preserves, which provides a wider set back from human activities, allows more visibility of the preserve, and will reduce potential water quality impacts that would result from illegal dumping or trespassing with off-road vehicles. Therefore, both the stream and the Preserve Setback AMMs required under the Proposed Action/Proposed Project Alternative would reduce potential direct and indirect water quality effects of new urban development, better improve or maintain existing water quality through processes such as filtration and/or trapping of contaminants such as sediment or toxicants and prevention of erosion, and facilitate greater groundwater recharge along creeks and streams, when compared to compared to the effects expected under the No Action/No Project Alternative.

AMM BMP-1 through AMM BMP-11 of the Proposed Action/Proposed Project Alternative are similar to the construction best management practices that would be implemented under the No Action/No Project Alternative (see Table 2-6). However, the Proposed Action/Proposed Project Alternative includes additional on-site monitoring and measurement of the effectiveness of each AMM implemented, as well as annual reporting of the effectiveness of each AMM. The Proposed Action/Proposed Project Alternative also includes a process to make adaptive changes to any AMM that was not fully effective at avoiding impacts to water quality and aquatic habitats. This

additional oversight and guidance provided by the SSHCP would result in water quality AMMs being implemented more frequently and consistently at all ground-disturbing activities than would occur under the No Action/No Project Alternative. The SSHCP AMMs also provide new avoidance and minimization measures that would not occur under the No Action/No Project Alternative (Table 2-6), and these new measures are expected to lessen the potential adverse effects on surface water quality and groundwater quality, compared to the effects of the No Action/No Project Alternative.

As discussed above in the analysis of surface waters, the Proposed Action/Proposed Project Alternative would also establish a watershed-based, interconnected, and coordinated Preserve System in the Planning Area, which would include a comprehensive preserve management program implemented in perpetuity. The more contiguous and more interconnected design of the regional SSHCP Preserve System, as well as the coordinated management of preserves in the SSHCP Preserve System, would provide greater benefits to water quality compared to the uncoordinated, smaller, and more scattered and isolated individual preserves of the No Action/No Project Alternative. The regional, watershed-based conservation provided by the SSHCP Preserve System, the SSHCP Conservation Plan, and the ARP would better protect upper watersheds, water quality of surface waters, and water quality of groundwater. The Proposed Action/Proposed Project Alternative would reduce adverse effects on surface water quality and groundwater quality relative to the effects of No Action/No Project Alternative.

Significance of Direct and Indirect Effects

In summary, when compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project Alternative would:

- Have smaller direct and indirect impacts to surface water quality and to groundwater quality.
- Provide a Conservation Strategy that has protection of watersheds and related ecosystem functions (including water quality) as one of the guiding principles.
- Provide larger contiguous preserves that would provide better protection to existing surface water quality.
- Provide greater setbacks between new development and streams, creeks, and minor tributaries, and provide setbacks between new development and preserves to reduce all direct and indirect water quality effects of new urban development on surface water quality. It would also improve or maintain existing water quality through processes such as filtration and/or trapping of contaminants such as sediment or toxicants and prevention of erosion, and it would facilitate greater groundwater recharge along creeks and streams.

Therefore, after considering the significance of impacts from the Proposed Action/Proposed Alternative on all of the surface water quality and groundwater quality related impact criteria, the Proposed Action/Proposed Project Alternative would result in **Minor Beneficial** effects on surface water quality and groundwater quality when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

Cumulative Effects on Surface Water Quality and Groundwater Quality

The effects of past, present, and reasonably foreseeable other projects on surface water quality and groundwater quality in the Planning Area were described in Section 7.2.2.3 and represent a significant adverse cumulative impact on the surface water quality and groundwater quality within the study area. As discussed in Section 7.2.2.3, the incremental effects of the No Action/No Project Alternative were determined not to be cumulatively considerable when viewed in connection with the effects of the past, present, and foreseeable other projects in the study area.

As discussed herein, implementation of the Proposed Action/Proposed Project Alternative's Conservation Strategy, including the SSHCP AMMs, the interconnected SSHCP Preserve System, and the ARP are expected to result in greater protection of surface water quality and groundwater quality compared to the No Action/No Project Alternative. Consequently, the Proposed Action/Proposed Project Alternative would result in a **Minor Beneficial** cumulative effect to surface water quality and groundwater quality compared to the No Action/No Project Alternative baseline condition.

7.2.4 Reduced Permit Term Alternative

As described in Section 2.3.3, the Reduced Permit Term Alternative includes the same types of new urban development and infrastructure as those anticipated under the No Action/No Project Alternative.

Under both the Reduced Permit Term Alternative and Proposed Action/Proposed Project Alternative, most of the Preserve System established inside the UDA would be associated with the development of the five large Master Plans discussed in Sections 2.3.3 and 2.3.4. Therefore, the Preserve System established inside the UDA under the Reduce Permit Term Alternative is expected to be very similar to the Preserve System established inside the UDA under Proposed Action/Proposed Project Alternative.

However, the shorter duration of Reduced Permit Term Alternative and the lower amount of urban development and associated development fees collected by the Reduced Permit Term Alternative would not allow the HCP's Implementing Entity to establish as many acres of new preserves in the Planning Area as would occur under the Proposed Action/Proposed Project

Alternative's 50-year permit term. In addition, relatively few new preserves are expected to be established outside the UDA under the Reduced Permit Term Alternative.

As described in Section 3.6.7.2, Analysis of the Reduced Permit Term Alternative, After the End of the Permit Term (Years 31–50), the ESA and CESA Incidental Take Permits and the CWA permit strategy for future Covered Activities would be valid only during the 30-year permit term, and the Reduced Permit Term Alternative HCP would be implemented only during this 30-year term. The urban development Covered Activities and conservation actions associated with the five Master Plans would be implemented inside the UDA during this 30-year period. However, the EIS/EIR uses a 50-year analysis study period to evaluate all alternatives (see Section 3.6.3), and the EIS/EIR study period extends beyond the end of the 30-year permit term for the Reduced Permit Term Alternative. Therefore, the analysis of the Reduced Permit Term Alternative also considers urban development that is not part of the project description of the Reduced Permit Term Alternative, but is expected to occur within the Planning Area after the end of the permit term (i.e., in years 31–50 of the EIS/EIR study period).

Project mitigation preserves established after the end of the Reduced Permit Term Alternative 30-year permit term would be established following an individual project-by-project process for obtaining authorizations under the CWA, ESA, CESA, and Section 1600 of the California Fish and Game Code. Preserves established in years 31–50 of the EIS/EIR study period would not be established using a regional, watershed-based approach that balances new urban development with the need for conservation of groundwater hydrology, surface water hydrology, water quality of surface waters, and groundwater quality, as would be provided by the SSHCP Preserve System, the SSHCP Conservation Plan, and the ARP under the Proposed Action/Proposed Project Alternative. Therefore, it is unlikely that a landscape-level preserve would be established in the Planning Area under the Reduced Permit Term Alternative.

7.2.4.1 Groundwater Hydrology Effects of the Reduced Permit Term Alternative

Direct and Indirect Effects of the Alternative

As described in Section 2.4.4, Covered Species Under the Reduced Permit Term Alternative, the Reduced Permit Term Alternative would include similar types of new urban development and infrastructure as those anticipated under the No Action Alternative. Similar to the Proposed Action/Proposed Project Alternative, the displacement of planned urban development to areas outside of the County's existing USB expected under the No Action/No Project Alternative would not occur under the Reduced Permit Term Alternative. Therefore, the potential changes in location of groundwater use between the Central Basin and South Basin identified for the No Action/No Project Alternative would not occur under the Reduced Permit Term Alternative.

However, no significant changes in groundwater use or recharge associated with the displaced development were identified for the No Action/No Project Alternative.

As described in Section 2.4.5, Conservation Strategy Under the Reduced Permit Term Alternative, the Reduced Permit Term Alternative includes an interconnected Preserve System established during the 30-year permit term and a comprehensive preserve management program for those preserves. The establishment and management of this Preserve System during the 30-year permit term would include the same Conservation Strategy as the SSHCP, which includes the protection of watersheds and related ecosystem functions (including groundwater recharge) as one of the guiding principles. However, without a comprehensive regional HCP during years 31–50 of the 50-year EIS/EIR study period, preserves established after the end of the term would not implement AMMs for groundwater recharge, and would not include a comprehensive HCP management and Conservation Strategy.

Covered Activities implemented during the 30-year permit term would include AMMs. For example, AMM LID-2 requires the Implementing Entity to prioritize locations that are suitable for groundwater recharge incorporation when siting preserves for Riparian, Open Water, or Freshwater Marsh land cover types. However, without a comprehensive regional HCP for years 31–50 of the EIS/EIR study period, the preserves outside the UDA would not be subject to AMMs for groundwater recharge or for a comprehensive HCP management and Conservation Strategy.

During the 30-year permit term, the Reduced Permit Term Alternative provides for greater wetland preservation and would provide better management of preserves, relative to the No Action/No Project Alternative. This would provide a 30-year improvement in surface water conditions that would also benefit groundwater recharge and hydrology. Therefore, overall, the Reduced Permit Term Alternative results in a **Minor Beneficial** effect on groundwater recharge and hydrology inside the UDA when comparing the Reduce Permit Term Alternative to the No Action/No Project Alternative baseline condition.

Significance of Direct and Indirect Effects

In summary, when compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would:

- Result in consistent groundwater use.
- Result in consistent adverse effects to groundwater recharge due to impervious surfaces from development.
- Result in greater protection of groundwater recharge areas from preserve establishment inside the UDA.

- Result in a Conservation Strategy that has protection of watersheds and related ecosystem functions (including groundwater recharge) as one of the guiding principles inside the UDA.

Therefore, after considering the significance of impacts from the Reduced Permit Term Alternative on all of groundwater hydrology related impact criteria, the Reduced Permit Term Alternative would result in **Minor Beneficial** effects to groundwater hydrology when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

Reduced Permit Term Cumulative Effects of the Alternative on Groundwater Hydrology

The cumulative effect of past, present, and reasonably foreseeable future actions on groundwater hydrology for the No Action/No Project Alternative are described in Section 7.2.2. Effects of land use changes in the Planning Area that would occur from past, present, and reasonably foreseeable future projects would result in a significant adverse cumulative impact on groundwater hydrologic conditions.

The implementation of an HCP Conservation Strategy, including AMMs, an ARP, and the interconnected Preserve System during the 30-year permit term under the Reduced Permit Term Alternative would result in better conservation of groundwater recharge inside the UDA compared to the No Action/No Project Alternative. Consequently, the Reduced Permit Term Alternative has a **Minor Beneficial** effect on groundwater hydrology compared to the No Action/No Project Alternative baseline condition; therefore, it does not result in a considerable contribution to the adverse cumulative impacts to groundwater hydrology. The Proposed Action/Proposed Project Alternative results in a **Minor Beneficial** cumulative effect on groundwater hydrology compared to the No Action/No Project Alternative baseline condition.

7.2.4.2 Surface Hydrology, Stormwater Runoff, and Flooding Effects of the Reduced Permit Term Alternative

Direct and Indirect Effects of the Alternative

As described in Section 2.4.3, Covered Activities/Projects Under the Reduced Permit Term Alternative, the Reduced Permit Term Alternative Covered Activities include the same types of urban development as under the No Action/No Project Alternative. The Reduced Permit Term Alternative would directly impact approximately 1,741 acres of aquatic resources within the UDA and 115 acres of aquatic resources outside the UDA (Table 8-12), which is 122 acres less than direct impacts to aquatic resources under the No Action/No Project Alternative (Table 8-4).

As described in Section 2.4.5, the Reduced Permit Term Alternative includes a 30-year Conservation Strategy that would establish an interconnected and coordinated SSHCP Preserve System inside the UDA portion of the Planning Area, as well as a comprehensive preserve management program for those preserves. The establishment and management of this Preserve System during the 30-year permit term would include the same Conservation Strategy as the SSHCP, which includes the protection of watersheds and related ecosystem functions (including groundwater recharge) as one of the guiding principles. The Reduced Permit Term Alternative would include the same aquatic resource avoidance, minimization, and compensation measures that the Proposed Action/Proposed Project Alternative provides. These elements of the Reduced Permit Term Alternative would provide the following benefits to aquatic resources and regional aquatic function:

- a. Provide a regional, balanced conservation and development approach for aquatic resources located within the Planning Area;
- b. Minimize impacts to aquatic resources to the greatest extent practicable;
- c. Implement compensatory mitigation at a landscape level to protect watersheds; and
- d. Achieve an overall no net loss of aquatic resources functions and services.

Inside the UDA and Morrison Creek watershed, approximately 501 acres of natural land covers would be permanently protected and managed (Table 8-13) through the designation of relatively large and contiguous Core, Minor, Satellite, and Linkage Preserves that would protect 414 acres of wetlands and other waters, and 87 acres of riparian land covers. In addition, one of the objectives of the Proposed Action/Proposed Project Alternative is to permanently protect the Laguna Creek Corridor located in the UDA. However, the majority of the total 30,771-acre SSHCP Preserve System (25,936 acres) will be located outside the UDA, and would preserve agricultural lands and natural landscapes with natural intact sources of surface and sub-surface water influx and outflow.

During the 30-year permit term of the Reduced Permit Term Alternative, the implementation of several surface hydrology AMMs (see Table 2-6 of this EIS/EIR) during urban development Covered Activities within the UDA would better protect and benefit surface hydrology conditions relative to the impacts of the No Action/No Project Alternative. AMM LID-3 would require new urban development to incorporate preservation of a site's natural aquatic features (such as creeks and streams) into project design to retain natural hydrologic patterns and to retain habitat that might be used by Covered Species. Implementation of LID-3 would result in preservation of project site natural features, which would avoid or minimize adverse changes to existing surface hydrologic conditions inside the UDA.

AMM STREAM-1 results in a minimum 300-foot-wide wildlife movement corridor for Laguna Creek by requiring Covered Activities to be setback 150 feet from the top of the bank on both sides. AMM STREAM-2 requires setbacks of 100 feet from the stream banks of Elder Creek, Frye Creek, Gerber Creek, Morrison Creek, Central Paseo, and Sun Creek. STREAM-3 requires 25-foot setback from the stream banks of minor tributaries in the UDA. There are not requirements for large setback under the No Action/No Project Alternative except in areas that are zoned for open space or designated on a project-by-project basis. Existing regulations protect the floodplain; however, construction can still occur within an existing floodplain as long as it does not cause or intensify flooding. This can be accomplished by filling in the floodplain and compensating for the loss of flood storage by building a detention basin. AMMs STREAM-1, STREAM-2, and STREAM-3 would protect stream hydrology. Floodplains are related to the overall health of a stream. Floodplains absorb and store floodwaters, and they reduce velocity and allow for the slow release to the stream. Floodplain trees and plants filter sediments and pollutants, and they help to anchor the riverbanks preventing erosion and providing shade to reduce water temperatures. Stream setback requirements minimize physical modifications of stream channels, thereby reducing potential adverse changes to natural hydrologic functions inside the UDA. As discussed in Section 7.2.2.2, there are no requirements for urban development projects to include these large setbacks under the No Action/No Project Alternative, except in areas zoned for open space.

Active management of the Preserve System established during the 30-year permit term of the Reduced Permit Term Alternative, combined with 30 years of AMMs, particularly greater setbacks along streams, creeks, and minor tributaries will limit indirect impacts from urbanization such as spread of invasive plants, establishment of informal trails, and use by people and domestic animals. EDGE-1 requires compatible land uses included in the Covered Activities (e.g., designated open space such as parks and ball fields, detention basins, and other land uses with less-intensive human activity) to be located in areas immediately adjacent to existing or planned preserve boundaries. The compatible land use will provide additional buffering of preserves from potential indirect effects of adjacent urban development. The soil surfaces in a compatible land use area may be re-contoured, provided that the soil restrictive layer remains undamaged and most of the soil profile above the restrictive layer remains intact.

AMM BMP-1 through AMM BMP-11 of the Reduced Permit Term Alternative are similar to the standard best management practices (e.g., erosion control measures) requirements that would be implemented during construction activities under the No Action/No Project Alternative. However, the Reduced Permit Term Alternative includes 30 years of additional on-site monitoring and measurement of the effectiveness of each AMM implemented, and annual reporting of the effectiveness of each AMM. The Reduced Permit Term Alternative includes process for annual review of AMM effectiveness for a 30-year period, as well as a process to make adaptive changes

of any AMM that is not fully effective at avoiding impacts to aquatic resources or species. This additional layer of oversight of AMMs implementation and effectiveness under the Reduced Permit Term Alternative increases avoidance and minimization of impacts to surface water hydrology and aquatic resources from construction activities.

Benefits resulting from permanent preserve establishment and management of preserves in perpetuity under the 30-year permit term of the Reduced Permit Term Alternative would not apply to any new preserves established during years 31–50 of the 50-year EIS/EIR study period, when the process for projects to establish mitigation preserves would be more similar to the No Action/No Project Alternative.

The Reduced Permit Term Alternative, through the implementation of an HCP Conservation Strategy during the 30-year permit term, including the Biological Goals and Objectives, implementation of the AMMs, and the ARP would provide additional surface water hydrology avoidance measures not included in the No Action/No Project Alternative, which are expected to lessen the potential adverse effects to surface hydrologic conditions relative to the No Action/No Project Alternative.

Significance of Direct and Indirect Effects

In summary, when compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would:

- Provide greater setbacks of new development from streams, creeks, and minor tributaries, which would maintain existing hydrologic functions of UDA streams and floodplains, and retain more of the stream's floodplain to provide better flood storage and flood flow.
- Result in greater and more consistent avoidance of adverse effects on surface hydrology conditions because of overlapping and new AMMs. It would also require implementation of additional AMMs to avoid or minimize surface hydrologic resources, as well as consistent implementation of surface hydrology AMMs during all ground-disturbing Covered Activities. Moreover, it would provide greater management of indirect impacts of urbanization, such as intrusion from domestic animals and informal trails.
- Result in a Conservation Strategy that has protection of watersheds and related ecosystem functions as one of the guiding principles.

Therefore, after considering the of the Reduced Permit Term Alternative on each surface hydrology impact-criteria, the Reduced Permit Term Alternative would result in ***Minor Beneficial*** effects to surface hydrologic resources, when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

Reduced Permit Term Cumulative Effects on Surface Water Hydrology and Flooding

The cumulative effect of past actions, present actions, and the reasonably foreseeable other actions on surface waters, stormwater runoff, and erosion in the study area were described in Section 7.2.2.2, and represent a significant adverse cumulative impact on the groundwater hydrologic conditions within the study area. As discussed in Section 7.2.2.2, because existing regulations related to flood control and stormwater management would continue over the 50-year EIS/EIR study period (see Section 7.1.1), the incremental effects of the No Action/No Project Alternative were determined to be individually limited, and would result in a less than significant impacts to the existing surface hydrology, stormwater runoff, stormwater system capacity, flooding, flood hazards, flood flows, drainage, and stream channels, when viewed in connection with the effects of the past, present, and foreseeable other projects in the study area.

As discussed here in Section 7.2.4.2, implementation of an HCP Conservation Strategy, including Covered Activity AMMs, and interconnected Preserve System, and an ARP during the 30-year permit term of the Reduced Permit Term Alternative would result in larger areas of watershed preservation, consistent and more frequent implementation of AMMs, and require larger setbacks and more conservation of natural waterways in the UDA when compared to the No Action/No Project Alternative. Consequently, the incremental effects of the Reduced Permit Term Alternative would have a **Minor Beneficial** effect to surface hydrology, stormwater runoff, and flooding conditions when compared to the incremental effects of the No Action/No Project Alternative baseline condition. Therefore, the incremental effects of Reduced Permit Term Alternative are individually limited and would not make a cumulatively considerable contribution to the significant adverse impact of the past, present, and reasonably foreseeable future projects. The Proposed Action/Proposed Project would result in a **Minor Beneficial** cumulative effect to surface water hydrology and flooding inside the UDA compared to the No Action/No Project Alternative baseline condition.

7.2.4.3 Surface Water Quality and Groundwater Quality Effect of the Reduced Permit Term Alternative

As described in Section 2.4.3, the Reduced Permit Term Alternative Covered Activities include the same types of urban development anticipated under the No Action/No Project Alternative.

The Reduced Permit Term Alternative, during the 30-year permit term, includes a Conservation Strategy that has protection of watersheds and their surface hydrologic functions as a guiding principle (Biological Goal 2). As discussed in Section 2.4.3, the Reduced Permit Term Alternative includes an interconnected and coordinated Preserve System and a 30-year implementation of an ARP that would better minimize adverse water quality effects of urban development compared to the No Action/No Project Alternative. The 30-year permit term would also require

each Covered Activity to implement AMMs (see Table 2-6 and Appendix D). The AMMs for aquatic resources, particularly the establishment of setbacks at streams, creeks, and minor tributaries, combined with the active management of the large and interconnected SSHCP Preserve System, would limit indirect impacts to surface waters from new urban development such as spread of invasive plants, trespassing by people and domestic animals, and unauthorized trails. AMMs BMP-1 through BMP-4 and BMPs 9 and 10 would require Covered Activities to implement construction BMPs to protect water quality through appropriate sediment and pollution control devices and practices.

AMMs LID-1, LID-2, and LID-3 require the project design of urban development Covered Activities to incorporate avoidance of aquatic features such as creeks and streams, and to design urban stormwater runoff management to avoid discharges of contaminants from completed development projects.

AMMs STREAM-1 through STREAM-5 require setbacks between streams and new urban development. Stream setback widths required by these AMMs range from 25 to 150 feet from top of bank. As discussed above in Section 7.2.2.2, the No Action/No Project Alternative has no requirements for all new urban development projects to include these large setbacks, except in areas that are zoned for open space. In addition, AMM EDGE-1 encourages new urban development Covered Activities to locate compatible land uses adjacent to new and existing preserves, including parks, ball fields, detention basins, open space, and other land uses that have minimal ground disturbance. The soil surfaces in a compatible land use area may be re-contoured, but the soil restrictive layer will remain undamaged and most of the soil profile above the restrictive layer will remain intact. Therefore, AMM EDGE-1 places a larger buffer between deep construction grading and the surface hydrology, maintains more of the seasonal perched aquifer, and maintains more of the microwatersheds of aquatic resources and species habitat present within a preserves. AMM EDGE-3 provides setbacks from preserves, which will likely contain aquatic resources. These stream and Preserve Setbacks would reduce indirect impacts of operational urban developments on surface water quality and groundwater quality. In addition, the natural vegetation remaining within the setbacks act to hold or settle out pollutants or silt rather than discharging to the stream or waterway. Setbacks help to maintain the natural floodplains of the stream or waterway, which reduces erosion and sedimentation of streams. AMM EDGE-2 requires single-loaded streets adjacent to preserves, which provides a wider setback from human activities, allows more visibility of the preserve, and will reduce potential water quality impacts that would result from illegal dumping or trespassing with off-road vehicles. Therefore, both the stream and the Preserve Setback AMMs required under the Reduced Permit Term Alternative would reduce potential direct and indirect water quality effects of new urban development, better improve or maintain existing water quality through processes such as filtration and/or trapping of contaminants

such as sediment or toxicants and prevention of erosion, and would facilitate greater groundwater recharge along creeks and streams, when compared to the effects expected under the No Action/No Project Alternative.

AMM BMP-1 through AMM BMP-11 of the Reduced Permit Term Alternative would be similar to the construction BMPs that would be implemented under the No Action/No Project Alternative (see Table 2-6). However, the Reduced Permit Term Alternative includes additional on-site monitoring and measurement of the effectiveness of each AMM implemented, as well as annual reporting of the effectiveness of each AMM. The Reduced Permit Term Alternative also includes a process for annual review of the effectiveness of each SSHCP AMM, and a process to make adaptive changes to any AMM that was not fully effective at avoiding impacts to water quality and aquatic habitats. This additional oversight and guidance provided by the SSHCP would result in water quality AMMs being implemented more frequently and consistently at all ground-disturbing activities than would occur under the No Action/No Project Alternative. The SSHCP AMMs also provide new avoidance and minimization measures that would not occur under the No Action/No Project Alternative (Table 2-6), and these new measures are expected to lessen the potential adverse effects to surface water quality and groundwater quality, compared to the effects of the No Action/No Project Alternative.

The Reduced Permit Term Alternative, during the 30-year permit term, would also establish a watershed based interconnected Preserve System in the UDA, as well as a comprehensive preserve management program that is implemented in perpetuity. The more contiguous and more interconnected design of the Preserve System would be beneficial to water quality compared to the preservation that would provide greater benefits to water quality compared to the uncoordinated, smaller, and more scattered and isolated individual preserves of the No Action/No Project Alternative. The Reduced Permit Term would reduce adverse effects to surface water quality and groundwater quality relative to the effects of No Action/No Project Alternative.

Significance of Direct and Indirect Effects on Water Quality

In summary, when compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would:

- Result in smaller direct and indirect impacts to surface water quality and groundwater quality.
- Provide larger contiguous preserves that would provide better protection to existing surface water quality inside the UDA.
- Provide greater setbacks between new development and streams, creeks, and minor tributaries. It would also provide setbacks between new development and preserves

to reduce all direct and indirect water quality effects of new urban development on surface water quality to better improve or maintain existing water quality through processes such as filtration and/or trapping of contaminants such as sediment or toxicants and prevention of erosion.

- Facilitate greater groundwater recharge along creeks and streams.

Therefore, after considering the impacts from the Reduced Permit Term Alternative on all of surface water quality and groundwater quality impact criteria, the Reduced Permit Term Alternative would result in **Minor Beneficial** effects to surface water and groundwater quality when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

Cumulative Effects on Surface Water Quality and Groundwater Quality

The effect of past, present, and reasonably foreseeable future actions on surface water quality and groundwater quality in the Planning Area were described in Section 7.2.2.3 and represent a significant adverse cumulative impact on the surface water quality and groundwater quality within the study area. As discussed in Section 7.2.2.3, the incremental effects of the No Action/No Project Alternative were determined to be significant and cumulatively considerable, when viewed in connection with the effects of the past, present, and foreseeable other projects in the study area.

Implementation of the Conservation Strategy during the 30-year permit term under the Reduced Permit Term Alternative, including AMMs, the ARP, and the interconnected Preserve System, are expected to result in greater protection of surface water quality and groundwater quality compared to the No Action/No Project Alternative. Consequently, the Proposed Action/Proposed Project Alternative would result in a **Minor Beneficial** cumulative effect to surface water quality and groundwater quality compared to the No Action/No Project Alternative baseline condition.

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CHAPTER 8 – NATURAL LAND COVER HABITATS AND ASSOCIATED PLANT AND ANIMAL COMMUNITIES

This chapter presents the environmental effects of each Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) Alternative on the Planning Area natural land covers, including effects on the community of native plant and native animal species that naturally co-occur within each land cover and use the land cover as habitat. As discussed in Section 8.1.2, Chapter 8 will use the same land cover classification system that is used in the South Sacramento Habitat Conservation Plan (SSHCP) document. Certain natural land covers analyzed in Chapter 8 are also classified by the State of California as “special-status natural communities.”

Some of the species in the plant and animal communities that live together in each land cover are protected or are otherwise considered to have special-status by a federal, state, or local environmental law, regulation, or policy. These “special status species” are briefly mentioned in Chapter 8, but each is more fully analyzed in Chapter 9, Special-Status Species, Including HCP Covered Species, of this EIS/EIR.

Some of the natural land covers analyzed in Chapter 8 are also aquatic resources that are regulated by the federal Clean Water Act (CWA) and by the state’s Porter-Cologne Water Quality Control Act. These aquatic land covers are analyzed in Chapter 8 as natural communities and species habitat. However, they are also analyzed separately in Chapter 10, Wetlands and Waters, in the context of the CWA and other statutes, regulations, and local policies that also regulate these land covers as aquatic resources.

8.1 AFFECTED ENVIRONMENT/ENVIRONMENTAL SETTING

8.1.1 Regulatory Framework

There are several federal, state, and local agency requirements that apply to the evaluation of natural communities and native species habitats. This section summarizes the statutes, regulations, policies, and agency planning documents that are relevant to the approval, issuance of permits, or implementation of the alternatives analyzed in this EIS/EIR. To the extent possible, the analyses or studies required by these regulations and policies are integrated into the environmental effects analyses presented in Section 8.2.

Federal Statutes and Regulations

Federal Endangered Species Act

As discussed in Section 9.1.1, the federal Endangered Species Act (ESA) and subsequent amendments provide for the conservation of federally endangered and threatened species, and species that are candidates for listing, and the habitat on which the species depend. The U.S.

Fish and Wildlife Service (USFWS) Sacramento Fish and Wildlife Office has jurisdiction over the federally listed plants, wildlife, and freshwater fish within the Planning Area.

Clean Water Act

CWA Section 404 regulates the discharge of dredged and fill materials into “waters of the United States,” which are defined at 33 Code of Federal Regulations (CFR) 328.3 and at 40 CFR 230.3. CWA 404 permits must be issued by the U.S. Army Corps of Engineers (USACE) to projects and activities that discharge dredge or fill material into wetlands and other waters of the U.S. The USACE delineates and verifies waters of the United States, including wetlands at each project or activity site, through jurisdictional determinations (33 CFR 328.3, 40 CFR 230.3).

Projects or activities that result in discharge of dredge or fill into waters of the United States must obtain a permit from the USACE under Section 404. General permits include nationwide permits, regional general permits, or programmatic general permits. Individual permits include letters of permission or standard permits. General permits are issued by the USACE for categories of projects that are substantially similar in nature and have minimal environmental impacts, both individually and cumulatively. Individual permits are issued for projects that do not qualify for a general permit (i.e., that is expected to have more than a minimal adverse environmental impact).

Projects and activities must avoid and minimize direct impacts to waters of the United States, to the extent practicable. Aquatic resources are often avoided within on-site preserves. For unavoidable impacts, compensatory mitigation is required to replace the loss of waters of the United States functions. Compensatory mitigation includes re-establishment and establishment. **Re-establishment** is a form of environmental restoration in which there is manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning the natural/historical functions to a former aquatic resource. **Establishment** is the manipulation of the physical, chemical, or biological characteristics of a site with the goal of developing a new aquatic resource where it did not previously exist. Pursuant to 40 CFR 230, the word “establish” is synonymous with “create” in this EIS/EIR.

In 2008, the USACE and the U.S. Environmental Protection Agency (EPA) jointly issued regulations for compensatory mitigation titled *Compensatory Mitigation for Losses of Aquatic Resources: Final Rule, 33 CFR Parts 325 and 332* (USACE and USEPA 2008)(2008 Compensatory Mitigation Rule). The term “compensatory mitigation” includes the restoration, re-establishment, establishment, enhancement, and/or preservation of wetlands, streams, or other aquatic resources specifically for the purpose of offsetting losses to these aquatic resources caused by authorized discharges of dredged or fill material into waters of the United States. The 2008 Compensatory Mitigation Rule seeks to improve the planning, implementation, and management

of wetland and stream compensatory mitigation projects by emphasizing a watershed approach in selecting compensatory mitigation project locations, requiring measurable and enforceable ecological performance standards with regular monitoring, and specifying the components of a complete compensatory mitigation plan.

If compensatory mitigation is required to offset unavoidable impacts to aquatic resources, the amount of compensatory mitigation must be sufficient to replace lost aquatic resource functions and services, to the extent practicable. In cases where functional or condition assessments or other suitable metrics are not used, a minimum 1-to-1 acreage or 1-to-1 linear foot compensation ratio must be used.

There are three forms of CWA 404 compensatory mitigation used within the Planning Area:

1. **Mitigation Bank:** A site, or suite of sites, where resources (e.g., wetlands, streams, riparian areas) are restored, established, enhanced, and/or preserved for the purpose of providing compensatory mitigation for impacts authorized by Department of the Army permits. In general, a mitigation bank sells compensatory mitigation credits to CWA 404 permittees whose obligation to provide compensatory mitigation is then transferred to the mitigation bank sponsor. The operation and use of a mitigation bank are governed by a mitigation banking instrument.
2. **In-Lieu Fee Program:** A program that conducts the restoration, establishment, enhancement, and/or preservation of aquatic resources through funds paid to a governmental agencies or nonprofit natural resources management entity by CWA 404 permittees to satisfy compensatory mitigation requirements for their USACE permits. Similar to a mitigation bank, an in-lieu fee program sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the in-lieu program sponsor. The operation and use of an in-lieu fee program are governed by an in-lieu fee program instrument.
3. **CWA Permittee-Responsible Mitigation:** An aquatic resource restoration, establishment, enhancement, and/or aquatic resource preservation activity undertaken by the CWA 404 permittee to provide compensatory mitigation: 1) permittee-responsible compensatory mitigation established under a watershed approach; 2) permittee-responsible compensatory mitigation through on-site and in-kind mitigation; and 3) permittee-responsible compensatory mitigation through off-site and/or out-of-kind mitigation.

CWA Section 401. To comply with Section 401 of the CWA, any project that receives permit under CWA Section 404 also needs to obtain a certification that the discharge will comply with the state's applicable effluent limitations and water quality standards. In California, the appropriate Regional Water Quality Control Board (RWQCB) administers CWA 401. The Central Valley RWQCB administers CWA 401 within the Planning Area.

State Statutes and Regulations

California Endangered Species Act

The California Endangered Species Act (CESA) (California Fish and Game Code, Section 2050 et seq.) prohibits the taking of species listed as threatened or endangered under the act, or candidates for listing, except as authorized by state law. Under CESA, “take” is defined as an activity that would directly or indirectly kill an individual of a species, but the CESA definition of take does not include “harm” or “harass,” which is included in the ESA definition. As a result, the threshold for take is higher under CESA than under ESA.

Section 2081 of CESA states that take of an endangered, threatened, or candidate species may be authorized by the California Department of Fish and Wildlife (CDFW) if the impacts of the take are incidental to an otherwise lawful activity, are “minimized and fully mitigated,” and do not “jeopardize the continued existence of [the] species.” Any mitigation measures imposed under CESA must be measures “roughly proportional in extent to the impact of the authorized taking on the species.”

Natural Community Conservation Planning Act

The Natural Communities Conservation Planning (NCCP) Act was established by the California Legislature, is directed by the Department of Fish and ~~Game~~ **Wildlife**, and is being implemented by the state, and public and private partnerships to protect habitat in California. The intent of the act is to promote long-term protection of plants, animals, and natural communities through landscape-level planning while still allowing compatible land use and local economic activity (California Fish and Game Code, Section 2800 et seq.; Morey and Ikeda 2001; Pollak 2001). As opposed to the single species interpretation of the federal ESA and CESA, this act aims at protecting many species using a regional ecosystem approach to habitat preservation. The Natural Communities Conservation Planning Act is designed to provide for conservation of ecosystems, including all of their components, whether they are rare or common, rather than a strategy of addressing impacts to rare taxa on a piecemeal, individual development project basis (Pollak 2001). By preserving larger areas of important habitat, it is hoped that common taxa will not become rare in the future (Lazar and Bjerke 2014).

Survey of California Vegetation

Natural communities have been considered part of the Natural Heritage conservation triad, along with plants and animals of conservation significance, since the state inception of the California Natural Heritage program in 1979 (CDFW 2016). In 2007, the State Legislature required CDFW to develop and maintain a vegetation mapping standard for the state (California Fish and Game Code Section 1940). This standard is manifested in the Survey of California Vegetation and implemented by the Vegetation Classification and Mapping Program (VegCAMP). VegCAMP focuses on

developing and maintaining maps and the classification of all vegetation and habitats in the state to support conservation and management decisions at the local, regional, and state levels. The California Natural Diversity Database (CNDDDB) continues to include occurrences of rare natural communities despite the fact that funding for the natural communities part of the program was cut in the mid-1990s. Since that time, no new occurrences of natural communities have been added. However, the importance of maintaining the natural communities layer in the CNDDDB has not diminished. Many of the 2,500+ individual occurrences of the 96 natural communities with occurrences in the CNDDDB still have significance for conservation and their existence is considered in the California Environmental Quality Act (CEQA) environmental review process along with occurrences of plants and animals tracked by the CNDDDB. Since 1999, CDFW's VegCAMP has undertaken the classification and mapping of vegetation throughout the state and also has assumed the role of standardizing vegetation nomenclature for California to comply with the National Vegetation Classification System standards. Many vegetation types included in the current list match well with existing CNDDDB natural community elements, which were based on Holland (1986). However, there is a complex relationship between the CNDDDB natural community elements and today's view of vegetation classification — in some cases, there is a one-to-one relationship, but in most there is a many-to-one or many-to-many relationship. Furthermore, in most cases no recent surveys have been made of the old CNDDDB natural community occurrences to ascertain the proper identity based on today's National Vegetation Classification System classification standards. CDFW continues to refine the mapping and classification of the state's vegetation. This will take some time. In the meantime, CDFW continues to include all of the old CNDDDB natural Community elements in the current Natural Communities List (CDFW 2016).

Section 1602 Streambed Alteration

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources are subject to regulation by the CDFW under Sections 1600 et seq. of the California Fish and Game Code. Under Section 1602, it is unlawful for any person to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by CDFW, or use any material from the streambeds, without first notifying CDFW of such activity and obtaining a Lake or Streambed Alteration Agreement authorizing such activity. "Stream" can be defined as a body of flowing water and the landform that conveys it, including water sources and adjoining landscape elements that are byproducts of and affected by interactions with flowing water without regard to size, duration or timing of flow.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act requires that each of the nine RWQCBs in California prepare and periodically update basin plans for water quality control. Each basin plan sets forth water quality standards for surface water and groundwater and actions to control nonpoint and

point sources of pollution to achieve and maintain these standards. Basin plans offer an opportunity to protect wetlands through the establishment of water quality objectives. The RWQCBs' jurisdiction includes waters of the United States and areas that meet the definition of "waters of the state." Waters of the state are defined as any surface water or groundwater, including saline waters, within the boundaries of the state. The RWQCBs have the discretion to take jurisdiction over aquatic areas not federally protected under CWA Section 404 provided they meet the definition of "waters of the state." The Porter-Cologne Water Quality Control Act is discussed in more detail in Section 10.1.1 of this EIS/EIR.

Oak Woodland Protection

Section 21083.4 of the California Public Resources Code requires counties to determine if a project within their jurisdiction is expected to result in conversion of oak woodlands that would have a significant adverse effect on the environment. If the lead agency determines that a project would result in a significant adverse effect on oak woodlands, mitigation measures to reduce the significant adverse effect of converting oak woodlands to other land uses are required.

Protection for Common Bird Nests and Common Raptors

Section 3503 of the California Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 specifically states that it is unlawful to take, possess, or destroy any raptor (e.g., hawks, owls, eagles, and falcons), including their nests or eggs. Section 3513 of the California Fish and Game Code codifies the federal Migratory Bird Treaty Act.

Local Regulations and Policies

Sacramento County General Plan of 2005–2030

The *Sacramento County General Plan* of 2005-2030 (Sacramento County General Plan)(Sacramento County 2011) Conservation Element includes goals, objectives, and over 100 policies related to the management and preservation of natural resources (policies CO-19 through CO-140 under Section V, Vegetation and Wildlife). The following is a summary of the policies relevant to the Planning Area natural communities (land covers) and their associated plant and animal species.

Policies CO-19 to CO-32: Provide for a safe, reliable water supply while protecting the beneficial uses of waters for the State of California by protecting water quality and water-supported ecosystems through preservation, restoration, and creation of riparian and wetlands habitats and buffers to protect water quality from erosion.

Policies CO-58 through CO-63: Support the management and restoration of wetland and riparian habitat, native habitat, and special-status species habitat. The Sacramento County General Plan calls for no net loss of wetlands, riparian woodlands, and oak woodlands.

Policies CO-83 and CO-86: Establish and limit land uses in vernal pool habitat preserves.

Policies CO-88 through CO-92: Support protection and enhancement of riparian habitat and promote the increase of native woodlands and riparian scrub along select waterways.

Policies CO-93 through CO-95: Maintain the natural character of the 100-year floodplain by limiting fill and excavation.

Policies CO-96 through CO-101: Promote the maintenance of bank stabilization on river and waterways and riparian functionality.

Policies CO-102 through CO-104: Promote the conservation and protection of the Cosumnes River and Mokelumne River corridors.

Policies CO-114 through CO-124: Protect stream corridors from an action that would degrade water quality and require maintenance of vegetation to allow for high water quality.

Policies CO-138 through CO-140: Require the preservation and protection of non-oak trees occurring in riparian habitats, especially those trees used by Swainson's hawks (*Buteo swainsonii*), and the protection of native trees other than oaks from development. Policies CO-138 through CO-140 also require that the removal of native oaks be compensated through canopy replacement or replanting.

In addition to the Conservation Element, the General Plan Agricultural Element contains policies that protect certain agricultural land covers (AG-1 through AG-6), as discussed previously in Section 6.1.1.3:

Policy AG-1: The County shall protect Prime, Statewide Importance, Unique and Local Importance farmlands located outside of the USB [urban services boundary] from urban encroachment.

Policy AG-3: The County shall permit agricultural uses on buffers, provided such uses are conducted in a manner compatible with urban uses. Buffers shall be used to separate farming practices incompatible with adjacent urban uses. Any homeowners' association or similar entity within the development shall assist in determining compatible use. Buffers shall not adversely conflict with agricultural uses on adjoining property.

Policy AG-5: Projects resulting in the conversion of more than fifty (50) acres of farmland shall be mitigated within Sacramento County, except as specified in the paragraph below, based on a 1:1 ratio, for the loss of the following farmland categories through the specific planning process or individual project entitlement requests to provide in-kind or similar resource value protection (such as easements for agricultural purposes):

- Prime, Statewide Importance, Unique, Local Importance, and Grazing farmlands located outside the USB;
- Prime, Statewide Importance, Unique, and Local Importance farmlands located inside the USB.

The Board of Supervisors retains the authority to override impacts to Unique, Local, and Grazing farmlands, but not with respect to Prime and Statewide farmlands.

Sacramento County Swainson's Hawk Ordinance

Chapter 16.130 of Title 16 of the Sacramento County Code addresses the reduction in Swainson's hawk foraging habitat within unincorporated Sacramento County. Participating in the County's Swainson's Hawk Mitigation Program, which is voluntary, is one option for mitigating the loss of foraging habitat within unincorporated areas of the County. Under this program, mitigation for impacts less than 40 acres can be achieved by paying a mitigation fee or providing replacement habitat (title or easement to suitable Swainson's hawk mitigation lands on a per-acre basis); mitigation for impacts of 40 acres or greater can be achieved only by providing replacement habitat under this program.

Sacramento County Tree Ordinance and Tree Preservation Ordinance

The Sacramento County Tree Ordinance (Chapter 19.04 of Title 19 of the County Code) establishes guidelines for the planting, removal, and protection of public trees as well as specially protected trees such as heritage or landmark trees within Sacramento County. A public tree is defined by the ordinance as "a tree or shrub planted or maintained, or both, by the County on an easement, planting easement, street, county park or public premises." A heritage tree is defined by the ordinance as "a California oak tree growing on any land (in unincorporated area) of Sacramento County, including privately owned land, with a trunk sixty inches or greater in girth measured four and one-half feet above the ground." A landmark tree is defined by the ordinance as "an especially prominent or stately tree on any land (in the unincorporated area) in Sacramento County, including privately owned land." The disturbance of any public tree without a permit is prohibited and special protection of landmark and heritage trees is required.

The Sacramento County Tree Preservation Ordinance (Chapter 19.12 of Title 19 of the County Code) establishes measures to preserve and protect native oak trees within the designated urban area. A native oak tree is defined by the ordinance as any valley oak (*Quercus lobata*), interior live oak (*Q. wislizenii*), blue oak (*Q. douglasii*), or oracle oak (*Q. morehus*) having at least one trunk of 6 inches or more in diameter measured 4.5 feet above the ground, or a multi-trunked native oak tree having an aggregate diameter of 10 inches or more measured 4.5 feet above the ground. The ordinance prohibits native oak tree removal or ground-disturbance activities within the dripline of a native oak tree, without a tree permit, unless authorized as a condition of a discretionary project such as a subdivision map, rezone, or conditional use permit. The ordinance establishes decision criteria for ascertaining whether or not oak tree removal should be permitted, along with development control measures intended to mitigate damage to oak trees caused by land development. The ordinance also establishes a Tree Preservation Fund to be used for tree planting and preservation programs and public education programs regarding trees.

2030 Galt General Plan

The *2030 Galt General Plan* (Galt General Plan) (Galt 2009) includes goals and policies that encourage the protection of important habitats and commit the city to address the effects of urban development on these habitats. Applicable Policies in the Galt General Plan include the following:

Policy COS-2.1: Sensitive Species Protection: The City should require minimization of impacts to protect mature trees, vernal pools, and any threatened endangered or other sensitive species when approving new development.

Policy COS-2.2: Wetland and Riparian Communities Management: The City shall support the protection, restoration, expansion, and management of wetland and riparian plant communities for passive recreation, groundwater recharge, and wildlife habitat.

Policy COS-2.3: Biologically Sensitive Area Development: The City should require new development in areas that are known to have particular value for biological resources to maximize preservation of sensitive vegetation and wildlife habitat.

Policy COS-2.4: Federal, State, and Local Statutes Compliance: The City shall review development proposals in accordance with applicable Federal, State, and local statutes protecting special-status species and jurisdictional wetlands.

Policy COS-2.5: Mitigation Measures Imposition: The City shall take into consideration mitigation standards and policies of resource and regulatory agencies with jurisdiction over biological resources (e.g., USFWS, CDFW, etc.).

Policy COS-2.6: Biological Surveys: On sites that have the potential to contain critical or sensitive habitats or special species, the City shall require the project applicant to have the site surveyed by a qualified biologist. A report on the findings of this survey shall be submitted to the City as part of the application process.

Policy COS-2.7: Regional Habitat Conservation Efforts Coordination: The City shall continue to coordinate efforts with Sacramento County to develop the South Sacramento Habitat Conservation Plan.

Policy COS-3.1: Riparian Protection: The City should require the protection of existing riparian vegetation along stream courses in the city.

Policy COS-3.2: Mature Tree and Woodland Preservation: The City shall encourage retention of mature trees and woodlands to the maximum extent possible.

Policy COS-4.1: Prime Agricultural Land Preservation. The City shall work to preserve prime agricultural lands surrounding the Planning Area from future development by creating a clear and sensitive urban transition to minimize land use conflicts and protect long-term agriculture.

Galt Tree Ordinances

Chapter 12.28 of the City of Galt Municipal Code requires written permission and approval for the cutting or removal of oak trees or public trees on public and private property unless certain provisions such as emergencies apply. A public tree is any tree with one-half or more of its trunk or branches on or above public land. An oak tree is defined as including, but not limited to, valley oak, interior live oak, blue oak, or oracle oak having at least one trunk of 6 inches in diameter measured 4 feet above the ground, or multi-trunks with an aggregate diameter of 8 inches or more measured 4 feet above ground. Minimum development control measures are suggested such as not disturbing the ground within the driplines of protected trees. Grading within the dripline of oak trees is not permitted unless specifically authorized. A tree preservation fund is established and is expected to be contributed to in lieu of a project planting replacement trees and is used for the planting, enhancement, maintenance and/or monitoring of trees on publicly owned property, easements, or rights-of-way. Specific details apply for ground disturbance within a protected tree's dripline.

Rancho Cordova General Plan

The *Rancho Cordova General Plan* (Rancho Cordova 2006) Natural Resources Element includes various goals and policies that encourage the protection of important habitats and guide mitigation for impacts to these habitats that cannot be avoided. There is also a policy that

functions much like tree ordinances adopted by other jurisdictions. Applicable policies in the General Plan include the following:

Policy NR.1.1: Protect rare, threatened, and endangered species and their habitats in accordance with State and federal law.

Policy NR.1.2: Conserve Swainson’s hawk habitat consistent with State policies and Department of Fish and Game guidelines.

Policy NR.1.6: Participate in the development of a habitat conservation plan to address the unique biological resources in Rancho Cordova.

Policy NR.1.8: The City shall encourage creation of habitat preserves that are immediately adjacent to each other in order to provide interconnected open space areas for animal movement.

Policy NR.1.9: The City shall require that impacts to riparian habitats be mitigated at a no net loss of existing function and value based on field survey and analysis of the riparian habitat to be impacted. No net loss be accomplished by avoidance of the habitat, restoration of existing habitat, or creation of new habitat, or through some combination of the above.

Policy NR.1.10: The City shall avoid the placement of new roadways within habitat preserves to the maximum extent feasible.

Policy NR.1.11: In such cases where habitat preserves are crossed by a roadway, or where two adjacent preserves are separated by a roadway, the roadway shall be designed or updated with wildlife passable fencing separating the roadway from the preserve and/or shall incorporate design features that allow for the movement of wildlife across or beneath the road without causing a hazard for vehicles and pedestrians on the roadway.

Policy NR.2.1: Require mitigation that provides for “no net loss” of wetlands consistent with current State and federal policies.

Policy NR.2.2: Ensure that direct and indirect effects to wetland habitats are minimized by environmentally sensitive project siting and design, to the maximum extent feasible.

Policy NR.2.5: The City shall require that drainage improvements that discharge into areas of wetlands to be preserved are, to the maximum extent feasible, designed to

mimic the undeveloped surface water flow conditions of the area in terms of seasonality, volume, and flow velocity.

Policy NR.3.1: Coordinate with property owners and local interest groups, such as the Sacramento Urban Creeks Council, to restore, enhance, and preserve creeks in Rancho Cordova.

Policy NR.3.4: Encourage projects that contain wetland preserves or creeks, or are located adjacent to wetland preserves or creeks, to be designed for visibility and, as appropriate, access.

Policy NR.4.1: Conserve native oak and landmark tree resources for their historic, economic, aesthetic, educational, and environmental value.

Policy NR.4.4: Prior to the approval of any public or private development project in areas identified or assumed to contain trees, the City shall require that a determinate survey of trees species and size be performed. If any native oaks or other native trees six inches or more in diameter at breast height (dbh), multi-trunk native oaks or native trees of 10 inches or greater dbh, or non-native trees of 18 inches or greater dbh that have been determined by a certified arborist to be in good health are found to occur, such trees shall be avoided if feasible. If such trees cannot be avoided, the project applicant shall do one of the following:

- All such trees shall be replaced at an inch-for-inch ratio. A replacement tree planting plan shall be prepared by a certified arborist or licensed landscape architect and shall be submitted to the City of Rancho Cordova for approval prior to removal of trees; or
- The project applicant shall submit a mitigation plan that provides for complete mitigation of the removal of such trees in coordination with the City of Rancho Cordova. The mitigation plan shall be subject to the approval of the City.

If the City of Ranch Cordova adopts a tree preservation ordinance at any time in the future, any future development activities shall be subject to that ordinance instead.

Policy LU.1.9: The City shall require development to protect 1 acre of existing farmland of equal or higher quality for each acre of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance that would be converted to non-agricultural uses. This protection may consist of the establishment of farmland conservation easements, farmland deed restrictions, or other appropriate farmland conservation in perpetuity, but may also be utilized for compatible wildlife conservation efforts. The farmland to be

preserved shall be located within Sacramento County and must have adequate water supply to support agricultural use. As part of the consideration of land areas proposed to be protected, the City shall consider the benefits of preserving farmlands in proximity to other protected lands.

8.1.2 Existing Conditions

This section provides information on the existing condition of each Planning Area natural land cover, as well as the existing condition of the plant and wildlife community that occurs in each Planning Area land cover. A “community” is a naturally occurring group of organisms belonging to a number of different species that live together in the same habitat or same area and interact through trophic and spatial relationships; a community is typically characterized by reference to the dominant plant species that give the community structure (Allaby 2010, Lincoln et al. 1998).

The land cover classifications used in the EIS/EIR are the same Planning Area land covers defined in the Draft SSHCP document, which are a modified version of the natural communities described in CDFW’s Manual of California Vegetation (Sawyer and Keeler-Wolf 1995). See the Draft SSHCP document Appendix E1 for a summary of the information and methodology used by the Permit Applicants to map existing SSHCP land covers within the Planning Area (Sacramento County et al. 2017).

Under the land cover classifications used in the SSHCP document, there are 17 “natural” land covers within the Planning Area. The natural land covers provide habitat for different communities of native plant and native wildlife species (see Section 8.1.2.1). Under the land cover classifications used in the SSHCP document, there are also eight “developed” land covers that were created by past and current human activities in the Planning Area (Table 8-1a). These eight developed land covers do not provide natural or important habitat for native plant and wildlife communities. Consequently, the developed land covers are not discussed further in Chapter 8, and any impacts from the EIS/EIR alternatives to areas of existing developed land covers are not analyzed in this chapter. However, because some of the Planning Area’s special-status bird species occasionally use trees or other features within certain “developed” land covers, Chapter 9 will include some of the developed land covers in the analyses of the Planning Area’s special-status species.

As discussed previously in Section 3.7.1, the Planning Area has been affected by past and current agriculture activities, urban development projects, infrastructure projects, and mining operations. These past and present activities have affected the existing distribution and existing conditions of the natural land covers and their associated natural communities that are present in the Planning Area (Figure 8-1).

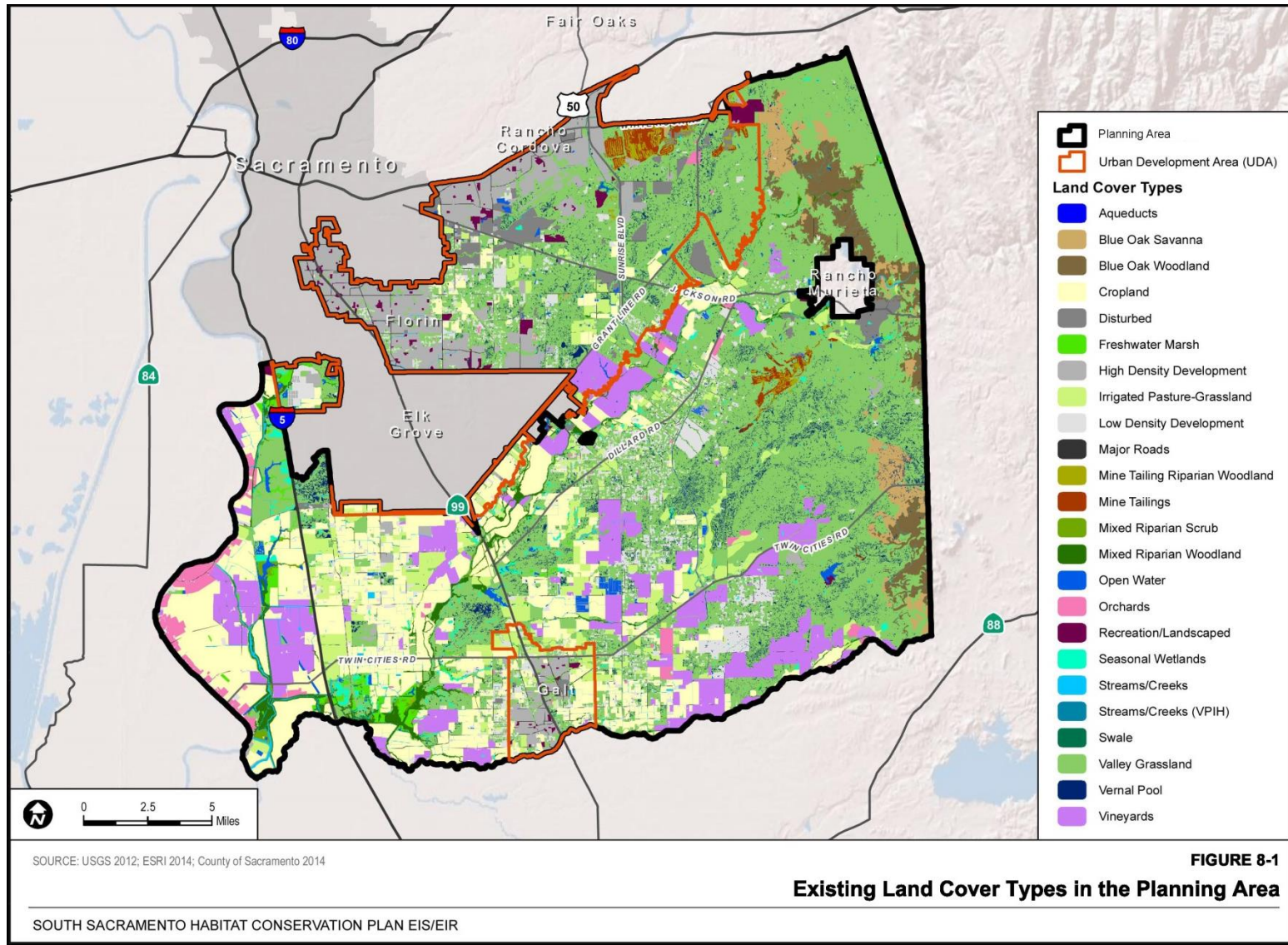
8.1.2.1 Natural Land Covers

As discussed previously, there are 17 natural SSHCP land covers in the Planning Area, totaling approximately 272,596 acres (Table 8-1a). Each of the 17 natural land covers provide important habitat for an associated community of native plant and wildlife species.

The following section includes a brief description of each natural land cover, discusses the existing acres and general locations of each land cover within the Planning Area, and describes the general condition of each natural land cover in the Planning Area. Figure 8-1 shows the existing distribution of each natural land cover in the Planning Area, and Table 8-1a lists the acres of each natural land cover within the Planning Area.

Of the approximately 272,596 acres of natural land covers within the Planning Area, approximately 64,000 acres (approximately 19% of the Planning Area) are within existing preserves (Figure 1-2). The Planning Area's existing preserves include wildlife refuges, nature preserves, lands under conservation easements, open space, mitigation banks, and individual mitigation sites established by past projects. Table 8-1b, Existing Natural Land Covers Already Preserved within the Planning Area, lists the total acreage of each land cover within existing preserves.

Figure 8-1 Existing Distribution of Each Land Cover Within the Planning Area



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Table 8-1a. Total Acres of Each Land Cover Within the Planning Area

Land Cover	Existing Acres in Planning Area	Percentage of the 317,655-acre Planning Area
<i>Natural Land Covers</i>		
<i>Aquatic Land Covers</i>		
<i>Wetlands and Other Waters</i>		
Vernal Pool*	4,536	1.4%
Swale*	1,252	0.4%
Seasonal Wetland*	2,600	0.8%
Freshwater Marsh*	2,954	0.9%
Stream/Creek - Vernal Pool Invertebrate Habitat (VPIH)*	73	0.02%
Stream/Creek*	2,778	0.9%
Open Water*	2,344	0.7%
<i>Total Wetlands & Other Waters</i>	<i>16,537</i>	<i>5.1%</i>
<i>Riparian Land Covers</i>		
Mixed Riparian Woodland*	5,856	1.8%
Mixed Riparian Scrub*	1,454	0.5%
Mine Tailing Riparian Woodland*	641	0.2%
<i>Total Riparian</i>	<i>7,951</i>	<i>2.5%</i>
<i>Terrestrial Land Covers</i>		
<i>Natural Uplands</i>		
Valley Grassland	135,152	42.5%
Blue Oak Savanna*	5,637	1.8%
Blue Oak Woodland*	9,132	2.9%
<i>Total Natural Uplands</i>	<i>149,921</i>	<i>47.2%</i>
<i>Farmlands</i>		
Cropland	51,829	16.3%
Orchard	3,907	1.2%
Vineyard	26,460	8.3%
Irrigated Pasture Grassland	15,991	5.0%
<i>Total Farmlands</i>	<i>98,187</i>	<i>30.9%</i>
<i>Developed Land Covers</i>		
Aqueduct	264	0.1%
Disturbed	6,288	2.0%
High-Density Development	13,073	4.1%
Low-Density Development	18,608	5.9%
Major Roads	2,764	0.9%
Mine Tailings	1,098	0.3%
Recreation/Landscaped	2,180	0.7%
Not Mapped	784	0.2%
<i>Total Developed Lands</i>	<i>45,059</i>	<i>14.2%</i>

* Indicates land cover that is considered sensitive. Sensitive natural communities are those that receive specific recognition or legal protection under federal, state, or local laws or regulations; see Section 8.1.2.3.

Table 8-1b. Acres of Each Natural Land Cover Already Preserved Within the Planning Area

Land Cover	Acres Preserved in the Planning Area	Percentage of Existing Acres Preserved within the Planning Area**
<i>Aquatic Land Covers</i>		
<i>Wetlands and Other Waters</i>		
Vernal Pool*	1,978	44%
Swale*	353	28%
Seasonal Wetland*	1,320	51%
Freshwater Marsh*	1,757	59%
Stream/Creek (Vernal Pool Invertebrate Habitat)*	10	14%
Stream/Creek*	557	20%
Open Water*	720	31%
<i>Total Wetlands & Other Waters</i>	<i>5,975</i>	<i>35%</i>
<i>Riparian Land Covers</i>		
Mixed Riparian Woodland*	2,058	35%
Mixed Riparian Scrub*	453	31%
Mine Tailing Riparian Woodland*	26	4%
<i>Total Riparian</i>	<i>2,537</i>	<i>23%</i>
<i>Terrestrial Land Covers</i>		
<i>Natural Uplands</i>		
Valley Grassland	35,288	26%
Blue Oak Savanna*	2,964	53%
Blue Oak Woodland*	4,260	47%
<i>Total Natural Uplands</i>	<i>42,512</i>	<i>42%</i>
<i>Farmlands</i>		
Cropland	10,348	20%
Orchard	212	5%
Vineyard	878	3%
Irrigated Pasture Grassland	927	6%
<i>Total Farmlands</i>	<i>12,365</i>	<i>9%</i>
Total	64,108	23%

* Indicates land cover that is considered sensitive. Sensitive natural communities are those that receive specific recognition or legal protection under federal, state, or local laws or regulations; see Section 8.1.2.3.

** Percentage of the existing acres of the land cover within the Planning Area, presented in Table 8-1a, which is already preserved.

Aquatic Land Covers

Vernal Pool Land Cover

Vernal pools are shallow surficial depressions that temporarily fill with water during winter and spring rains, but desiccate in the early dry summer months. As discussed in Appendix G-1, vernal pools occur as small poorly drained depressions in some Valley Grasslands and are perched above an impermeable or very slowly permeable soil horizon (Smith and Verrill 1998).

The hydrologic regime and seasonal inundation of a vernal pool is too short and unpredictable to support aquatic plant species, but is long enough to eliminate upland plant species. This characterizes vernal pools as ephemeral wetlands, and differentiates them from other aquatic ecosystems (Solomeshch and Holland 2007).

Most of California, including the Planning Area, has a Mediterranean climate that is characterized by hot, dry summers followed by a mild, wet winter. As discussed in Appendix G-1, soils in the Vernal Pool Ecosystems of the Planning Area typically become wetted in November and remain saturated during the winter and early spring, but dry by summer.

As discussed in Chapter 5, Planning Area vernal pools are located on several geological surfaces with soils that include a low-permeability layer such as a claypan, hardpan (e.g., silica-cemented duripans), a mudflow, or bedrock (Rains et al. 2006). Because vernal pools are associated with specific landforms, geologic formations, and soils (Smith and Verrill 1998), vernal pools tend to be clustered at the landscape scale, forming vernal pool complexes (Rains et al. 2006, USFWS 2006). A vernal pool's frequency of ponding, filling, draining, and ponding depth and ponding duration is primarily affected by characteristics of the vernal pool's watershed, including the underlying geology, the landform, the nature of the soil's water-restricting layer, and the soil depth above the soil's water-restricting layer. Vernal pool community structure (i.e., the type, number, and relative abundance of species) is largely determined by the vernal pool's physical makeup (e.g., size, depth, substrate, water chemistry) and the vernal pool's hydrology—the presence or absence of certain species and different patterns of species dominance can be indicative of physical and hydrologic differences among vernal pools (Holland and Jain 1988). Vernal pools in the Planning Area exhibit a variety of size, depth, soil, and water chemistry. Key physical parameters include pool drainage area, slope, soil type, soil structure and depth, pool size and depth, timing of the pool hydrologic cycle, and hydrologic interconnectivity. Most vernal pools in the Planning Area are broadly classified as Northern Hardpan vernal pools and Northern Volcanic Mudflow vernal pools (Jones and Stokes 1990, Sawyer and Keeler-Wolf 1995). In addition, a less specialized vernal pool type with generally lower species richness is found on Drainageway formation soils within the Planning Area. The vernal pools present in the Planning Area can be further classified by the presence or absence of certain dominant or less abundant vernal pool plant species (Sawyer and Keeler-Wolf 1995, Barbour et al. 2007, Sawyer et al. 2009).

Northern Volcanic Mudflow vernal pools occur on ancient mudflows called lahars. These pools are small, form in irregular depressions in gently sloping surfaces, and are often rocky and shallow. Water chemistry is mixo-saline, fresh (Sawyer and Keeler-Wolf 1995). As discussed in Chapter 5, Northern Volcanic Mudflow vernal pools are found on in the Planning Area on the Mehrten and Valley Springs formation in rocky soil series and complexes such as Hadselville-Pentz, Red Bluff-Redding, Corning-Redding, Amador-Gillender, and Pardee-Rancho Seco (Jones and Stokes 1990). Mudflow vernal pools in the Planning Area are hydrologically complex; in

some areas, vernal pools are in complex reticulated drainage networks with a high density of interconnected pools, swales, and ephemeral drainages (Jones and Stokes 1990). The seasonal hydrology of Northern Volcanic Mudflow vernal pools includes a perched water table (see Section 3.2.3), but the vernal pool hydrology is relatively “flashy” (i.e., pools fill and drain relatively rapidly). Northern Volcanic Mudflow vernal pools contain relatively rich flora that includes several vernal pool obligate species. The species richness and ecological complexity of Northern Volcanic Mudflow pools in the Planning Area exceed that of the Young-Terrace Northern Hardpan pools and the Drainageway vernal pools in the Planning Area. Possible explanations of the rich (less specialized) flora of Northern Volcanic Mudflow pools include the recent origin of the pools and their quickly changing or “flashy” hydrology. Mudflow pools fill and drain rapidly and are expected to be less stressful to most plant life than pools that remain flooded for extended periods, such as the Old-Terrace Northern Hardpan vernal pools (Jokerst 1990, Jones and Stokes 1990). Dominant plant species including California goldfields (*Lasthenia californica*), dwarf blennosperma (*Blennosperma nana*), round woollyheads (*Psilocarphus brevissimus*), two-crowned downingia (*Downingia bicornuta*), water pygmy (*Crassula aquatica*), and/or whiteflower navarretia (*Navarretia leucocephala*) are expected to be present with other herbs and grasses.

Northern Hardpan vernal pools form on alluvial terraces in old, acidic, nutrient-depleted soils with iron-silicate cemented soil layer (see Chapter 5). These soils often exhibit well-developed mound-intermound topography to form aggregations of pools and “mima mounds.” Water chemistry is mixo-saline fresh (Sawyer and Keeler-Wolf 1995, USFWS 2005). Northern Hardpan vernal pools typically have a conductivity of 40 to 70 mhos per 1 centimeter, which is similar to oligotrophic high Sierra lakes (Keeley and Zedler 1998, Williamson et al. 2005). Water in hardpan vernal pools is not only low in dissolved salts, but also in dissolved nitrogen. For example, Rains et al. (2006) reported that, during the growing season, nitrate and phosphate concentrations were below detection limits (i.e., 0.006 milligrams per liter (mg/L) and 0.03 mg/L, respectively), and the amount of ammonium was negligible (0.1 mg/L). Within the Planning Area, Northern Hardpan vernal pools occur on the low (younger) terrace Riverbank Formation soil series (e.g., San Joaquin, Galt, Madera, Tehama), as well as on the high (older) terrace Laguna Formation and Arroyo Seco gravels (e.g. Corning, Redding, Red Bluff, Mokelumne soil series). Vernal pools occur extensively on both landforms types (Jones and Stokes 1990). Dominant plant species may include bladder clover (*Trifolium depauperatum*), coyote-thistle (*Eryngium vaseyi*), Fremont gold-fields (*Lasthenia fremontii*), dwarf downingia (*Downingia pusilla*), popcorn flower (*Cryptantha microstachys*), rose meadowfoam (*Limnanthes douglasii* ssp. *rosea*), and water pygmy (*Crassula aquatic*).

High-Terrace Northern Hardpan vernal pools (e.g., on Corning and Redding soil series) are the most complex type of vernal pool in the Planning Area because of their rich and varied flora,

presence of special-status plant and invertebrate species, and complex hydrology, and because they often occur in areas with complex, highly convoluted interspersions of several soil types. Soils on high-terrace landform sites varies over short distances such that sites in proximity to each other is expected to have entirely different restricting layer types, depth, and vernal pool plant community. High-Terrace Northern Hardpan vernal pools are floristically rich and dominated by vernal pool obligate plant species (true “specialists”) and typically support special-status vernal pool species. The tremendous age and the geographic location of High-Terrace Northern Hardpan pools may explain their rich and highly specialized flora (Jones and Stokes 1990). In addition, little of the high-terrace landform has been farmed in the Planning Area because irrigation water is lacking, and many sites are not arable. Some high-terrace vernal pool areas were dryland farmed in the past with wheat or oats; this type of farming appears to have had little effect on high-terrace vernal pools. However, on other formations, dryland farming has disrupted vernal pool surface hydrology. Consequently, High-Terrace Northern Hardpan vernal pools are relatively abundant in the Planning Area (Jones and Stokes 1990).

The Planning Area’s **Low-Terrace Northern Hardpan vernal pools** (e.g., on San Joaquin soils) are of relatively recent geologic origin, which may explain their relatively unspecialized flora. The flora of Low-Terrace Northern Hardpan vernal pools often includes non-native plants, low species richness, scarcity of vernal pool obligate species, and low numbers of special-status plants. Most of the low terrace sites in the Planning Area have been plowed, graded, or heavily grazed because of their arable soils and proximity to reliable water; this may also account for their less specialized flora, relative to the flora of the High-Terrace Northern Hardpan pools. However, Low-Terrace Northern Hardpan vernal pools serve an important function as habitat for shorebirds, waterfowl, and raptors because of their location in the central portion of the valley along the Sacramento River (Jones and Stokes 1990; Silveira 1998).

Drainageway vernal pools are located on no particular Planning Area geologic formation, but formed on recent alluvial deposits that are adjacent to the incised channels of active watercourses. Consequently, Drainageway vernal pools are interspersed throughout the other three vernal pool types present in the Planning Area. Drainageway vernal pools fill and drain more rapidly than other Planning Area vernal pools, and are likely to depend more on overland runoff and direct precipitation to maintain their hydrology when compared to the other Planning Area vernal pool types (Jones and Stokes 1990).

All vernal pools support endemic plants and animals that are adapted to living under the extreme wet and dry annual hydrology of vernal pools. All vernal pool plant species live their entire lifecycle within 1 year, but have seeds that can remain dormant for many years. This allows vernal pool plant species to survive years of reduced winter rainfall and drought when pools partially fill with water or do not fill at all. Similarly, species of crustaceans, insects, and amphibians that occur in vernal pools are adapted to the extreme annual hydrology. Vernal

pools in the Central Valley and this Planning Area have historically supported four amphibian species: California tiger salamander (*Ambystoma californiense*), western spadefoot (*Spea hammondi*), western toad (*Anaxyrus boreas*), and the Pacific chorus frog (*Pseudacris regilla*) (Anderson 2013). However, recent estimates of the abundance and distribution of these amphibian species in the Sacramento Valley Vernal Pool Region indicate that most of these species are in steep decline or virtually extirpated from this region. Today, the Pacific chorus frog is often the most abundant, if not the only amphibian species, found within California's vernal pools (Anderson 2013). More than 22 species of freshwater crustaceans occur in Planning Area vernal pools, including three species of fairy shrimp, six copepod species, several species of water fleas, several types of clam shrimp, seed shrimp, and tadpole shrimp (Poirier 2012), as well as flatworms, snails, insect larva, and aquatic beetles (Calderaro 2011).

Vernal pools were once widespread across the Central Valley and in this Planning Area. However, because of past agricultural and urban development in the Central Valley (see Section 3.7.1), much of the vernal pool landscape and its associated species, including vernal pool plants and vernal pool crustaceans, have disappeared from large portions of their historical range (Holland 2009; Witham et al. 2014; USACE 2014).

Vernal pools are also used by common or non-specialized wildlife species including migratory birds and resident insect species, including native bumblebees and other pollinators. In addition, upland wildlife species associated with the Valley Grasslands that surround vernal pools also forage in or disperse through vernal pools, especially when pools are dry (see the Valley Grassland and Vernal Pool Ecosystem discussions later in this section).

As discussed in Section 8.1.2.2, the Vernal Pool land covers in the Planning Area are hydrologically and ecologically connected to the Swale, Valley Grassland, and Stream/Creek (Vernal Pool Invertebrate Habitat (VPIH)) land covers, which are described below.

Swale Land Cover

In the Planning Area, Swales are shallow gently sloping narrow seasonal drainages found in flat to gently rolling Valley Grassland on soils with an impermeable layer, and are always in association with vernal pools. The movement of surface water between vernal pools can occur in a network of surface "swales" (Solomeshch and Holland 2007). As discussed in Appendix G-1, most Planning Area vernal pools begin to fill with water only after the soil becomes saturated from winter rainfall, and seasonal "perched aquifer" forms in the upper part of the soil profile (above the soil restrictive layer). After the soil becomes saturated and vernal pools fill, Swales may convey surface water during and after winter rainstorms. In this manner, swales function as conduits between vernal pools that provide movement of water and dispersal of vernal pool plant and animal propagules (e.g., pollen, seeds, cysts, eggs, and spores), and also function as

conduits for movement of juvenile and adult vernal pool vertebrate species, such as California tiger salamander and western spadefoot. Swales support many of the native plant species that are also found within vernal pools.

Generally, the Swale land cover provides intermittent habitat for portions of the life cycle of many of the vertebrate and crustacean species that occur in the vernal pool land cover, including Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*), dwarf downingia, pincushion navarretia (*Navarretia myersii*), mid-valley fairy shrimp (*Branchinecta mesovallensis*), vernal pool fairy shrimp (*Lepidurus packardii*), Ricksecker's water scavenger beetle (*Hydrochara rickseckeri*), and western spadefoot. In addition to these special-status species, Swales also support more common vernal pool plant and animal species, and often support some plant species that are also found in the surrounding Valley Grasslands.

As indicated in Section 8.1.2.2, the Swale land cover is connected ecologically and hydrologically to Vernal Pools and the adjacent Valley Grassland upland, and many Swales also discharge to and are hydrologically connected with the Stream/Creek (VPIH) land cover.

Stream/Creek (VPIH)

In this Planning Area, the Stream/Creek (VPIH) land cover consists of intermittent drainages which convey water only after rain events (i.e., are ephemeral) and are located within the Vernal Pool Ecosystem (see section 8.1.2.2). Unlike the Swale land cover, the Stream/Creek (VPIH) land cover is less likely to support plant species that also occur within vernal pools; the vegetation of the Stream/Creek (VPIH) land cover is usually dominated by Valley Grassland plant species. However, many vernal pool invertebrate crustaceans, including mid-valley fairy shrimp and vernal pool fairy shrimp, can be found within the Stream/Creek (VPIH) land cover, especially in places where water ponds between storm events. Dominant plant and wildlife species of the Stream/Creek (VPIH) land cover include species associated with Vernal Pools, Swales, and Valley Grasslands. As discussed in Section 8.1.2.2, the Stream/Creek (VPIH) land cover is only located in the Vernal Pool Ecosystem.

Valley Grassland Land Cover

The Valley Grassland land cover in the Planning Area is currently dominated by naturalized non-native annual grasses, but also includes some native and naturalized forbs (see Section 3.7.1). Non-native annual grasses that dominate this land cover include wild oats (*Avena fatua*), soft chess (*Bromus hordeaceus*), ripgut brome (*B. diandrus*), red brome (*B. madritensis* ssp. *rubens*), wild barley (*Hordeum* spp.), and foxtail fescue (*Vulpia myuros*). Common forbs of this land cover include broadleaf filaree (*Erodium botrys*), redstem filaree (*E. cicutarium*), turkey mullein (*Eremocarpus setigerus*), true clovers (*Trifolium* spp.), and bur clover (*Medicago polymorpha*)

(Kie 2005; Sawyer and Keeler-Wolf 1995). Native plant species comprise a small portion of the current annual grassland flora in the Sacramento Valley, including the Planning Area. For example, purple needlegrass (*Stipa pulchra*) can be found as the dominant grass (i.e., comprising greater than 20% cover) in small patches along ridgetops of low-lying hills in the eastern portion of Sacramento County.

Common native mammal species found in the Planning Area's valley grasslands community include mule deer (*Odocoileus hemionus*), as well as rodents such as California ground squirrels (*Otospermophilus beecheyi*), California pocket mice (*Chaetodipus californicus*), and black-tailed jack rabbits (*Lepus californicus*). Common predators include the coyote (*Canis latrans*) and western rattlesnakes (*Crotalus viridis*). Native bird species that utilize these open, grassy areas include horned lark (*Eremophila alpestris*), northern harrier (*Circus cyaneus*), and western meadowlark (*Sturnella neglecta*). Invertebrate populations also provide an abundant food source, such as pallid-winged grasshoppers (*Trimerotropis pallidipennis*) and devastator grasshopper (*Melanoplus devastator*).

As discussed in Section 8.1.2.2, approximately 97,349 acres of the total 135,152 acres of Valley Grassland present within the Planning Area (approximately 72%) (Table 8-2) are believed to be ecologically and hydrologically associated with Vernal Pools and Swales, and are a part of the Vernal Pool Ecosystem.

Stream/Creek Land Cover

The Stream/Creek land cover includes linear aquatic features such as rivers, streams, creeks, and drainages that are intermittent or perennial. Species expected to co-occur within the Stream/Creek land cover include predatory birds such as common mergansers (*Mergus merganser*) and belted kingfisher (*Megaceryle alcyon*), which feed on the smaller fish that reside in the perennial creeks such as smaller age class brown trout (*Salmo trutta*), bluegill (*Lepomis macrochirus*), and small mouth bass (*Micropterus dolomieu*). Other fish that reside in the perennial Stream/Creek land cover include common carp (*Cyprinus carpio*), Sacramento pikeminnows (*Ptychocheilus grandis*), and riffle sculpin (*Cottus gulosus*). Many of the terrestrial species that occur in the streams and creek community also use the adjacent Riparian land covers, as described below for the Riparian land cover's natural community. Aquatic invertebrates such as aquatic insects, insect larvae, crustaceans, and mollusks are also important elements of the natural community associated with this land cover.

Seasonal Wetland Land Cover

The Seasonal Wetland land cover includes ephemeral wetlands that pond during the winter rainy season and usually become dry by late summer or fall, but may pond water year-round in

some years. Many exist only because of man-made alterations of the landscape that caused water to pond longer or sometimes pond year round, for example, stock ponds that dry during the summer during most years are Seasonal Wetlands, whereas perennial stock ponds would be considered Open Water. Seasonal Wetlands support herbaceous hydrophytic plant species that may also occur in with perennial marshes and lakes. The Seasonal Wetland land cover occurs in isolated patches throughout this Planning Area, as well as on the edges of the Stream/Creek land cover, and edges of rivers, ponds, lakes, and reservoirs (Open Water land cover). Depending on water depth and duration, Seasonal Wetlands provide breeding habitat for a large number of amphibian species, including the California tiger salamander, western spadefoot, bullfrogs (*Bufo borealis*), and Pacific treefrog (*Pseudacris regilla*). As with other seasonal and perennial waterbodies, the insects, crustaceans, mollusks (e.g., snails), and vegetation associated with this habitat provide important forage and habitat for migratory shorebirds and songbirds, as well as attracting upland wildlife such as mice, mule deer, coyote, raccoon (*Procyon lotor*), and striped skunk (*Mephitis mephitis*).

Freshwater Marsh Land Cover

Most of California's freshwater marshes occur in the Sacramento Valley and Sacramento–San Joaquin Delta regions. Therefore, the majority of Freshwater Marsh land cover in the Planning Area occurs along the perennial Cosumnes River and Deer Creek corridors. Freshwater marsh is also found on the margins of some streams and margins of the Open Water land covers.

Freshwater Marsh is typically dominated by perennial, herbaceous, hydrophytic plant species such as cattails (*Typha* spp.), tules (*Scirpus* spp.), and other emergent plant species, and is generally found along the edges of the Open Water land covers such as ponds, lakes, and rivers. Freshwater Marsh supports a diverse animal community. Prey species include insects, insect larvae, crustaceans, mollusks, birds, and mammals. For example, waterfowl feed on the abundant aquatic invertebrate populations associated with emergent Freshwater Marsh. The emergent vegetation also provides breeding habitat and shelter for red-winged blackbird (*Agelaius phoeniceus*). Swans, geese, and a variety of ducks visit the Freshwater Marshes for breeding, nesting, rearing young, and feeding. Muskrat (*Ondatra zibethicus*) use marsh plants for denning and feed on rushes, tule, cattails, crayfish, and snails.

Open Water Land Cover

Open Water land covers are perennial aquatic features, including natural or man-made ponds (e.g., stock ponds), lakes, and reservoirs. The Open Water community may include no vegetation, or may include rooted aquatic plants or non-rooted plants, such as algae, floating pondweeds, duckweeds, and other aquatic plants. The Open Water land cover is found throughout the Planning Area. Open Water features existing in the Planning Area are largely

unnamed, with the exception of Blodgett Reservoir inside the Urban Development Area (UDA¹) and Rancho Seco Lake outside the UDA. Wastewater treatment facilities are classified in Table 8-1a as High-Density Development, though the treatment ponds themselves are classified as Open Water. Standing water found within the Recreation/Landscaped and High-Density Development land covers were mapped as part of the surrounding land cover.

Wildlife species of the Open Water community include warmwater fishes such as common carp, largemouth bass (*Micropterus salmoides*), goldfish (*Carassius auratus*), green sunfish (*Lepomis cyanellus*), crayfish, ducks, geese, swans, and other migratory waterfowl. Aquatic invertebrates of the Open Water community (e.g., insects, insect larvae, crustaceans, and mollusks) act as prey for many of these species.

Riparian Land Covers

Riparian land covers are associated with Planning Area streams, creeks, or drainages and typically occur in the zone between the Active Stream Channel and Adjacent Upland land covers. The land cover classification system defines Riparian land covers by their associated trees and shrubs. The natural community of the Riparian land covers contains a great diversity of wildlife, including beaver (*Castor canadensis*), as well as providing foraging and sheltering habitat for species such as mule deer, and foraging and breeding habitat for many species of birds. The majority of the Planning Area wildlife species use the Riparian land covers as habitat for at least some portion of their life cycle.

In portions of the Planning Area that are already developed, riparian corridors are usually the only remaining natural land covers remaining for necessary breeding, nesting, denning, resting, sheltering, and foraging behaviors. The three categories of Riparian land covers are described below.

Mixed Riparian Woodland. The Mixed Riparian Woodland land cover is distinguishable by an open canopy layer dominated by tall Fremont cottonwood trees. Beneath this open layer, a moderately dense mid-canopy layer is composed of tree species such as Oregon ash (*Fraxinus latifolia*), Goodding's willow (*Salix gooddingii*), walnut (*Juglans* spp.), valley oak (*Quercus lobata*), and box elder (*Acer negundo*). In some areas, a subcanopy of dense riparian scrub

¹ As discussed in Section 1.1.1, the term Urban Development Area (UDA) is used by the EIS/EIR to discuss all lands where new urban development projects or activities could occur under the No Action/No Project Alternative, or where new urban development Covered Activities could occur under the two action alternatives. Therefore, the term "UDA" means all lands within the Sacramento County USB boundary that are also within the Planning Area (this includes lands within the Rancho Cordova city limits that are within the Planning Area) and all lands within Galt's city limits and within Galt's sphere of influence (see Section 1.1.1 and Figure 1-1).

dominated by willow species including arroyo willow (*S. lasiolepis*) and sandbar willow (*S. exigua*) is present.

Mixed Riparian Scrub. The Mixed Riparian Scrub land cover is interspersed with Mixed Riparian Woodlands in the floodplains of waterways throughout the Planning Area. This land cover often consists of an open-to-dense shrubby thicket dominated by a mixture of sandbar willow, arroyo willow, red willow (*S. laevigata*), and immature stands of Mixed Riparian Woodland tree species. Some of the more open canopy Mixed Riparian Scrub stands support an understory of native and non-native species, including wild rose (*Rosa californica*), wild grape (*Vitis californica*), perennial pepperweed (*Lepidium latifolium*), Himalayan blackberry (*Rubus discolor*), curly dock (*Rumex crispus*), and various non-native grasses.

Mine Tailing Riparian Woodland. The Mine Tailing Riparian Woodland land cover was defined by the SSHCP document for this Planning Area. It is distributed in a network of relatively narrow linear areas that naturally established in abandoned man-made mine tailing surface deposits within the Planning Area (see Figure 8-1). This land cover contains many of the same trees and the same native wildlife species commonly found in Mixed Riparian Woodland and Mixed Riparian Scrub land covers, described previously.

Terrestrial Land Covers

Blue Oak Woodland and Blue Oak Savanna Land Covers

Patches of Blue Oak Woodland and Blue Oak Savanna land covers are located in the eastern portion of the Planning Area near the Sacramento County border. Blue Oak Woodland and Blue Oak Savanna comprise approximately 5% of the Planning Area. Blue oaks are typically drought-tolerant, and unlike interior live oaks, are deciduous, dropping their leaves during periods of extreme moisture stress. This survival trait may explain the observed patterns of blue oak distribution, with blue oaks occupying drier, shallower, and more well-drained soils than interior live oaks or valley oaks (McDonald 1985, Sawyer and Keeler-Wolf 1995). In general, the SSHCP differentiates and maps Blue Oak Woodland land cover and Blue Oak Savanna by their tree-cover densities.

These woodlands and associated grasslands support a community of plants and animals that is similar to the community also found in the Valley Grassland land cover. Mule deer, woodpeckers, small rodents, and other species forage on the acorns produced each fall. Other species such as red fox (*Vulpes vulpes*) and gray fox (*Urocyon cinereoargenteus*), striped skunk, and coyote are attracted to the prey existing in these woodlands. The structure of the larger oak trees, which includes cavities, knots, and large limbs, provide nesting and roosting opportunities for many resident and migratory raptors and birds such as red-tailed hawk (*Buteo*

jamaicensis), western screech owl (*Megascops kennicottii*), great horned owl (*Bubo virginianus*), oak titmouse (*Baeolophus inornatus*), and western kingbird (*Tyrannus verticalis*).

Blue Oak Woodland. The Blue Oak Woodland land cover is distinguished by a blue oak-dominated overstory and an understory dominated by annual grasses. Blue Oak Woodland is distinguished from Blue Oak Savanna by the higher density of trees in the overstory canopy. Blue Oak Woodland is characterized by greater than 10% tree cover. Generally, Blue Oak Woodlands in the Planning Area have an open canopy, although the canopy could be nearly closed on better-quality sites.

Blue Oak Savanna. The Blue Oak Savanna land cover is characterized by grasslands with a very sparse tree canopy (less than 10% canopy cover) dominated mainly by blue oaks (USFS 1980, Sawyer and Keeler-Wolf 1995). Forbs and wildflowers typical of annual and perennial grasslands typically provide groundcover beneath the scattered trees.

Farmland Land Covers

There are four land covers associated with active farming operations: Cropland, Orchard, Vineyard, and Irrigated Pasture-Grassland. Agricultural activities also occur on the Valley Grassland and the Blue Oak Savanna land covers described above, including cattle grazing and ranching operations. However, the physical ecology, the biology, the plant and animal communities, and the extent of past disturbance in Croplands, Orchard, Vineyard, and Irrigated Pasture-Grasslands differ from those in Valley Grassland and Blue Oak Savanna. Therefore, Valley Grassland and Blue Oak Savanna are considered separately above, and not included here with farmlands.

Croplands, Vineyard, and Orchard provide food and habitat for insects, nesting/roosting opportunities for avian species, and protection for rodents and small mammals. Many of these bird and mammal species utilize these farmlands for foraging because small mammal prey are common in these land covers. Native terrestrial wildlife species associated with Planning Area farmlands include coyote, red fox, cottontail rabbits (*Sylvilagus audubonii*), deer mice (*Peromyscus maniculatus*), valley pocket gophers (*Thomomys bottae*), house mice (*Mus mus*), common bats species such as Yuma myotis (*Myotis yumanensis*), and western meadowlark (*Sturnella neglecta*), and red-winged blackbird.

Cropland (Row and Field Crops). The Cropland land cover includes all non-orchard and non-vineyard agricultural crops. Cropland includes annual row and field crops (e.g., small grains, corn, tomatoes, melons, peppers, safflower, sunflower) and short-term perennial crops (e.g., asparagus). Rice is a row crop grown in Sacramento County, but seldom in the Planning Area. However, small fields of rice have recently been planted on the existing Cosumnes River Preserve.

Irrigated Pasture–Grassland. The irrigated pasture–grassland land cover is defined as agricultural cropland in which a mix of perennial grasses and perennial legumes normally provide 100% ground cover. The Irrigated Pasture-Grassland land cover includes hay production (alfalfa, clovers, and mixed grasses), seasonal summer pasture for livestock (primarily cattle), and year-round pasture for livestock (primarily cattle or horses). The height of vegetation varies, according to season and livestock stocking levels, from a few inches to 2 or more feet on fertile soils before grazing. Alfalfa fields in the Planning Area are especially rich source of prey for hawks and other raptors, including Swainson’s hawk, as well as greater sandhill crane. (Pasture on natural landscapes that are not irrigated and are used for ranching are discussed under the Valley Grassland natural land cover).

Orchard (Fruit and Nut Orchards). The Orchard land cover has limited habitat value for most native species, but habitat for western red bat (*Lasiurus blossevillei*) is used by raptor species for perching. Orchard crops in the Planning Area include apples, cherries, pears, almonds, walnuts, pistachios, apricots, chestnuts, kiwi, nectarines, olives, peaches, pecans, and plums.

Vineyard. Vineyards are composed of grape plants planted in rows, usually supported on wood and wire trellises. Vineyards are primarily “clean cultivated,” meaning no other vegetation is allowed to grow between the rows or on the edges of fields and irrigation ditches, which provides habitat for a limited number of native plants and wildlife. However, some Planning Area vineyards use “environmentally friendly” management practices including bat boxes, raptor perches, and owl boxes to encourage presence of these species and reduce insect and predation damage.

8.1.2.2 The Vernal Pool Ecosystem in the Planning Area

As discussed above in Section 8.1.2.1 and in Appendix G, complexes of vernal pools occur within the Valley Grassland land cover of the Planning Area. Vernal pools within a complex are connected by the seasonal perched aquifer that forms between the soil surface and the sub-surface restricting layer, and are also connected by intermittently flowing surface swales. Recent hydrological studies show that vernal pools do not simply fill from direct precipitation nor do they empty solely by evapo-transpiration. Instead, lateral subsurface flow imparts a high degree of connectivity among pools. Once the soils have become saturated, water moves laterally above the impervious horizon, moving from hillocks into pools and vice-versa, ultimately draining downslope within a single watershed to become late-season stream or riverine flow (Hanes et al. 1990, Hanes and Stromberg 1998, Rains et al. 2005). This perched aquifer slows or “buffers” changes to pool water volume and determine pool water chemistry (Hanes et al 1990; Barbour et al. 2007). See the longer discussion of Planning Area vernal pool hydrology and ecology presented in Appendix G-1.

The Vernal Pool and Swale land covers in this Planning Area cannot exist absent the adjacent uplands. Essential vernal pool ecology and functions (such as the seasonal hydrologic cycle, nutrient cycling, water chemistry, and food chain support) are closely tied to the surrounding Valley Grassland uplands. The SSHCP Permit Applicants have identified areas where the vernal-wetland land covers (i.e., Vernal Pool, Swale, and Stream/Creek (VPIH)) are ecologically and hydrologically connected with the adjacent Valley Grassland land cover. Of the total 135,152 acres of Valley Grassland within the Planning Area (Table 8-1a), approximately 97,349 acres are assumed to be hydrologically connected with vernal pools and swales (Table 8-2). Taken together, the Valley Grassland, Vernal Pool, Swale, and Stream/Creek (VPIH) land covers in these areas comprise the Vernal Pool Ecosystem. Existing acres of the Valley Grassland, Vernal Pool, Swale, and Stream/Creek (VPIH) land covers within the Vernal Pool Ecosystem are shown in Table 8-2.

Table 8-2. Existing Vernal-Pool Ecosystem Land Covers in the Planning Area

Land Cover	Existing Acres in Planning Area	Percentage of the 317,655-acre Planning Area
<i>Aquatic Land Covers</i>		
Vernal Pool*	4,536	1.4%
Swale*	1,252	0.4%
Stream/Creek (VPIH)*	73	0.02%
<i>Terrestrial Covers</i>		
Valley Grassland	97,349	30.7%
Total	103,210	17.4%

* Indicates land cover that is considered sensitive. Sensitive natural communities are those that receive specific recognition or legal protection under federal, state, or local laws or regulations; see Section 8.1.2.3.

Of the existing 103,210 acres of Vernal Pool Ecosystem within the Planning Area, approximately 18,117 acres of Vernal Pool Ecosystem are within the designated Mather Core Recovery Area (MCRA) (USFWS 2008), located almost entirely within the UDA. In addition, approximately 38,514 acres of Vernal Pool Ecosystem are within the designated Cosumnes/Rancho-Secco Core Recovery Area (C/RS) (USFWS 2008), located in the southeastern portion of the Planning Area.

8.1.2.3 Sensitive Natural Communities

Sensitive natural communities are those that receive specific recognition or legal protection under federal, state, or local laws or regulations. CDFW maintains a list of plant communities that are native to California (CDFG 2010). Within that list, CDFW has identified special-status natural communities, which are of limited distribution statewide or within a county or region and often vulnerable to environmental effects of projects. As discussed previously in Section 8.1.1, the Aquatic Resources land covers (including the Wetland and Other Waters land covers and the Riparian land covers), are also protected by the state under Fish and Game Code Sections 1600 to

1607. Land covers that are expected to be waters of the United States are considered by the EIS/EIR to be special-status and include the Wetland and Other Waters land covers. As discussed above in Section 8.1.1, the importance of protecting and preserving wetland and riparian natural communities is recognized in the Sacramento County, Rancho Cordova, and Galt General Plan policies. As discussed previously in Section 8.1.1, native oaks and oak woodlands are also provided varying levels of protection under state law and local regulations and policies.

The 11 Planning Area land covers that are discussed as sensitive natural communities in the EIS/EIR are Vernal Pool, Swale, Seasonal Wetland, Freshwater Marsh, Stream/Creek (VPIH), Stream/Creek, Open Water, Mixed Riparian Scrub, Mixed Riparian Woodland, Riparian Blue Oak Woodland, and Blue Oak Savannah.

8.1.2.4 Existing Wildlife Movement Corridors

The natural land covers within the Planning Area support local and regional movement and dispersal of wildlife, and are also important for species that use the Planning Area during their spring and fall migrations. The existing wildlife movement corridors are important to both resident and migratory species because they allow individual animals to travel between Planning Area feeding, sheltering, or breeding resources on a daily or seasonal basis. For example, one area may provide important foraging habitat in spring, while another provides forage in fall. Also, individuals or groups of a species may move on a daily basis between locations within the Planning Area that provide suitable nighttime cover and other locations for foraging. Existing corridors are wide and continuous between blocks of habitat and allow movement by native terrestrial species to occur with reduced risk of predation (e.g., cover is provided within the movement corridor) and reduced risk of adverse human interactions. For example, remaining riparian-woodland corridors along streams and creeks in UDA allow movement of wildlife through developed areas. In the Planning Area, riparian corridors exist along the Cosumnes River and Dry Creek outside the UDA, along Laguna Creek inside the UDA, and along many other smaller creeks and streams inside the UDA.

CDFW and the California Department of Transportation developed the California Essential Habitat Connectivity Project to map and assess important wildlife habitat linkages (Spencer et al. 2010). The goal of the Essential Habitat Connectivity Project was to identify large remaining blocks of intact habitat or natural landscape at a coarse spatial scale, and model linkages (Essential Connectivity Areas (ECAs)) between them that are important to maintain as movement corridors for wildlife. These corridors or ECAs are vital for maintaining native biodiversity within the remaining intact habitat of California, included in and connected by these corridors. This coarse-scale, statewide map was based primarily on the ecological integrity of vegetation communities over a very large region, rather than the specific movement and other life history requirements of particular species. Because of the connection of large, intact expanses of remaining habitat, these designated corridors provide migratory pathways and/or stopovers for many wildlife species.

Four designated ECAs are located within, or adjacent to, the Planning Area (Figure 8-2). There are a total of 119,992 acres of ECAs mapped within the Planning Area (Table 8-3), which is approximately 35% of the 317,655-acre Planning Area. These ECAs contain areas that vary in “permeability,” which is defined as the lack of resistance to wildlife movement based in part on land cover type, existing roads, and terrain (Spencer et al. 2010). The 119,992 acres of ECAs within the Planning Area are comprised mostly of areas of intact natural land covers (see Table 8-3). However, areas of rural-residential development in south Sacramento County, which support more fragmented natural land covers, are also included within the boundary of certain ECAs (Figure 8-2). Some existing habitat preserves present in the Planning Area are within ECAs (e.g., Stone Lakes National Wildlife Area, the Cosumnes River Preserve, the Deer Creek Hills Oak Woodland Preserve, Rancho Seco Recreation Area, and Howard Ranch) (Figure 8-2).

The existing riparian corridor along Laguna Creek inside the UDA, and portions of the existing riparian corridor along the Cosumnes River outside the UDA, were not included in the ECAs. Regardless, these waterways continue to support relatively narrow but continuous riparian cover (Figure 8-1), and currently provide important east-west movement corridors for terrestrial wildlife.

Mule deer herds and other wildlife in the Planning Area utilize the relatively large and intact remaining blocks of habitat within the ECA and other corridors for movement, cover, and forage. The following summary of information on deer herds located within the Planning Area is adapted from CDFW data (2014a). Deer herds within the Planning Area are in the Motherlode Deer Management Unit, which includes the Sacramento Valley Deer Herd and the Placerville Deer Herd. These herds are located in deer zones A-North and D-5 according to the California Deer Zone Map (CDFW 2014a). The subspecies of deer in zone D-5 consists of the Columbian black-tailed deer (*Odocoileus hemionus columbianus*) and California mule deer (*Odocoileus hemionus californicus*). Deer in the western portion and lower elevations of zone D-5, which includes the majority of the Planning Area, are considered resident deer because they do not make long seasonal migrations. However, local movement within the Planning Area is important for accessing locations with suitable forage, cover, and fawning areas. Examples of the natural land covers within in the Planning area that are commonly utilized by deer include Blue Oak Woodland and Blue Oak Savanna, Valley Grassland, Seasonal Wetland, and Riparian land covers along watercourses, which provide cover and/or forage and also provide corridors for movement.

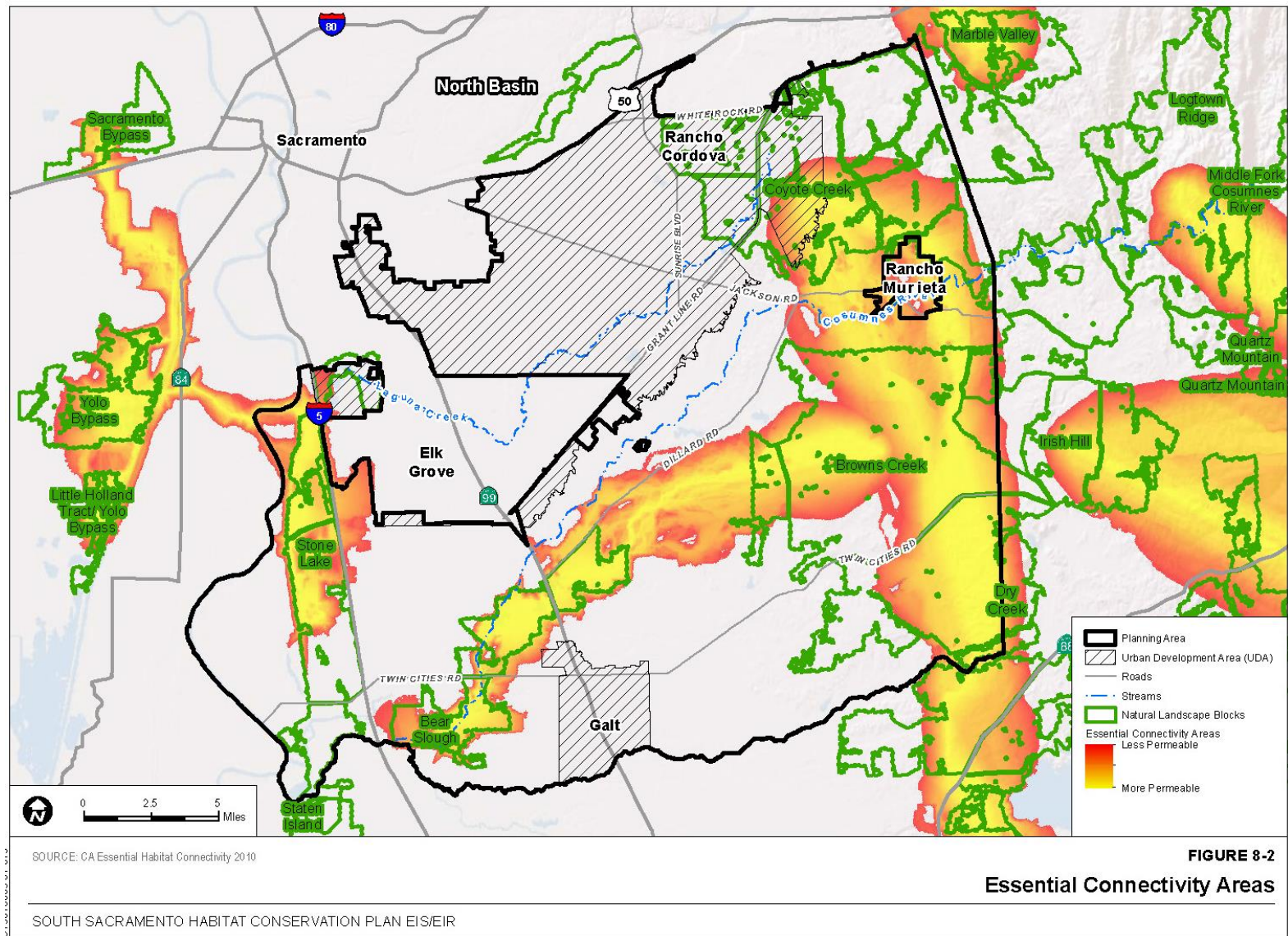
Table 8-3. Acres of Essential Connectivity Areas (ECAs) Within the Planning Area

Essential Connectivity Area	Total ECA Acres	Acres in Planning Area*	% in Planning Area
Stone Lake – Yolo Bypass	25,723	14,308	56
Bear Slough – Browns Creek	43,878	43,789	100
Marble Valley – Sawtooth Ridge	260,035	68	0.3
Duck Creek North Fork – Coyote Creek	126,166	64,196	51

Sources: Spencer et al. 2010; CDFW 2017.

* The ECAs overlap. Inconsistency between the total acres of ECAs in this table and the total ECA acreage in the text above is because of this overlap. .

Figure 8-2 Essential Connectivity Areas



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The Planning Area, like most of the California Central Valley, is located within the Pacific Flyway, which is identified by the USFWS, CDFW, and agencies to be a migratory pathway for waterfowl. The Pacific Flyway extends from the North Slope of Alaska south to Central and South America. Each year at least one billion birds migrate north and south along this corridor to reach nesting and wintering grounds depending on the season and the species. Birds that migrate through the Planning Area include waterbirds such as black-necked stilt (*Himantopus mexicanus*), American avocet (*Recurvirostra americana*), greater sandhill crane (*Grus canadensis tabida*), lesser sandhill crane (*Grus canadensis canadensis*), Ross' goose (*Chen rossii*), white-fronted goose (*Anser albifrons*), Canada goose (*Branta canadensis*), tundra swan (*Cygnus columbianus*), and numerous species of ducks and shorebirds. Within the Planning Area, the existing Wetland and Riparian natural land covers on the Stone Lakes National Wildlife Refuge, the existing Cosumnes River Preserve, and the ~~Sacramento Regional Sanitation District Buffer Lands~~ **Regional San Bufferlands** provide foraging and sheltering habitats for migratory water birds using the Pacific Flyway. Agricultural fields and pastures near these wetland areas provide foraging opportunities for many of these species. In addition to waterfowl and wading birds, natural land cover within the Planning Area supports migration of many raptor species, such as ferruginous hawk (*Buteo regalis*) and rough-legged hawk (*Buteo lagopus*), as well as song birds such as American goldfinch (*Spinus tristis*) and Wilson's warbler (*Cardellina pusilla*).

8.1.2.5 Wildlife Nursery Sites

Examples of native wildlife nursery sites include colonial bat maternity roosts, blue and great egret rookeries, and nest sites for other colonially nesting bird species. Known locations of nest and nursery sites from the CNDDDB (CDFW 2014b) within the Planning Area consist of two bank swallow cavity congregations found on the bank of the Cosumnes River near Rancho Murieta, three black-crowned night heron (*Nycticorax nycticorax*) rookeries (at Fishhead Lake and ~~Nicholas~~ **Nicolaus** Pond within the UDA and along a tributary of Badger Creek outside the UDA), three double-crested cormorant (*Phalacrocorax auritus*) rookeries (one at Stone Lake and two in the UDA along lower Morrison Creek and at Black Crown Lake), and four great blue heron (*Ardea herodias*) and great egret (*Ardea alba*) rookeries (North Stone Lake, along the North Fork of Badger Creek, along lower Morrison Creek in the UDA, and along the Cosumnes River near Rancho Murieta). Riparian land cover within the Planning Area along creek and streams with mature riparian communities serve as nursery sites for these and other similar species. Although no CNDDDB records were found for bat maternity roosts in the Planning Area, maternity roost for species such as Yuma myotis (*Myotis yumanensis*) and Brazilian free-tailed bats (*Tadarida brasiliensis*) are likely present in the Planning Area. These maternity roosts are found within old buildings, mines, caves, bridges, and large snags or cavities in woodlands (riparian and oak).

8.2 ENVIRONMENTAL CONSEQUENCES/ ENVIRONMENTAL IMPACTS

8.2.1 Methodology for Assessing Impacts of Each Alternative on Natural Land Covers and Natural Communities

This Environmental Consequences/Environmental Impact section describes the potential impacts of each EIS/EIR alternative on the Planning Area’s natural land covers and the plant and animal natural communities associated with that land cover. Therefore, the analysis of impacts to a natural land cover includes analysis of vegetation, wildlife habitat, and native species, including common species, game species, and migratory species that use that land cover with in this Planning Area.

As discussed in Section 3.6.3, the EIS/EIR analyzes the potential impacts of each alternative over a relatively long 50-year study period. Consequently, Chapter 8 does not analyze temporary impacts on lands that are expected to become a permanent urban development later in the study period. This avoids “double counting” acres of temporary impacts and acres of permanent impacts on the same parcel or area of land.

As discussed in Section 8.1.2, some of the natural land covers contain more than one CDFW natural community. Where a land cover contains one or more natural communities identified as rare or “special status” by CDFW (CDFG 2010), then impacts to the entire land cover are included in the analysis of the sensitive natural community. As discussed in Section 8.1.2, the land covers within the Vernal Pool Ecosystem function together as a single ecosystem. Therefore, Chapter 8 analyzes impacts to Vernal Pool, Swale, Stream/Creek (VPIH), and Valley Grassland in the Vernal Pool Ecosystem together.

The future projects and activities expected under each EIS/EIR alternative are described in Chapter 2: they include the construction and future operation of new urban development inside the UDA and a smaller amount of related infrastructure projects outside the UDA. As discussed in Section 3.6.5, the EIS/EIR impact methodology uses geographic information system (GIS) datasets that were prepared using the best available information about the amounts and locations of future urban development projects and related activities expected under each EIS/EIR alternative.

New urban development and infrastructure activities under all EIS/EIR Alternatives (including ground disturbance and construction, the operation of new buildings and facilities, and increased human activity) will produce physical, chemical, and biotic “stressors” that can inhibit or constrain productivity of individual organisms, the productivity of a species population, and productivity at the natural community level or ecosystem level (Freedman 2015). Potential physical stressors likely to

result from new urban development include kinetic energy, such as blasting, use of heavy machinery, other noise, and trampling. Potential chemical stressors can include gasses (such as carbon dioxide, ozone, sulphur dioxide, etc.), metals (such as lead or mercury), different types of pesticides, or excessive nutrients. Potential biological stressors from new urban development can be natural in origin (such as herbivory, predation, or parasitism), or they can be anthropogenic, for example, when trees, habitat, or animals are harvested or removed. Anthropogenic biological stressors also can be indirect, such as when an invasive non-native species or pathogen is introduced into a community. Environmental stressors can be from single disturbance events or can be chronic in their exposure. In addition, these different environmental stressors interact with each other to impact individuals in a species (Freedman 2015). Section 3.6 and Appendix G-1 summarize the types of environmental stressors expected from the types of projects and activities implemented under all EIS/EIR alternatives. Depending on the sensitivity of a natural community's plant and animal species to a given stressor, the natural land covers could be impacted to different extents.

The new urban development and infrastructure activities implemented under all EIS/EIR alternatives would directly impact Planning Area natural land covers and communities by permanently converting natural land covers to a developed land-cover type (Table 8-1a). This chapter quantifies the acres of each land cover expected to be directly impacted (lost) under each EIS/EIR alternative, and qualitatively describes and evaluates the corresponding direct loss of habitat and the plant and animal populations that occupied those acres.

As discussed in Section 3.6.6 and in Appendix G-1, the environmental stressors resulting from new urban development can also produce permanent indirect impacts that occur later in time or occur beyond the footprint of a project, such as later changes in the hydroperiod of an aquatic land cover or subsequent impacts to species populations after habitat become fragmented from new development. The indirect effects of each alternative on most of the Planning Area natural land covers (see Table 8-1a) will be described and analyzed qualitatively in this chapter by considering both the extent of the environmental stressors that would result from implementing alternative and the likely responses of each natural community and land cover to those environmental stressors, based on the best available biological information and agency expertise (see Section 3.6.6). However, expected indirect impacts to the three aquatic land covers that are within the Vernal Pool Ecosystem (i.e., Vernal Pools, Swales, and Stream/Creek (VPIH)) will be quantitatively described and analyzed in this chapter to provide analysis need for the agency decisions discussed in Section 1.5.

Vernal Pool Ecosystem Indirect Effects. Urban development activities within the watersheds of Vernal Pools, Swales, or Stream/Creek (VPIH) could indirectly change the existing hydrologic regime and ecology of those aquatic land covers over time. Vernal pool plant and animal species are especially vulnerable to indirect changes to the natural hydrologic regime of a Vernal Pool Ecosystem because both the timing of filling, water depth, and the period of inundation will dictate

whether the vernal pool's species will be able to germinate, survive, and reproduce (see discussion of Planning Area vernal pool hydrology and ecology presented in Appendix G). The EIS/EIR will estimate acres of indirectly impacted Vernal Pools, Swales, and Stream/Creek (VPIH) land covers using Light Detection and Ranging data (LIDAR data) available for the Planning Area. LIDAR images differ from aerial photography of land surfaces because they are created by using laser light to collect dense point-datasets of the land surfaces and produce highly accurate topographic and geospatial information about the land surface. This detailed LIDAR topographic data was used by the Permit Applicants to map the surface watershed-boundary of each vernal pool present within the UDA portion of the Planning Area (see Appendix E in the Draft SSHCP document for more information about use of LIDAR (Sacramento County et al. 2017)). As discussed in Sections 3.6.5 and 3.6.6, GIS technology and software was used to compare a GIS overlay of each vernal pool micro-watershed with a GIS overlay of future development and activities expected under that EIS/EIR alternative. GIS software programs were then used to quantify the area of overlap in each vernal pool watershed. Where future urban development intersected with 10% or more of an individual vernal pool watershed, the EIS/EIR assumes that the existing hydrologic regime of that individual vernal pool would permanently change over time (see discussion of Planning Area vernal pool hydrology in Appendix G-1). Changes to existing vernal pool hydrology would also change the existing ecology and habitat of the vernal pool and would permanently impact the natural community of native plant and animal species in the vernal pool. Therefore, the EIS/EIR quantified the acres of vernal pools with direct impacts to 10% or more of their microwatershed as acres of indirectly impacted Vernal Pool land cover. The LIDAR and GIS methodology used to estimate acres of indirectly impacted Vernal Pool, Swale, and Stream/Creek (VPIH) is explained further in Appendix E of the Draft SSHCP document (Sacramento County et al. 2017). This LIDAR data and GIS methodology was used to quantify indirect impacts under the 50-year permit term of the Proposed Action/Proposed Project Alternative and under the 30-year permit term of the Reduced Permit Term Alternative.

However, the computer analysis used to compare the LIDAR data of each vernal pool's microwatershed to the GIS overlay of planned urban development requires significant expertise, computer time, and resources. Consequently, it was not feasible for the EIS/EIR to use the LIDAR data to quantify potential indirect impacts of the No Action/No Project Alternative on the aquatic land covers within the Vernal Pool Ecosystem. In addition, it was not feasible for the EIS/EIR to also use the LIDAR data to quantify indirect impacts to the Vernal Pool Ecosystem that may occur after the end of the 30-year permit term in the latter part of the 50-year EIS/EIR study period (see Section 3.6.3 for discussion of the EIS/EIR study period). In the portions of the UDA where the LIDAR dataset and computer analysis could not be used to estimate vernal pool indirect effects of the No Action/No Project Alternative, or to estimate vernal pool indirect impacts of after the end of the Reduced Permit Term Alternative's 30-year permit, GIS methodology was used to delineate a 250-foot-wide zone around each Vernal Pool, Swale, or Stream/Creek (VPIH). Consistent with many ESA Section 7 consultations conducted within this Planning Area, any development activities within this 250-foot-wide zone were assumed to result in indirect impacts to the hydrology and ecology of the

Vernal Pool, Swale, or Stream/Creek (VPIH) land covers. GIS overlays of future development scenarios for these alternatives were compared to GIS overlays of the Vernal Pools, Swales, and Stream/Creek (VPIH). Where future development would occur inside the 250-foot-wide zone, the EIS/EIR quantified those Vernal Pools, Swales, or Stream/Creek (VPIH) as indirectly impacted. However, in the certain portions of the Planning Area where future new development under the No Action/No Project Alternative or after the 30-year term of the Reduced Permit Term Alternative was expected to be identical to the Proposed Action/Proposed Project Alternative, the results of the LIDAR analysis for those areas of the UDA were incorporated into to the impact analyses of the No Action/No Project Alternative and the impact analysis of the Reduced Permit Term Alternative.

As discussed in Section 3.6.3, the EIS/EIR analyzes the potential impacts of each alternative over a relatively long 50-year study period. Consequently, this chapter does not analyze temporary impacts on lands that are expected to become a permanent urban development later in the study period. This avoids “double counting” acres of temporary impacts and acres of permanent impacts on the same parcel or area of land.

study area. As discussed in Section 3.6.2, it is appropriate to consider incremental impacts to some environmental resources within the context of other impacts occurring to that resource within the surrounding landscape, community, or region. The lead agencies determined that an appropriate geographic scale for evaluating the incremental impacts resulting from each EIS/EIR alternative on most natural land covers and natural communities should extend beyond the boundary of the EIS/EIR Planning Area to consider impacts to the same land cover/natural community within the rest of Sacramento County, and within adjacent San Joaquin, Amador, Eldorado, Yolo, Solano, Sutter, and Placer Counties. However, incremental impacts to the Vernal Pool land cover and the Vernal Pool Ecosystem will consider cumulative impacts to those land covers within the Southeastern Sacramento Valley Vernal Pool Region, which includes most of Sacramento County and portions of San Joaquin, Calaveras, Amador, Eldorado, Placer, and Yuba Counties (Keeler-Wolf et al. 1998, USFWS 2005).

Determination of Impact Significance

Significance Criteria

As discussed in Section 3.8, the criteria used to evaluate the significance of each alternative’s impacts on natural land covers and natural communities is based on CEQA Guidelines Appendix G (14 CCR 15000 et seq.) and on typical thresholds used to evaluate effects on these resources in recent EIRs prepared by the County. Based on these sources, a significant adverse impact would occur on a natural land cover and its associated plant and animal communities if the alternative would:

- Have a substantial adverse effect on any riparian or other special-status natural community identified in local or regional plans, policies, regulations, or by the U.S. Fish and Wildlife Service or California Department of Fish and Wildlife;

- Interfere substantially with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a preservation policy or ordinance that protects a land cover such as oak woodland;
- Substantially reduce the habitat of a wildlife species within its range; or cause a native wildlife population to drop below self-sustaining levels; or threaten to eliminate the entirety of a plant or animal community.

Appendix G of the CEQA Guidelines does not provide suggested criteria for determining a beneficial effect. The following significance criteria and thresholds were developed by the lead agencies. A beneficial effect to land use would occur if the alternative would:

- Have a discernable beneficial effect on any riparian or other special-status natural community identified in local or regional plans, policies, regulations, or by the U.S. Fish and Wildlife Service or California Department of Fish and Wildlife;
- Have a discernable beneficial effect on the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors, or improve the use of native wildlife nursery sites;
- Reduce conflicts with any local policies or ordinances protecting biological resources, such as a preservation policy or ordinance that protects a land cover such as oak woodland;
- Substantially improve the habitat of a wildlife species within its range; or cause the size of a native wildlife population to substantially increase; or protect the entirety of a plant or animal community.

8.2.2 No Action/No Project Alternative

The No Action/No Project Alternative is described in Section 2.2 of Chapter 2.

The estimated direct loss of each natural land cover expected from the No Action/No Project Alternative future activities and projects are presented in Table 8-4 and are analyzed below. As discussed in Section 2.2.3 and Section 3.6.7, the No Action/No Project Alternative assumes that approximately 1,900 acres of new development would be “displaced” to areas outside the current USB boundary. The estimated acres of each natural land cover that would be directly impacted within these 1,900 acres were included in the Table 8-4 totals.

Table 8-4. Acres of Direct Impacts to Each Natural Land Cover Under the No Action/No Project Alternative

Land Cover	Direct Effects within UDA (acres)	Direct Effects outside UDA (acres)	Total Direct Impacts (acres)	Existing Acres in Planning Area	Percent of Existing Acres Directly Affected
<i>Aquatic Land Covers</i>					
Wetlands And Other Waters					
Vernal Pool*	279	43	322	4,536	7.1%
Swale*	235	5	240	1,252	19.2%
Stream/Creek (VPIH)*	35	0	35	73	47.9%
Seasonal Wetland*	101	14	115	2,600	4.4%
Freshwater Marsh*	132	12	144	2,954	4.9%
Stream/Creek*	114	35	149	2,778	5.4%
Open Water*	166	9	175	2,344	7.5%
<i>Total Wetland and Other Waters</i>	<i>1,062</i>	<i>118</i>	<i>1,180</i>	<i>16,537</i>	<i>5.5%</i>
Riparian					
Mixed Riparian Woodland*	107	40	147	5,856	2.5%
Mixed Riparian Scrub*	184	5	189	1,454	13.0%
Mine Tailing Riparian Woodland*	218	0	218	641	34.0%
<i>Total Riparian</i>	<i>509</i>	<i>45</i>	<i>554</i>	<i>7,951</i>	<i>6.9%</i>
Total Aquatic Resources	1,571	163	1,734	24,448	7.1%
<i>Terrestrial Land Covers</i>					
Natural Uplands					
Valley Grassland	21,797	1,632	23,429	135,152	17.3%
Blue Oak Woodland*	0	54	54	9,132	0.6%
Blue Oak Savanna*	2	84	86	5,637	1.5%
<i>Total Natural Uplands</i>	<i>21,799</i>	<i>1,770</i>	<i>23,569</i>	<i>149,921</i>	<i>15.7%</i>
Farmland					
Cropland	5,004	699	5,703	51,829	11.0%
Irrigated Pasture-Grassland	2,506	275	2,781	15,991	17.4%
Orchard	201	19	220	3,907	5.6%
Vineyard	1,345	180	1,525	26,460	5.8%
<i>Total Farmland</i>	<i>9,056</i>	<i>1,173</i>	<i>10,229</i>	<i>98,187</i>	<i>10.4%</i>
Total Terrestrial Land Covers	30,855	2,943	33,798	248,108	13.6%
TOTAL NATURAL LAND COVERS	32,426	3,106	35,532	272,596	13.0%

* Indicates land cover that is considered sensitive. Sensitive natural communities are those that receive specific recognition or legal protection under federal, state, or local laws or regulations; see Section 8.1.2.3.

Table 8-5 presents the estimated acres of each natural land cover that would be preserved as mitigation by future projects and activities implemented under the No Action/No Project Alternative's expected regulatory environment (Section 2.2.2). Table 8-5 includes acres of

expected land cover preservation (i.e., impact avoidance) under ESA, CESA, and CWA, as well as acres of re-establishment and establishment of Aquatic land covers under CWA 404.

The re-establishment and establishment acres of aquatic resources presented Table 8-5 reflect the lead agency assumption that the requirements of 2008 Compensatory Mitigation Rule to be re-established or established to replace lost aquatic resource functions and services at a minimum one-to-one acreage or one-to-one linear foot compensation-ratio would continue under the No Action/No Project Alternative. Table 8-5 assumes that compensatory mitigation for direct impact to Vernal Pools and Swales would occur within the Planning Area. However, it is assumed compensatory mitigation for the other Aquatic land covers (Stream/Creek (VPIH), Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water) would continue to occur primarily by purchase of credits at an approved mitigation bank or an in-lieu fee program. However, several mitigation banks and in-lieu fee programs with service areas that overlap the Planning Area actually re-establish, establish, or enhance wetlands or other waters at locations outside the Planning Area. Therefore, Table 8-5 assumes that only one-half the necessary compensatory mitigation for direct impacts to Stream/Creek (VPIH), Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water would occur inside the Planning Area.

In addition, Table 8-5 assumes that required compensatory mitigation for direct impacts to the Mine Tailing Riparian land cover would be provided by re-establishing the higher quality Mixed Riparian Woodland or Mixed Riparian Scrub Riparian land covers. In addition, mitigation for direct loss of Farmland land cover could be met by the preservation of any Farmland land cover within a similar resource category (i.e., Prime farmland, Statewide Importance farmland, Unique Farmland, Local Importance farmland, and Grazing farmlands).

Table 8-5. Expected Mitigation for Natural Land Cover Impacts Under the No Action/No Project Alternative

Land Cover	Preserved Acres in the Planning Area			Re-establishment & Establishment Acres in the Planning Area**
	Inside UDA	Outside UDA	Total	
Aquatic Land Covers				
Wetlands and Other Waters				
Vernal Pool*	164	866	1,030	322
Swale*	81	592	673	240
Stream/Creek (VPIH)*	13	0	13	17
Seasonal Wetland*	0	8	8	57
Freshwater Marsh*	0	16	16	72
Stream/Creek*	0	0	0	75
Open Water*	0	0	0	87
Total Wetland and Other Waters	258	1,482	1,740	870
Riparian				
Mixed Riparian Woodland*	0	0	0	256
Mixed Riparian Scrub*	0	0	0	298
Mine Tailing Riparian Woodland*	0	0	0	0
Total Riparian	0	0	0	554
Terrestrial Land Covers				
Natural Uplands				
Valley Grassland	5,215	6,591	11,806	0
Blue Oak Woodland*	0	27	27	27
Blue Oak Savanna*	15	28	43	43
Total Natural Uplands	5,230	6,646	11,876	70
Farmland				
Cropland	0	5,119	5,119	0
Irrigated Pasture-Grassland	0	2496	2,496	0
Orchard	0	197	197	0
Vineyard	0	1,369	1,369	0
Total Acres of Farmland	0	9,181	9,181	0
Total Terrestrial Land Covers	5,230	15,827	21,057	70
TOTAL NATURAL LAND COVERS	5,488	17,309	22,797	1,494

* Indicates a land cover type that is sensitive. Sensitive natural communities are those that receive specific recognition or legal protection under federal, State, or from local laws or regulations.

** The re-establishment/establishment acres in this column are in addition to the preservation acres presented in the previous column.

8.2.2.1 Vernal Pool Ecosystem (Valley Grassland, Vernal Pool, Swale, and Stream/Creek [VPIH])

As discussed earlier in Section 8.1.2.2, The Vernal Pool Ecosystem in the Planning Area, this chapter consolidates the discussion and analysis of impacts to the four land covers within the

Vernal Pool Ecosystem because those land covers function together as a single ecosystem (also see Appendix G-1). As discussed in Section 8.2.1, indirect impacts to the Vernal Pool Ecosystem is described qualitatively for the Valley Grassland land cover, but is described both qualitatively and quantitatively for the Vernal Pool, Swale, and Stream/Creek (VPIH) land covers.

Direct and Indirect Effects of the Alternative

The loss of habitat from new development and related infrastructure under the No Action/No Project Alternative are estimated to result in direct impacts to approximately 17,688 acres of Vernal Pool Ecosystem, and result in indirect impacts to approximately 261 acres of Vernal Pool Ecosystem land covers and their associated plant and animal communities (Table 8-6). The total 17,949 acres of directly and indirectly impacted Vernal Pool Ecosystem is approximately 17.4% of the existing 103,210 acres of Vernal Pool Ecosystem land covers in the Planning Area.

The majority of the direct and indirect impacts to the Vernal Pool Ecosystem will occur inside the UDA, where most new urban development will occur (see Section 2.2). Future UDA urban development projects and activities under the No Action/No Project Alternative (see Section 2.2.1) would result in an estimated direct loss of 17,135 acres and the indirect loss of 261 acres of the Vernal Pool Ecosystem and the habitat that those acres provide for the vernal pool plant and animal communities (Table 8-6).

As discussed above in Section 8.1.2.2, most of the Mather Core Recovery Area (MCRA) is located inside the UDA. Of the approximately 18,117 existing acres of Vernal Pool Ecosystem within the MCRA, approximately 9,570 acres are expected to be directly impacted (removed), and an additional 213 acres are expected to be indirectly impacted (9,783 acres total, or approximately 54% of the MCRA's Vernal Pool Ecosystem).

As discussed in Section 2.2.1, rural transportation and water recycling projects that support the planned urban development are expected to occur outside the UDA. Projects and activities outside the UDA, including potential impacts from the estimated 1,900 acres of "displaced development" (see Section 2.2.3), are expected to directly impact (remove) 553 acres of existing Vernal Pool Ecosystem land covers outside the UDA (Table 8-6).

Of the approximate 38,514 acres of Vernal Pool Ecosystem within the C/RS, approximately 53 acres would be directly impacted, and 0.2 acre would be indirectly impacted by the rural transportation Covered Activities planned outside the UDA (0.14%).

The environmental stressors likely to result from the urban development projects and activities implemented under the No Action/No Project Alternative are described in Section 8.2.1, in Appendix G, and in Section 3.6.6. The following discussion qualitatively describes the expected indirect effects of the No Action/No Project Alternative's environmental stressors on the Planning Area's Vernal Pool Ecosystem plant and animal communities.

Most indirect effects of the No Action/No Project Alternative to the Vernal Pool Ecosystem are described qualitatively in Section 8.2.2. However, the indirect impact to the existing hydrology and ecology of Vernal Pools, Swales, and Stream/Creek (VPIH) land covers are qualitatively estimated. As discussed in Section 8.2.1, the plants and animals of the Vernal Pool Ecosystem are especially vulnerable to impacts of activities that alter the hydrology of the watershed that support the seasonal perched aquifer of a Vernal Pool Ecosystem. As presented in Table 8-6, urban development projects and activities under the No Action/No Project Alternative are expected to indirectly affect the existing hydrology and ecology of 261 acres of Vernal Pool Ecosystem land covers, in addition to the expected 17,688 total acres of direct impacts to the Vernal Pool Ecosystem (Table 8-6). Most of the 261 acres of indirect impact to the Vernal Pool Ecosystem land covers would occur inside the UDA where almost all new urban development activities would occur.

Because it would permanently add impermeable surfaces in the UDA, urban development is expected to result in increased urban runoff relative to existing conditions, especially during storm events. Such increases have potential to result in increased sediment loads in Stream/Creek (VPIH), and alterations of stream/creek hydrology (see Section 7.2.2). Also, additional new development may permanently increase the potential for exposure to chronic discharge of non-point source pollutants, such as grease, oil, fertilizers, and lawn pesticides, to Vernal Pool Ecosystems, potentially harming vernal pool crustaceans, other vernal pool animals, or altering plant community composition. However, project compliance with existing regulatory requirements (see Sections 8.1.1 and 7.1.1) is expected to avoid these indirect effects (see Sections 7.2.2.2 and 7.2.2.3).

New urban development inside the UDA under the No Action/No Project Alternative would also indirectly impact Vernal Pool Ecosystem land covers by increasing the presence of invasive plants through species escaping from new landscaping and disturbed areas, which are more easily colonized by invasive plants (see Appendix G-1). These invasive plants would impact Vernal Pool Ecosystems in the UDA by outcompeting native species and by using more water than native species, thereby shortening the vernal pool ponding period (see discussion of the vernal pool hydrologic cycle in Appendix G-1).

New urban development under the No Action/No Project Alternative is also expected to result in an increased wildfire frequency on vernal pools inside the UDA due to increased ignition sources related to human activities, and increases in invasive plant abundance, which generates more wildfire fuel than non-invasive plant species. Wildfire is a natural part of the ecology of the Vernal Pool Ecosystem's Vernal Pools, Swales, and Valley Grassland land covers, so additional low-intensity fires alone would not adversely impact the existing conditions of those land covers. However, increased fire frequency would require more intensive fire suppression activities to protect newly developed areas, including disking and bulldozing of emergency firebreaks and increased vehicle traffic and human activity (see Section 12.2.2), which are likely to directly and indirectly impact the Vernal Pool Ecosystem and its associated plant and animal communities.

Therefore, the quantified impacts to vernal pool species habitat and natural community (including direct and indirect loss) would total 17,949 acres, which is approximately 17.4% of the total 103,210 acres of existing Vernal Pool Ecosystem within the Planning Area (see Table 8-6).

Table 8-6. Direct and Indirect Effects on the Vernal Pool Ecosystem Land Covers Expected Under the No Action/No Project Alternative

Land Cover	Direct Impacts within the UDA (acres)	Direct Impacts Outside the UDA (acres)	Indirect Effects (acres)	Total Impacts (acres)	Existing Acres in 317,655-acre Planning Area	Percent of Existing Acres Directly or Indirectly Impacted
Valley Grassland (in Vernal Pool Ecosystem)	16,586	505	Described Qualitatively	17,091	97,349	17.6%
Vernal Pool	279	43	193	515	4,536	11.4%
Swale	235	5	61	301	1,252	24.0%
Stream/Creek (VPIH)	35	0	7	42	73	57.6%
Vernal Pool Ecosystem Total Impacts	17,135	553	261	17,949	103,210	17.4%

The regulatory environment under the No Action/No Project Alternative (see Section 2.2.2) would require urban development projects and activities that undergo environmental review under CEQA or the National Environmental Policy Act, and/or require ESA, CESA, or CWA regulatory authorization to avoid and minimize impacts to the maximum extent possible, and to provide compensatory mitigation for impacts the Vernal Pool Ecosystem that cannot be avoided. Mitigation provided by individual projects and activities are expected to preserve approximately 10,406 acres of existing Vernal Pool Ecosystem within the Planning Area. Approximately 562 acres of Vernal Pools and Swales would also be re-established or established (created) on these Preserves to mitigate direct impacts (loss) of 562 acres of Vernal Pools and Swales (Table 8-7).

Table 8-7. Estimated Amounts of Vernal Pool Ecosystem Mitigation Implemented Under the No Action/No Project Alternative

Land Cover	Preserved Land (acres)			Re-establishment & Establishment Acres in the Planning Area**
	Inside UDA	Outside UDA	Total	
Valley Grassland (in Vernal Pool Ecosystem)*	4,807	3,883	8,690	0
Vernal Pool*	164	866	1,030	322
Swale*	81	592	673	240
Stream/Creek (VPIH)*	13	0	13	17 ^a
Total Vernal Pool Ecosystem Land Covers	5,065	5,341	10,406	579

* Indicates a land cover that is sensitive. Sensitive natural communities are those that receive specific recognition or legal protection under federal, state, or local laws or regulations; see Section 8.1.2.3.

** The re-establishment/establishment acres in this column are in addition to the preservation acres presented in the previous column.

^a As discussed above, the Section 8.2.2 analysis assumes CWA 404 compensatory mitigation for this land cover would utilize mitigation banks or in-lieu-fee programs, resulting in approximately half of compensatory mitigation acres occurring outside the EIS/EIR Planning Area.

As discussed above in Section 8.1.2.2, most of the MCRA is located inside the UDA. Of the approximately 18,117 acres of Vernal Pool Ecosystem within the MCRA, 4,550 acres (24%) would be preserved by the Proposed Action/Proposed Project Alternative.

Cumulative Effects of the Alternative

A substantial amount of vernal pool habitat has been converted for human uses, in spite of federal regulations protecting wetlands. Vernal Pool Ecosystem loss occurs from direct destruction and modification of pools due to filling, grading, disking, leveling, paving, and other activities, as well as modification of surrounding uplands, which alters vernal pool watersheds and the supporting upland ecosystem. Remaining Vernal Pool Ecosystems have also become highly fragmented across the study area. Habitat fragmentation degrades the function and services of remaining Vernal Pool Ecosystems, and decreases the potential for vernal pool aquatic and upland species to persist over the long term.

The approximately 7 million acres of Central Valley Vernal Pool Ecosystem present in the 1800s have been significantly reduced, first by agricultural development and mineral extraction, and more recently by urban expansion (Holland 2009). Beginning around the mid-1800s, the primary loss of Vernal Pool Ecosystem was from conversion to agriculture and water conveyance and storage projects (Frayer et al. 1989; Kreissman 1991). Holland (1998) estimated approximately 967,600 acres of remaining vernal pool habitat in California, an 87% reduction in the original habitat acreage. Holland (2009) subsequently estimated that approximately 13% more of the vernal pool grassland identified in baseline mapping had been lost as of 2005.

In most instances, habitat losses have gone unmitigated, either proceeding without required authorization(s) such as a CWA 404 permit and associated Section 7(a)(2) consultation, or in instances where direct filling of waters of the United States have been avoided, thus not triggering the CWA permitting process or the CWA's Section 7 process. However, even in the instances of authorized activities, the mitigation measures typically required through regulatory authorization only serve to reduce the overall rate of habitat loss; a net loss of existing habitat remains (Holland 2009; Marty 2005). Based on observed loss rates, Holland (2009) estimated that Vernal Pool Ecosystem grasslands outside of preserves could be lost from the Central Valley by 2087.

The Southeastern Sacramento Valley Vernal Pool Region includes much of Sacramento County and Placer County, and portions of San Joaquin, Calaveras, Eldorado, and Yuba Counties. The Southeastern Sacramento Valley Vernal Pool Region includes two zone one core recovery areas (MCRA and C/RS in Sacramento County) and two zone two core areas (Beale and Western Placer County). Vernal Pool Ecosystem losses range from 0.9% to 8.84%. In 1998, Keeler-Wolf et al. estimated that the Southeastern Sacramento Valley Vernal Pool Region contains

approximately 15% of the remaining Vernal Pool Ecosystem California. Based on Holland (2009) mapping data, approximately 108,964 acres of Vernal Pool Ecosystem, or 12% of the total 2009 remaining Vernal Pool Ecosystem, is in the Southeastern Sacramento Valley Vernal Pool Region. This equates to an approximate 20% reduction in Vernal Pool Ecosystem within the Southeastern Sacramento Valley Vernal Pool Region from the early 1990s to 2005 (which is considerably higher than the cumulative total loss of 13% across the Central Valley of California). Rapid urbanization in Placer County accounts for much of the higher-than-average observed losses in the Southeastern Sacramento Valley Vernal Pool Region. From 1994 to 2005, 17,113 acres of Vernal Pool Ecosystem (35%) within Placer County was lost. In contrast, an estimated 6,598 acres, 12%, were lost in Sacramento County from 1993 to 2005, which is similar to the total proportion of vernal pool grassland loss estimated by Holland (2009) across the Central Valley in the same time period.

Losses in Sacramento County occurred primarily from 1993 to 2005, when a total of 6,598 acres of vernal pool grassland were lost at a rate of 1.5% per year, with 3,267 acres (12.6%) removed by new urban development; 2,193 acres (5.6%) removed by new vineyards and orchard; 416 acres (2.4%) removed by new agricultural-residential development; 420 acres (2.4%) removed by new plowed farmland; and 456 acres (2.3%) removed by new alfalfa, irrigated pasture, or other agricultural activities (Holland 2009). More recently, in 2010 approximately 1,000 acres of vernal pool grassland in southeastern Sacramento County, within the C/RS, were lost through conversion to vineyard and agriculture (Holland 2009).

As discussed in Section 3.7.1, the natural land covers and their associated plant and animal communities within the Planning Area have been fragmented and lost because of past development, especially within the UDA. These land cover losses have removed a significant amount of the historical pre-settlement acres of Vernal Pool Ecosystem in the study area, including the associated vernal pool plant and animal communities. In the MCRA, Holland (2009) identified approximately 13,543 acres of extant Vernal Pool Ecosystem in 2005. Approximately 1,434 acres of Vernal Pool Ecosystem (22% of habitat loss countywide), were lost in what is now the MCRA, primarily to urbanization (Holland 2009). An additional 315 acres of vernal pool grassland were lost in the first quarter of 2006 subsequent to the 2005 high-resolution imagery used by Holland (2009), for a total of 1,749 acres of Vernal Pool Ecosystem from the MCRA through March 2006. This is a 13% loss within the MCRA over the 8-year period, or 1.63% annually, similar to losses countywide. An additional 278 acres of vernal pool grassland (not mapped by Holland (2009)) were lost within the Sunrise Douglas (Sunridge) urban planning area concurrent or subsequent to the MCRA being designated. In total, 2,027 acres of Vernal Pool Ecosystem have been lost from the MCRA through 2006. It is worth noting that losses in the MCRA since its designation have already exceeded what is recommended by the Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon, which is to protect 95% of suitable vernal pool branchiopod habitat in this Core Area.

However, a review of the USACE’s CWA 404 project authorizations within the Planning Area between 1979 and 2013 indicated a small net gain of waters of the United States within individual projects authorized under CWA 404 (USACE 2014), although this gain was not determined individually for aquatic land covers within the Vernal Pool Ecosystem. Existing regulations and policies (Section 8.1.1) would reduce project impacts to Vernal Pool Ecosystem aquatic land covers primarily through avoidance (preservation) and secondarily through compensatory re-establishment/establishment (creation) of wetlands and other waters (see Sections 2.2.4 and 10.1.1). These CWA 404 requirements (for avoidance, minimization, and compensatory mitigation of aquatic resources) by projects and activities that are subject to CWA 404 permitting is expected to continue for the future projects and activities of the No Action/No Project Alternative, and for the “other” reasonably foreseeable future actions described in Section 3.7.2. As such, future actions subject to CWA 404 permitting would likely result in no net loss of Vernal Pool land cover acres from those projects. As discussed in Section 2.2.4 under the No Action/No Project Alternative, mitigation to compensate for future project and activity impacts to Vernal Pool Ecosystem land covers would continue to be undertaken primarily on a project-by-project basis, would likely continue to be geographically fragmented, and would not conserve Vernal Pool Ecosystems at a landscape scale.

The incremental effects of the No Action/No Project Alternative would have direct and indirect impacts that would result in an estimated loss of 17,949 acres or approximately 17.4 % of the 103,210 acres of existing Vernal Pool Ecosystem within the Planning Area. Project mitigation under the No Action/No Project Alternative would include an estimated 10,406 acres of preservation and 579 acres of vernal pool habitat re-establishment/establishment within the Planning area.

Therefore, the incremental direct and indirect impacts of No Action/No Project Alternative to Vernal Pool Ecosystem, when considered together with the significant impacts to Vernal Pool Ecosystem from past, current, and foreseeable future projects and activities in the study area, would be a ***Significant Cumulative*** effect.

8.2.2.2 Aquatic Land Covers (Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water)

As discussed in Section 8.1.2.1, the plant and animal communities associated with Aquatic land covers Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water differ in composition, but provide similar aquatic habitats, have similar ecology, and have similar susceptibility to the environmental stressors described in Appendix G-1. Therefore, Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water natural land covers are analyzed together in this chapter (see Section 8.2.1). As discussed in Section 8.1.2, Seasonal Wetland,

Freshwater Marsh, Stream/Creek, and Open Water communities are considered sensitive natural communities.

Direct and Indirect Effects of the Alternative

As discussed in Section 8.1.2.1, approximately 10,676 acres of Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water natural communities are present in the Planning Area (Table 8-1a).

Activities and development projects expected under the No Action/No Project Alternative (Section 2.2.1) are estimated to result in direct loss of approximately 583 acres of Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water natural communities. This total loss includes approximately 513 acres lost from new development within the UDA, and 70 acres lost from activities, projects, and displaced development outside of the UDA (Table 8-4). The estimated loss is approximately 5.5% of the existing 10,676 acres of Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water within the Planning Area.

The potential environmental stressors that are expected to result from the projects and activities implemented under the No Action/No Project alternative are described in Appendix G. The discussion below qualitatively describes the expected effects of the No Action/No Project's environmental stressors on the Planning Area's Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water land covers and their plant and animal natural communities.

By permanently increasing the extent of impermeable surfaces, urban development in the UDA has potential to result in increased runoff relative to existing conditions, especially during storm events. Such increases could result in increased sediment loads in Seasonal Wetland, Freshwater Marsh, and Open Water land covers, and alter downstream hydrology in the Stream/Creek land cover in the UDA. Also, addition of new development is expected to permanently increase discharge of point and non-point source pollutants, such as grease, oil, fertilizers, and lawn pesticides, to Seasonal Wetland, Freshwater Marsh, Open Water, and flowing Stream/Creek land covers, relative to the existing conditions, potentially impacting the physical and biotic characteristics of the habitat and the associated natural community, including increases in sediments, chemical toxicity, and excessive nutrients. However, compliance with existing regulatory requirements (see Sections 8.1.1 and 7.1.1) is expected to avoid the indirect effects (see Sections 7.2.2.2 and 7.2.2.3).

The regulatory environment under the No Action/No Project Alternative would continue existing regulatory requirements for these four land covers (see Section 2.2.2 and Section 8.1.1), which would require urban development projects and activities that undergo environmental review under CEQA or the National Environmental Policy Act, and/or require

ESA, CESA, or CWA regulatory authorization to avoid and minimize impacts to the Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water land covers to the maximum extent possible, and to provide compensatory mitigation for losses of Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water land covers that cannot be avoided. This mitigation would be implemented on a project-by-project basis (see Section 2.2), and is expected to preserve approximately 24 acres and re-establish or establish 291 acres of these Aquatic Resource land covers within the Planning Area (Table 8-5).

Cumulative Effects of the Alternative

As discussed in Section 3.7.1 and Section 8.1.2, past development in the Planning Area has removed a significant amount of the historical Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water natural communities within the study area, fragmenting much of the existing Seasonal Wetland, Freshwater Marsh, Open Water, and Stream/Creek that remains in the study area (see Section 8.1.2.1 above).

However, a review of the USACE's CWA 404 project authorizations within the Planning Area between 1979 and 2013 indicated a small net gain of waters of the United States within individual project sites authorized under CWA 404 (USACE 2014), although this gain was not determined individually for Seasonal Wetland, Freshwater Marsh, Open Water, and Stream/Creek. Existing regulations and policies (Section 8.1.1) would reduce individual project impacts to Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water Aquatic land covers primarily through avoidance (preservation) and secondarily through compensatory re-establishment/establishment (creation) of wetlands and other waters (see Section 2.2.4 and Section 8.1.1). The CWA 404 regulatory requirements (for avoidance, minimization, and compensatory mitigation) for projects and activities that are subject to CWA 404 permitting is expected to continue for the future projects and activities of the No Action/No Project Alternative, and for the "other" reasonably foreseeable future actions (described in Section 3.7.2). In addition, other regulations and policies described previously in Section 8.1.1, including Section 1600 of the California Fish and Game Code, would also minimize loss in acreage of Stream/creek in the Planning Area from the projects and activities that will occur under the No Action/No Project alternative, as well as for the "other" reasonably foreseeable future actions (described in Section 3.7.2).

The incremental impacts of the No Action/No Project Alternative would result in the direct loss of 583 acres, or approximately 5.5%, of the existing Seasonal Wetlands Freshwater Marsh, Stream/Creek, and Open Water land covers and associated natural communities within the Planning Area. Project mitigation for impacts to Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water would continue to be implemented on a project-by-project basis. Therefore, the incremental direct and indirect impacts of No Action/No Project Alternative to

Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water, when considered together with the significant impacts to Valley Grassland from past, current, and foreseeable future projects and activities in the study area, would be a ***Significant Cumulative*** effect.

8.2.2.3 Riparian Land Covers (Mixed Riparian Woodland, Mixed Riparian Scrub, and Mine Tailing Riparian Woodland)

As discussed in Section 8.1.2.1, Planning Area Riparian land covers include Mixed Riparian Woodland, Mixed Riparian Scrub, and Mine Tailing Riparian Woodland. The Riparian land covers are considered sensitive natural communities (Section 8.1.2.3). As discussed in Section 8.2.1, indirect impacts to the Riparian land covers are described qualitatively.

Direct and Indirect Effects of the Alternative

The new development and related infrastructure projects and activities expected under the No Action/No Project Alternative are estimated to directly impact (remove) 554 acres of Riparian land covers and their associated natural communities within the Planning Area (Table 8-4). The majority of this loss (approximately 509 acres) would be within the UDA, with an additional 45 acres from rural transportation projects associated with new urban development in the UDA, and the 1,900 acres of planned urban development expected to be displaced outside of the UDA (see Section 2.2.3). The estimated total of 554 acres lost represents approximately 7% of the existing 7,951 acres of Riparian land covers and riparian plant and animal natural communities present in the Planning Area.

The environmental stressors that may result from new urban development are discussed in Section 8.2.1 and in Appendix G-1. The following impact analysis qualitatively describes the expected indirect effects of the No Action/No Project Alternative's environmental stressors on the Riparian land covers and their plant and animal natural communities.

By permanently increasing the extent of impermeable surfaces, urban development in the UDA has potential to result in increased runoff relative to existing conditions, especially during storm events. Such increases could result in stream bank erosion, increased sediment loads downstream, and alterations of downstream hydrology, which could remove or physically damage the surrounding riparian habitat. Also, additional new development is expected to permanently increase the potential for long-term discharge of point and non-point source pollutants such as grease, oil, fertilizers, and lawn pesticides into streams and creeks, which would increase the quantity of pollutants within Riparian land covers and adversely affect the riparian plant and animal communities. However, compliance with existing regulatory requirements (see Sections 8.1.1 and 7.1.1) is expected to avoid the indirect effects (see the analysis in Sections 7.2.2.2 and 7.2.2.3).

The plant and animal communities associated with riparian land covers are also expected to be indirectly impacted from increased the presence of invasive plants, which colonize downstream Riparian land covers through the highly effective transport of plant parts, seeds, and other propagules in flowing water of streams and creeks associated with the Riparian land covers. Invasive plant species have potential to dominate the riparian communities where they become established, excluding native herbaceous and woody riparian vegetation and degrading habitat conditions for wildlife species of the riparian natural community that depend on that native riparian vegetation.

New urban development is also expected to result in an increased wildfire frequency in Riparian land covers inside the UDA due to increased potential for ignitions occurring from greater human presence and human activities. Should wildfires be of sufficient intensity to result in high levels of mortality to mature riparian vegetation, the Riparian land covers and associated natural community would be adversely affected for many years, until sufficient regrowth occurs to again support the natural plant and animal communities.

Development projects that undergo environmental review under NEPA or CEQA, or that require CDFW, CWA, or local authorizations, would be required to avoid and minimize impacts to riparian areas and to provide compensatory mitigation for direct impact impacts to Riparian land covers (see Section 8.1.1). Mitigation for riparian impacts would occur on a project-by-project basis, as required by separate regulatory agencies and local jurisdictions. The No Action/No Project Alternative is expected to re-establish or establish 256 acres of Mixed Riparian Woodland and 298 acres of Mixed Riparian Scrub land covers. As discussed in the introduction to Section 8.2.2, impacts to the Mine Tailing Riparian Woodland land cover are expected to be mitigated by re-establishment or establishment of Mixed Riparian Woodland or Mixed Riparian Scrub within the Planning Area. The re-establishment or establishment of 554 acres of Riparian land covers (Table 8-5) equals the expected direct loss of 554 acres of riparian land covers (Table 8-4).

Cumulative Effects of the Alternative

As discussed in Section 3.7.1 and Section 8.1.2, past human activities in the study area have removed a significant amount of the Mixed Riparian Woodland and Mixed Riparian Scrub and their associated plant and animal communities once present in the study area. As discussed in Section 8.1.2.1 *Existing Conditions*, much of the riparian land covers remaining in the study area have been disturbed to different degrees, and have been indirectly affected by habitat fragmentation, change in stream hydrographs, and increased human disturbance in the study area.

In addition to the effects from past and current human activities, the reasonably foreseeable future activities expected within the Planning Area (Section 3.7) could result in loss of Riparian land covers, as well as indirect impacts to Riparian land covers (e.g., habitat fragmentation,

change in stream hydrographs, increased human disturbance). The types of future, reasonably foreseeable “other” projects, activities, and actions, described in Section 3.7.2, are similar to the types of past and present actions that occurred in the study area. The other reasonably foreseeable, future actions in the study area (see Sections 3.7.2 and 4.1.2.1) that were not included in the Section 2.2.2 description of the No Action/No Project Alternative include additional new urban development in Elk Grove and Rancho Murieta, master-planned developments inside the UDA named Rio Del Oro and Mather South, further rural residential development outside the UDA, continued development of cultivated agricultural lands, expansion of existing preserves, and development of major infrastructure projects, such as California High-Speed Rail and California WaterFix (see Section 3.7.2 for details about these projects). In addition, as discussed in Section 2.2.3, approximately 1,900 acres of planned urban development would be shifted or displaced to areas outside the current UDA under the No Action/No Project Alternative, probably to areas south of the Elk Grove sphere of influence or areas near Rancho Murieta.

The effects of past, present, and reasonably foreseeable other projects on the Riparian land covers in the study area are described in Section 8.2.2.1 and represent a significant adverse cumulative impact on the Riparian land covers within the study area. The incremental impacts of the No Action/No Project Alternative would result in the direct loss of 554 acres, or approximately 7%, of the existing Riparian land covers within the Planning Area. However, the regulatory environment under the No Action/No Project Alternative is expected to require projects to re-establish or establish 554 acres of Riparian land covers, which, over time, are expected to re-establish the wildlife habitat and plant and animal natural community of the directly impacted Riparian land covers. However, under the No Action/No Project Alternative, preserved and re-established/established habitat would often be geographically fragmented and not adaptively managed to provide conservation at a landscape scale due to the project-by-project nature of the mitigation.

Therefore, the incremental impacts of the No Action/No Project Alternative on Riparian land covers, when considered together with the significant impacts to riparian land covers from past and current human activities and the reasonably foreseeable future projects within the study area, would result in a ***Significant Cumulative*** effect.

8.2.2.4 Valley Grassland

As discussed in Section 8.1.2, approximately 135,152 acres of Valley Grassland are present in the Planning Area, including Valley Grassland that is present both inside and outside of the Vernal Pool Ecosystem (Table 8-1a), and including ranching and grazing agricultural lands. As discussed in Section 8.1.2, Valley Grassland provide habitat for large number of native wildlife species (e.g., small mammals, mule deer, western meadowlark, and red-winged blackbird; foraging for hawks and other raptors; and wintering sandhill cranes). The impacts to Valley

Grassland as a part of the Vernal Pool Ecosystem are also analyzed under impacts to the Vernal Pool Ecosystem (Section 8.2.2.1).

Direct and Indirect Effects of Alternative

Urban development projects and activities under the No Action/No Project Alternative (Section 2.2.2) are estimated to remove a total of 23,429 acres of Valley Grassland natural community within the Planning Area (Table 8-4). The majority of this loss would be within the UDA (approximately 21,797 acres) where most of the new urban development activities would occur. Approximately 1,632 acres of Valley Grassland would be impacted by planned infrastructure projects and activities located outside of the UDA and from the development expected to be displaced to areas outside the current USB boundaries under the No Action/No Project Alternative (Section 2.2.3). The estimated total loss of Valley Grassland would be approximately 17.3% of the existing Valley Grassland within the Planning Area (Section 8.1.2.1).

The environmental stressors resulting from new urban development can also produce permanent indirect impacts that occur later in time or occur beyond the project site (see Section 3.6.6 and Appendix G-1). The No Action/No Project Alternative would indirectly impact the plant and animal communities of the Valley Grassland land cover by resulting in habitat fragmentation, chronic ground vibration, chronic nighttime lighting, increased wildfire frequency, increased colonization by weedy plant species, and increased human activity, especially to the grasslands within the UDA.

The regulatory environment under the No Action/No Project Alternative (Section 8.1.1) would require mitigation for direct impacts to the Valley Grassland land cover and associated plant and animal communities for projects that undergo environmental review under CEQA. This mitigation would primarily occur as a result of mitigation requirements for loss of foraging habitat for associated special-status species, such as Swainson's hawk, and as a result of mitigation requirements for impacts to important farmland, including mitigation for loss of grazing land of more than 50 acres outside of the County of Sacramento's USB (also see the Section 8.2.2.1 analysis of Valley Grassland that is also located within the Vernal Pool Ecosystem).

The mitigation for impacts to Valley Grassland under the No Action/No Project Alternative would occur on a project-by-project basis and is anticipated to include preservation of approximately 11,806 acres of Valley Grassland land cover within the Planning Area, which includes the 8,690 acres of Valley Grassland that would be preserved within the Vernal Pool Ecosystem. This expected 11,806 acres of Valley Grassland preservation is roughly half the total 23,429 acres of the direct impacts (losses) to Valley Grassland land cover expected under the No Action/No Project Alternative.

Cumulative Effects of the Alternative

As discussed in Section 3.7.1 and above in Section 8.1.2, Valley Grassland once covered the majority of the Planning Area, except along waterway riparian corridors and in areas of oak woodlands. However, much of the Valley Grassland has been lost from the study area, and remaining areas are often fragmented because of past and current human activities.

In addition to the effects from past and current human activities, the reasonably foreseeable future activities (Section 3.7) are expected to result in additional loss and fragmentation of Valley Grassland land cover in the study area. The types of future, reasonably foreseeable “other” projects, activities, and actions, described in Section 3.7.2, are similar to the types of past and present actions that occurred in the study area. The other reasonably foreseeable, future actions in the study area (see Section 3.7.2) that were not included in the Section 2.2.2 description of the No Action/No Project Alternative include additional new urban development in Elk Grove and Rancho Murieta, master-planned developments inside the UDA named Rio Del Oro and Mather South, further rural residential development outside the UDA, continued development of cultivated agricultural lands, expansion of existing preserves, and development of major infrastructure projects, such as California High-Speed Rail and California WaterFix (see Section 3.7.2 for details about these projects). In addition, as discussed in Section 2.2.3, approximately 1,900 acres of planned urban development would be shifted or displaced to areas outside the current UDA under the No Action/No Project Alternative, probably to areas south of the Elk Grove sphere of influence, or areas near Rancho Murieta that are currently dominated by Valley Grassland. The effects of past, present, and reasonably foreseeable other projects on Valley Grassland in the study area represent a significant adverse cumulative impact on the Valley Grassland within the study area.

The incremental impact of the No Action/No Project Alternative would result in the direct loss of 23,429 acres of Valley Grassland (21,797 acres in the UDA and 1,632 acres outside the UDA), which would remove approximately 17.3% of the existing Valley Grassland acres within the Planning Area. As under the existing conditions (Section 8.1.1), the regulatory environment of the No Action/No Project alternative would not require project mitigation to re-establish or establish Valley Grassland. However, project mitigation is expected to permanently preserve 11,806 acres of Valley Grassland, which is approximately half the amount of Valley Grassland that is expected to be directly impacted (lost) under the No Action/No Project Alternative. As discussed in Section 2.2.4, preserves of Valley Grassland would continue to be implemented on a project-by-project basis, and individual grassland preserves would likely be relatively small and geographically fragmented.

Therefore, the incremental direct and indirect impacts of No Action/No Project Alternative to Valley Grassland, when considered together with the significant impacts to Valley Grassland

from past, current, and foreseeable future projects and activities in the study area, would be a ***Significant Cumulative*** effect.

8.2.2.5 Blue Oak Woodland and Blue Oak Savanna

The Blue Oak Woodland land cover and the Blue Oak Savanna land cover are considered together because the plants and animals of both communities overlap considerably (see Section 8.1.2.1), and each land cover has the same regulatory requirements (Section 8.1.1). Blue Oak Woodland and Blue Oak Savanna land covers are sensitive natural communities (see discussion of individual land covers in Section 8.1.2). As discussed in Section 8.2.1, indirect impacts to the Blue Oak Woodland and Blue Oak Savanna land covers is described qualitatively.

Direct and Indirect Effects of the Alternative

The new development and related infrastructure projects and activities expected under the No Action/No Project Alternative are estimated to directly impact (remove) 140 acres of Blue Oak Woodland and Blue Oak Savanna land covers and their associated natural communities within the Planning Area (Table 8-4). The majority of these impacts (54 acres of Blue Oak Woodland and 84 acres of Blue Oak Savanna) would occur outside of the UDA where most of the existing Blue Oak Woodland and Blue Oak Savanna is present (Section 8.1.2.1). Relatively few acres of Blue Oak Woodland and Blue Oak Savanna exist within the UDA, and only 2 acres of Blue Oak Savanna would be impacted and no Blue Oak Woodland acres would be impacted within the UDA. The estimated total of 140 acres of direct impacts is approximately 1% of the existing 14,769 acres of combined Blue Oak Woodland and Blue Oak Savanna existing in the Planning Area (Table 8-1).

The environmental stressors that may result from new urban development are discussed in Section 8.2.1 and in Appendix G-1. The environmental stressors resulting from new urban development can also produce permanent indirect impacts that occur later in time or occur beyond the project site (Section 3.6.6). The No Action/No Project Alternative would indirectly impact the plant and animal communities of the Blue Oak Woodland and Blue Oak Savanna land covers by increasing habitat fragmentation, wildfire frequency, and colonization by weedy plant species.

Wildfire is a natural part of the Blue Oak Woodland and Blue Oak Savanna ecosystem, and low-intensity fires would likely burn under the oak canopy and not adversely Blue Oak Woodland and Blue Oak Savanna land covers or the associated plant and animal communities. However, with decades of fire suppression, the amount of fuel has built up to levels that would increase the intensity of wildfires. Should wildfires be of sufficient intensity to result in high levels of mortality to blue oaks, these land covers and associated plant and animal communities would be adversely affected for many years, until sufficient regrowth occurs to again support the natural plant and animal communities. New urban development is expected to result in an

increased wildfire frequency inside the UDA due to increased potential for ignitions associated with greater human presence and activities. However, because this increased risk of wildfire will occur primarily inside the UDA, there should be little or no harm to existing Blue Oak Woodland and Blue Oak Savanna land covers.

The regulatory environment under the No Action/No Project Alternative (Section 8.1.1) would require projects that undergo environmental review under CEQA or require approvals or entitlements from a local jurisdiction to provide compensatory mitigation for direct impacts (losses) of Blue Oak Woodland and Blue Oak Savanna trees and land covers. This mitigation would be implemented on a project-by-project basis and would be guided by the Oak Woodlands Conservation Act (Senate Bill 1334), and the oak tree compensation policies in the Conservation Element of the Sacramento County General Plan. Mitigation provided under the No Action/Project Alternative is estimated to preserve 70 acres of Blue Oak Woodland and/or Blue Oak Savanna and re-establish or establish approximately 70 acres of Blue Oak Woodland and/or Blue Oak Savanna. Because mitigation for impact to Blue Oak Woodland and Blue Oak Savanna would continue to be implemented on a project-by-project basis under the No Action/No Project Alternative (Section 2.2.4), preserves and compensatory mitigation sites would likely be geographically fragmented.

Cumulative Effects of the Alternative

As discussed in Section 8.1.2, the existing 14,769 acres of Blue Oak Woodland and Blue Oak Savanna natural communities within the Planning Area are located primarily outside the UDA, and are relatively undisturbed and unfragmented by past and current human activities. However, past residential development around Rancho Murieta has removed and fragmented some of the Blue Oak Woodland and Blue Oak Savanna natural communities in that location (Sacramento County 2011). Overall, past and current effects on Blue Oak Woodland and Blue Oak Savanna in the study area have been relatively small.

The reasonably foreseeable future activities (Section 3.7.3) could directly impact some existing Blue Oak Woodland and Blue Oak Savanna land covers in the study area, additional new urban development in Rancho Murieta, a master-planned development inside the UDA named Rio Del Oro, further rural residential developments outside the UDA, continued development of cultivated agricultural lands, and development of major infrastructure projects such as California High-Speed Rail (see Section 3.7.2 for details of these projects). In addition, as discussed in Section 2.2.3, approximately 1,900 acres of planned urban development would be shifted or displaced to areas outside the current UDA under the No Action/No Project Alternative, probably to areas south of the Elk Grove sphere of influence or areas near Rancho Murieta where Blue Oak Woodland and Blue Oak Savanna are present. The effects of past, present, and reasonably foreseeable other projects on Blue Oak Woodland and Blue Oak Savanna in the study area represent a significant adverse

cumulative impact on the Blue Oak Woodland and Blue Oak Savanna land covers within the study area. However, these foreseeable other projects and activities in the County would typically be required to preserve or re-establish any affected Blue Oak Woodlands under the no-net-loss policy for oak woodlands in the Conservation Element of the Sacramento County General Plan and the Sacramento County Tree Ordinance (Chapter 19.04 of Title 19 of the County Code). While the general plans of Galt and Rancho Cordova also contain tree protection policies (see Section 9.1.1), there is little if any Blue Oak Woodland or Blue Oak Savanna land covers within these jurisdictions.

The No Action/No Project Alternative is anticipated to preserve 70 acres and to re-establish 70 acres of Blue Oak Woodland and Blue Oak Savanna, which together is equivalent to the 140 acres expected to be directly impacted (lost) under the No Action/No Project Alternative. Therefore, only 70 acres or approximately 0.5% of the Blue Oak Woodland and Blue Oak Savanna within the Planning Area would be directly impacted (lost), and the past and current impacts to Blue Oak Woodland and Blue Oak Savanna within most of the study area have been relatively small. Therefore, the incremental impact of the No Action/No Project Alternative on Blue Oak Woodland and Blue Oak Savanna, when considered together with the impacts of past, current, and reasonably foreseeable projects, would result in a ***Less Than Significant Cumulative*** effect.

8.2.2.6 Farmland (Croplands and Irrigated Pasture-Grassland)

As discussed in Section 8.1.2, Cropland and Irrigated Pasture-Grassland are included in the Natural land cover category because they provide habitat for a native wildlife community (e.g., cottontail rabbits, other small mammals, mule deer, western meadowlark, red-winged blackbird; foraging for hawks and other raptors; and wintering sandhill cranes), and support some native trees and other native plants on the margins of fields or in hedgerows. There are approximately 67,820 acres of the Cropland and Irrigated Pasture-Grassland land covers in the Planning Area.

Direct and Indirect Effects of the Alternative

Future development projects and activities under the No Action/No Project Alternative are estimated to directly remove up to approximately 8,484 acres of existing Cropland and Irrigated Pasture-Grassland land covers and their associated plant and animal communities, which is approximately 12.5% of the total existing of these land covers in the Planning Area. Approximately 7,510 acres Cropland and Irrigated Pasture-Grassland are expected to be directly impacted (lost) in the UDA, where most new urban development activities would occur (Table 8-4). Approximately 974 acres would be directly impacted (lost) outside the UDA from infrastructure projects associated with new urban development and from the 1,900 acres of planned development expected to be displaced to areas outside the current Sacramento County USB boundary (see Section 2.2.3).

Environmental stressors associated with new urban development may cause indirect impacts later in time or beyond the project site (Section 3.6.6 and in Appendix G-1). Environmental stressors that could affect Cropland and Irrigated Pasture-Grassland native plant and animal communities include habitat fragmentation, increased wildfire frequency, increased colonization by weedy plant species, and increased human activity.

The regulatory environment under the No Action/No Project Alternative (Section 8.1.1) would require projects that undergo CEQA and projects that obtain local approvals or entitlements to provide mitigation for project impacts to Cropland and Irrigated Pasture-Grassland land covers. This mitigation would be implemented on a project-by-project basis and would be guided by the agricultural protection policies in the Sacramento County, Rancho Cordova, and Galt General Plans (see Section 8.1.1). Impacts to agricultural land covers, including Cropland and Irrigated Pasture-Grassland, could be mitigated by preserving any agricultural land cover of a similar resource category (e.g., Prime Farmland, Statewide Importance Farmland, Unique Farmland, or Local Importance Farmland).

The No Action/No Project Alternative would permanently preserve approximately 7,615 acres of similar resource-category farmland to mitigate direct impacts to Cropland and Irrigated Pasture-Grassland land covers (Table 8-5), which equals approximately 90% of the Cropland and Irrigated Pasture-Grassland acres lost (Table 8-4). However, a net loss of 7,510 acres of existing Cropland and Irrigated Pasture-Grasslands would still occur in the Planning Area.

Cumulative Effects of the Alternative

As discussed in Section 1.3.1, Section 3.7.1, and Section 8.1.2, past and current urban development within the study area has removed substantial amounts of Cropland and Irrigated Pasture-Grasslands since the 1920s. The other reasonably foreseeable, future actions in the study area (see Section 3.7.2) that were not included in the Section 2.2.2 description of the No Action/No Project Alternative include additional new urban development in Elk Grove and Rancho Murieta, master-planned developments inside the UDA named Rio Del Oro and Mather South, further rural residential development outside the UDA, expansion of existing preserves, additional conversions of Croplands and Irrigated Pasture to other Farmland land covers such as vineyards and orchards, and development of major infrastructure projects such as California High-Speed Rail and California WaterFix (see Section 3.7.2 for details about these projects). In addition, as discussed in Section 2.2.3, approximately 1,900 acres of planned urban development would be shifted or displaced to areas outside the current UDA under the No Action/No Project Alternative, probably to areas near Rancho Murieta or to areas south of the Elk Grove sphere of influence that currently support Cropland and Irrigated Pasture Grassland. These reasonably foreseeable “other” future actions are anticipated to result in additional loss of Cropland and Irrigated Pasture-Grasslands within the study area. As discussed in Section

8.1.1, current regulations will require these foreseeable other projects to provide some farmland preservation as mitigation for losses of farmland, but this mitigation would not replace the acres of lost farmland.

Projects and activities implemented under the No Action/No Project Alternative are estimated to result in the direct loss of approximately 8,484 acres of Cropland and Irrigated Pasture-Grassland, and the expected regulatory environment of the No Action/No Project (Section 2.2.2) would require the preservation of approximately 7,615 acres of similar quality farmland, which would permanently preserve farmland but would still result in a net loss of farmland in the Planning Area and study area. Mitigation for impacts to farmland would continue to occur on a project-by-project basis, and would likely result in a pattern of farmland preserves that are geographically fragmented.

Therefore, the incremental loss of 8,484 acres of Cropland and Irrigated Pasture-Grasslands under the No Action/No Project Alternative would be a **Significant Cumulative** effect when considered together with the acres of Cropland and Irrigated Pasture Grassland lost from past and present human activities and the other foreseeable future projects in the study area.

8.2.2.7 Farmland (Orchard/Vineyard)

As discussed in Section 8.1.2, Orchard and Vineyard are included in the Natural land cover category because they provide habitat for native wildlife (e.g., perching raptors, other native birds, roosting western red bats, small mammals). There are approximately 30,367 acres of Orchard and Vineyard land covers and their associated plant and animal communities in the Planning Area.

Direct and Indirect Effects of the Alternative

Future urban development projects and activities under the No Action/No Project Alternative are estimated to remove up to approximately 1,745 acres of existing Orchard and Vineyard land covers and associated plant and animal communities, which is approximately 5.7% of the existing 30,367 acres of Orchard and Vineyard land covers in the Planning Area. Approximately 1,546 acres Orchard and Vineyard are expected to be directly impacted (lost) in the UDA, where most new urban development activities would occur (Table 8-4). Approximately 199 acres would be directly impacted (lost) outside the UDA from infrastructure projects associated with new urban development and from the 1,900 acres of planned development expected to be displaced to areas outside the current Sacramento County USB boundary (see Section 2.2.3).

Environmental stressors associated with new urban development may cause indirect impacts later in time or beyond the project site (see Section 3.6.6 and Appendix G-1). Environmental stressors that could affect Orchard and Vineyard native plant and animal communities include

habitat fragmentation, increased wildfire frequency, increased colonization by weedy plant species, and increased human activity.

The regulatory environment under the No Action/No Project Alternative (Section 8.1.1) would require projects that undergo CEQA review and projects that obtain local approvals or entitlements to provide mitigation for project impacts to Orchard and Vineyard land covers. This mitigation would be implemented on a project-by-project basis and would be guided by the agricultural protection policies in the Sacramento County, Rancho Cordova, and Galt General Plans (see Section 8.1.1). Impacts to Agricultural land covers, including Orchard and Vineyard, could be mitigated by preserving any Farmland land cover of similar value (e.g., Prime Farmland, Statewide Importance Farmland, Unique Farmland, or Local Importance Farmland).

Approximately 1,566 acres of similar quality farmland would be preserved under the No Action/No Project Alternative, which equals approximately 90% of the acres of Orchard and Vineyard lost (Table 8-5).

Cumulative Effects of the Alternative

As summarized in Section 1.3.1, Section 3.7.1, and Section 8.1.2, past and current urban development has removed Orchard and Vineyard land covers. However, in recent years, Vineyard land covers have also been created in the Planning Area by the conversion of Annual Grassland, Cropland, Irrigated Pasture, or Orchard Agricultural lands into the Vineyard land cover.

The other reasonably foreseeable, future actions in the study area (see Section 3.7.2) that were not included in the Section 2.2.2 description of the No Action/No Project Alternative include additional new urban development in Elk Grove and Rancho Murieta, master-planned developments inside the UDA named Rio Del Oro and Mather South, further rural residential development outside the UDA, expansion of existing preserves, and development of major infrastructure projects such as California High-Speed Rail and California WaterFix (see Section 3.7.2 for details about these projects). In addition, as discussed in Section 2.2.3, approximately 1,900 acres of planned urban development would be shifted or displaced to areas outside the current USB under the No Action/No Project Alternative, probably to areas near Rancho Murieta or to areas south of the Elk Grove sphere of influence. These reasonably foreseeable “other” future actions are anticipated to directly impact additional Orchard and Vineyard land covers within the study area. As discussed in Section 8.1.1, current regulations will require many of these foreseeable other projects to mitigate losses of Orchard and Vineyard by preserving the same acres of a Farmland land cover that is of the same category (e.g., Prime Farmland, Statewide Importance Farmland, Unique Farmland or Local Importance). However, the foreseeable agricultural land conversions discussed in Section 3.7.2 are expected to create additional acres of vineyard within the Planning Area.

Projects and activities implemented under the No Action/No Project Alternative are estimated to result in the direct loss of approximately 1,745 acres of existing Orchard and Vineyard. The regulatory environment of the No Action/No Project (Section 2.2.2, Section 8.1.1) would require the preservation of approximately 1,566 acres of farmland of a similar category, which would permanently preserve those acres of farmland but would still result in a net loss of 1,745 acres of farmland in the Planning Area. In addition, mitigation for impacts to farmland would continue to occur on a project-by-project basis and would likely result in a pattern of farmland preserves that are geographically fragmented.

Therefore, the incremental loss of Orchard and Vineyard under the No Action/No Project Alternative, when combined with the effects of past and current projects and the effects of the foreseeable future actions in the study area, would likely result in a ***Less Than Significant Cumulative*** effect to Orchard and Vineyard land covers.

8.2.2.8 Wildlife Movement Corridors

Direct and Indirect Effects of the Alternative

As shown in Figure 8-2 and Table 8-3, there are four ECAs either partially or wholly within the Planning Area. As discussed in Section 2.2.1, the majority of planned urban development under the No Action/No Project Alternative would occur within in the UDA, but only the extreme northern most portion of the Coyote Creek ECA is in the UDA and could be impacted (Figure 8-2).

The expected locations of planned recycled water pipeline infrastructure located outside the UDA and south of Elk Grove are not within an ECA, and would have little or no impact on wildlife movement. However, some rural transportation projects outside the UDA would occur within the Bear Slough-Browns Creek ECAs and the Coyote Creek-Dry Creek ECAs. These rural transportation projects include road widening, which would likely reduce the ability of wildlife to move within the ECA. In addition, the 1,900 acres of new development displaced to areas outside the UDA (Section 2.2.1) could occur within the Coyote Creek-Dry Creek ECA north of Rancho Murieta, which would reduce the ability of wildlife to move in those ECAs.

As discussed in Section 8.1.2, Laguna Creek inside the UDA and the Cosumnes River outside the UDA currently have relatively narrow but continuous riparian cover for long distances and provide important east–west movement corridors for terrestrial wildlife in the Planning Area (Figure 8-1). Planned urban development, and associated human activities and recreation along creeks and streams within the UDA are expected to directly and indirectly affect the existing wildlife movement and dispersal along Laguna Creek corridor (see Section 8.1.2.4).

The regulatory environment under the No Action/No Project Alternative (Section 2.2.2 and Section 8.1.1) would require new development projects that undergo CEQA to avoid substantial impacts to wildlife movement, but only if migration of a listed species could be affected.

However, new development projects that require authorizations under ESA, CESA, or CWA would be required to avoid and minimize impacts to wildlife movement corridors to the maximum extent possible. As discussed in Section 2.2.4 under the No Action/No Project Alternative, these avoidance and minimization measures (AMMs) would continue to be implemented on a project-by-project basis, resulting in mitigation that would likely be geographically fragmented and may not continue to provide wildlife movement through the Planning Area.

Cumulative Effects of the Alternative

As discussed in Section 3.7.1 and Section 8.1.2, Natural land cover has been lost and fragmented as a result of past urban and suburban development within the Planning Area, which has reduced the ability for many wildlife species to move or disperse across the Planning Area and the larger study area.

The types of future, reasonably foreseeable “other” projects and actions, described in Section 3.7.2, are similar to the types of past and present actions that have occurred in the study area. The other reasonably foreseeable, future actions in the study area (see Sections 3.7.2 and 4.1.2.1) that were not included in the Section 2.2.2 description of the No Action/No Project Alternative include additional new urban development in Elk Grove and Rancho Murieta, master-planned developments inside the UDA named Rio Del Oro and Mather South, further rural residential development outside the UDA, continued development of cultivated agricultural lands, expansion of existing preserves, and development of major infrastructure projects such as California High-Speed Rail and California WaterFix (see Section 3.7.2 for details about these projects), and would continue to result in loss of Natural land covers. The foreseeable expansion of Rancho Murrieta could reduce the Coyote Creek ECA, and the additional low-density rural development expected within areas designated as Agricultural-Residential in the Sacramento County General Plan could impact movement in the Brown’s Creek-Bear Slough ECA (Figure 8-2). If any of the foreseeable future infrastructure projects discussed in Section 3.7.2 would be located in a designated ECA or in another existing wildlife movement corridor, additional cumulative impacts to species movement could occur.

Therefore, the incremental loss and degradation of wildlife movement and corridors under the No Action/No Project Alternative would be a **Significant Cumulative** effect when considered together with the impacts to wildlife movement from by past and current human activities and the foreseeable other projects in the study area.

8.2.3 Proposed Action/Proposed Project Alternative

The Proposed Action/Proposed Project Alternative is described in Section 2.3.3. As described in Section 2.3.3, the Proposed Action/Proposed Project Alternative includes the same types of new urban development and infrastructure as those anticipated under the No Action/No Project

Alternative. New urban development implemented under any EIS/EIR alternative could result in the same types of environmental stressors (see Appendix G). Both the Proposed Action/Proposed Project Alternative and the No Action/No Project Alternative include full buildout of the UDA.² However, the locations of new urban development in the UDA under the Proposed Action/Proposed Project Alternative are expected to differ slightly from the No Action/No Project Alternative, primarily because the Proposed Action/Proposed Project Alternative would consolidate the ESA, CESA, and CWA 404 mitigation requirements of future projects and activities (the SSHCP Covered Activities) to form a managed and interconnected SSHCP Preserve System (see Section 2.3.5). The interconnected network of Preserves in the SSHCP Preserve System would preserve and manage Natural land covers and their natural communities in perpetuity throughout the Planning Area.

In addition, the Proposed Action/Proposed Project Alternative would allow implementation of urban development within the MCRA portion of the UDA to be consistent with planned development described in the approved Sacramento County and Rancho Cordova General Plans, without approximately 19,000 acres of new urban development shifting or being displaced to locations outside the current USB boundary. Therefore, the Proposed Action/Proposed Project Alternative would have more urban development within the MCRA and within the UDA than under the No Action/No Project Alternative, because approximately 1,900 acres of new urban development would not shift or be displaced to locations outside of the current Sacramento County USB boundary.

As discussed in Section 2.3.5, the Proposed Action/Proposed Project Alternative's Conservation Strategy also includes both landscape-level and project-level SSHCP impact AMMs (SSHCP AMMs), which would be incorporated into the design and or the implementation of each Covered Activity to avoid or minimize impacts to sensitive land covers and natural communities to the greatest extent practicable. The SSHCP AMMs include siting requirements, incorporation of low-impact development (LID) elements into project designs, incorporation of setback between waterways and new development (Stream Setbacks), incorporation of setbacks between preserved natural areas and new development (Preserve Setbacks), species-specific avoidance measures, and the use of best management practices (BMPs) during all ground-disturbing Covered Activities (see details of each SSHCP AMM in Appendix D).

Table 8-8 presents the direct impacts (loss) of each Natural land cover inside and outside the UDA under the Proposed Action/Proposed Project Alternative. Table 8-9 presents the acres of each Natural land cover expected to be preserved by the SSHCP Preserve System (see Section

² "Full buildout" of the UDA means all currently undeveloped lands that are zoned for, or are ultimately planned/contemplated for future urban development in the adopted general plans of the Permit Applicants would become developed. Full buildout of the UDA will include some open space and conservation lands within the areas of new urban development.

8 – NATURAL LAND COVER HABITATS AND ASSOCIATED PLANT AND ANIMAL COMMUNITIES

2.3.5). Table 8-8 also presents acres of each Natural land cover that would be re-established or established within the proposed SSHCP Preserve System.

**Table 8-8. Expected Direct Impacts to Natural Land Covers –
Proposed Action/Proposed Project Alternative**

Land Cover	Direct Effects within UDA (acres)	Direct Effects outside UDA (acres)	Total Direct Impacts (acres)	Existing Acres in Planning Area	Percent of Existing Acres Affected
<i>Aquatic Land Covers</i>					
<i>Wetlands and Other Waters</i>					
Vernal Pool*	355	34	389	4,536	8.6%
Swale*	233	1	234	1,252	18.8%
Stream/Creek (VPIH)*	22	0	22	73	30.1%
Seasonal Wetland*	102	3	105	2,600	4.0%
Freshwater Marsh*	119	8	127	2,954	4.3%
Stream/Creek*	91	26	117	2,778	4.2%
Open Water*	154	1	155	2,344	6.6%
Total Wetlands and Other Waters	1076	73	1149	16,537	6.9%
<i>Riparian</i>					
Mixed Riparian Woodland*	147	37	184	5,856	3.1%
Mixed Riparian Scrub*	186	3	189	1,454	13.0%
Mine Tailing Riparian Woodland*	218	0	218	641	34.0%
Total Riparian	551	40	591	7,951	7.4%
Total Aquatic Land Covers	1627	113	1740	24,488	7.1%
<i>Terrestrial Land Covers</i>					
<i>Natural Uplands</i>					
Valley Grassland	21,346	668	22,014	135,152	16.3%
Blue Oak Woodland*	0	9	9	9,132	0.1%
Blue Oak Savanna*	3	35	38	5,637	0.7%
<i>Farmland</i>					
Cropland	4,922	363	5,285	51,829	10.2%
Irrigated Pasture-Grassland	2,594	155	2,749	15,991	17.2%
Orchard	191	16	207	3,907	5.3%
Vineyard	1,376	79	1,455	26,460	5.5%
Total Farmland	9,083	613	9,696	98,187	9.9%
Total Terrestrial	30,432	1325	31,757	248,108	12.8%
GRAND TOTAL	32,059	1,438	33,497	272,596	12.8%

Notes:

* Indicates land cover that is considered sensitive. Sensitive natural communities are those that receive specific recognition or legal protection under federal, state, or local laws or regulations; see Section 8.1.2.3.

Table 8-9. Natural Land Cover Mitigation under the Proposed Action/ Proposed Project Alternative

Land Cover	SSHCP Preserve System (acres)			Re-establishment/ Establishment (acres)*
	Inside UDA	Outside UDA	Total	
Aquatic Land Covers				
Wetlands and Other Waters				
Vernal Pool	210	756	966	389
Swale	93	185	278	256
Stream/Creek (VPIH)	26	0	26	0
Seasonal Wetland	56	49	105	105
Freshwater Marsh	127	0	127	127
Stream/Creek	23	94	117	117
Open Water	70	85	155	155
Total Wetland and Other Waters	605	1,169	1,774	1149
Riparian				
Mine Tailing Riparian Woodland	1	217	218	0
Mixed Riparian Scrub	23	355	3784	298
Mixed Riparian Woodland	50	318	368	293
Total Riparian Land Covers	74	890	964	591
Total Aquatic Resources	679	2,059	2,738	1,740
Terrestrial Land Covers				
Natural Uplands				
Valley Grassland	5,743	16,271	22,014	0
Blue Oak Woodland	0	9	9	9
Blue Oak Savanna	15	23	38	38
Farmlands				
Cropland	376	5,740	6,116	0
Irrigated Pasture-Grassland	217	3,363	3,580	0
Orchard	0	0	0	0
Vineyard	0	0	0	0
Total Terrestrial Land Covers	6,351	25,406	31,757	47
Total Natural Land Covers	7,030	27,465	34,495	1,787

Note:

* The re-establishment/establishment acres within this column are in addition to the preservation acres included in the previous column.

8.2.3.1 Vernal Pool Ecosystem (Valley Grassland, Vernal Pool, Swale, Stream/Creek [VPIH])

As discussed in Section 8.1.2.2, this chapter discusses and analyzes impacts to the four land covers within the Vernal Pool Ecosystem together, because those land covers function together as a single ecosystem (also see Appendix G-1). As discussed in Section 8.2.1, indirect impacts to the Vernal Pool Ecosystem is described qualitatively for the Valley Grassland land cover, but is described both qualitatively and quantitatively for the Vernal Pool, Swale, and Stream/Creek (VPIH) land covers.

Direct and Indirect Effects of the Alternative

The Covered Activity projects and activities implemented under the Proposed Action/Proposed Project Alternative would directly impact approximately 17,118 acres of Vernal Pool Ecosystem (Table 8-10). This is 572 acres less than the anticipated 17,690 acres of Vernal Pool Ecosystem expected to be directly impacted under the No Action/No Project Alternative (Section 8.2.2).

Table 8-10. Direct and Indirect Effects on the Vernal Pool Ecosystem under the Proposed Action/Proposed Project Alternative

Land Cover	Direct Loss Within the UDA (acres)	Direct Loss Outside the UDA (acres)	Indirect Effects (acres)	Total impacts (acres)	Total Existing in Planning Area (acres)	Percent of Existing impacted in Planning Area
Valley Grassland (in Vernal Pool Ecosystem)	16,187	286	Qualitative only	16,473	97,349	16.9%
Vernal Pool	355	34	95	484	4,536	10.7%
Swale	233	1	44	278	1,252	22.2%
Stream/Creek (VPIH)	22	0	4	26	73	35.6%
Grand Total	16,797	321	143	17,261	103,210	16.7%

As discussed in Section 8.1.2.5, most of the MCRA is located inside the UDA. Of the approximately 18,117 existing acres of Vernal Pool Ecosystem within the MCRA, approximately 8,387 acres are expected to be directly impacted (removed), and an additional 113 acres are expected to be indirectly impacted by the Proposed Action/Proposed Project Alternative (8,500 total). Of the approximate 38,514 acres of Vernal Pool Ecosystem within the C/RS, approximately 53 acres would be directly impacted, and 0.2 acre would be indirectly impacted by the rural transportation Covered Activities planned outside the UDA.

Specific SSHCP AMMs (see Section 2.2.2 and Appendix D) will minimize the direct and indirect impacts of the Covered Activities on the Aquatic land covers of the Vernal Pool Ecosystem. The SSHCP AMMs include limiting ground disturbance to the construction footprint; implementing erosion-control BMPs during ground disturbance and siting roads and utilities outside of sensitive areas (BMP-1, BMP-2, BMP-3, ROAD-1, and UTILITY-4); and implementing BMPs that control construction dust (BMP-5), limit construction lighting in adjacent natural habitats (BMP-6), require biological monitoring (BMP-7), require worker awareness training (BMP-8), and implement speed limits on the construction site (BMP-11). Indirect impacts to Stream/Creek and Vernal Pool water quality and hydrology would be minimized by AMM LID-1 through LID-3 and EDGE-4 through EDGE-7.

AMM BMP-1 through AMM BMP-11 of the Proposed Action/Proposed Project Alternative are similar to the construction BMPs that would be implemented under the No Action/No Project Alternative (see Table 2-6). However, the Proposed Action/Proposed Project Alternative includes additional on-site monitoring and measurement of the effectiveness of each AMM implemented, and annual reporting of the effectiveness of each AMM. The Proposed Action/Proposed Project Alternative also includes a process for annual review of the effectiveness of each SSHCP AMM and a process to make adaptive changes to any AMM that was not fully effective at avoiding impacts to water quality and aquatic habitats. This additional oversight and guidance provided by the Proposed Action/Proposed Project Alternative would result in AMMs that are implemented more frequently and more consistently at all ground-disturbing activities, than the AMMs that would occur in new urban development projects under the No Action/No Project Alternative. The SSHCP AMMs also provide new AMMs that would not occur under the No Action/No Project Alternative (Table 2-6), and these new measures are expected to lessen the potential adverse effects to the Aquatic land covers of the Vernal Pool Ecosystem, compared to the effects of the No Action/No Project Alternative on the Vernal Pool Ecosystem.

Therefore, the environmental stressors that result from urban development (Appendix G) are expected to indirectly impact the hydrology, ecology, and species habitat within 143 acres of Vernal Pools, Swales, and Stream/Creek VPIH (Table 8-10), which is 118 acres less than the Vernal Pools, Swales, and Stream/Creek VPIH expected to be indirectly impacted under the No Action/No Project Alternative (Table 8-6).

The total 17,261 acres of directly and indirectly impacted Vernal Pool Ecosystem is approximately 16.7% of the existing 103,210 acres of Vernal Pool Ecosystem land covers in the Planning Area (Table 8-2 and Table 8-10). This expected total impact to the Vernal Pool Ecosystem under the Proposed Action/Proposed Project Alternative is 688 acres less than the total 17,949 acres of Vernal Pool Ecosystem impacts estimated for the No Action/No Project Alternative (Section 8.2.2).

The SSHCP Preserve System implemented under the Proposed Action/Proposed Project Alternative (Section 2.3.5) would preserve approximately 17,743 acres of Vernal Pool Ecosystem (Table 8-11). This would preserve 7,337 acres more than the 10,406 acres of Vernal Pool Ecosystem expected to be preserved under the No Action/No Project Alternative (Table 8-7). The Preserve System under the Proposed Action/Proposed Project Alternative would be designed to achieve the stated SSHCP Biological Goals and Measurable Objectives for the Planning Area's Vernal Pool Ecosystem (see Table 2-7). As discussed in Section 2.3.5, the individual Proposed Action/Proposed Project Alternative Preserves would be larger, contiguous, and interconnected, and would be consistently managed in perpetuity throughout the Planning Area. Consequently, each acre of Vernal Pool Ecosystem preserved under the Proposed

Action/Proposed Project Alternative would better maintain the existing habitat values and existing ecology of the Planning Area's Vernal Pool Ecosystems, when compared to the individual preserves that would be established on a project-by-project basis under the No Action/No Project Alternative.

As discussed in Section 8.1.2.2, most of the MCRA is located inside the UDA. Of the approximately 18,117 acres of Vernal Pool Ecosystem within the MCRA, 5,484 acres (30%) would be preserved by the Proposed Action/Proposed Project Alternative. Of the approximately 38,514 acres of Vernal Pool Ecosystem within the C/RS, approximately 15,294 acres (40%) would be preserved by the Proposed Action/Proposed Project Alternative.

Table 8-11. Expected Mitigation for Vernal Pool Ecosystem impacts Under the Proposed Action/Proposed Project Alternative

Land Cover	SSHCP Preserve System (acres)			Re-establishment/ Establishment (acres)
	Inside UDA	Outside UDA	Total	
Valley Grassland (in Vernal Pool Ecosystem)	5,289	11,184	16,473	0
Vernal Pool	210	756	966	389
Swale	93	185	278	256
Stream/Creek (VPIH)	26	0	26	0*
Total Vernal Pool Ecosystem Land Covers	5,618	12,125	17,743	645

* Compensatory mitigation for direct loss of 22 acres of Stream/Creek (VPIH) will be by re-establishment or establishment of Swale, which has been added to the 234 acres of compensatory mitigation for direct loss of Swale.

The SSHCP AMMs implemented under the Proposed Action/Proposed Project Alternative would be more effective at minimizing indirect impacts of new urban development on the existing hydrology and ecology of the Vernal Pool Ecosystem (see AMMs EDGE-1 through EDGE-10 and Appendix D) than the project-by-project impact AMMs that would be implemented for the No Action/No Project Alternative (Table 2-6).

Potential indirect impacts to the Vernal Pool Ecosystem from other environmental stressors, such as increased human activity and from habitat fragmentation (Appendix G), would also be minimized by the SSHCP AMMs, including EDGE-1 through EDGE-3, ROAD-1, ROAD-2 NATURE TRAIL-1 through NATURE TRAIL-4, STREAM-1 through STREAM-5, and UTILITY-2 through UTILITY-4. The potential for urban development to allow invasive species to more easily colonize SSHCP Preserves would be minimized by EDGE-10 and ROAD-3. In addition, when an SSHCP Preserve is located next to a new urban development, the development would include Preserve access-points designed to minimize impacts to the Vernal Pool Ecosystem that can be caused by the loading and unloading of livestock used to manage Valley Grasslands of preserved Vernal Pool Ecosystem (EDGE-9).

In addition to preserving 17,743-acres of Vernal Pool Ecosystem Aquatic land covers, the Proposed Action/Proposed Project Alternative would re-establish or establish 645 acres of Vernal Pool Ecosystem Aquatic land covers (Table 8-11) within the SSHCP Preserve System. Potential Impacts to existing vernal pools from the establishment of new vernal pools within an SSHCP Preserve would be minimized by SSHCP AMMs (see Re- establishment/Establishment AMMs described in Appendix D).

Significance of Direct and Indirect Effects

In summary, when compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project Alternative would:

- directly and indirectly impact 690 fewer total acres of the Planning Area's total Vernal Pool Ecosystem and the associated vernal pool plant and animal communities;
- directly and indirectly impact 1,283 fewer acres of the MCRA's Vernal Pool Ecosystem and the associated vernal pool plant and animal communities;
- require Covered Activities to implement better and more consistently implemented AMMs to avoid and minimize indirect effects of development projects and activities on the Vernal Pool Ecosystem;
- preserve approximately 7,340 more acres of Vernal Pool Ecosystem in the Planning Area;
- result in interconnected and more contiguous Preserves of Vernal Pool Ecosystem within the Planning Area; and
- preserve 934 more acres of the MCRA's Vernal Pool Ecosystem and the associated vernal pool plant and animal communities.

Therefore, the Proposed Action/Proposed Project Alternative's incremental impact to the Vernal Pool Ecosystem and natural community is a ***Significant Beneficial*** effect, when compared to the No Action/No Project Alternative incremental impacts on vernal pools ecosystem and natural community.

Cumulative Effects on the Vernal Pool Ecosystem from the Propose Action/Proposed Project

The effects of past, present, and reasonably foreseeable other projects on the Vernal Pool Ecosystems in the study area were described in Section 8.2.2.1, and represent a significant adverse cumulative impact on the Vernal Pool Ecosystem within the study area. The incremental effects of the No Action/No Project Alternative, when viewed in connection with the effects of the past, present, and foreseeable other projects in the study area, were determined to be significant (see Section 8.2.2.1).

As discussed in this section, implementation of the SSHCP Conservation Strategy (including the SSHCP AMMs, the SSHCP Aquatic Resources Program, and the interconnected SSHCP Preserve System) is expected to result in larger areas of Vernal Pool Ecosystem preservation, more consistent and more frequent implementation of AMMs, and larger setbacks between new development in the UDA and preserved Vernal Pool Ecosystems within the UDA, when compared to the No Action/No Project Alternative. The incremental effects of the Proposed Action/Proposed Project Alternative would result in the direct and indirect loss of 17,261 acres of Vernal Pool Ecosystem within the Planning Area, which is 690 acres fewer than the loss under the No Action/No Project Alternative. Overall, the Proposed Action/Proposed Project Alternative would make a slightly smaller contribution to study area cumulative effects on the Vernal Pool Ecosystem, when compared to the No Action/No Project Alternative. However, at the scale of Vernal Pool Ecosystem impacts throughout the study area, the 690-acre difference in impacts under the Proposed Action/Proposed Project Alternative compared to impacts under the No Action/No Project Alternative is not discernibly different. As discussed in Section 8.2.2.1, the impacts of the No Action/No Project Alternative on the Vernal Pool Ecosystem, when considered together with the impacts to Vernal Pool Ecosystem from the past, present, and reasonably foreseeable projects and activities in the study area, would have a significant adverse cumulative effect on the Vernal Pool Ecosystem. However, this EIS/EIR evaluates the future impacts of the two Action Alternatives relative to the future conditions expected under the No Action/No Project Alternative (see Section 3.6.1). Therefore, because the incremental effects of the Proposed Action/Proposed Project Alternative on the study area Vernal Pool Ecosystem is not discernibly different from the incremental effects of the No Action/No Project Alternative, the Proposed Action/Proposed Project would result in **No Cumulative** effect when compared to the No Action/No Project Alternative baseline condition.

8.2.3.2 Aquatic Land Covers (Seasonal Wetland, Freshwater Marsh, Stream/Creek, Open Water)

As discussed in Section 8.1.2.1, the plant and animal communities associated with Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water Aquatic land covers differ in composition but have similar ecological processes, aquatic habitats, and susceptibility to the environmental stressors of new urban development (described in Appendix G-1), and are analyzed together in this chapter. As discussed in Section 8.1.2.1, Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water communities are also considered “sensitive” natural communities.

Direct and Indirect Effects of the Proposed Action/Proposed Project Alternative

The acres of direct impacts from the Covered Activity projects and activities of the Proposed Action/Proposed Project Alternative on the Seasonal Wetland, Freshwater Marsh,

Stream/Creek, and Open Water land covers is approximately 504 acres (Table 8-8). This direct loss would be 79 acres less than the 583 acres of direct impact to Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water natural communities that would be lost under the No Action/No Project Alternative.

Covered Activity projects and activities implemented under the Proposed Action/Proposed Project Alternative would implement the following SSHCP AMMs to avoid or minimize direct impacts to Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water land covers by limiting ground disturbance to the construction footprint; implementing erosion-control BMPs and siting roads and utilities outside of sensitive areas (BMP-1, BMP-2, BMP-3, ROAD-1, UTILITY-4); requiring construction BMPs that avoid and minimize impacts to water quality and limit stormwater and pollutant runoff (BMP-2), limit impacts of oil and fuel spills (BMP-3), limit deposit of erodible materials into waterways (BMP-4), control construction dust (BMP-5), limit construction lighting in adjacent natural habitats (BMP-6), require biological monitoring (BMP-7), require worker awareness training on litter control and other requirements of the SSHCP (BMP-8), restore temporarily disturbed areas (BMP-9), revegetate cut slopes (BMP-10), and implement speed limits on the construction site (BMP-11) (see Appendix D).

AMM BMP-1 through AMM BMP-11 of the Proposed Action/Proposed Project Alternative are similar to the construction BMPs that would be implemented under the No Action/No Project Alternative (see Table 2-6). However, the Proposed Action/Proposed Project Alternative includes additional on-site monitoring and measurement of the effectiveness of each AMM implemented, and annual reporting of the effectiveness of each AMM. The Proposed Action/Proposed Project Alternative also includes a process for annual review of the effectiveness of each SSHCP AMM and a process to make adaptive changes to any AMM that was not fully effective at avoiding impacts to water quality and aquatic habitats. This additional oversight and guidance provided by the SSHCP would result in AMMs that are implemented more frequently and more consistently at all ground-disturbing activities, than the AMMs that would occur in new urban development projects under the No Action/No Project Alternative. The SSHCP AMMs also provide new AMMs that would not occur under the No Action/No Project Alternative (Table 2-6), and these new measures are expected to lessen the potential adverse effects to the Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water land covers, compared to the effects of the No Action/No Project Alternative on the Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water land covers.

Other SSHCP AMMs would avoid and minimize indirect effects of SSHCP Covered Activities on water quality and hydrology of Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water communities including AMM LID-1 through LID-3, and EDGE-4 through EDGE-6 (Appendix D). Potential impacts to Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water communities from increased human activity and from habitat fragmentation

would be minimized by the AMMs EDGE-1 through EDGE-3, EDGE-8, EDGE-10, ROAD-1, ROAD-2 NATURE TRAIL-1 through NATURE TRAIL-5, STREAM-1 through STREAM-5, and UTILITY-2 (see Appendix D for a description of AMMs). Relative to the AMMs implemented by individual projects under the No Action/No Project Alternative (Table 2-6), the SSHCP AMMs would better reduce indirect impacts on aquatic land covers. For example, STREAM-1 through STREAM-3 would require wider setbacks between natural waterways and new development, thereby providing greater protection of existing water quality and species habitats of Stream/Creek and other aquatic resources.

As discussed in Section 2.3.5, the Proposed Action/Proposed Project Alternative would include an interconnected SSHCP Preserve System within the Planning Area and a comprehensive SSHCP Preserve System management program to maintain and adaptively manage the SSHCP Preserve System in perpetuity. The Preserve System under the Proposed Action/Proposed Project Alternative would be more contiguous and maintain greater hydrologic connectivity than the project-by-project preserves that would be established under the No Action/No Project Alternative. The SSHCP Preserve system under the Proposed Action/Proposed Project Alternative would be designed to achieve the stated SSHCP Biological Goals and Measurable Objectives for the Planning Area's Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water natural communities (Table 2-7).

The Proposed Action/Proposed Project Alternative would impact approximately 504 acres of Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water land covers (Table 8-8), but would mitigate these unavoidable impacts by preserving approximately 504 acres of Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water land covers within the Planning Area, and also by re-establishing or establishing an additional 504 acres of Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water land covers within the Planning Area (Table 8-9). By comparison, the No Action/No Project Alternative is expected to mitigate impact by re-establishing or establishing approximately 291-acres of Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water land covers within the Planning Area, and would preserve only 24 acres of these land covers within the Planning Area (Table 8-5).

Significance of Direct and Indirect Effects

In summary, when compared to the expected No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project Alternative would:

- directly impact 79 fewer acres of Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water land covers and associated plant and animal communities;
- require Covered Activity activities and projects to implement better and more consistently implemented AMMs to avoid and minimize indirect effects to Seasonal

Wetland, Freshwater Marsh, Stream/Creek, and Open Water natural communities, such as larger setbacks between new development and streams and creeks;

- preserve 480 more acres of Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water;
- re-establish or establish 213 more acres of Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water land covers within the Planning Area; and
- result in more interconnected and contiguous Preserves of Seasonal Wetlands, Freshwater Marsh, Stream/Creek, and Open Water land covers within the Planning Area.

Therefore, the Proposed Action/Proposed Project Alternative's impact to Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water land covers would be a ***Minor Beneficial*** effect, when compared to the impacts of the No Action/No Project Alternative on the Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water land covers of the Planning Area.

Cumulative Effects on Impacts to Seasonal Wetlands, Freshwater Marsh, Streams/Creeks, and Open Water Landcovers

The effects of past, present, and reasonably foreseeable other projects on the Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water natural communities within the study area were described in Section 8.2.2.2 and represent a significant adverse cumulative impact on Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water within the study area. As discussed in Section 8.2.2.2, the incremental effects of the No Action/No Project Alternative were determined to be significant when viewed in connection with the effects of the past, present, and foreseeable other projects in the study area.

As discussed in this section, the incremental effects of the Proposed Action/Proposed Project Alternative would result in the loss of 504 acres of Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water land covers within the Planning Area, which is 79 acres less than the loss expected under the No Action/No Project Alternative.

Implementation of the SSHCP Conservation Strategy is expected to preserve 480 more acres and re-establish 213 more acres of Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water within the Planning Area, and would result in consistent and more frequent implementation of AMMs, such as wider stream setbacks, that would reduce indirect impacts to remaining Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water natural land covers when compared to the No Action/No Project Alternative.

Overall, the Proposed Action/Proposed Project Alternative would make a slightly smaller incremental contribution to the cumulative loss of Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water in the study area when compared to the No Action/No Project

Alternative. However, at the scale of impacts to these aquatic resources throughout the study area, the 79-acre difference in direct impacts, the 480-acre difference in preservation, and the 213-acre difference in re-establishment of Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water land covers under the Proposed Action/Proposed Project Alternative when compared to impacts under the No Action/No Project Alternative is not discernibly different.

As discussed in Section 8.2.2.2, the impacts of the No Action/No Project Alternative on the Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water, when considered together with the impacts from the past, present, and reasonably foreseeable projects and activities in the study area, would have a significant adverse cumulative effect on the Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water resources. However, as discussed in Section 3.6.1, this EIS/EIR evaluates the future impacts of the action alternatives relative to the future conditions expected under the No Action/No Project Alternative. Therefore, because the incremental effects of the Proposed Action/Proposed Project Alternative on the study area's Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water land covers is not discernibly different from the incremental effects of the No Action/No Project Alternative, the Proposed Action/Proposed Project would result in **No Cumulative** effect (when compared to the No Action/No Project Alternative baseline condition).

8.2.3.3 Riparian Land Covers (Mixed Riparian Woodland, Mixed Riparian Scrub, and Mine Tailing Riparian Woodland)

As discussed in Section 8.1.2.1, the Planning Area's three Riparian land covers are Mixed Riparian Woodland, Mixed Riparian Scrub, and Mine Tailing Riparian Woodland. The Riparian land covers are sensitive natural communities (Section 8.1.2.3).

Direct and Indirect Effects of the Proposed Action/Proposed Project Alternative

The Proposed Action/Proposed Project Alternative would directly impact (remove) approximately 184 acres of Mixed Riparian Woodland, approximately 189 acres of Riparian Scrub, and approximately 218 acres of Mine Tailing Riparian Woodland, for a total of 591 acres of Riparian land cover directly impacted within the Planning Area (Table 8-8). This loss of Riparian land cover is 37 acres more than the No Action/No Project Alternative's expected loss of 554 acres.

Covered Activity projects and activities implemented under the Proposed Action/Proposed Project Alternative would implement the following SSHCP AMMs to avoid or minimize direct impacts to the Riparian land covers by limiting ground disturbance to the construction footprint, implementing erosion-control BMPs and siting roads and utilities outside of sensitive areas (BMP-1, BMP-3, ROAD-1, and UTILITY-4), and by the implementation of AMMs requiring construction BMPs that avoid and minimize impacts to water quality and limit stormwater and pollutant runoff (BMP-2), limit impacts of oil and fuel spills (BMP-3), limit deposit of erodible

materials into waterways (BMP-4), control construction dust (BMP-5), limit construction lighting in adjacent natural habitats (BMP-6), require biological monitoring (BMP-7), require worker awareness training on litter control and other requirements of the SSHCP (BMP-8), restore temporarily disturbed areas (BMP-9), revegetate cut slopes (BMP-10), and implement speed limits on the construction site (BMP-11) (see Appendix D a description of each AMM).

AMM BMP-1 through AMM BMP-11 of the Proposed Action/Proposed Project are similar to the construction BMPs that would be implemented under the No Action/No Project Alternative (see Table 2-6). However, the Proposed Action/Proposed Project Alternative includes additional on-site monitoring and measurement of the effectiveness of each AMM implemented, and annual reporting of the effectiveness of each AMM. The Proposed Action/Proposed Project Alternative also includes a process for annual review of the effectiveness of each SSHCP AMM and a process to make adaptive changes to any AMM that was not fully effective at avoiding impacts to water quality and aquatic habitats. This additional oversight and guidance provided by the SSHCP would result in AMMs that are implemented more frequently and more consistently at all ground-disturbing activities, than the AMMs that would occur in new urban development projects under the No Action/No Project Alternative. The SSHCP AMMs also provide new AMMs that would not occur under the No Action/No Project Alternative (Table 2-6).

Other SSHCP AMMs that would avoid and minimize indirect effects of SSHCP Covered Activities on water quality and hydrology of Riparian land covers include AMM LID-1 through LID-3, and EDGE-4 through EDGE-6 (Appendix D). Potential impacts to Riparian natural communities from increased human activity and from habitat fragmentation would be minimized by the AMMs EDGE-1 through EDGE-3, EDGE-8, EDGE-10, ROAD-1, ROAD-2, NATURE TRAIL-1 through NATURE TRAIL-5, STREAM-1 through STREAM-5, and UTILITY-2 (see Appendix D for a description of AMMs). Relative to the AMMs implemented by individual projects under the No Action/No Project alternative (Table 2-6), the SSHCP AMMs would better reduce indirect impacts on Riparian land covers. For example, STREAM-1 through STREAM-3 would require wider setbacks between natural waterways and new development, thereby providing greater protection of Riparian land covers adjacent to streams and creeks. The SSHCP AMMs implemented under the Proposed Action/Proposed Project Alternative would be more effective at minimizing indirect impacts of new urban development on Riparian land covers than the project-by-project impact AMMs that would be implemented for the No Action/No Project alternative (Table 2-6).

As discussed in Section 2.3.5, the Proposed Action/Proposed Project Alternative would include an interconnected SSHCP Preserve System within the Planning Area and a comprehensive SSHCP Preserve System management program to maintain and adaptively manage the SSHCP Preserve System in perpetuity. The Preserve System under the Proposed Action/Proposed Project Alternative would be more contiguous and maintain greater connectivity between

riparian areas than the project-by-project Preserves that would be established under the No Action/No Project Alternative.

The SSHCP Preserve System under the Proposed Action/Proposed Project Alternative would be designed to achieve the stated SSHCP Biological Goals and Measurable Objectives for the Planning Area's Riparian land covers (Table 2-7). The SSHCP Conservation Strategy and the SSHCP Preserve System is expected to preserve approximately 964 acres of Riparian land covers, of which 74 acres are inside the UDA and 890 acres are outside the UDA (Table 8-9). By comparison, the No Action/No Project Alternative is not expected to preserve any Riparian land covers (Table 8-5). In addition to preserving 946 acres of Riparian land covers, the Proposed Action/Proposed Project Alternative would also re-establish or establish 591 acres of Mixed Riparian Woodland and Mixed Riparian Scrub within the SSHCP Preserve System (Table 8-9), an amount that equals the expected direct loss of 591 acres of Riparian land covers (Table 8-8). Because Mine Tailing Riparian Woodland land cover provides relatively low habitat value, functions, and services, impacts to the Mine Tailing Riparian Woodland land cover would be mitigated by preservation and by re-establishment of the higher quality, more natural Mixed Riparian Woodland or Mixed Riparian Scrub land covers.

Significance of Direct and Indirect Effects

In summary, when compared to the expected No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would:

- directly impact 37 more acres of Riparian land covers and associated plant and animal communities;
- require Covered Activities to implement better and more consistently implemented AMMs to avoid and minimize indirect effects to Riparian land covers such as larger setbacks between new development and streams and creeks;
- preserve 964 acres more of Riparian land covers (Mixed Riparian Woodland and Mixed Riparian Scrub);
- re-establish or establish 37 acres more of Riparian land covers (Mixed Riparian Woodland and Mixed Riparian Scrub) within the Planning Area; and
- result in more interconnected and contiguous preserves of Riparian land covers within the Planning Area, which would reduce habitat fragmentation effects on the plant and animal communities.

Therefore, the Proposed Action/Proposed Project Alternative's impact to Riparian land covers and the associated plant and animal communities would be a **Minor Beneficial** effect, when

compared to the impacts of the No Action/No Project Alternative on Riparian land covers of the Planning Area.

Cumulative Effects of the Alternative

The effects of past, present, and reasonably foreseeable other projects on the Riparian land covers and natural communities within the study area were described in Section 8.2.2.3 and represent a significant adverse cumulative impact on the Riparian land covers within the study area. As discussed in Section 8.2.2.3, the incremental effects of the No Action/No Project Alternative were determined to have a less than significant cumulative adverse effect on riparian land covers in the study area, when viewed in connection with the effects of the past, present, and foreseeable other projects in the study area.

As discussed in this section, the Proposed Action/Proposed Project Alternative would result in the incremental loss of 591 acres of Riparian land covers within the Planning Area, which is 37 acres greater than the loss under the No Action/No Project Alternative.

However, the implementation of the SSHCP Conservation Strategy, including the SSHCP Preserve System, is expected to preserve 964 more acres and re-establish 37 more acres of Riparian land covers within the Planning Area, and would result in consistent and more frequent implementation of AMMs that would reduce indirect impacts to Riparian land covers when compared to the No Action/No Project Alternative.

Overall, the incremental impacts of Proposed Action/Proposed Project Alternative would make a slightly similar contribution to the cumulative loss of Riparian land covers in the study area when compared to the incremental impacts of the No Action/No Project Alternative. However, at the scale of cumulative impacts to riparian resources throughout the study area, the 37-acre difference in direct impacts, the 964 acre difference in Riparian preservation, and the 37-acre difference in re-establishment of Riparian land covers is not discernibly different from the impacts expected under the No Action/No Project Alternative.

As discussed in Section 3.6.1, this EIS/EIR evaluates the future impacts of the action alternatives relative to the future conditions expected under the No Action/No Project Alternative. Therefore, because the incremental effects of the Proposed Action/Proposed Project Alternative on the study area's Riparian land covers is not discernibly different from the incremental effects of the No Action/No Project Alternative, the Proposed Action/Proposed Project would result in **No Cumulative** effect when compared to the No Action/No Project Alternative baseline condition.

8.2.3.4 Valley Grassland

As discussed in Section 8.1.2, approximately 135,152 acres of Valley Grassland are present in the Planning Area, which includes Valley Grassland acres that are located both inside and outside of the Vernal Pool Ecosystem (Table 8-1), and Valley Grassland in ranching and grazing agricultural use. (The impacts to Valley Grassland as a part of the Vernal Pool Ecosystem are also analyzed under impacts to the Vernal Pool Ecosystem in Section 8.2.3.1.)

Direct and Indirect Effects of the Proposed Action/Proposed Project Alternative

New urban development and associated infrastructure projects implemented under the Proposed Action/Proposed Project Alternative would directly impact (remove) approximately 22,014 acres (16.3%) of the Planning Area's Valley Grasslands (Table 8-8). This loss of Valley Grassland is 1,415 acres less than the No Action/No Project Alternative expected loss of 23,429-acres of Valley Grassland.

Covered Activity projects and activities implemented under the Proposed Action/Proposed Project Alternative would implement SSHCP AMMs to avoid or minimize direct impacts to Valley Grassland, including limiting ground disturbance to the construction footprint, implementing erosion control BMPs and siting roads and utilities outside of sensitive areas (BMP-1, BMP-3, ROAD-1, and UTILITY-4), and by implementing AMMs requiring construction BMPs that avoid and minimize stormwater and pollutant runoff (BMP-2), limit impacts of oil and fuel spills (BMP-3), limit deposit of erodible materials into waterways (BMP-4), control construction dust (BMP-5), limit construction lighting in adjacent natural habitats (BMP-6), require biological monitoring (BMP-7), require worker awareness training on litter control and other requirements of the SSHCP (BMP-8), restore temporarily disturbed areas (BMP-9), revegetate cut slopes (BMP-10), and implement speed limits on the construction site (BMP-11) (see Appendix D for a description of each AMM).

AMM BMP-1 through AMM BMP-11 of the Proposed Action/Proposed Project are similar to the construction BMPs that would be implemented under the No Action/No Project Alternative (see Table 2-6). However, the Proposed Action/Proposed Project Alternative includes additional on-site monitoring and measurement of the effectiveness of each AMM implemented, and annual reporting of the effectiveness of each AMM. The Proposed Action/Proposed Project Alternative also includes process for annual review of the effectiveness of each SSHCP AMM and a process to make adaptive changes to any AMM that was not fully effective at avoiding impacts. This additional oversight and guidance provided by the SSHCP would result in AMMs that are implemented more frequently and more consistently at all ground-disturbing activities, than the AMMs that would occur in new urban development projects under the No Action/No

Project Alternative. The SSHCP AMMs also provide new AMMs that would not occur under the No Action/No Project Alternative (Table 2-6).

Other SSHCP AMMs that would avoid and minimize indirect effects of SSHCP Covered Activities on Valley Grassland and the associated plant and animal communities include AMM LID-1 through LID-3, and EDGE-4 through EDGE-6 (Appendix D). Potential direct and indirect impacts to Valley Grassland plant and animal communities from increased human activity and from habitat fragmentation would be minimized by the AMMs EDGE-1 through EDGE-3, EDGE-8, ROAD-1, ROAD-2, NATURE TRAIL-1 through NATURE TRAIL-5, STREAM-1 through STREAM-5, and UTILITY-2 (see Appendix D for a description of AMMs). Relative to the AMMs implemented by individual projects under the No Action/No Project alternative (Table 2-6), the SSHCP AMMs would better reduce indirect impacts on this land cover. For example, STREAM-1 through STREAM-3 would require wider setbacks between natural waterways and new development, thereby providing greater protection of all land covers adjacent to streams and creeks. The SSHCP AMMs implemented under the Proposed Action/Proposed Project Alternative would be more effective at minimizing indirect impacts of new urban development on Valley Grassland land cover than the project-by-project impact AMMs that would be implemented for the No Action/No Project Alternative (Table 2-6).

As discussed in Section 2.3.5, the Proposed Action/Proposed Project Alternative would include an interconnected SSHCP Preserve System within the Planning Area and a comprehensive SSHCP Preserve System management program to maintain and adaptively manage the SSHCP Preserve System in perpetuity (Section 2.3.5). The SSHCP Preserve system would be designed to achieve the stated SSHCP Biological Goals and Measurable Objectives for the Planning Area's Valley Grasslands (Table 2-7). The SSHCP Preserve System would include approximately 22,014 acres of Valley Grassland and the associated plant and animal natural community (Table 8-9). This is 10,208 acres more Valley Grassland preserved than the 11,806 acres expected to be preserved under the No Action/No Project Alternative. The SSHCP Preserve System established under the Proposed Action/Proposed Project Alternative would also be more contiguous and maintain greater connectivity between preserves of Valley Grassland than the project-by-project mitigation preserves that would be established under the No Action/No Project Alternative.

Potential indirect effects of new urban development on Valley Grasslands within the SSHCP Preserve System would be avoided or minimized by other SSHCP AMMs required by the Proposed Action/Proposed Project Alternative. The effects of invasive weedy species would be minimized by EDGE-10 and ROAD-3, and the effects of expected increased wildfire frequency would be minimized by EDGE-3b (see Appendix D for a description of all SSHCP AMMs).

Significance of Direct and Indirect Effects

In summary, when compared to the expected No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project Alternative would:

- directly impact (remove) 1,415 fewer acres of Valley Grassland land cover and the associated plant and animal communities;
- require Covered Activities to implement better and more consistently implemented AMMs to avoid and minimize indirect effects to Valley Grasslands;
- preserve 10,208 acres more Valley Grassland within a large SSHCP Preserve System; and
- result in more interconnected and contiguous preserves of Valley Grassland within the Planning Area, which would reduce habitat fragmentation effects on the Valley Grassland plant and animal communities.

Therefore, the Proposed Action/Proposed Project Alternative's impact to Valley Grassland land cover and the associated plant and animal communities would be a ***Significant Beneficial*** effect, when compared to the impacts of the No Action/No Project Alternative on Valley Grassland land covers of the Planning Area.

Cumulative Impacts to Valley Grassland from the Proposed Action/Proposed Project

The effects of past, present, and reasonably foreseeable other projects on the Valley Grassland natural community within the study area were described above in Section 8.2.2.4 and represent a significant adverse cumulative impact on the Valley Grassland within the study area. As discussed in Section 8.2.2.2, , the incremental direct and indirect impacts of No Action/No Project Alternative to Valley Grassland, when considered together with the significant impacts to Valley Grassland from past, current, and foreseeable future projects and activities in the study area, would be a significant cumulative effect.

As discussed here in Section 8.2.3.4, the Proposed Action/Proposed Project Alternative would result in the incremental loss of 22,014 acres of Valley Grassland and associated plant and animal communities within the Planning Area, which is 1,415 acres less than the loss expected under the No Action/No Project Alternative. Implementation of the SSHCP Conservation strategy is expected to preserve 10,208 acres more Valley Grassland within the Planning Area and would result in consistent and more frequent implementation of AMMs that would better avoid and minimize indirect impacts to the Valley Grassland natural community.

Overall, the incremental impacts of the Proposed Action/Proposed Project Alternative would make a smaller contribution to the cumulative loss of Valley Grassland in the study area when compared to the incremental impact of the No Action/No Project Alternative.

As discussed in Section 8.2.2.4, the impacts of the No Action/No Project Alternative on Valley Grasslands, when considered together with the impacts from the past, present, and reasonably foreseeable projects and activities in the study area, would have a significant adverse cumulative effect on Valley Grassland. However, as discussed in Section 3.6.1, this EIS/EIR evaluates the future impacts of the action alternatives relative to the future conditions expected under the No Action/No Project Alternative. Therefore, because the Proposed Action/Proposed Project Alternative has fewer impacts and preserves substantially more Valley Grassland than the No Action/No Project Alternative, the Proposed Action/Proposed Project would result in a **Minor Beneficial** effect when compared to the No Action/No Project Alternative baseline condition.

8.2.3.5 Blue Oak Woodland and Blue Oak Savanna

The Blue Oak Woodland land cover and the Blue Oak Savanna land cover are considered together because the plants and animals of both communities overlap considerably (see Section 8.1.2.1), and each land cover has the same regulatory requirements (see Section 8.1.1). Blue Oak Woodland and Blue Oak Savanna land covers are sensitive natural communities (see discussion of individual land covers in Section 8.1.2). As discussed in Section 8.2.1, indirect impacts to the Blue Oak Woodland and Blue Oak Savanna land covers is described qualitatively.

Direct and Indirect Effects of the Proposed Action/Proposed Project Alternative

New urban development and associated infrastructure projects implemented under the Proposed Action/Proposed Project Alternative would directly impact (remove) approximately 9 acres of Blue Oak Savanna and approximately 38 acres of Blue Oak Savanna, for a combined loss of 47 acres (Table 8-8). This would be approximately 93 acres less than the 140 acres of Blue Oak Woodland and Blue Oak Savanna direct impacts expected under the No Action/No Project Alternative (Table 8-4).

Covered Activity projects and activities implemented under the Proposed Action/Proposed Project Alternative would implement relevant SSHCP AMMs to avoid or minimize direct impacts to Blue Oak Woodland and Blue Oak Savanna, including limiting ground disturbance to the construction footprint, implementing erosion-control BMPs and siting roads and utilities outside of sensitive areas (BMP-1, BMP-3, ROAD-1, and UTILITY-4), and by implementation of AMMs requiring construction BMPs that avoid and minimize stormwater and pollutant runoff (BMP-2), limit impacts of oil and fuel spills (BMP-3), limit deposit of erodible materials into waterways (BMP-4), control construction dust (BMP-5), limit construction lighting in adjacent natural habitats (BMP-6), require biological monitoring (BMP-7), require worker awareness training on litter control and other requirements of the SSHCP (BMP-8), restore temporarily disturbed areas (BMP-9), revegetate cut slopes (BMP-10), and implement speed limits on the construction site (BMP-11) (see Appendix D for a description of each AMM).

AMM BMP-1 through AMM BMP-11 of the Proposed Action/Proposed Project Alternative are similar to the construction BMPs that would be implemented under the No Action/No Project Alternative (see Table 2-6). However, the Proposed Action/Proposed Project Alternative includes additional on-site monitoring and measurement of the effectiveness of each AMM implemented, and annual reporting of the effectiveness of each AMM. The Proposed Action/Proposed Project Alternative also includes a process for annual review of the effectiveness of each SSHCP AMM and a process to make adaptive changes to any AMM that was not fully effective at avoiding impacts. This additional oversight and guidance provided by the SSHCP would result in AMMs that are implemented more frequently and more consistently at all ground-disturbing activities than the AMMs that would occur in new urban development projects under the No Action/No Project Alternative. The SSHCP AMMs also provide new AMMs that would not occur under the No Action/No Project Alternative (Table 2-6).

As discussed in Section 2.3.5, the Proposed Action/Proposed Project Alternative would include an interconnected SSHCP Preserve System within the Planning Area and a comprehensive SSHCP Preserve System management program to maintain and adaptively manage the SSHCP Preserve System in perpetuity (Section 2.3.5). The SSHCP Preserve system would be designed to achieve the stated SSHCP biological goals and measurable objectives for the Planning Area's Blue Oak Woodland and Blue Oak Savanna (Table 2-7).

The Proposed Action/Proposed Project Alternative is expected to both preserve 47 acres of Blue Oak Woodland and Blue Oak Savanna and to re-establish or establish 47 acres of Blue Oak Woodland and Blue Oak Savanna within the Planning Area (Table 8-9), amounts that equal the expected direct impact (loss) of 47 acres within the Planning Area. In comparison, the 70 acres re-established/established under the No Action/No Project Alternative would replace only half of the acres of Blue Oak Woodland and Blue Oak Savanna lost under that alternative. In addition, the preservation and re-establishment of Blue Oak Woodland and Blue Oak Savanna under the Proposed Action/Proposed Project Alternative would occur in the SSHCP Preserve System, which would be more contiguous and maintain greater connectivity between Blue Oak Woodland and Blue Oak Savanna land covers than the project-by-project mitigation preserves that would be established under the No Action/No Project Alternative.

Significance of Direct and Indirect Effects

In summary, when compared to the expected No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project Alternative would:

- directly impact 93 fewer acres of Blue Oak Woodland and Blue Oak Savanna and associated plant and animal communities;

- require Covered Activities to implement better and more consistently implemented AMMs to avoid and minimize indirect effects to Blue Oak Woodland and Blue Oak Savanna;
- provide acres of Blue Oak Woodland and Blue Oak Savanna preservation in the Planning Area (47 acres) equal to the acres of expected impacts to Blue Oak Woodland and Blue Oak Savanna. By comparison, the acreage of Blue Oak Woodland and Blue Oak Savanna preservation in the Planning Area under the No Action/No Project Alternative (70 acres) is only half of the expected impacts to Blue Oak Woodland and Blue Oak Savanna (140 acres).
- the would provide acres of Blue Oak Woodland and Blue Oak Savanna re-establishment or establishment in the Planning Area (47 acres) equal to the acres of expected impacts to Blue Oak Woodland and Blue Oak Savanna to provide no net loss of oak woodlands within the Planning Area. By comparison, the acreage of Blue Oak Woodland and Blue Oak Savanna re-establishment or establishment in the Planning Area under the No Action/No Project Alternative (70 acres) is only half of the expected impacts to Blue Oak Woodland and Blue Oak Savanna (140 acres).
- result in more interconnected and contiguous Preserves of Blue Oak Woodland and Blue Oak Savanna within the Planning Area, which would reduce habitat fragmentation effects on the Blue Oak Woodland and Blue Oak Savanna plant and animal communities.

Therefore, the Proposed Action/Proposed Project Alternative's impacts to Blue Oak Woodland and Blue Oak Savanna and their associated plant and animal communities would be a ***Minor Beneficial*** effect, when compared to the impacts of the No Action/No Project Alternative on Blue Oak Woodland and Blue Oak Savanna land covers of the Planning Area.

Cumulative Impacts to Blue Oak Woodland and Blue Oak Savanna from the Proposed Action/Proposed Project

The effects of past, present, and reasonably foreseeable other projects on the Blue Oak Woodland and Blue Oak Savanna natural community within the study area were described in Section 8.2.2.5 and represent a significant adverse cumulative impact on Blue Oak Woodland and Blue Oak Savanna within the study area. As discussed in Section 8.2.2.5, the incremental direct and indirect impacts of the No Action/No Project Alternative to Blue Oak Woodland and Blue Oak Savanna, when considered together with the significant impacts to Blue Oak Woodland and Blue Oak Savanna from past, current, and foreseeable future projects and activities in the study area, would be a significant cumulative effect.

As discussed in this section, the Proposed Action/Proposed Project Alternative would result in the incremental loss of 47 acres of Blue Oak Woodland and Blue Oak Savannah and associated plant and animal communities within the Planning Area, which is 93 acres less than the loss of Blue Oak Woodland and Blue Oak Savannah expected under the No Action/No Project Alternative. The

implementation of the SSHCP Conservation Strategy in the Proposed Action/Proposed Project Alternative would preserve 47 acres of Blue Oak Woodland and Blue Oak Savanna, an amount equal to the acres of expected impacts. The No Action/No Project Alternative would also re-establish or establish 47 acres of Blue Oak Woodland and Blue Oak Savanna, an amount also equal to the acres of expected impacts. By comparison, the No Action/No Project Alternative would preserve 70 acres Blue Oak Woodland and Blue Oak Savanna and re-establish or establish 70 acres Blue Oak Woodland and Blue Oak Savanna, amounts that are only half of the expected 140 acres of impacts to Blue Oak Woodland and Blue Oak Savanna.

Overall, the incremental impacts of the Proposed Action/Proposed Project Alternative would make a slightly smaller contribution to the cumulative loss of Blue Oak Woodland and Blue Oak Savanna in the study area, when compared to the incremental impacts of the No Action/No Project Alternative. However, at the scale of impacts to Blue Oak Woodland and Blue Oak Savanna throughout the study area, the difference in direct impacts and the difference in preservation and re-establishment or establishment of Blue Oak Woodland and Blue Oak Savanna land covers is not discernibly different.

As discussed in Section 8.2.2.5, the impacts of the No Action/No Project Alternative on Blue Oak Woodland and Blue Oak Savanna, when considered together with the impacts from the past, present, and reasonably foreseeable projects and activities in the study area, would have a significant adverse cumulative effect on Blue Oak Woodland and Blue Oak Savanna. However, as discussed in Section 3.6.1, this EIS/EIR evaluates the future impacts of the action alternatives relative to the future conditions expected under the No Action/No Project Alternative. Therefore, because the incremental effects of the Proposed Action/Proposed Project Alternative on Blue Oak Woodland and Blue Oak Savanna are not discernibly different from the incremental effects of the No Action/No Project Alternative, the Proposed Action/Proposed Project Alternative would result in **No Cumulative** effect (when compared to the No Action/No Project Alternative baseline condition).

8.2.3.6 Farmland (Croplands/Irrigated Pasture-Grasslands)

As discussed in Section 8.1.2.1 above, Cropland and Irrigated Pasture-Grasslands are included in the Natural land cover category because they provide habitat for native wildlife (e.g., cottontail rabbits, mule deer, western meadowlark, and red-winged black bird). There are approximately 67,820 acres of Cropland and Irrigated Pasture-Grassland land covers and associated plant and animal communities in the Planning Area. As discussed in Section 8.1.2.1, pasture that is not irrigated and used for ranching and grazing is analyzed in the Valley Grassland land cover.

Direct and Indirect Effects of the Proposed Action/Proposed Project Alternative

The Proposed Action/Proposed Project Alternative is expected to directly impact (remove) approximately 8,034 acres of Cropland and Irrigated Pasture-Grasslands (Table 8-8). This is 450

acres less than the approximately 8,484 acres expected to be lost under the No Action/No Project Alternative.

Covered Activity projects and activities implemented under the Proposed Action/Proposed Project Alternative would implement SSHCP AMMs to avoid or minimize direct impacts to Cropland and Irrigated Pasture-Grasslands, including limiting ground disturbance to the construction footprint, implementing erosion control BMPs and siting roads and utilities outside of sensitive areas (BMP-1, BMP-3, ROAD-1, and UTILITY-4), and by implementing AMMs requiring construction BMPs that avoid and minimize stormwater and pollutant runoff (BMP-2), limit impacts of oil and fuel spills (BMP-3), limit deposit of erodible materials into waterways (BMP-4), control construction dust (BMP-5), limit construction lighting in adjacent natural habitats (BMP-6), require biological monitoring (BMP-7), require worker awareness training on litter control and other requirements of the SSHCP (BMP-8), restore temporarily disturbed areas (BMP-9), revegetate cut slopes (BMP-10), and implement speed limits on the construction site (BMP-11) (see Appendix D for a description of each AMM).

AMM BMP-1 through AMM BMP-11 of the Proposed Action/Proposed Project Alternative are similar to the construction BMPs that would be implemented under the No Action/No Project Alternative (see Table 2-6). However, the Proposed Action/Proposed Project includes additional on-site monitoring and measurement of the effectiveness of each AMM implemented, and annual reporting of the effectiveness of each AMM. The Proposed Action/Proposed Project Alternative also includes a process for annual review of the effectiveness of each SSHCP AMM and a process to make adaptive changes to any AMM that was not fully effective at avoiding impacts. This additional oversight and guidance provided by the SSHCP would result in AMMs that are implemented more frequently and more consistently at all ground-disturbing activities than the AMMs that would occur in new urban development projects under the No Action/No Project Alternative. The SSHCP AMMs also provide new AMMs that would not occur under the No Action/No Project Alternative (Table 2-6).

Other SSHCP AMMs that would avoid and minimize indirect effects of SSHCP Covered Activities on the native wildlife community in Cropland and Irrigated Pasture-Grassland include AMM LID-1 through LID-3, and EDGE-4 through EDGE-6 (see Appendix D). Potential direct and indirect impacts to Cropland and Irrigated Pasture-Grassland plant and animal communities from increased human activity and from habitat fragmentation would be minimized by AMMs EDGE-1 through EDGE-3, EDGE-8, ROAD-1, ROAD-2, NATURE TRAIL-1 through NATURE TRAIL-5, STREAM-1 through STREAM-5, and UTILITY-2 (see Appendix D for a description of AMMs). Relative to the AMMs implemented by individual projects under the No Action/No Project Alternative (Table 2-6), the SSHCP AMMs would better reduce indirect impacts on these land covers. For example, STREAM-1 through STREAM-3 would require wider setbacks between natural waterways and new development, and wider setbacks between new Preserves and new development, thereby providing greater

protection of all adjacent land covers. The SSHCP AMMs implemented under the Proposed Action/Proposed Project Alternative would be more effective at minimizing indirect impacts on Croplands and Irrigated Pasture-Grasslands than the project-by-project impact AMMs that would be implemented of the No Action/No Project Alternative (Table 2-6).

As discussed in Section 2.3.5, the Proposed Action/Proposed Project Alternative would include an interconnected SSHCP Preserve System within the Planning Area and a comprehensive SSHCP Preserve System management program to maintain and adaptively manage the SSHCP Preserve System in perpetuity (Section 2.3.5). The SSHCP Preserve system would be designed to achieve the stated SSHCP biological goals and measurable objectives for the natural communities that utilize Croplands and Irrigated Pasture-Grasslands, including the Planning Area's Swainson's hawk and wintering sandhill crane populations (Table 2-7).

Because the Orchard and Vineyard land covers provide relatively low habitat value for the native wildlife community that uses farmlands as habitat, the Proposed Action/Proposed Project Alternative would mitigate direct impacts to any Farmland land cover by preserving the same acreage of either Cropland or Irrigated Pasture-Grassland land covers. The SSHCP Preserve System would include approximately 9,696 acres of Croplands and Irrigated Pasture-Grasslands (Table 8-9). This would be 1,212 acres more than the 8,484 acres of farmland expected to be preserved under the No Action/No Project Alternative. The farmland Preserves of Cropland or Irrigated Pasture-Grassland established under the Proposed Action/Proposed Project Alternative would be more contiguous, maintain greater habitat connectivity between Preserves, and provide better habitat for native wildlife species than the farmland preserves established on a project by project basis under the No Action/No Project Alternative.

Potential indirect effects of new urban development on Cropland and Irrigated Pasture-Grassland Preserves within the SSHCP Preserve System would be avoided or minimized by other SSHCP AMMs required by the Proposed Action/Proposed Project Alternative. For example, the potential for increased invasive species would be minimized by EDGE-10 and ROAD- 3, and the effects of expected increased wildfire frequency would be minimized by EDGE-3b (see Appendix D for a description of all SSHCP AMMs).

The Preserve System implemented under the Proposed Action/Proposed Project Alternative (Section 2.3.5) would include approximately 9,696 acres of Cropland and Irrigated Pasture-Grassland (Table 8-9). This area is 2,081 acres more than the total 7,615 acres of Cropland and Irrigated Pasture-Grassland that could be preserved under the No Action/No Project Alternative (Table 8-5). In addition, as discussed in Section 2.3.5, the Proposed Action/Proposed Project Alternative would preserve Cropland and Irrigated Pasture-Grassland within an interconnected SSHCP Preserve System throughout the Planning Area, and would include a comprehensive, in-perpetuity, preserve management program. In addition, the SSHCP Preserve System under the Proposed Action/Proposed Project Alternative would result in larger individual Preserves and

greater connectivity of Preserves than is anticipated from the project-by-project mitigation under the No Action/No Project Alternative.

Significance of Direct and Indirect Effects

In summary, when compared to the expected No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would:

- directly impact(remove) 450 fewer acres of Cropland and Irrigated Pasture-Grassland land cover and their plant and animal communities;
- require Covered Activities to implement better and more consistently implemented AMMs to avoid and minimize indirect effects to Cropland and Irrigated Pasture-Grassland;
- preserve 2,081 acres more Cropland and Irrigated Pasture-Grassland (or a similar quality Farmland land cover) within a large SSHCP Preserve System; and
- result in more contiguous Preserves and an interconnected Preserve System that includes Cropland and Irrigated Pasture-Grassland within the Planning Area and which would reduce habitat fragmentation effects on native wildlife in the Planning Area.

Therefore, the Proposed Action/Proposed Project Alternative's impact to Cropland and Irrigated Pasture-Grassland land is a **Minor Beneficial** effect when compared to the No Action/No Project Alternative impacts on Cropland and Irrigated Pasture-Grassland land covers and farmland wildlife community.

Cumulative Impacts to Cropland and Irrigated Pasture-Grassland from the Proposed Action/Proposed Project Alternative

The effects of past, present, and reasonably foreseeable other projects on the Cropland and Irrigated Pasture-Grassland natural communities within the study area were described in Section 8.2.2.6. Also as discussed in Section 8.2.2.6, the incremental direct and indirect impacts of the No Action/No Project Alternative on Cropland and Irrigated Pasture-Grassland, when considered together with the impacts to Cropland and Irrigated Pasture-Grassland from past, current, and foreseeable future projects and activities in the study area, would result in a significant cumulative effect.

As discussed in this section, the Proposed Action/Proposed Project Alternative would result in the incremental loss of 8,034 acres of Cropland and Irrigated Pasture-Grassland and associated plant and animal communities within the Planning Area, which is 450 acres less than the loss expected under the No Action/No Project Alternative. The implementation of the SSHCP Conservation strategy is expected to preserve 2,081 more acres of Cropland and Irrigated Pasture-Grassland within the Planning Area within an interconnected SSHCP Preserve System and would result in consistent and more frequent implementation of AMMs that would better avoid and minimize

indirect impacts to the natural communities associated with Cropland and Irrigated Pasture-Grassland land covers.

Overall, the incremental impacts of the Proposed Action/Proposed Project Alternative would make a smaller contribution to the cumulative loss of Cropland and Irrigated Pasture-Grassland in the study area when compared to the incremental impacts of the No Action/No Project Alternative. However, at the scale of impacts to Cropland and Irrigated Pasture-Grassland throughout the study area, the 450-acre difference in direct impacts and the 2,081-acres difference in the permanent preservation of Cropland and Irrigated Pasture-Grassland land covers is not discernibly different between the Proposed Action/Proposed Project Alternative and the No Action/No Project Alternative.

As discussed in Section 8.2.2.6, the impacts of the No Action/No Project Alternative on Cropland and Irrigated Pasture-Grassland, when considered together with the impacts from the past, present, and reasonably foreseeable projects and activities in the study area, would have a significant adverse cumulative effect on Cropland and Irrigated Pasture-Grassland. However, as discussed in Section 3.6.1, this EIS/EIR evaluates the future impacts of the action alternatives relative to the future conditions expected under the No Action/No Project Alternative. Therefore, because the incremental effects of the Proposed Action/Proposed Project Alternative on Cropland and Irrigated Pasture-Grassland are not discernibly different from the incremental effects of the No Action/No Project Alternative, the Proposed Action/Proposed Project would result in **No Cumulative** effect when compared to the No Action/No Project Alternative baseline condition.

8.2.3.7 Farmland (Orchard/Vineyard)

As discussed in Section 8.1.2, Orchard and Vineyard are included in the Natural land cover category because they provide habitat for native wildlife (e.g., small mammals, perching raptors, other native birds, roosting western red bats). There are approximately 30,367 acres of Orchard and Vineyard land covers and the associated plant and animal communities in the Planning Area.

Direct and Indirect Effects of the Alternative

The Proposed Action/Proposed Project Alternative is expected to directly impact (remove) approximately 1,662 acres of Orchard and Vineyard (Table 8-8). This loss is 63 acres less than the approximately 1,725 acres of Orchard and Vineyard estimated to be lost under the No Action/No Project Alternative.

Covered Activity projects and activities implemented under the Proposed Action/Proposed Project Alternative would implement SSHCP AMMs to avoid or minimize direct impacts to

Orchard and Vineyard, including limiting ground disturbance to the construction footprint, implementing erosion-control BMPs and siting roads and utilities outside of sensitive areas (BMP-1, BMP-3, ROAD-1, and UTILITY-4), and by implementing AMMs requiring construction BMPs that avoid and minimize stormwater and pollutant runoff (BMP-2), limit impacts of oil and fuel spills (BMP-3), limit deposit of erodible materials into waterways (BMP-4), control construction dust (BMP-5), limit construction lighting in adjacent natural habitats (BMP-6), require biological monitoring (BMP-7), require worker awareness training on litter control and other requirements of the SSHCP (BMP-8), restore temporarily disturbed areas (BMP-9), revegetate cut slopes (BMP-10), and implement speed limits on the construction site (BMP-11) (see Appendix D for a description of each AMM).

AMM BMP-1 through AMM BMP-11 of the Proposed Action/Proposed Project are similar to the construction BMPs that would be implemented under the No Action/No Project Alternative (see Table 2-6). However, the Proposed Action/Proposed Project Alternative includes additional on-site monitoring and measurement of the effectiveness of each AMM implemented and annual reporting of the effectiveness of each AMM. The Proposed Action/Proposed Project Alternative also includes a process for annual review of the effectiveness of each SSHCP AMM and a process to make adaptive changes to any AMM that was not fully effective at avoiding impacts. This additional oversight and guidance provided by the SSHCP would result in AMMs that are implemented more frequently and more consistently at all ground-disturbing activities than the AMMs that would occur in new urban development projects under the No Action/No Project Alternative. The SSHCP AMMs also provide new AMMs that would not occur under the No Action/No Project Alternative (Table 2-6).

Other SSHCP AMMs that would avoid and minimize indirect effects of SSHCP Covered Activities on the native wildlife community in Orchard and Vineyard include AMM LID-1 through LID-3, and EDGE-4 through EDGE-6 (see Appendix D). Potential direct and indirect impacts to Orchard and Vineyard natural communities from increased human activity and from habitat fragmentation would be minimized by AMMs EDGE-1 through EDGE-3, EDGE-8, ROAD-1, ROAD-2 NATURE TRAIL-1 through NATURE TRAIL-5, STREAM-1 through STREAM-5, and UTILITY-2 (see Appendix D for a description of AMMs). Relative to the AMMs implemented by individual projects under the No Action/No Project Alternative (Table 2-6), the SSHCP AMMs would better reduce indirect impacts on these land covers. For example, STREAM-1 through STREAM-3 would require wider setbacks between natural waterways and new development, and wider setbacks between new Preserves and new development, thereby providing greater protection of all adjacent land covers. The SSHCP AMMs implemented under the Proposed Action/Proposed Project Alternative would be more effective at minimizing indirect impacts on Orchard and Vineyard than the project-by-project impact AMMs that would be implemented for the No Action/No Project Alternative (Table 2-6).

As discussed in Section 2.3.5, the Proposed Action/Proposed Project Alternative would include an interconnected SSHCP Preserve System within the Planning Area and a comprehensive SSHCP Preserve System management program to maintain and adaptively manage the SSHCP Preserve System in perpetuity (Section 2.3.5). The SSHCP Preserve system would be designed to achieve the stated SSHCP Biological Goals and Measurable Objectives for the native species that utilize farmlands (Table 2-7). However, the SSHCP Preserve System would not preserve any acres of Orchard or Vineyard land covers. Because the Orchard and the Vineyard land covers provide relatively low habitat value for the native wildlife community that uses farmlands as habitat, the Proposed Action/Proposed Project Alternative would instead mitigate direct impacts to Orchards and Vineyards by preserving the same acreage of either Cropland or Irrigated Pasture-Grassland land covers (Table 8-9). Therefore, the 9,696 acres of farmland Preserves established under the Proposed Action/Proposed Project Alternative would be more contiguous, maintain greater habitat connectivity between Preserves, and provide better habitat for native wildlife species than the farmland preserves established on a project-by-project basis under the No Action/No Project Alternative. In addition, farmland Preserves established by the Proposed Action/Proposed Project Alternative would be operated to provide or improve habitat for target native species of concern. In addition, indirect effects of new urban development on farmland would be avoided or minimized by SSHCP AMMs. For example, the potential for increased invasive species would be minimized by EDGE-10 and ROAD-3, and the effects of expected increased wildfire frequency would be minimized by EDGE-3b (see Appendix D for a description of all SSHCP AMMs). The total 9,696 acres of Farmland land covers preserved under the Proposed Action/Proposed Project Alternative (Table 8-9) would equal the anticipated direct impact to Farmland land covers under Proposed Action/Proposed Project Alternative (Table 8-8), and this farmland preservation is 515 acres more than the 9,181-acres of farmlands preserved under the No Action/No Project Alternative (Table 8-5).

Significance of Direct and Indirect Effects

In summary, when compared to the expected No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project Alternative would:

- directly impact(remove) 63 fewer acres of Orchard and Vineyard land covers and their plant and animal communities;
- require Covered Activities to implement better and more consistently implemented AMMs to avoid and minimize indirect effects to Orchard and Vineyard land covers;
- preserve 515 acres more farmland and would preserve farmland within a large SSHCP Preserve System;
- mitigate impacts to Orchard and Vineyard land covers by preserving equal acres of Cropland and Irrigated Pasture-Grassland land covers, which provide much higher

quality habitat for the native wildlife community that uses farmland in the Planning Area; and

- preserve farmland in larger Preserves within an interconnected Preserve System, which would reduce habitat fragmentation effects on native wildlife in the Planning Area.

Therefore, the Proposed Action/Proposed Project Alternative's impacts to Orchard and Vineyard land covers and farmland wildlife community is a ***Minor Beneficial*** effect when compared to the No Action/No Project Alternative impacts on Orchard and Vineyard land covers and farmland wildlife community.

Cumulative Impacts to Orchards and Vineyards by the Proposed Action/ Proposed Project

The effects of past, present, and reasonably foreseeable other projects on the Orchard and Vineyard land covers within the study area were described in Section 8.2.2.7. Also as discussed in section 8.2.2.7, the incremental impacts of the No Action/No Project Alternative on Orchard and Vineyard land covers, when considered together with the impacts to Orchard and Vineyard from past, current, and foreseeable future projects and activities in the study area, would result in a less than significant cumulative effect to Orchard and Vineyard land covers.

As discussed here in Section 8.2.3.7, the Proposed Action/Proposed Project Alternative would result in the incremental loss of 1,662 acres of Orchard, Vineyard, and associated plant and animal communities within the Planning Area (Table 8-8), which is 63 acres less than the loss expected under the No Action/No Project Alternative (Table 8-4). The implementation of the SSHCP Conservation strategy is expected to preserve 515 more acres of farmland within a large interconnected Preserve System, would preserve farmland with much higher habitat value than the impacted Orchard and Vineyard land covers, and would result in consistent and more frequent implementation of AMMs that would better avoid and minimize indirect impacts to the farmland land covers and wildlife natural communities.

Overall, the incremental impacts of the Proposed Action/Proposed Project Alternative would make a smaller contribution to the cumulative loss of farmland in the study area, when compared to the incremental impacts of the No Action/No Project Alternative. However, at the scale of impacts to farmland throughout the study area, the 63-acre difference in direct impacts to Orchard and Vineyard land covers and the 515 acres difference in the preservation of farmland land covers is not discernibly different between the Proposed Action/ Proposed Project Alternative and the No Action/No Project Alternative.

As discussed in Section 8.2.2.6, the impacts of the No Action/No Project Alternative on Orchard and Vineyard land covers, when considered together with the impacts from the past, present, and reasonably foreseeable projects and activities in the study area, would have a less than

significant adverse cumulative effect on Orchard and Vineyard. However, as discussed in Section 3.6.1, this EIS/EIR evaluates the future impacts of the action alternatives relative to the future conditions expected under the No Action/No Project Alternative. Therefore, because the incremental effects of the Proposed Action/Proposed Project Alternative on Orchard and Vineyard is not discernibly different from the incremental effects of the No Action/No Project Alternative, the Proposed Action/Proposed Project would result in **No Cumulative** effect when compared to the No Action/No Project baseline condition.

8.2.3.8 Wildlife Movement Corridors

Direct and Indirect Effects of the Alternative

As shown in Figure 8-2 and Table 8-3, there are four ECAs either partially or wholly within the Planning Area. The majority of development under the Proposed Action/Proposed Project Alternative would occur within in the UDA (see Section 2.3.3) and could only impact the extreme northern most portion of the Duck Creek North Fork - Coyote Creek ECA.

Outside the UDA, no recycled water pipeline Covered Activities would be located within an ECA. However, rural transportation Covered Activity projects are anticipated to occur within the Stone Lake – Yolo Bypass, Bear Slough – Browns Creek, and Duck Creek North Fork – Coyote Creek ECAs. These rural transportation projects include road-widening projects, which could reduce the ability of wildlife to move across these roadways and within these ECAs. The types of rural transportation Covered Activities included under the Proposed Action/Proposed Project Alternative are similar to the types of rural transportation projects included under the No Action/No Project Alternative; however, additional roadway development is expected under the No Action/No Project Alternative to serve the 1,900 acres of new urban development that is expected to be displaced outside of the existing USB boundary under the No Action Alternative (see Section 2.2.3).

Potential direct effects of future rural transportation Covered Activities under the Proposed Action/Proposed Project Alternative would occur from new or expanded roadways that would increase the size of existing movement barriers or create new barriers to terrestrial wildlife movement. However, all Covered Activities implemented under the Proposed Action/Proposed Project Alternative would incorporate SSHCP AMMs, which would reduce habitat fragmentation and also require roadway projects to incorporate structures that would allow native wildlife to cross under improved or new roadways. SSHCP AMMs that would help to maintain existing wildlife movement include EDGE-1 through EDGE-3, and ROAD-1 through ROAD-3. Several SSHCP AMMs (STREAM-1 through STREAM-5) would also require larger setbacks between existing waterways and new development relative to the No Action/No Project Alternative. These wider setbacks between new development in the UDA and existing waterways would allow continued wildlife movement in

these riparian corridors. The SSHCP AMMs would also reduce other environmental stressors associated with urban development (see Appendix G-1) to better avoid or minimize indirect impacts on wildlife movement, relative to the No Action/No Project Alternative.

In addition, the Proposed Action/Proposed Project Alternative would allow urban development within the MCRA portion of the UDA to be consistent with the planned development described in the approved Sacramento County and Rancho Cordova General Plans, without approximately 19,000 acres of new urban development being displaced to locations outside the current USB boundary (see Section 2.2.3). Because the Proposed Action/Proposed Project Alternative would not result in the displacement of planned urban development to locations outside of the UDA, the expected No Action/No Project Alternative impacts to the Duck Creek North Fork – Coyote Creek ECA would not occur under the Proposed Action/Proposed Project Alternative.

As discussed in Section 2.3.5, the Proposed Action/Proposed Project Alternative would include an interconnected 34,494-acre SSHCP Preserve System within the Planning Area (Table 8-9), and a comprehensive SSHCP Preserve System management program to maintain and adaptively manage the SSHCP Preserve System in perpetuity (Section 2.3.5). The SSHCP Preserve System would be designed to achieve the stated SSHCP Biological Goals and Measurable Objectives for wildlife movement, including maintaining wildlife movement and dispersal through the Planning Area, including inside the UDA and outside the UDA (Table 2-7).

Significance of Direct and Indirect Effects of the Alternative

In summary, when compared to the expected No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project Alternative would:

- provide a coordinated, interconnected Preserve System designed to provide connectivity between existing preserves and new Preserves established under the Proposed Action/Proposed Project Alternative;
- require new development project to incorporate AMMs that would avoid or minimize effects on riparian corridors used for wildlife movement;
- require new development projects inside the UDA and related roadway projects outside the UDA to incorporate wildlife crossing structures at specific locations; and
- not result in displaced development outside the UDA to locations that have a greater potential to affect designated wildlife movement corridors.

Therefore, the Proposed Action/Proposed Project Alternative's impact to wildlife movement corridors would be **Minor Beneficial** effect when compared to the No Action/No Project Alternative impacts on wildlife movement in the Planning Area.

Cumulative Impacts to Wildlife Movement from the Proposed Action/Proposed Project

The effects of past, present, and reasonably foreseeable other projects on wildlife movement in the study area were described above in Section 8.2.2.8 and represent a significant adverse cumulative impact on wildlife movement within the study area. As discussed in Section 8.2.2.8, the incremental direct and indirect impacts of No Action/No Project Alternative on existing wildlife movement and dispersal would be a significant cumulative effect, when considered together with the significant impacts to wildlife movement from past, current, and foreseeable future projects and activities in the study area.

As discussed in this section, the Proposed Action/Proposed Project Alternative would provide an interconnected Preserve System in the Planning Area, which would not occur under the No Action/No Project Alternative. The Proposed Action/Proposed Project Alternative would require wider setbacks between development and waterways, preserving wider riparian movement corridors when compared to the No Action/No Project Alternative. In addition, the Proposed Action/Proposed Project Alternative would require roadway projects to include AMMs that would provide wildlife undercrossing at specific locations.

Overall, the incremental impacts of the Proposed Action/Proposed Project Alternative would make a smaller contribution to the cumulative loss of wildlife movement and dispersal in the study area, when compared to the incremental impact of the No Action/No Project Alternative. However, at the scale of wildlife movement throughout the study area, the difference in movement under the Proposed Action/Proposed Project Alternative when compared to impacts under the No Action/No Project Alternative is not discernibly different.

As discussed in Section 8.2.2.8, the impacts of the No Action/No Project Alternative on wildlife movement and dispersal, when considered together with the impacts from the past, present, and reasonably foreseeable projects and activities in the study area, would have a significant adverse cumulative effect. However, as discussed in Section 3.6.1, this EIS/EIR evaluates the future impacts of the action alternatives relative to the future conditions expected under the No Action/No Project Alternative. Therefore, because the incremental effects of the Proposed Action/Proposed Project Alternative on wildlife movement in the study area is not discernibly different from the incremental effects of the No Action/No Project Alternative on wildlife movement in the study area, the Proposed Action/Proposed Project Alternative would result in **No Cumulative** effect (when compared to the No Action/No Project baseline condition).

8.2.4 Reduced Permit Term Alternative

The Reduced Permit Term Alternative is described in Section 2.4. The Reduced Permit Term Alternative includes the same types of new urban development and infrastructure as those

anticipated under the No Action/No Project Alternative (see Section 2.4.3). New urban development implemented under any EIS/EIR alternative could result in the same types of environmental stressors (see Appendix G). The ESA and CESA incidental take permits and the CWA permit strategy for HCP Covered Activities would be valid only during the 30-year permit term of the Reduced Permit Term Alternative, and the Reduced Permit Term Alternative's Conservation Strategy would be implemented only during this 30-year term (see Section 2.4.1). The development of five large master plans within the UDA (see Sections 2.3.3 and 2.3.4) are expected to occur during the 30-year permit term. Under the Reduced Permit Term Alternative, the core of the SSHCP Preserve System inside the UDA would be associated with those five large master plans (see Sections 2.3.3 and 2.4.3). Because the core of the Preserve System inside the UDA under both EIS/EIR action alternatives is associated with the same five large master plans, approximately 70% of the UDA Preserves established under the Reduced Permit Term Alternative would have similar sizes, boundaries, and locations as the UDA Preserves established under the Proposed Action/Proposed Project Alternative. However, the shorter duration of the Reduced Permit Term Alternative—and the smaller amount of urban development and associated development fees collected under the Reduced Permit Term Alternative—would not allow the HCP's Implementing Entity to establish as many acres of new Preserves in the Planning Area as would occur under the Proposed Action/Proposed Project's 50-year permit term. Therefore, fewer new Preserves would be established under the Conservation Strategy of the Reduced Permit Term Alternative. This difference in acres of Natural land cover preservation would be especially pronounced outside the UDA.

This EIS/EIR uses a 50-year analysis study period to evaluate all alternatives (see Section 3.6.3), so the EIS/EIR study period extends beyond the end of the 30-year permit term for the Reduced Permit Term Alternative. Therefore, as described in Section 3.6.7.2, the EIS/EIR analysis of the Reduced Permit Term Alternative also considers future urban development that is not part of the project description of the Reduced Permit Term Alternative, but is still expected to occur within the Planning Area after the end of the permit term (i.e., in years 31–50 of the EIS/EIR Study Period). As described in Section 3.6.7.2, project mitigation Preserves established after the end of the 30-year Reduced Permit Term Alternative would be established under the existing project-by-project process for obtaining individual authorizations under CWA, ESA, CESA, and Section 1600 of the California Fish and Game Code. Consequently, mitigation Preserves established in years 31–50 of the EIS/EIR study period would not be established using a regional, landscape-based approach that balances the need for new urban development with the need for resource conservation, as would be provided by an HCP. Therefore, much of the Preserve System inside the UDA would be very similar under the two action alternatives, but the Preserve System outside the UDA would be substantially different between the Reduced Permit Term Alternative and the Proposed Action/Proposed Project Alternative. Under the Reduced Permit Term Alternative, it is unlikely that mitigation preserves established outside the

UDA would be contiguous or would be interconnected, and it is unlikely that a large, contiguous 10,500-acre landscape-size vernal pool Preserve would be established in the southwestern portion of the Planning Area. Likewise, the No Action/No Project Alternative also would not result in contiguous, interconnected preserves outside the UDA, and would not establish a 10,500-acre vernal-pool Preserve in the Planning Area. In these ways, the new mitigation Preserves established outside the UDA under the Reduced Permit Term Alternative and the No Action/No Project Alternative would be similar.

Table 8-12 presents the direct impacts (loss) of each natural land cover inside and outside the UDA expected under the Reduced Permit Term Alternative. Table 8-13 presents the acres of each natural land cover expected to be preserved under the Reduced Permit Term Alternative. Table 8-8 also presents acres of each Natural land cover that would be re-established or established under the Reduced Permit Term Alternative.

Table 8-12. Expected Direct Impacts to Natural Land Covers – Reduced Permit Term Alternative

Land Cover	Direct Effects within UDA (acres)	Direct Effects outside UDA (acres)	Total Direct Impacts (acres)	Existing Acres in Planning Area	Percent of Existing Acres Affected
<i>Aquatic Land Covers</i>					
<i>Wetlands and Other Waters</i>					
Vernal Pool*	379	34	413	4,536	9%
Swale*	268	2	270	1,252	22%
Streams/Creeks (VPIH)*	28	0	28	73	38%
Seasonal Wetland*	107	4	111	2,600	4%
Freshwater Marsh*	129	8	137	2,954	5%
Streams/Creeks*	97	25	122	2,778	4%
Open Water*	164	1	165	2,344	7%
<i>Total Wetlands and Other Waters</i>	<i>1,172</i>	<i>74</i>	<i>1,246</i>	<i>16,537</i>	<i>8%</i>
<i>Riparian</i>					
Mixed Riparian Woodland*	159	38	197	5,856	3%
Mixed Riparian Scrub*	191	3	194	1,454	13%
Mine Tailing Riparian Woodland*	219	0	219	641	34%
<i>Total Riparian</i>	<i>569</i>	<i>41</i>	<i>610</i>	<i>7,951</i>	<i>8%</i>
Total Aquatic Land Covers	1,741	115	1,856	24,488	8%
<i>Terrestrial Land Covers</i>					
<i>Natural Uplands</i>					
Valley Grassland	23,002	669	23,671	135,152	18%
Blue Oak Woodland*	0	9	9	9,132	0.1%
Blue Oak Savanna*	9	29	38	5,637	0.7%
<i>Total Natural Uplands</i>	<i>23,011</i>	<i>707</i>	<i>23,718</i>	<i>149,921</i>	<i>16%</i>
<i>Farmland</i>					
Cropland	5,102	363	5,465	51,829	11%
Irrigated Pasture-Grassland	2,509	156	2,665	15,991	17%
Orchard	209	16	225	3,907	6%
Vineyard	1,350	80	1,430	26,460	5%
<i>Total Farmland</i>	<i>9,170</i>	<i>615</i>	<i>9,785</i>	<i>98,187</i>	<i>10%</i>
Total Terrestrial Land Covers	32,181	1322	33,503	248,108	14%
GRAND TOTAL	33,921	1,437	35,358	272,596	13%

Notes:

* Indicates land cover type that is considered sensitive. Sensitive natural communities are those that receive specific recognition or legal protection under federal, state, or local laws or regulations; see Section 8.1.2.3.

Table 8-13. Natural Land Cover Mitigation under the Reduced Permit Term Alternative

Land Cover	HCP Preserve System (acres)			Re-establishment/ Establishment (acres)*
	Inside UDA	Outside UDA	Total	
Aquatic Land Covers				
Wetlands and Other Waters				
Vernal Pool**	101	1,098	1,199	413
Swale**	57	478	535	228
Stream/Creek (Vernal Pool Invertebrate Habitat)**	16	0	16	8
Seasonal Wetland**	55	15	70	91
Freshwater Marsh**	100	0	100	119
Stream/Creek**	41	81	122	105
Open Water**	43	0	43	104
Total Wetland and Other Waters	413	1,672	2,085	1,068
Riparian				
Mine Tailing Riparian Woodland**	0	5	5	0
Mixed Riparian Scrub**	33	317	350	303
Mixed Riparian Woodland**	54	284	338	306
Total Riparian Land Covers	87	606	693	609
Total Aquatic Resources	500	2,278	2,778	1,677
Terrestrial Land Covers				
Natural Uplands				
Valley Grassland	4,066	14,523	18,589	0
Blue Oak Woodland**	0		9	9
Blue Oak Savanna**	15	22	37	37
Total Natural Uplands	4,081	14,554	18,635	46
Farmlands				
Cropland	221	5,078	5,299	0
Irrigated Pasture-Grassland	32	2,610	2,642	0
Orchard	0	10	10	0
Vineyard	0	1,175	1,175	0
Total Farmland	253	8,873	9,126	0
Total Terrestrial Land Covers	4,334	23,427	27,761	46
TOTAL NATURAL LAND COVERS	4,834	25,705	30,539	1,723

* The re-establishment/establishment acres in this column are in addition to the preservation acres presented in the previous column.

** Indicates a land cover type that is sensitive. Sensitive natural communities are those that receive specific recognition or legal protection under federal, state, or local laws or regulations.

8.2.4.1 Vernal Pool Ecosystem

As discussed in Section 8.1.2.2, impacts to the four land covers within the Vernal Pool Ecosystem land covers are discussed and analyzed together because they function together as a single ecosystem (also see discussion in Appendix G-1). Indirect impacts to the Vernal Pool Ecosystem is described qualitatively for the Valley Grassland land cover, but is described both

qualitatively and quantitatively for the Vernal Pool, Swale, and Stream/Creek (VPIH) land covers (see Section 8.2.1).

Direct and Indirect Effects of the Alternative

The Reduced Permit Term Alternative would directly impact approximately 18,825 acres of Vernal Pool Ecosystem (Table 8-14) over the EIS/EIR 50-year permit term. This is 1,135 acres more than the anticipated 17,690 acres of Vernal Pool Ecosystem expected to be directly impacted under the No Action/No Project Alternative over the EIS/EIR 50-year permit term (Table 8-6, Section 8.2.2).

**Table 8-14. Direct and Indirect Effects on the Vernal Pool Ecosystem –
Reduced Permit Term Alternative**

Land Cover	Direct Loss Within the UDA (acres)	Direct Loss Outside the UDA (acres)	Indirect Effects (acres)	Total Impacts (acres)	Total Existing in 317,655-acre Planning Area	Percent of Existing Impacted in Planning Affected
Valley Grassland (in Vernal Pool Ecosystem)	17,828	286	Described Qualitatively	18,114	97,349	18.6%
Vernal Pool	379	34	186	599	4,536	13.2%
Swale	268	2	77	347	1,252	27.7%
Stream/Creek (VPIH)	28	0	8	36	73	49.3%
Vernal Pool Ecosystem Total Impacts	18,503	322	271	19,096	103,210	18.5%

As discussed in Section 8.1.2.5, most of the MCRA is located inside the UDA. Of the approximately 18,117 existing acres of Vernal Pool Ecosystem within the MCRA, approximately 9,800 acres are expected to be directly impacted (removed), and an additional 237 acres are expected to be indirectly impacted by the Reduced Permit Term Alternative, for a total of 10,037 acres (55% of the MCRA's Vernal Pool Ecosystem).

During the 30-year permit term, SSHCP Covered Activities implemented during the permit term would include relevant SSHCP AMMs to avoid or minimize direct and indirect impacts on the Vernal Pool Ecosystem (see Section 2.4.5). The SSHCP AMMs (see Appendix D) include limiting ground disturbance to the construction footprint, implementing erosion-control BMPs during any ground disturbance, and siting roads and utilities outside of sensitive areas (BMP-1, BMP-2, BMP-3, ROAD-1, and UTILITY-4); and implementing BMPs that control construction dust (BMP-5), limit construction lighting in adjacent natural habitats (BMP-6), require biological monitoring (BMP-7), require worker awareness training (BMP-8), and implement speed limits on the

construction site (BMP-11). Indirect impacts to Stream/Creek and Vernal Pool water quality and hydrology would be minimized by AMM LID-1 through LID-3 and EDGE-4 through EDGE-7.

AMM BMP-1 through AMM BMP-11 are similar to the construction BMPs that would be implemented under the No Action/No Project Alternative (see Table 2-6). However, the Reduced Permit Term Alternative includes additional on-site monitoring and measurement of the effectiveness of each AMM implemented and annual reporting of the effectiveness of each AMM implemented during the 30-year permit term. The Reduced Permit Term Alternative would also include annual review of the effectiveness of each SSHCP AMM implemented during the permit term and a process to make adaptive changes to any AMM that was not fully effective at avoiding impacts to water quality and aquatic habitats. This additional oversight and guidance provided by the Reduced Permit Term Alternative would result in BMPs and water quality AMMs being implemented more frequently and consistently at all ground-disturbing activities than would occur under the No Action/No Project Alternative. The AMMs implemented during the 30-year permit term also include new AMMs that would not occur under the No Action/No Project Alternative, and these new measures are expected to lessen the potential adverse effects to the Aquatic land covers of the Vernal Pool Ecosystem, compared to the effects of the No Action/No Project Alternative on the Vernal Pool Ecosystem.

Therefore, the environmental stressors that result from urban development (see Appendix G) are expected to indirectly impact the hydrology, ecology, and species habitat within 271 acres of Vernal Pools, Swales, and Stream/Creek (VPIH) (Table 8-14), which is 10 acres less than indirect impacts to Vernal Pools, Swales, and Stream/Creek (VPIH) expected under the No Action/No Project Alternative (Table 8-6).

The total 19,096 acres of directly and indirectly impacted Vernal Pool Ecosystem is approximately 18.5% of the existing 103,210 acres of Vernal Pool Ecosystem land covers in the Planning Area (Table 8-2, Table 8-14). This expected total impact to the Vernal Pool Ecosystem under the Reduced Permit Term Alternative is 1,147 acres more than the total 17,949 acres of Vernal Pool Ecosystem impacts estimated for the No Action/No Project Alternative (Table 8-6, Section 8.2.2).

The Reduced Permit Term Alternative is expected to preserve approximately 15,302 acres of Vernal Pool Ecosystem land covers over the EIS/EIR's 50-year study period (Table 8-15), which would include an expected 10,716 acres of Vernal Pool Ecosystem within the HCP Preserve System established during the 30-year permit term, and 4,590 acres preserved on a project-by-project basis as ESA mitigation (after the end of the permit term). The total acres of Vernal Pool Ecosystem preservation under the Reduced Permit Term Alternative is approximately 4,896 acres greater than the 10,406 acres of Vernal Pool Ecosystem preservation expected under the No Action/No Project Alternative. In addition, because the 10,716 acres preserved during the

first 30 years of the Reduced Permit Term Alternative would be within a more contiguous and interconnected HCP Preserve System, these acres of preserved Vernal Pool Ecosystem would better maintain the existing habitat values and existing ecology of the Vernal Pool Ecosystem, when compared the individual Preserves that would be established on a project-by-project basis under the No Action/No Project Alternative.

The SSHCP AMMs implemented during the 30-year permit would be more effective at minimizing indirect impacts of new urban development on the existing hydrology and ecology of the Vernal Pool Ecosystem (see AMMs EDGE -1 through EDGE-10 in Appendix D) than the project-by-project impact AMMs that would be implemented of the No Action/No Project Alternative.

Potential indirect impacts to the Vernal Pool Ecosystem from other environmental stressors, such as increased human activity and habitat fragmentation would be minimized during the 30-year permit term by EDGE-1 through EDGE-3, EDGE-8, ROAD-1, ROAD-2, NATURE TRAIL-1 through NATURE TRAIL-4, STREAM-1 through STREAM-5, and UTILITY-2 through UTILITY-4. The potential for urban development to allow invasive species to more easily colonize SSHCP Preserves would be minimized by EDGE-10 and ROAD-3. In addition, when a Vernal Pool Ecosystem Preserve is located next to a new urban development during the permit term, the development would include Preserve access-points designed to minimize impacts to the Vernal Pool Ecosystem that can be caused by the loading and unloading of livestock used to manage Valley Grasslands of preserved Vernal Pool Ecosystem (EDGE-9).

In addition to preserving 15,302 acres of Vernal Pool Ecosystem aquatic land covers, the Reduced Permit Term Alternative would re-establish or establish 649 acres of Vernal Pool Ecosystem Aquatic land covers (Table 8-15). Potential Impacts to existing vernal pools from the establishment of new vernal pools within a preserved Vernal Pool Ecosystem would be minimized by AMMs (see RE-ESTABLISHMENT/ ESTABLISHMENT AMMs described in Appendix D).

Table 8-15. Expected Mitigation for Vernal Pool Ecosystem Impacts Under the Reduced Permit Term Alternative

Land Cover	Preserved Land (acres)			Re-establishment/ Establishment (acres)
	Inside UDA	Outside UDA	Total	
Valley Grassland (in Vernal Pool Ecosystem)	3,550	10,002	13,552	0
Vernal Pool	101	1,098	1,199	413
Swale	57	478	535	228
Stream/Creek (VPIH)	16	0	16	8
Total Vernal Pool Ecosystem	3,724	11,578	15,302	649

Significance of Direct and Indirect Effects

In summary, when compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would:

- directly and indirectly impact 1,147 more acres of Vernal Pool Ecosystem and associated vernal pool plant and animal communities;
- directly and indirectly impact 254 more acres of the MCRA's Vernal Pool Ecosystem and the associated vernal pool plant and animal communities;
- implement better AMMs to reduce and minimize indirect effects of development projects and activities on the Vernal Pool Ecosystem during the 30-year permit term;
- preserve approximately 4,896 more acres of Vernal Pool Ecosystem in the Planning Area, and approximately two-thirds of the preserved Vernal Pool Ecosystem acres would be within an interconnected Preserve System established during the 30-year permit term;
- establish Preserves during the 30-year permit term that would be more interconnected and more contiguous than the Preserves established under the No Action/No Project Alternative; and
- preserve approximately 1,193 acres less of the MCRA's Vernal Pool Ecosystem and the associated vernal pool plant and animal communities.

Therefore, the Reduced Permit Term Alternative's incremental impact to the Vernal Pool Ecosystem and natural communities would be a ***Less Than Significant Adverse*** effect when compared to the No Action/No Project Alternative incremental impacts on the Vernal Pool Ecosystem and natural communities.

Cumulative Effects on the Vernal Pool Ecosystem from the Reduced Permit Term Alternative

The effects of past, present, and reasonably foreseeable other projects on the Vernal Pool Ecosystem within the study area were described in Section 8.2.2.1 and represent a significant adverse cumulative impact on the Vernal Pool Ecosystem within the study area. The incremental effects of the No Action/No Project Alternative, when viewed in connection with the effects of the past, present, and foreseeable other projects in the study area, were determined to be significant (see Section 8.2.2.1).

The incremental effects of the Reduced Permit Term Alternative would directly and indirectly impact 19,096 acres of Vernal Pool Ecosystem within the Planning Area, which is 1,147 acres more than the total direct and indirect impact expected under the No Action/No Project Alternative. Overall, the Reduced Permit Term Alternative would make a slightly larger contribution to study area cumulative effects on the Vernal Pool Ecosystem, when compared to

the No Action/No Project Alternative. However, at the scale of Vernal Pool Ecosystem impacts throughout the study area, the 1,147-acre difference in impacts under the Reduced Permit Term Alternative compared to impacts under the No Action/No Project Alternative is not discernibly different. As discussed in Section 8.2.2.1, the impacts of the No Action/No Project Alternative on the Vernal Pool Ecosystem, when considered together with the impacts to Vernal Pool Ecosystem from the past, present, and reasonably foreseeable projects and activities in the study area, would have a significant adverse cumulative effect on the Vernal Pool Ecosystem. However, this EIS/EIR evaluates the future impacts of the two action alternatives relative to the future conditions expected under the No Action/No Project Alternative (see Section 3.6.1). Therefore, because the incremental effects of the Reduced Permit Term Alternative on the study area Vernal Pool Ecosystem is not discernibly different from the incremental effects of the No Action/No Project Alternative, the Reduced Permit Term Alternative would result in **No Cumulative** effect when compared to the No Action/No Project baseline condition.

8.2.4.2 Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water

As discussed in Section 8.1.2.1, the plant and animal communities associated with Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water Natural land covers differ in composition, but provide similar aquatic habitats, have similar ecology, and have similar susceptibility to the environmental stressors described in Appendix G-1. Therefore, Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water Natural land covers are analyzed together in Chapter 8 (Section 8.2.1). As discussed in Section 8.1.2.1, Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water communities are also considered “sensitive” natural communities.

Direct and Indirect Effects of the Alternative

The acres of direct impacts under the Reduced Permit Term Alternative on natural communities of the Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water land covers would be approximately 535 acres (Table 8-12). This loss is 48 acres less than the loss of approximately 583 acres of Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water land covers and associated plant and animal communities under the No Action/No Project Alternative.

All HCP Covered Activities implemented during the 30-year permit term would incorporate relevant SSHCP AMMs to avoid or minimize direct and indirect impacts on the Aquatic land covers, including the Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water (see Section 2.4.5). The SSHCP AMMs (see Appendix D) include limiting ground disturbance to the construction footprint, implementing erosion-control BMPs and siting roads and utilities outside of sensitive areas (BMP-1, BMP-2, ROAD-1, and UTILITY-4); and implementing BMPs

that control construction dust (BMP-5), limit construction lighting in adjacent natural habitats (BMP-6), require biological monitoring (BMP-7), require worker awareness training (BMP-8), and implement speed limits on the construction site (BMP-11). Indirect impacts to Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water water-quality and hydrology would be minimized by AMM LID-1 through LID-3, and EDGE-4 through EDGE-7.

AMM BMP-1 through AMM BMP-11 are similar to the construction BMPs that would be implemented under the No Action/No Project Alternative (see Table 2-6). However, the Reduced Permit Term Alternative includes additional on-site monitoring and measurement of the effectiveness of each AMM implemented, and annual reporting of the effectiveness of each AMM implemented during the 30-year permit term. The Reduced Permit Term Alternative would also include annual review of the effectiveness of each SSHCP AMM implemented during the permit term and a process to make adaptive changes to any AMM that was not fully effective at avoiding impacts to water quality and aquatic habitats. This additional oversight and guidance provided by the Reduced Permit Term Alternative would result in BMPs and water quality AMMs being implemented more frequently and consistently at all ground-disturbing activities than would occur under the No Action/No Project Alternative. The AMMs implemented during the 30-year permit term also include new AMMs that would not occur under the No Action/No Project Alternative, and these new measures are expected to lessen the potential adverse effects to the Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water land covers compared to the effects of the No Action/No Project Alternative on these aquatic natural communities.

Other SSHCP AMMs that would avoid and minimize indirect effects of the SSHCP Covered Activities on water quality and hydrology of Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water communities include AMM LID-1 through LID-3, and EDGE-4 through EDGE-6 (Appendix D). Potential impacts to Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water communities from increased human activity and from habitat fragmentation would be minimized by the AMMs EDGE-1 through EDGE-3, EDGE-8, EDGE-10, ROAD-1, ROAD-2, NATURE TRAIL-1 through NATURE TRAIL-5, STREAM-1 through STREAM-5, and UTILITY-2 (see Appendix D for a description of AMMs). Relative to the AMMs implemented by individual projects under the No Action/No Project Alternative (Table 2-6), the HCP AMMs would better reduce indirect impacts on aquatic land covers during the 30-year permit term. For example, STREAM-1 through STREAM-3 would require wider setbacks between natural waterways and new development, thereby providing greater protection of existing water quality and species habitats of Stream/Creek and other aquatic resources. Therefore, the environmental stressors that result from urban development (see Appendix G) implemented during the 30-year permit term are expected to be smaller in extent and result in fewer indirect impacts to the existing hydrology, ecology, and species habitat of Seasonal Wetland,

Freshwater Marsh, Stream/Creek, and Open Water land covers, when compared to the environmental stressors of new urban development implemented under the No Action/No Project Alternative.

The Reduced Permit Term Alternative is expected to preserve approximately 335 acres of Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water land covers and associated plant and animal communities over the EIS/EIR's 50-year study period (Table 8-13). This is a larger area than the 24 acres estimated to be preserved under the No Action/No Project Alternative (Table 8-5). In addition, the acres preserved during the 30-year term of the Reduced Permit Term Alternative would be within a more contiguous and interconnected HCP Preserve System (see Section 2.4.4). Therefore, these preserved acres would better maintain the existing habitat values and existing ecology of the preserved Seasonal Wetland, Freshwater Marsh, Stream and Creek, and Open Water, when compared the individual Preserves that would be established on a project-by-project basis under the No Action/No Project Alternative.

In addition to preserving 335 acres of Seasonal Wetlands, Freshwater Marsh, Streams/Creeks, and Open Water land covers, the Reduced Permit Term Alternative would re-establish or establish 419 acres of Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water land covers within the Planning Area (Table 8-13). This is 128 acres more than the 291 acres re-establishment or establishment of these land covers expected in the Planning Area under the No Action/No Project Alternative (Table 8-5), primarily because compensatory mitigation for impacts to Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water land covers during the 30-year permit term would occur at HCP Preserves or mitigation banks located within the Planning Area.

Significance of Direct and Indirect Effects

In summary, when compared to the expected No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would:

- directly impact 48 fewer acres of Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water land covers and associated plant and animal communities;
- would require Covered Activity activities and projects implemented during the 30-year permit term to incorporate better and more consistently implemented AMMs to better avoid and minimize indirect effects to Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water natural communities, such as larger setbacks between new development and streams and creeks;
- would preserve 311 more acres of Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water;

- would re-establish or establish 128 more acres of Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water land covers within the Planning Area; and
- would result in more interconnected and more contiguous Preserves of Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water land covers within the Planning Area.

Therefore, the Reduced Permit Term Alternative's impact to Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water land covers would be a **Minor Beneficial** effect, when compared to the impacts of the No Action/No Project Alternative on the Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water land covers of the Planning Area.

Cumulative Impacts to Seasonal Wetland, Freshwater Marsh, Streams and Creeks, and Open Water

The effects of past, present, and reasonably foreseeable other projects on the Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water natural communities within the study area were described in Section 8.2.2.2 and represent a significant adverse cumulative impact on the Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water within the study area. As discussed in Section 8.2.2.2, the incremental effects of the No Action/No Project were determined to be significant when viewed in connection with the effects of the past, current, and foreseeable other projects in the study area.

As discussed in this section, the incremental effects of the Reduced Permit Term Alternative would result in the direct loss of 535 acres of Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water land covers within the Planning Area, which is 48 acres less than the losses expected under the No Action/No Project Alternative.

In addition, as discussed previously, the SSHCP Conservation Strategy implemented during the 30-year permit term would require Covered Activities to incorporate AMMs, such as increased setbacks between waterways and new urban development. These additional AMMs would be consistently implemented and monitored, and would reduce the number and extent of environmental stressors that result from urban development to avoid or minimize indirect impacts to Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water natural land covers of the Planning Area, when compared to is the extent of indirect impacts anticipated under the No Action/No Project Alternative. The implementation of the Reduced Permit Term Alternative's Conservation Strategy is also expected to preserve 311 more acres and to re-establish 128 more acres of Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water within the Planning Area, when compared to the No Action/No Project Alternative.

Overall, the Reduced Permit Term Alternative would make a slightly smaller contribution to the cumulative loss of Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water in the study area when compared to the No Action/No Project Alternative. However, at the scale of impacts to these aquatic resources throughout the study area, the 535-acre difference in direct impacts, the 311-acre difference in preservation, and the 128-acre difference in re-establishment of Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water land covers under the Reduced Permit Term Alternative is not discernibly different from the impacts expected under the No Action/No Project Alternative. As identified in Section 8.2.2.2, the incremental impacts to Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water from the No Action/No Project Alternative, when considered together with the acres of Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water impacted from past, present, and reasonably foreseeable projects and activities in the study area, would have a significant adverse cumulative effect on these land covers. As discussed in Section 3.6.1, this EIS/EIR evaluates the future impacts of the two action alternatives relative to the future conditions expected under the No Action/No Project Alternative. Therefore, because the incremental effects of the Reduced Permit Term Alternative on the study area's Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water natural communities is not discernibly different from the incremental effects of the No Action/No Project Alternative, the Reduced Permit Term Alternative would result in **No Cumulative** effect when compared to the future No Action/No Project Alternative condition.

8.2.4.3 Riparian Land Covers (Mixed Riparian Woodland, Mixed Riparian Scrub, and Mine Tailing Riparian Woodland)

Planning Area Riparian land covers include Mixed Riparian Woodland, Mixed Riparian Scrub, and Mine Tailing Riparian Woodland land covers. These riparian land covers are considered "sensitive natural communities" (see discussion of individual land covers in Section 8.1.2.3).

Direct and Indirect Effects of the Reduced Permit Term Alternative

The Reduced Permit Term Alternative is expected to directly impact (remove) 610 acres of Riparian land covers, which is 56 acres more than the loss of 554 acres of Riparian land covers expected under the No Action/No Project Alternative (Table 8-12).

All SSHCP Covered Activities implemented during the 30-year permit term of the Reduced Permit Term Alternative would incorporate relevant SSHCP AMMs to avoid or minimize direct and indirect impacts on the Riparian land covers and natural communities (see Section 2.4.5 and Appendix D).

The following AMMs would minimize direct impacts by limiting ground disturbance to the construction footprint; implementing erosion-control BMPs and siting roads and utilities outside of sensitive areas (BMP-1, BMP-2, ROAD-1, and UTILITY-4); and implementing BMPs

that control construction dust (BMP-5), limit construction lighting in adjacent natural habitats (BMP-6), require biological monitoring (BMP-7), require worker awareness training (BMP-8), and implement speed limits on the construction site (BMP-11).

AMM BMP-1 through AMM BMP-11 are similar to the construction BMPs that would be implemented under the No Action/No Project Alternative (see Table 2-6). However, the Reduced Permit Term Alternative includes additional on-site monitoring and measurement of the effectiveness of each AMM implemented and annual reporting of the effectiveness of each AMM implemented during the 30-year permit term. The Reduced Permit Term Alternative would also include annual review of the effectiveness of each SSHCP AMM implemented during the 30-year permit term and a process to make adaptive changes to any AMM that was not fully effective at avoiding impacts to water quality and aquatic habitats. This additional oversight and guidance provided by the Reduced Permit Term Alternative would result in BMPs and water quality AMMs being implemented more frequently and consistently at all ground-disturbing activities than would occur under the No Action/No Project Alternative. The AMMs implemented during the 30-year permit term also include new AMMs that would not occur under the No Action/No Project Alternative, and these new measures are expected to lessen the potential adverse effects to the Riparian Water land covers compared to the effects of the No Action/No Project Alternative.

Other AMMs which would avoid and minimize indirect effects of the Reduced Permit Term Alternative on water quality and hydrology of Riparian land covers include AMM LID-1 through LID-3, and EDGE-4 through EDGE-7 (Appendix D). Potential indirect impacts to Riparian land covers from increased human activity and from habitat fragmentation would be minimized by the AMMs EDGE-1 through EDGE-3, EDGE-8, EDGE-10, ROAD-1, ROAD-2, NATURE TRAIL-1 through NATURE TRAIL-5, STREAM-1 through STREAM-5, and UTILITY-2 (see Appendix D for a description of AMMs). Relative to the AMMs implemented by individual projects under the No Action/No Project Alternative (Table 2-6), the SSHCP AMMs would better reduce indirect impacts on Aquatic land covers during the 30-year permit term. For example, STREAM-1 through STREAM-3 would require wider setbacks between natural waterways and new development, thereby providing greater protection of existing water quality and species habitats of Riparian land covers and other aquatic resources. Therefore, the environmental stressors caused by new urban development (see Appendix G) are expected to be smaller in extent and would result in fewer indirect impacts to the existing hydrology, ecology, and species habitat the Riparian land covers, when compared to the environmental stressors of new urban development implemented under the No Action/No Project Alternative.

The Reduced Permit Term Alternative is expected to preserve approximately 696 acres of Riparian land covers and associated plant and animal communities over the EIS/EIR's 50-year study period (Table 8-13). By comparison, the No Action/No Project Alternative is not expected to

preserve any Riparian land covers (Table 8-5). In addition, the acres of Riparian land covers preserved during the 30-year term of the Reduced Permit Term Alternative would be within a contiguous and interconnected SSHCP Preserve System (see section 2.4.4), which would help to maintain the existing habitat values and existing ecology of the preserved Riparian land covers. In addition to preserving 696-acres of Riparian land covers, the Reduced Permit Term Alternative would re-establish or establish 609 acres of Riparian land covers within the Planning Area (Table 8-13). This is 55 acres more than the 554 acres of re-establishment or establishment of these land covers expected in the Planning Area under the No Action/No Project Alternative (Table 8-5).

Significance of Direct and Indirect Effects

In summary, when compared to the expected No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would:

- directly impact 56 more acres of Riparian land covers and associated plant and animal communities;
- require Covered Activity activities and projects implemented during the 30-year permit term to incorporate better and more consistently implemented AMMs, to better avoid and minimize indirect effects to Riparian land covers and natural communities, such as larger setbacks between new development and streams and creeks;
- preserve 696 more acres of Riparian land covers;
- re-establish or establish 55 more acres of Riparian land covers within the Planning Area; and
- result in more interconnected and more contiguous Preserves of Riparian land covers within the Planning Area.

Therefore, the Reduced Permit Term Alternative's impact to Riparian land covers and the associated plant and animal communities would be a **Minor Beneficial** effect, when compared to the impacts of the No Action/No Project Alternative on Riparian land covers of the Planning Area.

Cumulative Effects of the Alternative

The effects of past, present, and reasonably foreseeable other projects on the Riparian land covers and natural communities within the study area were described above in Section 8.2.2.3, and represent a significant adverse cumulative impact on the Riparian land covers within the study area. As discussed in Section 8.2.2.3, the incremental effects of the No Action/No Project Alternative were determined to have a less than significant cumulative adverse effect on riparian land covers in the study area when viewed in connection with the effects of the past, present, and foreseeable other projects in the study area.

As in this section 8.2.4.3, the incremental effects of the Reduced Permit Term Alternative would result in the loss of 610 acres of Riparian land covers within the Planning Area, which is 56 acres greater than the loss under the No Action/No Project Alternative. However, the Reduced Permit Term Alternative is expected to preserve 606 acres more and re-establish 55 more acres of Riparian land covers within the Planning Area, and would result in consistent and more frequent implementation of AMMs that would reduce indirect impacts to Riparian land covers when compared to the No Action/No Project Alternative.

Overall, the impacts of Reduced Permit Term Alternative would make a similar contribution to the cumulative loss of Riparian land covers in the study area, when compared to the No Action/No Project Alternative. In addition, at the scale of cumulative impacts to riparian resources throughout the study area, the 56-acre difference in direct impacts, the 693 acre difference in Riparian preservation, and the 55-acre difference in re-establishment of Riparian land covers is not discernibly different when compared to impacts expected under the No Action/No Project Alternative.

As discussed in Section 8.2.2.3, the incremental impacts of the No Action/No Project Alternative on the Riparian land covers, when considered together with the impacts from the past, present, and reasonably foreseeable projects and activities in the study area, would be less than significant, and the No Action/No Project Alternative would have a less than significant cumulative adverse effect on riparian land covers in the study area. As discussed in Section 3.6.1, this EIS/EIR evaluates the future impacts of the action alternatives relative to the future conditions expected under the No Action/No Project Alternative. Therefore, because the incremental effects of the Reduced Permit Term Alternative on the study area's Riparian land covers and natural communities is not discernibly different from the incremental effects of the No Action/No Project Alternative, the Reduced Permit Term Alternative would result in **No Cumulative** effect (when compared to the No Action/No Project Alternative baseline condition).

8.2.4.4 Valley Grassland

As discussed in Section 8.1.2, approximately 135,152 acres of Valley Grassland are present in the Planning Area, which includes Valley Grassland acres that are located both inside and outside of the Vernal Pool Ecosystem (Table 8-1) and all Valley Grassland in ranching and grazing agricultural use. (The impacts to Valley Grassland as a part of the Vernal Pool Ecosystem are also analyzed under impacts to the Vernal Pool Ecosystem (Section 8.2.4.1)).

Direct and Indirect Effects of the Reduced Permit Term Alternative

The Reduced Permit Term Alternative is expected to directly impact (remove) 23,671 acres of Valley Grassland (Table 8-12), which is 242 acres more than the loss of 23,429 acres of Valley Grassland expected under the No Action/No Project Alternative (Table 8-4).

All SSHCP Covered Activities implemented during the 30-year permit term of the Reduced Permit Term Alternative would incorporate relevant SSHCP AMMs, which would avoid or minimize direct and indirect impacts of the Covered Activities on the Valley Grassland natural community (see Section 2.4.5 and Appendix D).

AMMs that would minimize direct impacts include limiting ground disturbance to the construction footprint, implementing erosion control BMPs (BMP-1 through BMP-4), siting roads and utilities outside of sensitive areas include (ROAD-1, and UTILITY-4), controlling construction dust (BMP-5), limiting construction lighting adjacent natural habitats (BMP-6), requiring biological monitors (BMP-7), requiring worker awareness training (BMP-8), and implementing speed limits on the construction site (BMP-11).

AMM BMP-1 through AMM BMP-11 are similar to the construction BMPs that would be implemented under the No Action/No Project Alternative (see Table 2-6). However, the Reduced Permit Term Alternative includes additional on-site monitoring and measurement of the effectiveness of each AMM implemented and annual reporting of the effectiveness of each AMM implemented during the 30-year permit term. The Reduced Permit Term Alternative would also include annual review of the effectiveness of each SSHCP AMM implemented during the 30-year permit term, and a process to make adaptive changes to any AMM that was not fully effective at avoiding impacts to water quality and aquatic habitats. This additional oversight and guidance provided by the Reduced Permit Term Alternative would result in BMPs and water quality AMMs being implemented more frequently and consistently at all ground-disturbing activities than would occur under the No Action/No Project Alternative. The AMMs implemented during the 30-year permit term also include new AMMs that would not occur under the No Action/No Project Alternative, and these new measures are expected to lessen the potential adverse effects to the Valley Grasslands compared to the effects of the No Action/No Project Alternative.

Potential indirect impacts to Valley Grasslands from increased human activity and from habitat fragmentation would be minimized by the AMMs EDGE-1 through EDGE-3, EDGE-8, EDGE-10, ROAD-1, ROAD-2, NATURE TRAIL-1 through NATURE TRAIL-5, STREAM-1 through STREAM-5, and UTILITY-2 (see Appendix D for a description of AMMs). Relative to the AMMs implemented by individual projects under the No Action/No Project Alternative (Table 2-6), the SSHCP AMMs would reduce the extent of environmental stressors caused by new urban development (see Appendix G-1) and would result in fewer indirect impacts to the existing ecology and species habitat of Valley Grassland land covers, when compared to the new urban development implemented under the No Action/No Project Alternative.

The Reduced Permit Term Alternative is expected to preserve approximately 18,589 acres of Valley Grassland and associated plant and animal communities over the EIS/EIR's 50-year study period (Table 8-13), which is 6,783 acres more than the 11,806 acres of Valley Grassland

estimated to be preserved under the No Action/No Project Alternative (Table 8-5). In addition, the acres preserved during the 30-year term of the Reduced Permit Term Alternative would be within a more contiguous and interconnected SSHCP Preserve System (see section 2.4.4), which would better maintain the existing habitat values and existing ecology of the preserved Valley Grassland, when compared the individual Valley Grassland Preserves that would be established on a project-by-project basis under the No Action/No Project Alternative.

Significance of Direct and Indirect Effects

In summary, when compared to the expected No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would:

- directly impact 242 more acres of Valley Grassland land covers and associated plant and animal communities;
- require Covered Activity activities and projects implemented during the 30-year permit term to incorporate better and more consistently implemented AMMs, to better avoid and minimize indirect effects to Valley Grassland natural communities, such as larger setbacks between new development and preserved land covers and larger setbacks between new development and streams and creeks;
- preserve 6,783 more acres of Valley Grassland land cover; and
- result in more interconnected and more contiguous Preserves of Valley Grasslands within the Planning Area.

Therefore, the Reduced Permit Term's impact to Valley Grassland and the associated plant and animal communities would be a ***Less Than Significant Adverse*** effect, when compared to the impacts of the No Action/No Project Alternative on Valley Grassland land covers of the Planning Area.

Cumulative Effects on Valley Grassland from the Reduced Permit Term Alternative

The effects of past, present, and reasonably foreseeable other projects on the Valley Grassland land covers and natural communities within the study area were described in Section 8.2.2.4 and represent a significant adverse cumulative impact on the Valley Grassland within the study area. As discussed in Section 8.2.2.4, the incremental effects of the No Action/No Project Alternative were determined to have a significant cumulative adverse impact on Valley Grassland in the study area, when viewed in connection with the effects of the past, present, and foreseeable other projects in the study area.

As discussed here in Section 8.2.4.4, the incremental effects of the Reduced Permit Term Alternative would result in the loss of 23,671 acres of Valley Grassland within the Planning Area, which is 242 acres greater than the loss under the No Action/No Project Alternative.

In addition, as discussed previously, the SSHCP Conservation Strategy implemented during the 30-year permit term would require Covered Activities to incorporate additional AMMs, such as increased setbacks between Preserves and new urban development. These AMMs would be consistently implemented and monitored and would reduce the number and extent of environmental stressors that result from urban development to avoid or minimize indirect impacts to Valley Grassland natural communities when compared to the extent of indirect impacts anticipated under the No Action/No Project Alternative. The implementation of the Reduced Permit Term Alternative's Conservation Strategy is also expected to preserve 6,783 more acres of Valley Grassland in the Planning Area when compared to the No Action/No Project Alternative.

However, at the scale of impacts to Valley Grassland throughout the study area, the 242-acre difference in direct impacts and the 6,783-acre difference in Valley Grassland preservation under the Reduced Permit Term Alternative is not discernibly different from the impacts expected under the No Action/No Project Alternative. As identified in Section 8.2.2.4, the incremental impacts to Valley Grassland from the No Action/No Project Alternative would have a significant adverse cumulative effect on Valley Grassland when considered together with the Valley Grasslands impacted from past, present, and reasonably foreseeable projects and activities in the study area. As discussed in Section 3.6.1, this EIS/EIR evaluates the future impacts of the two action alternatives relative to the future conditions expected under the No Action/No Project Alternative. Therefore, because the incremental effects of the Reduced Permit Term Alternative on the study area's Valley Grassland is not discernibly different from the incremental effects of the No Action/No Project Alternative, the Reduced Permit Term Alternative would result in **No Cumulative** effect when compared to the future No Action/No Project Alternative condition.

8.2.4.5 Blue Oak Woodland and Blue Oak Savanna

The Blue Oak Woodland land cover and the Blue Oak Savanna land cover are considered together because the plants and animals of both communities overlap considerably (see Section 8.1.2.1), and each land cover has the same regulatory requirements (Section 8.1.1). Blue Oak Woodland and Blue Oak Savanna land covers are "sensitive natural communities" (see discussion of individual land covers in Section 8.1.2). As discussed in Section 8.2.1, indirect impacts to the Riparian land covers is described qualitatively.

Direct and Indirect Effects of the Alternative

The Reduced Permit Term Alternative is expected to directly impact (remove) 47 acres of Blue Oak Woodland and Blue Oak Savanna (Table 8-12), which is 93 acres less than the loss of 140 acres of Blue Oak Woodland and Blue Oak Savanna under the No Action/No Project Alternative (Table 8-4).

All SSHCP Covered Activities implemented during the 30-year permit term of the Reduced Permit Term Alternative would incorporate the relevant SSHCP AMMs (described in Appendix

D), which would avoid or minimize direct and indirect impacts of the Covered Activities on the Blue Oak Woodland and Blue Oak Savanna natural communities (see Section 2.4.5).

AMMs that would minimize direct impacts include limiting ground disturbance to the construction footprint, implementing erosion control BMPs (BMP-1 through BMP-4), siting roads and utilities outside of sensitive areas (ROAD-1, and UTILITY-4), controlling construction dust (BMP-5), limiting construction lighting adjacent natural habitats (BMP-6), requiring biological monitors (BMP-7), requiring worker awareness training (BMP-8), and implementing speed limits on the construction site (BMP-11).

AMM BMP-1 through AMM BMP-11 are similar to the construction BMPs that would be implemented under the No Action/No Project Alternative (see Table 2-6). However, the Reduced Permit Term Alternative includes additional on-site monitoring and measurement of the effectiveness of each AMM implemented and annual reporting of the effectiveness of each AMM implemented during the 30-year permit term. The Reduced Permit Term Alternative would also include annual review of the effectiveness of each SSHCP AMM implemented during the 30-year permit term and a process to make adaptive changes to any AMM that was not fully effective at avoiding impacts to water quality and aquatic habitats. This additional oversight and guidance provided by the Reduced Permit Term Alternative would result in BMPs and water quality AMMs being implemented more frequently and consistently at all ground-disturbing activities than would occur under the No Action/No Project Alternative. The AMMs implemented during the 30-year permit term also include new AMMs that would not occur under the No Action/No Project Alternative, and these new measures are expected to lessen the potential adverse effects to Blue Oak Woodland and Blue Oak Savanna natural communities compared to the effects of the No Action/No Project Alternative.

Potential indirect impacts to Blue Oak Woodland and Blue Oak Savanna from increased human activity and from habitat fragmentation would be minimized by AMMs EDGE-1 through EDGE-3, EDGE-8, EDGE-10, ROAD-1, ROAD-2, NATURE TRAIL-1 through NATURE TRAIL-5, STREAM-1 through STREAM-5 and UTILITY-2 (see Appendix D for a description of AMMs). Relative to the AMMs implemented by individual projects under the No Action/No Project alternative (Table 2-6), the SSHCP AMMs would reduce the extent of environmental stressors caused by new urban development (see Appendix G-1) and would result in fewer indirect impacts to the existing ecology and species habitat of Blue Oak Woodland and Blue Oak Savanna Grassland land covers when compared to the impacts expected under the No Action/No Project Alternative.

As shown on Table 8-13, the Reduced Permit Term Alternative is expected to both preserve 46 acres of Blue Oak Woodland and Blue Oak Savanna and to re-establish or establish 46 acres of Blue Oak Woodland and Blue Oak Savanna within the Planning Area, which are amounts that nearly equal the expected acres of direct impact (loss) of 47 acres within the Planning Area (Table

8-12). In comparison, the 70 acres re-established/established under the No Action/No Project Alternative would replace only half of the acres of Blue Oak Woodland and Blue Oak Savanna lost under that alternative (Tables 4-4 and 8-5). In addition, the preservation and re-establishment of Blue Oak Woodland and Blue Oak Savanna would occur in the interconnected Preserve System established during the 30-year permit term, which would maintain greater connectivity between Blue Oak Woodland and Blue Oak Savanna land covers than the project-by-project mitigation preserves that would be established under the No Action/No Project Alternative.

Significance of Direct and Indirect Effects

In summary, when compared to the expected No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would:

- directly impact 93 acres less Blue Oak Woodland and Blue Oak Savanna and their associated plant and animal communities;
- require Covered Activity projects and activities implemented during the 30-year permit term to implement better and more consistently implemented AMMs to avoid and minimize indirect effects to Blue Oak Woodland and Blue Oak Savanna;
- preserve 46 acres of Blue Oak Woodland and Blue Oak Savanna in the Planning Area, which would nearly equal acres of expected impacts to Blue Oak Woodland and Blue Oak Savanna (47 acres). By comparison, the acreage of Blue Oak Woodland and Blue Oak Savanna preservation in the Planning Area under the No Action/No Project Alternative (70 acres) is only half of the expected impacts to Blue Oak Woodland and Blue Oak Savanna (140 acres).
- re-establish or establish 46 acres of Blue Oak Woodland and Blue Oak Savanna in the Planning Area, which would nearly equal the acres of expected impacts to Blue Oak Woodland and Blue Oak Savanna (47 acres). By comparison, the acreage of Blue Oak Woodland and Blue Oak Savanna re-establishment or establishment in the Planning Area under the No Action/No Project Alternative (70 acres) is only half of the expected impacts to Blue Oak Woodland and Blue Oak Savanna (140 acres).
- result in more interconnected and contiguous Preserves of Blue Oak Woodland and Blue Oak Savanna within the Planning Area, which would reduce habitat fragmentation effects on the Blue Oak Woodland and Blue Oak Savanna plant and animal communities.

Therefore, the Reduced Permit Term Alternative's impacts to Blue Oak Woodland and Blue Oak Savanna and their associated plant and animal communities would be **a *Minor Beneficial*** effect, when compared to the impacts of the No Action/No Project Alternative on Blue Oak Woodland and Blue Oak Savanna land covers of the Planning Area.

Cumulative Impacts to Blue Oak Woodland and Blue Oak Savanna from the Reduced Permit Term Alternative

The effects of past, present, and reasonably foreseeable other projects on the Blue Oak Woodland and Blue Oak Savanna land covers and natural communities within the study area were described in Section 8.2.2.5 and represent a significant adverse cumulative impact on the Blue Oak Woodland and Blue Oak Savanna within the study area. As discussed in Section 8.2.2.5, the incremental effects of the No Action/No Project Alternative were determined to have a significant cumulative adverse impact on Blue Oak Woodland and Blue Oak Savanna in the study area when viewed in connection with the effects of the past, present, and foreseeable other projects in the study area.

As discussed in this section, the incremental effects of the Reduced Permit Term Alternative would result in the loss of 47 acres of Blue Oak Woodland and Blue Oak Savanna within the Planning Area, which is 93 acres less than the loss under the No Action/No Project Alternative. The Reduced Permit Term Alternative would preserve 46 acres of Blue Oak Woodland and Blue Oak Savanna, an amount nearly equal to the acres of expected impacts. The No Action/No Project Alternative would also re-establish/establish 46 acres of Blue Oak Woodland and Blue Oak Savanna, an amount also nearly equal to the acres of expected impacts. By comparison, the No Action/No Project Alternative would preserve 70 acres of Blue Oak Woodland and Blue Oak Savanna and re-establish or establish 70 acres Blue Oak Woodland and Blue Oak Savanna, which are each only half of the expected 140 acres of impacts to Blue Oak Woodland and Blue Oak Savanna.

Overall, the incremental impacts of the Reduced Permit Term Alternative would make a slightly smaller contribution to the cumulative loss of Blue Oak Woodland and Blue Oak Savanna in the study area, when compared to the incremental impacts of the No Action/No Project Alternative. However, at the scale of impacts to Blue Oak Woodland and Blue Oak Savanna throughout the study area, the difference in direct impacts and the difference in preservation and re-establishment or establishment of Blue Oak Woodland and Blue Oak Savanna land covers is not discernibly different.

As discussed in Section 8.2.2.5, the impacts of the No Action/No Project Alternative on Blue Oak Woodland and Blue Oak Savanna, when considered together with the impacts from the past, present, and reasonably foreseeable projects and activities in the study area, would have a significant adverse cumulative effect on Blue Oak Woodland and Blue Oak Savanna. However, as discussed in Section 3.6.1, this EIS/EIR evaluates the future impacts of the action alternatives relative to the future conditions expected under the No Action/No Project Alternative. Therefore, because the incremental effects of the Reduced Permit Term Alternative on Blue Oak Woodland and Blue Oak Savanna are not discernibly different from the incremental effects of the No

Action/No Project Alternative, the Reduced Permit Term Alternative would result in **No Cumulative** effect (when compared to the No Action/No Project Alternative baseline condition).

8.2.4.6 Farmland (Cropland/Irrigated Pasture-Grassland)

As discussed in Section 8.1.2, Cropland and Irrigated Pasture-Grassland are included in the Natural land cover category because they provide habitat for a native wildlife community (e.g., cottontail rabbits, other small mammals, mule deer, western meadowlark, and red-winged black bird; foraging for hawks and other raptors; and wintering sandhill cranes), and support some native trees and other native plants on the margins of fields or in hedgerows. There are approximately 67,820 acres of the Cropland and Irrigated Pasture-Grassland land covers in the Planning Area.

Direct and Indirect Effects of the Alternative

The Reduced Permit Term Alternative is expected to directly impact (remove) 8,130 acres of Cropland and Irrigated Pasture-Grassland (Table 8-12), which is 354 acres less than the loss of 8,484 acres of Cropland and Irrigated Pasture-Grassland expected under the No Action/No Project Alternative (Table 8-4).

All SSHCP Covered Activities implemented during the 30-year permit term of the Reduced Permit Term Alternative would incorporate relevant SSHCP AMMs, which would avoid or minimize direct and indirect impacts of the Covered Activities on the Cropland and Irrigated Pasture-Grassland wildlife communities (see Section 2.4.5 and Appendix D).

AMMs that would minimize direct impacts include limiting ground disturbance to the construction footprint, implementing erosion control BMPs (BMP-1 through BMP-4), siting roads and utilities outside of sensitive areas include (ROAD-1, and UTILITY-4), controlling construction dust (BMP-5), limiting construction lighting adjacent natural habitats (BMP-6), requiring biological monitors (BMP-7), requiring worker awareness training (BMP-8), and implementing speed limits on the construction site (BMP-11).

AMM BMP-1 through AMM BMP-11 are similar to the construction BMPs that would be implemented under the No Action/No Project Alternative (see Table 2-6). However, the Reduced Permit Term Alternative includes additional on-site monitoring and measurement of the effectiveness of each AMM implemented, and annual reporting of the effectiveness of each AMM implemented during the 30-year permit term. The Reduced Permit Term Alternative would also include annual review of the effectiveness of each SSHCP AMM implemented during the 30-year permit term and a process to make adaptive changes to any AMM that was not fully effective at avoiding impacts to water quality and aquatic habitats. This additional oversight and guidance provided by the Reduced Permit Term Alternative would result in BMPs

and water quality AMMs being implemented more frequently and consistently at all ground-disturbing activities than would occur under the No Action/No Project Alternative. The AMMs implemented during the 30-year permit term also include new AMMs that would not occur under the No Action/No Project Alternative, and these new measures are expected to lessen the potential adverse effects to Cropland and Irrigated Pasture-Grassland compared to the effects of the No Action/No Project Alternative.

Potential indirect impacts to Cropland and Irrigated Pasture-Grassland from increased human activity and from habitat fragmentation would be minimized by the AMMs EDGE-1 through EDGE-3, EDGE-8, EDGE-10, ROAD-1, ROAD-2, NATURE TRAIL-1 through NATURE TRAIL-5, STREAM-1 through STREAM-5, and UTILITY-2 (see Appendix D for a description of AMMs). Relative to the AMMs implemented by individual projects under the No Action/No Project alternative (Table 2-6), the HCP AMMs would reduce the extent of environmental stressors caused by new urban development (see Appendix G-1) and would result in fewer indirect impacts to the existing ecology and species habitat of Cropland and Irrigated Pasture-Grassland when compared to the new urban development implemented under the No Action/No Project Alternative.

During the 30-year permit term, impacts to any Farmland land cover would be mitigated by preserving the Cropland or the Irrigated Pasture-Grassland land covers (which provide much higher quality foraging and roosting habitat for native raptor species, sandhill cranes, and other native wildlife species, when compared to other Farmland land covers). In comparison, the No Action/No Project Alternative would mitigate impacts to the Farmland land covers by preserving any “similar category” of farmland, as discussed in Section 8.2.2.6. The No Action/No Project alternative would preserve 7,615 acres of farmland during the EIS/EIR’s 50-year study period. In comparison, the Reduced Permit Term Alternative would preserve approximately 7,941 acres of Cropland and Irrigated Pasture-Grassland, and also preserve approximately 1,185 acres of Orchard and Vineyard (Table 8-13).

Of the total 7,941 acres of Cropland and Irrigated Pasture-Grassland preserved over the 50-year study period of the Reduced Permit Term Alternative, approximately 5,559 acres (70%) would be preserved within a large and interconnected SSHCP Preserve System established during the 30-year permit term (see Section 2.4.4), and approximately 2,382 acres would be preserved on a project-by-project basis after the end of the permit term, as mitigation for individual projects and activities. Each acre of Cropland and Irrigated Pasture-Grassland preserved within the interconnected SSHCP Preserve System (see Section 2.4.4) would provide greater habitat value than the farmlands preserved under the No Action/No Project Alternative because of the Preserve System would provide higher habitat connectivity and include a comprehensive preserve management program that would manage the land covers to maintain existing farming operations and improve wildlife habitat.

Significance of Direct and Indirect Effects

In summary, when compared to the expected No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would:

- directly impact 354 fewer acres of Cropland and Irrigated Pasture-Grassland land covers and associated wildlife communities;
- require Covered Activity activities and projects implemented during the 30-year permit term to incorporate better and more consistently implemented AMMs, to better avoid and minimize indirect effects to Cropland and Irrigated Pasture-Grassland;
- preserve 326 more acres of Cropland and Irrigated Pasture-Grassland land covers;
- preserve higher quality farmland during the 30-year permit term by mitigating impact to any Farmland land cover with the higher quality Cropland or Irrigated Pasture-Grassland;
- result in more contiguous and interconnected and Preserves of Cropland and Irrigated Pasture-Grassland farmland within a larger Preserve System; and
- manage Cropland and Irrigated Pasture-Grassland within the Preserve System on a regional basis and under a comprehensive preserve management program.

Therefore, the Reduced Permit Term Alternative's impact to Cropland and Irrigated Pasture-Grasslands and their associated native wildlife communities would be a **Minor Beneficial** effect, when compared to the impacts of the No Action/No Project Alternative on Cropland and Irrigated Pasture-Grassland land covers of the Planning Area.

Cumulative Analysis Impacts to Cropland and Irrigated Pasture-Grassland from the Reduced Permit Term Alternative

The effects of past, present, and reasonably foreseeable other projects on Cropland and Irrigated Pasture-Grassland within the study area were described above in Section 8.2.2.6, and represent a significant adverse cumulative impact on the Cropland and Irrigated Pasture-Grassland within the study area. As discussed in Section 8.2.2.6, the incremental effects of the No Action/No Project Alternative were determined to be a significant cumulative effect when viewed in connection with the effects of the past, present, and foreseeable other projects in the study area.

As discussed in this section, the incremental effects of the Reduced Permit Term Alternative would result in the direct loss of 8,130 acres of Cropland and Irrigated Pasture-Grassland within the Planning Area, which is 354 acres less than the expected loss of Cropland and Irrigated Pasture-Grassland under the No Action/No Project Alternative. In addition, as discussed previously, the HCP Conservation Strategy implemented during the 30-year permit term would

require Covered Activities to incorporate additional AMMs. These AMMs would be consistently implemented and monitored and would reduce the number and extent of environmental stressors that result from urban development to avoid or minimize indirect impacts to Cropland and Irrigated Pasture-Grassland natural communities, when compared to the extent of indirect impacts anticipated under the No Action/No Project Alternative. The implementation of the Reduced Permit Term Alternative is also expected to preserve 326 more acres of Cropland and Irrigated Pasture-Grassland when compared to the No Action/No Project Alternative. The Preserve System would also result in larger farmland Preserves and greater connectivity of farmland Preserves than is anticipated from the project-by-project mitigation under the No Action/No Project Alternative.

However, at the scale of impacts to Cropland and Irrigated Pasture-Grassland throughout the study area, the 354-acre difference in direct impacts and the 326-acre difference in Cropland and Irrigated Pasture-Grassland preservation under the Reduced Permit Term Alternative is not discernibly different from the impacts expected under the No Action/No Project Alternative. As identified in Section 8.2.2.6, the incremental impacts to Cropland and Irrigated Pasture-Grassland from the No Action/No Project Alternative would have a significant adverse cumulative effect on Cropland and Irrigated Pasture-Grassland, when considered together with the Cropland and Irrigated Pasture-Grasslands impacted from past, present, and reasonably foreseeable projects and activities in the study area. As discussed in Section 3.6.1, this EIS/EIR evaluates the future impacts of the two action alternatives relative to the future conditions expected under the No Action/No Project Alternative. Therefore, because the incremental effects of the Reduced Permit Term Alternative on the study area's Cropland and Irrigated Pasture-Grasslands are not discernibly different from the incremental effects of the No Action/No Project Alternative, the Reduced Permit Term Alternative would result in **No Cumulative** effect when compared to the future No Action/No Project Alternative condition.

8.2.4.7 Farmland (Orchard/Vineyard)

As discussed in Section 8.1.2, Orchard and Vineyard are included in the natural land cover category because they provide habitat for native wildlife (e.g., small mammals, perching raptors, other native birds, and roosting western red bats). There are approximately 30,367 acres of Orchard and Vineyard land covers and the associated plant and animal communities in the Planning Area.

Direct and Indirect Effects of the Reduced Permit Term Alternative

The Reduced Permit Term Alternative is expected to directly impact (remove) approximately 1,685 acres of Orchard and Vineyard (Table 8-13). This loss is 119 acres more than the

approximately 1,566 acres of Orchard and Vineyard estimated to be lost under the No Action/No Project Alternative (Table 8-4).

All SSHCP Covered Activities implemented during the 30-year permit term of the Reduced Permit Term Alternative would incorporate relevant SSHCP AMMs, which would avoid or minimize direct and indirect impacts of the Covered Activities on the Orchard and Vineyard wildlife communities (see Section 2.4.5 and Appendix D).

AMMs that would minimize direct impacts include limiting ground disturbance to the construction footprint, implementing erosion control BMPs (BMP-1 through BMP-4), siting roads and utilities outside of sensitive areas (ROAD-1, and UTILITY-4), controlling construction dust (BMP-5), limiting construction lighting adjacent natural habitats (BMP-6), requiring biological monitors (BMP-7), requiring worker awareness training (BMP-8), and implementing speed limits on the construction site (BMP-11).

AMM BMP-1 through AMM BMP-11 are similar to the construction BMPs that would be implemented under the No Action/No Project Alternative (see Table 2-6). However, the Reduced Permit Term Alternative includes additional on-site monitoring and measurement of the effectiveness of each AMM implemented and annual reporting of the effectiveness of each AMM implemented during the 30-year permit term. The Reduced Permit Term Alternative would also include annual review of the effectiveness of each SSHCP AMM implemented during the 30-year permit term, and a process to make adaptive changes to any AMM that was not fully effective at avoiding impacts to water quality and aquatic habitats. This additional oversight and guidance provided by the Reduced Permit Term Alternative would result in BMPs and water quality AMMs being implemented more frequently and consistently at all ground-disturbing activities than would occur under the No Action/No Project Alternative. The AMMs implemented during the 30-year permit term also include new AMMs that would not occur under the No Action/No Project Alternative, and these new measures are expected to lessen the potential adverse effects to the Orchard and Vineyard compared to the effects of the No Action/No Project Alternative.

Potential indirect impacts to Orchard and Vineyard from increased human activity and from habitat fragmentation would be minimized by the AMMs EDGE-1 through EDGE-3, EDGE-8, EDGE-10, ROAD-1, ROAD-2, NATURE TRAIL-1 through NATURE TRAIL-5, STREAM-1 through STREAM-5, and UTILITY-2 (see Appendix D for a description of AMMs). Relative to the AMMs implemented by individual projects under the No Action/No Project alternative (Table 2-6), the HCP AMMs would reduce the extent of environmental stressors caused by new urban development (see Appendix G-1) and would result in fewer indirect impacts to the existing ecology and species habitat of Orchard and Vineyard, when compared to the new urban development implemented under the No Action/No Project Alternative.

The Reduced Permit Term Alternative could preserve up to 1,185 acres of Orchard and Vineyard over the EIS/EIR's 50-year study period (Table 8-13), which is 381 acres less than the 1,566 acres of Orchard and Vineyard that could be preserved under the No Action/No Project Alternative (Table 8-5).

During the 30-year permit term of the Reduced Permit Term Alternative, impacts to any Farmland land cover, including Orchard and Vineyard, would be mitigated by preserving Cropland or Irrigated Pasture-Grassland land covers, which provide much higher quality habitat for native wildlife species than other Farmland land covers. In comparison, the No Action/No Project Alternative would mitigate impacts to Farmland land covers by preserving any "similar category" of farmland, as discussed in Section 8.2.2.6 (e.g., Prime Farmland, Statewide Importance Farmland, Unique Farmland, or Local Importance Farmland).

In addition, the acres preserved during the 30-year term of the Reduced Permit Term Alternative would be within a more contiguous and interconnected HCP Preserve System (see Section 2.4.4), which would better maintain the existing habitat values of the preserved Orchard and Vineyard when compared the individual farmland Preserves that would be established on a project-by-project basis under the No Action/No Project Alternative.

After the end of the 30-year permit term, mitigation for additional project impacts to Orchard and Vineyard during the 50-year EIS/EIR Study Period would again occur on a project-by-project basis and would mitigate impacts to Orchard and Vineyard by preserving acres of "similar category" farmland. Therefore, the preservation of 1,185-acres of Orchard and Vineyard expected under the Reduced Permit Term Alternative would occur after the end of the 30-year permit term.

Significance of Direct and Indirect Effects

In summary, when compared to the expected No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would:

- directly impact 119 acres less of Orchard and Vineyard land covers and associated wildlife communities;
- require Covered Activity activities and projects implemented during the 30-year permit term to incorporate better and more consistently implemented AMMs to better avoid and minimize indirect effects to Orchard and Vineyard;
- preserve higher quality farmland during the 30-year permit term by mitigating impacts to Orchard and Vineyard with higher quality Cropland or Irrigated Pasture-Grassland.
- preserve 381 less acres of Orchard and Vineyard over the 50-year EIS/EIR study period;

- result in farmland Preserves that are more contiguous, more interconnected, and within a larger Preserve System; and
- manage preserved farmlands on a regional basis within the Preserve System and under a comprehensive preserve management program.

Therefore, the Reduced Permit Term's impact to Orchard and Vineyard and their associated native wildlife communities would be a **Minor Beneficial** effect when compared to the impacts of the No Action/No Project Alternative on Orchard and Vineyard land covers of the Planning Area.

Cumulative Impacts to Orchards and Vineyards from the Reduced Permit Term Alternative

The effects of past, present, and reasonably foreseeable other projects on Orchard and Vineyard within the study area were described in Section 8.2.2.7 and represent a significant adverse cumulative effect on Orchard and Vineyard within the study area. As discussed in Section 8.2.2.7, the incremental effects of the No Action/No Project on Orchard and Vineyard were determined to result in a less than significant cumulative effect when viewed in connection with the effects of the past, present, and foreseeable other projects in

As discussed here in Section 8.2.4.7, the incremental effects of the Reduced Permit Term Alternative would result in the direct loss of 1,685 acres of Orchard and Vineyard within the Planning Area, which is 119 acres greater than the loss under the No Action/No Project Alternative. In addition, as discussed above, the HCP Conservation Strategy implemented during the 30-year permit term would require Covered Activities to incorporate additional AMMs. These AMMs would be consistently implemented and monitored, and would reduce the number and extent of environmental stressors that result from urban development to avoid or minimize indirect impacts to Orchard and Vineyard, when compared to the extent of indirect impacts anticipated under the No Action/No Project Alternative. The implementation of the Reduced Permit Term Alternative is also expected to preserve 381 fewer acres of Orchard and Vineyard when compared to the No Action/No Project Alternative, because impacts to Orchard and Vineyard during the 30-year permit term would be mitigated by preserving other farmland land covers that provide better wildlife habitat (i.e., Cropland and Irrigated Pasture Grassland). The HCP Preserve System established during the 30-year permit term would result in larger farmland preserves, and greater connectivity of farmland preserves than is anticipated from the project-by-project mitigation under the No Action/No Project Alternative.

However, at the scale of impacts to Orchard and Vineyard throughout the study area, the 119-acre difference in direct impacts and the 381-acre difference in Orchard and Vineyard preservation under the Reduced Permit Term Alternative is not discernibly different from the impacts expected under the No Action/No Project Alternative. As identified in Section 8.2.2.7, the incremental impacts to Orchard and Vineyard from the No Action/No Project Alternative

have a significant adverse cumulative effect on Orchard and Vineyard, when considered together with the Orchard and Vineyard impacted from past, present, and reasonably foreseeable projects and activities in the study area. As discussed in Section 3.6.1, this EIS/EIR evaluates the future impacts of the two action alternatives relative to the future conditions expected under the No Action/No Project Alternative. Therefore, because the incremental effects of the Reduced Permit Term Alternative on the study area's Orchard and Vineyard are not discernibly different from the incremental effects of the No Action/No Project Alternative, the Reduced Permit Term Alternative would result in **No Cumulative** effect when compared to the future No Action/No Project Alternative condition.

8.2.4.8 Wildlife Movement Corridors

Direct and Indirect Effects of the Reduced Permit Term Alternative

As shown in Figure 8-2 and Table 8-2 above, there are four ECAs either partially or wholly within the Planning Area. The majority of development under the Reduced Permit Term Alternative would occur within in the UDA (see Section 2.4.3) and only impact the extreme northern most portion of the Duck Creek North Fork – Coyote Creek ECA.

Outside the UDA, no recycled water pipeline Covered Activities anticipated during the 30-year permit term would be located within an ECA. However, rural transportation Covered Activity projects during the 30-year permit term are anticipated to occur within the Stone Lake – Yolo Bypass, Bear Slough – Browns Creek, and Duck Creek North Fork – Coyote Creek ECAs. These rural transportation projects include road-widening projects, which could reduce the ability of wildlife to move across these roadways and within these ECAs. The types of rural transportation Covered Activities included under the Reduced Permit Term Alternative are similar to the types of rural transportation projects included under the No Action/No Project Alternative outside the UDA. However, additional roadway development is expected under the No Action/No Project Alternative to serve the 1,900-acres of new urban development that is expected to be displaced outside of the existing USB boundary under the No Action Alternative (see Section 2.2.3).

Potential direct effects of future rural transportation Covered Activities under the Reduced Permit Term Alternative would occur from the new or expanded roadways, which would increase the size of existing movement barriers or create new barriers to terrestrial wildlife movement. However, all Covered Activities implemented during the 30-year permit term of the Reduced Permit Term Alternative would incorporate SSHCP AMMs, which would reduce habitat fragmentation and also require roadway projects to incorporate structures that would allow native wildlife to cross under improved or new roadways. SSHCP AMMs implemented during the 30-year permit term would help to maintain existing wildlife movement, including AMMs EDGE-1 through EDGE-3, and ROAD-1 through ROAD-3 (See Appendix D).

Several SSHCP AMMs (STREAM-1 through STREAM-5) would also require larger setbacks between existing waterways and new development relative to the No Action/No Project Alternative. These wider setbacks between new development in the UDA and existing waterways would allow continued wildlife movement in the UDA's riparian corridors. The SSHCP AMMs implemented during the 30-year permit term would also reduce other environmental stressors associated with urban development (see Appendix G-1) to better avoid or minimize indirect impacts on wildlife movement, relative to the No Action/No Project Alternative.

In addition, the Reduced Permit Term Alternative would allow urban development within the MCRA portion of the UDA to be consistent with the planned development described in the approved Sacramento County and Rancho Cordova General Plans, without approximately 19,000 acres of new urban development being displaced to locations outside the current USB boundary (see Section 2.2.3). Because the Reduced Permit Term Alternative would not result in the displacement of planned urban development to locations outside of the UDA, the expected No Action/No Project impacts to the Duck Creek North Fork – Coyote Creek ECA would not occur under the Reduced Permit Term Alternative.

As discussed in Section 2.3.5, the Reduced Permit Term Alternative would include an interconnected 27,761-acre HCP Preserve System within the Planning Area (Table 8-13) and a comprehensive HCP Preserve System management program to maintain and adaptively manage the HCP Preserve System in perpetuity (Section 2.4.5). The HCP Preserve System would be designed to achieve the identified SSHCP Biological Goals and Measurable Objectives for wildlife movement, including maintaining wildlife movement and dispersal through the Planning Area, including inside the UDA and outside the UDA (Section 2.4.5, Table 2-7).

Significance of Direct and Indirect Effects

In summary, when compared to the expected No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would:

- provide a coordinated, interconnected Preserve System designed to provide connectivity between existing preserves and new Preserves established under the Reduced Permit Term Alternative;
- require new development projects implemented during the 30-year permit term to incorporate AMMs that would avoid or minimize effects on riparian corridors used for wildlife movement;
- require new development projects inside the UDA and related roadway projects outside the UDA implemented during the 30-year permit term to incorporate wildlife crossing structures at specific locations; and

- not result in displaced development outside the UDA to locations that have a greater potential to affect designated wildlife movement corridors.

Therefore, the Reduced Permit Term Alternative's impact to wildlife movement corridors would be a **Minor Beneficial** effect when compared to the No Action/No Project Alternative impacts on wildlife movement in the Planning Area.

Cumulative Impacts to Wildlife Movement from the Reduced Permit Term Alternative

The effects of past, present, and reasonably foreseeable other projects on wildlife movement in the study area were described in Section 8.2.2.8 and represent a significant adverse cumulative impact on wildlife movement within the study area. As discussed in Section 8.2.2.8, the incremental direct and indirect impacts of the No Action/No Project Alternative on existing wildlife movement and dispersal would be a significant cumulative effect when considered together with the significant impacts to wildlife movement from past, current, and foreseeable future projects and activities in the study area.

As discussed here in Section 8.2.4.8, the Reduced Permit Term Alternative would provide an interconnected Preserve System in the Planning Area, which would not occur under the No Action/No Project Alternative. The Reduced Permit Term Alternative would require wider setbacks between development and waterways, preserving wider riparian movement corridors when compared to the No Action/No Project. In addition, the Reduced Permit Term Alternative would require roadway projects to include AMMs that would provide wildlife undercrossings at specific locations.

Overall, the incremental impacts of the Reduced Permit Term Alternative would make a smaller contribution to the cumulative loss of wildlife movement and dispersal in the study area when compared to the incremental impacts of the No Action/No Project Alternative. However, at the scale of wildlife movement throughout the study area, the difference in impacts to wildlife movement under the Reduced Permit Term Alternative when compared to expected impacts to wildlife movement under the No Action/No Project Alternative, is not discernibly different. Therefore, because the incremental effects of the Reduced Permit Term Alternative on wildlife movement in the study area is not discernibly different from the incremental effects of the No Action/No Project Alternative on wildlife movement in the study area, the Reduced Permit Term Alternative would result in **No Cumulative** effect when compared to the No Action/No Project Alternative baseline condition.

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CHAPTER 9 – SPECIAL-STATUS SPECIES INCLUDING HCP COVERED SPECIES

This chapter presents the potential effects of each alternative on special-status species occurring in the Planning Area, including the 28 species specifically addressed in the Draft South Sacramento Habitat Conservation Plan (SSHCP) as “Covered Species.”

Special-status species are plants and animals that are legally protected under state and/or federal law, or species that are considered sufficiently rare or unique that they are given special consideration by state and/or federal resource agencies or by recognized conservation organizations. See Appendix G for a discussion of the criteria used by the Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) to determine which Planning Area special-status species would be addressed in Chapter 9.

The SSHCP land cover types are referenced in this chapter to discuss Planning Area suitable habitat for individual special-status species. However, the existing conditions and potential impacts of each EIS/EIR alternative on each Planning Area land cover as a natural community were analyzed in Chapter 8 of this EIS/EIR.

9.1 ENVIRONMENTAL SETTING/AFFECTED ENVIRONMENT

9.1.1 Regulatory Framework

This section outlines the regulatory framework that would apply to potential impacts of the alternatives to special-status species, including Covered Species. The summaries of statutes, regulations, and policies that are provided below focus on information relevant to the scope of the impact analysis presented in this chapter. Pursuant to Title 40 of the Code of Federal Regulations (CFR), Section 1502.25 (40 CFR 1502.25), the applicable statutes, regulations, and policies helped to determine the appropriate scope of analysis included in Chapter 9.

9.1.1.1 Federal

Federal Endangered Species Act

The federal Endangered Species Act (ESA) provides a means whereby the ecosystems upon which endangered and threatened species depend may be conserved (16 USC 1531). The terms “conserve,” “conserving,” and “conservation” mean to use, and the use of all, methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to ESA are no longer necessary. The U.S. Fish and Wildlife Service (USFWS) has jurisdiction over plants, wildlife, and freshwater fish listed under ESA.

Section 9 of ESA prohibits any person from “taking” an endangered or threatened fish or wildlife species. Take, as defined by ESA, means “to harass, harm, pursue, hunt, shoot, wound, kill, trap,

capture, or collect or to attempt to engage in any such conduct” (Section 3(18)). Take of threatened species is also prohibited under Section 9 unless otherwise authorized by federal regulations. Additionally, Section 9 prohibits removing, cutting, and maliciously damaging or destroying plants listed under ESA on sites that are under federal jurisdiction.

Under federal regulations, “harm” is further defined by USFWS to include acts or habitat modification or degradation that create the likelihood of injury or actually result in death or injury to listed species by significantly disrupting normal behavior patterns or by impairing essential behavioral patterns, including but not limited to, breeding, feeding, or sheltering (50 CFR 17.3).

Incidental take of listed species may be authorized under Section 10 of ESA. Incidental take is species take that is “incidental to, and not the purpose of, the carrying out of an otherwise lawful activity” (50 CFR 17.3). Section 10 of ESA requires the issuance of an incidental take permit before any nonfederal action may be taken that would potentially harm, harass, injure, kill, capture, collect, or otherwise hurt (i.e., take) any individual of an endangered or threatened species. The permit requires preparation and implementation of a habitat conservation plan (HCP) that would minimize and mitigate the take of covered species to the maximum extent practicable.

Federal entities may receive authorization for take of a listed species through Section 7 of ESA if a determination is made (considering effects on the species and minimization and mitigation measures) that the action is not likely to jeopardize the continued existence of any species listed under ESA, or result in the destruction or adverse modification of the species’ designated critical habitat.

Section 3 of ESA defines critical habitat as: (1) the specific areas within the geographical area occupied by a species at the time it is listed in accordance with the act, on which are found those physical or biological features, essential to the conservation of the species, and that may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. Critical habitat designations affect only federal agency actions or federally funded or permitted activities. Critical habitat designations do not affect activities by private landowners if there is no federal funding or authorization. Federal agencies are required to avoid destruction or adverse modification of designated critical habitat.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act makes it unlawful to pursue, hunt, take, capture, collect, kill or sell migratory birds, feathers, eggs, and nests. The statute does not discriminate between live or dead birds and also grants full protection to any bird parts, including feathers, eggs and nests. The current list of species protected by the Migratory Bird Treaty Act can be found in 50

CFR 10.13. The list includes nearly all migratory birds native to the United States. Over 800 species are currently on the list.

Executive Order 13186

Executive Order 13186 of 2001 assists compliance with the Migratory Bird Treaty Act by directing each federal agency taking actions that would have or would likely have a negative impact on migratory bird populations to work with USFWS to develop a memorandum of understanding to promote the conservation of migratory bird populations. Protocols developed under the memorandum of understanding must include the following agency responsibilities: (1) avoid and minimize, to the extent practicable, adverse impacts on migratory bird resources when conducting federal agency actions; (2) restore and enhance habitat of migratory birds, as practicable; and (3) prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

9.1.1.2 State

California Endangered Species Act

The California Endangered Species Act (CESA) (California Fish and Game Code, Section 2050 et seq.) prohibits the taking of species listed as threatened or endangered under the act, or candidates for listing, except as authorized by state law. Under CESA, “take” is defined as an activity that would directly or indirectly kill an individual of a species, but the definition does not include “harm” or “harass,” which is included in the ESA definition. As a result, the threshold for take is higher under CESA than under ESA.

CESA Section 2081 states that take of an endangered, threatened, or candidate species may be authorized by the California Department of Fish and Wildlife (CDFW) if the impacts of the take are incidental to an otherwise lawful activity, are “minimized and fully mitigated,” and do not “jeopardize the continued existence of [the] species.” Any mitigation measures imposed under CESA must be measures “roughly proportional in extent to the impact of the authorized taking on the species.”

California Fully Protected Species

Fully protected species are addressed in Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code. These statutes prohibit take or possession of fully protected species and do not provide for authorization of incidental take unless a natural community conservation plan is prepared; therefore take is not authorized under the SSHCP.

Protection for Bird Nests and Raptors

Section 3503 of the California Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 specifically states that it is unlawful to take, possess, or destroy any raptor (e.g., hawks, owls, eagles, and falcons), including their nests or eggs. Section 3513 of the California Fish and Game Code codifies the federal Migratory Bird Treaty Act, discussed previously.

California Native Plant Protection Act

The California Native Plant Protection Act provides protection to endangered and “rare” plant species, subspecies, and varieties of wild native plants in California. The California Native Plant Protection Act’s definition of “endangered” and “rare” closely parallel the CESA definitions of “endangered” and “threatened” plant species.

Oak Woodlands Conservation Act

The Oak Woodlands Conservation Act (Senate Bill 1334), Section 21083.4 of the California Public Resources Code, requires counties to determine if a project within their jurisdiction may result in loss of oak woodlands that would have a significant adverse effect on the environment. If the lead agency determines that a project would result in a significant adverse effect on oak woodlands, mitigation measures to avoid or minimize the significant adverse effect of converting oak woodlands to other land uses are required.

9.1.1.3 Local

Sacramento County General Plan of 2005–2030

The *Sacramento County General Plan of 2005–2030* (Sacramento County General Plan) (Sacramento County 2011) Conservation Element includes goals, objectives, and over 100 policies related to the management and preservation of natural resources (policies CO-19 through CO-140 under Section V, Vegetation and Wildlife). The following is a summary of the policies relevant to special-status species. These policies either directly relate to special-status species or address habitats that are important to special-status species.

Policies CO-19 to CO-32: Provide for a safe, reliable water supply while protecting beneficial uses by protecting water quality and water-supported ecosystems through preservation, restoration, and creation of riparian and wetlands habitats and buffers to protect water quality from erosion.

Policies CO-58 through CO-63: Support the management and restoration of wetland and riparian habitat, native habitat, and special-status species habitat. The general plan calls for no net loss of wetlands, riparian woodlands, and oak woodlands.

Policies CO-75 through 81: Support the preservation, enhancement, and restoration of special-status species habitat in Sacramento County to aid in the recovery of these species through maintenance of viable populations and wildlife corridors, managing vegetation on public lands to encourage native species, and controlling access and protecting sensitive habitat.

Policies CO-83 and CO-86: Establish and limit land uses in vernal pool habitat preserves.

Policies CO-88 through CO-92: Support protection and enhancement of riparian habitat and promote the increase of native woodlands and riparian scrub along select waterways.

Policies CO-96 through CO-101: Promote the maintenance of bank stabilization on river and waterways and riparian functionality.

Policies CO-102 through CO-104: Promote the conservation and protection of the Cosumnes River and Mokelumne River corridors.

Policies CO-114 through CO-124: Protect stream corridors from an action that would degrade water quality and require maintenance of vegetation to allow for high water quality.

Policies CO-138 through CO-140: Require the preservation and protection of heritage and landmark trees, especially those used by Swainson's hawks (*Buteo swainsoni*) in riparian areas, the protection of native trees other than oaks from development, and a no net loss of oak woodland canopy area. The section also requires compensation for removal of native oaks and native non-oaks, and provides mitigation measures for compensation.

Sacramento County Swainson's Hawk Ordinance

Chapter 16.130 of Title 16 of the Sacramento County Code addresses the reduction in Swainson's hawk foraging habitat within unincorporated Sacramento County (County). Participating in the County's Swainson's Hawk Mitigation Program, which is voluntary, is one option for mitigating the loss of foraging habitat within unincorporated areas of the County. Under this program, mitigation for impacts less than 40 acres can be achieved by paying a mitigation fee or providing replacement habitat (title or easement to suitable Swainson's hawk mitigation lands on a per-

acre basis); mitigation for impacts of 40 acres or greater can be achieved only by providing replacement habitat under this program.

Sacramento County Tree Preservation and Protection Ordinance

The Sacramento County Tree Preservation and Protection Ordinance, Chapter 19.12 of Title 19 of the Sacramento County Code, requires the protection of all native oak trees having a single trunk of 6 inches diameter at breast height (dbh) or greater, or with multiple trunks having an aggregate diameter of 10 inches dbh or greater. A native oak tree is defined by the ordinance as any of the following: valley oak (*Quercus lobata*), interior live oak (*Quercus wislizenii*), blue oak (*Quercus douglasii*), or oracle oak (*Quercus morehus*). The removal of any protected native oak trees must be authorized through a removal permit. Grading is limited beneath oak trees within their dripline, and any protected oak trees damaged during construction would require mitigation as specified in the ordinance. Exceptions to this ordinance are provided within various categories of developed areas.

2030 Galt General Plan Policy Document

The *2030 Galt General Plan Policy Document* (Galt General Plan)(Galt 2009) Conservation Element includes goals and policies that encourage the protection of important habitats and commit the city to address the effects of urban development on these habitats. The following are policies relevant to special-status species. These policies either directly relate to special-status species or address habitats that are important to special-status species.

Policy COS-2.1: Sensitive Species Protection: The City should require minimization of impacts to protect mature trees, vernal pools, and any threatened endangered or other sensitive species when approving new development.

Policy COS-2.2: Wetland and Riparian Communities Management: The City shall support the protection, restoration, expansion, and management of wetland and riparian plant communities for passive recreation, groundwater recharge, and wildlife habitat.

Policy COS-2.3: Biologically Sensitive Area Development: The City should require new development in areas that are known to have particular value for biological resources to maximize preservation of sensitive vegetation and wildlife habitat.

Policy COS-2.4: Federal, State, and Local Statutes Compliance: The City shall review development proposals in accordance with applicable Federal, State, and local statutes protecting special-status species and jurisdictional wetlands.

Policy COS-2.5: Mitigation Measures Imposition: The City shall, in its role as lead agency, take into consideration mitigation standards and policies of resource and regulatory agencies with jurisdiction over biological resources (e.g., USFWS, CDFW, etc.).

Policy COS-2.6: Biological Surveys: On sites that have the potential to contain critical or sensitive habitats or special species, the City shall require the project applicant to have the site surveyed by a qualified biologist. A report on the findings of this survey shall be submitted to the City as part of the application process.

Policy COS-2.7: Regional Habitat Conservation Efforts Coordination: The City shall continue to coordinate efforts with Sacramento County to develop the South Sacramento Habitat Conservation Plan.

Galt Tree Ordinances

Chapter 12.28 of the Galt Municipal Code requires written permission and approval for the cutting or removal of oak trees or public trees on public and private property unless certain provisions such as emergencies apply. A public tree is any tree with one-half or more of its trunk or branches on or above public land. An oak tree is defined as including, but not limited to, valley oak, interior live oak, blue oak, or oracle oak having at least one trunk of 6 inches in diameter measured 4 feet above the ground, or multi-trunks with an aggregate diameter of 8 inches or more, measured 4 feet above ground. Minimum development control measures are suggested such as not disturbing the ground within the driplines of protected trees. Grading within the dripline of oak trees is not permitted unless specifically authorized. A tree preservation fund is established in lieu of replacement trees and could be used as mitigation for damage or removal of protected trees. Specific details apply for ground disturbance within a protected tree's dripline.

Rancho Cordova General Plan

The *Rancho Cordova General Plan* (Rancho Cordova 2006) Natural Resources Element includes various goals and policies relevant to special-status species, as well as a policy that functions much like tree ordinances adopted by other jurisdictions. The following are policies relevant to special-status species. These policies either directly relate to special-status species or address habitats that are important to special-status species.

Policy NR.1.1: Protect rare, threatened, and endangered species and their habitats in accordance with State and federal law.

Policy NR.1.2: Conserve Swainson's hawk habitat consistent with State policies and Department of Fish and Game guidelines.

Policy NR.1.6: Participate in the development of a habitat conservation plan to address the unique biological resources in Rancho Cordova.

Policy NR.1.8: The City shall encourage creation of habitat preserves that are immediately adjacent to each other in order to provide interconnected open space areas for animal movement.

Policy NR.1.9: The City shall require that impacts to riparian habitats be mitigated at a no net loss of existing function and value based on field survey and analysis of the riparian habitat to be impacted. No net loss may be accomplished by avoidance of the habitat, restoration of existing habitat, or creation of new habitat, or through some combination of the above.

Policy NR.1.10: The City shall avoid the placement of new roadways within habitat preserves to the maximum extent feasible.

Policy NR.1.11: In such cases where habitat preserves are crossed by a roadway, or where two adjacent preserves are separated by a roadway, the roadway shall be designed or updated with wildlife passable fencing separating the roadway from the preserve and/or shall incorporate design features that allow for the movement of wildlife across or beneath the road without causing a hazard for vehicles and pedestrians on the roadway.

Policy NR.2.1: Require mitigation that provides for “no net loss” of wetlands consistent with current State and federal policies.

Policy NR.2.2: Ensure that direct and indirect effects to wetland habitats are minimized by environmentally sensitive project siting and design, to the maximum extent feasible.

Policy NR.2.5: The City shall require that drainage improvements that discharge into areas of wetlands to be preserved are, to the maximum extent feasible, designed to mimic the undeveloped surface water flow conditions of the area in terms of seasonality, volume, and flow velocity.

Policy NR.3.1: Coordinate with property owners and local interest groups, such as the Sacramento Urban Creeks Council, to restore, enhance, and preserve creeks in Rancho Cordova.

Policy NR.4.1: Conserve native oak and landmark tree resources for their historic, economic, aesthetic, educational, and environmental value.

Policy NR.4.4: Prior to the approval of any public or private development project in areas identified or assumed to contain trees, the City shall require that a determinate survey of trees species and size be performed. If any native oaks or other native trees six inches or more in diameter at breast height (dbh), multitrunk native oaks or native trees of 10 inches or greater dbh, or non-native trees of 18 inches or greater dbh that have been determined by a certified arborist to be in good health are found to occur, such trees shall be avoided if feasible. If such trees cannot be avoided, the project applicant shall do one of the following:

All such trees shall be replaced at an inch-for-inch ratio. A replacement tree planting plan shall be prepared by a certified arborist or licensed landscape architect and shall be submitted to the City of Rancho Cordova for approval prior to removal of trees;

or,

The project applicant shall submit a mitigation plan that provides for complete mitigation of the removal of such trees in coordination with the City of Rancho Cordova. The mitigation plan shall be subject to the approval of the City.

If the City of Rancho Cordova adopts a tree preservation ordinance at any time in the future, any future development activities shall be subject to that ordinance instead.

9.1.2 Existing Condition of the Special-Status Species and Their Habitats

This section provides information on special-status species in the Planning Area including SSHCP Covered Species along with the status of each species and their occurrence and acreage of modeled habitat within the Planning Area. Although conditions across a species' range influence factors such as whether it is listed as threatened or endangered, actions and alternatives evaluated in this EIS/EIR are limited to the Planning Area. Therefore, the lead agencies have determined that the primary focus for evaluating the effects of each EIS/EIR alternative on special-status species and their habitats is the Planning Area.

Additional details on the species considered but not further analyzed in this EIS/EIR are provided in Appendix G.

9.1.2.1 Existing Condition of the SSHCP Covered Species

Table 9-1 shows the current regulatory status of the 28 SSHCP Covered Species, and more information on each species, including natural history information, modeled habitat, species occurrences, and Critical Habitat and recovery plan information where applicable, is provided in Appendix G.

Table 9-1. South Sacramento Habitat Conservation Plan Covered Species

Scientific Name/Common Name	Status			Existing Conditions	
	ESA (Federal)	CESA (State)	CNPS CRPR Rank	Documented Occurrences in Planning Area	Existing Modeled Habitat in Planning Area (acres)
Invertebrates					
<i>Lepidurus packardii</i> Vernal pool tadpole shrimp (VPTS)	E*	—	—	851	103,210
<i>Branchinecta lynchi</i> Vernal pool fairy shrimp (VPFS)	T*	—	—	581	103,210
<i>Branchinecta mesovallensis</i> Mid-valley fairy shrimp (MVFS)	—	—	—	37	53,638
<i>Hydrochara rickseckeri</i> Ricksecker's water scavenger beetle (RWSB)	—	—	—	8	103,137
<i>Desmocerus californicus dimorphus</i> Valley elderberry longhorn beetle (VELB)	T	—	—	156	7,878
Amphibians					
<i>Ambystoma californiense</i> California tiger salamander (CTS), (Central Valley population)	T*	T	—	31	89,794
<i>Spea hammondi</i> Western spadefoot (WST)	—	CSC	—	41	163,342
Reptiles					
<i>Thamnophis gigas</i> Giant garter snake (GGS)	T	T	—	14	35,159
<i>Actinemys marmorata</i> Western pond turtle (WPT)	—	CSC	—	19	117,201
Birds					
<i>Accipiter cooperii</i> Cooper's hawk (COHA)	—	WL	—	20	22,646
<i>Agelaius tricolor</i> Tricolored blackbird (TRIC)	BCC	E**	—	36	212,632
<i>Athene cunicularia hypugaea</i> Western burrowing owl (BUOW)	BCC	CSC	—	97	213,106
<i>Buteo regalis</i> Ferruginous hawk (FEHA)	BCC	—	—	26	159,491
<i>Buteo swainsoni</i> Swainson's hawk (SWHA)	BCC	T	—	410	213,223
<i>Circus cyaneus</i> Northern harrier (NOHA)	—	CSC	—	70	210,318
<i>Elanus leucurus</i> White-tailed kite (WHKI)	—	CFP	—	62	230,042
<i>Grus canadensis tabida</i> Greater sandhill crane (SACR)	—	T; CFP	—	210	89,764
<i>Lanius ludovicianus</i> Loggerhead shrike (LOSH)	BCC	CSC	—	34	215,246

Table 9-1. South Sacramento Habitat Conservation Plan Covered Species

Scientific Name/Common Name	Status			Existing Conditions	
	ESA (Federal)	CESA (State)	CNPS CRPR Rank	Documented Occurrences in Planning Area	Existing Modeled Habitat in Planning Area (acres)
Mammals					
<i>Lasiurus blossevillei</i> Western red bat (WRB)	—	CSC	—	7	177,732
<i>Taxidea taxus</i> American badger (AMB)	—	CSC	—	9	149,137
Plants					
<i>Downingia pusilla</i> Dwarf downingia (DWDO)	—	—	2B.2	10	24,261
<i>Juncus leiospermus</i> var. <i>ahartii</i> Ahart's dwarf rush (ADR)	—	—	1B.2	2	25,136
<i>Navarretia myersii</i> Pincushion navarretia (PINA)	—	—	1B.1	48	57,438
<i>Gratiola heterosepala</i> Boggs Lake hedge-hyssop (BLHH)	—	E	1B.2	31	37,000
<i>Legenere limosa</i> Legenere (LEG)	—	—	1B.1	62	50,973
<i>Orcuttia tenuis</i> Slender Orcutt grass (SLOG)	T*	E	1B.1	4	34,492
<i>Orcuttia viscida</i> Sacramento Orcutt grass (SAOG)	E*	E	1B.1	40	34,492
<i>Sagittaria sanfordii</i> Sanford's arrowhead (SAAR)	—	—	1B.2	64	52,823

Status Definitions**Federal**

- E = listed as endangered under the ESA
T = listed as threatened under the ESA
* = species has designated Critical Habitat located within the Planning Area.
— = no federal status
BCC = Bird of Conservation Concern, USFWS 2008

State

- E = listed as endangered under CESA
T = listed as threatened under CESA
** = Candidate for listing by CDFW
CFP = fully protected under the California Fish and Game Code
CSC = species of special concern in California
WL = Watch List
— = no state status

California Native Plant Society (CNPS) California Rare Plant Rank (CRPR)

- 1B = Rare, threatened, or endangered in California and elsewhere
2B = Rare, threatened, or endangered in California but more common elsewhere

CRPR Threat Ranks

- 0.1 = Seriously threatened in California (high degree/immediacy of threat)
0.2 = Moderately threatened in California (moderate degree/immediacy of threat)

9.1.2.2 Existing Condition of the Other Special-Status Plant Species

Table 9-2 summarizes the regulatory status, occurrence within the Planning Area, and acres of existing modeled habitat for 18 other special-status plant species that are analyzed in Chapter 9.

Table 9-2. Other Special-Status Plant Species Analyzed in Chapter 9

Scientific Name/ Common Name	Status			Existing Conditions	
	ESA (Federal)	CESA (State)	CNPS CRPR Plant Rank	CNDDB or Calflora records within Planning Area	Existing Modeled Habitat in Planning Area (acres)
<i>Brasenia schreberi</i> Watershield	—	S2	2B.3	Y	5,554
<i>Carex comosa</i> Bristly sedge	—	S2	2B.1	Y	11,342
<i>Castilleja campestris</i> var. <i>succulenta</i> Fleshy owl's clover	T	E/S2	1B.2	N	5,554
<i>Clarkia biloba</i> ssp. <i>brandegeae</i> Brandegee's clarkia	—	S4	4.2	N	14,769
<i>Cicuta maculata</i> var. <i>bolanderi</i> Bolander's water-hemlock	—	S2	2B.1	Y	19,293
<i>Cuscuta obtusiflora</i> var. <i>glandulosa</i> Peruvian dodder	—	—	2B.2	Y	5,554
<i>Eryngium pinnatisectum</i> Tuolumne button-celery	—	S2	1B.2	Y	20,557
<i>Fritillaria agrestis</i> Stinkbells	—	S3	4.2	Y	149,921
<i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i> Woolly rose-mallow	—	S2	1B.2	Y	5,554
<i>Juglans hindsii</i> Northern California black walnut	—	S1	1B.1	Y	7,951
<i>Lathyrus jepsonii</i> var. <i>jepsonii</i> Delta tule pea	—	S2	1B.2	Y	5,554
<i>Lepidium latipes</i> var. <i>heckardii</i> Heckard's pepper-grass	—	S2	1B.2	Y	135,152
<i>Lilaeopsis masonii</i> Mason's lilaeopsis	—	S2	1B.1	Y	13,505
<i>Limosella australis</i> Delta Mudwort	—	S2	2B.1	Y	13,505
<i>Scutellaria galericulata</i> Marsh skullcap	—	S1	2B.2	Y	5,554
<i>Scutellaria lateriflora</i> Side-flowering skullcap	—	S1	2B.2	Y	5,554
<i>Symphyotrichum lentum</i> Suisun marsh aster	—	S2	1B.2	Y	5,554

Table 9-2. Other Special-Status Plant Species Analyzed in Chapter 9

Scientific Name/ Common Name	Status			Existing Conditions	
	<i>ESA (Federal)</i>	<i>CESA (State)</i>	<i>CNPS CRPR Plant Rank</i>	<i>CNDDDB or Calflora records within Planning Area</i>	<i>Existing Modeled Habitat in Planning Area (acres)</i>
<i>Trifolium hydrophilum</i> Saline clover	—	S2	1B.2	Y	146,494

Sources:

Records noted are from the California Natural Diversity Database (CNDDDB) (CDFW 2015a) and CalFlora database (CalFlora 2015).
Elevation in the Planning Area is from -5 to 670 feet.

Status Definitions

Federal

T = listed as threatened under the ESA
— = no federal status

State

E = listed as endangered under CESA
T = listed as threatened under CESA
S1 = Critically Imperiled by the State
S2 = Imperiled by the State
S3 = Vulnerable by the State
S4 = Apparently Secure by the State
— = no state status

California Native Plant Society (CNPS) California Rare Plant Rank (CRPR)

1B = Rare, threatened, or endangered in California and elsewhere
2B = Rare, threatened, or endangered in California, but more common elsewhere
4 = Plants of limited Distribution – Watch List

CRPR Threat Ranks

0.1 = Seriously threatened in California (high degree/immediacy of threat)
0.2 = Moderately threatened in California (moderate degree/immediacy of threat)
0.3 = Not very threatened in California (low degree/immediacy of threats or no current threats known)

9.1.2.3 Existing Conditions of the Other Special-Status Animal Species

Table 9-3 summarizes the regulatory status, occurrence within the Planning Area, and acres of existing modeled habitat for four other special-status bird and mammal species that are analyzed in Chapter 9.

Table 9-3. Other Special-Status Wildlife Species Analyzed in Chapter 9

Scientific Name/ Common Name	Status		Existing Conditions	
	ESA (Federal)	CESA (State)	CNDDDB Records within Planning Area	Existing Modeled Habitat in Planning Area (acres)
Birds				
<i>Ammodramus savannarum</i> Grasshopper sparrow (nesting)	—	CSC	Y	151,143
<i>Grus canadensis canadensis</i> Lesser sandhill crane (wintering)	—	CSC	N	89,712
<i>Melospiza melodia</i> Song sparrow (Modesto population)	—	CSC	Y	7,008
<i>Riparia riparia</i> Bank Swallow (nesting)	—	T	Y	n/a

Sources: CNDDDB = California Natural Diversity Database

The federal and state status of species primarily is based on the Special Animals List (October 2015) (CDFW 2015b).

Status Definitions

Federal

— = no federal status

State

T = listed as threatened under CESA

CSC = Species of special concern (no formal protection other than California Environmental Quality Act consideration)

9.1.2.4 Designated Critical Habitat

The following special-status species are federally listed and have designated Critical Habitat (see Section 9.1.1) within the Planning Area.

- Vernal pool tadpole shrimp (*Lepidurus packardii*) (36,156 acres of Critical Habitat in Planning Area)
- Vernal pool fairy shrimp (*Branchinecta lynchi*) (36,156 acres of Critical Habitat in Planning Area)
- California tiger salamander (*Ambystoma californiense*) (Central Valley population) (10,192 acres of Critical Habitat in Planning Area)
- Slender Orcutt grass (*Orcuttia tenuis*) (1,061 acres of Critical Habitat in Planning Area)
- Sacramento Orcutt grass (*Orcuttia viscida*) (30,936 acres of Critical Habitat in Planning Area)
- Fleshy owl's clover (*Castilleja campestris* var. *succulenta*) (51 acres of Critical Habitat in Planning Area)

A further description of the Critical Habitat for these species is presented in Appendix G. The total impacts of each alternative on species habitat within the designated critical habitat are presented in Section 9.2.

Recovery Plan Species

The following special-status species analyzed in Chapter 9 are included in the *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (USFWS 2005); vernal pool tadpole shrimp, vernal pool fairy shrimp, mid-valley fairy shrimp (*Branchinecta mesovallensis*), western spadefoot (*Spea hammondi*), Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*), Boggs Lake hedge-hyssop (*Gratiola heterosepala*), legenere (*Legenere limosa*), Sacramento Orcutt grass, and slender Orcutt grass.

In addition, the California tiger salamander (Central Valley population) is covered by the *Draft Recovery Plan for the Central California Distinct Population Segment of the California Tiger Salamander* (USFWS 2016).

The impacts of each alternative on species habitat present within Core Recovery Areas where designated are presented in Section 9.2 where applicable.

The USFWS published a new recovery plan for giant garter snake (*Thamnophis gigas*) in late 2017 (USFWS 2017). The giant garter snake recovery plan includes giant garter snake recovery areas (recovery units) within the Planning Area portion of the Cosumnes-Mokelumne Basin population of giant garter snake, which is south of the American River and east of Interstate 5, and within the small portion of the Delta Basin giant garter snake population, which is located in the Planning Area west of Interstate 5.

9.2 ENVIRONMENTAL CONSEQUENCES/ ENVIRONMENTAL IMPACTS

9.2.1 Methodology for Assessing Impacts of Each Alternative on Special-Status Species, Including SSHCP Covered Species

The general methodologies for assessing the impacts of each alternative are discussed in Chapter 3. That discussion is summarized here along with the specific methods related to the analysis of the impacts of each alternative to special-status species, including SSHCP Covered Species. The projects and activities expected under each alternative, including expected or planned preserves, are described in Chapter 2. Potential impacts of each alternative were analyzed using a 50-year study period, as discussed in Section 3.6.3.

As discussed generally in Sections 3.6.5 and 3.6.6, the lead agencies estimated the direct and the indirect impacts of each alternative using geographic information system (GIS) map-layers of the best available information about the projects and activities included in each alternative (see Chapter 2), GIS data sets of each SSHCP land-cover type, and GIS data sets of habitat models developed for 28 species (Appendix G). The impact to special-status species was based

on impacts to their modeled habitat, which would result in a conservative overestimate of impacts to the species as not all modeled habitat is actually used by the species.

The direct and indirect impacts of each alternative on the special-status species are discussed and analyzed here. Implementation of Covered Activities, including urban development, can produce “environmental stressors” or “impact mechanisms,” such as changes in hydroperiod of vernal pools and habitat fragmentation. Different species respond to each environmental stressor in different ways. Take occurs when an environmental stressor kills or injures an individual of the species; when the environmental stressor significantly disrupts normal behavior patterns of individuals, including normal feeding, breeding, or sheltering behaviors; or the environmental stressor significantly modifies or degrades habitat, impairing the essential behavior patterns of individuals, including normal feeding, breeding, or sheltering behaviors. The number of individuals of each species in the Urban Development Area (UDA)¹ and in other parts of Planning Area is not known for the following reasons: there have been few comprehensive surveys of any species in this Planning Area; there are limitations with the data that is available (e.g., the California Natural Diversity Database); many of the special-status species are small and/or cryptic in some or all stages of their life history (e.g. branchiopods);, many of the special-status species spend most of their lives underground; some species move around a lot and/or migrate annually; and most of the special-status plant species and the special-status vernal pool invertebrates are evolutionarily adapted to huge differences in annual rainfall, so individuals can be present (e.g., in the seed bank or as cysts in the soil) without being visible every year. Also, take was estimated over a 50-year period, with uncertainties regarding when or where specific Covered Activities will occur. Therefore, it would be infeasible to quantify or estimate the exact number individuals of each special-status species that would be subject to direct and indirect impacts from the projects and activities implemented under each alternative. Therefore, acres of direct and indirect species modeled habitat under each alternative were used as a surrogate for the number of individuals of each species that implementing the alternative would impact (take).

Direct impact to species and species habitat would result from the removal and loss of modeled species habitat during construction of new urban development and transportation projects, or from other projects and activities that result in permanent ground disturbance and habitat loss.

Some direct impacts may occur for only a relatively short duration and have temporary effects on a certain biological resource. Temporary effects to special-status species would also occur from

¹ As discussed in Section 1.1.1, the term Urban Development Area (UDA) is used by the EIS/EIR to discuss all lands where urban development Covered Activity projects or activities could occur under the action alternatives. Therefore, the term “UDA” means all lands within the County’s Urban Service Boundary that are also within the Planning Area (including lands within the Rancho Cordova city limits that are within the Planning Area), all lands within Galt’s city limits, and all lands within Galt’s sphere of influence (see Figure 1-1).

stressors such as urban development project construction-noise, nighttime lighting of construction sites, movement and activities of persons or equipment in a construction site, or soil and vegetation disturbance at a construction site or equipment staging area where the disturbed habitat could be returned to pre-project conditions within a year after construction is complete. Temporary effects in this chapter are described and analyzed qualitatively, by evaluating the expected environmental stressors/impact mechanisms of the alternatives' projects/actions and evaluating the likely response of a species to those environmental stressors based on the best available information on the biology and ecology of each species and agency expertise.

Indirect impacts to species and species habitat could result from new urban development and transportation projects. For example, implementation of activities and projects in the watershed or upstream that cause increased stormwater discharge and higher pollutant loads might adversely affect downstream water quality and habitat for the western pond turtle (*Actinemys marmorata*). As another example, development projects can damage duripan that is required for the perched aquifer that supports the vernal pool ecosystem, which would increase water loss from the system, reducing the hydroperiod of the vernal pools and adversely affecting the habitat for vernal pool tadpole shrimp. As a final example, residential development can increase lighting of adjacent natural areas, which may adversely affect habitat for the primarily nocturnal American badger (*Taxidea taxus*). As described in Section 3.6.8, the indirect impacts on vernal pool special-status species and their habitats are analyzed quantitatively in this chapter.

The following methods were used to quantify indirect effects on vernal pool ecosystem aquatic land covers for all three EIS/EIR alternatives.

The quantified indirect effects calculations for the Proposed Action/Proposed Project Alternative were conducted during preparation of the SSHCP using LIDAR data available for the Planning Area. LIDAR is an optical remote-sensing technique that uses laser light to densely sample the surface of the Earth, producing highly accurate locational and topographic information. The LIDAR data was used to identify the watershed boundaries for vernal pool aquatic land covers. GIS was then used to overlay covered activity development locations over the vernal pool aquatic land cover watersheds. Where proposed development overlapped with 10% or more of the watershed, the associated vernal pool aquatic land covers were considered subject to indirect effects. The methodology is explained further in Appendix E of the SSHCP. The LIDAR analysis requires significant time and resources, and it was not feasible to recreate this process for the No Action/No Project Alternative and the Reduced Permit Term Alternative.

In portions of the Planning Area where the development scenario for the No Action/No Project Alternative and Reduced Permit Term Alternative matched the Proposed Action/Proposed

Project Alternative, the results of the LIDAR analysis for these locations was applied to the No Action/No Project Alternative and Reduced Permit Term Alternative.

To calculate remaining indirect effects on aquatic vernal pool land covers for the No Action/No Project Alternative and years 31–50 of the 50-year EIS/EIR study period of the Reduced Permit Term Alternative, GIS was used to create a 250-foot-wide radius around all identified development under each alternative (radius method). Any vernal pool aquatic land covers that overlapped with this radius were considered potentially subject to indirect effects. This broad brush approach places a much larger area of vernal pool aquatic land covers in locations potentially subject to indirect effects than the LIDAR method described above. Therefore, to promote a more equitable comparison between alternatives, various refinements and conversion factors were developed, based on comparisons between the results of the LIDAR and GIS analyses, to generate indirect effects using the buffer method that better paralleled results that would be expected from the LIDAR method.

For the 30-year permit term under the Reduced Permit Term Alternative, where the LIDAR methodology could not be applied, indirect effects were calculated using the buffer method described above, but with refinements and conversion factors specific to the conditions of this portion of the Reduced Permit Term Alternative. For example, a 200-foot buffer extending from the mapped development boundary, rather than 250-foot buffer, was used to take into account the requirements for a minimum 50-foot setback between development and Preserve boundaries included during this early period of the Reduced Permit Term Alternative.

To calculate indirect effects on vernal pool aquatic land covers for the 1,900 acres of shifted or displaced development included as part of the No Action/No Project Alternative, the EIS/EIR used a proportional analysis similar to that described in Section 3.6.7 for direct effects. However, for the indirect effects analysis, the acreages of Vernal Pools and Swales that were already assumed to be directly affected were removed from the inventory of land cover types that could be subject to indirect effects.

The indirect effects on species that utilize other aquatic and terrestrial habitats are described and analyzed qualitatively, by evaluating the expected environmental stressors/impact mechanisms of the alternatives' projects/actions and evaluating the likely response of a species to those environmental stressors based on the best available information on the biology and ecology of each species and agency expertise.

Potential temporary and permanent impacts for each alternative were analyzed based on the anticipated development projects and Preserve establishment, management, and maintenance over the 50-year study period, as described in Section 3.6.3. The lead agencies also assume buildout of urban development as described in Chapter 2, which includes the assumption that

some urban development would be shifted or displaced outside the UDA under the No Action/No Project Alternative.

As described in Section 2.2.3, it is estimated that approximately 1,900 acres of urban development will shift to other locations on undeveloped land outside the UDA under the No Action/No Project Alternative. The methods used to determine potential impacts to land covers from this shifted or displaced development are discussed in Section 3.6.7. To determine the impacts of this shifted or displaced development on special-status species, it was assumed that any impact from shifted or displaced development on land covers within a given species habitat model would be an impact to the species, and the acreage of these impacts were added to the total modeled impact on the species.

Avoidance and Minimization Measures (AMMs) included in the SSHCP (see Table 2-6) would be applied to all Covered Activity projects and activities implemented over the 50-year permit term under the Proposed Action/Proposed Project Alternative, and over the 30-year permit term of the Reduced Permit Term Alternative. AMMs that would reduce impacts to species considered in this chapter are identified in each impact discussion below. As discussed in Section 2.3.5, the No Action/No Project Alternative's projects and activities would implement various best practices that are similar to many of the SSHCP AMMs. However, the Proposed Action/Proposed Project Alternative and the Reduced Permit Term Alternative (the action alternatives) include additional on-site monitoring and measurement of the effectiveness of each AMM implemented and annual reporting of the effectiveness of each AMM. These alternatives include processes for annual review of AMM effectiveness and a process making adaptive changes to an AMM that is not fully effective at avoiding impacts. This additional layer of oversight of AMM implementation and AMM effectiveness under the action alternatives increases avoidance and minimization of various impacts. The SSHCP AMMs also provide new avoidance and minimization measures that would not occur under the No Action/No Project Alternative (Table 2-6), and these new measures are expected to lessen many potential adverse effects compared to the effects of the No Action/No Project Alternative.

Calculations of direct effects to species modeled habitat under the Proposed Action/Proposed Project Alternative and the Reduced Permit Term Alternative assume that the AMMs that avoid and minimize direct impacts to modeled species habitat, including BMP-1 (Construction Fencing), BMP-3 (Equipment Storage and Fueling), BMP-9 (Soil Compaction), and Road-1 (Road Project Location) (Table 2-6) would be effective.

Cumulative effects of each alternative are analyzed consistent with the methodology described in Section 3.7. The cumulative analysis of each EIS/EIR alternative considers whether the incremental impacts of the alternative on each species would be significant (i.e., cumulatively considerable).

9.2.1.1 Determination of Impact Significance

Significance Criteria

As discussed in Section 3.8.1, the criteria used to evaluate the significance of each alternative's impacts on special-status species, including Covered Species, are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines, and on typical thresholds used to evaluate effects on these resources in recent EIRs prepared by Sacramento County. Based on these sources, a significant impact would occur if the alternative would:

1. Have a substantial adverse effect, either directly, or through habitat modifications, on any species identified as a special-status species in local or regional plans, policies, or regulations, or by the U.S. Fish and Wildlife Service or California Department of Fish and Wildlife;
2. Reduce the number or restrict the range of a rare, threatened, or endangered plant or animal;
3. Conflict with any local policies or ordinances protecting biological resources; or
4. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Appendix G of the CEQA Guidelines does not provide suggested criteria for evaluating a beneficial effect. The following criteria were developed by the lead agencies. A beneficial effect could occur if the alternative would:

1. Reduce direct or indirect effects on any species identified as a special-status species in local or regional plans, policies, or regulations, or by the U.S. Fish and Wildlife Service or California Department of Fish and Wildlife compared to a baseline environmental condition;
2. Have a lesser reduction in numbers or restriction in range of a rare, threatened, or endangered plant or animal compared to a baseline environmental condition;
3. Increase the number, range, or area of local occurrence of any species identified as a special-status species in local or regional plans, policies, or regulations, or by the U.S. Fish and Wildlife Service or California Department of Fish and Wildlife compared to a baseline environmental condition;
4. Reduce or eliminate conflicts with any local policies or ordinances protecting biological resources; or
5. Reduce or eliminate conflicts with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

The impact analysis for the three EIS/EIR Alternatives will consider the context, intensity, and severity of potential impacts to each of these impact-criteria and will present a determination of significance applicable to each of these criteria.

Issues Not Evaluated Further

This section identifies significance criteria for special-status species that are not carried forward into the impact analysis and provides the reasoning for this determination.

There are currently no other HCPs within the Planning Area. Therefore, implementation of any of the alternatives would not conflict with an adopted HCP or natural community conservation plan, or other approved local, regional, or state HCP within the Planning Area.

The following are adopted regional conservation plans that cover areas that are either adjacent to, or near the Planning Area:

- San Joaquin County Multi-Species Habitat Conservation Plan and Open Space Plan (SJCOG 2000)
- Natomas Basin HCP (Natomas Basin Conservancy 2003)
- Metro Airport HCP (Natomas Basin Conservancy 2001)

The Planning Area does not overlap with the plan areas of these plans or any other approved and permitted HCP; therefore, implementation of any EIS/EIR alternative would not conflict with any approved HCP. The significance criteria of potential conflict with the provisions of an adopted HCP or natural community conservation plan, or other approved local, regional, or state HCP (Section 9.2.1) could not occur under any alternative, so is not evaluated further in this EIS/EIR.

9.2.2 No Action/No Project Alternative

The No Action/No Project Alternative's future projects, activities, and expected future regulatory environment are described in Section 2.2 of Chapter 2.

9.2.2.1 Effects on Vernal Pool Invertebrate/Plant Species and Habitat

The following 11 vernal pool invertebrate and plant species are considered together in this analysis due to their dependence on the vernal pool ecosystem; vernal pool tadpole shrimp, vernal pool fairy shrimp, mid-valley fairy shrimp, Ricksecker's water scavenger beetle (*Hydrochara rickseckeri*), dwarf downingia (*Downingia pusilla*), Ahart's dwarf rush, pincushion navarretia (*Navarretia myersii*), slender Orcutt grass, Sacramento Orcutt grass, Boggs Lake hedge-hyssop, and legenere. While the individual natural history, habitat requirements,

modeled habitat, and documented occurrences in the Planning Area differ for these species (see Appendix G), the direct impact mechanisms and environmental stressors that cause temporary impacts are the same.

Direct and Indirect Effects of the Alternative

Projects and activities under the No Action/No Project Alternative (Section 2.2.1) would permanently remove modeled habitat for vernal pool invertebrate and plant species through development and related infrastructure. While the majority of the urban development would occur within the UDA, transportation and other infrastructure projects would occur outside the UDA. In addition, the regulatory environment under the No Action/No Project Alternative is expected to result in shifted or displaced development outside of the UDA (Section 2.2.3), which would result in additional direct impacts to vernal pool ecosystem and therefore, impacts on some vernal pool invertebrate and plant species. These acres of shifted or displaced development are included in the direct impact acres shown in Table 9-4 for each species below.

Vernal pool invertebrate and plant species near proposed construction activities under the No Action/No Project Alternative will be adversely affected by several temporary construction-related effects (Appendix G) that will result in additional disturbance to habitat or additional harm to vernal pool invertebrate plant and animal species. Generally, these temporary effects will occur within the project boundary or road right-of-way area.

As discussed previously for direct impacts, the majority of indirect impacts under the No Action/No Project Alternative would occur within the UDA, as a result of urban development, with the exception of infrastructure projects and shifted or displaced development. The various environmental stressors that may result from activities under the No Action/No Project Alternative and that would result in indirect effects on vernal pool invertebrate and plant species, potential take of individuals, and degradation of vernal pool species habitat are described here and in Appendix G.

Vernal pool ecosystems and the invertebrate and plant species that are dependent on them are especially vulnerable to hydrologic alteration, because the timing and period of inundation can dictate whether these plants and invertebrates are able to reproduce. An impervious soil layer hydrologically connects land cover types to form the vernal pool ecosystem. Development under the No Action/No Project Alternative may indirectly affect the hydrology of remaining vernal pool ecosystem land covers, and the invertebrate and plant species that depend on them, in three major ways: (1) by permanently interrupting connection to surface water flows from up-gradient swales; (2) by damaging or permanently interrupting hydrologic connections to the perched water table; and (3) by puncturing the impermeable layer within the micro-watershed, permanently increasing rate of water loss from the remaining vernal pool

ecosystem and its associated perched aquifer, and allowing that water to drain into deeper groundwater tables.

Permanently increasing the extent of impermeable surfaces, urban development, and roads may result in increased runoff, especially during storm events. Such increases can result in increased inundation periods for vernal pools, and alterations of downstream hydrology in streams and creeks with vernal pool invertebrate habitat (VPIH). Also, addition of new development may permanently increase the potential for ongoing discharge of point and non-point source pollutants such as grease, oil, fertilizers, and lawn pesticides in creeks and streams with VPIH and other connected waters within the vernal pool ecosystem. An overall increase in the quantity of pollutants, including sediment reaching streams and creeks with VPIH through higher runoff from urban development, as a result of the No Action/No Project Alternative may impact the physical characteristics of the aquatic habitats within the vernal pool ecosystem and result in harm to vernal pool invertebrates and plants.

Changes in the wildlife community structure as a result of increased inundation in vernal pools and other habitat within the vernal pool ecosystem brought on by urban and road runoff can result in the presence of fish species that act as predators on vernal pool invertebrates, reducing vernal pool invertebrate populations.

Development could also impact vernal pool invertebrate and plant species by increasing the presence of invasive plants through species escaping from landscaping. These invasive plants could impact the vernal pool ecosystem by outcompeting native vernal pool plant species and changing the hydrology of the vernal pool ecosystem, shortening the vernal pool ponding period, which in turn could interfere with reproduction of vernal pool invertebrates and plants.

Development may result in an increased wildfire frequency due to increased ignition sources. Wildfire is a natural part of the ecosystem, and low intensity fires would not adversely impact vernal pool invertebrates or plants. However, increased fire frequency would require more fire suppression activities around developed areas that would result in ground disturbance, which would result in habitat removal and additional changes in hydrology that would impact vernal pool invertebrates and plants.

Development under the No Action/No Project Alternative would likely result in habitat fragmentation that would inhibit dispersal of vernal pool invertebrates, and seed dispersal and movement of pollinators for vernal pool plant species. Habitat fragmentation can also increase the impact of other indirect environmental stressors listed here (e.g., urban runoff, invasive plants) on vernal pool invertebrates and vernal pool plant species by increasing the area of impact by these stressors relative to the area of the intact habitat patch.

The previously discussed indirect effects on vernal pool invertebrate and plant species under the No Action/No Project Alternative are analyzed both qualitatively for Valley Grassland land cover type and quantitatively for the other land cover types that make up the vernal pool ecosystem (shown in the impact tables for each species below).

The No Action/No Project Alternative is estimated to result in approximately 17,688 acres of direct impacts to modeled habitat for vernal pool tadpole shrimp and vernal pool fairy shrimp (Table 9-4). Indirect effects on vernal pool tadpole shrimp and vernal pool fairy shrimp modeled aquatic habitat are anticipated to result in approximately an additional 261 acres of impacts. The total impact of the No Action/No Project Alternative on vernal pool tadpole shrimp and vernal pool fairy shrimp modeled habitat within the Planning Area is expected to be approximately 17,949 acres.

Of the vernal pool tadpole shrimp and vernal pool fairy shrimp habitat loss, approximately 9,015 acres would occur within the Mather Core Recovery Area (MCRA), which would affect approximately 50% of the modeled habitat within the MCRA. There would also be approximately 54 acres lost within the Cosumnes/Rancho-Seco Core Recovery Area (C/RS), which would affect approximately 0.1% of modeled habitat within the C/RS.

The No Action/Project Alternative is also expected to remove approximately 886 acres of Critical Habitat for vernal pool tadpole shrimp and vernal pool fairy shrimp in Critical Habitat Unit 13 and approximately 80 acres in Critical Habitat Unit 14a for a total of approximately 966 acres of Critical Habitat lost.

The No Action/No Project Alternative is expected to remove 90 of the 851 documented occurrences of vernal pool tadpole shrimp and 31 of the 581 documented occurrences of vernal pool fairy shrimp in the Planning Area.

Projects and activities under the No Action/No Project Alternative are estimated to remove approximately 13,042 acres of modeled habitat for mid-valley fairy shrimp within the Planning Area. In addition to this direct impact, 178 acres of indirect impact would also occur for a total impact of approximately 13,220 acres on mid-valley fairy shrimp modeled habitat within the Planning Area. This total impact would affect approximately 25% of the total modeled habitat within the Planning Area (Table 9-4).

Of the mid-valley fairy shrimp habitat loss, approximately 6,846 acres would occur within the MCRA, which would affect approximately 48% of modeled habitat within the MCRA. There would also be approximately 42 acres lost within the C/RS, which would affect approximately 0.4% of modeled habitat within the C/RS.

The No Action/No Project Alternative is expected to remove 5 of the 37 documented occurrences of mid-valley fairy shrimp in the Planning Area.

Activities under the No Action/No Project Alternative would cause direct impacts to approximately 17,653 acres of Ricksecker's water scavenger beetle modeled habitat to development and related infrastructure. In addition to this direct impact, approximately 254 acres of indirect impact would also occur for a total impact of approximately 17,907 acres on Ricksecker's water scavenger beetle modeled habitat. The total impact to Ricksecker's water scavenger beetle modeled habitat would be approximately 17% of the existing modeled habitat in the Planning Area (Table 9-4).

The No Action/No Project Alternative is not expected to remove any of the eight documented occurrences of Ricksecker's water scavenger beetle in the Planning Area.

The No Action/No Project Alternative future urban development and related infrastructure would cause direct impacts through the loss of approximately 2,004 acres of modeled habitat for dwarf downingia. In addition to this direct impact, approximately 34 acres of indirect impact would also occur for a total impact of approximately 2,038 acres on dwarf downingia modeled habitat. The total impact to dwarf downingia modeled habitat would be approximately 8% of the existing modeled habitat in the Planning Area (Table 9-4).

The No Action/No Project Alternative is not expected to remove any of the 10 documented occurrences of dwarf downingia in the Planning Area.

The No Action/No Project Alternative would cause permanent loss of approximately 7,930 acres of land cover types suitable for Ahart's dwarf rush due to development and related infrastructure. In addition to this direct impact, 131 acres of indirect impact would also occur for a total impact of approximately 8,061 acres on Ahart's dwarf rush modeled habitat. The total impact to Ahart's dwarf rush modeled habitat would be approximately 32% of the existing modeled habitat in the Planning Area (Table 9-4).

The No Action/No Project Alternative is not expected to remove the two occurrences of Ahart's dwarf rush in the Planning Area.

The No Action/No Project Alternative would cause loss of approximately 8,337 acres of modeled habitat for pincushion navarretia resulting from development and related infrastructure. In addition to this direct impact, approximately 100 acres of indirect impact would also occur for a total impact of approximately 8,437 acres on pincushion navarretia modeled habitat. The total impact to pincushion navarretia modeled habitat would be approximately 15% of the existing modeled habitat in the Planning Area (Table 9-4).

The No Action/No Project Alternative is not expected to remove any of the 48 occurrences of pincushion navarretia in the Planning Area.

The No Action/No Project Alternative would result in an estimated permanent loss of approximately 7,654 acres of land cover types suitable for slender Orcutt grass and Sacramento Orcutt grass resulting from development and related infrastructure. In addition to this direct impact, approximately 108 acres of indirect impact would also occur for a total impact of approximately 7,762 acres on for slender Orcutt grass and Sacramento Orcutt grass modeled habitat. This total impact would be approximately 22% of the total modeled habitat within the Planning Area (Table 9-4).

Of the slender Orcutt grass and Sacramento Orcutt grass habitat loss, approximately 5,018 acres would occur within the MCRA, which would affect approximately 48% of modeled habitat within the MCRA. There would also be approximately 22 acres lost within the C/RS, which would affect approximately 0.1% of modeled habitat within the C/RS.

The No Action/Project alternative is also expected to impact approximately 710 acres of Critical Habitat for Sacramento Orcutt grass in Critical Habitat Unit 2 and approximately 64 acres in Critical Habitat Unit 3 for a total of approximately 774 acres of Critical Habitat lost. Approximately 710 acres of Critical Habitat for slender Orcutt grass would also be lost in Critical Habitat Unit 6.

The No Action/No Project Alternative is expected to remove 2 of the 40 occurrences of Sacramento Orcutt grass and none of the 4 occurrences of slender Orcutt grass in the Planning Area.

The No Action/No Project Alternative would result in loss of approximately 9,126 acres of modeled habitat for Boggs Lake hedge-hyssop resulting from development and related infrastructure. In addition to this direct impact, approximately 122 acres of indirect impact would also occur for a total impact of approximately 9,248 acres on Boggs Lake hedge-hyssop modeled habitat. The total impact to Boggs Lake hedge-hyssop modeled habitat would be approximately 25% of the existing modeled habitat in the Planning Area (Table 9-4).

The No Action/No Project Alternative is expected to remove 2 of the existing 31 occurrences of Boggs Lake hedge-hyssop in the Planning Area.

The No Action/No Project Alternative would cause loss of approximately 11,146 acres of land cover types suitable for legenera from development and related infrastructure. In addition to this direct impact, approximately 137 acres of indirect impact would also occur for a total impact of approximately 11,283 acres on legenera modeled habitat. The total impact to legenera modeled habitat would be approximately 22% of the existing modeled habitat in the Planning Area (Table 9-4).

The No Action/No Project Alternative is expected to remove 1 of the 62 documented occurrences of legenera in the Planning Area.

Table 9-4. Direct/Indirect Impacts and Conservation of Vernal Pool Invertebrate and Plant Modeled Habitat under the No Action/No Project Alternative

Land Covers Included in the Species Modeled Habitat	Total Within Planning Area (acres)						
	Existing Modeled Habitat (total acres)	Direct Impacts	Indirect Impacts	Total Impacts	% of the Existing Habitat Lost	Modeled Habitat Preservation	Modeled Habitat Re-establishment/ Establishment
Vernal Pool Tadpole Shrimp and Vernal Pool Fairy Shrimp							
Valley Grassland	97,349	17,091	Qualitative	17,091	17.6%	11,806	0
Vernal Pool	4,536	322	193	515	11.4%	1,030	322
Swale	1,252	240	61	301	24.0%	673	240
Streams/Creeks (VPIH)	73	35	7	42	57.5%	13	17
Total Modeled Habitat	103,210	17,688	261	17,949	17.4%	13,522	579
Mid-Valley Fairy Shrimp							
Valley Grassland	50,061	12,577	Qualitative	12,577	25.1%	6,071	0
Vernal Pool	2,818	271	141	412	14.6%	824	271
Swale	759	194	37	231	30.4%	462	194
Total Modeled Habitat	53,638	13,042	178	13,220	24.6%	7,357	465
Ricksecker's Water Scavenger Beetle							
Valley Grassland	97,349	17,091	Qualitative	17,091	17.6%	11,806	0
Vernal Pool	4,536	322	193	515	11.4%	1,030	322
Swale	1,252	240	61	301	24.0%	602	240
Total Modeled Habitat	103,137	17,653	254	17,907	17.4%	10,244	562
Dwarf Downingia							
Valley Grassland	22,241	1,888	Qualitative	1,888	8.5%	2,697	0
Vernal Pool	1,661	75	24	99	6.0%	198	75
Swale	359	41	10	51	14.2%	102	41
Total Modeled Habitat	24,261	2,004	34	2,038	8.4%	2,997	116
Ahart's Dwarf Rush							
Valley Grassland	23,885	7,704	Qualitative	7,704	32.3%	2,896	0
Vernal Pool	937	128	107	235	25.1%	470	128
Swale	314	98	24	122	38.9%	244	98
Total Modeled Habitat	25,136	7,930	131	8,061	32.1%	3,610	226
Pincushion Navarretia							
Valley Grassland	54,967	8,133	Qualitative	8,133	14.8%	6,666	0
Vernal Pool	1,844	104	78	182	9.9%	364	104
Swale	627	100	22	122	19.5%	244	100
Total Modeled Habitat	57,438	8,337	100	8,437	14.7%	7,274	204
Slender Orcutt Grass and Sacramento Orcutt Grass							
Valley Grassland	33,265	7,530	Qualitative	7,530	22.6%	4,034	0
Vernal Pool	1,227	124	108	232	18.9%	464	124
Total Modeled Habitat	34,492	7,654	108	7,762	22.5%	4,498	124

Table 9-4. Direct/Indirect Impacts and Conservation of Vernal Pool Invertebrate and Plant Modeled Habitat under the No Action/No Project Alternative

Land Covers Included in the Species Modeled Habitat	Total Within Planning Area (acres)						
	<i>Existing Modeled Habitat (total acres)</i>	<i>Direct Impacts</i>	<i>Indirect Impacts</i>	<i>Total Impacts</i>	<i>% of the Existing Habitat Lost</i>	<i>Modeled Habitat Preservation</i>	<i>Modeled Habitat Re-establishment/ Establishment</i>
<i>Boggs Lake Hedge-Hyssop</i>							
Valley Grassland	35,115	8,919	Qualitative	8,919	25.4%	4,258	0
Vernal Pool	1,531	183	122	305	19.9%	610	183
Seasonal Wetland	354	24	Qualitative	24	6.8%	8	24
Total Modeled Habitat	37,000	9,126	122	9,248	25.0%	4,876	207
<i>Legenere</i>							
Valley Grassland	47,527	10,884	Qualitative	10,884	22.9%	5,764	0
Vernal Pool	2,560	216	137	353	13.8%	706	216
Seasonal Wetland	886	46	Qualitative	46	5.2%	8	46
Total Modeled Habitat	50,973	11,146	137	11,283	22.1%	6,478	262

The regulatory environment under the No Action/No Project Alternative (Section 2.2.2) would require mitigation for impacts to vernal pool invertebrate and plant species for projects that undergo environmental review under the National Environmental Policy Act (NEPA) or CEQA. The anticipated compensation would be required on a project-by-project basis and would include preservation and re-establishment/establishment of vernal pool invertebrate and plant habitat that would often not be part of a coordinated and linked Preserve System. The acres that are expected to be conserved under the under the No Action/No Project Alternative for each of the 11 vernal pool invertebrate and plant species are shown in their respective species tables above. This result is likely a conservative overestimate as the future regulatory environment used for the No Action/No Project Alternative assumes greater preservation and re-establishment/establishment relative to project impacts than is typically called for today.

Cumulative Effect of the Alternative

The modeled habitat for vernal pool invertebrate and plant species has been lost, degraded, and fragmented by past and present urban and suburban development, associated infrastructure, agriculture, development of agricultural-residential neighborhoods and other rural development, and mining operations within the Planning Area, as described in Section 3.7.1. The effects of the these past and present projects on vernal pool invertebrate and plant species and their habitat are reflected in the current conditions for the species as discussed in Appendix G.

Reasonably foreseeable future actions, as described in Section 3.7.2, consist of actions that are similar in nature to the past and present actions in the Planning Area, including urban

development in Elk Grove and Rancho Murieta, further rural residential development, continued development of cultivated agricultural lands, and development of infrastructure projects such as California High-Speed Rail and California WaterFix. Although not every reasonably foreseeable future action would affect vernal pool invertebrate and plant species, as a whole these actions would result in the continued loss of modeled habitat and in indirect impacts (e.g., habitat fragmentation, change in vernal pool hydrology) to remaining modeled habitat. For future projects and activities subject to CEQA and NEPA, these impacts would be mitigated under the regulatory environment described in Sections 9.1.1 and 2.2.2. Mitigation for impacts of future projects and activities under ESA and Clean Water Act (CWA) requirements would ensure that there would be no net loss of acreage, function, and/or value for aquatic land covers that are modeled habitat for vernal pool invertebrate and plant species. In addition to these mitigation requirements for replacement of land covers that are modeled habitat, vernal pool tadpole shrimp, vernal pool fairy shrimp, Boggs Lake hedge-hyssop, slender Orcutt grass, and Sacramento Orcutt grass are listed under ESA and/or CESA, and additional avoidance, minimization, and mitigation requirements for suitable and occupied habitat would be applied.

As discussed previously in this impact section, the development and related infrastructure under the No Action/No Project Alternative would result in direct and indirect impacts to modeled vernal pool invertebrate and plant species habitat. The modeled aquatic habitat that would be preserved and would be re-established/established under the No Action/No Project Alternative would exceed the acreage of modeled aquatic habitat lost for vernal pool invertebrate and plant species; however, upland habitat loss would typically exceed the amount preserved. Under the No Action/No Project Alternative, preserved and re-established/established habitat would often be geographically fragmented and not adaptively managed to provide conservation at a landscape scale due to the project-by-project nature of the mitigation. This mitigation scenario would increase indirect effects such as habitat fragmentation and would result in a decrease in the value of modeled habitat for the species.

Therefore, the incremental direct and indirect impacts of No Action/No Project Alternative to vernal pool invertebrate and plant species, when considered together with the significant impacts to vernal pool invertebrate and plant species from past, current, and foreseeable future projects and activities in the study area, would be a **Significant Cumulative** effect.

9.2.2.2 Effects on Valley Elderberry Longhorn Beetle and Its Habitat

The description of valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) along with species occurrences within the Planning Area can be found in Appendix G. Modeled habitat within the Planning Area for valley elderberry longhorn beetle is Mine Tailing Riparian Woodland, Mixed Riparian Woodland, and Mixed Riparian Scrub above sea level.

This species is dependent on elderberry shrubs (*Sambucus glauca*, *S. mexicana*, *S. caerulea*), which are primarily associated with riparian habitats within the Planning Area, to host the larval stage of its lifecycle.

Direct and Indirect Effects of the Alternative

The No Action/No Project Alternative would result in the direct impacts due to the loss of approximately 554 acres of modeled valley elderberry longhorn beetle habitat to development and related infrastructure. The majority of this loss (approximately 509 acres) is expected to occur within the UDA, though development outside of the UDA would also result in loss of modeled species habitat (approximately 45 acres) including impacts from shifted or displaced development (see Section 9.1.2). The implementation of this alternative would directly affect approximately 7% of the existing modeled habitat within the Planning Area (Table 9-5).

Table 9-5. Effects and Modeled Habitat Conservation for Valley Elderberry Longhorn Beetle under the No Action/No Project Alternative

Modeled Habitat	Total Planning Area (acres)				
	Total Existing Modeled Habitat	Direct Effect	% of Existing Habitat Lost	Modeled Habitat Preservation	Modeled Habitat Re-establishment/ Establishment
Mine Tailing Riparian Woodland	641	218	34.0%	0	0
Mixed Riparian Woodland	5,785	147	2.5%	0	256
Mixed Riparian Scrub	1,452	189	13.0%	0	298
Total Modeled Habitat	7,878	554	7.0%	0	554

Indirect effects due to activities under the No Action/No Project Alternative are analyzed qualitatively for individual species, and as discussed previously for direct impacts, the majority of indirect impacts would occur within the UDA, as a result of urban development. However, these impacts would also occur to a lesser extent outside of the UDA. The various environmental stressors that may result from activities under the No Action/No Project Alternative are described in Appendix G. The following discussion focuses on those stressors that may result in indirect impacts to valley elderberry longhorn beetle and modeled habitat for the species.

Changes to hydrology (e.g., changes in stream and creek flows), and reductions in water quality as a result of increased urban and road runoff that may contain petroleum products, pesticides and herbicides can kill elderberry shrubs through water stress and toxicity, thereby removing habitat for valley elderberry longhorn beetle.

Development could also increase the presence of invasive plants within modeled habitat for valley elderberry longhorn beetle through species escaping from landscaping and by increasing

disturbed areas (e.g., user-created trails) often colonized by invasive plants. Invasive plants could impact valley elderberry longhorn beetle's host plant by outcompeting elderberry shrubs and replacing native riparian plant species with species more susceptible to wildfire.

Populations of medium-sized predators that are tolerant of human disturbance could reduce the population of seed-dispersing birds, thereby reducing the number of new elderberry shrubs that can establish, while potential increases in invasive animals (e.g., Argentine ant (*Linepithema humile*)) as a result of increased runoff and irrigation may increase predation on valley elderberry longhorn beetle larvae.

Also, increased development may lead to the increased use of pesticides that can move into adjacent riparian habitat and could possibly result in mortality of valley elderberry longhorn beetle.

Lastly, habitat fragmentation as a result of loss of modeled habitat for valley elderberry longhorn beetle could restrict movement of adults between remaining patches of elderberry shrubs. Habitat fragmentation can also increase the impact of other indirect environmental stressors listed here (e.g., predation, invasive plants and animals) on valley elderberry longhorn beetle by increasing the area of impact from these stressors relative to the area of the remaining habitat patch.

Temporary effects (Section 3.6.5 and Section 9.1.2) that result from ground-disturbing construction activities under the No Action/No Project Alternative may result in temporary reduction of habitat quality and loss of individual valley elderberry longhorn beetle caused by trampling, construction dust, and other actions that could adversely affect elderberry host plants.

The No Action/No Project Alternative is not expected to remove any of the 156 occurrences of valley elderberry longhorn beetle in the Planning Area.

The regulatory environment under the No Action/No Project Alternative (Section 2.2.2) would require mitigation for impacts to valley elderberry longhorn beetle for projects that undergo environmental review under NEPA or CEQA. The anticipated mitigation would be required on a project-by-project basis and would include re-establishment/establishment of 554 acres of valley elderberry longhorn beetle modeled habitat within the Planning Area, which equals the direct impact to valley elderberry longhorn beetle modeled habitat under the No Action/No Project Alternative.

Cumulative Effect of the Alternative

Valley elderberry longhorn beetle habitat has been lost, degraded, and fragmented by past and present urban and suburban development, associated infrastructure, agriculture, development of agricultural–residential neighborhoods and other rural development, and mining operations

within the Planning Area, as described in Section 3.7.1. The effects of these past and present projects on valley elderberry longhorn beetle and its habitat are reflected in the current conditions for the species as discussed in Appendix G.

Reasonably foreseeable future actions, as described in Section 3.7.2, consist of actions that are similar in nature to the past and present actions in the Planning Area, including urban development in Elk Grove and Rancho Murieta, further rural residential development, continued development of cultivated agricultural lands, and development of infrastructure projects such as California High-Speed Rail and California WaterFix. Although not every reasonably foreseeable future action would affect valley elderberry longhorn beetle, as a whole these actions would result in the continued loss of valley elderberry longhorn beetle habitat, as well as indirect impacts (e.g., habitat fragmentation, changes in hydrology) to remaining modeled habitat. For future projects and activities subject to CEQA and NEPA, these impacts would be mitigated under the regulatory environment described in Sections 9.1.1 and 2.2.2. Mitigation would occur at a no net loss of acreage, due to combined ESA requirements and Sacramento County General Plan policies protecting riparian land cover types. In addition to these mitigation requirements for replacement of land covers that are modeled habitat, valley elderberry longhorn beetle is listed under ESA, and additional avoidance, minimization, and mitigation requirements for suitable and occupied habitat would be applied.

As discussed previously in this impact section, the development and related infrastructure under the No Action/No Project Alternative would result in direct (554 acres) and indirect impacts to modeled valley elderberry longhorn beetle habitat. The modeled habitat preserved (554 acres) and re-established/established (554 acres) under the No Action/No Project Alternative would equal the acreage of modeled habitat lost. However, under the No Action/No Project Alternative, preserved and re-established/established habitat would often be geographically fragmented and not adaptively managed to provide conservation at a landscape scale due to the project-by-project nature of the mitigation. This mitigation scenario would increase indirect effects such as habitat fragmentation and would result in a decrease in the value of modeled habitat for the species.

Therefore, the incremental impacts of the No Action/No Project Alternative on valley elderberry longhorn beetle, when considered together with the significant impacts to valley elderberry longhorn beetle from past and current human activities and the reasonably foreseeable future projects within the study area, would result in a ***Significant Cumulative*** effect.

9.2.2.3 Effects on California Tiger Salamander (Central Valley Population) and Its Habitat

As discussed in Appendix G, upland underground refugia habitats for this species within the Planning Area are Valley Grassland, Blue Oak Woodland, and Blue Oak Savanna, where the

California tiger salamander inhabits ground squirrel and other burrows or soil cracks and crevices, up to 1.3 miles from aquatic breeding habitat. Breeding habitat within the Planning Area is the Vernal Pool and Seasonal Wetland land covers located south of the Cosumnes River and east of Highway 99.

Direct and Indirect Effects of the Alternative

The implementation of the No Action/No Project Alternative would result in the direct loss of approximately 1,772 acres of modeled upland habitat and the direct loss of approximately 71 acres of modeled aquatic breeding habitat for California tiger salamander (Table 9-6). These impacts would be both within the UDA in Galt and outside the UDA, including impacts from shifted or displaced development (see Section 9.1.2).

Table 9-6. Direct Effects and Modeled Habitat Conservation for California Tiger Salamander under the No Action/No Project Alternative

Modeled Habitat	Total Planning Area (acres)						
	Total Existing Modeled Habitat	Direct Effect	Indirect Effect	Total Effect	% of Existing Habitat Lost	Modeled Habitat Preservation	Modeled Habitat Re-establishment/ Establishment
Upland Habitat							
Blue Oak Savanna	3,322	48	Qualitative	48	1.4%	24	24
Blue Oak Woodland	3,774	45	Qualitative	45	1.2%	23	22
Valley Grassland	78,274	1,679	Qualitative	1,679	2.1%	9,492	0
<i>Total Upland Habitat</i>	<i>85,369</i>	<i>1,772</i>	<i>Qualitative</i>	<i>1,772</i>	<i>2.1%</i>	<i>9,539</i>	<i>46</i>
Aquatic Habitat							
Vernal Pool	3,033	67	4	71	2.3%	142	67
Seasonal Wetland	1,391	4	Qualitative	4	2.4%	8	4
<i>Total Aquatic Habitat</i>	<i>4,425</i>	<i>71</i>	<i>4</i>	<i>75</i>	<i>2.3%</i>	<i>150</i>	<i>71</i>
Total Modeled Habitat	89,794	1,843	4	1,847	2.1%	9,689	117

The No Action/No Project would result in impacts to approximately 53 acres of upland habitat and 7 acres of aquatic breeding habitat within the C/RS.

The No Action/No Project Alternative would also result in indirect impacts of 4 acres of California tiger salamander Vernal Pool modeled habitat. Indirect effects for the remaining land cover types of modeled habitat are analyzed qualitatively below. As with the direct impacts discussed previously, these indirect impacts would be within the UDA in Galt and outside the UDA. The various environmental stressors that may result from activities under the No Action/No Project Alternative are described in Appendix G. The following discussion focuses on

those stressors that may result in indirect impacts to California tiger salamander and modeled habitat for the species.

Altered hydrology of vernal pools as a result of impacts to the duripan and other factors (see Appendix G) may reduce the hydroperiod of vernal pools which could make the habitat unsuitable for California tiger salamander breeding. Sedimentation as a result of urban and road runoff can also deposit sediment into seasonal wetlands and decrease depth and hydroperiod, with the same effects on breeding habitat as described for vernal pools.

Impacts to California tiger salamander may also occur due to increased ground vibration from transportation projects (e.g., causing abandonment of burrows), and lighting from urban development (e.g., disruption of nightly movement patterns).

Increased human activity resulting from nearby development could impact remaining modeled habitat use due to factors such as increased trash, soil compaction, and trampling of vegetation.

Adjacent development could also increase the presence of invasive plants and animals in modeled aquatic habitat. Invasive plants can increase water use in the ecosystem, shortening the hydroperiod of vernal pools and interfering with reproduction of California tiger salamander. Introductions of invasive animals such as bullfrogs (*Lithobates catesbeianus*) could increase predation on California tiger salamander eggs, larvae and juveniles. Increased medium sized predators that are associated with urban development could also increase predation risk to juveniles and adults during overland migration.

The use of pesticides and fertilizers in and adjacent to new development in the Planning Area would degrade breeding habitat by decreasing water quality, causing impacts on the vernal pool ecosystem and possibly result in mortality of eggs and larval California tiger salamander.

Development may result in an increased wildfire frequency due to increased ignition sources. Wildfire is a natural part of the ecosystem, and low intensity fires would not adversely impact California tiger salamander modeled habitat. However, increased fire frequency would require more fire-suppression activities around developed areas that would result in ground disturbance, which would result in habitat removal and additional changes in vernal pool hydrology that would impact California tiger salamander modeled breeding habitat.

Increases in the number of roads and traffic associated with development can cause mortality of California tiger salamander from vehicle collisions as adults migrate between upland habitat and aquatic breeding sites, and when juveniles disperse from breeding ponds to upland habitat.

Fragmentation of upland modeled habitat by new development could inhibit access to other areas of modeled habitat by restricting adult movement to suitable breeding habitat and by restricting dispersal of juveniles out of breeding ponds. Habitat fragmentation can also increase the impact of other indirect environmental stressors listed here (e.g., altered hydrology, invasive animals) on California tiger salamander by increasing the area of impact from these stressors relative to the area of the intact habitat patch.

Temporary effects (Section 3.6.5 and Section 9.2.1) that result from ground-disturbing construction activities under the No Action/No Project Alternative may result from stressors (Appendix G) such as temporary construction lighting, temporary construction noise, and temporary ground vibration that could result in take of individual California tiger salamanders under the No Action/No Project Alternative.

The Planning Area includes 10,193 acres of designated Critical Habitat (USFWS 2005) for California tiger salamander. None of the 10,193 acres of designated Critical Habitat within the Planning Area for the species would be removed under the No Action/No Project Alternative.

The No Action/No Project Alternative is not expected to remove any of the 31 occurrences California tiger salamander in the Planning Area.

The regulatory environment under the No Action/No Project Alternative (Section 2.2.2) would require mitigation for impacts to California tiger salamander for projects that undergo environmental review under NEPA and CEQA. The anticipated mitigation would be required on a project-by-project basis and would result in 9,689 acres of preservation and 117 acres of re-establishment/establishment of California tiger salamander modeled habitat.

Cumulative Effect of the Alternative

California tiger salamander habitat has been lost, degraded, and fragmented by past and present urban and suburban development, associated infrastructure, agriculture, development of agricultural–residential neighborhoods, and other rural development within the Planning Area, as described in Section 3.7.1. The effects of these past and present projects on California tiger salamander and its habitat are reflected in the current conditions for the species as discussed in Appendix G.

Reasonably foreseeable future actions, as described in Section 3.7.2, consist of actions that are similar in nature to the past and present actions in the Planning Area, including further rural residential development, continued development of cultivated agricultural lands, and development of infrastructure projects such as California High-Speed Rail and California WaterFix. Although not every reasonably foreseeable future action would affect California tiger salamander, as a whole these actions would result in the continued loss of California tiger

salamander habitat and in indirect impacts (e.g., habitat fragmentation, change in vernal pool hydrology, increased human disturbance) to remaining modeled habitat. For future projects and activities subject to CEQA or NEPA, these impacts would be mitigated under the regulatory environment described in Sections 9.1.1 and 2.2.2. Mitigation for impacts of future projects and activities under ESA and CWA requirements would ensure that there would be no net loss of acreage, function, and/or value for aquatic land covers that are modeled habitat for California tiger salamander. Mitigation for impacts on Blue Oak Woodland and Blue Oak Savanna land cover types that are modeled habitat would also typically occur due to policies protecting these land cover types in the Sacramento County General Plan. In addition to these mitigation requirements for replacement of land covers that are modeled habitat, California tiger salamander is listed under ESA and CESA, and additional avoidance, minimization, and mitigation requirements for suitable and occupied habitat would be applied.

As discussed previously in this impact section, the development and related infrastructure under the No Action/No Project Alternative would result in direct (approximately 1,843 acres) and indirect (approximately 4 acres) of impacts to modeled California tiger salamander habitat. The modeled habitat preserved (approximately 9,689 acres) under the No Action/No Project Alternative would exceed the acreage of modeled habitat lost, and the aquatic habitat re-established/established would equal the aquatic habitat lost. However, under the No Action/No Project Alternative, preserved and re-established/established habitat would often be geographically fragmented and not adaptively managed to provide conservation at a landscape scale due to the project-by-project nature of the mitigation. This mitigation scenario would increase indirect effects such as habitat fragmentation and would result in a decrease in the value of modeled habitat for the species.

Therefore, the incremental direct and indirect impacts of No Action/No Project Alternative to California tiger salamander, when considered together with the significant impacts to California tiger salamander from past, current, and foreseeable future projects and activities in the study area, would be a ***Significant Cumulative*** effect.

9.2.2.4 Effects on Western Spadefoot Toad and Its Habitat

Modeled habitat for western spadefoot in the Planning Area includes portions of the Valley Grassland, Blue Oak Woodland, Blue Oak Savanna, Vernal Pool, Seasonal Wetland, Swale, Open Water, and Stream/Creek land covers above sea level. The terrestrial habitats within 1 mile of aquatic habitat are included in the habitat model as they are used by western spadefoot for foraging and estivation (similar to hibernation), during the dry season.

Direct and Indirect Effects of the Alternative

Direct loss of western spadefoot modeled habitat under the No Action/No Project Alternative would be approximately 1,036 acres of aquatic habitat, and 23,550 acres of upland habitat, which would impact approximately 15.7% and 7.7% of the existing modeled upland and aquatic habitat in the Planning Area respectively (Table 9-7).

Of the western spadefoot modeled habitat loss, approximately 9,336 acres would occur within the MCRA, which would affect approximately 50.3% modeled habitat within the MCRA. There would also be approximately 56 acres lost within the C/RS, which would affect approximately 0.1% of modeled habitat within the C/RS.

Table 9-7. Direct Effects and Preservation of Western Spadefoot Modeled Habitat Under the No Action/No Project Alternative

Modeled Habitat	Total Planning Area (acres)						
	Total Existing Modeled Habitat	Direct Effect	Indirect Effect	Total Effect	% of Existing Habitat Lost	Modeled Habitat Preservation	Modeled Habitat Re-establishment/ Establishment
Upland Habitat							
Blue Oak Savanna	5,637	86	Qualitative	86	1.5%	43	43
Blue Oak Woodland	9,132	54	Qualitative	54	0.6%	27	27
Valley Grassland	135,094	23,410	Qualitative	23,410	17.3%	11,806	0
<i>Total Upland Habitat</i>	<i>149,863</i>	<i>23,550</i>	<i>Qualitative</i>	<i>23,550</i>	<i>15.7%</i>	<i>11,876</i>	<i>70</i>
Aquatic Habitat							
Vernal Pool	4,536	322	193	515	11.4%	1,030	322
Swale	1,252	240	61	301	24.0%	673	240
Seasonal Wetland	2,600	115	Qualitative	115	4.4%	8	57
Open Water	2,344	175	Qualitative	175	7.5%	0	87
Streams/Creeks	2,674	149	Qualitative	149	5.6%	0	75
Streams/Creeks (VPIH)	73	35	7	42	57.5%	13	17
<i>Total Aquatic Habitat</i>	<i>13,479</i>	<i>1,036</i>	<i>261</i>	<i>1,297</i>	<i>9.6%</i>	<i>1,724</i>	<i>798</i>
Total Modeled Habitat	163,342	24,586	261	24,847	15.2%	13,600	868

The No Action/No Project Alternative would also result in approximately 261 acres of indirect effects to western spadefoot modeled aquatic habitat, as well as indirect effects to modeled upland habitat. These indirect effects are analyzed qualitatively below. The various environmental stressors that may result from activities under the No Action/No Project Alternative are described in Appendix G. The following discussion focuses on those stressors that may result in indirect impacts to western spadefoot and modeled habitat for the species.

Altered hydrology of vernal pools as a result of impacts to the duripan and other factors (see Appendix G) may reduce the hydroperiod of vernal pools, which could make the habitat unsuitable for western spadefoot breeding. Sedimentation as a result of urban and road runoff can also deposit sediment into seasonal wetlands and decrease depth and hydroperiod, with the same effects on breeding habitat as described for vernal pools.

Impacts to western spadefoot may also occur due to increased ground vibration from transportation projects (e.g., causing abandonment of burrows) and lighting from urban development (e.g., disruption of nightly movement patterns).

Increased human activity resulting from nearby development could impact remaining modeled habitat use due to factors such as increased trash, soil compaction, and trampling of vegetation.

Adjacent development could also increase the presence of invasive plants and animals in modeled aquatic habitat. Invasive plants can increase water use in the ecosystem, shortening the hydroperiod of vernal pools and interfering with reproduction of western spadefoot. Introductions of invasive animals such as bullfrogs could increase predation on all life stages of western spadefoot in and around breeding habitat. Increased abundance of medium-sized predators that are associated with urban development could also increase predation risk to juveniles and adults during overland migration.

The use of pesticides and fertilizers in adjacent new development would degrade breeding habitat by decreasing water quality causing impacts on the vernal pool ecosystem and possibly result in mortality of eggs and larval western spadefoot.

Development may result in an increased wildfire frequency due to increased ignition sources. Wildfire is a natural part of the ecosystem, and low-intensity fires would not adversely impact western spadefoot modeled habitat. However, increased fire frequency would require more fire suppression activities around developed areas that would result in ground disturbance, which would result in habitat removal and additional changes in vernal pool hydrology that would impact western spadefoot modeled breeding habitat.

Increases in the number of roads and traffic associated with development can cause mortality of western spadefoot from vehicle collisions as adults migrate between upland habitat and aquatic breeding sites, and when juveniles disperse from breeding ponds to upland habitat.

Fragmentation of upland modeled habitat by new development could inhibit access to other areas of modeled habitat by restricting adult movement to suitable breeding habitat and by restricting dispersal of juveniles out of breeding ponds. Habitat fragmentation can also increase the impact of other indirect environmental stressors listed here (e.g., altered hydrology,

invasive animals) on western spadefoot by increasing the area of impact from these stressors relative to the area of the intact habitat patch.

Temporary environmental stressors that result from ground-disturbing construction activities under the No Action/No Project Alternative may result in temporary impacts (Section 3.6.5 and Section 9.1.2) to western spadefoot. These stressors (Appendix G) can include, but are not limited to, temporary construction lighting, temporary construction noise, and temporary ground vibration that could result in impacts to individual western spadefoot.

The No Action/No Project Alternative is expected to remove 5 of the 41 occurrences of western spadefoot in the Planning Area.

The regulatory environment under the No Action/No Project Alternative (Section 2.2.2) would require mitigation for impacts to western spadefoot modeled habitat for projects that undergo environmental review under NEPA or CEQA, or that require some other authorization. The anticipated mitigation would be required on a project-by-project basis and would result in preservation of approximately 11,876 acres of upland habitat and 1,724 acres of aquatic habitat, which would exceed the aquatic habitat lost. The No Action/No Project Alternative would also result in re-establishment/establishment of 868 acres of modeled habitat, which would be less than the aquatic habitat lost.

Cumulative Effect of the Alternative

Western spadefoot toad habitat has been lost, degraded, and fragmented by past and present urban and suburban development, associated infrastructure, agriculture, development of agricultural–residential neighborhoods, and other rural development within the Planning Area, as described in Section 3.7.1. The effects of these past and present projects on western spadefoot and its habitat are reflected in the current conditions for the species as discussed in Appendix G.

Reasonably foreseeable future actions, as described in Section 3.7.2, consist of actions that are similar in nature to the past and present actions in the Planning Area, including urban development in Elk Grove and Rancho Murieta, further rural residential development, continued development of cultivated agricultural lands, and development of infrastructure projects such as California High-Speed Rail and California WaterFix. Although not every reasonably foreseeable future action would affect western spadefoot, as a whole these actions would contribute to the ongoing habitat loss. However, for future projects and activities subject to CEQA and NEPA review, these impacts would typically be mitigated under the regulatory environment described in Sections 9.1.1 and 2.2.2. Mitigation for impacts of future projects and activities under ESA and CWA requirements would ensure that there would be no net loss of acreage, function, and/or value for aquatic land covers that are modeled habitat for western spadefoot.

As discussed previously in this impact section, the development and related infrastructure under the No Action/No Project Alternative would have direct and indirect impacts resulting in impacts to 24,586 acres of modeled western spadefoot habitat. The No Action/No Project Alternative would include the preservation (13,600 acres) of total modeled habitat, which would be less than the estimated loss of habitat, and re-establishment/establishment of aquatic habitat, which would also be less than the loss of that habitat type. Additionally, under the No Action/No Project Alternative, preserved and re-established/established habitat would often be geographically fragmented and not adaptively managed to provide conservation at a landscape scale due to the project-by-project nature of the mitigation. This mitigation scenario would increase indirect effects such as habitat fragmentation and would result in a decrease in the value of modeled habitat for the species.

Therefore, the incremental impacts of the No Action/No Project Alternative on western spadefoot, when considered together with the significant impacts to western spadefoot from past and current human activities and the reasonably foreseeable future projects within the study area, would result in a ***Significant Cumulative*** effect.

9.2.2.5 Effects on Giant Garter Snake and Its Habitat

The life history, acres of existing modeled habitat, and documented occurrences of giant garter snake in the Planning Area are described in Appendix G. All giant garter snake modeled habitat in this Planning Area is located between sea level and an elevation of 230 feet. Aquatic modeled habitats for foraging and movement, and aquatic modeled habitat for winter refugia habitat is identified within and adjacent to the following specific Planning Area drainages, of which only Laguna Creek is within the UDA:

- The prominent drainageway (Stream/Creek) on the Elliot mitigation site, which links to Stone Lakes National Wildlife Refuge and is wet year-round.
- All drainage canals (Stream/Creek) south of Elk Grove, which have a past documented occurrence of giant garter snake and link to Stone Lakes National Wildlife Refuge; the perennial segments of these canals are suitable habitat.
- All parts of Badger Creek (Stream/Creek) and all other creeks that drain into the marsh at the Cosumnes River Preserve; the perennial segments of these creeks are suitable habitat.
- The perennial segments of Laguna Creek (south) and tributaries (Stream/Creek), which are suitable habitat due to presence of Freshwater Marsh habitat and proximity to documented occurrences.
- The perennial segments of drainages and canals (Stream/Creek) leading from the Cosumnes River Preserve including Deadman's Gulch, which provides suitable habitat.

In addition to these specific Stream/Creek drainages, the habitat model includes all Stream/Creek, Freshwater Marsh, Open Water, and Seasonal Wetland land covers that are within 0.25 mile of these drainages that have the potential for supporting giant garter snake. Upland winter refugia habitat within the Planning Area consists of mixed riparian scrub and valley grassland, within a distance of 0.25 mile from modeled aquatic habitat.

Direct and Indirect Effects of the Alternative

Loss of modeled giant garter snake habitat due to implementation of projects and activities under the No Action/No Project Alternative would be approximately 2,314 acres of modeled upland habitat (8.3% of existing) and approximately 187 acres of modeled aquatic habitat (2.6 % of existing) (Table 9-8). Of this habitat loss, approximately 1,600 acres would occur within the UDA, and approximately 901 acres would occur outside of the UDA, including impacts from shifted or displaced development (see Section 9.1.2).

Table 9-8. Direct Effects and Conservation of Giant Garter Snake Modeled Habitat Under the No Action/No Project Alternative

Habitat Model	Total Planning Area (acres)				
	Total Existing Modeled Habitat	Direct Effect	% of Existing Habitat Lost	Modeled Habitat Preservation	Modeled Habitat Re-establishment/ Establishment
Upland Habitat					
Mixed Riparian Scrub	1,044	134	12.8%	0	134
Valley Grassland	26,825	2,180	8.1%	3,253	0
<i>Total Upland Habitat</i>	<i>27,869</i>	<i>2,314</i>	<i>8.3%</i>	<i>3,253</i>	<i>134</i>
Aquatic Habitat					
Seasonal Wetland	1,625	41	2.5%	8	21
Freshwater Marsh	2,589	80	3.1%	16	40
Open Water	1,282	28	2.2%	0	14
Streams/Creeks	1,794	38	2.1%	0	38
<i>Total Aquatic Habitat</i>	<i>7,290</i>	<i>187</i>	<i>2.6%</i>	<i>24</i>	<i>81</i>
Total Modeled Habitat	35,159	2,501	7.1%	3,277	215

The No Action/No Project Alternative would also result in indirect effects to giant garter snake and its habitat. As with the direct impacts discussed previously, the greatest impact of these indirect effects would be within the UDA due to the intersection of development and suitable habitat in that area. The various environmental stressors that may result from activities under the No Action/No Project Alternative are described in Appendix G. The following discussion focuses on those stressors that may result in indirect impacts to giant garter snake and modeled habitat for the species.

Increased urban runoff from impervious surfaces under the No Action/No Project Alternative could increase water depth in waterways that support giant garter snake, flooding the small mammal burrows used for winter shelter by giant garter snake. In addition, the pesticides and fertilizers that may be contained in this runoff may reduce prey populations.

Ongoing vibration and noise from urban development and associated transportation infrastructure can disturb movement patterns and cause abandonment of burrows, basking sites, and cover habitat.

Introductions of invasive animals such as bullfrogs in occupied giant garter snake habitat could increase predation on young giant garter snake. Increased numbers of medium-sized predators that are associated with urban development could also increase predation risk to juveniles and adults in upland habitats.

Increased wildfire as a result of the increased ignition sources associated with urban development could result in loss of cover habitat, as well as reduce potential prey in upland habitats until such time as the habitat returns to its pre-fire state.

Fragmentation of upland modeled habitat by new development could inhibit access to other areas of modeled habitat by restricting adult movement between aquatic habitats and upland burrows. Habitat fragmentation can also increase the impact of other indirect environmental stressors listed here (e.g., water quality, invasive animals) on giant garter snake by increasing the area of impact from these stressors relative to the area of the intact habitat patch.

The No Action/No Project Alternative is not expected to remove any of the 14 documented occurrences of giant garter snake in the Planning Area.

Temporary effects (Section 3.6.5 and Section 9.1.2) that result from ground-disturbing construction activities under the No Action/No Project Alternative may result from stressors (Appendix G) such as temporary construction lighting, temporary construction noise, and temporary ground vibration that could result in disturbance of individual giant garter snakes under the No Action/No Project Alternative.

The regulatory environment under the No Action/No Project Alternative (Section 2.2.2) would require mitigation for giant garter snake for projects that undergo environmental review under NEPA and CEQA. The anticipated mitigation would be required on a project-by-project basis and would result in preservation of modeled habitat of approximately 3,253 acres of upland habitat and 24 acres of aquatic habitat. In addition, there is estimated to be 134 acres of re-establishment/establishment of modeled upland habitat and 81 acres of aquatic habitat.

Cumulative Effect of the Alternative

Giant garter snake habitat has been lost and fragmented by past urban and suburban development, associated infrastructure, and farming within the Planning Area, as described in Section 3.7.1. The effects of these past and present projects on giant garter snake and its habitat are reflected in the current conditions for the species as discussed in Appendix G.

Reasonably foreseeable future actions, as described in Section 3.7.2, consist of actions that are similar in nature to the past and present actions in the Planning Area. Although not every reasonably foreseeable future action would affect giant garter snake, as a whole these actions would result in the continued loss of giant garter snake habitat and in indirect impacts (e.g., habitat fragmentation, increased urban runoff, increased human disturbance) to remaining modeled habitat. For future projects and activities subject to CEQA and NEPA review, these impacts would be mitigated under the regulatory environment described in Sections 9.1.1 and 2.2.2. Mitigation for impacts of future projects and activities under ESA and CWA requirements would ensure that there would be no net loss of acreage, function, and/or value for aquatic land covers that are modeled habitat for giant garter snake. Mitigation for impacts on Mixed Riparian Scrub land cover that is modeled habitat would typically occur at a no net loss of acreage due to policies in the Sacramento County General Plan protecting riparian land cover types. In addition to these mitigation requirements for replacement of land covers that are modeled habitat, giant garter snake is listed under ESA and CESA, and additional avoidance, minimization, and mitigation requirements for suitable and occupied habitat would be applied.

As discussed previously in this impact section, the development and related infrastructure under the No Action/No Project Alternative would result in direct (2,501 acres) and indirect impacts to modeled giant garter snake habitat. The modeled habitat re-established/established (215 acres) under the No Action/No Project Alternative would be less than the modeled riparian and aquatic habitat lost. The No Action/No Project Alternative would also result in approximately 3,277 acres of modeled habitat preserved, which exceeds the modeled habitat lost. However, under the No Action/No Project Alternative, preserved and re-established/established habitat would often be geographically fragmented and not adaptively managed to provide conservation at a landscape scale due to the project-by-project nature of the mitigation. This mitigation scenario would increase indirect effects such as habitat fragmentation and would result in a decrease in the value of modeled habitat for the species.

Therefore, the incremental impacts of the No Action/No Project Alternative on giant garter snake, when considered together with the significant impacts to giant garter snake from past and current human activities and the reasonably foreseeable future projects within the study area, would result in a ***Significant Cumulative*** effect.

9.2.2.6 Effects on Western Pond Turtle and Its Habitat

The life history, habitat requirements, documented occurrences, and existing acres of modeled habitat of western pond turtle in the Planning Area are described in Appendix G.

The aquatic land cover types that are considered suitable habitat for western pond turtle are Streams/Creeks above sea level, and Freshwater Marsh and Open Water within 0.25 mile of a modeled Stream/Creek. Land cover types that provide suitable upland habitat are Blue Oak Woodland, Blue Oak Savanna, Mine Tailing Riparian Woodland, Mixed Riparian Woodland, Mixed Riparian Scrub, and Valley Grassland above sea level and within 0.25 mile of suitable aquatic habitat.

Direct and Indirect Effects of the Alternative

The estimated loss of habitat under the No Action/No Project Alternative is approximately 11,783 acres of upland and approximately 377 acres of aquatic habitat. This habitat loss would remove approximately 10.6% of the upland and approximately 5.9% of aquatic habitat for western pond turtle remaining in the Planning Area (Table 9-9). Of this habitat loss, approximately 10,432 acres occurs within the UDA, and approximately 1,728 acres occurs outside of the UDA, including impacts from shifted or displaced development (see Section 9.1.2).

Table 9-9. Direct Effects and of Modeled Habitat for Western Pond Turtle Under the No Action/No Project Alternative

Modeled Habitat	Total Planning Area (acres)				
	Total Existing Modeled Habitat	Direct Effect	% of Existing Habitat Lost	Modeled Habitat Preservation	Modeled Habitat Re-establishment/ Establishment
Upland Habitat					
Blue Oak Woodland	7,610	54	0.7%	27	27
Blue Oak Savanna	4,825	83	1.7%	42	42
Valley Grassland	91,580	11,328	12.4%	8,000	0
Mine Tailing Riparian Woodland	306	41	13.4%	0	0
Mixed Riparian Woodland	5,347	144	2.7%	0	164
Mixed Riparian Scrub	1,178	133	11.3%	0	154
<i>Total Upland Habitat</i>	<i>110,846</i>	<i>11,783</i>	<i>10.6%</i>	<i>8,069</i>	<i>387</i>
Aquatic Habitat					
Freshwater Marsh	2,240	111	5.0%	16	56
Open Water	1,441	117	8.1%	0	59
Stream/Creek	2,674	149	5.6%	0	75
<i>Total Aquatic Habitat</i>	<i>6,355</i>	<i>377</i>	<i>5.9%</i>	<i>16</i>	<i>190</i>
Total Modeled Habitat	117,201	12,160	10.4%	8,085	577

The No Action/No Project Alternative would also result in indirect effects to western pond turtle and its habitat. As with the direct impacts discussed previously, the greatest impact of these indirect effects would be within the UDA due to the intersection of development and suitable habitat in that area. The various environmental stressors that may result from activities under the No Action/No Project Alternative are described in Appendix G. The following discussion focuses on those stressors that may result in indirect impacts to western pond turtle and modeled habitat for the species.

Altered hydrology and water quality degradation will adversely affect the suitability of aquatic habitats to support foraging and movement pathways. Altered hydrology will adversely affect western pond turtle by affecting water levels and movement through aquatic pathways to other aquatic habitats and dispersal of juvenile turtles to other habitats.

By permanently increasing the extent of impermeable surfaces, urban development may result in increased runoff, which is likely to contain petroleum products, pesticides, and other toxins that may reduce water quality within modeled aquatic habitat and may injure or kill western pond turtle when exposed to toxins either through direct contact or by ingesting contaminated prey items.

Increased human activity (including trash, debris, pets, off-highway vehicles, trampling, and just the presence of humans) in the vicinity of suitable aquatic habitats (Stream/Creek, Freshwater Marsh, and Open Water) and adjacent upland (estivation) habitats will adversely affect western pond turtle. Since western pond turtle is very shy and cryptic, just the presence of humans and other activities near aquatic habitats can adversely affect western pond turtle foraging and basking activities. Increased human activity will also indirectly affect overwintering sites (where they bury themselves in loose soil until the weather warms) and nest sites (where hatchlings may reside for several months following emergence).

As with many amphibians and reptiles, western pond turtle is sensitive to vibration and noise. Vibration and noise issues will indirectly affect the use of aquatic and upland habitats by western pond turtle (e.g., disruption of movement patterns and basking and foraging activities, disturbance of nest sites where hatchlings may reside for several months following emergence or abandonment of nest sites, and disturbance of upland overwintering sites where they bury themselves in loose soil until the weather warms). Depending on the proximity of the vibration source, western pond turtle may abandon sites and move further away from the vibration source, which can make them more susceptible to predation. Since western pond turtle is sensitive to disturbance, noise can disturb basking sites and potentially overwintering sites.

Increased numbers of medium-sized predators associated with increased development could increase predation risk and mortality of western pond turtle.

Habitat fragmentation and isolation will have several adverse effects on western pond turtle although this species will move short distances through upland habitats to reach other suitable aquatic habitats, even though they prefer to move along aquatic pathways. In addition, habitat fragmentation would increase the influence of other stressors by increasing the amount of foraging and nesting habitat within the UDA exposed to edge effects from adjacent land uses.

The No Action/No Project Alternative is not expected to remove any of the 19 documented occurrences of western pond turtle in the Planning Area.

Temporary effects (Section 3.6.5 and Section 9.1.2) that result from ground-disturbing construction activities under the No Action/No Project Alternative may result from stressors (Appendix G) such as temporary construction lighting, temporary construction noise, and temporary ground vibration that could result in disturbance of individual western pond turtle.

The regulatory environment under the No Action/No Project Alternative (Section 2.2.2) would require mitigation for impacts to western pond turtle habitat for projects that undergo environmental review under NEPA or CEQA. The anticipated mitigation would be required on a project-by-project basis and would result in approximately 577 acres of modeled habitat re-establishment/establishment and approximately 8,085 acres of modeled habitat preservation for western pond turtle (approximately 8,069 acres of upland habitat and approximately 16 acres of aquatic habitat). As discussed in Section 2.2.4, this habitat conservation would be implemented on a project-by-project basis and would often not be part of a coordinated and linked Preserve System.

Cumulative Effect of the Alternative

Western pond turtle habitat has been lost, degraded, and fragmented by past and present urban and suburban development, associated infrastructure, agriculture, development of agricultural–residential neighborhoods and other rural development, and mining operations within the Planning Area, as described in Section 3.7.1. The effects of these past and present projects on western pond turtle and its habitat are reflected in the current conditions for the species as discussed in Appendix G.

Reasonably foreseeable future actions, as described in Section 3.7.2, consist of actions that are similar in nature to the past and present actions in the Planning Area. Although not every reasonably foreseeable future action would affect western pond turtle, as a whole these actions would contribute to the ongoing habitat loss. However, for future projects and activities subject to CEQA and NEPA review, these impacts would typically be mitigated under the regulatory environment described in Sections 9.1.1 and 2.2.2. Mitigation for impacts of future projects and activities under CWA requirements would ensure that there would be no

net loss of acreage, function, and/or value for aquatic land covers that are modeled habitat for western pond turtle.

As discussed previously in this impact section, the development and related infrastructure under the No Action/No Project Alternative would have direct and indirect impacts resulting in the loss of 12,160 acres of modeled western pond turtle habitat. The No Action/No Project Alternative would include the preservation (approximately 8,085 acres) and re-establishment/establishment (approximately 577 acres) of modeled habitat, both of which are less than the acres lost. Additionally, under the No Action/No Project Alternative, preserved and re-established/established habitat would often be geographically fragmented and not adaptively managed to provide conservation at a landscape scale due to the project-by-project nature of the mitigation. This mitigation scenario would increase indirect effects such as habitat fragmentation and would result in a decrease in the value of modeled habitat for the species.

Therefore, the incremental impacts of the No Action/No Project Alternative on western pond turtle, when considered together with the significant impacts to western pond turtle from past and current human activities and the reasonably foreseeable future projects within the study area, would result in a ***Significant Cumulative*** effect.

9.2.2.7 Effects on Cooper's Hawk and Its Habitat

The life history, habitat requirements, documented occurrences and existing acres of modeled habitat of Cooper's hawk (*Accipiter cooperii*) in the Planning Area are described in Appendix G.

Cooper's hawk modeled habitat within the Planning Area includes Blue Oak Woodland, Blue Oak Savanna, Mine Tailing Riparian Woodland, Mixed Riparian Woodland, and Mixed Riparian Scrub above sea level. Modeled nesting habitat within the Planning Area is Blue Oak Woodland, Mine Tailing Riparian Woodland, Mixed Riparian Woodland, and Mixed Riparian Scrub above sea level. The species also has been known to nest in urban areas.

Direct and Indirect Effects of the Alternative

Permanent loss of Cooper's hawk modeled habitat would occur under the No Action/No Project Alternative from new urban development and related infrastructure including approximately 607 acres of combined nesting/foraging habitat and 86 acres of foraging habitat for total loss of approximately 693 acres (Table 9-10). Of this habitat loss, approximately 521 acres would occur within the UDA and approximately 172 acres would occur outside of the UDA, including impacts from shifted or displaced development (see Section 9.1.2).

Table 9-10. Direct Effects and Conservation of Cooper's Hawk Modeled Habitat under the No Action/No Project Alternative

Modeled Habitat	Total Planning Area (acres)				
	Total Existing Modeled Habitat	Direct Effect	% of Existing Habitat Lost	Modeled Habitat Preservation	Modeled Habitat Re-establishment/ Establishment
Nesting/Foraging Habitat					
Blue Oak Woodland	9,132	54	0.6%	27	27
Mine Tailing Riparian Woodland	641	218	34.0%	0	0
Mixed Riparian Woodland	5,785	146	2.5%	0	255
Mixed Riparian Scrub	1,451	189	13.0%	0	298
<i>Total Nesting/Foraging Habitat</i>	<i>17,009</i>	<i>607</i>	<i>3.6%</i>	<i>27</i>	<i>580</i>
Foraging Habitat					
Blue Oak Savanna	5,637	86	1.5%	43	43
<i>Total Foraging Habitat</i>	<i>5,637</i>	<i>86</i>	<i>1.5%</i>	<i>43</i>	<i>43</i>
Total Modeled Habitat	22,646	693	3.1%	70	623

The No Action/No Project Alternative would also result in indirect effects to Cooper's hawk and its habitat which are analyzed qualitatively below. As with the direct impacts discussed previously, the greatest impact of these indirect effects would be within the UDA due to the intersection of development and suitable habitat in that area. The various environmental stressors that may result from activities under the No Action/No Project Alternative are described in Appendix G. The following discussion focuses on those stressors that may result in indirect impacts to Cooper's hawk and modeled habitat for the species.

By permanently increasing the extent of impermeable surfaces, urban development may result in increased runoff, especially during storm events. Such increases can result in stream bank erosion, increased sediment loads downstream, and alterations of downstream hydrology which can remove or physically damage the surrounding riparian habitat that is modeled nesting habitat for Cooper's hawk.

Development may result in an increased wildfire frequency due to increased potential for ignitions associated with greater human presence and activities. Wildfire is a natural part of the ecosystem, and riparian and blue oak modeled Cooper's hawk habitat can recover quickly from low intensity fires. However with decades of fire suppression, the amount of fuel may have built up to levels that would increase the intensity of wildfires. Should wildfires be of sufficient intensity to result in high levels of mortality to riparian trees and oaks, this would result in a removal of nesting and foraging habitat for Cooper's hawk until sufficient regrowth occurs.

Noise, lighting, and human activity associated with urban development could degrade remaining modeled habitat by disturbing nesting activity of Cooper's hawk adjacent to development.

Increased numbers of medium-sized predators associated with increased development could reduce the numbers of each prey species. The increased use of pesticides (e.g., rodenticides) in adjacent developed parcels could also decrease prey availability.

New aboveground powerlines would pose a risk of electrocution to all raptors. However, the relatively small size of a Cooper's hawk, when compared to other raptors, may decrease this risk. Also, where new and improved transportation routes intersect with remaining modeled habitat, the increases in traffic and roads could cause a subsequent increase in mortality of Cooper's hawk.

Habitat fragmentation by new urban development may increase the distance required for Cooper's hawk to move between remaining modeled nesting and foraging habitat, increasing the time away from the nest, which can result in reduced nest success. In addition, habitat fragmentation would increase the influence of other stressors by increasing the amount of foraging and nesting habitat within the UDA exposed to edge effects from adjacent land uses.

In addition, construction activities under the No Action/No Project Alternative are expected to have temporary effects (Section 3.6.5 and Section 9.1.2) on Cooper's hawk primarily during nesting. Temporary environmental stressors (Appendix G) such as construction noise, construction lighting, and increased human presence may result in nest disturbance or failure, and injure or kill individual Cooper's hawks. These temporary stressors can also result in disturbance of foraging behavior that can result in reduced nest success and result in injury to, or death of, individual Cooper's hawks.

The No Action/No Project Alternative is expected to remove two of the 20 documented occurrences of Cooper's hawk in the Planning Area.

The regulatory environment under the No Action/No Project Alternative (Section 2.2.2) would require mitigation for impacts to Cooper's hawk for projects that undergo environmental review under NEPA or CEQA. The anticipated mitigation would be required on a project-by-project basis and would re-establish/establish approximately 623 acres of modeled habitat, and preserve an additional approximately 70 acres of Cooper's hawk modeled habitat, 27 acres of the combined nesting/foraging habitat, and 43 acres of foraging habitat.

Cumulative Effect of the Alternative

The land cover types that make up Cooper's hawk habitat within the Planning Area have been lost, degraded, and fragmented by past and present urban and suburban development and

associated infrastructure as described in Section 3.7.1. The effects of these past and present projects on Cooper's hawk and its habitat are reflected in the current conditions for the species as discussed in Appendix G.

Reasonably foreseeable future actions, as described in Section 3.7.2, consist of actions that are similar in nature to the past and present actions in the Planning Area. Although not every reasonably foreseeable future action would affect Cooper's hawk, as a whole these actions would contribute to ongoing habitat loss and indirect impacts (e.g. habitat fragmentation, increased human disturbance) to remaining modeled habitat. However, for future projects and activities subject to CEQA and NEPA review, these impacts would typically be mitigated under the regulatory environment described in Sections 9.1.1 and 2.2.2.

As discussed previously in this impact section, the development and related infrastructure under the No Action/No Project Alternative would result in direct (approximately 693 acres) and indirect impacts to modeled Cooper's hawk habitat. The modeled habitat preserved (approximately 70 acres) and re-established/established (approximately 623 acres) under the No Action/No Project Alternative would be less than the acreage of modeled habitat lost. Additionally, under the No Action/No Project Alternative, preserved and re-established/established habitat would often be geographically fragmented and not adaptively managed to provide conservation at a landscape scale due to the project-by-project nature of the mitigation. This mitigation scenario would increase indirect effects such as habitat fragmentation and would result in a decrease in the value of modeled habitat for the species.

Therefore, the incremental impacts of the No Action/No Project Alternative on Cooper's hawk, when considered together with the significant impacts to Cooper's hawk from past and current human activities and the reasonably foreseeable future projects within the study area, would result in a **Significant Cumulative** effect.

9.2.2.8 Effects on Tricolored Blackbird and Its Habitat

The natural history, occurrences, and habitat use in the Planning Area for tricolored blackbird (*Agelaius tricolor*) is described in Appendix G. Modeled foraging habitat within the Planning Area is Cropland, Irrigated Pasture-Grassland, Valley Grassland, Vernal Pool, Seasonal Wetland, Swale, Freshwater Marsh, and Open Water above sea level. Modeled nesting habitat within the Planning Area is Cropland, Valley Grassland, Seasonal Wetland, and Freshwater Marsh above sea level.

Direct and Indirect Effects of the Alternative

Permanent loss of tricolored blackbird modeled habitat under the No Action/No Project Alternative through development and related infrastructure would remove approximately 29,389 acres of existing modeled nesting/foraging habitat (15.6% of existing) and

approximately 3,518 acres of foraging habitat (14.6% of existing) (Table 9-11). Total loss of species modeled habitats would be approximately 32,907 acres (15.5% of existing). Of this habitat loss, approximately 30,219 acres would occur within the UDA, and approximately 2,688 acres would occur outside of the UDA, including impacts from shifted or displaced development (Section 9.1.2).

Table 9-11. Direct Effects and Conservation of Tricolored Blackbird Modeled Habitat Under the No Action/No Project Alternative

Modeled Habitat	Total Planning Area (acres)				
	Total Existing Modeled Habitat	Direct Effect	% of Existing Habitat Lost	Modeled Habitat Preservation	Modeled Habitat Re-established/Established
Nesting/Foraging Habitat					
Valley Grassland	135,112	23,428	17.3%	11,806	0
Cropland	47,905	5,703	11.9%	5,119	0
Seasonal Wetland	2,600	115	4.4%	8	57
Freshwater Marsh	2,922	143	4.9%	16	72
<i>Total Nesting/Foraging Habitat</i>	<i>188,539</i>	<i>29,389</i>	<i>15.6%</i>	<i>16,949</i>	<i>129</i>
Foraging Habitat					
Irrigated Pasture-Grassland	15,991	2,781	17.4%	2,496	0
Vernal Pool	4,536	322	7.1%	1,030	322
Swale	1,222	240	19.6%	602	240
Open Water	2,344	175	7.4%	0	87
<i>Total Foraging Habitat</i>	<i>24,093</i>	<i>3,518</i>	<i>14.6%</i>	<i>4,199</i>	<i>649</i>
Total Modeled Habitat	212,632	32,907	15.5%	21,148	778

The No Action/No Project Alternative would also result in indirect effects to tricolored blackbird and its habitat, which are analyzed qualitatively below. As with the direct impacts discussed previously, the greatest impact of these indirect effects would be within the UDA due to the intersection of development and suitable habitat in that area. The various environmental stressors that may result from activities under the No Action/No Project Alternative are described in Appendix G. The following discussion focuses on those stressors that may result in indirect impacts to tricolored blackbird and modeled habitat for the species.

By permanently increasing the extent of impermeable surfaces, urban development may result in increased runoff, which is likely to contain petroleum products, pesticides, and other toxins that may reduce water quality within modeled nesting and foraging habitat and may injure or kill tricolor blackbird when the birds are exposed to toxins either through direct contact or by ingesting contaminated prey items.

Human activity associated with urban development could degrade remaining modeled nesting habitat by disturbing nesting activity of tricolored blackbird adjacent to development.

The increased use of pesticides in adjacent developed parcels could decrease prey availability in remaining modeled foraging habitat, reduce nesting success and in some cases injury and death of individuals.

Changes to the wildlife community included an increase in medium-sized predators that are often associated with development could increase predation on tricolored blackbird nesting colonies and result in the injury and death of individuals.

Habitat fragmentation by new urban development may increase the distance required for tricolored blackbird to move between nesting colonies and remaining modeled foraging habitat, which can result in reduced nest success and abandonment of nest colonies. In addition, habitat fragmentation would increase the influence of other stressors by increasing the amount of modeled habitat within the UDA exposed to edge effects from adjacent land uses.

Construction activities under the No Action/No Project Alternative are expected to have temporary effects (Section 3.6.5 and Section 9.1.2) on tricolored blackbird, primarily during nesting, which are analyzed qualitatively here. Temporary environmental stressors (Appendix G) such as construction noise, construction lighting, and increased human presence may result in disturbance or abandonment of nesting colonies and injury or death of individual tricolored blackbirds.

The regulatory environment under the No Action/No Project Alternative (Section 2.2.2) would require mitigation for impacts to tricolored blackbird habitat for projects that undergo environmental review under NEPA or CEQA. The anticipated mitigation would be required on a project-by-project basis and would result in approximately 778 acres of re-establishment/establishment of modeled habitat, approximately 21,148 acres of preservation of modeled habitat, approximately 16,949 acres of nesting and foraging land covers, and approximately 4,199 of foraging only land covers for tricolored blackbird.

Cumulative Effect of the Alternative

The land cover types that make up modeled tricolored blackbird habitat within the Planning Area have been lost, degraded, and fragmented by other past and present urban and suburban development and associated infrastructure as described in Section 3.7.1.

In addition to past and current development effects, reasonably foreseeable future activities within the Planning Area (Section 3.7.2) would result in continued loss of tricolored blackbird modeled habitat, as well as indirect impacts (e.g. habitat fragmentation, increased urban runoff, increased human disturbance) to remaining modeled habitat, although for projects

subject to CEQA and NEPA review these impacts would likely be mitigated under the future regulatory environment Section 2.2.2.

The expected impacts of the No Action/No Project Alternative on tricolored blackbird modeled habitat total approximately 32,907 acres. It is expected that due to the regulatory environment under the No Action/No Project Alternative approximately 778 acres of modeled habitat would be re-established/ established. In addition under the No Action/No Project Alternative, approximately 21,148 acres of modeled habitat would be preserved, although this preservation and the aforementioned re-establishment/establishment would occur on a project-by-project basis and would often not be part of a coordinated Preserve System.

Therefore, the incremental impacts of the No Action/No Project Alternative on tricolored blackbird, when considered together with the significant impacts to tricolored blackbird from past and current human activities and the reasonably foreseeable future project within the study area, would result in a significant cumulative effect.

9.2.2.9 Effects on Western Burrowing Owl and Its Habitat

Habitat use, natural history, documented occurrences, and existing acres of modeled habitat within the Planning Area for western burrowing owl (*Athene cunicularia hypugaea*) are described in Appendix G. Modeled foraging habitat within the Planning Area is Blue Oak Savanna, Cropland, Irrigated Pasture-Grassland, Valley Grassland, Vernal Pool, Seasonal Wetland, Swale, and Stream/Creek (VPIH) above sea level. Modeled nesting habitat within the Planning Area is Valley Grassland, Blue Oak Savanna, Cropland, and Irrigated Pasture-Grassland above sea level. Western burrowing owl may also occur in disturbed land covers when there are open areas with sufficient suitable burrow structures for nesting; however, these land covers were not included in the western burrowing owl species model because these burrow features are often removed with development activities.

Direct and Indirect Effects of the Alternative

The No Action/No Project Alternative would result in permanent loss of western burrowing owl habitat from new development and related infrastructure. These activities and projects would remove approximately 31,999 acres of existing modeled nesting/foraging habitat (15.6 % of existing) (Table 9-12). Of this habitat loss, approximately 29,310 acres would occur within the UDA, and approximately 2,689 acres would occur outside of the UDA, including impacts from shifted or displaced development (Section 9.1.2). Approximately 712 acres of wintering habitat would also be directly impacted under the No Action/No Project Alternative, for a total loss of approximately 32,711 acres.

Table 9-12. Direct Loss and Conservation of Western Burrowing Owl Modeled Habitat under the No Action/No Project Alternative

Modeled Habitat	Total Planning Area (acres)				
	<i>Total Existing Modeled Habitat</i>	<i>Direct Effect</i>	<i>% of Existing Habitat Lost</i>	<i>Modeled Habitat Preservation</i>	<i>Modeled Habitat Re-establishment/ Establishment</i>
Wintering Habitat					
Vernal Pool	4,536	322	7.1%	1,030	322
Seasonal Wetland	2,600	115	4.4%	8	57
Swale	1,252	240	19.2%	673	240
Stream/Creek (VPIH)	73	35	47.9%	13	17
<i>Total Wintering Habitat</i>	<i>8,461</i>	<i>712</i>	<i>8.4%</i>	<i>1,724</i>	<i>636</i>
Nesting/Foraging Habitat					
Cropland	47,905	5,703	11.9%	5,119	0
Irrigated Pasture-Grassland	15,991	2,781	17.4%	2,496	0
Valley Grassland	135,112	23,429	17.3%	11,806	0
Blue Oak Savanna	5,637	86	1.5%	43	43
<i>Total Nesting/ Foraging Habitat</i>	<i>204,645</i>	<i>31,999</i>	<i>15.6%</i>	<i>19,464</i>	<i>43</i>
Total Modeled Habitat	213,106	32,711	15.3%	21,188	679

The No Action/No Project Alternative would also result in indirect impacts to modeled western burrowing owl habitat, which is analyzed here qualitatively. As with the direct impacts discussed previously, the greatest impact of these indirect effects would be within the UDA due to the intersection of development and suitable habitat in that area. The various environmental stressors that may result from activities under the No Action/No Project Alternative are described in Appendix G. The discussion below focuses on those stressors that may result in indirect impacts to western burrowing owl and modeled habitat for the species.

Human activity associated with urban development could degrade remaining modeled nesting/foraging habitat by increasing interactions between domestic dogs and western burrowing owl, which can result disturbance of burrows and harassment of owls adjacent to development.

Changes to the wildlife community included an increase in medium-sized predators that are often associated with urban development, such as raccoons, which could increase predation on burrowing owl and result in the injury and death of individuals. Increases of prey species associated with urban development such as pigeons may result in increased transmission of disease to western burrowing owl, leading to injury or death.

The increased use of pesticides in adjacent developed parcels could decrease prey availability in remaining modeled nesting/foraging habitat, reduce nesting success, and in some cases cause injury and death of individuals.

The increase in traffic associated with new development may result in increased mortality of western burrowing owl as a result of a greater number of vehicle collisions.

While habitat fragmentation may increase the distance required for western burrowing owl to move between nest burrows and remaining modeled foraging habitat, western burrowing owl often forage in the areas surrounding the nesting burrow reducing this impact. Habitat fragmentation would increase the influence of other stressors by increasing the amount of modeled habitat within the UDA exposed to edge effects from adjacent land uses.

Ground-disturbing construction activities under the No Action/No project Alternative are expected to have temporary effects (Section 3.6.5 and Section 9.1.2) on nesting western burrowing owl, which are analyzed qualitatively here. Temporary environmental stressors (Appendix G) such as construction ground vibration and increased human presence may result in disturbance or abandonment of burrows and injury or death of individual western burrowing owl.

There are 97 documented occurrences of western burrowing owl within the Planning Area. Projects and activities implemented as a result of the No Action/No Project Alternative would remove 10 of these occurrences.

The regulatory environment under the No Action/No Project Alternative (Section 2.2.2) would require mitigation for impacts to western burrowing owl for projects that undergo environmental review under NEPA or CEQA. The anticipated mitigation would be required on a project-by-project basis and would result in re-establishment/establishment of approximately 679 acres of modeled habitat (consisting of approximately 43 acres of nesting/foraging habitat and 636 acres of wintering habitat), and preservation of approximately 21,188 acres of modeled habitat (consisting of approximately 19,464 acres of nesting/foraging habitat and 1,724 acres of wintering habitat) for western burrowing owl.

Cumulative Effect of the Alternative

The land cover types that make up western burrowing owl modeled habitat within the Planning Area have been lost, degraded, and fragmented by other past and present urban and suburban development and associated infrastructure as described in Section 3.7.1. The effects of these past and present projects on western burrowing owl and its habitat are reflected in the current conditions for the species as discussed in Appendix G.

Reasonably foreseeable future actions, as described in Section 3.7.2, consist of actions that are similar in nature to the past and present actions in the Planning Area. Although not every reasonably foreseeable future action would affect western burrowing owl, as a whole these actions would contribute to the ongoing habitat loss. However, for future projects and activities subject to NEPA or CEQA, these impacts would typically be mitigated under the regulatory environment described in Sections 9.1.1 and 2.2.2.

As discussed previously in this impact section, the development and related infrastructure under the No Action/No Project Alternative would have direct and indirect impacts resulting in the loss of 32,711 acres of western burrowing owl modeled habitat. The regulatory environment under the No Action/No Project Alternative is anticipated to result in the re-establishment/establishment approximately 43 acres of modeled Blue Oak Savanna modeled habitat and an additional 636 acres of western burrowing owl wintering habitat. In addition under the No Action/No Project Alternative, approximately 21,188 acres of modeled habitat would be preserved, although this preservation and the aforementioned re-establishment/establishment would occur on a project-by-project basis and would often not be part of a coordinated Preserve System.

Therefore, the incremental impacts of the No Action/No Project Alternative on western burrowing owl, when considered together with the significant impacts to western burrowing owl from past and current human activities and the reasonably foreseeable future projects within the study area, would result in a **Significant Cumulative** effect.

9.2.2.10 Effects on Ferruginous Hawk and Its Habitat

Habitat use, natural history, documented occurrences, and existing acres of modeled habitat in the Planning Area of ferruginous hawk (*Buteo regalis*) are discussed in Appendix G. Ferruginous hawk is not known to nest in the Planning Area and do not regularly breed in California, but utilize open grasslands and agricultural areas for winter foraging. Suitable habitat within the Planning Area is represented by Valley Grassland, Irrigated Pasture-Grassland, Vernal Pool, Seasonal Wetland, and Swale land cover types located above sea level.

Direct and Indirect Effects of the Alternative

The No Action/No Project Alternative would result in permanent direct loss of approximately 26,887 acres of ferruginous hawk habitat through loss of habitat to development and related infrastructure (16.9% of existing removed) (Table 9-13). Of this habitat loss, approximately 24,918 acres would occur within the UDA, and approximately 1,969 acres would occur outside of the UDA.

Table 9-13. Direct Effects and Preservation of Ferruginous Hawk Modeled Habitat Under the No Action/No Project Alternative

Modeled Habitat	Total Planning Area (acres)				
	Total Existing Modeled Habitat	Direct Effect	% of Existing Lost	Modeled Habitat Preservation	Modeled Habitat Re-establishment/ Establishment
Foraging Habitat					
Valley Grassland	135,112	23,429	17.3%	11,806	0
Irrigated Pasture-Grassland	15,991	2,781	17.4%	2,496	0
Seasonal Wetland	2,600	115	4.4%	8	57
Vernal Pool	4,536	322	7.1%	1,030	322
Swale	1,252	240	19.2%	602	240
Total Modeled Habitat	159,491	26,887	16.9%	15,942	619

In addition to direct effects, the No Action/No Project Alternative would also result in indirect impacts to modeled ferruginous hawk foraging habitat, which is analyzed here qualitatively. As with the direct impacts discussed previously, the greatest impact of these indirect effects would be within the UDA due to the intersection of development and suitable habitat in that area. The various environmental stressors that may result from activities under the No Action/No Project Alternative are described in Appendix G. The following discussion focuses on those stressors that may result in indirect impacts to ferruginous hawk and modeled foraging habitat.

Stressors such as changes to hydrology and water quality due to urban runoff, increased use of pesticides, and increases in abundance of medium-sized predators associated with urban areas may impact modeled foraging habitat by adversely affecting aquatic vegetation and prey availability.

New development would likely result in increased traffic and vehicle collisions, and the use of aboveground electrical lines that pose an electrocution risk. Both of these stressors both may increase mortality of ferruginous hawk.

Increased human activity resulting from nearby development could degrade habitat suitability in remaining habitat by disturbing foraging behavior.

Habitat fragmentation by new urban development may increase the distance required for ferruginous hawk to move between remaining patches of modeled foraging habitat, which can result in increased energy use and decreased health. In addition, habitat fragmentation would increase the influence of other stressors by increasing the amount of modeled habitat within the UDA exposed to edge effects from adjacent land uses.

Temporary effects (Section 3.6.5 and Section 9.1.2) on foraging habitat quality from construction activities under the No Action/No Project are expected to occur due to environmental stressors (Appendix G); temporary trampling of vegetation, construction noise and lighting, increased human presence during construction, and construction debris.

Of 26 documented occurrences of ferruginous hawks in the Planning Area, none are expected to be removed by implementation of the No Action/No Project Alternative.

The regulatory environment under the No Action/No Project Alternative (Section 2.2.2) would require mitigation for impacts to ferruginous hawk modeled habitat for projects that undergo environmental review under NEPA or CEQA. The anticipated mitigation would be required on a project-by-project basis and would result in the re-establishment/establishment of approximately 619 acres of modeled habitat and the preservation of approximately 15,942 acres of modeled habitat for ferruginous hawk.

Cumulative Effect of the Alternative

Ferruginous hawk habitat has been lost, degraded, and fragmented by past and present urban and suburban development, associated infrastructure, agriculture, development of agricultural–residential neighborhoods and other rural development, and mining operations within the Planning Area, as described in Section 3.7.1. The effects of these past and present projects on ferruginous hawk and its habitat are reflected in the current conditions for the species as discussed in Appendix G.

Reasonably foreseeable future actions, as described in Section 3.7.2, consist of actions that are similar in nature to the past and present actions in the Planning Area. Although not every reasonably foreseeable future action would affect ferruginous hawk, as a whole these actions would contribute to the ongoing habitat loss. However, for future projects and activities subject to CEQA and NEPA review, these impacts would typically be mitigated under the regulatory environment described in Sections 9.1.1 and 2.2.2. Mitigation for impacts of future projects and activities under ESA and CWA requirements would ensure that there would be no net loss of acreage, function, and/or value for aquatic land covers that are modeled habitat for ferruginous hawk.

As discussed previously in this impact section, the development and related infrastructure under the No Action/No Project Alternative would have direct and indirect impacts resulting in the loss of 26,887 acres of modeled ferruginous hawk habitat. The No Action/No Project Alternative would include the preservation of modeled habitat (approximately 15,942 acres), which would be less than the anticipated loss of habitat, and re-establishment/establishment of modeled habitat (approximately 619 acres). Under the

No Action/No Project Alternative, preserved and re-established/established habitat would often be geographically fragmented and not adaptively managed to provide conservation at a landscape scale due to the project-by-project nature of the mitigation. This mitigation scenario would increase indirect effects such as habitat fragmentation and would result in a decrease in the value of modeled habitat for the species.

Therefore, the incremental impacts of the No Action/No Project Alternative on ferruginous hawk, when considered together with the significant impacts to ferruginous hawk from past and current human activities and the reasonably foreseeable future projects within the study area, would result in a ***Significant Cumulative*** effect.

9.2.2.11 Effects on Swainson's Hawk and Its Habitat

Habitat use, natural history, documented occurrences, and existing acres of modeled habitat in the Planning Area of Swainson's hawk are discussed in Appendix G. Modeled foraging habitat within the Planning Area is Cropland, Irrigated Pasture-Grassland, Valley Grassland, Vernal Pool, Seasonal Wetland, and Swale above sea level and below 500 feet. Modeled nesting habitat is mixed Riparian Woodland and Mixed Riparian Scrub above sea level and below 500 feet.

High-value habitat for Swainson's hawk is defined by the SSHCP as modeled foraging habitat occurring in the western portion of the Planning Area. The majority of documented occurrences of Swainson's hawk in the Planning Area are located outside of the UDA in the western portion of the Planning Area, where the foraging habitat is of high quality due to the relative abundance of prey species in that area. While nesting of Swainson's hawk has occurred in urbanized areas, it is very uncommon, and developed land covers are not included in the Swainson's hawk nesting habitat model.

Direct and Indirect Effects of the Alternative

The No Action/No Project Alternative would remove approximately 336 acres of nesting habitat (4.6% of existing) and approximately 32,888 acres of foraging habitat (15.4% of existing) in the Planning Area (Table 9-14). Of this habitat loss, approximately 30,212 acres would occur within the UDA, and approximately 2,676 acres would occur outside of the UDA.

Table 9-14. Direct Effects and Conservation of Swainson's Hawk Modeled Habitat under the No Action/No Project Alternative

Modeled Habitat	Total Planning Area (acres)				
	Total Existing Modeled Habitat	Direct Effect	% of Existing Habitat Lost	Modeled Habitat Preservation	Modeled Habitat Re-establishment/ Establishment
Nesting Habitat					
Mixed Riparian Woodland	5,785	147	2.5%	0	147
Mixed Riparian Scrub	1,449	189	13.0%	0	189
<i>Total Nesting Habitat</i>	<i>7,234</i>	<i>336</i>	<i>4.6%</i>	<i>0</i>	<i>336</i>
Foraging Habitat					
Valley Grassland	133,705	23,391	17.5%	11,806	0
Cropland	47,905	5,703	11.9%	5,119	0
Irrigated Pasture-Grassland	15,991	2,781	17.4%	2,496	0
Vernal Pool	4,536	322	7.1%	1,030	322
Seasonal Wetland	2,600	115	4.4%	8	57
Swale	1,252	240	19.1%	602	240
<i>Total Foraging Habitat</i>	<i>205,989</i>	<i>32,552</i>	<i>15.8%</i>	<i>21,061</i>	<i>619</i>
Total Modeled Habitat	213,223	32,888	15.4%	21,061	955

In addition to direct effects, the No Action/No Project Alternative would also result in indirect impacts to modeled Swainson's hawk nesting and foraging habitat, which is analyzed here qualitatively. As with the direct impacts discussed previously, the greatest impact of these indirect effects would be within the UDA due to the intersection of development and suitable habitat in that area. The various environmental stressors that may result from activities under the No Action/No Project Alternative are described in Appendix G. The following discussion focuses on those stressors that may result in indirect impacts to Swainson's hawk and modeled nesting and foraging habitat.

By permanently increasing the extent of impermeable surfaces, urban development may result in increased runoff, especially during storm events. Such increases can result in stream bank erosion, increased sediment loads downstream, and alterations of downstream hydrology, which can remove or physically damage the surrounding riparian habitat that is modeled nesting habitat for Swainson's hawk.

Development may result in an increased wildfire frequency due to increased potential for ignitions associated with greater human presence and activities. Wildfire is a natural part of the ecosystem, and riparian modeled Swainson's hawk habitat can recover quickly from low-intensity fires. However, with decades of fire suppression the amount of fuel may have built up to levels that would increase the intensity of wildfires. Should wildfires be of sufficient intensity

to result in high levels of mortality to riparian trees, this would result in a removal of nesting habitat for Swainson's hawk until sufficient regrowth occurs.

Noise, lighting, and human activity associated with urban development could degrade remaining modeled nesting habitat by disturbing nesting activity of Swainson's hawk adjacent to development, potentially causing nest abandonment.

Increased numbers of medium-sized predators associated with increased development could reduce the numbers of each prey species. The increased use of pesticides (e.g., rodenticides) in adjacent developed parcels could also decrease prey availability.

New aboveground powerlines would pose a risk of electrocution to Swainson's hawk. Also, where new and improved transportation routes intersect with remaining modeled habitat, the increases in traffic and roads could cause a subsequent increase in mortality of Swainson's hawk from vehicle collisions.

Habitat fragmentation by new urban development may increase the distance required for Swainson's hawk to move between remaining modeled nesting and foraging habitat, increasing the time away from the nest, which can result in reduced nest success. In addition, habitat fragmentation would increase the influence of other stressors by increasing the amount of foraging and nesting habitat within the UDA exposed to edge effects from adjacent land uses.

In addition, construction activities under the No Action/No Project Alternative are expected to have temporary effects (Section 3.6.5 and Section 9.1.2) on Swainson's hawk, primarily during nesting, which are analyzed qualitatively here. Temporary environmental stressors (Appendix G) such as construction noise, construction lighting, and increased human presence may result in nest disturbance or failure and injure or kill individual Swainson's hawks. These temporary stressors can also result in disturbance of foraging behavior that can result in reduced nest success and result in the injury to, or death of, individual Swainson's hawks.

The No Action/No Project Alternative is expected to remove 35 of the 410 documented occurrences of Swainson's hawks in the Planning Area.

The regulatory environment under the No Action/No Project Alternative (Section 2.2.2) would require mitigation for impacts to Swainson's hawk modeled habitat for projects that undergo environmental review under NEPA or CEQA. The anticipated mitigation would be required on a project-by-project basis and would result in approximately 955 acres of modeled habitat re-establishment/establishment (approximately 336 acres of nesting habitat and approximately 619 acres of foraging habitat), and approximately 21,061 acres of modeled habitat preservation for Swainson's hawk (consisting entirely of foraging habitat). As discussed in Section 2.2.4, this

habitat conservation would be implemented on a project-by-project basis and would often not be part of a coordinated and linked Preserve System.

Cumulative Effect of the Alternative

The land cover types that make up Swainson's hawk modeled habitat within the Planning Area have been lost, degraded, and fragmented by other past and present urban and suburban development and associated infrastructure as described in Section 3.7.1. The effects of these past and present projects on Swainson's hawk and its habitat are reflected in the current conditions for the species as discussed in Appendix G.

Reasonably foreseeable future actions, as described in Section 3.7.2, consist of actions that are similar in nature to the past and present actions in the Planning Area. Although not every reasonably foreseeable future action would affect Swainson's hawk, as a whole these actions would contribute to ongoing habitat loss and indirect impacts (e.g., habitat fragmentation, increased human disturbance) to remaining modeled habitat, although for projects subject to CEQA and NEPA review these impacts would likely be mitigated under the future regulatory environment described in Section 2.2.2, which would include protection for the species under CESA and the mitigation guidelines of the CWA, Sacramento County Swainson's Hawk Ordinance, and Sacramento County General Plan.

As discussed previously in this impact section, the development and related infrastructure under the No Action/No Project Alternative would have direct and indirect impacts resulting in the loss of 32,888 acres of modeled Swainson's hawk habitat. The No Action/No Project Alternative would include the preservation of modeled habitat (approximately 21,061 acres), which would be less than the estimated loss of habitat, and re-establishment/establishment of modeled habitat (approximately 955 acres). Under the No Action/No Project Alternative, preserved and re-established/established habitat would often be geographically fragmented and not adaptively managed to provide conservation at a landscape scale due to the project-by-project nature of the mitigation. This mitigation scenario would increase indirect effects such as habitat fragmentation and would result in a decrease in the value of modeled habitat for the species.

Therefore, the incremental impacts of the No Action/No Project Alternative on Swainson's hawk, when considered together with the significant impacts to Swainson's hawk from past and current human activities and the reasonably foreseeable future projects within the study area, would result in a ***Significant Cumulative*** effect.

9.2.2.12 Effects on Northern Harrier and Its Habitat

Habitat use, natural history, documented occurrences, and existing acres of modeled habitat in the Planning Area of northern harrier (*Circus cyaneus*) are discussed in Appendix G. Modeled foraging habitat within the Planning Area is Cropland, Irrigated Pasture-Grassland, Valley Grassland, Vernal Pool, Seasonal Wetland, Swale, and Freshwater Marsh above sea level. Modeled nesting habitat is Cropland, Irrigated Pasture-Grassland, and Valley Grassland above sea level.

Direct and Indirect Effects of the Alternative

The No Action/No Project Alternative would remove approximately 31,913 acres of nesting/foraging habitat for northern harrier (16.0% of existing) and approximately 821 acres of foraging habitat (7.6% of existing) (Table 9-15). Of this habitat loss, approximately 30,054 acres would occur within the UDA and approximately 1,859 acres would occur outside of the UDA.

Table 9-15. Direct Effects and Conservation for Northern Harrier Modeled Habitat Under the No Action/No Project Alternative

Modeled Habitat	Total Planning Area (acres)				
	Total Existing Modeled Habitat	Direct Effect	% of Existing Habitat Lost	Modeled Habitat Preservation	Modeled Habitat Re-establishment/ Establishment
Nesting/Foraging Habitat					
Valley Grassland	135,112	23,429	17.3%	11,806	0
Cropland	47,905	5,703	11.9%	5,119	0
Irrigated Pasture-Grassland	15,991	2,781	17.4%	2,496	0
<i>Total Nesting/Foraging Habitat</i>	<i>199,008</i>	<i>31,913</i>	<i>16.0%</i>	<i>19,421</i>	<i>0</i>
Foraging Habitat					
Vernal Pool	4,536	322	8.0%	1,030	322
Seasonal Wetland	2,600	115	4.4%	8	57
Freshwater Marsh	2,922	144	4.9%	16	72
Swale	1,252	240	19.1%	602	240
<i>Total Foraging Habitat</i>	<i>11,310</i>	<i>821</i>	<i>7.6%</i>	<i>1,656</i>	<i>691</i>
Total Modeled Habitat	210,318	32,734	15.6%	21,077	691

In addition to direct effects, the No Action/No Project Alternative would also result in indirect impacts to modeled northern harrier nesting and foraging habitat, which is analyzed here qualitatively. As with the direct impacts discussed previously, the greatest impact of these indirect effects would be within the UDA due to the intersection of development and suitable habitat in that area. The various environmental stressors that may result from activities under the No Action/No Project Alternative are described in Appendix G. The following discussion

focuses on those stressors that may result in indirect impacts to northern harrier and modeled nesting and foraging habitat.

Noise, lighting, and human activity associated with urban development could degrade remaining modeled nesting habitat by disturbing nesting activity of northern harrier adjacent to development, potentially causing nest abandonment.

Increased numbers of medium-sized predators associated with increased development could reduce the numbers of each prey species. The increased use of pesticides (e.g., rodenticides) in adjacent developed parcels could also decrease prey availability.

New aboveground powerlines would pose a risk of electrocution to northern harrier. Also, where new and improved transportation routes intersect with remaining modeled habitat, the increases in traffic and roads could cause a subsequent increase in mortality of northern harrier from vehicle collisions.

Habitat fragmentation by new urban development may increase the distance required for northern harrier to move between remaining modeled nesting and foraging habitat, increasing the time away from the nest, which can result in reduced nest success. In addition, habitat fragmentation would increase the influence of other stressors by increasing the amount of foraging and nesting habitat within the UDA exposed to edge effects from adjacent land uses.

In addition, construction activities under the No Action/No Project Alternative are expected to have temporary effects (Section 3.6.5 and Section 9.1.2) on northern harrier, primarily during nesting, which are analyzed qualitatively here. Temporary environmental stressors (Appendix G) such as construction noise, construction lighting, and increased human presence may result in nest disturbance or failure, and may injure or kill individual northern harrier. These temporary stressors can also result in disturbance of foraging behavior that can result in reduced nest success and result in the injury or death of individual northern harriers.

The No Action/No Project Alternative is expected to remove two of the 70 documented occurrences of northern harrier in the Planning Area.

The regulatory environment under the No Action/No Project Alternative (Section 2.2.2) would require mitigation for impacts to northern harrier modeled habitat for projects that undergo environmental review under NEPA or CEQA. The anticipated mitigation would be required on a project-by-project basis and would result in approximately 691 acres of modeled habitat re-established/established, approximately 21,077 acres of preservation of modeled habitat preserved; approximately 19,421 acres of nesting/foraging habitat, and approximately 1,656 acres of foraging habitat.

Cumulative Effect of the Alternative

The land cover types that make up northern harrier modeled habitat within the Planning Area have been lost, degraded, and fragmented by other past and present urban and suburban development and associated infrastructure as described in Section 3.7.1. The effects of these past and present projects on northern harrier and its habitat are reflected in the current conditions for the species as discussed in Appendix G.

Reasonably foreseeable future actions, as described in Section 3.7.2, consist of actions that are similar in nature to the past and present actions in the Planning Area. Although not every reasonably foreseeable future action would affect northern harrier, as a whole these actions would result in the continued loss of northern harrier habitat, as well as indirect impacts (e.g., habitat fragmentation, increased human disturbance) to remaining modeled habitat. For future projects and activities subject to CEQA and NEPA review, these impacts would be mitigated under the regulatory environment described in Sections 9.1.1 and 2.2.2, which would include protection for the species under Section 3503 of the California Fish and Game Code. Mitigation for impacts of future projects and activities under ESA and CWA requirements would ensure that there would be no net loss of acreage, function, and/or value for aquatic land covers that are modeled habitat for northern harrier.

As discussed previously in this impact section, the development and related infrastructure under the No Action/No Project Alternative would result in direct (approximately 32,734 acres) and indirect impacts to modeled northern harrier habitat. The modeled habitat preserved (21,077 acres) under the No Action/No Project Alternative would be less than the acreage of modeled habitat lost. In addition, the No Action/No Project Alternative would result in approximately 691 acres of modeled habitat re-established/established. Under the No Action/No Project Alternative, preserved and re-established/established habitat would often be geographically fragmented and not adaptively managed to provide conservation at a landscape scale due to the project-by-project nature of the mitigation. This mitigation scenario would increase indirect effects such as habitat fragmentation and would result in a decrease in the value of modeled habitat for the species.

Therefore, the incremental impacts of the No Action/No Project Alternative on northern harrier, when considered together with the significant impacts to northern harrier from past and current human activities and the reasonably foreseeable future projects within the study area, would result in a **Significant Cumulative** effect.

9.2.2.13 Effects on White-Tailed Kite and Its Habitat

Habitat use, natural history, documented occurrences, and existing acres of modeled habitat in the Planning Area of white-tailed kite (*Elanus leucurus*) are discussed in Appendix G. Modeled foraging habitat within the Planning Area is Blue Oak Savanna, Cropland, Irrigated Pasture-Grassland, Valley

Grassland, Mixed Riparian Scrub, Vernal Pool, Seasonal Wetland, and Swale above sea level. Modeled nesting habitat within the Planning Area is Blue Oak Woodland, Mine Tailing Riparian Woodland, Mixed Riparian Woodland, and Mixed Riparian Scrub above sea level. The majority of the 62 documented occurrences of this species within the Planning Area are outside the UDA, and the majority of those are located in the western portion of the Planning Area (Appendix G).

Direct and Indirect Effects of the Alternative

The No Action/No Project Alternative would remove approximately 419 acres of white-tailed kite nesting habitat (2.9% of existing), approximately 189 acres of nesting/foraging habitat (13.0% of existing), and approximately 32,676 acres of foraging habitat (15.3% of existing) for a total of approximately 33,284 acres lost (Table 9-16). Of this habitat loss, approximately 30,407 acres would occur within the UDA, and approximately 2,877 acres would occur outside of the UDA.

Table 9-16. Direct Effects and Conservation of White-Tailed Kite Modeled Habitat Under the No Action/No Project Alternative

Modeled Habitat	Total Planning Area (acres)				
	Total Existing Modeled Habitat	Direct Effect	% of Existing Habitat Lost	Modeled Habitat Preservation	Modeled Habitat Re-establishment/Establishment
Nesting Habitat					
Blue Oak Woodland	9,132	54	0.6%	27	27
Mixed Riparian Woodland	5,785	147	2.5%	0	256
Mine Tailing Riparian Woodland	641	218	34.0%	0	0
<i>Total Nesting Habitat</i>	<i>15,558</i>	<i>419</i>	<i>2.9%</i>	<i>27</i>	<i>283</i>
Nesting/Foraging Habitat					
Mixed Riparian Scrub	1,451	189	13.0%	0	298
<i>Total Nesting/Foraging Habitat</i>	<i>1,451</i>	<i>189</i>	<i>13.0%</i>	<i>190</i>	<i>298</i>
Foraging Habitat					
Valley Grassland	135,112	23,429	17.3%	11,806	0
Cropland	47,905	5,703	11.9%	5,119	0
Irrigated Pasture-Grassland	15,991	2,781	17.4%	2,496	0
Blue Oak Savanna	5,637	86	1.5%	43	43
Vernal Pool	4,536	322	6.9%	1,030	322
Seasonal Wetland	2,600	115	4.4%	8	57
Swale	1,252	240	19.1%	602	240
<i>Total Foraging Habitat</i>	<i>213,033</i>	<i>32,676</i>	<i>15.3%</i>	<i>21,104</i>	<i>662</i>
Total Modeled Habitat	230,042	33,284	14.5%	21,321	1,243

In addition to direct effects, the No Action/No Project Alternative would also result in indirect impacts to modeled white-tailed kite nesting and foraging habitat, which is analyzed here qualitatively. As with the direct impacts discussed previously, the greatest impact of these

indirect effects would be within the UDA due to the intersection of development and suitable habitat in that area. The various environmental stressors that may result from activities under the No Action/No Project Alternative are described in Appendix G. The following discussion focuses on stressors that may result in indirect impacts to white-tailed kite and modeled nesting and foraging habitat where it is adjacent to urban development and transportation projects.

By permanently increasing the extent of impermeable surfaces, urban development may result in increased runoff, especially during storm events. Such increases can result in stream bank erosion, increased sediment loads downstream, and alterations of downstream hydrology, which can remove or physically damage the surrounding riparian habitat that is modeled nesting habitat for white-tailed kite.

Development may result in an increased wildfire frequency due to increased potential for ignitions associated with greater human presence and activities. Wildfire is a natural part of the ecosystem and riparian and blue oak woodland modeled white-tailed kite habitat can recover quickly from low-intensity fires. However, with decades of fire suppression, the amount of fuel may have built up to levels that would increase the intensity of wildfires. Should wildfires be of sufficient intensity to result in high levels of mortality to riparian trees and oaks, this would result in a removal of nesting and foraging habitat for white-tailed kite until sufficient regrowth occurs.

Noise, lighting, and human activity associated with urban development could degrade remaining modeled nesting habitat by disturbing nesting activity of white-tailed kite adjacent to development, potentially causing nest abandonment.

Increased numbers of medium sized predators associated with increased development could reduce the numbers of each prey species. The increased use of pesticides (e.g., rodenticides) in adjacent developed parcels could also decrease prey availability.

New aboveground powerlines would pose a risk of electrocution to white-tailed kite. Also, where new and improved transportation routes intersect with remaining modeled habitat, the increases in traffic and roads could cause a subsequent increase in mortality of white-tailed kite from vehicle collisions.

Habitat fragmentation by new urban development may increase the distance required for white-tailed kite to move between remaining modeled nesting and foraging habitat, increasing the time away from the nest, which can result in reduced nest success. In addition, habitat fragmentation would increase the influence of other stressors by increasing the amount of foraging and nesting habitat within the UDA exposed to edge effects from adjacent land uses.

In addition, construction activities under the No Action/No Project Alternative are expected to have temporary effects (Section 3.6.5 and Section 9.1.2) on white-tailed kite primarily during

nesting, which are analyzed qualitatively here. Temporary environmental stressors (Appendix G) such as construction noise, construction lighting, and increased human presence may result in nest disturbance or failure, and may injure or kill individual white-tailed kite. These temporary stressors can also result in disturbance of foraging behavior that can result in reduced nest success and result in the injury or death of individual white-tailed kite. While nest failure may be caused by construction activities, it is expected that any activity under CEQA would include protection measures for this fully protected species as there is no mechanism within the Fish and Game Code to authorize take of individuals of fully protected species under these circumstances (Section 9.1.1).

The No Action/No Project Alternative is expected to remove 8 of the 62 documented occurrences of white-tailed kite in the Planning Area.

The regulatory environment under the No Action/No Project Alternative (Section 2.2.2) would require mitigation for impacts to white-tailed kite modeled habitat for projects that undergo environmental review under NEPA or CEQA. The anticipated mitigation would be required on a project-by-project basis and would result in approximately 1,243 acres of modeled habitat re-established/established, and approximately 21,321 acres of modeled habitat preservation for white-tailed kite, consisting of approximately 27 acres of nesting habitat, approximately 190 acres of nesting/foraging habitat, and approximately 21,104 acres of foraging habitat. As described in Section 2.2.4, this modeled habitat conservation would be implemented on a project-by-project basis and would often not be part of a coordinated and linked Preserve System.

Cumulative Effect of the Alternative

White-tailed kite modeled habitat within the Planning Area has been lost, degraded, and fragmented by other past and present urban and suburban development and associated infrastructure as described for Section 3.7.1. The effects of these past and present projects on white-tailed kite and its habitat are reflected in the current conditions for the species as discussed in Appendix G.

Reasonably foreseeable future actions, as described in Section 3.7.2, consist of actions that are similar in nature to the past and present actions in the Planning Area. Although not every reasonably foreseeable future action would affect white-tailed kite, as a whole these actions would result in the continued loss of white-tailed kite habitat and indirect impacts (e.g., habitat fragmentation, increased human disturbance) to remaining modeled habitat, although for projects subject to CEQA and NEPA review these impacts would likely be mitigated under the future regulatory environment Section 2.2.2, which would include protection for the species as a fully protected species under the California Fish and Game Code. Mitigation for impacts of future projects and activities under ESA and CWA requirements would ensure that there would

be no net loss of acreage, function, and/or value for aquatic land covers that are modeled habitat for white-tailed kite.

As discussed previously in this impact section, the development and related infrastructure under the No Action/No Project Alternative would result in direct (approximately 33,284 acres) and indirect impacts to modeled white-tailed kite habitat. The modeled habitat preserved (approximately 21,321 acres) under the No Action/No Project Alternative would be less than the acreage of modeled habitat lost. In addition, the No Action/No Project Alternative would re-establish/establish approximately 1,243 acres of modeled habitat. However, under the No Action/No Project Alternative, preserved and re-established/established habitat would often be geographically fragmented and not adaptively managed to provide conservation at a landscape scale due to the project-by-project nature of the mitigation. This mitigation scenario would increase indirect effects such as habitat fragmentation and would result in a decrease in the value of modeled habitat for the species.

Therefore, the incremental impacts of the No Action/No Project Alternative on white-tailed kite, when considered together with the significant impacts to white-tailed kite from past and current human activities and the reasonably foreseeable future projects within the study area, would result in a ***Significant Cumulative*** effect.

9.2.2.14 Effects on Greater Sandhill Crane and Its Habitat

Habitat use, natural history, documented occurrences, and existing acres of modeled habitat in the Planning Area of greater sandhill crane (*Grus canadensis tabida*) are discussed in Appendix G. Greater sandhill crane is listed as threatened under CESA and is a fully protected species under the California Fish and Game Code. Modeled roosting habitat is Vernal Pool, Seasonal Wetland, and Freshwater Marsh above sea level and within 2 miles of documented greater sandhill crane occurrences. Modeled foraging habitat within the Planning Area is Cropland, Irrigated Pasture-Grassland, Valley Grassland, Seasonal Wetland, and Freshwater Marsh within 1.75 miles of modeled roosting habitat and above sea level.

Direct and Indirect Effects of the Alternative

The No Action/No Project Alternative project and activities would remove a total of approximately 9,499 acres of modeled habitat for greater sandhill crane, of which approximately 76 acres is roosting habitat, approximately 138 acres is roosting/foraging habitat, and approximately 9,285 acres is foraging habitat (Table 9-17). Of this modeled habitat loss, approximately 7,210 acres would occur within the UDA, and approximately 2,289 acres would occur outside of the UDA.

Table 9-17. Direct Effects and of Modeled Habitat for Greater Sandhill Crane Under the No Action/No Project Alternative

Modeled Habitat	Total Planning Area (acres)						
	Total Existing Modeled Habitat	Direct Effect	Indirect Effect	Total Effect	% of Existing Habitat Lost	Modeled Habitat Preservation	Modeled Habitat Re-establishment /Establishment
Roosting/Foraging Habitat							
Seasonal Wetland	1,877	63	Qualitative	63	3.4%	8	32
Freshwater Marsh	2,610	75	Qualitative	75	2.9%	16	38
<i>Total Roosting/Foraging Habitat</i>	<i>4,487</i>	<i>138</i>	<i>Qualitative</i>	<i>138</i>	<i>3.1%</i>	<i>24</i>	<i>70</i>
Roosting Habitat							
Vernal Pool	1,156	76	117	193	6.6%	386	76
<i>Total Roosting Habitat</i>	<i>1,156</i>	<i>76</i>	<i>117</i>	<i>193</i>	<i>6.6%</i>	<i>386</i>	<i>76</i>
Foraging Habitat							
Cropland	42,628	4,080	Qualitative	4,080	9.6%	3,662	0
Valley Grassland	30,585	3,444	Qualitative	3,444	11.3%	2,671	0
Irrigated Pasture-Grassland	10,908	1,761	Qualitative	1,761	16.1%	1,580	0
<i>Total Foraging Habitat</i>	<i>84,121</i>	<i>9,285</i>	<i>Qualitative</i>	<i>9,285</i>	<i>11.0%</i>	<i>7,913</i>	<i>0</i>
Total Modeled Habitat	89,764	9,499	117	9,616	10.6%	8,323	146

In addition to direct effects, the No Action/No Project Alternative would also result in indirect impacts to modeled greater sandhill crane roosting habitat (117 acres) and foraging habitat, which is analyzed here qualitatively. As with the direct impacts discussed previously, the greatest impact of these indirect effects would be within the UDA due to the intersection of development and suitable habitat in that area. The various environmental stressors that may result from activities under the No Action/No Project Alternative are described in Appendix G. The following discussion focuses on those stressors that may result in indirect impacts to greater sandhill crane roosting and foraging habitat.

By permanently increasing the extent of impermeable surfaces, urban development may result in increased runoff, which could cause alterations of downstream hydrology and could modify water depths around roosting habitat causing abandonment of roost sites. Urban runoff also can contain petroleum products, pesticides, and other chemicals that can degrade water quality and potentially harm greater sandhill crane directly or by contaminating food sources.

Chronic noise from new development and transportation infrastructure can cause abandonment of roost sites and avoidance of foraging habitat by greater sandhill crane. New development may also increase human activities, including recreational activities within

roosting and foraging habitat for greater sandhill crane that can result in the abandonment of roosts and avoidance of foraging habitat.

New development can also have the potential to spread disease to greater sandhill crane as a result of the increased presence of humans and pets within roosting and foraging habitat.

Where new and improved transportation routes intersect with modeled habitat, the increases in traffic and roads could cause a subsequent increase in mortality of greater sandhill crane from vehicle collisions.

Habitat fragmentation by new urban development may limit suitability of remaining modeled greater sandhill crane roosting habitat in small habitat patches. Habitat fragmentation can also increase the distance required for greater sandhill crane to move between remaining modeled roosting and foraging habitat, increasing the energy demands required to forage. In addition, habitat fragmentation would increase the influence of other stressors by increasing the amount of modeled foraging and roosting habitat exposed to edge effects from adjacent land uses.

In addition, construction activities under the No Action/No Project Alternative are expected to have temporary effects (Section 3.6.5 and Section 9.1.2) on greater sandhill crane and are analyzed qualitatively here. Temporary environmental stressors (Appendix G) such as construction noise, construction lighting, and increased human presence in the vicinity of roost sites may result in roost abandonment and disturbance of foraging, which would be a disruption of normal behavior that could result in injury to greater sandhill crane. While roost abandonment may be caused by construction activities, it is expected that any activity under CEQA would include protection measures for this fully protected species as there is no mechanism within the Fish and Game Code to authorize take of individuals of fully protected species under these circumstances (Section 9.1.1).

The majority of documented occurrences of greater sandhill crane in the Planning Area are outside the UDA in the western portion of the Planning Area (Appendix G). The No Action/No Project Alternative is expected to remove 62 of the 70 documented occurrences of greater sandhill cranes in the Planning Area.

The regulatory environment under the No Action/No Project Alternative (Section 2.2.2) would require mitigation for impacts to greater sandhill crane modeled habitat for projects that undergo environmental review under NEPA or CEQA. The anticipated mitigation would be required on a project-by-project basis and would result in approximately 146 acres of modeled habitat re-establishment/establishment, and approximately 8,323 total acres of modeled habitat preservation for greater sandhill crane, including approximately 24 acres of

roosting/foraging habitat, approximately 386 acres of roosting habitat, and approximately 7,913 acres of foraging habitat.

Cumulative Effect of the Alternative

Greater sandhill crane modeled habitat within the Planning Area has been lost, degraded, and fragmented by other past and present urban and suburban development and associated infrastructure described in Section 3.7.1. The effects of these past and present projects on greater sandhill crane and its habitat are reflected in the current conditions for the species as discussed in Appendix G.

Reasonably foreseeable future actions, as described in Section 3.7.2, consist of actions that are similar in nature to the past and present actions in the Planning Area. Although not every reasonably foreseeable future action would affect greater sandhill crane, as a whole these actions would result in the continued loss of greater sandhill crane habitat, as well as indirect impacts (e.g., habitat fragmentation, increased human disturbance) to remaining modeled habitat, although for projects subject to CEQA and NEPA review, these impacts would likely be mitigated under the future regulatory environment described Section 2.2.2, which would include protection for the species as a fully protected species under the California Fish and Game Code.

As discussed previously in this impact section, the development and related infrastructure under the No Action/No Project Alternative would result in direct (9,499 acres) and indirect (117 acres) impacts to modeled greater sandhill crane habitat for a total impact of 9,616 acres. The modeled habitat preserved (8,323 acres) would be less than the acreage of modeled habitat lost. In addition, the No Action/No Project Alternative would result in 146 acres of modeled habitat re-established/established. Under the No Action/No Project Alternative, preserved and re-established/established habitat would often be geographically fragmented and not adaptively managed to provide conservation at a landscape scale due to the project-by-project nature of the mitigation. This mitigation scenario would increase indirect effects such as habitat fragmentation and would result in a decrease in the value of modeled habitat for the species.

Therefore, the incremental impacts of the No Action/No Project Alternative on greater sandhill crane, when considered together with the significant impacts to greater sandhill crane from past and current human activities and the reasonably foreseeable future projects within the study area, would result in a ***Significant Cumulative*** effect.

9.2.2.15 Effects on Lesser Sandhill Crane and Its Habitat

Basic habitat information for lesser sandhill crane (*Grus canadensis canadensis*) within the Planning Area is found in Appendix G. The land cover types in the Planning Area that are utilized by lesser sandhill crane are the same as those for greater sandhill crane above.

Direct and Indirect Effects of the Alternative

The No Action/No Project Alternative would result in the same acres of habitat loss as discussed previously for greater sandhill crane (see Table 9-17). New development and transportation infrastructure would have indirect effects on lesser sandhill crane that would also be the same as those discussed for greater sandhill crane. In addition, construction activities under the No Action/No Project Alternative may result in temporary effects as discussed for greater sandhill crane.

The habitat preserved under the No Action/No Project Alternative for lesser sandhill crane would be the same as that for greater sandhill crane.

Cumulative Effect of the Alternative

The cumulative effects on lesser sand hill crane would be similar to those described previously for greater sandhill crane; that is, there would be a **Significant Adverse Cumulative** effect when considering the No Action/No Project Alternative with past, present, and reasonably foreseeable future projects.

9.2.2.16 Effects on Loggerhead Shrike and Its Habitat

Habitat use, natural history, documented occurrences, and existing acres of modeled habitat in the Planning Area of loggerhead shrike (*Lanius ludovicianus*) are discussed in Appendix G. The SSHCP modeled foraging habitat within the Planning Area is Cropland, Irrigated Pasture-Grassland, Valley Grassland, Vernal Pool, Seasonal Wetland, and Swale above sea level. Modeled nesting habitat within the Planning Area is Mine Tailing Riparian Woodland, Mixed Riparian Scrub, and Valley Grassland above sea level.

Direct and Indirect Effects of the Alternative

Activities under the No Action/No Project Alternative are anticipated to result in loss of loggerhead shrike habitat to development and related infrastructure. Activities would remove approximately 554 acres of nesting habitat, approximately 23,429 acres of nesting/foraging habitat, and approximately 9,161 acres of foraging habitat (Table 9-18). Of this habitat loss, approximately 30,431 acres would occur within the UDA, and approximately 2,713 acres would occur outside of the UDA.

Table 9-18. Direct Effects and Conservation of Modeled Habitat for Loggerhead Shrike Under the No Action/No Project Alternative

Modeled Habitat	Total Planning Area (acres)				
	Total Existing Modeled Habitat	Direct Effect	% of Existing Habitat Lost	Modeled Habitat Preservation	Modeled Habitat Re-establishment/ Establishment
Nesting Habitat					
Mixed Riparian Woodland	5,785	147	2.5%	0	256
Mixed Riparian Scrub	1,424	189	13.0%	0	298
Mine Tailing Riparian Woodland	641	218	34.0%	0	0
<i>Total Nesting Habitat</i>	<i>7,850</i>	<i>554</i>	<i>7.0%</i>	<i>0</i>	<i>554</i>
Nesting/Foraging Habitat					
Valley Grassland	135,112	23,429	17.3%	11,806	0
<i>Total Nesting/Foraging Habitat</i>	<i>135,112</i>	<i>23,429</i>	<i>17.3%</i>	<i>11,806</i>	<i>0</i>
Foraging Habitat					
Cropland	47,905	5,703	11.9%	5,119	0
Irrigated Pasture-Grassland	15,991	2,781	17.4%	2,496	0
Vernal Pool	4,536	322	6.9%	1,030	322
Seasonal Wetland	2,600	115	4.4%	8	57
Swale	1,252	240	19.1%	602	240
<i>Total Foraging Habitat</i>	<i>72,284</i>	<i>9,161</i>	<i>12.7%</i>	<i>9,255</i>	<i>619</i>
Total Modeled Habitat	215,246	33,144	15.4%	21,061	1,173

The No Action/No Project Alternative would also result in indirect effects to loggerhead shrike and its habitat which are analyzed qualitatively below. As with the direct impacts discussed previously, the greatest impact of these indirect effects would be within the UDA due to the intersection of development and suitable habitat in that area. The various environmental stressors that may result from activities under the No Action/No Project Alternative are described in Appendix G. The discussion below focuses on those stressors that may result in indirect impacts to loggerhead shrike and modeled habitat for the species.

By permanently increasing the extent of impermeable surfaces, urban development may result in increased runoff, especially during storm events. Such increases can result in stream bank erosion, increased sediment loads downstream, and alterations of downstream hydrology, which can remove or physically damage the surrounding riparian habitat that is modeled nesting habitat for loggerhead shrike.

Development may result in an increased wildfire frequency due to increased potential for ignitions associated with greater human presence and activities. Wildfire is a natural part of the ecosystem, and riparian loggerhead shrike habitat can recover quickly from low-intensity fires. However, with decades of fire suppression, the amount of fuel may have built up to levels that

would increase the intensity of wildfires. Should wildfires be of sufficient intensity to result in high levels of mortality to riparian vegetation, this would result in a removal of nesting habitat for loggerhead shrike until sufficient regrowth occurs.

The increased use of pesticides (e.g., rodenticides, insecticides) that may occur within adjacent developed parcels could also decrease prey availability within remaining foraging habitat for loggerhead shrike.

Habitat fragmentation by new urban development within the UDA may reduce the patch size of remaining modeled habitat to the point where the habitat is no longer suitable for loggerhead shrike. Also, habitat fragmentation can result in an increase in the distance required for loggerhead shrike to move between remaining modeled nesting and foraging habitat, increasing the time away from the nest, which can result in reduced nest success. Also, habitat fragmentation would increase the influence of other stressors by increasing the amount of foraging and nesting habitat within the UDA exposed to edge effects from adjacent land uses.

In addition, construction activities under the No Action/No project Alternative are expected to have temporary effects (Section 3.6.5 and Section 9.1.2) on loggerhead shrike, primarily during nesting, which are analyzed qualitatively here. Temporary environmental stressors (Appendix G) such as construction noise, construction lighting, and increased human presence may result in nest disturbance or failure and may injure or kill individual loggerhead shrike. These temporary stressors can also result in disturbance of foraging behavior that can result in reduced nest success and in the injury or death of individual loggerhead shrikes.

The No Action/No Project Alternative is not expected to remove any of the 34 documented occurrences of loggerhead shrike in the Planning Area.

The regulatory environment under the No Action/No Project Alternative (Section 2.2.2) would require mitigation for impacts to loggerhead shrike modeled habitat for projects that undergo environmental review under NEPA or CEQA. The anticipated mitigation would be required on a project-by-project basis and would result in re-establishment/establishment of approximately 1,173 acres of modeled habitat and approximately 21,061 acres of modeled habitat preservation for loggerhead shrike. The acres preserved under the No Action/No Project Alternative would often not be part of a coordinated and linked Preserve System, but rather preserved on a project-by-project basis as described in Section 2.2.4.

Cumulative Effect of the Alternative

The land cover types that make up loggerhead shrike modeled habitat within the Planning Area have been lost, degraded, and fragmented by other past and present urban and suburban development and associated infrastructure as described in Section 3.7.1. The effects of these

past and present projects on loggerhead shrike and its habitat are reflected in the current conditions for the species as discussed in Appendix G.

Reasonably foreseeable future actions, as described in Section 3.7.2, consist of actions that are similar in nature to the past and present actions in the Planning Area. Although not every reasonably foreseeable future action would affect loggerhead shrike, as a whole these actions would result in the continued loss of loggerhead shrike habitat, as well as indirect impacts (e.g., habitat fragmentation, increased human disturbance) to remaining modeled habitat. For future projects and activities subject to CEQA and NEPA review, these impacts would be mitigated under the regulatory environment described in Sections 9.1.1 and 2.2.2. Mitigation for impacts of future projects and activities under ESA and CWA requirements would ensure that there would be no net loss of acreage, function, and/or value for aquatic land covers that are modeled habitat for loggerhead shrike.

As discussed previously in this impact section, the development and related infrastructure under the No Action/No Project Alternative would result in direct (approximately 33,144 acres) and indirect impacts to modeled loggerhead shrike habitat. The modeled habitat preserved (approximately 21,061 acres) would be less than the acreage of modeled habitat lost. In addition the No Action/No Project Alternative would result in approximately 1,173 acres of modeled habitat re-established/established. However, under the No Action/No Project Alternative, preserved and re-established/established habitat would often be geographically fragmented and not adaptively managed to provide conservation at a landscape scale due to the project-by-project nature of the mitigation. This mitigation scenario would increase indirect effects such as habitat fragmentation and would result in a decrease in the value of modeled habitat for the species.

Therefore, the incremental impacts of the No Action/No Project Alternative on loggerhead shrike, when considered together with the significant impacts to loggerhead shrike from past and current human activities and the reasonably foreseeable future projects within the study area, would result in a **Significant Cumulative** effect.

9.2.2.17 Effects on Grasshopper Sparrow and Its Habitat

Basic habitat information and documented occurrence in the Planning Area for grasshopper sparrow (*Ammodramus savannarum*) are described in Appendix G. The EIS/EIR considers potentially suitable habitat within the Planning Area to be Irrigated Pasture-Grassland and Valley Grassland above sea-level.

Direct and Indirect Effects of the Alternative

Estimated losses of habitat potentially suitable for grasshopper sparrow under the No Action/No Project Alternative consist of approximately 2,781 acres of Irrigated Pasture and approximately 23,429 acres of Valley Grassland for a total land cover loss of approximately 26,210 acres. Of this habitat loss, approximately 24,301 acres would occur within the UDA, and approximately 1,909 acres would occur outside of the UDA.

The No Action/No Project Alternative is also expected to result in permanent indirect effects on grasshopper sparrow and potentially suitable habitat, which may result in degradation of remaining habitat and disturbance or loss of individuals. These impacts are analyzed qualitatively here. As with the direct impacts discussed previously, the greatest impact of these indirect effects would be within the UDA due to the intersection of development and suitable habitat in that area. The various environmental stressors that may result from activities under the No Action/No Project Alternative are described in Appendix G. The following discussion focuses on those stressors that may result in indirect impacts to grasshopper sparrow and potentially suitable habitat for the species.

Noise, lighting, and human activity associated with urban development could degrade remaining modeled nesting habitat by disturbing nesting activity of grasshopper sparrow adjacent to development, potentially causing nest abandonment. Increased human activity can also increase the numbers of pests and medium-sized predators in modeled habitat which could result in increased nest predation on the ground-nesting grasshopper sparrow.

Habitat fragmentation would increase the influence of other stressors by increasing the amount of potentially suitable habitat within the UDA exposed to edge effects from adjacent land uses.

In addition, construction activities under the No Action/No Project Alternative are expected to have temporary effects (Section 3.6.5 and Section 9.1.2) on grasshopper sparrow, primarily during nesting, which are analyzed qualitatively here. Temporary environmental stressors (Appendix G) such as construction noise, construction lighting, and increased human presence may result in nest disturbance or failure and injure or kill individual grasshopper sparrow. These temporary stressors can also result in disturbance of foraging behavior that can result in reduced nest success and result in the injury or death of individual grasshopper sparrows.

The No Action/No Project Alternative would result in approximately 14,302 acres of preservation of land covers that provide suitable habitat for grasshopper sparrow through project mitigation. This habitat preservation would be implemented on a project-by-project basis and would often not be part of a coordinated and linked Preserve System.

Cumulative Effect of the Alternative

The Valley Grassland and Irrigated Pasture Grassland that make up potentially suitable habitat for grasshopper sparrow within the Planning Area have been lost, degraded, and fragmented by other past and present urban and suburban development and associated infrastructure as described in Section 3.7.1.

In addition to past and current development effects, reasonably foreseeable future activities within the Planning Area (Section 3.7.2) would result in continued loss of grasshopper sparrow habitat, as well as indirect impacts (e.g., habitat fragmentation, increased human disturbance) to remaining habitat. Neither of the land cover types that make up grasshopper sparrow habitat are subject to stringent mitigation requirements that would substantially avoid, minimize, or compensate for losses, though grasshopper sparrow is a California Species of Concern and additional mitigation may be required as a result of CEQA review of individual projects.

The expected impacts of the No Action/No Project Alternative on grasshopper sparrow potentially suitable habitat total approximately 26,210 acres. The regulatory environment under the No Action/No Project Alternative (Section 2.2.2) may require mitigation for impacts on grasshopper sparrow suitable habitat for projects that undergo environmental review under NEPA and CEQA, which is estimated to result in the preservation of approximately 14,302 acres of potentially suitable habitat, although this preservation would occur on a project-by-project basis and would often not be part of a coordinated Preserve System.

Therefore, the incremental impacts of the No Action/No Project Alternative on grasshopper sparrow, when considered together with the significant impacts to grasshopper sparrow from past and current human activities and the reasonably foreseeable future projects within the study area, would result in a ***Significant Cumulative*** effect.

9.2.2.18 Effects on Song Sparrow (Modesto Population) and Its Habitat

Basic habitat information for song sparrow (*Melospiza melodia*) within the Planning Area is found in Table 9-3 and Appendix G. The land cover types in the Planning Area that are utilized by song sparrow are Seasonal Wetland, Freshwater Marsh, and Mixed Riparian Scrub above sea level.

Direct and Indirect Effects of the Alternative

The estimated potentially suitable song sparrow habitat loss due to loss of these land cover types under the No Action/No Project Alternative would total approximately 448 acres.

The No Action/No Project Alternative would also result in indirect effects to song sparrow and its habitat, which are analyzed qualitatively below. As with the direct impacts discussed

previously, the greatest impact of these indirect effects would be within the UDA due to the intersection of development and suitable habitat in that area. The various environmental stressors that may result from activities under the No Action/No Project Alternative are described in Appendix G. The discussion below focuses on those stressors that may result in indirect impacts to song sparrow and potentially suitable habitat for the species.

By permanently increasing the extent of impermeable surfaces, urban development may result in increased runoff, which is likely to contain petroleum products, pesticides, and other toxins that may reduce water quality within modeled nesting and foraging habitat and may injure or kill song sparrow when the birds are exposed to toxins either through direct contact or by ingesting contaminated prey items.

Human activity associated with urban development could degrade remaining modeled nesting habitat by disturbing nesting activity of song sparrow adjacent to development.

The increased use of pesticides in adjacent developed parcels could decrease prey availability in remaining modeled foraging habitat, reduce nesting success, and in some cases cause injury and death of individuals.

Changes to the wildlife community, including an increase in abundance of medium-sized predators that are often associated with development, could increase predation on song sparrow resulting in the injury and death of individuals.

Habitat fragmentation by new urban development may increase the distance required for song sparrow to move between remaining suitable nesting and foraging habitat, which can result in reduced nest success. In addition, habitat fragmentation would increase the influence of other stressors by increasing the amount of suitable habitat within the UDA exposed to edge effects from adjacent land uses.

Construction activities under the No Action/No Project Alternative are expected to have temporary effects (Section 3.6.5 and Section 9.1.2) on song sparrow, primarily during nesting, which are analyzed qualitatively here. Temporary environmental stressors (Appendix G) such as construction noise, construction lighting, and increased human presence may result in disturbance, injury, or death of individual song sparrow.

The regulatory environment under the No Action/No Project Alternative (Section 2.2.2) would require mitigation for impacts to song sparrow modeled habitat for projects that undergo environmental review under NEPA or CEQA. The anticipated mitigation would be required on a project-by-project basis and would result in re-establishment/establishment of 318 acres of modeled habitat and 24 total acres of preservation of song sparrow habitat, which equals the habitat loss under this alternative.

Cumulative Effect of the Alternative

The land cover types that make up song sparrow potentially suitable habitat within the Planning Area have been lost, degraded, and fragmented by other past and present urban and suburban development and associated infrastructure as described in Section 3.7.1.

In addition to past and current development effects, reasonably foreseeable future activities within the Planning Area (Section 3.7.2) would result in continued loss of song sparrow potentially suitable habitat, as well as indirect impacts (e.g., habitat fragmentation, increased human disturbance) to remaining potentially suitable habitat, although for projects subject to CEQA and NEPA review these impacts would likely be mitigated under the future regulatory environment described Section 2.2.2.

The expected impacts of the No Action/No Project Alternative on song sparrow potentially suitable habitat total approximately 448 acres. The regulatory environment under the No Action/No Project Alternative is anticipated to result in the re-establishment/establishment approximately 318 acres of potentially suitable habitat. In addition, under the No Action/No Project Alternative, approximately 24 acres of potentially suitable habitat would be preserved, although this preservation and the aforementioned re-establishment/establishment would occur on a project-by-project basis and often not be part of a coordinated Preserve System.

Therefore, the incremental impacts of the No Action/No Project Alternative on song sparrow, when considered together with the significant impacts to song sparrow from past and current human activities and the reasonably foreseeable future projects within the study area, would result in a **Significant Cumulative** effect

9.2.2.19 Effects on Bank Swallow and Its Habitat

Basic habitat information and occurrence within the Planning Area of bank swallow (*Riparia riparia*) are described in Appendix G. Bank swallow is associated with large cut banks in riverine habitats and sand bluffs where it builds nest burrows, and with surrounding areas that it uses for foraging habitat.

Direct and Indirect Effects of the Alternative

Documented occurrences within the Planning Area are along the Cosumnes River between Rancho Murieta and Sloughhouse. The expected loss of bank swallow nesting habitat under the No Action/No Project Alternative is analyzed qualitatively, because the land cover definition does not specifically consider exposed stream banks and other features required by this species for nesting colonies. However, there are no activities under the No Action/No Project

Alternative expected to result in the loss of exposed stream banks along the Cosumnes River or in the loss of foraging habitat within close proximity to known nest colonies.

Activities under the No Action/No Project Alternative are not likely to result in permanent indirect and temporary effects on bank swallow or the preservation of habitat through mitigation.

Cumulative Effect of the Alternative

Past flood control and bank stabilization projects in the Planning Area discussed in Section 3.7.1 have reduced nesting habitat for bank swallow, and foraging habitat has been lost, degraded, and fragmented by urban and suburban development and associated infrastructure.

Reasonably foreseeable future activities within the Planning Area under the No Action/No Project Alternative are not expected to result in the loss of exposed stream banks along the Cosumnes River or in the loss of foraging habitat within close proximity to known nest colonies.

Therefore, the incremental impact of the No Action/No Project Alternative on bank swallow, when considered together with the impacts of past, current, and reasonably foreseeable projects, would result in a ***Less Than Significant Cumulative*** effect.

9.2.2.20 Effects on Western Red Bat and Its Habitat

Habitat use, natural history, and documented occurrences of western red bat (*Lasiurus blossevillii*) within the Planning Area are described in Appendix G. Modeled foraging habitat within the Planning Area is Valley Grassland, Blue Oak Woodland, Blue Oak Savanna, Orchard, Mine Tailing Riparian Woodland, Mixed Riparian Woodland, Mixed Riparian Scrub, Vernal Pool, Seasonal Wetland, Swale, Freshwater Marsh, Open Water, and Stream/Creek above sea level. Modeled roosting habitat within the Planning Area is Blue Oak Woodland, Blue Oak Savanna, Orchard, Mine Tailing Riparian Woodland, and Mixed Riparian Woodland above sea level.

Direct and Indirect Effects of the Alternative

The No Action/No Project Alternative would result in the removal of approximately 24,763 acres of foraging habitat and approximately 725 acres of roosting/foraging habitat for western red bat (Table 9-19), the majority of this loss (approximately 23,535 acres) would be within the UDA. The habitat shown (Table 9-19) are only those natural land covers that may be used by the species and is an underestimation of total habitat remaining, as western red bat is known to roost and forage in developed areas with sufficient mature tree cover, and those acres are not included in the analysis. While newly developed acres under the No Action/No Project Alternative may contain trees that could provide habitat for western red bat in the future, given

the time for newly planted trees to mature, newly developed acres are considered habitat loss in this analysis.

Table 9-19. Direct Effects and Conservation of Modeled Habitat for Western Red Bat Under the No Action/No Project Alternative

Modeled Habitat	Total Planning Area (acres)				
	Total Existing	Direct Effect	% of Modeled Habitat Lost	Habitat Modeled Habitat Preservation	Modeled Habitat Re-establishment/ Establishment
Foraging Habitat					
Valley Grassland	135,112	23,429	17.3%	11,806	0
Vernal Pool	4,536	322	7.1%	1,030	322
Seasonal Wetlands	2,600	115	4.4%	8	57
Freshwater Marsh	2,922	144	4.9%	16	72
Stream/Creek	2,674	149	5.6%	0	75
Open Water	2,344	175	7.5%	0	87
Mixed Riparian Scrub	1,451	189	13.0%	0	298
Swale	1,252	240	19.1%	602	240
<i>Total Foraging Habitat</i>	<i>152,891</i>	<i>24,763</i>	<i>16.2%</i>	<i>13,462</i>	<i>1,151</i>
Roosting/Foraging Habitat					
Blue Oak Woodland	9,132	54	0.9%	27	27
Mixed Riparian Woodland	5,785	147	2.5%	0	256
Blue Oak Savanna	5,637	86	1.5%	43	43
Orchards	3,646	220	6.0%	197	0
Mine Tailing Riparian Woodland	641	218	34.0%	0	0
<i>Total Roosting/Foraging Habitat</i>	<i>24,841</i>	<i>725</i>	<i>3.0%</i>	<i>267</i>	<i>326</i>
Total Modeled Habitat	177,732	25,488	14.3%	13,729	1,477

The No Action/No Project Alternative would also result in indirect effects to western red bat and its habitat, which are analyzed qualitatively below. As with the direct impacts discussed previously, the greatest impact of these indirect effects would be within the UDA due to the intersection of development and suitable habitat in that area. The various environmental stressors that may result from activities under the No Action/No Project Alternative are described in Appendix G. The discussion below focuses on those stressors that may result in indirect impacts to western red bat and modeled habitat for the species.

By permanently increasing the extent of impermeable surfaces, urban development may result in increased runoff, which is likely to contain petroleum products, pesticides, and other toxins that may reduce water quality within modeled foraging habitat and may injure or kill western red bat that are exposed to toxins either through direct contact or by ingesting contaminated prey items. The increased use of pesticides (e.g., insecticides) that may occur within adjacent

developed parcels could also decrease prey availability within remaining foraging habitat for western red bat.

Development may result in an increased wildfire frequency due to increased potential for ignitions associated with greater human presence and activities. Wildfire is a natural part of the riparian and oak woodland ecosystem, and western red bat habitat can recover quickly from low-intensity fires. However, with decades of fire suppression, the amount of fuel may have built up to levels that would increase the intensity of wildfires. Should wildfires be of sufficient intensity to result in high levels of mortality to riparian vegetation or oaks, this would result in a removal of roosting and foraging habitat for western red bat until sufficient regrowth occurs.

Changes to the wildlife community included an increase in medium sized predators that are often associated with development as well as pets that could increase predation on western red bats.

Habitat fragmentation by new urban development within the UDA may increase the distance required for western red bat to move between remaining modeled roosting and foraging habitat, increasing energy demands. Also, habitat fragmentation would increase the influence of other stressors by increasing the amount of foraging and roosting habitat within the UDA exposed to edge effects from adjacent land uses.

Construction activities under the No Action/No Project Alternative may also result environmental stressors (Appendix G) that can temporarily reduce habitat quality and impact individual western red bats. These stressors include vegetation and tree removal, which can result in the abandonment of roost sites.

The No Action/No Project Alternative is expected to remove three of the seven documented occurrences of western red bats in the Planning Area.

The regulatory environment under the No Action/No Project Alternative (Section 2.2.2) would require mitigation for impacts to western red bat modeled habitat for projects that undergo environmental review under NEPA or CEQA. The anticipated mitigation would be required on a project-by-project basis and would result in the re-establishment/establishment of approximately 1,477 acres of modeled habitat, approximately 13,729 total acres of modeled habitat preservation for western red bat, approximately 13,462 acres of foraging habitat, and approximately 267 acres of roosting/foraging habitat. The acres conserved under the No Action/No Project Alternative would often not be part of a coordinated and linked Preserve System, but rather would be conserved on a project-by-project basis as described in Section 2.2.4.

Cumulative Effect of the Alternative

The land cover types that make up western red bat modeled habitat within the Planning Area have been lost, degraded, and fragmented by other past and present urban and suburban development and associated infrastructure as described in Section 3.7.1. The effects of these past and present projects on western red bat and its habitat are reflected in the current conditions for the species as discussed in Appendix G.

Reasonably foreseeable future actions, as described in Section 3.7.2, consist of actions that are similar in nature to the past and present actions in the Planning Area. Although not every reasonably foreseeable future action would affect western red bat, as a whole these actions would result in the continued loss of western red bat habitat, as well as indirect impacts (e.g., habitat fragmentation, increased human disturbance) to remaining modeled habitat. For future projects and activities subject to CEQA and NEPA, review these impacts would be mitigated under the regulatory environment described in Sections 9.1.1 and 2.2.2. Mitigation for impacts of future projects and activities under ESA and CWA requirements would ensure that there would be no net loss of acreage, function, and/or value for aquatic land covers that are modeled habitat for western red bat.

As discussed previously in this impact section, the development and related infrastructure under the No Action/No Project Alternative would result in direct (approximately 25,488 acres) and indirect impacts to modeled western red bat habitat. The modeled habitat preserved (approximately 13,729 acres) would be less than the acreage of modeled habitat lost. In addition, the No Action/No Project Alternative would result in approximately 1,477 acres of modeled habitat re-established/established. However, under the No Action/No Project Alternative, preserved and re-established/established habitat would often be geographically fragmented and not adaptively managed to provide conservation at a landscape scale due to the project-by-project nature of the mitigation. This mitigation scenario would increase indirect effects such as habitat fragmentation and would result in a decrease in the value of modeled habitat for the species.

Therefore, the incremental direct and indirect impacts of No Action/No Project Alternative to western red bat, when considered together with the significant impacts to western red bat from past, current, and foreseeable future projects and activities in the study area, would be a ***Significant Cumulative*** effect.

9.2.2.21 Effects on American Badger and Its Habitat

Habitat use, natural history, known occurrences, and existing acres of modeled habitat in the Planning Area of American badger are described in Appendix G. Modeled habitat is Blue Oak Savanna, Valley Grassland, Vernal Pool, Seasonal Wetland, and Swale above sea level.

Direct and Indirect Effects of the Alternative

The No Action/No Project Alternative would result in the loss of approximately 24,192 acres of American badger modeled habitat to development and related infrastructure (Table 9-20). The majority of this loss of modeled habitat would occur within the UDA (23,134 acres) due to the intersection of urban development with modeled habitat in this area.

Table 9-20. Direct Effects and Conservation of Modeled Habitat for American Badger Under the No Action/No Project Alternative

Modeled Habitat	Total Planning Area (acres)				
	<i>Total Existing</i>	<i>Direct Effect</i>	<i>% of Existing Habitat Lost</i>	<i>Modeled Habitat Preservation</i>	<i>Modeled Habitat Re-establishment/ Establishment</i>
Valley Grassland	135,112	23,429	17.34%	11,806	0
Blue Oak Savanna	5,637	86	1.53%	43	43
Vernal Pool	4,536	322	7.12%	1,030	322
Seasonal Wetland	2,600	115	4.42%	8	57
Swale	1,252	240	19.09%	602	240
Total Modeled Habitat	149,137	24,192	16.22%	13,489	662

The No Action/No Project Alternative would also result in indirect effects to American badger and its habitat, which are analyzed qualitatively below. As with the direct impacts discussed previously, the greatest impact of these indirect effects would be within the UDA due to the intersection of development and suitable habitat in that area. The various environmental stressors that may result from activities under the No Action/No Project Alternative are described in Appendix G. The discussion below focuses on those stressors that may result in indirect impacts to American badger and modeled habitat for the species.

Alterations to hydrology can reduce prey availability in aquatic habitats areas by impacting aquatic vegetation. The increased use of pesticides in adjacent developed parcels (i.e., rodenticides) along with an increase in medium-sized predators that are often associated with urban settings could also reduce prey availability.

Chronic ground vibration, noise, lighting, and increased human activity resulting from nearby development could disturb foraging activity and result in abandonment of burrows. New development would also increase traffic, which could result in increased vehicle collisions and injury and death of American badger.

Habitat fragmentation due to loss of habitat to development would increase the influence of other stressors (e.g., human activity) by increasing the amount of habitat exposed to edge effects from adjacent urban development within the UDA.

Construction activities under the No Action/No Project Alternative may also result in temporary reduction in foraging habitat quality and disturbance of individual American badger, which could lead to reproductive failure. These effects would be caused by stressors (Appendix G) including trampling of vegetation, construction vibration, construction noise and lighting, increased human presence, and trash and debris.

The No Action/No Project Alternative is not expected to remove any of the nine documented occurrences of American badger in the Planning Area.

The regulatory environment under the No Action/No Project Alternative (Section 2.2.2) would require mitigation for impacts to American badger for projects that undergo environmental review under NEPA or CEQA. The anticipated mitigation would be required on a project-by-project basis and would result in the re-establishment/establishment of approximately 662 acres of modeled habitat and approximately 13,489 acres of preservation of modeled habitat for American badger through project mitigation requirements for the project-by-project regulatory compliance. As discussed in Section 2.2.4, the acres conserved under the No Action/No Project Alternative would often not be part of a coordinated and linked Preserve System, but rather would be conserved on a project-by-project basis.

Cumulative Effect of the Alternative

The land cover types that make up American badger modeled habitat within the Planning Area have been lost, degraded, and fragmented by other past and present urban and suburban development and associated infrastructure as described in Section 3.7.1. The effects of these past and present projects on American badger and its habitat are reflected in the current conditions for the species as discussed in Appendix G.

Reasonably foreseeable future actions, as described in Section 3.7.2, consist of actions that are similar in nature to the past and present actions in the Planning Area. Although not every reasonably foreseeable future action would affect American badger, as a whole these actions would result in the continued loss of American badger habitat, as well as indirect impacts (e.g., habitat fragmentation, increased human disturbance) to remaining modeled habitat. For future

projects and activities subject to CEQA and NEPA review, these impacts would be mitigated under the regulatory environment described in Sections 9.1.1 and 2.2.2.

As discussed previously in this impact section, the development and related infrastructure under the No Action/No Project Alternative would result in direct (approximately 24,192 acres) and indirect impacts to modeled American badger habitat. The modeled habitat preserved (approximately 13,489 acres) would be less than the acreage of modeled habitat lost. In addition the No Action/No Project Alternative would result in approximately 662 acres of modeled habitat re-established/established. However, under the No Action/No Project Alternative, preserved and re-established/established habitat would often be geographically fragmented and not adaptively managed to provide conservation at a landscape scale due to the project-by-project nature of the mitigation. This mitigation scenario would increase indirect effects such as habitat fragmentation and would result in a decrease in the value of modeled habitat for the species.

Therefore, the incremental direct and indirect impacts of No Action/No Project Alternative to American badger, when considered together with the significant impacts to American badger from past, current, and foreseeable future projects and activities in the study area, would be a **Significant Cumulative** effect.

9.2.2.22 Effects on Sanford's Arrowhead and Its Habitat

Documented occurrences within the Planning Area of Sanford's arrowhead (*Sagittaria sanfordii*) are provided in Appendix G. Modeled habitat for Sanford's arrowhead is all Seasonal Wetland, Freshwater Marsh, Open Water, and Stream/Creek above sea level that coincides with specific slopes and soils.

Direct and Indirect Effects of the Alternative

The No Action/No Project Alternative would result in the permanent loss of approximately 12,065 acres of Sanford's arrowhead modeled habitat due to development and related infrastructure (Table 9-21). Of this loss approximately 10,844 acres would occur within the UDA.

Table 9-21. Direct Effects and Modeled Habitat Conservation for Sanford's Arrowhead Under the No Action/No Project Alternative

Modeled Habitat	Total Planning Area (acres)				
	Total Existing	Direct Effect	% of Existing Habitat Lost	Modeled Habitat Preservation	Modeled Habitat Re-establishment/Establishment
Freshwater Marsh	2,044	119	5.8%	16	60
Open Water	1,086	80	7.4%	0	40
Seasonal Wetlands	1,425	81	5.7%	8	41
Streams/Creeks	893	109	12.2%	0	55
Valley Grassland	47,375	11,676	24.6%	5,883	0
Total Modeled Habitat	52,823	12,065	22.8%	5,907	196

As discussed previously for direct impacts, the majority of indirect impacts to Sanford's arrowhead under the No Action/No Project Alternative would occur within the UDA as a result of urban development. The various environmental stressors that may result from activities under the No Action/No Project Alternative and that would result in indirect effects on Sanford's arrowhead and its habitat described here and in Appendix G.

By permanently increasing the extent of impermeable surfaces, urban development and roads may result in increased runoff, especially during storm events. Such increases can result in increased inundation periods for seasonal wetlands and alterations of downstream hydrology in streams and creeks. Also, addition of new development may permanently increase the potential for ongoing discharge of pollutants such as grease, oil, fertilizers, and lawn pesticides within habitat for Sanford's arrowhead, which could degrade modeled habitat.

Development could also impact Sanford's arrowhead by increasing the presence of invasive plants through species escaping from landscaping, which could outcompete Sanford's arrowhead.

Development may result in an increased wildfire frequency due to increased ignition sources. Wildfire is a natural part of the ecosystem, and low-intensity fires would not adversely impact Sanford's arrowhead. However, increased fire frequency would require more fire suppression activities around developed areas that would result in ground disturbance, which would result in habitat removal.

Development under the No Action/No Project Alternative would likely result in habitat fragmentation that would inhibit seed dispersal and movement of pollinators for Sanford's arrowhead. Habitat fragmentation can also increase the impact of other indirect environmental stressors listed here (e.g., urban runoff, invasive plants) on Sanford's arrowhead by increasing the area of impact from these stressors relative to the area of the intact habitat patch.

There are 64 documented occurrences in the Planning Area, most of which occur outside the UDA. Of these occurrences, six would be lost to development under the No Action/No Project Alternative.

The regulatory environment under the No Action/No Project Alternative (Section 2.2.2) would require mitigation for impacts to Sanford's arrowhead for projects that undergo environmental review under NEPA or CEQA. The anticipated mitigation would be required on a project-by-project basis and would result in the re-establishment/establishment of approximately 196 acres of modeled habitat and approximately 5,907 acres of preservation of modeled habitat for Sanford's arrowhead through project mitigation requirements for the project-by-project regulatory compliance.

Cumulative Effect of the Alternative

Sanford's arrowhead modeled habitat within the Planning Area has been lost, degraded, and fragmented by other past and present urban and suburban development and associated infrastructure as described in Section 3.7.1. The effects of these past and present projects on American badger and its habitat are reflected in the current conditions for the species as discussed in Appendix G.

Reasonably foreseeable future actions, as described in Section 3.7.2, consist of actions that are similar in nature to the past and present actions in the Planning Area. Although not every reasonably foreseeable future action would affect Sanford's arrowhead, as a whole these actions would result in the continued loss of American badger habitat, as well as indirect impacts (e.g., habitat fragmentation, increased urban runoff) to remaining modeled habitat. For future projects and activities subject to CEQA and NEPA review these impacts would be mitigated under the regulatory environment described in Sections 9.1.1 and 2.2.2.

As discussed previously in this impact section, the development and related infrastructure under the No Action/No Project Alternative would result in direct (approximately 12,065 acres) and indirect impacts to modeled Sanford's arrowhead habitat. The modeled habitat preserved (approximately 5,907 acres) under the No Action/No Project Alternative would be less than the acreage of modeled habitat lost. In addition the No Action/No Project Alternative would result in approximately 196 acres of modeled habitat re-established/established. However, under the No Action/No Project Alternative, preserved and re-established/established habitat would often be geographically fragmented and not adaptively managed to provide conservation at a landscape scale due to the project-by-project nature of the mitigation. This mitigation scenario would increase indirect effects such as habitat fragmentation and would result in a decrease in the value of modeled habitat for the species.

Therefore, the incremental direct and indirect impacts of No Action/No Project Alternative to Sanford's arrowhead, when considered together with the significant impacts to Sanford's arrowhead from past, current, and foreseeable future projects and activities in the study area, would be a ***Significant Cumulative*** effect.

9.2.2.23 Effects on Other Special-Status Plant Species and Their Habitat

There are 18 special-status plant species with potential to occur in the Planning Area that are not covered by the SSHCP and are analyzed here (Table 9-2). Information on the process to select these species, their habitat associations, and occurrence in the Planning Area is provided in Appendix G. These plant species are predominately associated with five SSHCP land cover categories: Vernal Wetlands, Non-vernal Wetlands, Riparian Habitats, Blue Oak Woodland and

Savanna, and Valley Grassland. The No Action/No Project Alternative is expected to result in loss of land covers that provide suitable habitat for these species as shown in Table 9-22.

Direct and Indirect Effects of the Alternative

New development and transportation infrastructure would have indirect effects on special-status plant species not covered by the SSHCP that would be the same type and character as those discussed for Sanford's arrowhead previously. Effects may include increased exposure to pollutants and increased presence of invasive plant species, with the addition of specific environmental stressors on vernal pool hydrology (see the analysis of vernal pool invertebrates and plants in Section 9.2.2.1) that would indirectly adversely impact those special-status plant species analyzed here that are modeled to occur within the vernal pool ecosystem (e.g., bristly sedge (*Carex comosa*), Bolander's water-hemlock (*Cicuta maculata* var. *bolanderi*), Tuolumne button-celery (*Eryngium pinnatisectum*), and saline clover (*Trifolium hydrophilum*)). In addition, construction activities under the No Action/No Project Alternative may result in temporary effects as discussed for Sanford's arrowhead in Section 9.2.2.23.

Table 9-22. Total Loss of Potentially Suitable Habitat for Other Special-status Plants Under the No Action/No Project Alternative

Plant Name (status)*	Total Planning Area (acres)								
	Loss of Potentially Suitable Habitat (direct and indirect)					Total Habitat Loss	% of Existing Potentially Suitable Habitat Lost	Habitat Preservation	Habitat Re-establishment/ Establishment
	Vernal Wetlands	Non-vernal Wetlands	Riparian	Blue Oak Woodland /Savanna	Valley Grassland				
Watershield (State S2)	—	259	—	—	—	259	4.6%	24	129
Bristly sedge (State S2)	562	259	—	—	—	821	7.2%	1,656	691
Fleshy owl's clover (Federal - T; State - E)	—	259	—	—	—	259	4.6%	24	129
Brandegee's clarkia (State S2)	—	—	—	140	—	140	0.9%	70	70
Bolander's water- hemlock (State S2)	562	259	554	—	—	1,375	7.1%	1,656	1,245
Peruvian dodder (CRPR 2B.2)	—	259	—	—	—	259	4.6%	24	129
Tuolumne button-celery (State S2)	562	—	—	140	—	702	3.4%	1,702	632
Stinkbells (State S3)	—	—	—	140	23,429	23,569	15.7%	11,876	70
Woolly rose-mallow (State S2)	—	259	—	—	—	259	4.6%	24	129
Northern California black walnut (State S1)	—	—	554	—	—	554	7.0%	0	554
Delta tule pea (State S2)	—	259	—	—	—	259	4.6%	24	129
Heckard's pepper-grass (State S2)	—	—	—	—	23,429	23,429	17.3%	11,806	0
Mason's lilaeopsis (State S2)	—	259	554	—	—	813	6.0%	24	683
Delta mudwort (State S2)	—	259	554	—	—	813	6.0%	24	683
Marsh skullcap (State S1)	—	259	—	—	—	259	4.6%	24	129

Table 9-22. Total Loss of Potentially Suitable Habitat for Other Special-status Plants Under the No Action/No Project Alternative

Plant Name (status)*	Total Planning Area (acres)								
	Loss of Potentially Suitable Habitat (direct and indirect)					Total Habitat Loss	% of Existing Potentially Suitable Habitat Lost	Habitat Preservation	Habitat Re-establishment/ Establishment
	Vernal Wetlands	Non-vernal Wetlands	Riparian	Blue Oak Woodland /Savanna	Valley Grassland				
Side-flowering skullcap (State S1)	—	259	—	—	—	259	4.6%	24	129
Suisun marsh aster (State S2)	—	259	—	—	—	259	4.6%	24	129
Saline clover (State S2)	562	259	—	—	23,429	24,250	16.6%	13,462	691

Modeled Habitat Definitions:

Vernal Wetlands: Vernal Pool, Swale

Non-vernal Wetlands: Freshwater Marsh, Seasonal Wetland

Riparian: Mine Tailing Riparian Woodland, Mixed Riparian Scrub, Mixed Riparian Woodland

For species with state or federal status no CRPR listing used.

Status Definitions**Federal:**

E = listed as endangered under the ESA

T = listed as threatened under the ESA

State:

E = listed as endangered under CESA

T = listed as threatened under CESA

S1 = Critically Imperiled by the State

S2 = Imperiled by the State

S3 = Vulnerable by the State

California Rare Plant Rank (CRPR)

1A = Presumed extirpated in California and either rare or extinct elsewhere

1B = Rare, threatened, or endangered in California and elsewhere

2A = Presumed extirpated in California, but more common elsewhere

2B = Rare, threatened, or endangered in California, but more common elsewhere

3 = Plants which need more information and on the Review list

4 = Plants of limited Distribution – Watch List

CRPR Threat Ranks

0.1 = Seriously threatened in California (high degree/immediacy of threat)

0.2 = Moderately threatened in California (moderate degree/immediacy of threat)

0.3 = Not very threatened in California (low degree/immediacy of threats or no current threats known)

The No Action/No Project Alternative is expected to result in conservation of habitat for these special-status plants through project-by-project mitigation required by existing policies and regulations (Section 9.1.1), and would often not be part of a coordinated and linked Preserve System (Section 2.2.4). The acres of estimated habitat conservation for each species are shown in Table 9-22.

Critical habitat has been designated for fleshy owl's clover (*Castilleja campestris* var. *succulenta*) south of Dry Creek at the extreme southern edge of the Planning Area. The No Action/No Project Alternative is not expected to impact any of this designated Critical Habitat for fleshy owl's clover.

Cumulative Effect of the Alternative

Potentially suitable habitat within the Planning Area for special-status plants not covered by the SSHCP has been lost, degraded, and fragmented by other past and present urban and suburban development and associated infrastructure as described in Section 3.7.1. The effects of these past and present projects on special-status plants and their habitat are reflected in the current conditions for the species as discussed in Appendix G.

Reasonably foreseeable future actions, as described in Section 3.7.2, consist of actions that are similar in nature to the past and present actions in the Planning Area. Although not every reasonably foreseeable future action would affect special-status plants, as a whole these actions would result in the continued loss of special-status plant habitat, as well as indirect impacts (e.g., habitat fragmentation, increased urban runoff) to remaining modeled habitat. For future projects and activities subject to CEQA and NEPA review, these impacts would be mitigated under the regulatory environment described in Sections 9.1.1 and 2.2.2.

As discussed previously in this impact section, the development and related infrastructure under the No Action/No Project Alternative would result in direct and indirect impacts to modeled special-status plant species habitat (Table 9-22). The modeled habitat preserved under the No Action/No Project Alternative would, in most cases, be less than the acreage of modeled habitat lost. In addition for species other than Heckard's pepper-grass (*Lepidium latipes* var. *heckardii*), the No Action/No Project Alternative would also re-establish/establish modeled habitat. However, under the No Action/No Project Alternative, preserved and re-established/established habitat would often be geographically fragmented and not adaptively managed to provide conservation at a landscape scale due to the project-by-project nature of the mitigation. This mitigation scenario would increase indirect effects such as habitat fragmentation and would result in a decrease in the value of modeled habitat for the species.

Therefore, the incremental direct and indirect impacts of No Action/No Project Alternative to other special-status plants, when considered together with the significant impacts to other special-status plants from past, current, and foreseeable future projects and activities in the study area, would be a ***Significant Cumulative*** effect.

9.2.3 Proposed Action/Proposed Project Alternative

The Proposed Action/Proposed Project Alternative is described in Section 2.3.

9.2.3.1 Effects on Vernal Pool Invertebrate/Plant Species and Habitat

As was the case for the No Action/ No Project Alternative above, the following 11 vernal pool invertebrate and plant species are considered together in the analysis of the Proposed Action/Proposed Project due to their dependence on the vernal pool ecosystem: vernal pool tadpole shrimp, vernal pool fairy shrimp, mid-valley fairy shrimp, Ricksecker's water scavenger beetle, dwarf downingia, Ahart's dwarf rush, pincushion navarretia, slender Orcutt grass, Sacramento Orcutt grass, Boggs Lake hedge-hyssop, and legenere.

While the individual natural history, habitat requirements, modeled habitat, and documented occurrences in the Planning Area differ for these species (Appendix G), the direct impact mechanisms (environmental stressors) that cause temporary impacts are the same.

Direct and Indirect Effects of the Alternative

Projects and activities under the Proposed Action/Proposed Project (Section 2.3.3) would permanently remove modeled habitat for vernal pool invertebrate and plant species through development and related infrastructure resulting in direct impacts to vernal pool invertebrate and plant species. While the majority of the urban development and direct impacts would occur within the UDA, transportation and other infrastructure projects resulting in direct impacts would occur outside the UDA. The direct impact acres that would occur under the Proposed Action/Proposed Project Alternative for each species are shown in Table 9-23 and discussed below.

Vernal pool invertebrate and plant species near proposed construction activities under the Proposed Action/Proposed Project Alternative will be adversely affected by several temporary construction-related effects (Appendix G) that will result in disturbance to habitat or harm to vernal pool invertebrate plant and animal species. Generally, these temporary effects will occur within the project boundary or road right-of-way area, which is quantified in the direct effects and the area of indirect impacts to each species in the impact tables below.

As discussed previously for direct impacts, the majority of indirect impacts to vernal pool invertebrate and plant species under the Proposed Action/Proposed Project Alternative would

occur within the UDA, as a result of urban development, although there would be indirect impacts as a result of transportation and other infrastructure projects occurring outside the UDA. The environmental stressors that would trigger indirect impacts under the Proposed Action/Proposed Project Alternative are the same in type and character as those discussed in the impact discussion for vernal pool invertebrate and plant species under the No Action/No Project Alternative in Section 9.2.2.

The Proposed Action/Proposed Project Alternative requires covered activities to implement the following AMMs relevant to vernal pool invertebrate and plant species; LID-1 (Stormwater Quality), LID-3 (Natural Site Features), EDGE-1 (Compatible Land Uses), EDGE-2 (Single Loaded Streets), EDGE-3 (Preserve Setbacks), EDGE-4 (Locate Stormwater Control Outside Preserves), EDGE-5 (Stormwater Control in Preserve Setbacks), EDGE-7 (Hardpan/Duripan Protection), EDGE-10 (Prevent Invasive Species Spread), BMP-9 (Soil Compaction), NATURE TRAIL-1 (Trail Plan), NATURE TRAIL-2 (Hardpan/Duripan Protection), NATURE TRAIL-3 (Trail Location), NATURE TRAIL-4 (Biological Studies Prior to Trail Design), NATURE TRAIL-5 (Monitoring of Trail Impacts), ROAD-1 (Road Project Location), ROAD-2 (Wildlife Crossing Structures), ROAD-3 (Roadside Pesticide Use), RE-ESTABLISHMENT/ESTABLISHMENT-1 (Vernal Pool), UTILITY-2 (Utility Maintenance), UTILITY-3 (Trenchless Construction Methods), and UTILITY-4 (Siting of Entry and Exit Location) (Table 2-6). Compared to the project avoidance and minimization measures of the No Action/Project Alternative, these SSHCP AMMs would reduce indirect impacts on vernal pool invertebrate and plant species. For example, EDGE-3 establishes a 50-foot setback from the edge of established preserves to minimize indirect effects on Preserve lands, while EDGE-7 would not allow covered activities that could damage duripan within the Preserve Setback to protect the perched aquifer that maintains hydrologic conditions in the vernal pool ecosystem. The indirect impact acres that would occur under the Proposed Action/Proposed Project for each species are shown in Table 9-23 and discussed below.

The maximum anticipated loss of species modeled habitat for vernal pool tadpole shrimp and vernal pool fairy shrimp modeled habitat due to direct impacts would be approximately 17,117 acres (Table 9-23). Indirect effects on vernal pool tadpole shrimp and vernal pool fairy shrimp modeled aquatic habitat are anticipated to result in additional approximately 142 acres of impacts. The total impact, including direct and indirect impacts, of the Proposed Action/Proposed Project Alternative on vernal pool tadpole shrimp and vernal pool fairy shrimp modeled habitat is expected to be approximately 17,259 acres.

Of the modeled vernal pool tadpole shrimp and vernal pool fairy shrimp habitat loss, approximately 8,500 acres would occur within the MCRA, which would affect approximately 46.9% of the modeled habitat within the MCRA. There would also be approximately 53 acres lost within the C/RS, which would affect approximately 0.1% of modeled habitat within the

C/RS. This is a smaller area lost within the MCRA and an approximately equal area lost within the C/RS when compared to the No Action/No Project Alternative.

The total impact of approximately 17,259 acres under the Proposed Action/Proposed Project Alternative on vernal pool tadpole and vernal pool fairy shrimp habitat is approximately 690 acres less than the approximately 17,949 acres of total impact estimated for the No Action/No Project Alternative.

The Proposed Action/Proposed Project Alternative is also expected to remove approximately 695 acres of Critical Habitat for vernal pool tadpole shrimp and vernal pool fairy shrimp in Critical Habitat Unit 13 and approximately 51 acres in Critical Habitat Unit 14a for a total of approximately 746 acres of Critical Habitat lost. This loss is approximately 220 acres less than the approximately 966 acres of designated Critical Habitat that would be removed under the No Action/No Project Alternative.

The Proposed Action/Proposed Project Alternative is expected to remove 112 of the 851 documented occurrences of vernal pool tadpole shrimp in the Planning Area, which would be 22 more occurrences than would be removed under the No Action/No Project Alternative. The Proposed Action/Proposed Project Alternative is also expected to remove 49 of the 581 documented occurrences of vernal pool fairy shrimp in the Planning Area, which would be 18 more occurrences than would be removed under the No Action/No Project Alternative.

The maximum anticipated direct loss of species modeled habitat for mid-valley fairy shrimp under the Proposed Action/Proposed Project would be approximately 12,553 acres, primarily within the UDA. In addition, indirect impacts on modeled habitat would be approximately 106 acres. The total impacts on modeled habitat, including direct and indirect impacts, would be approximately 12,639 acres within the Planning Area (Table 9-23). Of this habitat loss, approximately 6,280 acres would occur within the MCRA, which would affect approximately 43% of modeled habitat within the MCRA. There would also be approximately 41 acres lost within the C/RS, which would affect approximately 0.4% of modeled habitat within the C/RS. This is a smaller area lost within the MCRA and an approximately equal area lost within the C/RS when compared to the No Action/No Project Alternative.

The total impact area of 12,639 acres for mid-valley fairy shrimp under the Proposed Action/Proposed Project is approximately 581 acres less than the estimated 13,220 acres of total loss under the No Action/No Project Alternative (Table 9-4).

The Proposed Action/Proposed Project Alternative is expected to remove 10 of the 37 occurrences of mid-valley fairy shrimp in the Planning Area, which would be 5 more occurrences than would be removed under the No Action/No Project Alternative.

Activities under the Proposed Action/Proposed Project Alternative would cause direct impacts to approximately 17,095 acres of Ricksecker's water scavenger beetle modeled habitat to development and related infrastructure. In addition to this direct impact, approximately 138 acres of indirect impact would also occur for a total impact, direct and indirect combined, of 17,233 acres on Ricksecker's water scavenger beetle modeled habitat. The total impact to Ricksecker's water scavenger beetle modeled habitat would be approximately 16.6% of the existing modeled habitat in the Planning Area (Table 9-23).

The total impact area of 17,233 acres for Ricksecker's water scavenger beetle modeled habitat under the Proposed Action/Proposed Project is approximately 674 acres less than the estimated 17,907 acres of total loss under the No Action/No Project Alternative (Table 9-4).

The Proposed Action/Proposed Project Alternative is not expected to remove any of the eight occurrences of Ricksecker's water scavenger beetle in the Planning Area; no occurrences would be removed under the No Action/No Project Alternative.

The Proposed Action/Proposed Project Alternative future urban development and related infrastructure would cause direct impacts through the loss of approximately 1,963 acres of modeled habitat for dwarf downingia. In addition to this direct impact, approximately 19 acres of indirect impact would also occur for a total impact of approximately 1,982 acres on dwarf downingia modeled habitat. The total impact, including direct and indirect impacts, to dwarf downingia modeled habitat would be approximately 8.1% of the existing modeled habitat in the Planning Area (Table 9-23).

The total impact area of 1,982 acres for dwarf downingia modeled habitat under the Proposed Action/Proposed Project is approximately 56 acres less than the estimated 2,038 acres of total loss under the No Action/No Project Alternative (Table 9-4).

The Proposed Action/Proposed Project Alternative is not expected to remove any of the 10 documented occurrences of dwarf downingia in the Planning Area; no occurrences would be removed under the No Action/No Project Alternative.

The Proposed Action/Proposed Project Alternative would cause permanent loss of approximately 7,332 acres land cover types suitable for Ahart's dwarf rush due to development and related infrastructure. In addition to this direct impact, approximately 71 acres of indirect impact would also occur for a total impact (direct and indirect impacts combined) of approximately 7,403 acres on Ahart's dwarf rush modeled habitat. The total impact to Ahart's dwarf rush modeled habitat would be approximately 29.2% of the existing modeled habitat in the Planning Area (Table 9-23).

The total impact area of 7,403 acres for Ahart's dwarf rush modeled habitat under the Proposed Action/Proposed Project is approximately 658 acres less than the estimated 8,061 acres of total loss under the No Action/No Project Alternative (Table 9-4).

The Proposed Action/Proposed Project Alternative is not expected to remove either of the two occurrences of Ahart's dwarf rush in the Planning Area; no occurrences would be removed under the No Action/No Project Alternative.

The Proposed Action/Proposed Project Alternative would cause loss of approximately 8,201 acres of modeled habitat for pincushion navarretia resulting from development and related infrastructure. In addition to this direct impact, approximately 57 acres of indirect impact would also occur for a total impact (direct and indirect impacts combined) of approximately 8,258 acres on pincushion navarretia modeled habitat. The total impact to pincushion navarretia modeled habitat would be approximately 14.3% of the existing modeled habitat in the Planning Area (Table 9-23).

The total impact area of 8,258 acres for pincushion navarretia modeled habitat under the Proposed Action/Proposed Project is approximately 179 acres less than the estimated 8,437 acres of total loss under the No Action/No Project Alternative (Table 9-4).

The Proposed Action/Proposed Project Alternative is not expected to remove any of the 48 occurrences of pincushion navarretia in the Planning Area; no occurrences would be removed under the No Action/No Project Alternative.

The Proposed Action/Proposed Project Alternative would result in an estimated permanent loss of approximately 7,139 acres of land cover types suitable for slender Orcutt grass and Sacramento Orcutt grass resulting from development and related infrastructure. In addition to this direct impact, approximately 48 acres of indirect impact would also occur for a total impact, including both direct and indirect impacts, of approximately 7,187 acres on slender Orcutt grass and Sacramento Orcutt grass modeled habitat. This total impact would be approximately 20.7% of the total modeled habitat within the Planning Area (Table 9-23). Of this habitat loss, approximately 4,683 acres would occur within the MCRA, which would affect approximately 44.8% of modeled habitat within the MCRA. There would also be approximately 21 acres lost within the C/RS, which would affect approximately 0.1% of modeled habitat within the C/RS. This is a smaller area lost within the MCRA and an approximately equal area lost within the C/RS when compared to the No Action/No Project Alternative.

The total impact area of 7,187 acres for slender Orcutt grass and Sacramento Orcutt grass modeled habitat under the Proposed Action/Proposed Project is approximately 575 acres less than the estimated 7,762 acres of total loss under the No Action/No Project Alternative (Table 9-4).

The Proposed Action/Proposed Project alternative is also expected to impact approximately 235 acres of Critical Habitat for Sacramento Orcutt grass in Critical Habitat Unit 2 and approximately 13 acres in Critical Habitat Unit 3, for a total of approximately 248 acres of Critical Habitat lost. This loss of Critical Habitat would be approximately 526 acres less than the 774 acres that is estimated to occur under the No Action/No Project Alternative.

Approximately 235 acres of Critical Habitat for slender Orcutt grass would also be lost in Critical Habitat Unit 6, which would be approximately 475 acres less than the 710 acres of Critical Habitat estimated to be lost under the No Action/No Project Alternative.

The Proposed Action/Proposed Project Alternative is expected to remove 1 of the 40 occurrences of Sacramento Orcutt grass and none of the 4 occurrences of slender Orcutt grass in the Planning Area, which would be one fewer occurrence than would be removed under the No Action/No Project Alternative.

The Proposed Action/Proposed Project Alternative would result in loss of approximately 8,672 acres of modeled habitat for Boggs Lake hedge-hyssop resulting from development and related infrastructure. In addition to this direct impact, approximately 52 acres of indirect impact would also occur for a total impact (direct and indirect impacts combined) of approximately 8,724 acres on Boggs Lake hedge-hyssop modeled habitat. The total impact to Boggs Lake hedge-hyssop modeled habitat would be approximately 23.8% of the existing modeled habitat in the Planning Area (Table 9-23).

The total impact area of 8,724 acres for Boggs Lake hedge-hyssop modeled habitat under the Proposed Action/Proposed Project is approximately 524 acres less than the estimated 9,248 acres of total loss under the No Action/No Project Alternative (Table 9-4).

The Proposed Action/Proposed Project Alternative is expected to remove four of the existing 31 occurrences of Boggs Lake hedge-hyssop in the Planning Area, which would be two more occurrences than would be removed under the No Action/No Project Alternative.

The No Action/No Project Alternative would result in loss of approximately 10,713 acres of modeled habitat for legenera resulting from development and related infrastructure. In addition to this direct impact, approximately 65 acres of indirect impact would also occur for a total impact (direct and indirect impacts combined) of approximately 10,778 acres on legenera modeled habitat. The total impact to legenera modeled habitat would be approximately 21.1% of the existing modeled habitat in the Planning Area (Table 9-23).

The total impact area of 10,778 acres for legenera modeled habitat under the Proposed Action/Proposed Project is approximately 505 acres less than the estimated 11,283 acres of total loss under the No Action/No Project Alternative (Table 9-4).

The Proposed Action/Proposed Project Alternative is expected to remove 2 of the existing 62 occurrences of legenera in the Planning Area, which would be 1 more occurrence than would be removed under the No Action/No Project Alternative.

Table 9-23. Direct/Indirect Impacts and Conservation of Vernal Pool Invertebrate and Plant Modeled Habitat under the Proposed Action/Proposed Project Alternative

Modeled Habitat	Total Planning Area (acres)						
	Total Existing Modeled Habitat	Direct Impacts	Indirect Impacts	Total Impacts	% of Existing Habitat lost	Modeled Habitat Preservation	Modeled Habitat Established/ Re-established
Vernal Pool Tadpole Shrimp and Vernal Pool Fairy Shrimp							
Valley Grassland	97,349	16,472	Qualitative	16,472	16.9%	22,014	0
Vernal Pool	4,536	389	94	483	10.6%	966	389
Swale	1,252	234	44	278	22.2%	278	256*
Stream/Creek (VPIH)	73	22	4	26	30.1%	26	0*
Total Modeled Habitat	103,210	17,117	142	17,259	16.6%	23,284	645
Mid-Valley Fairy Shrimp							
Valley Grassland	50,061	12,006	Qualitative	12,006	24.0%	10,493	0
Vernal Pool	2,818	337	71	408	11.9%	603	336
Swale	759	190	35	225	25.0%	201	210*
Total Modeled Habitat	53,638	12,553	106	12,639	23.4%	11,297	546
Ricksecker's Water Scavenger Beetle							
Valley Grassland	97,349	16,472	Qualitative	16,472	16.9%	22,014	0
Vernal Pool	4,536	389	94	483	8.6%	966	389
Swale	1,252	234	44	278	18.8%	278	234
Total Modeled Habitat	103,137	17,095	138	17,233	16.6%	23,258	623
Dwarf Downingia							
Valley Grassland	22,241	1,823	Qualitative	1,823	8.2%	3,733	0
Vernal Pool	1,661	94	13	107	5.7%	186	95
Swale	359	46	6	52	12.8%	56	46
Total Modeled Habitat	24,261	1,963	19	1,982	8.1%	3,975	141
Ahart's Dwarf Rush							
Valley Grassland	23,885	7,093	Qualitative	7,093	29.7%	11,949	0
Vernal Pool	937	149	51	200	15.9%	478	149
Swale	314	90	20	110	28.7%	165	90
Total Modeled Habitat	25,136	7,332	71	7,403	29.2%	12,592	239

Table 9-23. Direct/Indirect Impacts and Conservation of Vernal Pool Invertebrate and Plant Modeled Habitat under the Proposed Action/Proposed Project Alternative

Modeled Habitat	Total Planning Area (acres)						
	Total Existing Modeled Habitat	Direct Impacts	Indirect Impacts	Total Impacts	% of Existing Habitat lost	Modeled Habitat Preservation	Modeled Habitat Established/ Re-established
<i>Pincushion Navarretia</i>							
Valley Grassland	54,967	7,987	Qualitative	7,987	14.5%	13,945	0
Vernal Pool	1,844	118	36	154	6.3%	514	95
Swale	627	96	21	117	15.3%	183	46
Total Modeled Habitat	57,438	8,201	57	8,258	14.3%	14,642	141
<i>Sacramento Orcutt Grass</i>							
Valley Grassland	33,265	6,991	Qualitative	6,991	21.0%	13,945	0
Vernal Pool	1,227	148	48	196	12.1%	514	148
Total Modeled Habitat	34,492	7,139	48	7,187	20.7%	14,459	148
<i>Slender Orcutt Grass</i>							
Valley Grassland	33,265	6,991	Qualitative	6,991	21.0%	9,332	0
Vernal Pool	1,227	148	48	196	12.1%	378	148
Total Modeled Habitat	34,492	7,139	48	7,187	20.7%	9,710	148
<i>Boggs Lake Hedge-Hyssop</i>							
Valley Grassland	35,115	8,419	Qualitative	8,419	24.0%	8,657	0
Vernal Pool	1,531	240	52	292	19.1%	382	239
Seasonal Wetland	354	13	Qualitative	13	3.7%	35	13
Total Modeled Habitat	37,000	8,672	52	8,724	23.4%	9,074	252
<i>Legenere</i>							
Valley Grassland	47,527	10,401	Qualitative	10,401	21.9%	11,061	0
Vernal Pool	2,560	276	65	341	13.3%	512	95
Seasonal Wetland	886	36	Qualitative	36	4.1%	42	35
Total Modeled Habitat	50,973	10,713	65	10,778	21.1%	11,615	130

* Under SSHCP Objective VP5, re-establishment/establishment to mitigate effects to Stream/Creek (VPIH) will be in the form of Swale, which has been added to the acres necessary to mitigate effects to Swale.

The Conservation Strategy that would be implemented under the Proposed Action/Proposed Project Alternative would result in the acres of modeled habitat preserved and re-established/established for vernal pool invertebrates and plants shown in Table 9-23.

The modeled habitat re-established/established under the Proposed Action/Proposed Project Alternative for pincushion navarretia (approximately 141 acres) and legenere (approximately 130

acres) is smaller than under the No Action/No Project Alternative (approximately 204 acres and 262 acres respectively), although the acres preserved under the Proposed Action/Proposed Project are larger for both species.

For all other vernal pool invertebrates and plants covered by the SSHCP, the acres preserved and acres re-established/established under the Proposed Action/Proposed Project Alternative would exceed the acres preserved and acres re-established/established under the No Action/No Project Alternative.

The Conservation Strategy also includes Biological Goals and Measurable Objectives that would direct the modeled habitat preservation associated with Covered Activities for vernal pool invertebrates and plants within the Planning Area. These biological objectives would include maintenance or improvement of habitat value for vernal pool invertebrates and plants by minimizing indirect effects on modeled habitat within preserves (e.g., development of Preserve management plans and requirements for developments to include setback widths to limit edge effects). The No Action/No Project Alternative would preserve and re-establish/establish vernal pool invertebrate and plant habitat listed in Table 9-4; however, this habitat preservation would not be in an as effectively linked Preserve System, nor would it follow the objectives of the Conservation Strategy as would be implemented under the Proposed Action/Proposed Project Alternative.

Significance of Direct and Indirect Effects

The Proposed Action/Proposed Project Alternative would result in the loss of a smaller area of habitat for vernal pool invertebrate and plant species within the Planning Area when compared to the No Action/No Project Alternative. In addition, the Proposed Action/Proposed Project Alternative would preserve and re-establish/establish more habitat than what is estimated for the No Action/No Project Alternative. The Proposed Action/Proposed Project would also impact a smaller area within the MCRA, compared to the No Action/No Project Alternative, and an equal area within the C/RS, although preservation within the MCRA would also be less than the No Action/No Project Alternative.

The Proposed Action/Proposed Project Alternative would impact a smaller area of Critical Habitat for vernal pool tadpole shrimp, vernal pool fairy shrimp, slender Orcutt grass, and Sacramento Orcutt grass than the No Action/ No Project Alternative.

The Proposed Action/Project Preserve System would provide some larger vernal pool ecosystem preserves, and increased Preserve connectivity, over the project-by-project mitigation under the No Action/No Project Alternative, maintaining existing vernal pool ecosystem function, which benefits vernal pool invertebrate and plant species.

Multiple AMMs are also included in the Proposed Action/Proposed Project Alternative that would result in the avoidance or minimization of indirect and temporary effects on vernal pool invertebrate and plant modeled habitat and provide an additional mechanism for impact avoidance and oversight.

Therefore, the Proposed Action/Proposed Project Alternative would have less impact, and using the significance criteria presented in Section 9.2.1 and the impact analysis provided previously, the Proposed Action/Proposed Project Alternative's impact to 11 vernal pool invertebrate and plant species is a ***Significant Beneficial*** effect when comparing the Proposed Action/Proposed Project Alternative to the No Action/ No Project baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Proposed Action/Proposed Project Alternative would generally be the same as described for the No Action/No Project Alternative in Section 9.2.2.

As discussed previously in this impact section, the Proposed Action/Proposed Project Alternative would result in the loss of a smaller area of habitat for vernal pool invertebrate and plant species within the Planning Area when compared to the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Proposed Action/Proposed Project Alternative would include AMMs, such as increased stream setbacks, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy also would include Biological Goals and Measureable Objectives specific to the conservation of vernal pool invertebrate and plant species and would preserve additional acres of modeled habitat that exceed the preservation under the No Action/No Project Alternative within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected preserves than is anticipated from the project-by-project mitigation under the No Action /No Project Alternative. The individual Preserves in the Preserve System under the Proposed Action/Proposed Project Alternative would also be subject to the Biological Goals and Measurable Objectives of the SSHCP applicable to vernal pool invertebrate and plant species and be operated under a comprehensive preserve management program.

The incremental effects of the Proposed Action/Proposed Project Alternative would result in less of an incremental contribution to the cumulative impact within the Planning Area for 11 vernal pool invertebrates and plant species than would occur under the No Action/No Project Alternative. However, at the scale of vernal pool invertebrate and plant species impacts

throughout the study area, the incremental difference in impacts under the Proposed Action/Proposed Project Alternative compared to impacts under the No Action/No Project Alternative is not discernibly different. Therefore, the Proposed Action/Proposed Project Alternative does not result in a cumulatively considerable contribution to significant adverse cumulative impacts to these species. The Proposed Action/Proposed Project Alternative would result in **No Cumulative Effect** to these 11 vernal pool invertebrate and plant species compared to the No Action/No Project Alternative baseline condition.

9.2.3.2 Effects on Valley Elderberry Longhorn Beetle and Its Habitat

The description of valley elderberry longhorn beetle along with modeled species habitat and documented occurrences within the Planning Area can be found in Appendix G.

Direct and Indirect Effects of the Alternative

The maximum anticipated loss of species modeled habitats for valley elderberry longhorn beetle is approximately 591 acres, primarily within the UDA due to the intersection of urban development and modeled habitat in this area. This would result in the loss of approximately 7.5% of the existing habitat within the Planning Area (Table 9-24). This would be greater than the anticipated 554 acres removed by activities under the No Action/No Project Alternative.

The Proposed Action/Proposed Project Alternative is expected to remove one of the existing 156 occurrences of valley elderberry longhorn beetle in the Planning Area, whereas no occurrences would be removed under the No Action/No Project Alternative.

Table 9-24. Direct Effects and Modeled Habitat Conservation for Valley Elderberry Longhorn Beetle Under the Proposed Action/Proposed Project Alternative

Modeled Habitat	Total Planning Area (acres)				
	Total Existing Modeled Habitat	Direct Effect	% of Existing Habitat Lost	Total Habitat Preservation	Total Habitat Re-establishment and/or Establishment
Mine Tailing Riparian Woodland	641	218	34%	218	218*
Mixed Riparian Woodland	5,785	184	3.2%	368	184
Mixed Riparian Scrub	1,452	189	13.0%	378	189
Total Modeled Habitat	7,878	591	7.5%	1,170	591

* All of the required mitigation acreage to offset losses of Mine Tailing Riparian Woodlands would occur within either Mixed Riparian Scrub or Mixed Riparian Woodland (Table 2-7).

Indirect impacts to valley elderberry longhorn beetle would also occur from the environmental stressors that result from the Proposed Action/Proposed Project Alternative. The indirect effects of these environmental stressors on valley elderberry longhorn beetle are described and

analyzed qualitatively in the valley elderberry longhorn beetle impact discussion for the No Action/No Project Alternative in Section 9.2.2.

The Proposed Action/Proposed Project Alternative requires Covered Activities to implement the following AMMs that are relative to valley elderberry longhorn beetle habitat; LID-1 (Stormwater Quality), LID-3 (Natural Site Features), EDGE-1 (Compatible Land Uses), EDGE-2 (Single Loaded Streets), EDGE-3 (Preserve Setbacks), EDGE-4 (Locate Stormwater Control Outside Preserves), EDGE-5 (Stormwater Control in Preserve Setbacks), EDGE-8 (Outdoor Lighting), EDGE-9 (Livestock Access to Preserves), EDGE-10 (Prevent Invasive Species Spread), BMP-9 (Soil Compaction), ROAD-1 (Road Project Location), ROAD-2 (Wildlife Crossing Structures), ROAD-3 (Roadside Pesticide Use), STREAM-1 (Laguna Creek Wildlife Corridor), STREAM-2 (UDA Stream Setbacks), STREAM-3 (Minor Tributaries to UDA Streams), NATURE TRAIL-1 (Trail Plan), NATURE TRAIL-3 (Trail Location), NATURE TRAIL-4 (Biological Studies Prior to Trail Design), and NATURE TRAIL-5 (Monitoring of Trail Impacts) (Table 2-6). Relative to the project avoidance and minimization measures of the No Action/Project Alternative, these SSHCP AMMs would further avoid and minimize indirect impacts on valley elderberry longhorn beetle. For example, STREAM-1 through STREAM-3 would increase setback distances on Laguna Creek, UDA streams, and minor tributaries over what would be required under the No Action/No Project Alternative, increasing protection of riparian modeled habitat.

There are no species AMMs for valley elderberry longhorn beetle; however, AMMs required of Covered Activities would avoid or minimize temporary direct effects on valley elderberry longhorn beetle and modeled habitat. For example, STREAM-1 through STREAM-3 would require greater setbacks than under the No/Action Alternative thereby increasing protection of riparian modeled habitat, and reducing temporary effects under the Proposed Action/Proposed Project Alternative to be less than under the No Action/No Project.

The Proposed Action/Proposed Project Alternative would include the re-establishment/establishment of approximately 591 acres of modeled habitat for valley elderberry longhorn beetle (Table 9-24), which would equal the loss under the alternative. This is approximately 37 acres more re-establishment/establishment than would be expected under the No Action/No Project Alternative.

The Proposed Action/Proposed Project Alternative would also preserve approximately 1,170 acres within the Preserve System, while no modeled habitat preservation is anticipated under the No Action/No Project Alternative. The Conservation Strategy also provides two specific objectives for valley elderberry longhorn beetle: the relocation and replacement of damaged or lost elderberry shrubs, and the inclusion of elderberry shrubs in general riparian re-establishment/establishment projects. These objectives would mitigate impacts to individual elderberry shrubs on which this species depends.

Significance of Direct and Indirect Effects

The Proposed Action/Proposed Project Alternative would directly impact approximately 38 acres more modeled habitat for valley elderberry longhorn beetle within the Planning Area than would the No Action/No Project Alternative. Both alternatives would achieve no net loss of acreage of modeled habitat through mitigation; however, the Proposed Action/Proposed Project Alternative would preserve considerably more habitat (approximately 1,170 acres) than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included in the Proposed Action/Proposed Project Alternative that would result in avoidance of indirect and temporary effects on valley elderberry longhorn beetle individuals and habitat, and provide an additional mechanism for impact avoidance and oversight.

The Proposed Action/Proposed Project Alternative's impact would be similar to that of the No Action/No Project Alternative but would provide more benefit to the species when considering the additional 1,170 acres of habitat preserved. Therefore, based on the significance criteria in Section 9.2.1, there would be a **Minor Beneficial** effect on valley elderberry longhorn beetle when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Proposed Action/Proposed Project Alternative would generally be the same as described above for the No Action/No Project Alternative above (Section 9.2.2).

As discussed previously in this impact section, the Proposed Action/Proposed Project Alternative would result in the loss of 591 acres of modeled valley elderberry longhorn beetle habitat within the Planning Area, which is 38 acres greater than the loss than under the No Action/No Project Alternative. However, as discussed previously, both alternatives are anticipated to mitigate these losses to a no net loss of acreage. In addition, the SSHCP Conservation Strategy implemented under the Proposed Action/Proposed Project Alternative would include AMMs, such as increased stream setbacks, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy also would include Biological Goals and Measureable Objectives specific to the conservation of valley elderberry longhorn beetle and would preserve additional acres of valley elderberry longhorn beetle habitat that exceed the preservation under the No Action/No Project Alternative by 1,170 acres within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous

and more connected preserves than is anticipated from the project-by-project mitigation under the No Action /No Project Alternative. The individual preserves in the Preserve System under the Proposed Action/Proposed Project Alternative would also be subject to the Biological Goals and Measurable Objectives of the SSHCP applicable to valley elderberry longhorn beetle and be operated under a comprehensive preserve management program.

The incremental effects of the Proposed Action/Proposed Project Alternative would not be significantly different than the incremental effects that would be occur under the No Action/No Project Alternative for valley elderberry longhorn beetle. The Proposed Action/Proposed Project Alternative would result in a **No Cumulative Effect** to valley elderberry longhorn beetle compared to the No Action/No Project Alternative baseline condition.

9.2.3.3 Effects on California Tiger Salamander (Central Valley Population) and Its Habitat

The life history, habitat requirements, known occurrences, and existing acres of modeled California tiger salamander (Central Valley population) habitat in the Planning Area are described in detail in Appendix G.

Direct and Indirect Effects of the Alternative

The maximum anticipated direct loss of species modeled habitats for California tiger salamander is approximately 1,677 acres of upland habitat and approximately 80 acres of aquatic breeding habitat for the species (Table 9-25). These losses would be 2.0% of the existing modeled upland and 1.8% of the existing modeled aquatic habitat in the Planning Area. Impacts to upland habitat acres are approximately 95 acres less, while impacts to aquatic habitat are approximately 5 acres more than the acres of expected direct impact from the No Action/No Project Alternative of approximately 1,772 acres of upland and approximately 75 acres of aquatic habitat (Table 9-6). This may be due to the majority of California tiger salamander habitat occurring within the UDA in Galt and outside of the UDA in locations where the anticipated development under the two alternatives are very similar in size and scope.

The Proposed Action/Proposed Project Alternative is not expected to remove any of the existing 31 occurrences of California tiger salamanders in the Planning Area; there would also be no occurrences removed under the No Action/No Project Alternative.

Table 9-25. Direct Effects and Conservation of California Tiger Salamander Modeled Habitat Under the Proposed Action/Proposed Project Alternative

Modeled Habitat	Total Planning Area (acres)						
	Total Existing	Direct Effect	Indirect Effect	Total Effect	% of Existing Modeled Habitat Lost	Habitat Preservation	Habitat Re-establishment and/or Establishment
Upland Habitat							
Blue Oak Savanna	3,322	0	Qualitative	0	0.0%	33	0
Blue Oak Woodland	3,774	0	Qualitative	0	0.0%	0	0
Valley Grassland	78,274	1,677	Qualitative	1,677	2.1%	16,144	0
<i>Total Upland Habitat</i>	<i>85,369</i>	<i>1,677</i>	<i>Qualitative</i>	<i>1,677</i>	<i>2.0%</i>	<i>16,177</i>	<i>0</i>
Aquatic Habitat							
Vernal Pool	3,033	57	2	59	1.9%	762	58
Seasonal Wetland	1,391	21	Qualitative	21	1.5%	105	21
<i>Total Aquatic Habitat</i>	<i>4,425</i>	<i>79</i>	<i>2</i>	<i>80</i>	<i>1.8%</i>	<i>867</i>	<i>79</i>
Total Modeled Habitat	89,794	1,756	2	1,757	2.0%	17,062	79

The loss of modeled habitat within the C/RS would be approximately 52 acres, including 46 acres of upland habitat and 6 acres of aquatic habitat. This loss of modeled habitat is approximately equal to the estimated 60 acres of habitat loss within the C/RS under the No Action/No Project Alternative.

None of the 10,193 acres of Critical Habitat for the species in the Planning Area would be lost under the Proposed Action/Proposed Project Alternative. As discussed in Section 9.2.3, the No Action/No project Alternative also would not remove designated Critical Habitat for California tiger salamander.

Indirect effects on modeled California tiger salamander habitat would also occur under the Proposed Action/Proposed Project Alternative. These indirect effects would be the same in type and character as those discussed and analyzed qualitatively for the No Action/No Project in Section 9.2.2. The total quantified indirect effects under the Proposed Action/Proposed Project Alternative would be approximately 4 acres. This would be approximately equal to the quantified indirect impact of 4 acres under the No Action/No Project Alternative.

The Proposed Action/Proposed Project Alternative requires implementation of the following AMMs by Covered Activities that are relative to California tiger salamander; LID-1 (Stormwater Quality), LID-3(Natural Site Features), EDGE-1 (Compatible Land Uses), EDGE-2 (Single Loaded Streets), EDGE-3 (Preserve Setbacks), EDGE-4 (Locate Stormwater Control Outside

Preserves), EDGE-5 Stormwater Control in Preserve Setbacks), EDGE-7 (Hardpan/Duripan Protection), EDGE-10 (Prevent Invasive Species Spread), BMP-9 (Soil Compaction), NATURE TRAIL-1 (Trail Plan), NATURE TRAIL-2 (Hardpan/Duripan Protection), NATURE TRAIL-3 (Trail Location), NATURE TRAIL-4 (Biological Studies Prior to Trail Design) NATURE TRAIL-5 (Monitoring of Trail Impacts), ROAD-1 (Road Project Location), ROAD-2 (Wildlife Crossing Structures), ROAD-3 (Roadside Pesticide Use), RE-ESTABLISHMENT/ESTABLISHMENT-1 (Vernal Pool), RE-ESTABLISHMENT/ESTABLISHMENT-2 (Vernal Pool Inocula Bank), UTILITY-2 (Utility Maintenance), UTILITY-3 (Trenchless Construction Methods), UTILITY-4 (Siting of Entry and Exit Location), and CTS-7 (Rodent control) (Table 2-6). Relative to the project avoidance and minimization measures of the No Action/Project alternative, these SSHCP AMMs would avoid and minimize indirect impacts on California tiger salamander. For example, ROAD-2 would require wildlife crossing structures and maintain connectivity between modeled habitats, while CTS-7 would limit rodent control to developed portions of project sites allowing for burrow creation that provides habitat for California tiger salamander. While both of these AMMs may be applied to projects under the No Action/No Project Alternative, they would likely be applied less frequently and not within all modeled habitat.

There are general AMMs that would avoid or minimize temporary effects to California tiger salamander, and species-specific AMMs that would further avoid or minimize temporary impacts on this species: CTS-1 (California Tiger Salamander Daily Construction Schedule), CTS-2 (California Tiger Salamander Monitoring), CTS-3 (California Tiger Salamander Exclusion Fencing), CTS-4 (trench protection), CTS-5 (Encounter Protocol), and CTS-6 (erosion control materials) (Table 2-6). Temporary effects under the Proposed Action/Proposed Project Alternative are expected to be less than under the No Action/No Project Alternative as discussed at the beginning of Section 9.2.3.

The Preserve System under the Proposed Action/Proposed Project Alternative would include approximately 17,062 acres of modeled habitat for California tiger salamander. This is greater than the estimated 9,689 acres of modeled habitat preservation under the No Action/No Project Alternative. Of this preserved habitat, approximately 14,435 acres of upland habitat and approximately 752 acres of aquatic habitat are located within the C/RS.

The Conservation Strategy also includes the re-establishment/establishment of approximately 79 acres of modeled California tiger salamander aquatic habitat, which would be fewer acres of re-establishment/establishment than the approximately 117 acres estimated for the No Action/No Project Alternative.

The Conservation Strategy includes the implementation of biological objectives related to California tiger salamander habitat and the species itself within the Planning Area. In addition to the preservation and re-establishment of habitat, the Conservation Strategy would

implement biological objectives related to California tiger salamander that would guide the modeled habitat preservation of habitat for the species within the Planning Area. These objectives would include the implementation of the AMMs and the Preserve System discussed previously, and objectives to maintain or improve habitat value (e.g., development of preserve management plans and requirements for Preserve width to limit edge effects).

Significance of Direct and Indirect Effects

The Proposed Action/Proposed Project Alternative would impact approximately 90 fewer acres of habitat for California tiger salamander within the Planning Area than are estimated for the No Action/No Project Alternative, as well as slightly fewer acres in the C/RS. In addition, the Proposed Action/Proposed Project Alternative would preserve considerably more habitat than what is estimated for the No Action/No Project Alternative overall, as well as within the C/RS. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included in the Proposed Action/Proposed Project Alternative that would avoid or minimize indirect and temporary effects on California tiger salamander individuals and habitat, and provide an additional mechanism for impact avoidance and oversight.

Therefore, the Proposed Action/Proposed Project Alternative would have less impact, and using the significance criteria presented in Section 9.2.1 and the impact analysis provided previously, the Proposed Action/Proposed Project Alternative would have a **Significant Beneficial** effect on California tiger salamander when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present and reasonably foreseeable future projects to cumulative effects under the Proposed Action/Proposed Project Alternative would generally be the same as described above for the No Action/No Project Alternative described in Section 9.2.2.

As discussed previously in this impact section, the Proposed Action/Proposed Project Alternative would result in the loss of approximately 1,757 acres of modeled California tiger salamander habitat within the Planning Area, which is approximately 90 acres less than the loss under the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Proposed Action/Proposed Project Alternative would include AMMs, such as limitations on rodent control, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy also would include Biological Goals and Measureable Objectives specific to the conservation of California tiger salamander and would preserve additional acres

of California tiger salamander habitat that exceed the preservation under the No Action/No Project Alternative by approximately 7,373 acres within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected preserves than is anticipated from the project-by-project mitigation under the No Action/No Project Alternative.

The incremental effects of the Proposed Action/Proposed Project Alternative would result in less of an incremental contribution to the cumulative impact within the Planning Area on California tiger salamander than would occur under the No Action/No Project Alternative. Therefore, the Proposed Action/Proposed Project Alternative does not result in a cumulatively considerable contribution to significant adverse impacts on this species. The Proposed Action/Proposed Project Alternative would result in a ***Minor Beneficial Cumulative*** effect on California tiger salamander compared to the No Action/No Project Alternative baseline condition.

9.2.3.4 Effects on Western Spadefoot and Its Habitat

The life history, habitat requirements, documented occurrences, and existing acres of modeled habitat of western spadefoot in the Planning Area are described in Appendix G.

Direct and Indirect Effects of the Alternative

The maximum anticipated loss of modeled habitats for western spadefoot is approximately 22,043 acres of upland habitat and approximately 1,022 acres of aquatic breeding habitat for the species (Table 9-26). These habitat losses would equal approximately 14.7% of the upland and 7.6% of aquatic habitat for western spadefoot in the Planning Area. This loss is less than the estimated 1,036 acres of aquatic habitat loss and less than the estimated 23,550 acres of upland habitat loss under the No Action/No Project Alternative.

The Proposed Action/Proposed Project Alternative is expected to remove 4 of the existing 41 occurrences of western spadefoot in the Planning Area, which would be 3 fewer occurrences than would be removed under the No Action/No Project Alternative.

Table 9-26. Direct Effects and Modeled Habitat Conservation for Western Spadefoot Under the Proposed Action/Proposed Project Alternative

Modeled Habitat	Total Planning Area (acres)						
	Total Existing	Direct Effect	Indirect Effect	Total Habitat Lost	% of Existing Habitat Lost	Total Habitat Preservation	Total Habitat Re-establishment and/or Establishment
Upland Habitat							
Blue Oak Savanna	5,637.	38	Qualitative	38	0.7%	38	38
Blue Oak Woodland	9,132	9	Qualitative	9	0.1%	9	9
Valley Grassland	135,094	21,996	Qualitative	21,996	16.3%	22,014	0
<i>Total Upland Habitat</i>	<i>149,863</i>	<i>22,043</i>	<i>Qualitative</i>	<i>22,043</i>	<i>14.7%</i>	<i>22,061</i>	<i>47</i>
Aquatic Habitat							
Vernal Pool	4,536	389	94.28	483	8.6%	966	389
Swale	1,252	234	43.69	278	18.7%	278	256*
Seasonal Wetland	2,600	105	Qualitative	105	4.0%	105	105
Open Water	2,344	155	Qualitative	155	6.6%	155	155**
Stream/Creek	2,674	117	Qualitative	117	4.4%	117	117
Stream/Creek (VPIH)	73	22	3.57	26	30.1%	26	0*
<i>Total Aquatic Habitat</i>	<i>13,479</i>	<i>1,022</i>	<i>141.54</i>	<i>1,164</i>	<i>7.6%</i>	<i>1,647</i>	<i>1,022</i>
Total Modeled Habitat	163,342	23,065	141.54	23,207	14.1%	23,708	1,069

* Under SSHCP Objective VP5, re-establishment/establishment to mitigate effects to Stream/Creek (VPIH) will be in the form of Swale, which has been added to the acres necessary to mitigate effects to Swale.

** Acres of Open Water Habitat re-established/established will occur as either Freshwater Marsh or Seasonal Wetland

Indirect effects on modeled western spadefoot habitat would also occur under the Proposed Action/Proposed Project Alternative. These indirect effects would be the same in type and character as those discussed and analyzed qualitatively for the species under the No Action/No Project in Section 9.2.2.

The Proposed Action/Proposed Project Alternative requires implementation of the following AMMs by Covered Activities that are relative to western spadefoot: LID-1 (Stormwater Quality), LID-3 (Natural Site Features), EDGE-1 (Compatible Land Uses), EDGE-2 (Single Loaded Streets), EDGE-3 (Preserve Setbacks), EDGE-4 (Locate Stormwater Control Outside Preserves), EDGE-5 (Stormwater Control in Preserve Setbacks), EDGE-7 (Hardpan/Duripan Protection), EDGE-10 (Prevent Invasive Species Spread), BMP-9 (Soil Compaction), NATURE TRAIL-1(Trail Plan), NATURE TRAIL-2 (Hardpan/Duripan Protection), NATURE TRAIL-3 (Trail Location), NATURE TRAIL-4 (Biological Studies Prior to Trail Design) NATURE TRAIL-5 (Monitoring of Trail Impacts),

ROAD-1 (Road Project Location), ROAD-2 (Wildlife Crossing Structures), ROAD-3 (Roadside Pesticide Use), RE-ESTABLISHMENT/ESTABLISHMENT-1 (Vernal Pool), RE-ESTABLISHMENT/ESTABLISHMENT-2 (Vernal Pool Inocula Bank), UTILITY-2 (Utility Maintenance), UTILITY-3 (Trenchless Construction Methods), and UTILITY-4 (Siting of Entry and Exit Location) (Table 2-6). Relative to the project avoidance and minimization measures of the No Action/Project alternative, these SSHCP AMMs would avoid and minimize indirect impacts on western spadefoot. For example, ROAD-2 would require wildlife crossing structures and maintain connectivity between modeled habitats, and EDGE-4 would require that stormwater runoff be directed away from Preserves which would limit exposure of western spadefoot within Preserves to urban runoff that may contain pesticides and petroleum products. While both of these AMMs may be applied to projects under the No Action/No Project Alternative, they would likely be applied less frequently.

There are general construction AMMs that would be required of Covered Activities that would avoid or minimize temporary effects to western spadefoot (Table 2.6), along with species-specific AMMs that would further avoid or minimize temporary impacts on this species: WS-1 (Western Spadefoot Design Surveys), WS-2 (Western Spadefoot Work Window), WS-3 (Western Spadefoot Monitoring), WS-4 (Trench Protection), WS-5 (Erosion Control Materials), and WS-6 (Encounter Protocol) (Table 2-5). These construction and species-specific AMMs may also be applied under the No Action/No Project Alternative; however, oversight of AMM implementation and monitoring of AMM effectiveness by the Implementing Entity for the SSHCP would increase the avoidance and minimization of impacts. For this reason, temporary effects under the Proposed Action/Proposed Project Alternative on western spadefoot are expected to be less than under the No Action/No Project Alternative.

The Preserve System under the Proposed Action/Proposed Project Alternative would include approximately 23,708 acres of modeled habitat for western spadefoot. This modeled habitat preservation would be more than the 13,600 acres of western spadefoot modeled habitat estimated to be conserved under the No Action/No Project Alternative. This acreage preserved under the No Action/No Project Alternative would not be part of an organized Preserve System.

The Conservation Strategy would also establish/re-establish approximately 47 acres of upland habitat and 1,022 acres of aquatic habitat for western spadefoot. The Conservation Strategy would implement biological objectives that support modeled habitat conservation for the species within the Planning Area. These objectives would include the implementation of the AMMs and the Preserve System discussed above, and objectives to maintain or improve habitat value (e.g., development of preserve management plans and requirements for Preserve width to limit edge effects).

The Proposed Action/Proposed Project Alternative is also estimated to preserve 5,176 acres of upland habitat and 520 acres of aquatic habitat located within the MCRA, and approximately

14,436 acres of upland habitat and 1,013 acres of aquatic habitat located within the C/RS for western spadefoot.

Significance of Direct and Indirect Effects

The Proposed Action/Proposed Project Alternative would directly and indirectly adversely affect approximately 1,640 fewer acres of habitat for western spadefoot within the Planning Area than is estimated for the No Action/No Project Alternative. Additionally, the Proposed Action/Proposed Project Alternative would preserve approximately 10,108 more acres of modeled habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included in the Proposed Action/Proposed Project Alternative that would result in reduce avoid or minimized indirect and temporary effects on western spadefoot individuals and habitat and provide an additional mechanism for impact avoidance and oversight.

Therefore, the Proposed Action/Proposed Project Alternative would have less impact, and using the significance criteria presented in Section 9.2.1 and the impact analysis provided previously, the Proposed Action/Proposed Project Alternative would have a **Significant Beneficial** effect on western spadefoot when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present and reasonably foreseeable future projects to cumulative effects under the Proposed Action/Proposed Project Alternative would generally be the same as described above for the No Action/No Project Alternative in Section 9.2.2.

The Proposed Action/Proposed Project Alternative would result in the loss of 23,065 acres of modeled western spadefoot habitat within the Planning Area, which is 1,379 acres less than the loss than under the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Proposed Action/Proposed Project Alternative would include AMMs, such as limitations on stormwater runoff to Preserves, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy also would include Biological Goals and Measureable Objectives specific to the conservation of western spadefoot. Although the Conservation Strategy would preserve 10,108 more acres of western spadefoot habitat than under the No Action/No Project Alternative, those acres would be preserved within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected preserves than is anticipated from the project-by-project mitigation under the No Action /No Project Alternative.

The incremental effects of the Proposed Action/Proposed Project Alternative would result in less of an incremental contribution to the cumulative impact within the Planning Area for western spadefoot than would occur under the No Action/No Project Alternative. Therefore, the Proposed Action/Proposed Project Alternative does not result in a cumulatively considerable contribution to significant adverse cumulative impacts to this species. The Proposed Action/Proposed Project Alternative would result in a **Minor Beneficial Cumulative** effect to the western spadefoot compared to the No Action/No Project Alternative baseline condition.

9.2.3.5 Effects on Giant Garter Snake and Its Habitat

The life history, habitat requirements, documented occurrences, and existing acres of modeled habitat for giant garter snake in the Planning Area are described in detail in Appendix G.

Direct and Indirect Effects of the Alternative

The maximum anticipated loss of modeled habitat for giant garter snake under the Proposed Action/Proposed Project Alternative total approximately 2,358 acres, including approximately 2,189 acres of upland habitat and 169 acres of aquatic habitat for the species (Table 9-27). These would equal the loss of approximately 7.9% of the upland and 2.3% of aquatic habitat in the Planning Area. The loss of modeled habitat under the Proposed Action/Proposed Project Alternative is less than the approximately 2,501 acres lost under the No Action/No Project Alternative.

Table 9-27. Direct Effects and Modeled Habitat Conservation for Giant Garter Snake Under the Proposed Action/Proposed Project Alternative

Modeled Habitat	Total Planning Area (acres)				
	Total Existing	Direct Effect	% of Existing Habitat Lost	Total Habitat Preservation	Total Habitat Re-establishment and/or Establishment
Upland Habitat					
Mixed Riparian Scrub	1,044	135	12.9%	105	134
Valley Grassland	26,825	2,054	7.7%	5,013	0
<i>Total Upland Habitat</i>	<i>27,869</i>	<i>2,189</i>	<i>7.9%</i>	<i>5,118</i>	<i>134</i>
Aquatic Habitat					
Seasonal Wetland	1,625	39	2.4%	100	39
Freshwater Marsh	2,589	71	2.7%	127	71
Open Water	1,282	25	2.0%	62	25*
Stream/Creek	1,794	34	1.9%	117	34
<i>Total Aquatic Habitat</i>	<i>7,290</i>	<i>169</i>	<i>2.3%</i>	<i>406</i>	<i>169</i>
Total Modeled Habitat	35,159	2,358	6.7%	5,524	303

* Acres of Open Water habitat re-establishment/establishment will occur as a land cover that provides equivalent or better habitat value for Covered Species affected by the loss of open water, as determined by the Technical Advisory Committee (TAC).

The Proposed Action/Proposed Project Alternative is not expected to remove any of the existing 14 occurrences of giant garter snakes in the Planning Area; there would also be no occurrences removed under the No Action/No Project Alternative.

Indirect effects to giant garter snake and its habitat would also occur under the Proposed Action/Proposed Project Alternative. These indirect effects would be the same in type and character as those discussed and analyzed qualitatively for the species under the No Action/No Project in Section 9.2.2.

The Proposed Action/Proposed Project Alternative requires implementation of the following AMMs by Covered Activities that are relative to giant garter snake: LID-1 (Stormwater Quality), LID-3 (Natural Site Features), EDGE-1 (Compatible Land Uses), EDGE-2 (Single Loaded Streets), EDGE-3 (Preserve Setbacks), EDGE-4 (Locate Stormwater Control Outside Preserves), EDGE-5 Stormwater Control in Preserve Setbacks), EDGE-10 (Prevent Invasive Species Spread), BMP-9 (Soil Compaction), NATURE TRAIL-1 (Trail Plan), NATURE TRAIL-2 (Hardpan/Duripan Protection), NATURE TRAIL-3 (Trail Location), NATURE TRAIL-4 (Biological Studies Prior to Trail Design), NATURE TRAIL-5 (Monitoring of Trail Impacts), ROAD-1 (Road Project Location), ROAD-2 (Wildlife Crossing Structures), ROAD-3 (Roadside Pesticide Use), STREAM-2 (UDA Stream Setbacks), STREAM-3 (Minor tributaries to UDA Streams), UTILITY-2 (Utility Maintenance), and UTILITY-4 (Siting of Entry and Exit Location) (Table 2-6). Relative to the project avoidance and minimization measures of the No Action/Project alternative, these SSHCP AMMs would avoid and minimize indirect impacts on giant garter snake. For example, STREAM-2 and STREAM-3 would increase setback distances on UDA streams and minor tributaries over what would be required under the No Action/No Project Alternative, increasing protection of riparian modeled habitat.

Temporary construction stressors and impacts would occur under the Proposed Action/Proposed Project Alternative. These stressors and impacts would be the same in type and character as those discussed and analyzed qualitatively for the species under the No Action/No Project Alternative (Section 9.2.2). Covered activities would be required to implement general construction AMMs as well as species-specific AMMs that would avoid or minimize temporary effects to giant garter snake: GGS-1 (Giant Garter snake Design Surveys), GGS-2 (Giant Garter snake Work Window), GGS-3 (Giant Garter snake Monitoring), GGS-4 (Giant Garter snake Habitat Dewatering and Exclusion), GGS-5 (Trench Protection), GGS-6 (Erosion Control Materials), GGS-7 (Encounter Protocol), and GGS-8 (Giant Garter Snake Post-Construction Restoration) (Table 2-6). These construction and species-specific AMMs may also be applied under the No Action/No Project Alternative; however, oversight of AMM implementation and monitoring of AMM effectiveness by the Implementing Entity for the SSHCP would increase the avoidance and minimization of impacts. For this reason, temporary effects under the Proposed Action/Proposed Project Alternative on giant garter snake are expected to be less than under the No Action/No Project Alternative.

The Preserve System under the Proposed Action/Proposed Project Alternative would include approximately 5,524 acres of giant garter snake modeled habitat, including approximately 5,118 acres of upland habitat and approximately 406 acres of aquatic habitat. This modeled habitat conservation would exceed the estimated total of approximately 3,253 acres of modeled upland and 24 acres of modeled aquatic habitat preservation under the No Action/No Project Alternative. The Conservation Strategy also would establish/re-establish a total of approximately 303 acres of giant garter snake upland and aquatic habitat, compared to 215 acres under the No Action/No Project Alternative, and would implement specific biological objectives for modeled habitat conservation of the species in the Planning Area. These objectives would include the implementation of the AMMs and the Preserve System discussed above, and objectives to maintain or improve habitat value (e.g., development of preserve management plans and requirements for Preserve width to limit edge effects).

Significance of Direct and Indirect Effects

The Proposed Action/Proposed Project Alternative would adversely affect approximately 143 fewer acres of modeled habitat for giant garter snake within the Planning Area than is estimated for the No Action/No Project Alternative. In addition, the Proposed Action/Proposed Project Alternative would preserve approximately 2,247 acres more habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included in the Proposed Action/Proposed Project Alternative that would avoid or minimize indirect and temporary effects on giant garter snake individuals and habitat and provide an additional mechanism for impact avoidance and oversight.

Therefore, the Proposed Action/Proposed Project Alternative would have less impact, and using the significance criteria presented in Section 9.2.1 and the impact analysis provided previously, the Proposed Action/Proposed Project Alternative would have a **Minor Beneficial** effect on giant garter snake when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present and reasonably foreseeable future projects to cumulative effects under the Proposed Action/Proposed Project Alternative would generally be the same as described above for the No Action/No Project Alternative above (Section 9.2.2).

As discussed previously in this impact section, the Proposed Action/Proposed Project Alternative would result in the loss of approximately 2,358 acres of modeled giant garter snake habitat within the Planning Area, which is approximately 143 fewer acres than the loss than

under the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Proposed Action/Proposed Project Alternative would include AMMs, such as increased stream setbacks, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy would also include Biological Goals and Measureable Objectives specific to the conservation of giant garter snake. In addition, the Conservation Strategy would preserve approximately 2,247 more acres of giant garter snake habitat than under the No Action/No Project Alternative, and those acres would be preserved within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action /No Project Alternative.

The incremental effects of the Proposed Action/Proposed Project Alternative would result in less of an incremental contribution to the cumulative impact within the Planning Area for giant garter snake than would occur under the No Action/No Project Alternative. Therefore, the Proposed Action/Proposed Project Alternative does not result in a cumulatively considerable contribution to significant adverse cumulative impacts to this species. The Proposed Action/Proposed Project Alternative would result in a ***Minor Beneficial Cumulative*** effect to giant garter snake compared to the No Action/No Project Alternative baseline condition.

9.2.3.6 Effects on Western Pond Turtle and Its Habitat

The life history, habitat requirements, documented occurrences, and existing acres of modeled habitat of western pond turtle in the Planning Area are described in Appendix G.

Direct and Indirect Effects of the Alternative

The maximum anticipated loss of modeled habitat for the western pond turtle is approximately 10,972 acres, including approximately 10,656 acres of upland habitat and approximately 316 acres of aquatic habitat (Table 9-28). This would equal approximately 9.6% of the upland and 5.0% of aquatic habitat for the species in the Planning Area. This is less than the expected loss under the No Action/No Project Alternative of approximately 12,160 acres, including approximately 11,783 of upland and approximately 377 acres of aquatic habitat.

The Proposed Action/Proposed Project Alternative is expected to remove 1 of the existing 19 occurrences of western pond turtle in the Planning Area, which would be the same number of occurrences as would be removed under the No Action/No Project Alternative.

Indirect effects to western pond turtle and its habitat would also occur under the Proposed Action/Proposed Project Alternative. These indirect effects would be the same in type and character as those discussed and analyzed qualitatively for the species under the No Action/No Project in Section 9.2.2 above.

Table 9-28. Direct Effects and Modeled Habitat Conservation for Western Pond Turtle Under the Proposed Action/Proposed Project Alternative

Modeled Habitat	Total Planning Area(acres)				
	Total Existing	Direct Effect	% of Existing Habitat Lost	Total Habitat Preservation	Total Habitat Re-establishment and/or Establishment
Upland Habitat					
Blue Oak Woodland	7,610	9	0.1%	0	9
Blue Oak Savanna	4,825	35	0.7%	34	35
Valley Grassland	91,580	10,256	11.2%	12,319	0
Mine Tailing Riparian Woodland	306	41	13.4%	37	41*
Mixed Riparian Woodland	5,347	170	3.2%	368	170
Mixed Riparian Scrub	1,178	145	12.3%	14	145
<i>Total Upland Habitat</i>	<i>110,846</i>	<i>10,656</i>	<i>9.6%</i>	<i>12,772</i>	<i>400</i>
Aquatic Habitat					
Freshwater Marsh	2,240	95	4.2%	127	95
Open Water	1,441	104	7.2%	86	104**
Stream/Creek	2,674	117	4.4%	117	117
<i>Total Aquatic Habitat</i>	<i>6,355</i>	<i>316</i>	<i>5.0%</i>	<i>330</i>	<i>316</i>
Total Modeled Habitat	117,201	10,972	9.4%	13,102	716

* Acres of Mine Tailing Riparian habitat re-establishment/establishment will occur as either Mixed Riparian Woodland and/or Mixed Riparian Scrub.

** Acres of Open Water habitat re-establishment/establishment will occur as a land cover that provides equivalent or better habitat value for Covered Species affected by the loss of open water, as determined by the TAC.

The Proposed Action/Proposed Project Alternative requires implementation of the following AMMs by Covered Activities that are relative to western pond turtle: LID-1 (Stormwater Quality), LID-3 (Natural Site Features), EDGE-1 (Compatible Land Uses), EDGE-2 (Single Loaded Streets), EDGE-3 (Preserve Setbacks), EDGE-4 (Locate Stormwater Control Outside Preserves), EDGE-5 (Stormwater Control in Preserve Setbacks), EDGE-10 (Prevent Invasive Species Spread), BMP-9 (Soil Compaction), NATURE TRAIL-1 (Trail Plan), NATURE TRAIL-2 (Hardpan/Duripan Protection), NATURE TRAIL-3 (Trail Location), NATURE TRAIL-4 (Biological Studies Prior to Trail Design) NATURE TRAIL-5 (Monitoring of Trail Impacts), ROAD-1 (Road Project Location), ROAD-2 (Wildlife Crossing Structures), ROAD-3 (Roadside Pesticide Use), STREAM-1 (Laguna Creek Setback), STREAM-2 (UDA Stream Setbacks), STREAM-3 (Minor tributaries to UDA Streams) UTILITY-2 (Utility Maintenance), and UTILITY-4 (Siting of Entry and Exit Location) (Table 2-6). Relative to the project avoidance and minimization measures of the No Action/Project Alternative, these SSHCP AMMs would avoid and minimize indirect

impacts on western pond turtle. For example, STREAM-1, STREAM-2, and STREAM-3 would increase setback distances on Laguna Creek, UDA streams, and minor tributaries over what would be required under the No Action/No Project Alternative, increasing protection of riparian modeled habitat from indirect impacts.

Temporary construction stressors and impacts would occur under the Proposed Action/Proposed Project Alternative. These stressors and impacts would be the same in type and character as those discussed and analyzed qualitatively for the species under the No Action/No Project Alternative (Section 9.2.2). Covered activities would be required to implement general construction AMMs, and species-specific AMMs that would avoid or minimize temporary effects to western pond turtle: WPT-1 (Western Pond Turtle Design Surveys), WPT-2 (Western Pond Turtle Work Window), WPT-3 (Western Pond Turtle Monitoring), WPT-4 (Western Pond Turtle Habitat Dewatering and Exclusion), WPT-5 (Trench Protection), WPT-6 (Erosion Control Materials) and WPT-7 (Western Pond Turtle Modeled Habitat Speed Limit), WPT-8 (Western Pond Turtle Encounter Protocol), and WPT-9 (Post-Construction Restoration (Table 2-6). These construction and species-specific AMMs may also be applied under the No Action/No Project Alternative; however, oversight of AMM implementation and monitoring of AMM effectiveness by the Implementing Entity for the SSHCP would increase the avoidance and minimization of impacts. For this reason, temporary effects under the Proposed Action/Proposed Project Alternative on western pond turtle are expected to be less than under the No Action/No Project Alternative.

The Preserve System under the Proposed Action/Proposed Project Alternative would include approximately 13,102 acres of habitat for western pond turtle, including approximately 12,772 acres of upland habitat and approximately 330 acres of aquatic habitat. This modeled habitat conservation would exceed the estimated 8,085 acres of western pond turtle habitat, including approximately 8,069 of upland and approximately 16 acres of aquatic habitat conserved under the No Action/No Project Alternative, which would be the result of project-by-project mitigation. In addition, the Conservation Strategy under the Proposed Action/Proposed Project would establish/re-establish approximately 716 acres of upland and aquatic habitat for western pond turtle, compared to approximately 577 acres under the No Action/No Project Alternative, and includes specific biological objectives for the conservation of the species in the Planning Area. These objectives would include the implementation of the AMMs and the Preserve System discussed previously, and objectives to maintain or improve habitat value (e.g., development of preserve management plans and requirements for Preserve width to limit edge effects).

Significance of Direct and Indirect Effects

The Proposed Action/Proposed Project Alternative would impact approximately 1,188 fewer acres of habitat for western pond turtle within the Planning Area than is estimated for the No

Action/No Project Alternative. In addition, the Proposed Action/Proposed Project Alternative would preserve approximately 5,017 acres more habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included in the Proposed Action/Proposed Project Alternative that would avoid or minimize indirect and temporary effects on western pond turtle individuals and habitat, and provide an additional mechanism for impact avoidance and oversight.

Therefore, the Proposed Action/Proposed Project Alternative would have less impact, and using the significance criteria presented in Section 9.2.1 and the impact analysis provided previously, the Proposed Action/Proposed Project Alternative would have a **Beneficial** effect on western pond turtle comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Proposed Action/Proposed Project Alternative would generally be the same as described above for the No Action/No Project Alternative above (Section 9.2.2).

As discussed previously in this impact section, the Proposed Action/Proposed Project Alternative would result in the loss of approximately 10,972 acres of modeled western pond turtle habitat within the Planning Area, which is approximately 1,188 fewer acres than the loss than under the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Proposed Action/Proposed Project Alternative would include AMMs, such as increased stream setbacks, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy also would include Biological Goals and Measureable Objectives specific to the conservation of western pond turtle. Although the Conservation Strategy would preserve approximately 5,017 more acres of western pond turtle habitat than under the No Action/No Project Alternative, those acres would be preserved within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action /No Project Alternative.

The incremental effects of the Proposed Action/Proposed Project Alternative would result in less of an incremental contribution to the cumulative impact within the Planning Area for western pond turtle than would occur under the No Action/No Project Alternative. Therefore, the Proposed Action/Proposed Project Alternative does not result in a cumulatively considerable contribution to

significant adverse cumulative impacts on this species. The Proposed Action/Proposed Project Alternative would result in a **Minor Beneficial Cumulative** effect to western pond turtle compared to the No Action/No Project Alternative baseline condition.

9.2.3.7 Effects on Cooper's Hawk and Its Habitat

Appendix G describes the life history, habitat requirements, documented occurrences, and existing acres of modeled habitat of Cooper's hawk in the Planning Area.

Direct and Indirect Effects of the Alternative

The maximum anticipated loss of modeled habitat for Cooper's hawk is approximately 638 acres, including approximately 600 acres of nesting/foraging habitat (approximately 3.5% of existing), and approximately 38 acres of foraging habitat (approximately 0.7% of existing) (Table 9-29). These percentages do not take into account the use of developed areas for nesting by Cooper's hawk, which if taken into account would increase the percentage of remaining existing habitat. This is smaller than the estimated loss of 693 acres under the No Action/No Project Alternative. The difference in habitat loss between the two alternatives consists of additional impact to mixed riparian and mixed riparian nesting/foraging habitat under the Proposed Action/Proposed Project Alternative.

The Proposed Action/Proposed Project Alternative is expected to remove 4 of the existing 20 occurrences of Cooper's hawk in the Planning Area, which would be two more occurrences than would be removed under the No Action/No Project Alternative.

Table 9-29. Direct Effects and Modeled Habitat Conservation for Cooper's Hawk Under the Proposed Action/Proposed Project Alternative

Modeled Habitat	Total Planning Area (acres)				
	Total Existing	Direct Effect	% of Existing Lost	Total Habitat Preservation	Total Habitat Re-establishment and/or Establishment
Nesting/Foraging Habitat					
Blue Oak Woodland	9,132	9	0.1%	0	9
Mixed Riparian Woodland	5,785	184	3.2%	368	184
Mixed Riparian Scrub	1,451	189	13.0%	378	189
Mine Tailing Riparian Woodland	641	218	34.0%	218	218*
<i>Total Nesting/Foraging Habitat</i>	<i>17,009</i>	<i>600</i>	<i>3.5%</i>	<i>964</i>	<i>600</i>
Foraging Habitat					
Blue Oak Savanna	5,637	38	0.7%	47	38
<i>Total Foraging Habitat</i>	<i>5,637</i>	<i>38</i>	<i>0.7%</i>	<i>47</i>	<i>38</i>
Total Modeled Habitat	22,646	638	2.8%	1,011	638

* Habitat Re-establishment/establishment for Mine Tailing Riparian Woodland can be either Mixed Riparian Woodland or Mixed Riparian Scrub.

Indirect impacts on Cooper's hawk modeled habitat would also occur under the Proposed Action/Proposed Project Alternative. These indirect effects and the environmental stressors that cause them are the same in type and character as those discussed and analyzed qualitatively for Cooper's hawk under the No Action/No Project Alternative (Section 9.2.2).

The Proposed Action/Proposed Project Alternative requires implementation of the following AMMs that are relevant to Cooper's hawk: LID-1 (Stormwater Quality), LID-3 (Natural Site Features), EDGE-1 (Compatible Land Uses), EDGE-2 (Single Loaded Streets), EDGE-3 (Preserve Setbacks), EDGE-4 (Locate Stormwater Control Outside Preserves), EDGE-5 (Stormwater Control in Preserve Setbacks), EDGE-6 (Stormwater Basins in Preserves), EDGE-8 (Outdoor Lighting), EDGE-9 (Livestock Access to Preserves), EDGE-10 (Prevent Invasive Species Spread), ROAD-1 (Road Project Location), ROAD-3 (Roadside Pesticide Use), NATURE TRAIL-1 (Trail Plan), NATURE TRAIL-3 (Trail Location), NATURE TRAIL-4 (Biological Studies Prior to Trail Design), NATURE TRAIL-5 (Monitoring of Trail Impacts), NATURE TRAIL-6 (Trail Public Education), and UTILITY-1 (Avian Collision Avoidance). Relative to the project avoidance and minimization measures of the No Action/Project alternative, these SSHCP AMMs would avoid and minimize indirect impacts on Cooper's hawk. For example, STREAM-1, STREAM-2, and STREAM-3 would increase setback distances on Laguna Creek, UDA streams, and minor tributaries over what would be required under the No Action/No Project Alternative, increasing protection of riparian modeled nesting/foraging habitat from indirect impacts.

Temporary construction stressors and impacts would occur under the Proposed Action/Proposed Project Alternative, which would be the same in type and character as those discussed and analyzed qualitatively for the species under the No Action/No Project Alternative (Section 9.2.2). The Proposed Action/Proposed Project Alternative would require general construction AMMs and AMMs specific to covered raptor species: RAPTOR-1 (Raptor Design Surveys), RAPTOR-2 (Raptor Pre-Construction Surveys), RAPTOR-3 (Raptor Nest/Roost Buffer), and RAPTOR-4 (Raptor Nest/Roost Buffer Monitoring) (Table 2-6). These construction and raptor-specific AMMs may also be applied under the No Action/No Project Alternative; however, oversight of AMM implementation and monitoring of AMM effectiveness by the Implementing Entity for the SSHCP would increase the avoidance and minimization of impacts. For this reason, temporary impacts under the Proposed Action/Proposed Project Alternative on Cooper's hawk are expected to be less than under the No Action/No Project Alternative.

The Preserve System under the Proposed Action/Proposed Project Alternative would include approximately 1,011 acres of modeled Cooper's hawk habitat, including approximately 964 acres of nesting/foraging habitat and approximately 47 acres of foraging habitat. This modeled habitat preservation would exceed the estimated 70 acres of preservation under the No Action/No Project Alternative, which would occur as a result of project-by-project mitigation. The Conservation Strategy also would establish/re-establish a total of approximately 638 acres of habitat for Cooper's

hawk, as compared to approximately 623 acres under the No Action/No Project Alternative, and implement biological objectives to conserve the species within the Planning Area. These objectives would include the implementation of the AMMs and the Preserve System discussed previously and objectives to maintain or improve habitat value (e.g., development of preserve management plans and requirements for Preserve width to limit edge effects).

Significance of Direct and Indirect Effects

The Proposed Action/Proposed Project Alternative would impact approximately 55 fewer acres of habitat for Cooper's hawk within the Planning Area than is estimated for the No Action/No Project Alternative. In addition, the Proposed Action/Proposed Project Alternative would preserve 924 acres more habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included in the Proposed Action/Proposed Project Alternative that would avoid or minimize indirect and temporary effects on Cooper's hawk individuals and habitat, and provide an additional mechanism for impact avoidance and oversight.

Therefore, the Proposed Action/Proposed Project Alternative would have less impact, and using the significance criteria presented in Section 9.2.1 and the impact analysis provided previously, the Proposed Action/Proposed Project Alternative would have a **Minor Beneficial** effect on Cooper's hawk when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Proposed Action/Proposed Project Alternative would generally be the same as described above for the No Action/No Project Alternative above (Section 9.2.2).

As discussed previously in this impact section, the Proposed Action/Proposed Project Alternative would result in the loss of approximately 638 acres of modeled Cooper's hawk habitat within the Planning Area, which is approximately 55 fewer acres than the loss than under the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Proposed Action/Proposed Project Alternative would include AMMs, such as increased stream setbacks, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy also would include Biological Goals and Measureable Objectives that would benefit Cooper's hawk. In addition, the Conservation Strategy would preserve approximately 924 more acres of Cooper's hawk habitat than under the No Action/No Project Alternative, and

those acres would be preserved within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action /No Project Alternative.

The incremental effects of the Proposed Action/Proposed Project Alternative would result in less of an incremental contribution to the cumulative impact within the Planning Area for Cooper's hawk than would occur under the No Action/No Project Alternative. However, at the scale of the study area, the incremental difference in impacts under the Proposed Action/Proposed Project Alternative compared to impacts under the No Action/No Project Alternative is not discernibly different. Therefore, the Proposed Action/Proposed Project Alternative would result in ***No Cumulative Effect*** to Cooper's hawk compared to the No Action/No Project Alternative baseline condition.

9.2.3.8 Effects on Tricolored Blackbird and Its Habitat

The natural history, habitat use, and documented occurrences in the Planning Area for tricolored blackbird are given in Appendix G.

Direct and Indirect Effects of the Alternative

The maximum anticipated loss of modeled habitat for tricolored blackbird is approximately 31,058 acres, including approximately 27,531 acres of nesting/foraging habitat (approximately 14.6% of existing), approximately 3,527 acres of foraging habitat (approximately 14.6% of existing) (Table 9-30). This is a smaller area than the estimated habitat loss under the No Action/No Project Alternative of 32,907 acres, including 29,389 acres of nesting/foraging and 3,518 acres of foraging habitat.

Table 9-30. Effects and Modeled Habitat Conservation for Tricolored Blackbird Under the Proposed Action/Proposed Project Alternative

Modeled Habitat	Total Planning Area (acres)				
	Total Existing	Direct Effect	% of Existing Lost	Total Habitat Preservation	Total Habitat Re-establishment and/or Establishment
Nesting/Foraging Habitat					
Valley Grassland	135,112	22,014	16.3%	22,014	0
Cropland	47,905	5,285	11.0%	6,947	0
Seasonal Wetland	2,600	105	4.0%	105	105
Freshwater Marsh	2,922	127	4.3%	127	127
<i>Total Nesting/Foraging Habitat</i>	<i>188,539</i>	<i>27,531</i>	<i>14.6%</i>	<i>29,193</i>	<i>232</i>
Foraging Habitat					
Irrigated Pasture-Grassland	15,991	2,749	17.2%	2,749	0
Vernal Pool	4,536	389	8.6%	966	389
Swale	1,222	234	19.1%	278	234
Open Water	2,344	155	6.6%	155	155*
<i>Total Foraging Habitat</i>	<i>24,093</i>	<i>3,527</i>	<i>14.6%</i>	<i>4,148</i>	<i>778</i>
Total Modeled Habitat	212,632	31,058	14.6%	33,341	1,010

* Acres of Open Water habitat re-establishment/establishment will occur as a land cover that provides equivalent or better habitat value for Covered Species affected by the loss of open water, as determined by the TAC.

Indirect impacts to tricolored blackbird modeled habitat would occur under the Proposed Action/Proposed Project Alternative, which would be the same type and character as those discussed and analyzed qualitatively for the species under the No Action/No Project Alternative in Section 9.2.2.

The Proposed Action/Proposed Project Alternative requires implementation of the following AMMs that are relevant to tricolored blackbird: LID-1(Stormwater Quality), LID-3 (Natural Site Features), EDGE-1 (Compatible Land Uses), EDGE-2 (Single Loaded Streets), EDGE-3 (Preserve Setbacks), EDGE-4 (Locate Stormwater Control Outside Preserves), EDGE-5 (Stormwater Control in Preserve Setbacks), EDGE-8 (Outdoor Lighting), EDGE-9 (Livestock Access to Preserves), EDGE-10 (Prevent Invasive Species Spread), BMP-2 (Erosion Control), BMP-9 (Soil Compaction), ROAD-1 (Road Project Location), ROAD-3 (Roadside Pesticide Use), NATURE TRAIL-1 (Trail Plan), NATURE TRAIL-3 (Trail Location), NATURE TRAIL-4 (Biological Studies Prior to Trail Design), NATURE TRAIL-5 (Monitoring of Trail Impacts), NATURE TRAIL-6 (Trail Public Education), RE-ESTABLISHMENT/ ESTABLISHMENT-1 (Vernal Pool), UTILITY-1 (Avian Collision Avoidance), UTILITY-4 (Siting of Entry and Exit Location), and TCB-5 (Timing of Pesticide Use and Harvest Timing on Agricultural Preserves) (Table 2-6). Relative to the project AMMs of the No Action/Project Alternative, these SSHCP AMMs would avoid and minimize indirect impacts on tricolored blackbird. For example, EDGE-4 would require that stormwater runoff be directed away from Preserves, which would

limit exposure of tricolor blackbird within Preserves to urban runoff that may contain pesticides and petroleum products. TCB-5 would restrict the use of pesticides on Preserves between January 1 and July 15, further reducing exposure of tricolored blackbird to pesticides. While these AMMs may be applied to projects under the No Action/No Project Alternative, they would likely be applied less frequently.

Temporary construction stressors and impacts would occur under the Proposed Action/Proposed Project Alternative, which would be the same in type and character as those discussed and analyzed qualitatively for the species under the No Action/No Project Alternative (Section 9.2.2). The Proposed Action/Proposed Project Alternative would require general construction AMMs and species-specific AMMs: TCB-1 (Tricolored Blackbird Design Surveys), TCB-2 (Tricolored Blackbird Pre-Construction Surveys), TCB-3 (Tricolored Blackbird Nest Buffer), and TCB-4 (Tricolored Blackbird Nest Buffer Monitoring) (Table 2-6). These construction and raptor-specific AMMs may also be applied under the No Action/No Project Alternative. However, oversight of AMM implementation and monitoring of AMM effectiveness by the Implementing Entity for the SSHCP would increase the avoidance and minimization of impacts. For this reason, temporary impacts under the Proposed Action/Proposed Project Alternative on tricolored blackbird are expected to be less than under the No Action/No Project Alternative.

The Preserve System under the Proposed Action/Proposed Project Alternative would include approximately 33,341 acres of habitat for tricolored blackbird, including approximately 29,193 acres of nesting/foraging habitat and approximately 4,148 acres of foraging habitat. This modeled habitat conservation would be greater than the estimated 21,148 acres under the No Action/No Project Alternative, which would occur as a result of project-by-project mitigation. The Conservation Strategy also would establish/re-establish a total of approximately 1,010 acres of habitat for tricolored blackbird and implement biological objectives to conserve the species within the Planning Area. These objectives would include the implementation of the AMMs and the Preserve System discussed previously, and objectives to maintain or improve habitat value and preserve high-quality habitat (e.g., development of preserve management plans and requirements for Preserve width to limit edge effects).

Significance of Direct and Indirect Effects

The Proposed Action/Proposed Project Alternative would impact approximately 1,849 fewer acres of habitat for tricolored blackbird within the Planning Area than is estimated for the No Action/No Project Alternative. In addition, the Proposed Action/Proposed Project Alternative would preserve approximately 12,193 acres more habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included in the Proposed Action/Proposed Project Alternative that would avoid or minimize

indirect and temporary effects on tricolored blackbird individuals and habitat, and provide an additional mechanism for impact avoidance and oversight.

Therefore, the Proposed Action/Proposed Project Alternative would have less impact, and using the significance criteria presented in Section 9.2.1 and the impact analysis provided previously, the Proposed Action/Proposed Project Alternative would have a **Significant Beneficial** effect on tricolored blackbird when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Proposed Action/Proposed Project Alternative would generally be the same as described for the No Action/No Project Alternative in Section 9.2.2.

As discussed previously in this impact section, the Proposed Action/Proposed Project Alternative would result in the loss of approximately 31,058 acres of modeled tricolored blackbird habitat within the Planning Area, which is approximately 1,849 acres less than the estimated loss under the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Proposed Action/Proposed Project Alternative would include AMMs, such as limitations on stormwater runoff, to Preserves that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy also would include Biological Goals and Measureable Objectives specific to the conservation of tricolored blackbird. In addition, the Conservation Strategy would preserve approximately 12,193 more acres of tricolored blackbird habitat than under the No Action/No Project Alternative, those acres would be preserved within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action/No Project Alternative.

The incremental effects of the Proposed Action/Proposed Project Alternative would result in less of an incremental contribution to the cumulative impact within the Planning Area for tricolored blackbird than would occur under the No Action/No Project Alternative. Therefore, the Proposed Action/Proposed Project Alternative does not result in a cumulatively considerable contribution to significant adverse cumulative impacts to this species. The Proposed Action/Proposed Project Alternative would result in a **Significant Beneficial Cumulative Effect** for tricolored blackbird compared to the No Action/No Project Alternative baseline condition.

9.2.3.9 Effects on Western Burrowing Owl and Its Habitat

Habitat use, natural history, and occurrence within the Planning Area for western burrowing owl are found in Appendix G.

Direct and Indirect Effects of the Alternative

The maximum anticipated loss of modeled habitat under the Proposed Action/Proposed Project is approximately 30,836 acres (14.7% of existing) (Table 9-31). This is smaller than the estimated modeled habitat loss under the No Action/No Project Alternative of 32,711 acres.

The Proposed Action/Proposed Project Alternative is expected to remove 19 of the existing 97 occurrences of western burrowing owls in the Planning Area, which would be 9 more occurrences than would be removed under the No Action/No Project Alternative.

Table 9-31. Direct Effects and Modeled Habitat Conservation for Western Burrowing Owl Under the Proposed Action/Proposed Project Alternative

Modeled Habitat	Total Planning Area (acres)				
	Total Existing	Direct Effect	% of Existing Habitat Lost	Total Habitat Preservation	Total Habitat Re-establishment and/or Establishment
Wintering Habitat					
Vernal Pool	4,536	389	8.6%	966	389
Seasonal Wetland	2,600	105	4.0%	105	105
Swale	1,252	234	18.7%	278	256
Stream/Creek (VPIH)	73	22	30.1%	26	0
<i>Total Wintering Habitat</i>	<i>8,461</i>	<i>750</i>	<i>8.9%</i>	<i>1,375</i>	<i>750</i>
Nesting/Foraging Habitat					
Cropland	47,905	5,285	11.0%	6,947	0
Irrigated Pasture-Grassland	15,991	2,749	17.2%	2,749	0
Valley Grassland	135,112	22,014	16.3%	22,014	0
Blue Oak Savanna	5,637	38	0.7%	47	38
<i>Total Nesting/Foraging Habitat</i>	<i>204,645</i>	<i>30,086</i>	<i>14.7%</i>	<i>31,757</i>	<i>38</i>
Total Modeled Habitat	213,106	30,836	—	33,132	788

Indirect impacts on western burrowing owl modeled habitat would also occur under the Proposed Action/Proposed Project Alternative. These indirect effects and the environmental stressors that cause them are the same in type and character as those discussed and analyzed qualitatively for western burrowing owl under the No Action/No Project Alternative (Section 9.2.2).

The Proposed Action/Proposed Project Alternative requires implementation of the following AMMs that are relevant western burrowing owl: LID-1 (Stormwater Quality), LID-3 (Natural Site Features), EDGE-1 (Compatible Land Uses), EDGE-2 (Single Loaded Streets), EDGE-3 (Preserve Setbacks), EDGE-4 (Locate Stormwater Control Outside Preserves), EDGE-5 (Stormwater Control in Preserve Setbacks), EDGE-6 (Stormwater Basins in Preserves), EDGE-8 (Outdoor Lighting), EDGE-9 (Livestock Access to Preserves), EDGE-10 (Prevent Invasive Species Spread), ROAD-1 (Road Project Location), ROAD-3 (Roadside Pesticide Use), RE-ESTABLISHMENT/ ESTABLISHMENT-1 (Vernal Pool), NATURE TRAIL-1 (Trail Plan), NATURE TRAIL-3 (Trail Location), NATURE TRAIL-4 (Biological Studies Prior to Trail Design), NATURE TRAIL-5 (Monitoring of Trail Impacts), NATURE TRAIL-6 (Trail Public Education), and UTILITY-1 (Avian Collision Avoidance) (Table 2-6). Relative to the project AMMs of the No Action/Project alternative, these SSHCP AMMs would avoid and minimize indirect impacts on western burrowing owl. For example, EDGE-3 would require 50-foot setback distances between urban development and Preserves, which would not be required under the No Action/No Project Alternative, thereby increasing protection of modeled burrowing owl habitat from indirect impacts.

Temporary construction stressors and impacts would occur under the Proposed Action/Proposed Project Alternative, which would be the same in type and character as those discussed and analyzed qualitatively for the species under the No Action/No Project Alternative (Section 9.2.2). The Proposed Action/Proposed Project Alternative would require general construction AMMs, and AMMs specific to western burrowing owl that would also be required: WBO-1 (Burrowing Owl Design Surveys), WBO-2 (Burrowing Owl Pre-Construction Survey), WBO-3 (Burrowing Owl Avoidance), WBO-4 (Burrowing Owl Construction Monitoring), WBO-5 (Burrowing Owl Passive Relocation), and WBO-6 (Burrowing Owl Timing of Maintenance) (Table 2-6). These construction and species-specific AMMs may also be applied under the No Action/No Project Alternative. However, oversight of AMM implementation and monitoring of AMM effectiveness by the Implementing Entity for the SSHCP would increase the avoidance and minimization of impacts. For this reason, temporary impacts under the Proposed Action/Proposed Project Alternative on western burrowing owl are expected to be less than under the No Action/No Project Alternative.

The Preserve System under the Proposed Action/Proposed Project Alternative would include a total of approximately 33,132 acres of modeled habitat for western burrowing owl. This modeled habitat preservation would exceed the approximately 21,188 acres estimated under the No Action/No Project Alternative. The Conservation Strategy would also establish/re-establish a total of approximately 788 acres of habitat for western burrowing owl, and would implement biological objectives to conserve the species within the Planning Area. These objectives would include the implementation of the AMMs and the Preserve System discussed

previously, and objectives to maintain or improve habitat value (e.g., development of preserve management plans and requirements for P Preserve width to limit edge effects).

Significance of Direct and Indirect Effects

The Proposed Action/Proposed Project Alternative would impact approximately 1,875 fewer acres of modeled habitat for western burrowing owl within the Planning Area than is estimated for the No Action/No Project Alternative. In addition, the Proposed Action/Proposed Project Alternative would preserve approximately 11,944 acres more habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included in the Proposed Action/Proposed Project Alternative that would avoid or minimize indirect and temporary effects on western burrowing owl individuals and habitat, and provide an additional mechanism for impact avoidance and oversight.

Therefore, the Proposed Action/Proposed Project Alternative would have less impact, and using the significance criteria presented in Section 9.2.1 and the impact analysis provided previously, the Proposed Action/Proposed Project Alternative would have a ***Significant Beneficial*** effect on western burrowing owl when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Proposed Action/Proposed Project Alternative would generally be the same as described above for the No Action/No Project Alternative above (Section 9.2.2).

As discussed previously in this impact section, the Proposed Action/Proposed Project Alternative would result in the loss of approximately 30,836 acres of modeled western burrowing owl habitat within the Planning Area, which is approximately 1,875 acres less than the estimated loss under the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Proposed Action/Proposed Project Alternative would include AMMs, such as setbacks from Preserves, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy also would include Biological Goals and Measureable Objectives specific to the conservation of western burrowing owl. In addition, the Conservation Strategy would preserve approximately 11,944 more acres of western burrowing owl habitat than under the No Action/No Project Alternative, and those acres would be preserved within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would

result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action/No Project Alternative.

The incremental effects of the Proposed Action/Proposed Project Alternative would result in less of an incremental contribution to the cumulative impact within the Planning Area for western burrowing owl than would occur under the No Action/No Project Alternative. Therefore, the Proposed Action/Proposed Project Alternative does not result in a cumulatively considerable contribution to significant adverse cumulative impacts to this species. The Proposed Action/Proposed Project Alternative would result in a **Minor Beneficial Cumulative** effect for western burrowing owl compared to the No Action/No Project Alternative baseline condition.

9.2.3.10 Effects on Ferruginous Hawk and Its Habitat

The life history, suitable habitat, and documented occurrences in the Planning Area of ferruginous hawk are discussed in Appendix G.

Direct and Indirect Effects of the Alternative

The maximum anticipated loss of modeled habitat for ferruginous hawk under the Proposed Action/Proposed Project is approximately 25,491 acres of foraging habitat (16% of existing) (Table 9-32). This is less than the expected loss under the No Action/No Project Alternative of approximately 26,887 acres.

The Proposed Action/Proposed Project Alternative is expected to remove 1 of the existing 26 occurrences of ferruginous hawk in the Planning Area, whereas no occurrences would be removed under the No Action/No Project Alternative.

Table 9-32. Direct Effects and Modeled Habitat Conservation for Ferruginous Hawk Under the Proposed Action/Proposed Project Alternative

Modeled Habitat	Total Planning Area (acres)				
	Total Existing	Direct Effect	% of Existing Lost	Total Habitat Preservation	Total Habitat Re-establishment and/or Establishment
Foraging Habitat					
Valley Grassland	135,112	22,014	16.3%	22,014	0
Irrigated Pasture-Grassland	15,991	2,749	17.2%	2,749	0
Seasonal Wetland	2,600	105	4.0%	105	105
Vernal Pool	4,536	389	8.6%	966	389
Swale	1,252	234	18.7%	278	234
Total Modeled Habitat	159,491	25,491	16.0%	26,112	728

Indirect impacts on modeled foraging habitat for ferruginous hawk would also occur under the Proposed Action/Proposed Project Alternative. These indirect impacts and the stressors that cause them are the same type and character as the impacts and stressors discussed and analyzed qualitatively in the species impact discussion in Section 9.2.2.

The Proposed Action/Proposed Project Alternative requires implementation of the following AMMs by Covered Activities that are relevant to ferruginous hawk: LID-1 (Stormwater Quality), LID-3 (Natural Site Features), EDGE-1 (Compatible Land Uses), EDGE-2 (Single Loaded Streets), EDGE-3 (Preserve Setbacks), EDGE-4 (Locate Stormwater Control Outside Preserves), EDGE-5 (Stormwater Control in Preserve Setbacks), EDGE-6 (Detention Basins in Linkage Preserves), EDGE-9 (Livestock Access to Preserves), EDGE-10 (Prevent Invasive Species Spread), BMP-9 (Soil Compaction), ROAD-1 (Road Project Location), ROAD-3 (Roadside Pesticide Use), NATURE TRAIL-1 (Trail Plan), NATURE TRAIL-2 (Hardpan/Duripan Protection), NATURE TRAIL-3 (Trail Location), NATURE TRAIL-4 (Biological Studies Prior to Trail Design), NATURE TRAIL-5 (Monitoring of Trail Impacts), NATURE TRAIL-6 (Trail Public Education), RE-ESTABLISHMENT/ESTABLISHMENT-1 (Vernal Pool), UTILITY-1 (Avian Collision Avoidance), and UTILITY-4 (Siting of Entry and Exit Location) (Table 2-6). Relative to the project AMMs of the No Action/Project Alternative, these SSHCP AMMs would avoid and minimize indirect impacts on ferruginous hawk. For example, EDGE-3 would require 50-foot setback distances between urban development and Preserves, which would not be required under the No Action/No Project Alternative, thereby increasing protection of modeled ferruginous hawk foraging habitat from indirect impacts.

Temporary construction stressors and impacts would occur under the Proposed Action/Proposed Project Alternative, which would be the same in type and character as those discussed and analyzed qualitatively for the species under the No Action/No Project Alternative (Section 9.2.2). The Proposed Action/Proposed Project Alternative would require general construction AMMs (Table 2.6). These construction AMMs may also be applied under the No Action/No Project Alternative. However, oversight of AMM implementation and monitoring of AMM effectiveness by the Implementing Entity for the SSHCP would increase the avoidance and minimization of impacts. For this reason, temporary impacts under the Proposed Action/Proposed Project Alternative on ferruginous hawk are expected to be less than under the No Action/No Project Alternative.

The Preserve System under the Proposed Action/Proposed Project Alternative would include approximately 26,112 acres of habitat for ferruginous hawk. This modeled habitat conservation would be greater than the approximately 15,942 acres estimated under the No Action/No Project Alternative, which would be the result of project-by-project mitigation. The Conservation Strategy would also establish/re-establish a total of approximately 728 acres of habitat for ferruginous hawk, and would also implement biological objectives to conserve the

species within the Planning Area. These objectives would include the implementation of the AMMs and the Preserve System discussed previously, and objectives to maintain or improve habitat value (e.g., development of preserve management plans and requirements for Preserve width to limit edge effects).

Significance of Direct and Indirect Effects

The Proposed Action/Proposed Project Alternative would impact approximately 1,396 fewer acres of habitat for ferruginous hawk within the Planning Area than is estimated for the No Action/No Project Alternative. Additionally, the Proposed Action/Proposed Project Alternative would preserve 10,168 more habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included in the Proposed Action/Proposed Project Alternative that would avoid or minimize indirect and temporary effects on ferruginous hawk individuals and habitat, and provide an additional mechanism for impact avoidance and oversight.

Therefore, the Proposed Action/Proposed Project Alternative would have less impact, and using the significance criteria presented in Section 9.2.1 and the impact analysis provided previously, the Proposed Action/Proposed Project Alternative would have a **Significant Beneficial** effect on ferruginous hawk when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Proposed Action/Proposed Project Alternative would generally be the same as described above for the No Action/No Project Alternative above (Section 9.2.2).

As discussed previously in this impact section, the Proposed Action/Proposed Project Alternative would result in the loss of approximately 25,491 acres of modeled ferruginous hawk habitat within the Planning Area, which is approximately 1,396 acres less than the loss than under the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Proposed Action/Proposed Project Alternative would include AMMs, such as Preserve Setbacks, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy also would include Biological Goals and Measureable Objectives specific to the conservation of ferruginous hawk and would preserve additional acres of ferruginous hawk habitat that would be approximately 10,168 acres greater than the preservation under the No Action/No Project Alternative. Additionally, the preservation under the Proposed Action/Proposed Project Alternative would be within a systematic, coordinated

Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action /No Project Alternative. The individual Preserves in the Preserve System under the Proposed Action/Proposed Project Alternative would also be subject to the Biological Goals and Measurable Objectives of the SSHCP applicable to ferruginous hawk and be operated under a comprehensive preserve management program.

The incremental effects of the Proposed Action/Proposed Project Alternative would result in less of an incremental contribution to the cumulative impact within the Planning Area for ferruginous hawk than would occur under the No Action/No Project Alternative. Therefore, the Proposed Action/Proposed Project Alternative does not result in a cumulatively considerable contribution to significant adverse cumulative impacts to this species. The Proposed Action/Proposed Project Alternative would result in a ***Minor Beneficial Cumulative*** effect for ferruginous hawk compared to the No Action/No Project Alternative baseline condition.

9.2.3.11 Effects on Swainson's Hawk and Its Habitat

The life history, suitable habitat, and documented occurrences in the Planning Area of Swainson's hawk are discussed in Appendix G.

Direct and Indirect Effects of the Alternative

The maximum anticipated loss of Swainson's hawk modeled habitat under the Proposed Action/Proposed Project would be approximately 31,112 acres; including 373 acres of nesting habitat (approximately 5.2% of existing) and 30,739 acres of foraging habitat (approximately 14.9% of existing) (Table 9-33). This is less than the estimated loss under the No Action/No Project Alternative totaling approximately 32,888 acres, including 336 acres of nesting and 32,552 acres of foraging habitat.

The Proposed Action/Proposed Project Alternative is expected to remove 53 of the existing 410 occurrences of Swainson's hawk in the Planning Area, which would be 13 more occurrences than would be removed under the No Action/No Project Alternative.

Indirect reductions in habitat quality for Swainson's hawk would also occur under the Proposed Action/Proposed Project Alternative. These indirect impacts and the stressors that cause them are the same type and character as the impacts and stressors discussed and analyzed qualitatively in the species impact discussion in Section 9.2.2.

Table 9-33. Direct Effects and Modeled Habitat Conservation for Swainson's Hawk Under the Proposed Action/Proposed Project Alternative

Modeled Habitat	Total Planning Area (acres)				
	Total Existing	Direct Effect	% of Existing Lost	Total Habitat Preservation	Total Habitat Re-establishment and/or Establishment
Nesting Habitat					
Mixed Riparian Woodland	5,785	184	3.2%	368	184
Mixed Riparian Scrub	1,449	189	13.0%	378	189
<i>Total Nesting Habitat</i>	7,234	373	5.2%	746	373
Foraging Habitat					
Valley Grassland	133,705	21,977	16.4%	22,014	0
Cropland	47,905	5,285	11.0%	6,947	0
Irrigated Pasture-Grassland	15,991	2,749	17.2%	2,749	0
Vernal Pool	4,536	389	8.6%	966	389
Seasonal Wetland	2,600	105	4.0%	105	105
Swale	1,252	234	18.7%	278	234
<i>Total Foraging Habitat</i>	205,989	30,739	14.9%	33,059	728
Total Modeled Habitat	213,223	31,112	14.6%	33,805	1,101

The Proposed Action/Proposed Project Alternative requires implementation of the following AMMs; LID-1 (Stormwater Quality) LID-3 (Natural Site Features), EDGE-1 (Compatible Land Uses), EDGE-2 (Single Loaded Streets), EDGE-3 (Preserve Setbacks), EDGE-4 (Locate Stormwater Control Outside Preserves), EDGE-5 (Stormwater Control in Preserve Setbacks), EDGE-6 (Detention Basins in Linkage Preserves), EDGE-9 (Livestock Access to Preserves), EDGE-10 (Prevent Invasive Species Spread), BMP-9 (Soil Compaction), ROAD-1 (Road Project Location), ROAD-3 (Roadside Pesticide Use), NATURE TRAIL-1 (Trail Plan), NATURE TRAIL-2 (Hardpan/Duripan Protection), NATURE TRAIL-3 (Trail Location), NATURE TRAIL-4 (Biological Studies Prior to Trail Design), NATURE TRAIL-5 (Monitoring of Trail Impacts), NATURE TRAIL-6 (Trail Public Education), RE-ESTABLISHMENT/ESTABLISHMENT-1 (Vernal Pool), and UTILITY-1 (Avian Collision Avoidance) (Table 2-6). For example, EDGE-3 would require 50-foot setback distances between urban development and Preserves which would not be required under the No Action/No Project Alternative, thereby increasing protection of modeled Swainson's hawk habitat from indirect impacts.

Temporary construction stressors and impacts would occur under the Proposed Action/Proposed Project Alternative, which would be the same in type and character as those discussed and analyzed qualitatively for the species under the No Action/No Project Alternative (Section 9.2.2). The Proposed Action/Proposed Project Alternative would require the application of general construction and species-specific AMMs: SWHA-1 (Swainson's Hawk

Design Surveys), SWHA-2 (Swainson's Hawk Pre-Construction), SWHA-3 (Swainson's Hawk Nest Buffer), and SWHA-4 (Swainson's Hawk Nest Buffer Monitoring) (Table 2-6). These construction and Swainson's hawk AMMs may also be applied under the No Action/No Project Alternative. However, oversight of AMM implementation and monitoring of AMM effectiveness by the Implementing Entity for the SSHCP would increase the avoidance and minimization of impacts. For this reason, temporary impacts under the Proposed Action/Proposed Project Alternative on Swainson's hawk are expected to be less than under the No Action/No Project Alternative.

The Preserve System under the Proposed Action/Proposed Project Alternative would include a total of approximately 33,805 acres of habitat for Swainson's hawk, including approximately 746 acres of nesting and 33,059 acres of foraging habitat. This modeled habitat preservation would exceed the estimated 21,061 acres of conservation under the No Action/No Project Alternative that would result from project-by-project mitigation. The Conservation Strategy would also establish/re-establish approximately 373 acres of nesting and 728 acres of foraging habitat, and would implement biological objectives to conserve the species within the Planning Area. These objectives would include the implementation of the AMMs and the Preserve System discussed previously, and objectives to maintain or improve habitat value (e.g., development of preserve management plans and requirements for Preserve width to limit edge effects).

Significance of Direct and Indirect Effects

The Proposed Action/Proposed Project Alternative would impact approximately 1,776 fewer acres of habitat for Swainson's hawk within the Planning Area than is estimated for the No Action/No Project Alternative. In addition, the Proposed Action/Proposed Project Alternative would preserve approximately 12,744 more acres of modeled habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included in the Proposed Action/Proposed Project Alternative that would avoid or minimize indirect and temporary effects on Swainson's hawk individuals and habitat and provide an additional mechanism for impact avoidance and oversight.

Therefore, the Proposed Action/Proposed Project Alternative would have less impact, and using the significance criteria presented in Section 9.2.1 and the impact analysis provided previously, the Proposed Action/Proposed Project Alternative would have a **Significant Beneficial** effect on Swainson's hawk when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Proposed Action/Proposed Project Alternative would generally be the same as described above for the No Action/No Project Alternative above (Section 9.2.2).

As discussed previously in this impact section, the Proposed Action/Proposed Project Alternative would result in the loss of approximately 31,112 acres of modeled Swainson's hawk habitat within the Planning Area, which is approximately 1,776 acres less than the estimated loss under the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Proposed Action/Proposed Project Alternative would include AMMs, such as setbacks from Preserves, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy also would include Biological Goals and Measureable Objectives specific to the conservation of Swainson's hawk. In addition, the Conservation Strategy would preserve approximately 12,744 more acres of Swainson's hawk habitat than under the No Action/No Project Alternative, those acres would be preserved within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action/No Project Alternative.

The incremental effects of the Proposed Action/Proposed Project Alternative would result in less of an incremental contribution to the cumulative impact within the Planning Area for Swainson's hawk than would occur under the No Action/No Project Alternative. Therefore, the Proposed Action/Proposed Project Alternative does not result in a cumulatively considerable contribution to significant adverse cumulative impacts to this species. The Proposed Action/Proposed Project Alternative would result in a ***Minor Beneficial Cumulative*** effect for Swainson's hawk compared to the No Action/No Project Alternative baseline condition.

9.2.3.12 Effects on Northern Harrier and Its Habitat

The life history, suitable habitat, and documented occurrences in the Planning Area of northern harrier are discussed in Appendix G.

Direct and Indirect Effects of the Alternative

The maximum anticipated loss of modeled habitat for northern harrier under the Proposed Action/Proposed Project would be approximately 30,903 acres, including approximately 30,048 acres of nesting/foraging habitat (approximately 15.1% of existing) and approximately 855 acres of foraging habitat (approximately 7.6% of existing) (Table 9-34). This is greater than the

estimated total loss of 32,734 acres of northern harrier habitat, including 31,913 acres of nesting/foraging and 821 acres of foraging habitat under the No Action/No Project Alternative.

The Proposed Action/Proposed Project Alternative is expected to remove 8 of the existing 70 occurrences of northern harrier in the Planning Area, which would be 3 more occurrences than would be removed under the No Action/No Project Alternative.

Table 9-34. Direct Effects and Modeled Habitat Conservation for Northern Harrier Under the Proposed Action/Proposed Project Alternative

Modeled Habitat	Total Planning Area (acres)				
	Total Existing	Direct Effect	% of Existing Habitat Lost	Total Habitat Preservation	Total Habitat Re-establishment and/or Establishment
Nesting/Foraging Habitat					
Valley Grassland	135,112	22,014	16.3%	22,014	0
Cropland	47,905	5,285	11.0%	6,947	0
Irrigated Pasture-Grassland	15,991	2,749	17.2%	2,749	0
<i>Total Nesting/Foraging Habitat</i>	<i>199,008</i>	<i>30,048</i>	<i>15.1%</i>	<i>31,710</i>	<i>0</i>
Foraging Habitat					
Vernal Pool	4,536	389	8.6%	966	389
Seasonal Wetland	2,600	105	4.0%	105	105
Freshwater Marsh	2,922	127	4.3%	127	127
Swale	1,252	234	18.7%	278	234
<i>Total Foraging Habitat</i>	<i>11,310</i>	<i>855</i>	<i>7.6%</i>	<i>1,476</i>	<i>855</i>
Total Modeled Habitat	210,318	30,903	14.7%	33,186	855

Indirect impacts on northern harrier modeled habitat and individuals would also occur under the Proposed Action/Proposed Project Alternative. These indirect effects and the environmental stressors that cause them are the same in type and character as those discussed and analyzed qualitatively for northern harrier under the No Action/No Project Alternative (Section 9.2.2).

The Proposed Action/Proposed Project Alternative requires implementation of the following AMMs that are relevant to northern harrier: LID-1 (Stormwater Quality), LID-3 (Natural Site Features), EDGE-1 (Compatible Land Uses), EDGE-2 (Single Loaded Streets), EDGE-3 (Preserve Setbacks), EDGE-4 (Locate Stormwater Control Outside Preserves), EDGE-5 (Stormwater Control in Preserve Setbacks), EDGE-6 (Stormwater Basins in Preserves), EDGE-8 (Outdoor Lighting), EDGE-9 (Livestock Access to Preserves), EDGE-10 (Prevent Invasive Species Spread), ROAD-1 (Road Project Location), ROAD-3 (Roadside Pesticide Use), NATURE TRAIL-1 (Trail Plan), NATURE TRAIL-3 (Trail Location), NATURE TRAIL-4 (Biological Studies Prior to Trail Design), NATURE TRAIL-5 (Monitoring of Trail Impacts), NATURE TRAIL-6 (Trail Public Education), and UTILITY-1 (Avian Collision Avoidance) (Table 2-6). Relative to the project AMMs of the No Action/Project

alternative, these SSHCP AMMs would avoid and minimize indirect impacts on northern harrier. For example, EDGE-3 would require 50-foot setback distances between urban development and Preserves, which would not be required under the No Action/No Project Alternative, thereby increasing protection of modeled northern harrier habitat from indirect impacts.

Temporary construction stressors and impacts would occur under the Proposed Action/Proposed Project Alternative, which would be the same in type and character as those discussed and analyzed qualitatively for the species under the No Action/No Project Alternative (Section 9.2.2). The Proposed Action/Proposed Project Alternative would require general construction AMMs and AMMs specific to covered raptor species: RAPTOR-1 (Raptor Design Surveys), RAPTOR-2 (Raptor Pre-Construction Surveys), RAPTOR-3 (Raptor Nest/Roost Buffer), and RAPTOR-4 (Raptor Nest/Roost Buffer Monitoring) (Table 2-6). These construction and raptor-specific AMMs may also be applied under the No Action/No Project Alternative; however, oversight of AMM implementation and monitoring of AMM effectiveness by the Implementing Entity for the SSHCP would increase the avoidance and minimization of impacts. For this reason, temporary impacts under the Proposed Action/Proposed Project Alternative on northern harrier are expected to be less than under the No Action/No Project Alternative.

The Preserve System under the Proposed Action/Proposed Project Alternative would include a total of approximately 33,186 acres of habitat for northern harrier, including 31,710 acres of nesting/foraging and 1,476 acres of foraging habitat. This modeled habitat preservation would exceed the estimated 21,077 acres of modeled habitat preservation under the No Action/No Project Alternative, which would be the result of project-by-project mitigation. The Conservation Strategy would also establish/re-establish approximately 855 acres of foraging habitat for northern harrier and would implement biological objectives to conserve the species within the Planning Area. These objectives would include the implementation of the AMMs and the Preserve System discussed previously and objectives to maintain or improve habitat value (e.g., development of preserve management plans and requirements for Preserve width to limit edge effects).

Significance of Direct and Indirect Effects

The Proposed Action/Proposed Project Alternative would impact approximately 1,831 fewer acres of habitat for northern harrier within the Planning Area than is estimated for the No Action/No Project Alternative. In addition, the Proposed Action/Proposed Project Alternative would preserve approximately 12,109 acres more habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included in the Proposed Action/Proposed Project Alternative that would avoid or minimize indirect and temporary effects on northern harrier individuals and habitat and provide an additional mechanism for impact avoidance and oversight.

Therefore, the Proposed Action/Proposed Project Alternative would have less impact, and using the significance criteria presented in Section 9.2.1 and the impact analysis provided above, the Proposed Action/Proposed Project Alternative would have a ***Significant Beneficial*** effect on northern harrier when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Proposed Action/Proposed Project Alternative would generally be the same as described above for the No Action/No Project Alternative above (Section 9.2.2).

As discussed previously in this impact section, the Proposed Action/Proposed Project Alternative would result in the loss of approximately 30,903 acres of modeled northern harrier habitat within the Planning Area, which is approximately 1,831 acres less than the estimated loss under the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Proposed Action/Proposed Project Alternative would include AMMs, such as setbacks from Preserves, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy also would include Biological Goals and Measureable Objectives specific to the conservation of northern harrier. In addition, the Conservation Strategy would preserve approximately 12,109 more acres of northern harrier habitat than under the No Action/No Project Alternative, those acres would be preserved within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action/No Project Alternative.

The incremental effects of the Proposed Action/Proposed Project Alternative would result in less of an incremental contribution to the cumulative impact within the Planning Area for northern harrier than would occur under the No Action/No Project Alternative. Therefore, the Proposed Action/Proposed Project Alternative does not result in a cumulatively considerable contribution to significant adverse cumulative impacts to this species. The Proposed Action/Proposed Project Alternative would result in a ***Minor Beneficial Cumulative*** effect for northern harrier compared to the No Action/No Project Alternative baseline condition.

9.2.3.13 Effects on White-Tailed Kite and Its Habitat

The life history, suitable habitat, and documented occurrences in the Planning Area of white-tailed kite are discussed in Appendix G.

Direct and Indirect Effects of the Alternative

The maximum anticipated total loss of white-tailed kite modeled habitat under the Proposed Action/Proposed Project would be approximately 31,319 acres, including approximately 376 acres of nesting habitat (approximately 2.4% of existing), approximately 189 acres of nesting/foraging habitat (approximately 13.0% of existing), and approximately 30,754 acres of foraging habitat (approximately 14.4% of existing) (Table 9-35). This would be less than the estimated total loss under the No Action/No Project Alternative of approximately 33,284 acres, including 419 acres of nesting, 189 acres of nesting/foraging, and 32,676 acres of foraging habitat.

The Proposed Action/Proposed Project Alternative is expected to remove 12 of the existing 62 occurrences of white-tailed kite in the Planning Area, which would be one more occurrence than would be removed under the No Action/No Project Alternative.

Table 9-35. Direct Effects and Modeled Habitat Conservation for White-Tailed Kite Under the Proposed Action/Proposed Project Alternative

Modeled Habitat	Total Planning Area (acres)				
	Total Existing	Direct Effect	% of Existing Habitat Lost	Total Habitat Preservation	Total Habitat Re-establishment and/or Establishment
Nesting Habitat					
Blue Oak Woodland	9,132	9	0.1%	0	9
Mixed Riparian Woodland	5,785	149	2.6%	368	184
Mine Tailing Riparian Woodland	641	218	34.0%	218	218*
<i>Total Nesting Habitat</i>	<i>15,558</i>	<i>376</i>	<i>2.4%</i>	<i>586</i>	<i>411</i>
Nesting/Foraging Habitat					
Mixed Riparian Scrub	1,451	189	13.0%	169	189
<i>Total Nesting/Foraging Habitat</i>	<i>1,451</i>	<i>189</i>	<i>13.0%</i>	<i>169</i>	<i>189</i>
Foraging Habitat					
Valley Grassland	135,112	21,954	16.2%	22,014	0
Cropland	47,905	5,285	11.0%	5,285	0
Irrigated Pasture-Grassland	15,991	2,749	17.2%	2,749	0
Blue Oak Savanna	5,637	38	0.7%	47	37
Vernal Pool	4,536	389	8.6%	966	389
Seasonal Wetland	2,600	105	4.0%	105	105
Swale	1,252	234	18.7%	278	234
<i>Total Foraging Habitat</i>	<i>213,033</i>	<i>30,754</i>	<i>14.4%</i>	<i>31,444</i>	<i>765</i>
Total Modeled Habitat	230,042	31,319	13.6%	32,319	1,365

* Habitat re-establishment/establishment for Mine Tailing Riparian Woodland can be either Mixed Riparian Woodland or Mixed Riparian Scrub.

Indirect impacts on white-tailed kite modeled habitat and individuals would also occur under the Proposed Action/Proposed Project Alternative. These indirect effects and the environmental stressors that cause them are the same in type and character as those discussed

and analyzed qualitatively for white-tailed kite under the No Action/No Project Alternative (Section 9.2.2).

The Proposed Action/Proposed Project Alternative requires implementation of the following AMMs that are relevant to white-tailed kite: LID-1 (Stormwater Quality), LID-3 (Natural Site Features), EDGE-1 (Compatible Land Uses), EDGE-2 (Single Loaded Streets), EDGE-3 (Preserve Setbacks), EDGE-4 (Locate Stormwater Control Outside Preserves), EDGE-5 (Stormwater Control in Preserve Setbacks), EDGE-6 (Stormwater Basins in Preserves), EDGE-8 (Outdoor Lighting), EDGE-9 (Livestock Access to Preserves), EDGE-10 (Prevent Invasive Species Spread), ROAD-1 (Road Project Location), ROAD-3 (Roadside Pesticide Use), NATURE TRAIL-1 (Trail Plan), NATURE TRAIL-3 (Trail Location), NATURE TRAIL-4 (Biological Studies Prior to Trail Design), NATURE TRAIL-5 (Monitoring of Trail Impacts), NATURE TRAIL-6 (Trail Public Education), and UTILITY-1 (Avian Collision Avoidance) (Table 2-6). Relative to the project AMMs of the No Action/Project alternative, these SSHCP AMMs would avoid and minimize indirect impacts on white-tailed kite. For example, EDGE-3 would require 50-foot setback distances between urban development and Preserves, which would not be required under the No Action/No Project Alternative, thereby increasing protection of modeled white-tailed kite habitat from indirect impacts.

Temporary construction stressors and impacts would occur under the Proposed Action/Proposed Project Alternative, which would be the same in type and character as those discussed and analyzed qualitatively for the species under the No Action/No Project Alternative (Section 9.2.2). The Proposed Action/Proposed Project Alternative would require general construction AMMs, and AMMs specific to covered raptor species would also be required: RAPTOR-1 (Raptor Design Surveys), RAPTOR-2 (Raptor Pre-Construction Surveys), RAPTOR-3 (Raptor Nest/Roost Buffer), and RAPTOR-4 (Raptor Nest/Roost Buffer Monitoring) (Table 2-6). These construction and raptor-specific AMMs may also be applied under the No Action/No Project Alternative; however, oversight of AMM implementation and monitoring of AMM effectiveness by the Implementing Entity for the SSHCP would increase the avoidance and minimization of impacts. For this reason, temporary impacts under the Proposed Action/Proposed Project Alternative on white-tailed kite are expected to be less than under the No Action/No Project Alternative.

The Preserve System under the Proposed Action/Proposed Project Alternative would include a total of approximately 32,319 acres of habitat for white-tailed kite, including approximately 586 acres of nesting habitat, approximately 169 acres of nesting/foraging habitat, and approximately 31,444 acres of foraging habitat. This modeled habitat preservation is greater than estimated for the No Action/No Project Alternative of a combined 21,321 acres of habitat types, which would occur as a result of project-by-project mitigation.

The Conservation Strategy would also establish/re-establish approximately 1,365 acres of habitat for white-tailed kite, and would implement biological objectives to conserve the species within the Planning Area. These objectives would include the implementation of the AMMs and the Preserve System discussed above, and objectives to maintain or improve habitat value (e.g., development of preserve management plans and requirements for Preserve width to limit edge effects).

Significance of Direct and Indirect Effects

The Proposed Action/Proposed Project Alternative would impact approximately 1,965 fewer acres of habitat for white-tailed kite within the Planning Area than is estimated for the No Action/No Project Alternative. In addition, the Proposed Action/Proposed Project Alternative would preserve approximately 10,998 acres more habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included in the Proposed Action/Proposed Project Alternative that would avoid or minimize indirect and temporary effects on white-tailed kite individuals and habitat, and provide an additional mechanism for impact avoidance and oversight.

Therefore, the Proposed Action/Proposed Project Alternative would have less impact, and using the significance criteria presented in Section 9.2.1 and the impact analysis provided previously, the Proposed Action/Proposed Project Alternative would have a **Significant Beneficial** effect on white-tailed kite when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Proposed Action/Proposed Project Alternative would generally be the same as described previously for the No Action/No Project Alternative (Section 9.2.2).

As discussed previously in this impact section, the Proposed Action/Proposed Project Alternative would result in the loss of approximately 31,319 acres of modeled white-tailed kite habitat within the Planning Area, which is approximately 1,965 acres less than the estimated loss under the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Proposed Action/Proposed Project Alternative would include AMMs, such as setbacks from Preserves, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy also would include Biological Goals and Measureable Objectives specific to the conservation of white-tailed kite. In addition, the Conservation Strategy would

preserve approximately 10,998 more acres of white-tailed kite than under the No Action/No Project Alternative, and those acres would be preserved within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action/No Project Alternative.

The incremental effects of the Proposed Action/Proposed Project Alternative would result in less of an incremental contribution to the cumulative impact within the Planning Area for white-tailed kite than would occur under the No Action/No Project Alternative. Therefore, the Proposed Action/Proposed Project Alternative does not result in a cumulatively considerable contribution to significant adverse cumulative impacts to this species. The Proposed Action/Proposed Project Alternative would result in a ***Minor Beneficial Cumulative*** effect for white-tailed kite compared to the No Action/No Project Alternative baseline condition.

9.2.3.14 Effects on Greater Sandhill Crane and Its Habitat

The life history, suitable habitat, and documented occurrences in the Planning Area of greater sandhill crane are discussed in Appendix G.

Direct and Indirect Effects of the Alternative

The maximum anticipated loss of greater sandhill crane modeled habitat under the Proposed Action/Proposed Project would be approximately 7,942 acres, including 66 acres of roosting, 124 acres of roosting/foraging, and 7,752 acres of foraging habitat (Table 9-36). Of this total, approximately 7,116 acres are within the UDA and only approximately 826 acres are outside of the UDA where high-quality habitat is located. The total loss of modeled habitat is less than the estimated total loss of 9,616 acres under the No Action/No Project Alternative, of which 2,289 acres would occur outside of the UDA where high-quality habitat is located.

The Proposed Action/Proposed Project Alternative is expected to remove 63 of the existing 70 occurrences of greater sandhill crane in the Planning Area, which is 1 more occurrence that would be removed under the No Action/No Project Alternative.

Table 9-36. Direct Effects and Modeled Habitat Conservation for Greater Sandhill Crane Under the Proposed Action/Proposed Project Alternative

Modeled Habitat	Total Planning Area (acres)						
	Total Existing	Direct Effect	Indirect Effect	Total Habitat Lost	% of Existing Habitat Lost	Total Habitat Preservation	Total Habitat Re-establishment and/or Establishment
Roosting/Foraging Habitat¹							
Seasonal Wetland	1,877	51	Qualitative	51	2.7%	105	52
Freshwater Marsh	2,610	73	Qualitative	73	2.8%	127	73
<i>Total Roosting/Foraging Habitat</i>	<i>4,487</i>	<i>124</i>	<i>Qualitative</i>	<i>124</i>	<i>2.8%</i>	<i>232</i>	<i>125</i>
Roosting Habitat							
Vernal Pool	1,156	59	7	66	5.7%	37	59
<i>Total Roosting Habitat</i>	<i>1,156</i>	<i>59</i>	<i>7</i>	<i>66</i>	<i>5.7%</i>	<i>37</i>	<i>59</i>
Foraging Habitat²							
Cropland	42,628	3,764	Qualitative	3,764	8.8%	6,700	0
Valley Grassland	30,585	2,469	Qualitative	2,469	8.1%	1,671	0
Irrigated Pasture-Grassland	10,908	1,519	Qualitative	1,519	13.9%	1,680	0
<i>Total Foraging Habitat</i>	<i>84,121</i>	<i>7,752</i>	<i>Qualitative</i>	<i>7,752</i>	<i>9.2%</i>	<i>10,051</i>	<i>0</i>
Grand Total	89,764	7,935	7	7,942	8.8%	10,320	184

¹ Modeled roosting habitat includes these communities within 2 miles of greater sandhill crane occurrences in the Planning Area.

² Modeled foraging habitat includes these communities within 1.75 miles of modeled roosting habitat.

The Proposed Action/Proposed Project Alternative would have approximately 7 acres of indirect effects on greater sandhill crane roosting habitat, as compared to approximately 117 acres of indirect effects on roosting habitat under the No Action/No Project Alternative. Indirect effects to other habitat types and individuals would also occur under the Proposed Action/Proposed Project Alternative; these indirect effects and the environmental stressors that cause them are the same in type and character as those discussed and analyzed qualitatively for greater sandhill crane under the No Action/No Project Alternative (Section 9.2.2).

The Proposed Action/Proposed Project Alternative requires implementation of the following AMMs that are relevant to greater sandhill crane; LID-1 (Stormwater Quality), LID-3 (Natural Site Features), EDGE-1 (Compatible Land Uses), EDGE-2 (Single Loaded Streets), EDGE-3(Preserve Setbacks), EDGE-4 (Locate Stormwater Control Outside Preserves), EDGE-5 (Stormwater Control in Preserve Setbacks), EDGE-8 (Outdoor Lighting), EDGE-9 (Livestock Access to Preserves), EDGE-10 (Prevent Invasive Species Spread), BMP-2 (Erosion Control), BMP-9 (Soil Compaction), ROAD-1 (Road Project Location), ROAD-2 (Wildlife Crossing Structures), ROAD-3 (Roadside Pesticide Use), NATURE TRAIL-1 (Trail Plan), NATURE TRAIL-3 (Trail Location), NATURE TRAIL-4 (Biological Studies Prior to Trail Design), NATURE TRAIL-5 (Monitoring of Trail Impacts), NATURE TRAIL-6 (Trail Public Education),

RE-ESTABLISHMENT/ESTABLISHMENT-1 (Vernal Pool), UTILITY-1 (Avian Collision Avoidance), and UTILITY-4 (Siting of Entry and Exit Location) (Table 2-6). Relative to the project AMMs of the No Action/Project Alternative, these SSHCP AMMs would avoid and minimize indirect impacts on greater sandhill crane. For example, EDGE-4 would require that stormwater runoff be directed away from Preserves, which would limit exposure of greater sandhill crane within Preserves to urban runoff that may contain pesticides and petroleum products and that can adversely affect the hydrology of vernal pool roosting habitat.

Temporary construction stressors and impacts would occur under the Proposed Action/Proposed Project Alternative, which would be the same in type and character as those discussed and analyzed qualitatively for the species under the No Action/No Project Alternative (Section 9.2.2). The Proposed Action/Proposed Project Alternative will require general construction AMMs and species-specific AMMs: GSC-1 (Greater Sandhill Crane Design Surveys), GSC-2 (Greater Sandhill Crane Pre-Construction Surveys), GSC-3 (Greater Sandhill Crane Roosting Buffer), GSC-4 (Greater Sandhill Crane Visual Barrier), and GSC-5 (Greater Sandhill Crane Roost Buffer Monitoring) (Table 2-6). These construction and species-specific AMMs may also be applied under the No Action/No Project Alternative. However, oversight of AMM implementation and monitoring of AMM effectiveness by the Implementing Entity for the SSHCP would increase the avoidance and minimization of impacts. For this reason, temporary impacts under the Proposed Action/Proposed Project Alternative on tricolored blackbird are expected to be less than under the No Action/No Project Alternative.

The Preserve System under the Proposed Action/Proposed Project Alternative would include approximately 10,320 acres of modeled habitat for greater sandhill crane. This modeled habitat preservation exceeds the 8,323 acres estimated under the No Action/No Project Alternative. The Conservation Strategy would also establish/re-establish approximately 184 acres of habitat for greater sandhill crane. Furthermore, the Conservation Strategy would also implement biological objectives to conserve the species within the Planning Area. These objectives would include the implementation of the AMMs and the Preserve System discussed above, and objectives to maintain or improve habitat value and preserve high-quality habitat (at least 2,000 acres of preserved foraging habitat would be high-quality foraging habitat).

Significance of Direct and Indirect Effects

The Proposed Action/Proposed Project Alternative would impact approximately 1,557 fewer acres of habitat for greater sandhill crane within the Planning Area than is estimated for the No Action/No Project Alternative. In addition, the Proposed Action/Proposed Project Alternative would preserve approximately 1,997 acres more habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also

included in the Proposed Action/Proposed Project Alternative that would avoid or minimize indirect and temporary effects on greater sandhill crane individuals and habitat and provide an additional mechanism for impact avoidance and oversight.

Therefore, the Proposed Action/Proposed Project Alternative would have less impact, and using the significance criteria presented in Section 9.2.1 and the impact analysis provided previously, the Proposed Action/Proposed Project Alternative would have a **Minor Beneficial** effect on greater sandhill crane when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Proposed Action/Proposed Project Alternative would generally be the same as described above for the No Action/No Project Alternative previously (Section 9.2.2).

As discussed previously in this impact section, the Proposed Action/Proposed Project Alternative would result in the loss of approximately 7,942 acres of modeled greater sandhill crane habitat within the Planning Area, which is approximately 1,557 acres less than the estimated loss under the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Proposed Action/Proposed Project Alternative would include AMMs, such as setbacks from Preserves, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy also would include Biological Goals and Measureable Objectives specific to the conservation of greater sandhill crane. In addition, the Conservation Strategy would preserve 1,997 more acres of greater sandhill crane modeled habitat than under the No Action/No Project Alternative; those acres would be preserved within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action /No Project Alternative.

The incremental effects of the Proposed Action/Proposed Project Alternative would result in less of an incremental contribution to the cumulative impact within the Planning Area for greater sandhill crane than would occur under the No Action/No Project Alternative. However, at the scale of the study area, the incremental difference in impacts under the Proposed Action/Proposed Project Alternative compared to impacts under the No Action/No Project Alternative is not discernibly different. Therefore, the Proposed Action/Proposed Project Alternative would result in **No Cumulative Effect** for greater sandhill crane compared to the No Action/No Project Alternative baseline condition.

9.2.3.15 Effects on Lesser Sandhill Crane and Its Habitat

Basic Habitat use and occurrence within the Planning Area for lesser sandhill crane are described in Appendix G.

Direct and Indirect Effects of the Alternative

The land cover types in the Planning Area that are utilized by lesser sandhill crane are the same as those for greater sandhill crane (Table 9-36) described in Section 9.2.3.14, as is the expected acres of habitat loss under the Proposed Action/Proposed Project Alternative. New development and transportation infrastructure would have indirect effects on lesser sandhill crane that would be the same as those discussed previously for greater sandhill crane. In addition, construction activities under the Proposed Action/Proposed Project Alternative may result in temporary effects as discussed previously for greater sandhill crane.

The Proposed Action/Proposed Project Alternative would include the implementation of the AMMs discussed for greater sandhill crane that would also avoid or minimize indirect impacts lesser sandhill crane. Temporary impacts would also be avoided or minimized by the construction and species AMMs discussed in Section 9.2.3.14 for greater sandhill crane. Although the greater sandhill crane species-specific AMMs would not apply to projects where only lesser sandhill crane is present, due to the habitat overlap of the two species, both would benefit from the application of these species-specific AMMs.

The lesser sandhill crane modeled habitat preserved under the Proposed Action/Proposed Project Alternative and the relation of that modeled habitat preservation to the No Action/No Project Alternative would be the same as that for greater sandhill crane.

Significance of Direct and Indirect Effects

The Proposed Action/Proposed Project Alternative would impact approximately 1,557 fewer acres of habitat for lesser sandhill crane within the Planning Area than is estimated for the No Action/No Project Alternative. In addition, the Proposed Action/Proposed Project Alternative would preserve approximately 1,997 more acres of habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included in the Proposed Action/Proposed Project Alternative that would avoid or minimize indirect and temporary effects on lesser sandhill crane individuals and habitat, and provide an additional mechanism for impact avoidance and oversight.

Therefore, the Proposed Action/Proposed Project Alternative would have less impact, and using the significance criteria presented in Section 9.2.1 and the impact analysis provided previously,

the Proposed Action/Proposed Project Alternative would have a **Minor Beneficial** effect on lesser sandhill crane when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Proposed Action/Proposed Project Alternative would generally be the same as described above for the No Action/No Project Alternative (Section 9.2.2).

As discussed previously in this impact section, the Proposed Action/Proposed Project Alternative would result in the loss of approximately 7,942 acres of modeled lesser sandhill crane habitat within the Planning Area, which is approximately 1,557 acres less than the estimated loss under the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Proposed Action/Proposed Project Alternative would include AMMs, such as setbacks from Preserves, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy also would include Biological Goals and Measureable Objectives specific to the conservation of greater sandhill crane, which would also benefit lesser sandhill crane. In addition, the Conservation Strategy would preserve 1,997 more acres of lesser sandhill crane modeled habitat than under the No Action/No Project Alternative, and those acres would be preserved within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action/No Project Alternative.

The incremental effects of the Proposed Action/Proposed Project Alternative would result in less of an incremental contribution to the cumulative impact within the Planning Area for lesser sandhill crane than would occur under the No Action/No Project Alternative. However, at the scale of the study area, the incremental difference in impacts under the Proposed Action/Proposed Project Alternative compared to impacts under the No Action/No Project Alternative is not discernibly different. The Proposed Action/Proposed Project Alternative would result in **No Cumulative Effect** for lesser sandhill crane compared to the No Action/No Project Alternative baseline condition.

9.2.3.16 Effects on Loggerhead Shrike and Its Habitat

Habitat use, natural history, documented occurrences, and existing acres of modeled habitat in the Planning Area of loggerhead shrike are described in Appendix G.

Direct and Indirect Effects of the Alternative

The maximum anticipated loss of modeled habitat for loggerhead shrike would be approximately 31,367 acres, including approximately 591 acres of nesting (approximately 7.5% of existing), approximately 22,014 acres of nesting/foraging (approximately 16.3% of existing), and approximately 8,762 acres of foraging habitat (approximately 12.1% of existing) (Table 9-37). This is less than the estimated total loss under the No Action/No Project Alternative of approximately 33,144 acres.

The Proposed Action/Proposed Project Alternative is not expected to remove any of the existing 34 occurrences of loggerhead shrike in the Planning Area; no occurrences would be removed under the No Action/No Project Alternative.

Table 9-37. Direct Effects and Modeled Habitat Conservation for Loggerhead Shrike Under the Proposed Action/Proposed Project Alternative

Modeled Habitat	Total Planning Area (acres)				
	Total Existing	Direct Effect	% of Existing Habitat Lost	Total Habitat Preservation	Total Habitat Re-establishment and/or Establishment
Nesting Habitat					
Mixed Riparian Woodland	5,785	184	3.2%	368	184
Mixed Riparian Scrub	1,424	189	13.3%	378	189
Mine Tailing Riparian Woodland	641	218	34.0%	218	218
<i>Total Nesting Habitat</i>	<i>7,850</i>	<i>591</i>	<i>7.5%</i>	<i>964</i>	<i>591</i>
Nesting/Foraging Habitat					
Valley Grassland	135,112	22,014	16.3%	21,014	0
<i>Total Nesting/Foraging Habitat</i>	<i>135,112</i>	<i>22,014</i>	<i>16.3%</i>	<i>21,014</i>	<i>0</i>
Foraging Habitat					
Cropland	47,905	5,285	11.0%	6,947	0
Irrigated Pasture-Grassland	15,991	2,749	17.2%	2,749	0
Vernal Pool	4,536	389	8.6%	966	389
Seasonal Wetland	2,600	105	4.0%	105	105
Swale	1,252	234	18.7%	278	234
<i>Total Foraging Habitat</i>	<i>72,284</i>	<i>8,762</i>	<i>12.1%</i>	<i>11,045</i>	<i>728</i>
Grand Total	215,246	31,367	14.6%	34,023	1,319

Indirect impacts on loggerhead shrike modeled habitat and individuals would also occur under the Proposed Action/Proposed Project Alternative. These indirect effects and the environmental stressors that cause them are the same in type and character as those discussed and analyzed qualitatively for loggerhead shrike under the No Action/No Project Alternative (Section 9.2.2).

The Proposed Action/Proposed Project Alternative requires implementation of the following AMMs that are relevant to loggerhead shrike: LID-1 (Stormwater Quality), LID-3 (Natural Site Features), EDGE-1 (Compatible Land Uses), EDGE-2 (Single Loaded Streets), EDGE-3 (Preserve Setbacks), EDGE-4 (Locate Stormwater Control Outside Preserves), EDGE-5 (Stormwater Control in Preserve Setbacks), EDGE-6 (Stormwater Basins in Preserves), EDGE-8 (Outdoor Lighting), EDGE-9 (Livestock Access to Preserves), EDGE-10 (Prevent Invasive Species Spread), ROAD-1 (Road Project Location), ROAD-3 (Roadside Pesticide Use), NATURE TRAIL-1 (Trail Plan), NATURE TRAIL-3 (Trail Location), NATURE TRAIL-4 (Biological Studies Prior to Trail Design), NATURE TRAIL-5 (Monitoring of Trail Impacts), NATURE TRAIL-6 (Trail Public Education), STREAM-1 (Laguna Creek Setback), STREAM-2 (UDA Stream Setbacks), and UTILITY-1 (Avian Collision Avoidance) (Table 2-6). Relative to the project avoidance and minimization measures of the No Action/Project alternative, these SSHCP AMMs would avoid and minimize indirect impacts on loggerhead shrike. For example, EDGE-3 would require 50-foot setback distances between urban development and Preserves which would not be required under the No Action/No Project Alternative, thereby increasing protection of modeled loggerhead shrike habitat from indirect impacts.

Temporary construction stressors and impacts would occur under the Proposed Action/Proposed Project Alternative, which would be the same in type and character as those discussed and analyzed qualitatively for the species under the No Action/No Project Alternative (Section 9.2.2). The Proposed Action/Proposed Project Alternative would require general construction AMMs and AMMs specific to covered raptor species: RAPTOR-1 (Raptor Design Surveys), RAPTOR-2 (Raptor Pre-Construction Surveys), RAPTOR-3 (Raptor Nest/Roost Buffer), and RAPTOR-4 (Raptor Nest/Roost Buffer Monitoring) (Table 2-6). These construction and raptor-specific AMMs may also be applied under the No Action/No Project Alternative; however, oversight of AMM implementation and monitoring of AMM effectiveness by the Implementing Entity for the SSHCP would increase the avoidance and minimization of impacts. For this reason, temporary impacts under the Proposed Action/Proposed Project Alternative on loggerhead shrike are expected to be less than under the No Action/No Project Alternative.

The Preserve System under the Proposed Action/Proposed Project Alternative would include a total of approximately 34,023 acres of habitat for loggerhead shrike. This modeled habitat preservation would exceed the estimated 21,061 acres of modeled habitat preservation under the No Action/No Project Alternative. The Conservation Strategy would also establish/re-establish a total of approximately 1,319 acres of habitat for loggerhead shrike and would implement biological objectives to conserve the species within the Planning Area. These objectives would include the implementation of the AMMs and the Preserve System discussed above, and objectives to maintain or improve habitat value (e.g., development of preserve management plans and requirements for Preserve width to limit edge effects).

Significance of Direct and Indirect Effects

The Proposed Action/Proposed Project Alternative would impact approximately 1,777 fewer acres of habitat for loggerhead shrike within the Planning Area than is estimated for the No Action/No Project Alternative. In addition, the Proposed Action/Proposed Project Alternative would preserve approximately 12,962 more acres of habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included in the Proposed Action/Proposed Project Alternative that would avoid or minimize indirect and temporary effects on loggerhead shrike individuals and habitat and provide an additional mechanism for impact avoidance and oversight.

Therefore, the Proposed Action/Proposed Project Alternative would have less impact, and using the significance criteria presented in Section 9.2.1 and the impact analysis provided above, the Proposed Action/Proposed Project Alternative would have a ***Significant Beneficial*** effect on loggerhead shrike when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Proposed Action/Proposed Project Alternative would generally be the same as described above for the No Action/No Project Alternative above (Section 9.2.2).

As discussed previously in this impact section, the Proposed Action/Proposed Project Alternative would result in the loss of approximately 31,367 acres of modeled loggerhead shrike habitat within the Planning Area, which is approximately 1,777 acres less than the estimated loss under the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Proposed Action/Proposed Project Alternative would include AMMs, such as setbacks from Preserves, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy also would include Biological Goals and Measureable Objectives beneficial to the conservation of loggerhead shrike. In addition, the Conservation Strategy would preserve approximately 12,962 more acres of loggerhead shrike modeled habitat than under the No Action/No Project Alternative; those acres would be preserved within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action/No Project Alternative.

The incremental effects of the Proposed Action/Proposed Project Alternative would result in less of an incremental contribution to the cumulative impact within the Planning Area for loggerhead shrike than would occur under the No Action/No Project Alternative. Therefore, the Proposed Action/Proposed Project Alternative does not result in a cumulatively considerable contribution to significant adverse cumulative impacts to this species. The Proposed Action/Proposed Project Alternative would result in a **Minor Beneficial Cumulative** effect for loggerhead shrike compared to the No Action/No Project Alternative baseline condition.

9.2.3.17 Effects on Grasshopper Sparrow and Its Habitat

Basic habitat information for grasshopper sparrow within the Planning Area is found in Appendix G.

Direct and Indirect Effects of the Alternative

Estimated losses of potentially suitable grasshopper sparrow habitat under the Proposed Action/Proposed Project Alternative would consist of approximately 2,749 acres of Irrigated Pasture and approximately 22,014 acres of Valley Grassland for a total land cover loss of approximately 24,763 acres. Of this habitat loss, approximately 23,938 acres would occur within the UDA, and 825 acres would occur outside of the UDA. This is less than the estimated loss of potentially suitable grasshopper sparrow habitat under the No Action/No Project Alternative of approximately 26,210 acres.

Indirect impacts on potentially suitable grasshopper sparrow habitat would also occur under the Proposed Action/Proposed Project Alternative. These indirect effects and the environmental stressors that cause them are the same in type and character as those discussed and analyzed qualitatively for grasshopper sparrow under the No Action/No Project Alternative (Section 9.2.2).

The Proposed Action/Proposed Project Alternative requires implementation of the following AMMs that are relevant to grasshopper sparrow: LID-1 (Stormwater Quality), LID-3 (Natural Site Features), EDGE-1 (Compatible Land Uses), EDGE-2 (Single Loaded Streets), EDGE-3(Preserve Setbacks), EDGE-4 (Locate Stormwater Control Outside Preserves), EDGE-5(Stormwater Control in Preserve Setbacks), EDGE-6 (Stormwater Basins in Preserves), EDGE-8 (Outdoor Lighting), EDGE-9 (Livestock Access to Preserves), EDGE-10 (Prevent Invasive Species Spread), ROAD-1 (Road Project Location), ROAD-3 (Roadside Pesticide Use), NATURE TRAIL-1 (Trail Plan), NATURE TRAIL-3 (Trail Location), NATURE TRAIL-4 (Biological Studies Prior to Trail Design), NATURE TRAIL-5 (Monitoring of Trail Impacts), NATURE TRAIL-6 (Trail Public Education), and UTILITY-1 (Avian Collision Avoidance) (Table 2-6). Relative to the project AMMs of the No Action/Project alternative, these SSHCP AMMs would avoid and minimize indirect impacts on grasshopper sparrow. For example, EDGE-3 would require 50-foot setback distances between urban development and Preserves, which would not be required under the No Action/No Project

Alternative, thereby increasing protection of modeled grasshopper sparrow habitat from indirect impacts.

Temporary construction stressors and impacts would occur under the Proposed Action/Proposed Project Alternative, which would be the same in type and character as those discussed and analyzed qualitatively for the species under the No Action/No Project Alternative (Section 9.2.2). The Proposed Action/Proposed Project Alternative will require general construction AMMs be applied to Covered Activities (Table 2-6). These construction AMMs may also be applied under the No Action/No Project Alternative; however, oversight of AMM implementation and monitoring of AMM effectiveness by the Implementing Entity for the SSHCP would increase the avoidance and minimization of impacts. For this reason, temporary impacts under the Proposed Action/Proposed Project Alternative on grasshopper sparrow are expected to be less than under the No Action/No Project Alternative.

The Preserve System under the Proposed Action/Proposed Project Alternative would include approximately 24,763 acres of potentially suitable grasshopper sparrow habitat. This would be a greater amount of preserved potentially suitable habitat than the estimated 14,302 acres preserved under the No Action/No Project Alternative that would result from project-by-project mitigation.

Significance of Direct and Indirect Effects

The Proposed Action/Proposed Project Alternative would impact approximately 1,447 fewer acres of potentially suitable habitat for grasshopper sparrow within the Planning Area than is estimated for the No Action/No Project Alternative. Additionally, the Proposed Action/Proposed Project Alternative would preserve approximately 10,461 more acres of potentially suitable habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included in the Proposed Action/Proposed Project Alternative that would avoid or minimize indirect and temporary effects on grasshopper sparrow individuals and habitat and provide an additional mechanism for impact avoidance and oversight.

Therefore, the Proposed Action/Proposed Project Alternative would have less impact, and using the significance criteria presented in Section 9.2.1 and the impact analysis provided previously, the Proposed Action/Proposed Project Alternative would have a **Significant Beneficial** effect on grasshopper sparrow when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Proposed Action/Proposed Project Alternative would generally be the same as described for the No Action/No Project Alternative in Section 9.2.2.

As discussed previously in this impact section, the Proposed Action/Proposed Project Alternative would result in the loss of approximately 24,763 acres of potentially suitable grasshopper sparrow habitat within the Planning Area, which is approximately 1,447 acres less than the estimated loss under the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Proposed Action/Proposed Project Alternative would include AMMs, such as setbacks from Preserves, that would reduce indirect impacts to remaining potentially suitable habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy also would include Biological Goals and Measureable Objectives beneficial to the conservation of grasshopper sparrow. The Conservation Strategy would preserve approximately 10,461 more acres of grasshopper sparrow potentially suitable habitat than under the No Action/No Project Alternative. Additionally, those acres would be preserved within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action/No Project Alternative.

The incremental effects of the Proposed Action/Proposed Project Alternative would result in less of an incremental contribution to the cumulative impact within the Planning Area for grasshopper sparrow than would occur under the No Action/No Project Alternative. Therefore, the Proposed Action/Proposed Project Alternative does not result in a cumulatively considerable contribution to significant adverse cumulative impacts to this species. The Proposed Action/Proposed Project Alternative would result in a **Minor Beneficial Cumulative** effect for grasshopper sparrow compared to the No Action/No Project Alternative baseline condition.

9.2.3.18 Effects on Song Sparrow (Modesto Population) and Its Habitat

Basic habitat information for song sparrow within the Planning Area is found in Appendix G.

Direct and Indirect Effects of the Alternative

The anticipated loss of potentially suitable habitat for song sparrow would be approximately 105 acres of Seasonal Wetland, 127 acres of Freshwater Marsh, and 189 acres of Mixed Riparian Scrub, which totals approximately 421 acres and is less than the 448 acres estimated under the No Action/No Project Alternative.

Indirect impacts to song sparrow potentially suitable habitat would occur under the Proposed Action/Proposed Project Alternative which would be the same type and character as those discussed and analyzed qualitatively for the species under the No Action/No Project Alternative in Section 9.2.2.

The Proposed Action/Proposed Project Alternative requires implementation of the following AMMs that are relevant to song sparrow: LID-1 (Stormwater Quality), LID-3 (Natural Site Features), EDGE-1 (Compatible Land Uses), EDGE-2 (Single Loaded Streets), EDGE-3 (Preserve Setbacks), EDGE-4 (Locate Stormwater Control Outside Preserves), EDGE-5 (Stormwater Control in Preserve Setbacks), EDGE-8 (Outdoor Lighting), EDGE-9 (Livestock Access to Preserves), EDGE-10 (Prevent Invasive Species Spread), BMP-2 (Erosion Control), BMP-9 (Soil Compaction), ROAD-1(Road Project Location), ROAD-3(Roadside Pesticide Use), NATURE TRAIL-1(Trail Plan), NATURE TRAIL-3 (Trail Location), NATURE TRAIL-4 (Biological Studies Prior to Trail Design), NATURE TRAIL-5 (Monitoring of Trail Impacts), NATURE TRAIL-6 (Trail Public Education), RE-ESTABLISHMENT/ESTABLISHMENT-1 (Vernal Pool), UTILITY-1 (Avian Collision Avoidance), and UTILITY-4 (Siting of Entry and Exit Location) (Table 2-6). Relative to the project AMMs of the No Action/Project Alternative, these SSHCP AMMs would avoid and minimize indirect impacts on song sparrow. For example, EDGE-4 would require that stormwater runoff be directed away from Preserves, which would limit exposure of song sparrow within Preserves to urban runoff that may contain pesticides and petroleum products. While this AMM may be applied to projects under the No Action/No Project Alternative it would likely be applied less frequently.

Temporary construction stressors and impacts would occur under the Proposed Action/Proposed Project Alternative, which would be the same in type and character as those discussed and analyzed qualitatively for the species under the No Action/No Project Alternative (Section 9.2.2). The Proposed Action/Proposed Project Alternative will require general construction AMMs be applied to Covered Activities (Table 2-6). These construction AMMs may also be applied under the No Action/No Project Alternative; however, oversight of AMM implementation and monitoring of AMM effectiveness by the Implementing Entity for the SSHCP would increase the avoidance and minimization of impacts. For this reason, temporary impacts under the Proposed Action/Proposed Project Alternative on song sparrow are expected to be less than under the No Action/No Project Alternative.

The Preserve System under the Proposed Action/Proposed Project Alternative would include a total of approximately 421 acres of potentially suitable song sparrow habitat. This exceeds the estimated 24 acres under the No Action/No Project Alternative that would occur on a project-by-project basis.

Significance of Direct and Indirect Effects

The Proposed Action/Proposed Project Alternative would impact approximately 27 fewer acres of potentially suitable habitat for song sparrow within the Planning Area than is estimated for the No Action/No Project Alternative. In addition, the Proposed Action/Proposed Project Alternative would preserve approximately 397 acres more potentially suitable habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included in the Proposed Action/Proposed Project Alternative that would avoid or minimize indirect and temporary effects on song sparrow individuals and potentially suitable habitat and provide an additional mechanism for impact avoidance and oversight.

Therefore, the Proposed Action/Proposed Project Alternative would have less impact, and using the significance criteria presented in Section 9.2.1 and the impact analysis provided previously, the Proposed Action/Proposed Project Alternative would have a **Minor Beneficial** effect on song sparrow when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Proposed Action/Proposed Project Alternative would generally be the same as described for the No Action/No Project Alternative in Section 9.2.2.

As discussed previously in this impact section, the Proposed Action/Proposed Project Alternative would result in the loss of approximately 421 acres of potentially suitable song sparrow habitat within the Planning Area, which is approximately 27 acres less than the estimated loss under the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Proposed Action/Proposed Project Alternative would include AMMs, such as setbacks from Preserves, that would reduce indirect impacts to remaining potentially suitable habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy also would include Biological Goals and Measureable Objectives beneficial to the conservation of song sparrow. The Conservation Strategy would preserve approximately 397 more acres of song sparrow potentially suitable habitat than under the No Action/No Project Alternative, and those acres would be preserved within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action/No Project Alternative.

The incremental effects of the Proposed Action/Proposed Project Alternative would result in less of an incremental contribution to the cumulative impact within the Planning Area for song sparrow than would occur under the No Action/No Project Alternative. However, at the scale of the study area, the incremental difference in impacts under the Proposed Action/Proposed Project Alternative compared to impacts under the No Action/No Project Alternative is not discernibly different. The Proposed Action/Proposed Project Alternative would result in **No Cumulative Effect** for song sparrow compared to the No Action/No Project Alternative baseline condition.

9.2.3.19 Effects on Bank Swallow and Its Habitat

Basic habitat information for bank swallow within the Planning Area is found in Appendix G.

Direct and Indirect Effects of the Alternative

Bank swallow is associated with large cut banks in riverine habitats and sand bluffs where it builds nest burrows, and with surrounding areas that it uses for foraging. The two documented occurrences within the Planning Area are along the Cosumnes River between Rancho Murieta and Sloughhouse. The potential loss of bank swallow nesting habitat from Preserve Covered Activities within the Cosumnes River/Deer Creek Corridor where it occurs is analyzed qualitatively, as the land cover level analysis performed does not include the specific features required by this species for nesting colonies. Preserve Covered Activities under the Proposed Action/Proposed Project Alternative that remove cut banks through use of bank stabilization techniques to restore historical hydrologic conditions or activities that remove foraging habitat within proximity to nest colonies would result in impacts to bank swallow.

The Proposed Action/Proposed Project Alternative requires implementation of the following AMMs that are relevant to bank swallow: LID-3 (Natural Site Features), EDGE-1 (Compatible Land Uses), EDGE-2 (Single Loaded Streets), EDGE-3 (Preserve Setbacks), EDGE-4 (Locate Stormwater Control Outside Preserves), EDGE-5 (Stormwater Control in Preserve Setbacks), EDGE-8 (Outdoor Lighting), EDGE-9 (Livestock Access to Preserves), EDGE-10 (Prevent Invasive Species Spread), BMP-2 (Erosion Control), BMP-9 (Soil Compaction), ROAD-1 (Road Project Location), ROAD-3 (Roadside Pesticide Use), NATURE TRAIL-1 (Trail Plan), NATURE TRAIL-3 (Trail Location), NATURE TRAIL-4 (Biological Studies Prior to Trail Design), NATURE TRAIL-5 (Monitoring of Trail Impacts), NATURE TRAIL-6 (Trail Public Education), RE-ESTABLISHMENT/ESTABLISHMENT-1 (Vernal Pool), UTILITY-1 (Avian Collision Avoidance), and UTILITY-4 (Siting of Entry and Exit Location) (Table 2-6). Relative to the project AMMs of the No Action/Project Alternative, these SSHCP AMMs would avoid and minimize indirect impacts on song sparrow. For example, EDGE-3 would require 50-foot setback distances between urban development and Preserves, which would not be required under the No Action/No Project Alternative, thereby increasing protection of bank swallow foraging habitat from indirect impacts.

Temporary construction stressors and impacts would occur under the Proposed Action/Proposed Project Alternative, which would be the same in type and character as those discussed and analyzed qualitatively for the species under the No Action/No Project Alternative (Section 9.2.2). The Proposed Action/Proposed Project Alternative will require general construction AMMs be applied to Covered Activities (Table 2-6). These construction AMMs may also be applied under the No Action/No Project Alternative; however, oversight of AMM implementation and monitoring of AMM effectiveness by the Implementing Entity for the SSHCP would increase the avoidance and minimization of impacts. For this reason, temporary impacts under the Proposed Action/Proposed Project Alternative on bank swallow are expected to be less than under the No Action/No Project Alternative.

The majority of nesting and foraging habitat in the Planning Area would likely be preserved within the Cosumnes River/Deer Creek Corridor under the Proposed Action/Proposed Project Alternative.

Significance of Direct and Indirect Effects

Preserve Covered Activities within the Cosumnes River/Deer Creek Corridor implemented under the Proposed Action/Proposed Project Alternative would potentially impact known nesting colonies of bank swallow within the Planning Area in contrast to the No Action/No Project Alternative. However, the Proposed Action/Proposed Project Alternative would preserve considerably more habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included in the Proposed Action/Proposed Project Alternative that would avoid or minimize indirect and temporary effects on bank swallow individuals and habitat, and provide an additional mechanism for impact avoidance and oversight.

Therefore, the overall impact of the Proposed Action/Proposed Project Alternative on bank swallow would be similar to that of the No Action/No Project Alternative, and based on the significance criteria in Section 9.2.1, impacts from the Proposed Action/Proposed Project Alternative would have a **Less Than Significant Adverse** effect on bank swallow when compared to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present and reasonably foreseeable future projects to cumulative effects under the Proposed Action/Proposed Project Alternative would generally be the same as described for the No Action/No Project Alternative in Section 9.2.2.

As discussed previously in this impact section, Preserve Covered Activities may occur within the Cosumnes River/Deer Creek Corridor, such as the use of bank stabilization techniques to restore

historical hydrologic conditions, or Preserve Covered Activities may remove foraging habitat near nest colonies in the area. There are no proposed activities under the No Action/No Project Alternative in that area that would likely adversely affect these nest colonies. However, the AMMs that would be required by the SSHCP would likely reduce impacts from Preserve Covered Activities.

The Conservation Strategy would include Biological Goals and Measureable Objectives that would benefit bank sparrow foraging habitat and would preserve a greater area of bank swallow habitat than the preservation under the No Action/No Project Alternative. In addition the preservation under the Proposed Action/Proposed Project Alternative would be within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action/No Project Alternative. The individual preserves in the Preserve System under the Proposed Action/Proposed Project Alternative would also be subject to the Biological Goals and Measurable Objectives of the SSHCP applicable to bank swallow and be operated under a comprehensive preserve management program.

The incremental effects of the Proposed Action/Proposed Project Alternative would not be significantly different than the incremental effects that would occur under the No Action/No Project Alternative. The Proposed Action/Proposed Project Alternative would result in **No Cumulative Effect** to bank swallow compared to the No Action/No Project Alternative baseline condition.

9.2.3.20 Effects on Western Red Bat and Its Habitat

The habitat requirements, documented occurrences, and existing acres of modeled habitat of western red bat in the Planning Area are described in Appendix G.

Direct and Indirect Effects of the Alternative

The maximum anticipated loss of western red bat modeled habitat would be approximately 23,986 acres, including 23,330 acres of foraging (approximately 15.3% of existing) and approximately 656 acres of roosting/foraging habitat (approximately 2.6% of existing). This is less than the estimated loss under the No Action/No Project Alternative of approximately 25,488 acres. The percentage of habitat remaining shown in Table 9-38 only applies to those natural land covers listed and is an underestimation of total habitat remaining. Western red bat is known to roost and forage in developed areas with mature trees and those acres are not included in the analysis.

The Proposed Action/Proposed Project Alternative is expected to remove six of the existing seven occurrences of western red bat in the Planning Area, which would be three more occurrences than would be removed under the No Action/No Project Alternative.

Table 9-38. Direct Effects and Modeled Habitat Conservation for Western Red Bat Under the Proposed Action/Proposed Project Alternative

Modeled Habitat	Total (acres)				
	Total Existing	Direct Effect	% of Existing Habitat Lost	Total Habitat Preservation	Total Habitat Re-establishment and/or Establishment
Foraging Habitat					
Valley Grassland	135,112	22,014	16.3%	22,014	0
Vernal Pool	4,536	389	8.6%	966	389
Seasonal Wetlands	2,600	105	4.0%	105	105
Freshwater Marsh	2,922	127	4.3%	127	127
Stream/Creek	2,674	117	4.4%	117	117
Open Water	2,344	155	6.6%	155	155*
Mixed Riparian Scrub	1,451	189	13.0%	378	189
Swale	1,252	234	18.7%	278	234
<i>Total Foraging Habitat</i>	<i>152,891</i>	<i>23,330</i>	<i>15.3%</i>	<i>24,140</i>	<i>1,316</i>
Roosting/Foraging Habitat					
Blue Oak Woodland	9,132	9	0.1%	0	9
Mixed Riparian Woodland	5,785	184	3.2%	368	184
Blue Oak Savanna	5,637	38	0.7%	47	38
Orchards	3,646	207	5.7%	207	0
Mine Tailing Riparian Woodland	641	218	34.0%	218	218**
<i>Total Roosting/Foraging Habitat</i>	<i>24,841</i>	<i>656</i>	<i>2.6%</i>	<i>840</i>	<i>449</i>
Grand Total	177,732	23,986	13.5%	24,980	1,765

* Acres of Open Water habitat re-establishment/establishment will occur as a land cover that provides equivalent or better habitat value for Covered Species affected by the loss of Open Water, as determined by the TAC.

** Habitat re-establishment/establishment for Mine Tailing Riparian Woodland can be either Mixed Riparian Woodland or Mixed Riparian Scrub.

Indirect impacts to western red bat modeled habitat would also occur under the Proposed Action/Proposed Project Alternative. These indirect effects are the same in type and character as those discussed and analyzed qualitatively in the species impact discussion in Section 9.2.2 above.

The Proposed Action/Proposed Project Alternative requires implementation of the following AMMs that are relevant to western red bat: LID-1 (Stormwater Quality) LID-3 (Natural Site Features), EDGE-1 (Compatible Land Uses), EDGE-2 (Single Loaded Streets), EDGE-3 (Preserve Setbacks), EDGE-4 (Locate Stormwater Control Outside Preserves), EDGE-5 (Stormwater Control in Preserve Setbacks), EDGE-6 (Detention Basins in Linkage Preserves), EDGE-9 (Livestock Access to Preserves), EDGE-10 (Prevent Invasive Species Spread), ROAD-1 (Road Project Location), ROAD-3 (Roadside Pesticide Use), NATURE TRAIL-1 (Trail Plan), NATURE TRAIL-3 (Trail Location),

NATURE TRAIL-4 (Biological Studies Prior to Trail Design) NATURE TRAIL-5 (Monitoring of Trail Impacts), NATURE TRAIL-6 (Trail Public Education), and UTILITY-1 (Avian Collision Avoidance) (Table 2-6). Relative to the project AMMs of the No Action/Project alternative, these SSHCP AMMs would avoid and minimize indirect impacts on western red bat. For example, STREAM-1, STREAM-2, and STREAM-3 would increase setback distances on Laguna Creek, UDA streams, and minor tributaries over what would be required under the No Action/No Project Alternative, increasing protection of riparian modeled roosting habitat from indirect impacts.

Temporary construction stressors and impacts would occur under the Proposed Action/Proposed Project Alternative, which would be the same in type and character as those discussed and analyzed qualitatively for the species under the No Action/No Project Alternative (Section 9.2.2). The Proposed Action/Proposed Project Alternative will require covered activities implement general AMMs and species-specific AMMs: BAT-1 (Maternity Roost Design Surveys), BAT-2 (Maternity Roost Pre-Construction Surveys, BAT-3 (Maternity Roost Buffer), and BAT-4 (Bat Eviction Methods) (Table 2-6). These construction AMMs may also be applied under the No Action/No Project Alternative; however, oversight of AMM implementation and monitoring of AMM effectiveness by the Implementing Entity for the SSHCP would increase the avoidance and minimization of impacts. For this reason, temporary impacts under the Proposed Action/Proposed Project Alternative on western red bat are expected to be less than under the No Action/No Project Alternative.

The Preserve System under the Proposed Action/Proposed Project Alternative would include approximately 24,980 acres of modeled habitat for western red bat. This modeled habitat preservation would be greater than the estimated 13,729 acres under the No Action/No Project Alternative. The Conservation Strategy would also establish/ re-establish a total of approximately 1,765 acres of habitat for western red bat, and would implement biological objectives to conserve the species within the Planning Area. These objectives would include the implementation of the AMMs and the Preserve System discussed above, and objectives to maintain or improve habitat value (e.g., development of preserve management plans, and requirements for Preserve width to limit edge effects).

Significance of Direct and Indirect Effects

The Proposed Action/Proposed Project Alternative would impact approximately 1,502 fewer acres of modeled habitat for western red bat within the Planning Area than is estimated for the No Action/No Project Alternative. In addition, the Proposed Action/Proposed Project Alternative would preserve approximately 11,251 acres more modeled western red bat habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included in the Proposed Action/Proposed Project Alternative that would avoid or

minimize indirect and temporary effects on western red bat individuals and habitat and provide an additional mechanism for impact avoidance and oversight.

Therefore, the Proposed Action/Proposed Project Alternative would have less impact, and using the significance criteria presented in Section 9.2.1 and the impact analysis provided previously, the Proposed Action/Proposed Project Alternative would have a **Significant Beneficial** effect on western red bat when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Proposed Action/Proposed Project Alternative would generally be the same as described for the No Action/No Project Alternative in Section 9.2.2.

As discussed previously in this impact section, the Proposed Action/Proposed Project Alternative would result in the loss of approximately 23,986 acres of modeled western red bat habitat within the Planning Area, which is approximately 1,502 fewer acres than the estimated loss under the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Proposed Action/Proposed Project Alternative would include AMMs, such as setbacks from Preserves, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy also would include Biological Goals and Measureable Objectives beneficial to the conservation of western red bat. The Conservation Strategy would preserve approximately 11,251 more acres of western red bat modeled habitat than under the No Action/No Project Alternative, and those acres would be preserved within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action /No Project Alternative.

The incremental effects of the Proposed Action/Proposed Project Alternative would result in less of an incremental contribution to the cumulative impact within the Planning Area for western red bat than would occur under the No Action/No Project Alternative. Therefore, the Proposed Action/Proposed Project Alternative does not result in a cumulatively considerable contribution to significant adverse cumulative impacts to this species. The Proposed Action/Proposed Project Alternative would result in a **Minor Beneficial Cumulative** effect for western red bat compared to the No Action/No Project Alternative baseline condition.

9.2.3.21 Effects on American Badger and Its Habitat

The species description of American badger within the Planning Area is provided in Appendix G.

Direct and Indirect Effects of the Alternative

The maximum anticipated loss of modeled habitat for American badger would be approximately 22,780 acres, or approximately 15.3% of the existing modeled habitat in the Planning Area (Table 9-39). This is less than the 24,192 acres estimated under the No Action/No Project Alternative.

The Proposed Action/Proposed Project Alternative is not expected to remove any of the existing nine occurrences of American badger in the Planning Area; no occurrences would be removed under the No Action/No Project Alternative.

Table 9-39. Direct Effects and Modeled Habitat Conservation for American Badger Under the Proposed Action/Proposed Project Alternative

Modeled Habitat	Total Planning Area (acres)				
	<i>Total Existing</i>	<i>Direct Effect</i>	<i>% of Existing Habitat Lost</i>	<i>Total Habitat Preservation</i>	<i>Total Habitat Re-establishment and/or Establishment</i>
Valley Grassland	135,112	22,014	16.3%	22,014	0
Blue Oak Savanna	5,637	38	0.7%	38	38
Vernal Pool	4,536	389	8.6%	966	389
Seasonal Wetland	2,600	105	4.0%	105	105
Swale	1,252	234	18.7%	278	234
Grand Total	149,137	22,780	15.3%	23,401	766

Indirect effects on American badger would also occur under the Proposed Action/Proposed Project Alternative. These indirect effects are the same in type and character as those discussed for the species in Section 9.2.2.

The Proposed Action/Proposed Project Alternative requires implementation of the following AMMs relevant to American badger: LID-1 (Stormwater Quality), LID-3 (Natural Site Features), EDGE-1 (Compatible Land Uses), EDGE-2 (Single Loaded Streets), EDGE-3 (Preserve Setbacks), EDGE-4 (Locate Stormwater Control Outside Preserves), EDGE-5 (Stormwater Control in Preserve Setbacks), EDGE-6 (Stormwater Basins in Preserves), EDGE-8 (Outdoor Lighting), EDGE-9 (Livestock Access to Preserves), EDGE-10 (Prevent Invasive Species Spread), ROAD-1 (Road Project Location), ROAD-2 (Wildlife Crossing Structures), ROAD-3 (Roadside Pesticide Use), BMP-9 (Soil Compaction), NATURE TRAIL-1 (Trail Plan), NATURE TRAIL-3 (Trail Location), NATURE TRAIL-4 (Biological Studies Prior to Trail Design), NATURE TRAIL-5 (Monitoring of Trail Impacts), and NATURE TRAIL-6 (Trail Public Education) (Table 2-6). Relative to the project

AMMs of the No Action/Project alternative, these SSHCP AMMs would avoid and minimize indirect impacts on American badger. For example, EDGE-3 would require 50-foot setback distances between urban development and Preserves, which would not be required under the No Action/No Project Alternative, thereby increasing protection of modeled American badger habitat from indirect impacts.

The Proposed Action/Proposed Project Alternative will also have temporary impacts on American badger, which would be the same in type and character as those discussed and analyzed qualitatively for the species under the No Action/No Project Alternative (Section 9.2.2). The Proposed Action/Proposed Project Alternative will require general construction AMMs be applied to Covered Activities (Table 2-6). These construction AMMs may also be applied under the No Action/No Project Alternative; however, oversight of AMM implementation and monitoring of AMM effectiveness by the Implementing Entity for the SSHCP would increase the avoidance and minimization of impacts. For this reason, temporary impacts under the Proposed Action/Proposed Project Alternative on American badger are expected to be less than under the No Action/No Project Alternative.

The Preserve System under the Proposed Action/Proposed Project Alternative would include approximately 23,401 acres of habitat for American badger. This modeled habitat preservation would be more than the estimated 13,489 acres of modeled habitat preservation under the No Action/No Project Alternative. The Conservation Strategy would also establish/re-establish a total of approximately 766 acres of habitat and would implement biological objectives to conserve the species within the Planning Area. These objectives would include the implementation of the AMMs and the Preserve System discussed previously and objectives to maintain or improve habitat value (e.g., development of preserve management plans and requirements for Preserve width to limit edge effects).

Significance of Direct and Indirect Effects

The Proposed Action/Proposed Project Alternative would impact 1,412 fewer acres of habitat for American badger within the Planning Area than is estimated for the No Action/No Project Alternative. Additionally, the Proposed Action/Proposed Project Alternative would preserve 9,912 more acres of habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included in the Proposed Action/Proposed Project Alternative that would avoid or minimize indirect and temporary effects on American badger individuals and habitat and provide an additional mechanism for impact avoidance and oversight.

Therefore, the Proposed Action/Proposed Project Alternative would have less impact, and using the significance criteria presented in Section 9.2.1 and the impact analysis provided previously,

the Proposed Action/Proposed Project Alternative would have a ***Significant Beneficial*** effect on American badger when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Proposed Action/Proposed Project Alternative would generally be the same as described for the No Action/No Project Alternative in Section 9.2.2.

As discussed previously in this impact section, the Proposed Action/Proposed Project Alternative would result in the loss of approximately 22,780 acres of modeled American badger habitat within the Planning Area, which is approximately 1,412 acres less than the estimated loss under the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Proposed Action/Proposed Project Alternative would include AMMs, such as setbacks from Preserves, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy also would include Biological Goals and Measureable Objectives beneficial to the conservation of American badger. The Conservation Strategy would preserve approximately 9,912 more acres of American badger modeled habitat than under the No Action/No Project Alternative. Additionally, those acres would be preserved within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action/No Project Alternative.

The incremental effects of the Proposed Action/Proposed Project Alternative would result in less of an incremental contribution to the cumulative impact within the Planning Area for American badger than would occur under the No Action/No Project Alternative. Therefore, the Proposed Action/Proposed Project Alternative does not result in a cumulatively considerable contribution to significant adverse cumulative impacts to this species. The Proposed Action/Proposed Project Alternative would result in a ***Minor Beneficial Cumulative*** effect for American badger compared to the No Action/No Project Alternative baseline condition.

9.2.3.22 Effects on Sanford's Arrowhead and Its Habitat

The habitat requirements of Sanford's arrowhead and information on documented occurrences in the Planning Area are provided in Appendix G.

Direct and Indirect Effects of the Alternative

The maximum anticipated loss of Sanford's arrowhead modeled habitat would be approximately 10,620 acres, or 20.1% of existing modeled habitat in the Planning Area (Table 9-40). The majority of that effect would be on Valley Grassland within the UDA. This is less than the estimated loss of 12,065 acres under the No Action/No Project Alternative.

The Proposed Action/Proposed Project Alternative is expected to remove 12 of the existing 64 occurrences of Sanford's arrowhead in the Planning Area, which would be 6 more occurrences than would be removed under the No Action/No Project Alternative.

Table 9-40. Direct Effects and Modeled Habitat Conservation for Sanford's Arrowhead Under the Proposed Action/Proposed Project Alternative

Modeled Habitat	Total Planning Area (acres)				
	Total Existing	Direct Effect	% of Existing Habitat Lost	Total Habitat Preservation	Total Habitat Re-establishment and/or Establishment
Freshwater Marsh	2,044	103	5.0%	127	103
Open Water	1,086	68	6.3%	23	68*
Seasonal Wetlands	1,425	72	5.1%	87	72
Streams/Creeks	893	83	9.3%	117	83
Valley Grassland	47,375	10,294	21.7%	11,735	0
Grand Total	52,823	10,620	20.1%	12,089	326

* Acres of Open Water habitat re-establishment/establishment will occur as a land cover that provides equivalent or better habitat value for Covered Species affected by the loss of Open Water, as determined by the TAC.

Indirect effects on Sanford's arrowhead would occur under the Proposed Action/Proposed Project Alternative. These indirect effects are the same in type and character as those discussed for the species in Section 9.2.2.

The Proposed Action/Proposed Project Alternative requires implementation of the following AMMs by Covered Activities that are relative to Sanford's arrowhead: LID-1 (Stormwater Quality), LID-3 (Natural Site Features), EDGE-1 (Compatible Land Uses), EDGE-2 (Single Loaded Streets), EDGE-3 (Preserve Setbacks), EDGE-4 (Locate Stormwater Control Outside Preserves), EDGE-5 (Stormwater Control in Preserve Setbacks), EDGE-10 (Prevent Invasive Species Spread), BMP-9 (Soil Compaction), NATURE TRAIL-1 (Trail Plan), NATURE TRAIL-2 (Hardpan/Duripan Protection), NATURE TRAIL-3 (Trail Location), NATURE TRAIL-4 (Biological Studies Prior to Trail Design) NATURE TRAIL-5 (Monitoring of Trail Impacts), ROAD-1 (Road Project Location), ROAD-3 (Roadside Pesticide Use), STREAM-1 (Laguna Creek Setback), STREAM-2 (UDA Stream Setbacks), STREAM-3 (Minor tributaries to UDA Streams), UTILITY-2 (Utility Maintenance), and UTILITY-4 (Siting of Entry and Exit Location) (Table 2-6). Relative to the project AMMs of the No Action/Project alternative, these SSHCP AMMs would avoid

and minimize indirect impacts on Sanford's arrowhead. For example, STREAM-1, STREAM-2, and STREAM-3 would increase setback distances on Laguna Creek, UDA streams, and minor tributaries over what would be required under the No Action/No Project Alternative. These setbacks would minimize the indirect impact to stream and creek modeled habitat for Sanford's arrowhead.

Temporary construction stressors and impacts would occur under the Proposed Action/Proposed Project Alternative. These stressors and impacts would be the same in type and character as those discussed and analyzed qualitatively for the species under the No Action/No Project Alternative (Section 9.2.2). Covered Activities would be required to implement general construction AMMs that would avoid or minimize temporary effects to Sanford's arrowhead (Table 2-6). These construction AMMs may also be applied under the No Action/No Project Alternative; however, oversight of AMM implementation and monitoring of AMM effectiveness by the Implementing Entity for the SSHCP would increase the avoidance and minimization of impacts. For this reason, temporary impacts under the Proposed Action/Proposed Project Alternative on Sanford's arrowhead are expected to be less than under the No Action/No Project Alternative.

The Preserve System under the Proposed Action/Proposed Project Alternative would include a total of approximately 12,089 acres of habitat for Sanford's arrowhead. This modeled habitat preservation would exceed the estimated 5,907 acres of modeled habitat preservation under the No Action/No Project Alternative. The Conservation Strategy would also establish/re-establish a total of approximately 326 acres of habitat, and would implement biological objectives to conserve the species within the Planning Area. These objectives would include the implementation of the AMMs and the Preserve System discussed previously, and objectives to maintain or improve habitat value (e.g., development of preserve management plans, and requirements for Preserve width to limit edge effects).

Significance of Direct and Indirect Effects

The Proposed Action/Proposed Project Alternative would impact approximately 1,445 fewer acres of habitat for Sanford's arrowhead within the Planning Area than is estimated for the No Action/No Project Alternative. In addition, the Proposed Action/Proposed Project Alternative would preserve approximately 6,182 acres more habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included in the Proposed Action/Proposed Project Alternative that would avoid or minimize indirect and temporary effects on Sanford's arrowhead individuals and habitat and provide an additional mechanism for impact avoidance and oversight.

Therefore, the Proposed Action/Proposed Project Alternative would have less impact, and using the significance criteria presented in Section 9.2.1 and the impact analysis provided previously, the Proposed Action/Proposed Project Alternative would have a **Minor Beneficial** effect on Sanford's arrowhead when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Proposed Action/Proposed Project Alternative would generally be the same as described for the No Action/No Project Alternative in Section 9.2.2.

As discussed previously in this impact section, the Proposed Action/Proposed Project Alternative would result in the loss of approximately 10,620 acres of modeled Sanford's arrowhead habitat within the Planning Area, which is approximately 1,445 fewer acres than the estimated loss under the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Proposed Action/Proposed Project Alternative would include AMMs, such as increased stream setbacks, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy also would include Biological Goals and Measureable Objectives beneficial to the conservation of Sanford's arrowhead. The Conservation Strategy would preserve approximately 6,182 more acres of Sanford's arrowhead modeled habitat than under the No Action/No Project Alternative, and those acres would be preserved within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action/No Project Alternative.

The incremental effects of the Proposed Action/Proposed Project Alternative would result in less of an incremental contribution to the cumulative impact within the Planning Area for Sanford's arrowhead than would occur under the No Action/No Project Alternative. Therefore, the Proposed Action/Proposed Project Alternative does not result in a cumulatively considerable contribution to significant adverse cumulative impacts to this species. The Proposed Action/Proposed Project Alternative would result in a **Minor Beneficial Cumulative** effect for Sanford's arrowhead compared to the No Action/No Project Alternative baseline condition.

9.2.3.23 Effects on Special-Status Plant Species Not Covered by the SSHCP and Their Habitat

There are 18 special-status plant species with potential to occur in the Planning Area that are not covered by the SSHCP (Table 9-2) and are analyzed here. Information on the process to select these species, their habitat associations, and occurrence in the Planning Area is provided

in Appendix G. These plant species are predominately associated with five SSHCP land cover categories: Vernal Wetlands, Non-vernal Wetlands, Riparian Habitats, Blue Oak Woodland and Savanna, and Valley Grassland.

Direct and Indirect Effects of the Alternative

The maximum modeled habitat loss under Proposed Action/Proposed Project Alternative is expected to be less than the loss under the No Action/No Project Alternative for 12 species (watershield (*Brasenia schreberi*), fleshy owl's clover, Brandegees clarkia (*Clarkia biloba* ssp. *brandegeae*), Peruvian dodder (*Cuscuta obtusiflora* var. *glandulosa*), stinkbells, woolly rose-mallow (*Hibiscus lasiocarpus* var. *occidentalis*), Delta tule pea (*Lathyrus jepsonii* var. *jepsonii*), Heckard's pepper-grass, marsh skullcap (*Scutellaria galericulata*), side-flowering skullcap (*Scutellaria lateriflora*), Suisun Marsh aster (*Symphyotrichum lentum*), and saline clover) and greater for the remaining 6 species (Table 9-41).

Table 9-41. Total Loss of Potentially Suitable Habitat for Other Special-Status Plants Under the Proposed Action/Proposed Project Alternative

Total Planning Area (acres)									
Plant Name (status)*	Loss of Potentially Suitable Habitat (direct and indirect)						% of Existing Potentially Suitable Habitat Lost	Habitat Preservation	Habitat Re-establishment/ Establishment
	Vernal Wetlands	Non-vernal Wetlands	Riparian	Blue Oak Woodland/ Savanna	Valley Grassland	Total Habitat Loss			
Watershield (State S2)	—	232	—	—	—	232	4.2%	232	232
Bristly sedge (State S2)	761	232	—	—	—	993	8.8%	1,476	855
Fleshy owl's clover (Federal - T; State - E)	—	232	—	—	—	232	4.2%	232	232
Brandegee's clarkia (State S2)	—	—	—	47	—	47	0.3%	47	47
Bolander's water-hemlock (State S2)	761	232	591	—	—	1,584	8.2%	2,440	1,446
Peruvian dodder (CRPR 2B.2)	—	232	—	—	—	232	4.2%	232	232
Tuolumne button-celery (State S2)	761	—	—	47	—	808	3.9%	1,291	670
Stinkbells (State S3)	—	—	—	47	22,014	22,061	14.7%	22,061	47
Woolly rose-mallow (State S2)	—	232	—	—	—	232	4.2%	232	232
Northern California black walnut (State S1)	—	—	591	—	—	591	7.4%	964	591
Delta tule pea (State S2)	—	232	—	—	—	232	4.2%	232	232
Heckard's pepper-grass (State S2)	—	—	—	—	22,014	22,014	16.3%	22,014	0
Mason's lilaeopsis (State S2)	—	232	591	—	—	823	6.1%	1,196	823

Table 9-41. Total Loss of Potentially Suitable Habitat for Other Special-Status Plants Under the Proposed Action/Proposed Project Alternative

Total Planning Area (acres)									
Plant Name (status)*	Loss of Potentially Suitable Habitat (direct and indirect)						% of Existing Potentially Suitable Habitat Lost	Habitat Preservation	Habitat Re-establishment/ Establishment
	Vernal Wetlands	Non-vernal Wetlands	Riparian	Blue Oak Woodland/ Savanna	Valley Grassland	Total Habitat Loss			
Delta mudwort (State S2)	—	232	591	—	—	823	6.1%	1,196	823
Marsh skullcap (State S1)	—	232	—	—	—	232	4.2%	232	232
Side-flowering skullcap (State S1)	—	232	—	—	—	232	4.2%	232	232
Suisun marsh aster (State S2)	—	232	—	—	—	232	4.2%	232	232
Saline clover (State S2)	761	232	—	—	22,014	23,007	15.7%	23,490	855

For species with state or federal status, no CRPR listing used.

* **Status Definitions**

Federal

E = listed as endangered under the ESA

T = listed as threatened under the ESA

State

E = listed as endangered under CESA

T = listed as threatened under CESA

S1 = Critically Imperiled by the State

S2 = Imperiled by the State

S3 = Vulnerable by the State

California Rare Plant Rank (CRPR)

2B = Rare, threatened, or endangered in California, but more common elsewhere

CRPR Threat Ranks

0.2 = Moderately threatened in California (moderate degree/immediacy of threat)

Indirect and temporary effects on these special-status plant species would be similar to those listed for Sanford's arrowhead in Section 9.2.2, such as increased exposure to pollutants and increased presence of invasive plant species, and are analyzed qualitatively for the No Action/No Project Alternative. The Proposed Action/Proposed Project Alternative would include the implementation of the AMMs discussed previously for Sanford's arrowhead that would also avoid or minimize indirect impacts to the special-status plants analyzed here.

Temporary construction stressors and impacts would occur under the Proposed Action/Proposed Project Alternative. These stressors and impacts would be the same in type and character as those discussed and analyzed qualitatively for Sanford's arrowhead under the No Action/No Project Alternative (Section 9.2.2), with the addition of specific environmental stressors on vernal pool hydrology (see the analysis of vernal pool invertebrates and plants in Section 9.2.2.1) that would indirectly adversely impact those special-status plant species analyzed here that are modeled to occur within the vernal pool ecosystem (e.g., bristly sedge, Bolander's water-hemlock, Tuolumne button-celery, and saline clover). Covered activities would be required to implement general construction AMMs that would avoid or minimize temporary effects to special-status plant species. These construction AMMs may also be applied under the No Action/No Project Alternative; however, oversight of AMM implementation and monitoring of AMM effectiveness by the Implementing Entity for the SSHCP would increase the avoidance and minimization of impacts. For this reason, temporary impacts under the Proposed Action/Proposed Project Alternative on the special-status plants analyzed here are expected to be less than under the No Action/No Project Alternative.

The Preserve System under the Proposed Action/Proposed Project Alternative would preserve and establish/re-establish habitat for special-status plants not covered by the SSHCP. In addition, the Conservation Strategy would implement biological objectives for Covered Species that would benefit non-covered plant species. The acres preserved under the Proposed Action/Proposed Project Alternative exceed the acres preserved under the No Action/No Project Alternative for all but three species (bristly sedge, Brandagee's clarkia, and Tuolumne button-celery).

Critical Habitat has been designated for fleshy owl's clover south of Dry Creek at the extreme southern edge of the Planning Area. The Proposed Action/Proposed Project Alternative is not expected to impact any of this designated Critical Habitat for fleshy owl's clover.

Significance of Direct and Indirect Effects

The Proposed Action/Proposed Project Alternative would impact a greater number of acres of habitat for 6 special-status plant species within the Planning Area than is estimated for the No Action/No Project Alternative and fewer acres for the remaining 12 species. However, the Proposed

Action/Proposed Project Alternative would preserve more habitat than what is estimated for the No Action/No Project Alternative for four of the six species with a greater impact and fewer for only one that has a smaller impact. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included in the Proposed Action/Proposed Project Alternative that would avoid and minimize indirect and temporary effects on special-status plant species individuals and habitat and provide an additional mechanism for impact avoidance and oversight.

Therefore, the overall impact of the Proposed Action/Proposed Project Alternative on these special-status plant species would not be substantially different to that of the No Action/No Project Alternative, and based on the significance criteria in Section 9.2.1, impacts from the Proposed Action/Proposed Project Alternative would have a ***Less Than Significant Adverse*** effect on the special-status plant species not covered by the SSHCP when compared to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Proposed Action/Proposed Project Alternative would generally be the same as described for the No Action/No Project Alternative in Section 9.2.2.

As discussed previously in this impact section, the Proposed Action/Proposed Project Alternative would impact a greater number of acres of habitat for 6 special-status plant species within the Planning Area than is estimated for the No Action/No Project Alternative, and fewer acres for the remaining 12 species.

The Conservation Strategy would include Biological Goals and Measureable Objectives that would benefit special-status plant species habitat and would preserve more habitat than what is estimated for the No Action/No Project Alternative for four of the six species with a greater impact and fewer for only one that has a smaller impact. In addition the preservation under the Proposed Action/Proposed Project Alternative would be within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected preserves than is anticipated from the project-by-project mitigation under the No Action /No Project Alternative. The individual preserves in the Preserve System under the Proposed Action/Proposed Project Alternative would also be subject to the Biological Goals and Measurable Objectives of the SSHCP applicable to special-status plant species and be operated under a comprehensive preserve management program.

The incremental effects of the Proposed Action/Proposed Project Alternative would not be significantly different than the incremental effects that would occur under the No Action/No Project

Alternative. However, at the scale of the study area, the incremental difference in impacts under the Proposed Action/Proposed Project Alternative compared to impacts under the No Action/No Project Alternative is not discernibly different. The Proposed Action/Proposed Project Alternative would result in **No Cumulative Effect** to the special-status plant species not covered by the SSHCP compared to the No Action/No Project Alternative baseline condition.

9.2.4 Reduced Permit Term Alternative

As described in Section 2.4.3, the Reduced Permit Term Alternative includes the same types of new urban development and infrastructure as those anticipated under the No Action/No Project Alternative.

Under the Reduced Permit Term Alternative, the core of the Preserve System established inside the UDA would be associated with the development of five large Master Plans, as discussed in Section 2.3.4 for the Reduced Permit Term Alternative, and as discussed in Section 2.3.3 for the Proposed Action/Proposed Project Alternative. Because the core of the Preserve System inside the UDA under both EIS/EIR action alternatives is associated with the same five large Master Plans, approximately 70% of the UDA Preserves established under the Reduced Permit Term Alternative would have similar sizes, boundaries, and locations as the UDA Preserves established under the Proposed Action/Proposed Project Alternative. However, the shorter duration of the Reduced Permit Term Alternative—and the smaller amount of urban development and associated development fees collected by the Reduced Permit Term Alternative—would not allow the HCP's Implementing Entity to establish as many acres of new Preserves in the Planning Area as would occur under the Proposed Action/Proposed Project's 50-year permit term. Therefore, fewer new Preserves would be established under the Conservation Strategy of the Reduced Permit Term Alternative. This difference would be especially pronounced outside the UDA.

As described in Section 2.4, the ESA and CESA incidental take permits and the CWA permit strategy for HCP Covered Activities would be valid only during the 30-year permit term of the Reduced Permit Term Alternative, and the Reduced Permit Term Alternative's Conservation Strategy would be implemented only during this 30-year term. The urban development Covered Activities and conservation strategies associated with the five Master Plans would be implemented inside the UDA during this 30-year period. However, the EIS/EIR uses a 50-year analysis study period to evaluate all alternatives (see Section 3.6.3), so the EIS/EIR study period extends beyond the end of the 30-year permit term for the Reduced Permit Term Alternative. Therefore, as described in Section 3.6.7.2, the EIS/EIR analysis of the Reduced Permit Term Alternative also considers future urban development that is not part of the project description of the Reduced Permit Term Alternative, but is still expected to occur within the Planning Area after the end of the permit term (i.e., in years 31–50 of the EIS/EIR study period).

As described in Section 3.6.7.2, project mitigation Preserves established after the end of the 30-year Reduced Permit Term Alternative would be established under a project-by-project process for obtaining individual authorizations under CWA, ESA, CESA, and Section 1600 of the California Fish and Game Code. Consequently, mitigation Preserves established in years 31–50 of the EIS/EIR study period would not be established using a regional, landscape-based approach that balances new urban development with the need for conservation, as would be provided by an HCP. Therefore, much of the Preserve System inside the UDA would be very similar under the two action alternatives, but the Preserve System outside the UDA would be substantially different between the Reduced Permit Term Alternative and the Proposed Action/Proposed Project Alternative. Under the Reduced Permit Term Alternative, it is unlikely that mitigation Preserves established outside the UDA would be contiguous or would be interconnected, and it is unlikely that a large, contiguous 10,500-acre landscape-size vernal pool Preserve would be established in the southwestern portion of the Planning Area. Likewise, the No Action/No Project Alternative also would not result in contiguous, interconnected Preserves outside the UDA and would not establish a 10,500-acre vernal-pool preserve in the Planning Area. In these ways, the new mitigation Preserves established outside the UDA under the Reduced Permit Term Alternative and the No Action/No Project Alternative would be similar.

9.2.4.1 Effects on Vernal Pool Invertebrate/Plant Species and Habitat

As was the case for the No Action/No Project Alternative discussed previously, the following 11 vernal pool invertebrate and plant species are considered together in the analysis of the Reduced Permit Term Alternative due to their dependence on the vernal pool ecosystem: vernal pool tadpole shrimp, vernal pool fairy shrimp, mid-valley fairy shrimp, Ricksecker's water scavenger beetle, dwarf downingia, Ahart's dwarf rush, pincushion navarretia, slender Orcutt grass, Sacramento Orcutt grass, Boggs Lake hedge-hyssop, and legenera. While the individual natural history, habitat requirements, modeled habitat, and documented occurrences in the Planning Area differ for these species (and are found in Appendix G), the direct impact mechanisms and environmental stressors that cause temporary impacts are the same.

Direct and Indirect Effects of the Alternative

Projects and activities under the Reduced Permit Term Alternative (Section 2.4.3) would permanently remove modeled habitat for vernal pool invertebrate and plant species through development and related infrastructure resulting in direct impacts to vernal pool invertebrate and plant species. While the majority of the urban development would occur within the UDA, transportation and other infrastructure projects would occur outside the UDA. The direct impact acres that would occur under the Reduced Permit Term Alternative for each species are shown in Table 9-42 and discussed below.

Vernal pool invertebrate and plant species near proposed construction activities under the Reduced Permit Term Alternative will be adversely affected by several temporary construction-related effects (Appendix G) that will result in additional disturbance to habitat or additional harm to vernal pool invertebrate plant and animal species. Generally, these temporary effects will occur within the project boundary or road right-of-way area (quantified in the direct effects and the area of indirect impacts to each species in the impact tables below).

As discussed above for direct impacts, the majority of indirect impacts to vernal pool invertebrate and plant species under the Reduced Permit Term Alternative would occur within the UDA as a result of urban development, although there would be indirect impacts as a result of transportation and other infrastructure projects outside the UDA. The environmental stressors that would trigger indirect impacts under the Reduced Permit Term Alternative are the same in type and character as those discussed in the impact discussion for vernal pool invertebrate and plant species under the No Action/No Project Alternative in Section 9.2.2 above.

The Reduced Permit Term Alternative requires Covered Activities to implement the AMMs that would be applied during the permit term and are listed in the vernal pool invertebrate and plant species analysis in Section 9.2.3.

Relative to the project AMMs of the No Action/No Project Alternative, the implementation of SSHCP AMMs during the permit term would reduce indirect impacts on vernal pool invertebrate and plant species. For example, EDGE-3 establishes a 50-foot setback from the edge of established Preserves to minimize indirect effects on Preserve lands, while EDGE-7 would not allow Covered Activities that could damage duripan within the Preserve Setback to protect the perched aquifer that maintains hydrologic conditions in the vernal pool ecosystem. The indirect impact acres that would occur under the Reduced Permit Term Alternative for each species are shown in Table 9-42 and discussed below.

Some of the elements of the AMMs described previously would also be implemented under the No Action/No Project Alternative as part of standard best practices and/or regulatory requirements (see Table 2-6). However, for those AMM elements implemented across alternatives, the additional oversight and guidance provided by the SSHCP would result in the requirements of these AMMs being implemented more frequently and consistently across the Planning Area.

The maximum anticipated loss of species modeled habitat for vernal pool tadpole shrimp and vernal pool fairy shrimp due to direct impacts would be approximately 18,825 acres (Table 9-42). Indirect effects on vernal pool tadpole shrimp and vernal pool fairy shrimp modeled aquatic habitat are anticipated to result in additional approximately 271 acres of impacts. The total impact, including direct and indirect impacts, of the Reduced Permit Term Alternative on

vernal pool tadpole shrimp and vernal pool fairy shrimp modeled habitat is expected to be approximately 19,096 acres. This total impact exceeds the 17,949 acres of total impact estimated for the No Action/No Project Alternative by approximately 1,147 acres (Table 9-4).

Of the direct habitat loss, approximately 9,800 acres would occur within the MCRA, which would affect approximately 53% of the modeled habitat within the MCRA. There would also be approximately 53 acres lost within the C/RS, which would affect approximately 0.1% of modeled habitat within the C/RS. This is greater than the habitat loss estimated within the MCRA and equal to the loss within the C/RS estimated for the No Action/No Project Alternative.

The Reduced Permit Term Alternative is also expected to remove approximately 725 acres of Critical Habitat for vernal pool tadpole shrimp and vernal pool fairy shrimp in Critical Habitat Unit 13 and approximately 80 acres in Critical Habitat Unit 14a for a total of approximately 805 acres of Critical Habitat lost. This loss is 161 acres less than the approximately 966 acres of designated Critical Habitat that would be removed under the No Action/No Project Alternative.

The Reduced Permit Term Alternative is expected to remove 94 of the 851 documented occurrences of vernal pool tadpole shrimp in the Planning Area, which would be 4 more occurrences than would be removed under the No Action/No Project Alternative. The Reduced Permit Term Alternative is also expected to remove 39 of the 581 documented occurrences of vernal pool fairy shrimp in the Planning Area, which would be 8 more occurrences than would be removed under the No Action/No Project Alternative.

The maximum anticipated direct loss of species modeled habitat for mid-valley fairy shrimp under the Reduced Permit Term Alternative would be approximately 13,774 acres, primarily within the UDA. In addition, indirect impacts on modeled habitat would be approximately 148 acres. The total impact to modeled habitat, including direct and indirect impacts, would be 13,921 acres (Table 9-42). This exceeds the approximately 13,220 acres of total impact estimated for the No Action/No Project Alternative (Table 9-4) by approximately 701 acres.

Of the direct habitat loss, approximately 7,252 acres would occur within the MCRA, which would affect approximately 40.0% of modeled habitat within the MCRA. There would also be approximately 41 acres lost within the C/RS, which would affect approximately 0.1% of modeled habitat within the C/RS. This is less than the 48% of habitat loss estimated within the MCRA and 0.4% of habitat loss within the C/RS estimated for the No Action/No Project Alternative.

The Reduced Permit Term Alternative is expected to remove 4 of the 37 occurrences of mid-valley fairy shrimp in the Planning Area, which would be 1 fewer occurrence than would be removed under the No Action/No Project Alternative.

Activities under the Reduced Permit Term Alternative would cause direct impacts to approximately 18,797 acres of Ricksecker's water scavenger beetle modeled habitat to development and related infrastructure. In addition to this direct impact, approximately 263 acres of indirect impact would also occur for a total impact (direct and indirect combined) of approximately 19,060 acres on Ricksecker's water scavenger beetle modeled habitat. The total impact to Ricksecker's water scavenger beetle modeled habitat would be approximately 18.5% of the existing modeled habitat in the Planning Area (Table 9-42). The total impact to Ricksecker's water scavenger beetle modeled habitat under the Reduced Permit Term Alternative would be approximately 1,153 acres greater than the approximately 17,907 acres that is estimated to occur under the No Action/No Project Alternative (Table 9-4).

The Reduced Permit Term Alternative is not expected to remove any of the eight occurrences of Ricksecker's water scavenger beetle in the Planning Area; no occurrences would be removed under the No Action/No Project Alternative.

The Reduced Permit Term Alternative future urban development and related infrastructure would cause direct impacts through the loss of approximately 2,139 acres of modeled habitat for dwarf downingia. In addition to this direct impact, approximately 30 acres of indirect impact would also occur for a total impact of approximately 2,167 acres on dwarf downingia modeled habitat. The total impact, including direct and indirect impacts, to dwarf downingia modeled habitat would be approximately 9% of the existing modeled habitat in the Planning Area (Table 9-42). The total impact to dwarf downingia modeled habitat under the Reduced Permit Term Alternative would be approximately 129 acres greater than the approximately 2,038 acres of impact estimated to occur under the No Action/No Project Alternative (Table 9-4).

The Reduced Permit Term Alternative is not expected to remove any of the 10 documented occurrences of dwarf downingia in the Planning Area; no occurrences would be removed under the No Action/No Project Alternative.

The Reduced Permit Term Alternative would cause permanent loss of approximately 8,031 acres land cover types suitable for Ahart's dwarf rush due to development and related infrastructure. In addition to this direct impact, approximately 98 acres of indirect impact would also occur for a total impact (direct and indirect impacts combined) of approximately 8,130 acres on Ahart's dwarf rush modeled habitat. The total impact to Ahart's dwarf rush modeled habitat would be approximately 32.3% of the existing modeled habitat in the Planning Area (Table 9-42). The total impact to Ahart's dwarf rush modeled habitat under the Reduced Permit Term Alternative would be approximately 69 acres greater than the approximately 8,061 acres estimated to occur under the No Action/No Project Alternative (Table 9-4).

The Reduced Permit Term Alternative is not expected to remove the two occurrences of Ahart's dwarf rush in the Planning Area; no occurrences would be removed under the No Action/No Project Alternative.

The Reduced Permit Term Alternative would cause loss of approximately 8,854 acres of modeled habitat for pincushion navarretia resulting from development and related infrastructure. In addition to this direct impact, approximately 96 acres of indirect impact would also occur, for a total impact (direct and indirect impacts combined) of approximately 8,950 acres on pincushion navarretia modeled habitat. The total impact to pincushion navarretia modeled habitat would be approximately 15.6% of the existing modeled habitat in the Planning Area (Table 9-42). The total impact to pincushion navarretia modeled habitat under the Reduced Permit Term would be approximately 513 acres greater than the approximately 8,437 acres estimated to occur under the No Action/No Project Alternative (Table 9-4).

The Reduced Permit Term Alternative is not expected to remove any of the 48 occurrences of pincushion navarretia in the Planning Area; no occurrences would be removed under the No Action/No Project Alternative.

The No Action/No Project Alternative would result in an estimated permanent loss of approximately 7,858 acres of modeled habitat for slender Orcutt grass and Sacramento Orcutt grass resulting from development and related infrastructure. In addition to this direct impact, approximately 80 acres of indirect impact would also occur for a total impact, including both direct and indirect impacts, of approximately 7,938 acres on for slender Orcutt grass and Sacramento Orcutt grass modeled habitat. This total impact would be approximately 23% of the total modeled habitat within the Planning Area (Table 9-42). The total impact to slender Orcutt grass and Sacramento Orcutt grass modeled habitat under the Reduced Permit Term Alternative would be approximately 176 acres greater than the approximately 7,762 acres under the No Action/No Project Alternative (Table 9-4).

Of this modeled habitat loss, approximately 5,295 acres would occur within the MCRA, which would affect approximately 50.6% of modeled habitat within the MCRA. There would also be approximately 21 acres lost within the C/RS, which would affect approximately 0.1% of modeled habitat within the C/RS. This is greater than the habitat loss estimated within the MCRA and equal to the loss within the C/RS estimated for the No Action/No Project Alternative.

The Reduced Permit Term Alternative is also expected to impact approximately 553 acres of Critical Habitat for Sacramento Orcutt grass in Critical Habitat Unit 2 and approximately 64 acres in Critical Habitat Unit 3 for a total of approximately 618 acres of Critical Habitat lost. This loss of Critical Habitat would be approximately 156 acres less than the approximately 774 acres estimated to occur under the No Action/No Project Alternative.

Approximately 553 acres of Critical Habitat for slender Orcutt grass would also be lost in Critical Habitat Unit 6, which would be approximately 157 acres less than the approximately 710 acres of Critical Habitat lost by the No Action/No Project Alternative.

The Reduced Permit Term Alternative is expected to remove 2 of the 40 occurrences of Sacramento Orcutt grass and none of the 4 occurrences of slender Orcutt grass in the Planning Area, which is equal to the occurrences that would be removed under the No Action/No Project Alternative.

The Reduced Permit Term Alternative would result in loss of approximately 9,618 acres of modeled habitat for Boggs Lake hedge-hyssop resulting from development and related infrastructure. In addition to this direct impact, approximately 105 acres of indirect impact would also occur for a total impact (direct and indirect impacts combined) of approximately 9,723 acres on Boggs Lake hedge-hyssop modeled habitat. The total impact to Boggs Lake hedge-hyssop modeled habitat would be approximately 26% of the existing modeled habitat in the Planning Area (Table 9-42). This total impact under the Reduced Permit Term would be approximately 475 acres greater than the approximately 9,248 acres estimated to occur under the No Action/No Project Alternative (Table 9-4).

The Reduced Permit Term Alternative is expected to remove 3 of the existing 31 occurrences of Boggs Lake hedge-hyssop in the Planning Area, which would be 1 more occurrence than would be removed under the No Action/No Project Alternative.

The No Action/No Project Alternative would result in loss of approximately 11,680 acres of modeled habitat for legenere resulting from development and related infrastructure. In addition to this direct impact, 110 acres of indirect impact would also occur for a total impact (direct and indirect impacts combined) of 11,790 acres on legenere modeled habitat. The total impact to legenere modeled habitat would be approximately 23.1% of the existing modeled habitat in the Planning Area (Table 9-42). This total impact under the Reduced Permit Term would be 507 acres greater than the 11,283 acres estimated to occur under the No Action/No Project Alternative (Table 9-4).

The Reduced Permit Term Alternative is expected to remove 2 of the existing 62 occurrences of legenere in the Planning Area, which would be 1 more occurrence than would be removed under the No Action/No Project Alternative.

Table 9-42. Direct/Indirect Impacts and Conservation of Vernal Pool Invertebrate and Plant Modeled Habitat Under the Reduced Permit Term Alternative.

Modeled Habitat	Total Planning Area (acres)						
	Total Existing Modeled Habitat (acres)	Direct Impacts	Indirect Impacts	Total Impacts	% of Existing Habitat Lost	Modeled Habitat Preservation	Modeled Habitat Establishment/ Re-establishment
Vernal Pool Tadpole Shrimp and Vernal Pool Fairy Shrimp							
Valley Grassland	97,349	18,114	Qualitative	18,114	18.6%	18,589	0
Vernal Pool	4,536	413	186	599	13.2%	1,199	413
Swale	1,252	270	77	347	27.7%	535	228
Stream/Creek (VPIH)	73	28	8	36	49.3%	16	8
Total Modeled Habitat	103,210	18,825	271	19,096	18.5%	15,969	649
Mid-Valley Fairy Shrimp							
Valley Grassland	50,061	13,203	Qualitative	13,203	26.4%	9,559	0
Vernal Pool	2,818	354	114	467	16.6%	934	354
Swale	759	217	34	251	33.1%	377	217
Total Modeled Habitat	53,638	13,774	148	13,921	26.0%	10,870	571
Ricksecker's Water Scavenger Beetle							
Valley Grassland	97,349	18,114	Qualitative	18,114	18.6%	18,589	0
Vernal Pool	4,536	413	186	599	13.2%	1,199	413
Swale	1,252	270	77	347	27.7%	495	228
Total Modeled Habitat	103,137	18,797	263	19,060	18.5%	20,323	641
Dwarf Downingia							
Valley Grassland	22,241	1,988	Qualitative	1,988	8.9%	4,246	0
Vernal Pool	1,662	96	24	119	7.2%	238	96
Swale	359	55	6	60	16.7%	90	55
Total Modeled Habitat	24,262	2,139	30	2,167	9%	4,574	151
Ahart's Dwarf Rush							
Valley Grassland	23,885	7,775	Qualitative	7,775	32.6%	4,560	0
Vernal Pool	937	156	32	189	20.2%	378	156
Swale	314	100	66	166	52.9%	249	100
Total Modeled Habitat	25,136	8,031	98	8,130	32.3%	5,187	256
Pincushion Navarretia							
Valley Grassland	54,967	8,634	Qualitative	8,634	15.7%	10,496	0
Vernal Pool	1,844	111	73	184	10.0%	368	111

Table 9-42. Direct/Indirect Impacts and Conservation of Vernal Pool Invertebrate and Plant Modeled Habitat Under the Reduced Permit Term Alternative.

Modeled Habitat	Total Planning Area (acres)						
	Total Existing Modeled Habitat (acres)	Direct Impacts	Indirect Impacts	Total Impacts	% of Existing Habitat Lost	Modeled Habitat Preservation	Modeled Habitat Establishment/ Re-establishment
Swale	627	109	23	132	21.1%	198	109
Total Modeled Habitat	57,438	8,854	96	8,950	15.6%	11,062	220
<i>Slender Orcutt Grass and Sacramento Orcutt Grass</i>							
Valley Grassland	33,265	7,704	Qualitative	7,704	23.2%	6,352	0
Vernal Pool	1,227	154	80	234	19.1%	468	154
Total Modeled Habitat	34,492	7,858	80	7,938	23.0%	6,820	154
<i>Boggs Lake Hedge-Hyssop</i>							
Valley Grassland	35,115	9,352	Qualitative	9,352	27.1%	6,705	0
Vernal Pool	1,532	250	105	355	23.2%	710	250
Seasonal Wetland	354	16	Qualitative	16	4.5%	10	13
Total Modeled Habitat	37,001	9,618	105	9,723	26.3%	7,425	263
<i>Legenere</i>							
Valley Grassland	47,526	11,356	Qualitative	11,356	23.9%	9,075	0
Vernal Pool	2,559	286	110	396	15.5%	792	286
Seasonal Wetland	886	38	Qualitative	38	4.3%	24	31
Total Modeled Habitat	50,971	11,680	110	11,790	23.1%	9,891	317

The Reduced Permit Term Alternative would result in the acres of modeled habitat preserved and re-established/established for vernal pool invertebrates and plants shown in Table 9-42 above. The modeled habitat preservation for all vernal pool invertebrate and plant species under the Reduced Permit Term Alternative would exceed that estimated under the No Action/No Project Alternative.

The Conservation Strategy also includes Biological Goals and Measurable Objectives that would direct the modeled habitat preservation associated with Covered Activities for vernal pool invertebrates and plants within the Planning Area. These Biological Goals and Measurable Objectives would include maintenance or improvement of habitat value for vernal pool invertebrates and plants by minimizing indirect effects on modeled habitat within preserves (e.g., development of preserve management plans and requirements for developments to include setback widths to limit edge effects). The No Action/No Project Alternative would

preserve vernal pool invertebrate and plant habitat listed previously; this habitat preservation would not be in a linked Preserve System, nor would it follow the objectives of the Conservation Strategy as would be implemented under the Reduced Permit Term Alternative.

Significance of Direct and Indirect Effects

The Reduced Permit Term Alternative would result in loss of a larger area of habitat for all 11 vernal pool invertebrate and plant species within the Planning Area when compared to the No Action/No Project Alternative. However, the Reduced Permit Term Alternative would preserve more habitat than what is estimated for the No Action/No Project Alternative for these vernal pool invertebrate and plant species.

Multiple AMMs are also included in the Reduced Permit Term Alternative that would result in the avoidance or minimization of indirect and temporary effects on vernal pool invertebrate and plant modeled habitat and provide an additional mechanism for impact avoidance and oversight.

The Reduced Permit Term Alternative would impact a smaller area of Critical Habitat for vernal pool tadpole shrimp, vernal pool fairy shrimp, slender Orcutt grass, and Sacramento Orcutt grass than the No Action/ No Project Alternative.

The Reduced Permit Term Alternative would also impact a greater area within the MCRA and an equal area within the C/RS compared to the No Action/No Project Alternative.

The Reduced Permit Term Alternative Preserve System would provide some larger vernal pool ecosystem Preserves and increased Preserve connectivity over the project-by-project mitigation under the No Action/No Project Alternative, maintaining existing vernal pool ecosystem function, which benefits vernal pool invertebrate and plant species.

Therefore, the Reduced Permit Term Alternative's impact to all vernal pool invertebrate and plant species would be similar to that of the No Action/No Project Alternative, and based on the significance criteria in Section 9.2.1, effects from the Reduced Permit Term Alternative on vernal pool invertebrates and plant species would be a ***Less Than Significant Adverse*** effect when comparing the Reduced Permit Term Alternative to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Reduced Permit Term Alternative would generally be the same as described for the No Action/No Project Alternative in Section 9.2.2.

The Reduced Permit Term Alternative would result in loss of a larger area of habitat for all 11 vernal pool invertebrate and plant species within the Planning Area when compared to the No Action/No Project Alternative. However, the Reduced Permit Term Alternative would preserve considerably more habitat than what is estimated for the No Action/No Project Alternative for these species.

In addition, the SSHCP Conservation Strategy implemented under the Reduced Permit Term Alternative would include AMMs, such as increased stream setbacks, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

During the 30-year permit term of the Reduced Permit Term Alternative, modeled habitat preservation would occur within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action /No Project Alternative. The individual preserves established in the Preserve System during the 30-year permit term of the Reduced Permit Term Alternative would also be subject to the Biological Goals and Measurable Objectives of the SSHCP applicable to vernal pool invertebrate and plant species and be operated under a comprehensive preserve management program.

The incremental effects of the Reduced Permit Term Alternative would not be significantly different than the incremental effects that would occur under the No Action/No Project Alternative. The Reduced Permit Term Alternative would result in **No Cumulative Effect** on the vernal pool invertebrate and plant species compared to the No Action/No Project Alternative baseline condition.

9.2.4.2 Effects on Valley Elderberry Longhorn Beetle and Its Habitat

Habitat use, natural history, documented occurrences, and existing acres of modeled habitat in the Planning Area of valley elderberry longhorn beetle are described in Appendix G.

Direct and Indirect Effects of the Alternative

The maximum anticipated loss of valley elderberry longhorn beetle modeled habitat would be approximately 610 acres, primarily within the UDA or 7.7% of the existing modeled habitat in the Planning Area (Table 9-43). This would be greater than the estimated direct impact of 554 acres for the No Action/No Project Alternative.

The Reduced Permit Term Alternative is not expected to remove any of the existing 156 occurrences of valley elderberry longhorn beetle in the Planning Area; there would also be no occurrences removed under the No Action/No Project Alternative.

Table 9-43. Effects and Modeled Habitat Conservation for Valley Elderberry Longhorn Beetle Under the Reduced Permit Term Alternative

Modeled Habitat	Total Planning Area (acres)				
	<i>Total Existing</i>	<i>Direct Effect</i>	<i>% of Existing Habitat Lost</i>	<i>Total Habitat Preservation</i>	<i>Total Habitat Re-establishment and/or Establishment</i>
Mine Tailing Riparian Woodland	641	219	34.2%	5	0
Mixed Riparian Woodland	5,785	197	3.41	338	306
Mixed Riparian Scrub	1,452	194	13.4%	350	303
TOTAL	7,878	610	7.7%	693	609

Indirect and temporary impacts to valley elderberry longhorn beetle would also occur under the Reduced Permit Term Alternative. These effects are listed in the species impact discussion in Section 9.2.2. The Reduced Permit Term Alternative requires Covered Activities implement the AMMs that would be applied during the permit term are listed in the valley elderberry longhorn beetle analysis in Section 9.2.3.

Relative to the project AMMs of the No Action/Project alternative, the implementation of SSHCP AMMs during the permit term would reduce indirect impacts on valley elderberry longhorn beetle. For example, STREAM-1 through STREAM-3 would increase setback distances on Laguna Creek, UDA streams, and minor tributaries over what would be required under the No Action/No Project Alternative, increasing protection of riparian modeled habitat.

Some of the elements of the AMMs described above and in Section 9.2.3 would also be implemented under the No Action/No Project Alternative as part of standard best practices and/or regulatory requirements (see Table 2-6). However, for those AMM elements implemented across alternatives, the additional oversight and guidance provided by the SSHCP would result in the requirements of these AMMs being implemented more frequently and consistently across the Planning Area.

The Reduced Permit Term Alternative would result in approximately 598 acres of preservation, which is greater than the zero acres estimated for the No Action/No Project Alternative. The Conservation Strategy also would re-establish/establish 609 acres of valley elderberry longhorn beetle habitat and provides for two specific objectives for valley elderberry longhorn beetle that would be implemented during the permit term: the relocation and replacement of damaged or lost elderberry shrubs and the inclusion of elderberry shrubs in riparian re-establishment/establishment projects as discussed in Section 9.2.3.

Significance of Direct and Indirect Effects

The Reduced Permit Term Alternative would impact approximately 56 more acres of habitat for valley elderberry longhorn beetle within the Planning Area than is estimated for the No Action/No Project Alternative; however, the Reduced Permit Term and the No Action/No Project Alternative would both re-establish/establish an equal number of acres to result in a no net loss of acreage for the species. Also, the Reduced Permit Term Alternative would preserve approximately 598 more of modeled habitat, while the No Action/No Project Alternative is estimated to preserve none. Additionally, the Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs, such as increased stream setbacks, are also included during the 30-year permit term of the Reduced Permit Term Alternative that would avoid and minimize indirect and temporary effects on valley elderberry longhorn beetle individuals and habitat, and provide an additional mechanism for impact avoidance and oversight.

Therefore, the overall impact of the Reduced Permit Term Alternative on valley elderberry longhorn beetle would be similar to that of the No Action/No Project Alternative, and based on the significance criteria in Section 9.2.1, the Reduced Permit Term Alternative would have **No Effect** on valley elderberry longhorn beetle when compared to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Reduced Permit Term Alternative would generally be the same as described for the No Action/No Project Alternative in Section 9.2.2.

As discussed previously in this impact section, the Reduced Permit Term Alternative would result in the loss of approximately 610 acres of modeled valley elderberry longhorn beetle habitat within the Planning Area, which is approximately 56 acres greater than the loss than under the No Action/No Project Alternative. However, as discussed previously, both alternatives are anticipated to mitigate these losses to a no net loss of acreage. In addition, the SSHCP Conservation Strategy implemented under the Reduced Permit Term Alternative would include AMMs, such as increased stream setbacks, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy implemented during the first 30-years of the Reduced Permit Term Alternative also would include Biological Goals and Measureable Objectives specific to the conservation of valley elderberry longhorn beetle. The Reduced Permit Term Alternative would

result in the preservation of 598 more acres of valley elderberry longhorn beetle habitat than under the No Action/No Project Alternative. In addition, this modeled habitat preservation would occur within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action /No Project Alternative. The individual Preserves in the Preserve System under the Reduced Permit Term Alternative would also be subject to the Biological Goals and Measurable Objectives of the SSHCP applicable to valley elderberry longhorn beetle and be operated under a comprehensive preserve management program.

The incremental effects of the Reduced Permit Term Alternative would not be significantly different than the incremental effects that would occur under the No Action/No Project Alternative. The Reduced Permit Term Alternative would result in **No Cumulative Effect** to valley elderberry longhorn beetle compared to the No Action/No Project Alternative baseline condition.

9.2.4.3 Effects on California Tiger Salamander (Central Valley Population) and Its Habitat

The life history, habitat requirements, documented occurrences, and existing acres of modeled habitat of California tiger salamander (Central Valley population) in the Planning Area are described in detail in Appendix G.

The maximum anticipated direct loss of modeled habitats for California tiger salamander would be approximately 1,761 acres of upland (2.2% of existing) and approximately 85 acres of aquatic habitat (1.9% of existing), for a total of 1,846 acres of direct loss to modeled habitat (Table 9-44). These impacts would be very similar to the estimated direct impact from the No Action/No Project Alternative of approximately 1,847 acres.

The Reduced Permit Term Alternative is not expected to remove any of the existing 31 occurrences of California Tiger salamander in the Planning Area; there would also be no occurrences removed under the No Action/No Project Alternative.

Table 9-44. Direct Effects and Modeled Habitat Conservation for California Tiger Salamander Under the Reduced Permit Term Alternative

Modeled Habitat	Total Planning Area (acres)						
	Total Existing	Direct Effect	Indirect Effect	Total Habitat Lost	% of Existing Habitat Lost	Habitat Preservation	Habitat Re-establishment and/or Establishment
Upland Habitat							
Blue Oak Savanna	3,322	0	Qualitative	0	0.0%	0	0
Blue Oak Woodland	3,774	0	Qualitative	0	0.0%	0	0
Valley Grassland	78,274	1,761	Qualitative	1,761	2.2%	14,946	0
<i>Total Upland Habitat</i>	<i>85,369</i>	<i>1,761</i>	<i>Qualitative</i>	<i>1,761</i>	<i>2.1%</i>	<i>14,946</i>	<i>0</i>
Aquatic Habitat							
Vernal Pool	3,033	58	0	58	1.9%	116	58
Seasonal Wetland	1,391	27	Qualitative	27	1.9%	17	22
<i>Total Aquatic Habitat</i>	<i>4,425</i>	<i>85</i>	<i>0</i>	<i>85</i>	<i>1.9%</i>	<i>133</i>	<i>80</i>
Grand Total	89,794	1,846	0	1,846	2.1%	15,079	80

The Reduced Permit Term Alternative is expected to result in the loss of approximately 46 acres of upland habitat and 6 acres of aquatic habitat within the C/RS. This is 7 acres less than the expected habitat loss under the No Action/No Project Alternative.

None of the 10,193 acres of designated Critical Habitat for the species is expected to be removed under the Reduced Permit Term Alternative or the No Action/No Project Alternative.

Indirect effects on modeled California tiger salamander habitat would also occur under the Reduced Permit Term Alternative. These indirect effects would be the same in type and character as those discussed and analyzed qualitatively for the No Action/No Project in Section 9.2.2. There would be no quantified indirect effects under the Reduced Permit Term Alternative, which would be approximately 4 acres less than the quantified indirect impact under the No Action/No Project Alternative.

The Reduced Permit Term Alternative requires Covered Activities during the permit term to implement the AMMs listed in the California tiger salamander analysis in Section 9.2.3.

Relative to the project AMMs of the No Action/Project alternative, the implementation of SSHCP AMMs during the permit term would reduce indirect impacts on valley elderberry longhorn beetle. For example, ROAD-2 would require wildlife crossing structures and maintain connectivity between modeled habitats, while CTS-7 would limit rodent control to developed portions of project sites, allowing for burrow creation that provides habitat for California tiger salamander. While both of

these AMMs may be applied to projects under the No Action/No Project Alternative, they would likely be applied less frequently and not within all modeled habitat.

Some of the elements of the AMMs described previously and in Section 9.2.3 would also be implemented under the No Action/No Project Alternative as part of standard best practices and/or regulatory requirements (see Table 2-6). However, for those AMM elements implemented across alternatives, the additional oversight and guidance provided by the SSHCP would result in the requirements of these AMMs being implemented more frequently and consistently across the Planning Area.

The temporary effects on California tiger salamander modeled habitat that would occur under the Reduced Permit Term Alternative are the same in type and character as those analyzed for the species under the No Action/No Project Alternative in Section 9.2.2. The AMMs that would be applied during the permit term to avoid or minimize these temporary effects are listed in the species analysis for the Proposed Action in Section 9.2.3. This would result in reduced temporary impacts to California tiger salamander when compared with the No Action/No Project Alternative, under which AMMs would not be required of development projects for the full 50-year analysis period.

The Reduced Permit Term Alternative would include preservation of approximately 15,079 acres of habitat for California tiger salamander. This is greater than the estimated 9,689 acres of modeled habitat preservation under the No Action/No Project Alternative. The Reduced Permit Term Alternative would also re-establish/establish 80 acres of modeled habitat for California tiger salamander.

Significance of Direct and Indirect Effects

The Reduced Permit Term Alternative would impact approximately the same number of acres of habitat for California tiger salamander within the Planning Area as is estimated for the No Action/No Project Alternative, and an equal number of acres within the C/RS. However, the Reduced Permit Term Alternative would result in preservation of approximately 5,390 acres more modeled habitat for California tiger salamander than is estimated to result from the No Action/No Project Alternative. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included during the 30-year permit term of the Reduced Permit Term Alternative that would avoid or minimize indirect and temporary effects on California tiger salamander individuals and habitat, and provide an additional mechanism for impact avoidance and oversight.

Therefore, the Reduced Permit Term Alternative would have less impact, and using the significance criteria presented in Section 9.2.1 and the impact analysis provided previously, the

Reduced Permit Term Alternative would have a **Minor Beneficial** effect on California tiger salamander when comparing the Reduced Permit Term Alternative to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Reduced Permit Term Alternative would generally be the same as described above for the No Action/No Project Alternative above (Section 9.2.2).

As discussed previously in this impact section, the Reduced Permit Term Alternative would result in the loss of approximately 1,846 acres of modeled California tiger salamander beetle habitat within the Planning Area, which is approximately 1 acre smaller than the loss than under the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Reduced Permit Term Alternative would include AMMs, such as increased stream setbacks, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy implemented during the first 30 year of the Reduced Permit Term Alternative also would include Biological Goals and Measureable Objectives specific to the conservation of California tiger salamander. The Reduced Permit Term Alternative would result in preservation of additional acres of California tiger salamander habitat that exceed the preservation under the No Action/No Project Alternative by approximately 5,390 acres. During the 30-year permit term of the Reduced Permit Term Alternative, this preservation would occur within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action /No Project Alternative. The individual Preserves in the Preserve System under the Reduced Permit Term Alternative would also be subject to the Biological Goals and Measurable Objectives of the SSHCP applicable to California tiger salamander and would be operated under a comprehensive preserve management program.

The incremental effects of the Reduced Permit Term Alternative would result in less of an incremental contribution to the cumulative impact within the Planning Area for California tiger salamander than would occur under the No Action/No Project Alternative. However, at the scale of the study area, the incremental difference in impacts under the Proposed Action/Proposed Project Alternative compared to impacts under the No Action/No Project Alternative is not discernibly different. Therefore, the Reduced Permit Term Alternative would result in **No Cumulative Effect** for California tiger salamander compared to the No Action/No Project Alternative baseline condition.

9.2.4.4 Effects on Western Spadefoot and Its Habitat

The life history, habitat requirements, documented occurrences, and existing acres of modeled habitat of western spadefoot in the Planning Area are described in Appendix G.

Direct and Indirect Effects of the Alternative

The maximum anticipated direct loss of modeled habitats for western spadefoot would be approximately 23,719 acres of upland habitat (approximately 15.8% of existing) and approximately 1,107 acres of aquatic breeding habitat (approximately 9.5% of existing) for the species, for a total direct loss of 24,826 acres of modeled habitat (Table 9-45). This exceeds the estimated loss of 24,586 acres of modeled habitat under the No Action/No Project Alternative.

The Reduced Permit Term Alternative is expected to remove 3 of the existing 41 occurrences of western spadefoot in the Planning Area, which would be 4 fewer occurrences than would be removed under the No Action/No Project Alternative.

Indirect effects on modeled western spadefoot habitat would also occur under the Reduced Permit Term Alternative. These indirect effects would be the same in type and character as those discussed and analyzed qualitatively for the No Action/No Project in Section 9.2.2. There would be approximately 177 acres of quantified indirect effects under the Reduced Permit Term Alternative, which would be approximately 84 acres less than the quantified indirect impact under the No Action/No Project Alternative. The total impact, direct impact and indirect impact combined, to western spadefoot under the Reduced Permit Term Alternative would be approximately 25,003 acres, which is greater than the estimated total impact under the No Action/No Project Alternative of 24,847 acres (Table 9-7).

Table 9-45. Direct Effects and Modeled Habitat Conservation for Western Spadefoot Under the Reduced Permit Term Alternative

Modeled Habitat	Total Planning Area (acres)						
	Total Existing	Direct Effect	Indirect Effect	Total Effect	% of Existing Habitat Lost	Habitat Preservation	Habitat Re-establishment and/or Establishment
Upland Habitat							
Blue Oak Savanna	5,637	38	Qualitative	38	0.7%	37	37
Blue Oak Woodland	9,132	9	Qualitative	9	0.1%	9	9
Valley Grassland	135,094	23,671	Qualitative	23,671	17.5%	18,589	0
<i>Total Upland Habitat</i>	<i>149,863</i>	<i>23,719</i>	<i>Qualitative</i>	<i>23,719</i>	<i>15.8%</i>	<i>18,635</i>	<i>46</i>
Aquatic Habitat							
Vernal Pool	4,536	413	130	543	12.0%	1,086	413
Swale	1,252	269	40	309	24.7%	503	227
Seasonal Wetland	2,600	110	Qualitative	110	4.2%	70	91
Open Water	2,344	165	Qualitative	165	7.0%	43	104
Stream/Creek	2,674	122	Qualitative	122	4.6%	122	105
Stream/Creek (VPIH)	73	28	7	35	47.9%	16	8
<i>Total Aquatic Habitat</i>	<i>13,479</i>	<i>1,107</i>	<i>177</i>	<i>1,284</i>	<i>9.5%</i>	<i>1,840</i>	<i>948</i>
Grand Total	163,342	24,826	177	25,003	15.3%	20,475	994

The Reduced Permit Term Alternative requires Covered Activities implement the AMMs that would be applied during the permit term; they are listed in the western spadefoot analysis in Section 9.2.3.

Relative to the project AMMs of the No Action/Project Alternative, the implementation of SSHCP AMMs during the permit term would reduce indirect impacts on western spadefoot. For example, ROAD-2 would require wildlife crossing structures and maintain connectivity between modeled habitats, and EDGE-4 would require that stormwater runoff be directed away from Preserves, which would limit exposure of western spadefoot within Preserves to urban runoff that may contain pesticides and petroleum products. While both of these AMMs may be applied to projects under the No Action/No Project Alternative, they would likely be applied less frequently.

Some of the elements of the AMMs described previously and in Section 9.2.3 would also be implemented under the No Action/No Project Alternative as part of standard best practices and/or regulatory requirements (see Table 2-6). However, for those AMM elements implemented across alternatives, the additional oversight and guidance provided by the SSHCP

would result in the requirements of these AMMs being implemented more frequently and consistently across the Planning Area.

The temporary effects on western spadefoot and potential loss of individuals that may occur under the Reduced Permit Term would be the same in type and character as those analyzed qualitatively in the species impact discussion in Section 9.2.2. The AMMs that would be required during the permit term that would reduce these temporary effects on western spadefoot during the permit term are listed for the species in Section 9.2.3. This would result in reduced temporary impacts to western spadefoot when compared with the No Action/No Project Alternative, under which AMMs would not be required of development projects for the full 50-year analysis period.

The Reduced Permit Term Alternative would include preservation of approximately 20,475 acres of modeled habitat for western spadefoot, which would be greater than the 13,600 acres of modeled habitat estimated to be conserved under the No Action/No Project Alternative. The Conservation Strategy implemented during the permit term would establish/re-establish approximately 994 acres of modeled habitat for western spadefoot, along with Biological Goals and Measurable Objectives that support modeled habitat preservation for the species within the Planning Area as discussed in Section 9.2.3.

Significance of Direct and Indirect Effects

The Reduced Permit Term Alternative would impact approximately 156 more acres of habitat for western spadefoot within the Planning Area than is estimated for the No Action/No Project Alternative. However, the Reduced Permit Term Alternative would preserve approximately 6,875 acres more habitat than what is estimated for the No Action/No Project Alternative. In addition, the Preserve System implemented during the permit term would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included during the 30-year permit term of the Reduced Permit Term Alternative that would avoid or minimize indirect and temporary effects on western spadefoot modeled habitat and provide an additional mechanism for impact avoidance and oversight.

Therefore, the overall impact of the Reduced Permit Term Alternative on western spadefoot would be similar to that of the No Action/No Project Alternative, and based on the significance criteria in Section 9.2.1, impacts from the Reduced Permit Term Alternative would have **No Effect** on western spadefoot when compared to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Reduced Permit Term Alternative would generally be the same as described previously for the No Action/No Project Alternative in Section 9.2.2.

As discussed previously in this impact section, the Reduced Permit Term Alternative would result in direct and indirect impacts to approximately 25,001 acres of western spadefoot modeled habitat within the Planning Area, which is approximately 156 acres greater than the total impact under the No Action/No Project Alternative. However, the SSHCP Conservation Strategy implemented under the Reduced Permit Term Alternative would include AMMs, such as increased stream setbacks and setbacks to avoid impacts to vernal pool hydrology, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy implemented during the first 30 years of the Reduced Permit Term Alternative also would include Biological Goals and Measureable Objectives specific to the conservation of western spadefoot, and the Reduced Permit Term Alternative would result in approximately 6,875 more acres of western spadefoot habitat preserved than under the No Action/No Project Alternative. In addition, the modeled habitat preservation that would occur during the 30-year permit term of the Reduced Permit Term Alternative would occur within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action /No Project Alternative. The individual Preserves in the Preserve System under the Reduced Permit Term Alternative would also be subject to the Biological Goals and Measurable Objectives of the SSHCP applicable to western spadefoot and be operated under a comprehensive preserve management program.

The incremental effects of the Reduced Permit Term Alternative would not be significantly different than the incremental effects that would occur under the No Action/No Project Alternative. The Reduced Permit Term Alternative would result in **No Cumulative Impact** to western spadefoot compared to the No Action/No Project Alternative baseline condition.

9.2.4.5 Effects on Giant Garter Snake and Its Habitat

The life history, habitat requirements, documented occurrences, and existing acres of modeled habitat of giant garter snake in the Planning Area are described in detail in Appendix G.

Direct and Indirect Effects of the Alternative

The maximum anticipated loss of modeled habitats for giant garter snake would be approximately 2,506 acres, including approximately 2,319 acres of upland habitat (approximately 8.3% of existing) and approximately 187 acres of aquatic habitat (approximately 2.6% of existing) (Table 9-46). This is approximately 5 acres greater than the estimated 2,501 total acres lost under the No Action/No Project Alternative.

The Reduced Permit Term Alternative is not expected to remove any of the existing 14 occurrences of giant garter snake in the Planning Area; there would also be no occurrences removed under the No Action/No Project Alternative.

Table 9-46. Direct Effects and Modeled Habitat Conservation for Giant Garter Snake Under the Reduced Permit Term Alternative

Modeled Habitat	Total Planning Area (acres)				
	Total Existing	Direct Effect	% of Existing Habitat Lost	Habitat Preservation	Habitat Re-establishment and/or Establishment
Upland Habitat					
Mixed Riparian Scrub	1,044	134	12.8%	167	167
Valley Grassland	26,825	2,185	8.1%	5,122	0
<i>Total Upland Habitat</i>	<i>27,869</i>	<i>2,319</i>	<i>8.3%</i>	<i>5,289</i>	<i>167</i>
Aquatic Habitat					
Seasonal Wetland	1,625	41	2.5%	27	34
Freshwater Marsh	2,589	80	3.1%	58	69
Open Water	1,282	28	2.2%	7	18
Streams/Creeks	1,794	38	2.1%	38	33
<i>Total Aquatic Habitat</i>	<i>7,290</i>	<i>187</i>	<i>2.6%</i>	<i>130</i>	<i>154</i>
Grand Total	35,159	2,506	7.1%	5,419	321

Indirect effects on giant garter snake modeled habitat may occur under the Reduced Permit Term, which would be the same in type and character as the indirect effects analyzed for the species in Section 9.2.2. The AMMs that would be required during the permit term are discussed for the species in Section 9.2.3.

Relative to the project AMMs of the No Action/Project alternative, the implementation of HCP AMMs during the permit term would reduce indirect impacts on giant garter snake. For example, STREAM-2 and STREAM-3 would increase setback distances on UDA streams and minor tributaries over what would be required under the No Action/No Project Alternative, increasing protection of riparian modeled habitat.

Some of the elements of the AMMs described previously and in Section 9.2.3 would also be implemented under the No Action/No Project Alternative as part of standard best practices and/or regulatory requirements (see Table 2-6). However, for those AMM elements implemented across alternatives, the additional oversight and guidance provided by the SSHCP would result in the requirements of these AMMs being implemented more frequently and consistently across the Planning Area.

The temporary effects on giant garter snake and potential loss of individuals that may occur under the Reduced Permit Term would be the same in type and character as those analyzed qualitatively in the species impact discussion in Section 9.2.2. The AMMs that would be required during the permit term that would reduce these temporary effects on giant garter snake during the permit term are listed for the species in Section 9.2.3. This would result in reduced temporary impacts to giant garter snake when compared with the No Action/No Project Alternative, under which AMMs would not be required of development projects for the full 50-year analysis period.

The Reduced Permit Term Alternative would include preservation of approximately 5,419 acres of modeled habitat for giant garter snake. This modeled habitat preservation is 2,142 acres greater than that estimated for the No Action/No Project Alternative of 3,277 acres. The Conservation Strategy implemented during the permit term would establish/re-establish approximately 321 acres of upland and aquatic habitat for giant garter snake, and implement specific biological objectives for the modeled habitat preservation of the species in the Planning Area as discussed in Section 9.2.3.

Significance of Direct and Indirect Effects

The Reduced Permit Term Alternative would impact 5 acres more habitat for giant garter snake within the Planning Area than is estimated for the No Action/No Project Alternative. In addition, the Reduced Permit Term Alternative would preserve approximately 2,142 acres more habitat than what is estimated for the No Action/No Project Alternative. The Preserve System established during the permit term would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included during the 30-year permit term of the Reduced Permit Term Alternative that would avoid or minimize indirect and temporary effects on giant garter snake individuals and habitat, and provide an additional mechanism for impact avoidance and oversight.

Therefore, the overall impact on giant garter snake would be similar to that of the No Action/No Project Alternative, and using the significance criteria presented in Section 9.2.1 and the impact analysis provided previously, the Reduced Permit Term Alternative would have **No Effect** on giant

garter snake when comparing the Reduced Permit Term Alternative to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Reduced Permit Term Alternative would generally be the same as described for the No Action/No Project Alternative in Section 9.2.2.

As discussed previously in this impact section, the Reduced Permit Term Alternative would result in the loss of approximately 2,506 acres of modeled giant garter snake habitat within the Planning Area, which is 5 acres greater than the loss than under the No Action/No Project Alternative. In addition, the HCP Conservation Strategy implemented under the Reduced Permit Term Alternative would include AMMs, such as increased stream setbacks, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy also would include Biological Goals and Measureable Objectives specific to the conservation of giant garter snake. The Reduced Permit Term Alternative would result in preservation of approximately 2,142 more acres of giant garter snake habitat than under the No Action/No Project Alternative; those acres would be preserved within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action /No Project Alternative.

The incremental effects of the Reduced Permit Term Alternative on giant garter snake would be similar to the effects that would occur under the No Action/No Project Alternative. Therefore, the Reduced Permit Term Alternative would result in **No Effect** for giant garter snake compared to the No Action/No Project Alternative baseline condition.

9.2.4.6 Effects on Western Pond Turtle and Its Habitat

The life history, habitat requirements, documented occurrences, and existing acres of modeled habitat of western pond turtle in the Planning Area are described in Appendix G.

Direct and Indirect Effects of the Alternative

The maximum anticipated direct loss of modeled habitats for the species would be approximately 11,356 acres, including approximately 11,022 acres of upland habitat (9.9% of existing) and approximately 334 acres of aquatic habitat(5.3% of existing) (Table 9-47). This is

less than the total estimated loss under the No Action/No Project Alternative of 12,160 acres, including 11,783 of upland and 377 acres of aquatic habitat.

The Reduced Permit Term Alternative is not expected to remove any of the existing 19 occurrences of western pond turtle in the Planning Area, which would be the 1 fewer occurrence than would be removed under the No Action/No Project Alternative.

Table 9-47. Direct Effects and Modeled Habitat Conservation for Western Pond Turtle Under the Reduced Permit Term Alternative

Modeled Habitat	Total Planning Area (acres)				
	Total Existing	Direct Effect	% of Existing Habitat Lost	Habitat Preservation	Habitat Re-establishment and/or Establishment
Upland Habitat					
Blue Oak Woodland	7,610	9	0.1%	9	9
Blue Oak Savanna	4,825	35	0.7%	35	35
Valley Grassland	91,580	10,605	11.6%	12,596	0
Mine Tailing Riparian Woodland	306	41	13.4%	5	0
Mixed Riparian Woodland	5,347	183	3.4%	230	241
Mixed Riparian Scrub	1,178	149	12.6%	204	195
<i>Total Upland Habitat</i>	<i>110,846</i>	<i>11,022</i>	<i>9.9%</i>	<i>13,079</i>	<i>480</i>
Aquatic Habitat					
Freshwater Marsh	2,240	104	4.6%	76	90
Open Water	1,441	108	7.5%	28	68
Stream/Creek	2,674	122	4.6%	122	105
<i>Total Aquatic Habitat</i>	<i>6,355</i>	<i>334</i>	<i>5.3%</i>	<i>226</i>	<i>263</i>
Grand Total	117,201	11,356	9.7%	13,239	679

Indirect effects on western pond turtle modeled habitat may occur under the Reduced Permit Term, which would be the same in type and character as the indirect effects analyzed for the species in Section 9.2.2. The AMMs that would be required during the permit term are discussed for the species in Section 9.2.3.

Relative to the project AMMs of the No Action/No Project Alternative, the implementation of SSHCP AMMs during the permit term would reduce indirect impacts on western pond turtle. For example, STREAM-2 and STREAM-3 would increase setback distances on UDA streams and minor tributaries over what would be required under the No Action/No Project Alternative, increasing protection of riparian modeled habitat.

Some of the elements of the AMMs described previously and in Section 9.2.3 would also be implemented under the No Action/No Project Alternative as part of standard best practices

and/or regulatory requirements (see Table 2-6). However, for those AMM elements implemented across alternatives, the additional oversight and guidance provided by the SSHCP would result in the requirements of these AMMs being implemented more frequently and consistently across the Planning Area.

The temporary effects on western pond turtle and potential loss of individuals that may occur under the Reduced Permit Term would be the same in type and character as those analyzed qualitatively in the species impact discussion in Section 9.2.2. The AMMs that would be required during the permit term that would reduce these temporary effects on western pond turtle during the permit term are listed for the species in Section 9.2.3. This would result in reduced temporary impacts to western pond turtle when compared with the No Action/No Project Alternative, under which AMMs would not be required of development projects for the full 50-year analysis period.

The Reduced Permit Term Alternative would result in the preservation of approximately 13,079 acres of upland habitat and 226 acres of aquatic habitat. This 13,239 acres total modeled habitat preservation would be greater than the estimated modeled habitat preservation under the No Action/No Project Alternative of 8,085 acres. The Conservation Strategy implemented during the permit term would establish/re-establish approximately 679 acres of upland and aquatic habitat for western pond turtle, and implement specific biological objectives for the modeled habitat preservation of the species in the Planning Area as discussed in Section 9.2.3.

Significance of Direct and Indirect Effects

The Reduced Permit Term Alternative would impact approximately 804 fewer acres of habitat for western pond turtle within the Planning Area than is estimated for the No Action/No Project Alternative. In addition, the Reduced Permit Term Alternative would preserve approximately 5,154 more acres of western pond turtle modeled habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included during the 30-year permit term of the Reduced Permit Term Alternative that would avoid or minimize indirect and temporary effects on western pond turtle individuals and habitat and provide an additional mechanism for impact avoidance and oversight.

Therefore, the Reduced Permit Term Alternative would have less impact, and using the significance criteria presented in Section 9.2.1 and the impact analysis provided above, the Reduced Permit Term Alternative would have a **Significant Beneficial** effect on western pond turtle when comparing the Reduced Permit Term Alternative to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Reduced Permit Term Alternative would generally be the same as described for the No Action/No Project Alternative in Section 9.2.2.

As discussed previously in this impact section, the Reduced Permit Term Alternative would result in the loss of 11,356 acres of modeled western pond turtle habitat within the Planning Area, which is 804 acres less than the loss than under the No Action/No Project Alternative. In addition, the HCP Conservation Strategy implemented under the Reduced Permit Term Alternative would include AMMs, such as increased stream setbacks, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy implemented during the permit term also would include Biological Goals and Measureable Objectives specific to the conservation of western pond turtle. The Reduced Permit Term Alternative would result in the preservation of approximately 5,154 more acres of western pond turtle habitat than under the No Action/No Project Alternative. In addition, preservation that occurs during the 30-year permit term of the Reduced Permit Term Alternative would be within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action /No Project Alternative. The individual Preserves in the Preserve System under the Reduced Permit Term Alternative would also be subject to the Biological Goals and Measurable Objectives similar to those of the SSHCP applicable to western pond turtle and be operated under a comprehensive preserve management program.

The incremental effects of the Reduced Permit Term Alternative would result in less of an incremental contribution to the cumulative impact within the Planning Area for western pond turtle than would occur under the No Action/No Project Alternative. Therefore, the Reduced Permit Term Alternative does not result in a cumulatively considerable contribution to significant adverse cumulative impacts to this species. The Reduced Permit Term Alternative would result in a **Minor Beneficial Cumulative** effect for western pond turtle compared to the No Action/No Project Alternative baseline condition.

9.2.4.7 Effects on Cooper's Hawk and Its Habitat

Appendix G describes the life history, habitat requirements, documented occurrences, and existing acres of modeled habitat of Cooper's hawk in the Planning Area.

Direct and Indirect Effects of the Alternative

The maximum anticipated loss of species modeled habitat for Cooper's hawk would be approximately 657 acres, including approximately 619 acres of nesting/foraging habitat (3.6% of existing), and approximately 38 acres of foraging habitat (0.7% of existing) (Table 9-48). These percentages do not take into account the use of developed areas for nesting by Cooper's hawk, which if taken into account would increase the percentage of remaining existing habitat. This loss of modeled habitat is less than the estimated loss of 693 acres under the No Action/No Project Alternative.

The Reduced Permit Term Alternative is expected to remove 2 of the existing 20 occurrences of Cooper's hawk in the Planning Area, which would be the same number of occurrences as would be removed under the No Action/No Project Alternative.

Table 9-48. Direct Effects and Modeled Habitat Conservation for Cooper's Hawk Under the Reduced Permit Term Alternative

Modeled Habitat	Total Planning Area (acres)				
	Total Existing	Direct Effect	% of Existing Habitat Lost	Total Habitat Preservation	Habitat Re-establishment and/or Establishment
Nesting/Foraging Habitat					
Blue Oak Woodland	9,132	9	0.1%	9	9
Mine Tailing Riparian Woodland*	641	219	34.2%	5	0
Mixed Riparian Woodland	5,785	197	3.4%	338	306
Mixed Riparian Scrub	1,451	194	13.4%	350	303
<i>Total Nesting/Foraging Habitat</i>	<i>17,009</i>	<i>619</i>	<i>3.6%</i>	<i>702</i>	<i>618</i>
Foraging Habitat					
Blue Oak Savanna	5,637	38	0.7%	37	37
<i>Total Foraging Habitat</i>	<i>5,637</i>	<i>38</i>	<i>0.7%</i>	<i>37</i>	<i>37</i>
Grand Total	22,646	657	2.9%	739	655

* Habitat re-establishment/establishment for Mine Tailing Riparian Woodland can be either Mixed Riparian Woodland or Mixed Riparian Scrub.

Indirect effects on Cooper's hawk modeled habitat may occur under the Reduced Permit Term, which would be the same in type and character as the indirect effects analyzed for the species in Section 9.2.2. The AMMs that would be required during the permit term are discussed for the species in Section 9.2.3.

Relative to the project AMMs of the No Action/Project alternative, the implementation of SSHCP AMMs during the permit term would reduce indirect impacts on Cooper's hawk. For example, STREAM-2 and STREAM-3 would increase setback distances on UDA streams and minor tributaries over what would be required under the No Action/No Project Alternative, increasing protection of riparian modeled habitat.

Some of the elements of the AMMs described previously and in Section 9.2.3 would also be implemented under the No Action/No Project Alternative as part of standard best practices and/or regulatory requirements (see Table 2-6). However, for those AMM elements implemented across alternatives, the additional oversight and guidance provided by the SSHCP would result in the requirements of these AMMs being implemented more frequently and consistently across the Planning Area.

The temporary effects on Cooper's hawk and potential loss of individuals that may occur under the Reduced Permit Term would be the same in type and character as those analyzed qualitatively in the species impact discussion in Section 9.2.2. The AMMs that would be required during the permit term that would reduce these temporary effects on Cooper's hawk during the permit term are listed for the species in Section 9.2.3. This would result in reduced temporary impacts to Cooper's hawk when compared with the No Action/No Project Alternative, under which AMMs would not be required of development projects for the full 50-year analysis period.

The Reduced Permit Term Alternative would result in preservation of approximately 702 acres of nesting/foraging habitat and 37 acres of foraging habitat, which would be more than the 70 acres estimated for the No Action/No Project Alternative. Additionally, the Conservation Strategy implemented during the permit term would also, establish/re-establish a total of approximately 655 acres of habitat for Cooper's hawk and would implement biological objectives to conserve the species within the Planning Area as discussed in Section 9.2.3.

Significance of Direct and Indirect Effects

The Reduced Permit Term Alternative would impact approximately 36 fewer acres of habitat for Cooper's hawk within the Planning Area than is estimated for the No Action/No Project Alternative. Additionally, the Reduced Permit Term Alternative would preserve approximately 632 more acres of modeled habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included during the 30-year permit term of the Reduced Permit Term Alternative that would avoid or minimize indirect and temporary effects on Cooper's hawk individuals and habitat and provide an additional mechanism for impact avoidance and oversight.

Therefore, the Reduced Permit Term Alternative would have less impact, and using the significance criteria presented in Section 9.2.1 and the impact analysis provided above, the Reduced Permit Term Alternative would have a **Minor Beneficial** effect on Cooper's hawk when comparing the Reduced Permit Term Alternative to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present and reasonably foreseeable future projects to cumulative effects under the Reduced Permit Term Alternative would generally be the same as described above for the No Action/No Project Alternative in Section 9.2.2.

As discussed previously in this impact section, the Reduced Permit Term Alternative would result in direct and indirect impacts to 657 acres of Cooper's hawk modeled habitat within the Planning Area, which is 36 acres less than the total impact under the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Reduced Permit Term Alternative would include AMMs, such as increased stream setbacks, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy implemented during the first 30 years of the Reduced Permit Term Alternative also would include Biological Goals and Measureable Objectives specific to the conservation of Cooper's hawk. The Reduced Permit Term Alternative would result in preservation of 632 more acres of Cooper's hawk habitat than under the No Action/No Project Alternative. In addition, the modeled habitat preservation that would occur during the 30-year permit term of the Reduced Permit Term Alternative would occur within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action /No Project Alternative. The individual Preserves in the Preserve System under the Reduced Permit Term Alternative would also be subject to the Biological Goals and Measurable Objectives of the SSHCP applicable to Cooper's hawk and be operated under a comprehensive preserve management program.

The incremental effects of the Reduced Permit Term Alternative would result in less of an incremental contribution to the cumulative impact within the Planning Area for Cooper's hawk than would occur under the No Action/No Project Alternative. However, at the scale of the study area, the incremental difference in impacts under the Proposed Action/Proposed Project Alternative compared to impacts under the No Action/No Project Alternative is not discernibly different. Therefore, the Reduced Permit Term Alternative would result in a ***Significant Beneficial Cumulative Effect*** for Cooper's hawk compared to the No Action/No Project Alternative baseline condition.

9.2.4.8 Effects on Tricolored Blackbird and Its Habitat

Habitat use, natural history, documented occurrences, and existing acres of modeled habitat in the Planning Area for tricolored blackbird are described in Appendix G.

Direct and Indirect Effects of the Alternative

The maximum anticipated loss of modeled habitats for tricolored blackbird would be approximately 33,206 acres, including approximately 29,694 acres of nesting/foraging habitat (15.8% of existing) and approximately 3,512 acres of foraging habitat (14.5% of existing) (Table 9-49). This is greater than the estimated habitat loss under the No Action/No Project Alternative of 32,907 acres, including 29,389 acres of nesting/foraging and 3,518 acres of foraging habitat.

Indirect effects on tricolored blackbird modeled habitat may occur under the Reduced Permit Term, which would be the same in type and character as the indirect effects analyzed for the species in Section 9.2.2. The AMMs that would be required during the permit term are discussed for the species in Section 9.2.3.

Table 9-49. Direct Effects and Modeled Habitat Conservation for Tricolored Blackbird Under the Reduced Permit Term Alternative

Modeled Habitat	Total Planning Area (acres)				
	Total Existing	Direct Effect	% of Existing Habitat Lost	Habitat Preservation	Habitat Re-establishment and/or Establishment
Nesting/Foraging Habitat					
Valley Grassland	135,112	23,671	17.5%	18,589	0
Cropland	47,905	5,465	11.4%	5,299	0
Seasonal Wetland	2,600	110	4.2%	70	91
Freshwater Marsh	2,922	137	4.7%	100	119
<i>Total Nesting/Foraging Habitat</i>	<i>188,539</i>	<i>29,694</i>	<i>15.8%</i>	<i>24,058</i>	<i>210</i>
Foraging Habitat					
Irrigated Pasture-Grassland	15,991	2,665	16.7%	2,642	0
Vernal Pool	4,536	413	9.1%	1,199	413
Swale	1,222	269	22.0%	495	216
Open Water	2,344	165	7.0%	43	104
<i>Total Foraging Habitat</i>	<i>24,093</i>	<i>3,512</i>	<i>14.5%</i>	<i>4,379</i>	<i>733</i>
Grand Total	212,632	33,206	15.6%	28,437	943

Relative to the project AMMs of the No Action/Project alternative, the implementation of SSHCP AMMs during the permit term would reduce indirect impacts on tricolored blackbird. For example, EDGE-4 would require that stormwater runoff be directed away from Preserves, which would limit exposure of tricolor blackbird within Preserves to urban runoff that may contain pesticides and petroleum products. TCB-5 would restrict the use of pesticides on Preserves between January 1 and July 15, further reducing exposure of tricolored blackbird to

pesticides. While these AMMs may be applied to projects under the No Action/No Project Alternative, they would likely be applied less frequently.

Some of the elements of the AMMs described above and in Section 9.2.3 would also be implemented under the No Action/No Project Alternative as part of standard best practices and/or regulatory requirements (see Table 2-6). However, for those AMM elements implemented across alternatives, the additional oversight and guidance provided by the SSHCP would result in the requirements of these AMMs being implemented more frequently and consistently across the Planning Area.

The temporary effects on tricolored blackbird and potential loss of individuals that may occur under the Reduced Permit Term would be the same in type and character as those analyzed qualitatively in the species impact discussion in Section 9.2.2. The AMMs that would be required during the permit term that would reduce these temporary effects on tricolored blackbird during the permit term are listed for the species in Section 9.2.3. This would result in reduced temporary impacts to tricolored blackbird when compared with the No Action/No Project Alternative, under which AMMs would not be required of development projects for the full 50-year analysis period.

The Reduced Permit Term Alternative would result in preservation of approximately 24,058 acres of nesting/foraging habitat and approximately 4,739 acres of foraging habitat. This modeled habitat preservation exceeds the estimated 21,148 total acres of modeled habitat preservation under the No Action/No Project Alternative. The Conservation Strategy implemented during the permit term would also establish/ re-establish approximately 943 acres of habitat for tricolored blackbird and implement Biological Goals and Measurable Objectives as discussed in Section 9.2.3.

Significance of Direct and Indirect Effects

The Reduced Permit Term Alternative would impact approximately 299 acres more modeled habitat for tricolored blackbird within the Planning Area than is estimated for the No Action/No Project Alternative. However, the Reduced Permit Term Alternative would preserve approximately 2,910 acres more habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included during the 30-year permit term of the Reduced Permit Term Alternative that would avoid or minimize indirect and temporary effects on tricolored blackbird individuals and habitat, and provide an additional mechanism for impact avoidance and oversight.

Therefore, the overall impact of the Reduced Permit Term Alternative on tricolored blackbird would be similar to that of the No Action/No Project Alternative, and based on the significance

criteria in Section 9.2.1, impacts from the Reduced Permit Term Alternative would have a ***Less Than Significant Adverse*** effect on tricolored blackbird when compared to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Reduced Permit Term Alternative would generally be the same as described above for the No Action/No Project Alternative in Section 9.2.2.

As discussed previously in this impact section, the Reduced Permit Term Alternative would result in direct and indirect impacts to approximately 33,206 acres of tricolored blackbird modeled habitat within the Planning Area, which is approximately 299 acres greater than the total impact under the No Action/No Project Alternative. However, the SSHCP Conservation Strategy implemented under the Reduced Permit Term Alternative would include AMMs, such as requirements to direct stormwater away from Preserves, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy implemented during the first 30 years of the Reduced Permit Term Alternative also would include Biological Goals and Measureable Objectives specific to the conservation of tricolored blackbird. The Reduced Permit Term would result in the preservation of approximately 2,910 more acres of tricolored blackbird habitat than the preservation under the No Action/No Project Alternative. In addition, the modeled habitat preservation that would occur during the 30-year permit term of the Reduced Permit Term Alternative would occur within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action /No Project Alternative. The individual Preserves in the Preserve System under the Reduced Permit Term Alternative would also be subject to the Biological Goals and Measurable Objectives of the SSHCP applicable to tricolored blackbird and would be operated under a comprehensive preserve management program.

The incremental effects of the Reduced Permit Term Alternative would not be significantly different than the incremental effects that would occur under the No Action/No Project Alternative. The Reduced Permit Term Alternative would result in ***No Cumulative Effect*** to tricolored blackbird compared to the No Action/No Project Alternative baseline condition.

9.2.4.9 Effects on Western Burrowing Owl and Its Habitat

Habitat use, natural history, and documented occurrences within the Planning Area for western burrowing owl are described in Appendix G.

Direct and Indirect Effects of the Alternative

The maximum anticipated loss of modeled habitat for western burrowing owl would be approximately 32,972 acres (15.5% of existing) (Table 9-50). This is greater than the expected habitat loss under the No Action/No Project Alternative of 32,711 acres.

The Reduced Permit Term Alternative is expected to remove 11 of the existing 97 occurrences of western burrowing owl in the Planning Area, which would be 1 more occurrence than would be removed under the No Action/No Project Alternative.

Indirect effects on western burrowing owl modeled habitat may occur under the Reduced Permit Term, which would be the same in type and character as the indirect effects analyzed for the species in Section 9.2.2. The AMMs that would be required during the permit term are discussed for the species in Section 9.2.3.

Table 9-50. Direct Effects and Modeled Habitat Conservation for Western Burrowing Owl Under the Reduced Permit Term Alternative

Modeled Habitat	Total Planning Area (acres)				
	Total Existing	Direct Effect	% of Existing Habitat Lost	Habitat Preservation	Habitat Re-establishment and/or Establishment
Wintering Habitat					
Vernal Pool	4,536	413	9.1%	1,199	413
Seasonal Wetland	2,600	111	4.3%	70	91
Swale	1,252	270	21.6%	535	228
Stream/Creek (VPIH)	73	28	38.4%	16	8
<i>Total Wintering Habitat</i>	<i>8,461</i>	<i>822</i>	<i>9.7%</i>	<i>1,820</i>	<i>740</i>
Nesting/Foraging Habitat					
Cropland	47,905	5,465	11.4%	5,299	0
Irrigated Pasture-Grassland	15,991	2,665	16.7%	2,642	0
Valley Grassland	135,112	23,671	17.5%	18,589	0
Blue Oak Savanna	5,637	38	0.7%	37	37
<i>Total Nesting/Foraging Habitat</i>	<i>204,645</i>	<i>32,150</i>	<i>15.7%</i>	<i>26,567</i>	<i>37</i>
Total Modeled Habitat	213,106	32,972	15.5%	28,387	777

Relative to the typical project AMMs of the No Action/Project Alternative, the implementation of SSHCP AMMs during the permit term would reduce indirect impacts on western burrowing owl. For

example, EDGE-3 would require 50-foot setback distances between urban development and Preserves which would not be required under the No Action/No Project Alternative, thereby increasing protection of modeled burrowing owl habitat from indirect impacts.

Some of the elements of the AMMs described previously and in Section 9.2.3 would also be implemented under the No Action/No Project Alternative as part of standard best practices and/or regulatory requirements (see Table 2-6). However, for those AMM elements implemented across alternatives, the additional oversight and guidance provided by the SSHCP would result in the requirements of these AMMs being implemented more frequently and consistently across the Planning Area.

The temporary effects on western burrowing owl and potential loss of individuals that may occur under the Reduced Permit Term would be the same in type and character as those analyzed qualitatively in the species impact discussion in Section 9.2.2. The AMMs that would be required during the permit term that would reduce these temporary effects on western burrowing owl during the permit term are listed for the species in Section 9.2.3. This would result in reduced temporary impacts to western burrowing owl when compared with the No Action/No Project Alternative, under which AMMs would not be required of development projects for the full 50-year analysis period.

The Reduced Permit Term Alternative would result in the preservation of approximately 28,387 acres of modeled habitat. This exceeds the estimated 21,188 acres of modeled habitat preservation under the No Action/No Project Alternative. The Conservation Strategy implemented during the permit term would establish/re-establish a total of approximately 777 acres of habitat for western burrowing owl and would implement Biological Goals and Measurable Objectives as discussed in Section 9.2.3.

Significance of Direct and Indirect Effects

The Reduced Permit Term Alternative would impact approximately 261 acres more modeled habitat for western burrowing owl within the Planning Area than is estimated for the No Action/No Project Alternative. However, the Reduced Permit Term Alternative would preserve approximately 7,199 acres more habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included during the 30-year permit term of the Reduced Permit Term Alternative that would avoid and minimize indirect and temporary effects on western burrowing owl individuals and habitat, and provide an additional mechanism for impact avoidance and oversight.

Therefore, the overall impact of the Reduced Permit Term Alternative on western burrowing owl would be similar to that of the No Action/No Project Alternative, and based on the significance criteria in Section 9.2.1, impacts from the Reduced Permit Term Alternative would have a ***Less Than Significant Adverse*** effect on western burrowing owl when compared to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Reduced Permit Term Alternative would generally be the same as described for the No Action/No Project Alternative in Section 9.2.2.

As discussed previously in this impact section, the Reduced Permit Term Alternative would result in direct and indirect impacts to 32,972 acres of western burrowing owl modeled habitat within the Planning Area, which is 261 acres greater than the total impact under the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Reduced Permit Term Alternative would include AMMs, such as requirements to direct stormwater away from Preserves, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy implemented during the first 30 years of the Reduced Permit Term Alternative also would include Biological Goals and Measureable Objectives specific to the conservation of western burrowing owl. The Reduced Permit Term Alternative would result in the preservation of approximately 7,199 more acres of western burrowing owl habitat than under the No Action/No Project Alternative. In addition, the modeled habitat preservation that would occur during the 30-year permit term of the Reduced Permit Term Alternative would occur within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action /No Project Alternative. The individual Preserves in the Preserve System under the Reduced Permit Term Alternative would also be subject to the Biological Goals and Measurable Objectives of the SSHCP applicable to western burrowing owl and be operated under a comprehensive preserve management program.

The incremental effects of the Reduced Permit Term Alternative would not be significantly different than the incremental effects that would occur under the No Action/No Project Alternative. The Reduced Permit Term Alternative would result in ***No Cumulative Effect*** to western burrowing owl compared to the No Action/No Project Alternative baseline condition.

9.2.4.10 Effects on Ferruginous Hawk and Its Habitat

The life history, suitable habitat in the Planning Area, and documented occurrences of ferruginous hawk are discussed in Appendix G.

Direct and Indirect Effects of the Alternative

The maximum anticipated loss of species modeled habitat for ferruginous hawk would be approximately 27,130 acres of foraging habitat (17.2% of existing) (Table 9-51). This is greater than the expected loss under the No Action/No Project Alternative of 26,887 acres.

The Reduced Permit Term Alternative is not expected to remove any of the existing 26 occurrences of ferruginous hawk in the Planning Area; no occurrences would be removed under the No Action/No Project Alternative.

Table 9-51. Direct Effects and Modeled Habitat Conservation for Ferruginous Hawk Under the Reduced Permit Term Alternative

Modeled Habitat	Total Planning Area (acres)				
	Total Existing	Direct Effect	% of Existing Habitat Remaining	Habitat Preservation	Habitat Re-establishment and/or Establishment
Foraging Habitat					
Valley Grassland	135,112	23,671	17.5%	18,589	0
Irrigated Pasture-Grassland	15,991	2,665	16.7%	2,642	0
Seasonal Wetland	2,600	111	4.3%	70	91
Vernal Pool	4,536	413	9.1%	846	413
Swale	1,252	270	21.6%	495	216
Total Foraging Habitat	159,491	27,130	17.0%	22,642	720

Indirect effects on ferruginous hawk modeled habitat may occur under the Reduced Permit Term, which would be the same in type and character as the indirect effects analyzed for the species in Section 9.2.2. The AMMs that would be required during the permit term are discussed for the species in Section 9.2.3.

Relative to the project AMMs of the No Action/Project alternative, the implementation of SSHCP AMMs during the permit term would reduce indirect impacts on ferruginous hawk. For example, EDGE-3 would require 50-foot setback distances between urban development and Preserves, which would not be required under the No Action/No Project Alternative, thereby increasing protection of modeled ferruginous hawk habitat from indirect impacts.

Some of the elements of the AMMs described above and in Section 9.2.3 would also be implemented under the No Action/No Project Alternative as part of standard best practices and/or regulatory requirements (see Table 2-6). However, for those AMM elements implemented across alternatives, the additional oversight and guidance provided by the SSHCP would result in the requirements of these AMMs being implemented more frequently and consistently across the Planning Area.

The temporary effects on ferruginous hawk and potential loss of individuals that may occur under the Reduced Permit Term would be the same in type and character as those analyzed qualitatively in the species impact discussion in Section 9.2.2. The AMMs that would be required during the permit term that would reduce these temporary effects on ferruginous hawk during the permit term are listed for the species in Section 9.2.3. This would result in reduced temporary impacts to ferruginous hawk when compared with the No Action/No Project Alternative, under which AMMs would not be required of development projects for the full 50-year analysis period.

The Reduced Permit Term Alternative would result in the preservation of approximately 22,642 acres of nesting/foraging habitat. This exceeds the estimated 15,942 acres of modeled habitat preservation under the No Action/No Project Alternative. The Conservation Strategy implemented during the permit term would establish/re-establish a total of approximately 720 acres of habitat for ferruginous hawk and implement Biological Goals and Measurable Objectives as discussed in Section 9.2.3.

Significance of Direct and Indirect Effects

The Reduced Permit Term Alternative would impact approximately 243 acres more modeled habitat for ferruginous hawk within the Planning Area than is estimated for the No Action/No Project Alternative. However, the Reduced Permit Term Alternative would preserve approximately 6,700 acres more habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included during the 30-year permit term of the Reduced Permit Term Alternative that would avoid and minimize indirect and temporary effects on ferruginous hawk individuals and habitat and provide an additional mechanism for impact avoidance and oversight.

Therefore, the overall impact of the Reduced Permit Term Alternative on ferruginous hawk would be similar to that of the No Action/No Project Alternative, and based on the significance criteria in Section 9.2.1, impacts from the Reduced Permit Term Alternative would have a **Less Than Significant Adverse** effect on ferruginous hawk when compared to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Reduced Permit Term Alternative would generally be the same as described for the No Action/No Project Alternative in Section 9.2.2.

As discussed previously in this impact section, the Reduced Permit Term Alternative would result in direct and indirect impacts to approximately 27,439 acres of ferruginous hawk modeled habitat within the Planning Area, which is approximately 553 acres greater than the total impact under the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Reduced Permit Term Alternative would include AMMs, such as requirements to direct stormwater away from Preserves, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy implemented during the first 30 years of the Reduced Permit Term Alternative also would include Biological Goals and Measureable Objectives specific to the conservation of ferruginous hawk. The Reduced Permit Term Alternative would result in the preservation of approximately 389 more acres of ferruginous hawk habitat than under the No Action/No Project Alternative. In addition, the modeled habitat preservation that would occur during the 30-year permit term of the Reduced Permit Term Alternative would occur within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action/No Project Alternative. The individual Preserves in the Preserve System under the Reduced Permit Term Alternative would also be subject to the Biological Goals and Measurable Objectives of the SSHCP applicable to ferruginous hawk and be operated under a comprehensive preserve management program.

The incremental effects of the Reduced Permit Term Alternative would not be significantly different than the incremental effects that would occur under the No Action/No Project Alternative. The Reduced Permit Term Alternative would result in **No Cumulative Effect** to ferruginous hawk compared to the No Action/No Project Alternative baseline condition.

9.2.4.11 Effects on Swainson's Hawk and Its Habitat

Habitat use, natural history, documented occurrences, and existing acres of modeled habitat in the Planning Area of Swainson's hawk are discussed in Appendix G.

Direct and Indirect Effects of the Alternative

The maximum anticipated loss of modeled habitats for Swainson's hawk would be approximately 32,986 acres, including approximately 391 acres of nesting habitat (5.4% of

existing) and approximately 32,595 acres of foraging habitat (15.8% of existing) (Table 9-52). This exceeds the estimated loss under the No Action/No Project Alternative, which totals approximately 32,888 acres, including 336 acres of nesting and 32,552 acres of foraging habitat.

The Reduced Permit Term Alternative is expected to remove 37 of the existing 410 occurrences of Swainson's hawk in the Planning Area, which would be 2 more occurrences than would be removed under the No Action/No Project Alternative.

Table 9-52. Direct Effects and Modeled Habitat Conservation for Swainson's Hawk Under the Reduced Permit Term Alternative

Modeled Habitat	Total Planning Area (acres)				
	Total Existing	Direct Effect	% of Existing Habitat Lost	Total Habitat Preservation	Habitat Re-establishment and/or Establishment
Nesting Habitat					
Mixed Riparian Woodland	5,785	197	3.4%	229	250
Mixed Riparian Scrub	1,449	194	13.4%	241	242
<i>Total Nesting Habitat</i>	<i>7,234</i>	<i>391</i>	<i>5.4%</i>	<i>470</i>	<i>492</i>
Foraging Habitat					
Valley Grassland	133,705	23,671	17.7%	18,589	0
Cropland	47,905	5,465	11.4%	5,299	0
Irrigated Pasture-Grassland	15,991	2,665	16.7%	2,642	0
Vernal Pool	4,536	413	9.1%	1,199	413
Seasonal Wetland	2,600	111	4.2%	70	91
Swale	1,252	270	21.6%	495	216
<i>Total Foraging Habitat</i>	<i>205,989</i>	<i>32,595</i>	<i>15.8%</i>	<i>28,294</i>	<i>720</i>
Grand Total	213,223	32,986	15.5%	28,764	1,212

Indirect effects on Swainson's hawk modeled habitat may occur under the Reduced Permit Term, which would be the same in type and character as the indirect effects analyzed for the species in Section 9.2.2. The AMMs that would be required during the permit term are discussed for the species in Section 9.2.3.

Relative to the project AMMs of the No Action/Project Alternative, the implementation of SSHCP AMMs during the permit term would reduce indirect impacts on Swainson's hawk. For example, EDGE-3 would require 50-foot setback distances between urban development and Preserves, which would not be required under the No Action/No Project Alternative, thereby increasing protection of modeled Swainson's hawk habitat from indirect impacts.

Some of the elements of the AMMs described previously and in Section 9.2.3 would also be implemented under the No Action/No Project Alternative as part of standard best practices and/or regulatory requirements (see Table 2-6). However, for those AMM elements

implemented across alternatives, the additional oversight and guidance provided by the SSHCP would result in the requirements of these AMMs being implemented more frequently and consistently across the Planning Area.

The temporary effects on Swainson's hawk and potential loss of individuals that may occur under the Reduced Permit Term would be the same in type and character as those analyzed qualitatively in the species impact discussion in Section 9.2.2. The AMMs that would be required during the permit term that would reduce these temporary effects on Swainson's hawk during the permit term are listed for the species in Section 9.2.3. This would result in reduced temporary impacts to Swainson's hawk when compared with the No Action/No Project Alternative, under which AMMs would not be required of development projects for the full 50-year analysis period.

The Reduced Permit Term Alternative would result in the preservation of approximately 28,764 acres of modeled habitat, which exceeds the estimated 21,061 acres of modeled habitat preservation under the No Action/No Project Alternative. The Conservation Strategy implemented during the permit term would establish/re-establish a total of approximately 1,212 acres of habitat for Swainson's hawk, and implement biological objectives as discussed in Section 9.2.3.

Significance of Direct and Indirect Effects

The Reduced Permit Term Alternative would impact approximately 1,098 acres more modeled habitat for Swainson's hawk within the Planning Area than is estimated for the No Action/No Project Alternative. However, the Reduced Permit Term Alternative would preserve approximately 7,703 acres more habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included during the 30-year permit term of the Reduced Permit Term Alternative that would avoid and minimize indirect and temporary effects on Swainson's hawk individuals and habitat, and provide an additional mechanism for impact avoidance and oversight.

Therefore, the overall impact of the Reduced Permit Term Alternative on Swainson's hawk would be similar to that of the No Action/No Project Alternative, and based on the significance criteria in Section 9.2.1, impacts from the Reduced Permit Term Alternative would have a ***Less Than Significant Adverse Impact*** on Swainson's hawk when compared to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Reduced Permit Term Alternative would generally be the same as described previously for the No Action/No Project Alternative above (Section 9.2.2).

As discussed previously in this impact section, the Reduced Permit Term Alternative would result in direct and indirect impacts to 32,986 acres of Swainson's hawk modeled habitat within the Planning Area, which is 1,098 acres greater than the total impact estimated under the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Reduced Permit Term Alternative would include AMMs, such as requirements to direct stormwater away from Preserves, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy implemented during the first 30 years of the Reduced Permit Term Alternative also would include Biological Goals and Measureable Objectives specific to the conservation of Swainson's hawk. The Reduced Permit Term Alternative would result in the preservation of approximately 7,703 more acres of Swainson's hawk habitat than the preservation under the No Action/No Project Alternative. In addition, the modeled habitat preservation that would occur during the 30-year permit term of the Reduced Permit Term Alternative would occur within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action /No Project Alternative. The individual Preserves in the Preserve System under the Reduced Permit Term Alternative would also be subject to the Biological Goals and Measurable Objectives of the SSHCP applicable to Swainson's hawk and would be operated under a comprehensive preserve management program.

The incremental effects of the Reduced Permit Term Alternative would not be significantly different than the incremental effects that would occur under the No Action/No Project Alternative. The Reduced Permit Term Alternative would result in **No Cumulative Effect** to Swainson's hawk compared to the No Action/No Project Alternative baseline condition.

9.2.4.12 Effects on Northern Harrier and Its Habitat

Habitat use, natural history, and documented occurrences within the Planning Area for northern harrier are described in Appendix G.

Direct and Indirect Effects of the Alternative

The maximum anticipated loss of species modeled habitats totals approximately 32,732 acres, including approximately 31,801 acres of nesting/foraging habitat (16.1% of existing) and approximately 931 acres of foraging habitat (8.2% of existing) (Table 9-53). This is slightly less than the estimated total loss of approximately 32,734 acres of northern harrier habitat, including approximately 31,913 acres of nesting/foraging and approximately 821 acres of foraging habitat under the No Action/No Project Alternative.

The Reduced Permit Term Alternative is expected to remove 4 of the existing 70 occurrences of northern harrier in the Planning Area, which would be two more occurrences than would be removed under the No Action/No Project Alternative.

Table 9-53. Direct Effects and Modeled Habitat Conservation for Northern Harrier Under the Reduced Permit Term Alternative

Modeled Habitat	Total Planning Area (acres)				
	Total Existing	Direct Effect	% of Existing Habitat Lost	Habitat Preservation	Habitat Re-establishment and/or Establishment
Nesting/Foraging Habitat					
Valley Grassland	135,112	23,671	17.5%	18,589	0
Cropland	47,905	5,465	11.4%	5,299	0
Irrigated Pasture-Grassland	15,991	2,665	16.7%	2,642	0
<i>Total Nesting/Foraging Habitat</i>	<i>199,008</i>	<i>31,801</i>	<i>16.0%</i>	<i>26,530</i>	<i>0</i>
Foraging Habitat					
Vernal Pool	4,536	413	9.1%	1,199	413
Seasonal Wetland	2,600	111	4.3%	70	91
Freshwater Marsh	2,922	137	4.7%	100	119
Swale	1,252	270	21.6%	495	216
<i>Total Foraging Habitat</i>	<i>11,310</i>	<i>931</i>	<i>8.2%</i>	<i>1,864</i>	<i>839</i>
Grand Total	210,318	32,732	15.6%	28,394	839

Indirect effects on northern harrier modeled habitat may occur under the Reduced Permit Term, which would be the same in type and character as the indirect effects analyzed for the species in Section 9.2.2. The AMMs that would be required during the permit term are discussed for the species in Section 9.2.3.

Relative to the project AMMs of the No Action/Project alternative, the implementation of SSHCP AMMs during the permit term would reduce indirect impacts on northern harrier. For example, EDGE-3 would require 50-foot setback distances between urban development and

Preserves, which would not be required under the No Action/No Project Alternative, thereby increasing protection of modeled northern harrier habitat from indirect impacts.

Some of the elements of the AMMs described previously and in Section 9.2.3 would also be implemented under the No Action/No Project Alternative as part of standard best practices and/or regulatory requirements (see Table 2-6). However, for those AMM elements implemented across alternatives, the additional oversight and guidance provided by the SSHCP would result in the requirements of these AMMs being implemented more frequently and consistently across the Planning Area.

The temporary effects on northern harrier and potential loss of individuals that may occur under the Reduced Permit Term would be the same in type and character as those analyzed qualitatively in the species impact discussion in Section 9.2.2. The AMMs that would be required during the permit term that would reduce these temporary effects on northern harrier during the permit term are listed for the species in Section 9.2.3. This would result in reduced temporary impacts to northern harrier when compared with the No Action/No Project Alternative, under which AMMs would not be required of development projects for the full 50-year analysis period.

The Reduced Permit Term Alternative would result in preservation of approximately 28,394 acres of modeled habitat. This exceeds the estimated 21,077 acres of modeled habitat preservation under the No Action/No Project Alternative. The Conservation Strategy implemented during the permit term would establish/re-establish a total of approximately 839 acres of habitat for northern harrier and would implement Biological Goals and Measurable Objectives as discussed in Section 9.2.3.

Significance of Direct and Indirect Effects

The Reduced Permit Term Alternative would impact approximately 2 acres less modeled habitat for northern harrier within the Planning Area than is estimated for the No Action/No Project Alternative. Additionally, the Reduced Permit Term Alternative would preserve approximately 7,317 acres more habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included during the 30-year permit term of the Reduced Permit Term Alternative that would avoid and minimize indirect and temporary effects on northern harrier individuals and habitat, and provide an additional mechanism for impact avoidance and oversight.

Therefore, the Reduced Permit Term Alternative would have less impact, and using the significance criteria presented in Section 9.2.1 and the impact analysis provided previously, the Reduced Permit Term Alternative would have a **Minor Beneficial** effect on Cooper's hawk

when comparing the Reduced Permit Term Alternative to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Reduced Permit Term Alternative would generally be the same as described for the No Action/No Project Alternative in Section 9.2.2.

As discussed previously in this impact section, the Reduced Permit Term Alternative would result in direct impacts to 32,732 acres of northern harrier modeled habitat within the Planning Area, which is 2 acres less than the total impact under the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Reduced Permit Term Alternative would include AMMs, such as requirements to direct stormwater away from Preserves, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy implemented during the first 30 years of the Reduced Permit Term Alternative also would include Biological Goals and Measureable Objectives specific to the conservation of northern harrier. The Reduced Permit Term Alternative would result in the preservation of approximately 7,317 more acres of northern harrier habitat than under the No Action/No Project Alternative. In addition, the modeled habitat preservation that would occur during the 30-year permit term of the Reduced Permit Term Alternative would occur within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action/No Project Alternative. The individual preserves in the Preserve System under the Reduced Permit Term Alternative would also be subject to the Biological Goals and Measurable Objectives of the SSHCP applicable to northern harrier and would be operated under a comprehensive preserve management program.

The incremental effects of the Reduced Permit Term Alternative would result in less of an incremental contribution to the cumulative impact within the Planning Area for northern harrier than would occur under the No Action/No Project Alternative. However, at the scale of the study area, the incremental difference in impacts under the Proposed Action/Proposed Project Alternative compared to impacts under the No Action/No Project Alternative is not discernibly different. Therefore, the Reduced Permit Term Alternative would result in **No Cumulative Effect** for northern harrier compared to the No Action/No Project Alternative baseline condition.

9.2.4.13 Effects on White-Tailed Kite and Its Habitat

Habitat use, natural history, documented occurrences, and existing acres of modeled habitat in the Planning Area of white-tailed kite are discussed in Appendix G.

Direct and Indirect Effects of the Alternative

The maximum anticipated total loss of modeled habitats for white-tailed kite would be approximately 33,252 acres, including approximately 425 acres of nesting habitat (2.7% of existing), 194 acres of nesting/foraging habitat (13.4% of existing), and approximately 32,633 acres of foraging habitat (15.3% of existing) (Table 9-54). This is less than the estimated total loss under the No Action/No Project Alternative of approximately 33,284 acres.

Table 9-54. Direct Effects and Modeled Habitat Conservation for White-Tailed Kite Under the Reduced Permit Term Alternative

Modeled Habitat	Total Planning Area (acres)				
	Total Existing	Direct Effect	% of Existing Habitat Lost	Habitat Preservation	Habitat Re-establishment and/or Establishment
Nesting Habitat					
Blue Oak Woodland	9,132	9	0.1%	9	9
Mixed Riparian Woodland	5,785	197	3.4%	338	306
Mine Tailing Riparian Woodland	641	219	34.2%	5	0
<i>Total Nesting Habitat</i>	15,558	425	2.7%	352	315
Nesting/Foraging Habitat					
Mixed Riparian Scrub	1,451	194	13.4%	350	303
<i>Total Nesting/Foraging Habitat</i>	1,451	194	13.4%	350	303
Foraging Habitat					
Valley Grassland	135,112	23,671	17.5%	18,589	0
Cropland	47,905	5,465	11.4%	5,299	0
Irrigated Pasture-Grassland	15,991	2,665	16.7%	2,642	0
Blue Oak Savanna	5,637	38	0.7%	37	37
Vernal Pool	4,536	413	9.1%	1,199	413
Seasonal Wetland	2,600	111	4.3%	70	91
Swale	1,252	270	21.6%	495	216
<i>Total Foraging Habitat</i>	213,033	32,633	15.3%	28,331	757
Grand Total	230,042	33,252	14.5%	29,033	1,375

Indirect effects on white-tailed kite modeled habitat may occur under the Reduced Permit Term, which would be the same in type and character as the indirect effects analyzed for the

species in Section 9.2.2. The AMMs that would be required during the permit term are discussed for the species in Section 9.2.3.

Relative to the project AMMs of the No Action/Project alternative, the implementation of SSHCP AMMs during the permit term would reduce indirect impacts on white-tailed kite. For example, EDGE-3 would require 50-foot setback distances between urban development and Preserves, which would not be required under the No Action/No Project Alternative, thereby increasing protection of modeled white-tailed kite habitat from indirect impacts.

Some of the elements of the AMMs described above and in Section 9.2.3 would also be implemented under the No Action/No Project Alternative as part of standard best practices and/or regulatory requirements (see Table 2-6). However, for those AMM elements implemented across alternatives, the additional oversight and guidance provided by the SSHCP would result in the requirements of these AMMs being implemented more frequently and consistently across the Planning Area.

The temporary effects on white-tailed kite and potential loss of individuals that may occur under the Reduced Permit Term would be the same in type and character as those analyzed qualitatively in the species impact discussion in Section 9.2.2. The AMMs that would be required during the permit term that would reduce these temporary effects on white-tailed kite during the permit term are listed for the species in Section 9.2.3. This would result in reduced temporary impacts to white-tailed kite when compared with the No Action/No Project Alternative, under which AMMs would not be required of development projects for the full 50-year analysis period.

The Reduced Permit Term Alternative would result in the preservation of approximately 29,033 acres of modeled habitat. This exceeds the estimated 21,321 acres of modeled habitat preservation under the No Action/No Project Alternative. The Conservation Strategy implemented during the permit term would establish/re-establish a total of approximately 1,375 acres of habitat for white-tailed kite and would implement Biological Goals and Measurable Objectives as discussed in Section 9.2.3.

Significance of Direct and Indirect Effects

The Reduced Permit Term Alternative would impact approximately 32 fewer acres of modeled habitat for white-tailed kite within the Planning Area than is estimated for the No Action/No Project Alternative. Additionally, the Reduced Permit Term Alternative would preserve 7,712 acres more habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included during the 30-year permit term of the Reduced Permit Term Alternative that would avoid and minimize indirect and temporary effects on white-tailed kite individuals and habitat, and provide an additional mechanism for impact avoidance and oversight.

Therefore, the Reduced Permit Term Alternative would have less impact, and using the significance criteria presented in Section 9.2.1 and the impact analysis provided previously, the Reduced Permit Term Alternative would have a **Minor Beneficial** effect on Cooper's hawk when comparing the Reduced Permit Term Alternative to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Reduced Permit Term Alternative would generally be the same as described for the No Action/No Project Alternative in Section 9.2.2.

As discussed previously in this impact section, the Reduced Permit Term Alternative would result in direct and indirect impacts to approximately 33,252 acres of white-tailed kite modeled habitat within the Planning Area, which is approximately 32 fewer acres than the total impact under the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Reduced Permit Term Alternative would include AMMs, such as requirements to direct stormwater away from Preserves, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy implemented during the first 30 years of the Reduced Permit Term Alternative also would include Biological Goals and Measureable Objectives specific to the conservation of white-tailed kite. The Reduced Permit Term Alternative would result in the preservation of approximately 7,712 more acres of white-tailed kite habitat than the preservation under the No Action/No Project Alternative. In addition, the modeled habitat preservation that would occur during the 30-year permit term of the Reduced Permit Term Alternative would occur within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action /No Project Alternative. The individual preserves in the Preserve System under the Reduced Permit Term Alternative would also be subject to the Biological Goals and Measurable Objectives of the SSHCP applicable to white-tailed kite and would be operated under a comprehensive preserve management program.

The incremental effects of the Reduced Permit Term Alternative would result in less of an incremental contribution to the cumulative impact within the Planning Area for white-tailed kite than would occur under the No Action/No Project Alternative. However, at the scale of the study area, the incremental difference in impacts under the Proposed Action/Proposed Project Alternative compared to impacts under the No Action/No Project Alternative is not discernibly different. Therefore, the Reduced Permit Term Alternative would result in **No Cumulative Effect** for white-tailed kite compared to the No Action/No Project Alternative baseline condition.

9.2.4.14 Effects on Greater Sandhill Crane and Its Habitat

Appendix G discusses the habitat use, natural history, and documented occurrences of greater sandhill crane in the Planning Area.

Direct and Indirect Effects of the Alternative

The maximum anticipated direct loss of species modeled habitats for greater sandhill crane would be approximately 8,271 acres (9.7% of existing), including approximately 59 acres of roosting, approximately 131 acres of roosting/foraging, and approximately 8,081 acres of foraging habitat (Table 9-55). This is less than the estimated total loss of 9,499 acres under the No Action/No Project Alternative.

Table 9-55. Direct Effects and Modeled Habitat Conservation for Greater Sandhill Crane Under the Reduced Permit Term Alternative

Modeled Habitat	Total Planning Area (acres)						
	Total Existing	Direct Effect	Indirect Effect	Total Effect	% of Existing Habitat Lost	Habitat Preservation	Habitat Re-establishment and/or Establishment
Roosting/Foraging Habitat¹							
Seasonal Wetland	1,877	58	Qualitative	58	3.2%	80	58
Freshwater Marsh	2,610	73	Qualitative	73	2.8%	53	64
<i>Total Roosting/Foraging Habitat</i>	<i>4,487</i>	<i>131</i>	<i>Qualitative</i>	<i>131</i>	<i>3.0%</i>	<i>133</i>	<i>122</i>
Roosting Habitat							
Vernal Pool	1,156	59	83	142	12.3%	284	59
<i>Total Roosting Habitat</i>	<i>1,156</i>	<i>59</i>	<i>83</i>	<i>142</i>	<i>12.3%</i>	<i>284</i>	<i>59</i>
Foraging Habitat²							
Cropland	42,628	3,876	Qualitative	3,876	9.1%	3,758	0
Valley Grassland	30,585	2,534	Qualitative	2,534	8.3%	4,206	0
Irrigated Pasture-Grassland	10,908	1,671	Qualitative	1,671	15.3%	1,654	0
<i>Total Foraging Habitat</i>	<i>84,121</i>	<i>8,081</i>	<i>Qualitative</i>	<i>8,081</i>	<i>9.6%</i>	<i>9,618</i>	<i>0</i>
Grand Total	85,277	8,271	83	8,354	9.6%	10,035	181

¹ Modeled roosting habitat includes these communities within 2 miles of greater sandhill crane occurrences in the Planning Area.

² Modeled foraging habitat includes these communities within 1.75 miles of modeled roosting habitat.

Indirect effects on modeled greater sandhill crane habitat would also occur under the Reduced Permit Term Alternative. These indirect effects would be the same in type and character as those discussed and analyzed qualitatively for the No Action/No Project in Section 9.2.2. There would be 83 acres of quantified indirect effects under the Reduced Permit Term Alternative, which would be approximately 34 acres less than the quantified indirect impact under the No Action/No Project Alternative.

The AMMs that would be required during the permit term are discussed for the species in Section 9.2.3. Relative to the project AMMs of the No Action/Project Alternative, the implementation of SSHCP AMMs during the permit term would reduce indirect impacts on greater sandhill crane. For example, EDGE-4 would require that stormwater runoff be directed away from Preserves, which would limit exposure of greater sandhill crane within Preserves to urban runoff that may contain pesticides and petroleum products and that can adversely affect the hydrology of vernal pool roosting habitat.

Some of the elements of the AMMs described above and in Section 9.2.3 would also be implemented under the No Action/No Project Alternative as part of standard best practices and/or regulatory requirements (see Table 2-6). However, for those AMM elements implemented across alternatives, the additional oversight and guidance provided by the SSHCP would result in the requirements of these AMMs being implemented more frequently and consistently across the Planning Area.

The temporary effects on greater sandhill crane modeled habitat that would occur under the Reduced Permit Term Alternative are the same in type and character as those analyzed for the species under the No Action/No Project Alternative in Section 9.2.2. The AMMs that would be applied during the permit term to avoid or minimize these temporary effects are listed in the species analysis for the Proposed Action in Section 9.2.3. This would result in reduced temporary impacts to greater sandhill crane when compared with the No Action/No Project Alternative, under which AMMs would not be required of development projects for the full 50-year analysis period.

The Reduced Permit Term Alternative would result in preservation of approximately 10,035 acres of modeled habitat, which would be more than the estimated 8,323 acres of modeled habitat preservation under the No Action/No Project Alternative. The Conservation Strategy implemented during the permit term would also establish/re-establish approximately 181 acres of habitat for greater sandhill crane and would implement Biological Goals and Measurable Objectives as discussed in Section 9.2.3.

Significance of Direct and Indirect Effects

The Reduced Permit Term Alternative would impact 1,262 fewer acres of modeled habitat for greater sandhill crane within the Planning Area than is estimated for the No Action/No Project Alternative. Additionally, the Reduced Permit Term Alternative would preserve 1,712 more acres of habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would also provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included during the 30-year permit term of the Reduced Permit Term Alternative that would avoid and minimize indirect and

temporary effects on greater sandhill crane individuals and habitat and provide an additional mechanism for impact avoidance and oversight.

Therefore, the Reduced Permit Term Alternative would have less impact, and using the significance criteria presented in Section 9.2.1 and the impact analysis provided previously, the Reduced Permit Term Alternative would have a **Minor Beneficial** effect on greater sandhill crane when comparing the Reduced Permit Term Alternative to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Reduced Permit Term Alternative would generally be the same as described for the No Action/No Project Alternative in Section 9.2.2.

As discussed previously in this impact section, the Reduced Permit Term Alternative would result in direct (approximately 8,271 acres) and indirect (approximately 83 acres) impacts for a total impact of approximately 8,354 acres to greater sandhill crane modeled habitat within the Planning Area, which is approximately 1,262 acres less than the total impact under the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Reduced Permit Term Alternative would include AMMs, such as requirements to direct stormwater away from Preserves, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy implemented during the first 30 years of the Reduced Permit Term Alternative also would include Biological Goals and Measureable Objectives specific to the conservation of greater sandhill crane. The Reduced Permit Term Alternative would result in the preservation of approximately 1,712 more acres of greater sandhill crane habitat than the preservation under the No Action/No Project Alternative. In addition, the modeled habitat preservation that would occur during the 30-year permit term of the Reduced Permit Term Alternative would occur within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action/No Project Alternative. The individual Preserves in the Preserve System under the Reduced Permit Term Alternative would also be subject to the Biological Goals and Measurable Objectives of the SSHCP applicable to greater sandhill crane and would be operated under a comprehensive preserve management program.

The incremental effects of the Reduced Permit Term Alternative would result in less of an incremental contribution to the cumulative impact within the Planning Area for greater sandhill

crane than would occur under the No Action/No Project Alternative. However, at the scale of the study area, the incremental difference in impacts under the Proposed Action/Proposed Project Alternative compared to impacts under the No Action/No Project Alternative is not discernibly different. Therefore, the Reduced Permit Term Alternative would result in **No Cumulative Effect** for greater sandhill crane compared to the No Action/No Project Alternative baseline condition.

9.2.4.15 Effects on Lesser Sandhill Crane and Its Habitat

Habitat associations and occurrence information for lesser sandhill crane in the Planning Area is provided in Appendix G.

Direct and Indirect Effects of the Alternative

The land cover types in the Planning Area that are utilized by lesser sandhill crane are the same as those previously identified for greater sandhill crane, as is the expected acres of potentially suitable habitat loss under the Reduced Permit Term Alternative.

New development and transportation infrastructure would have indirect effects on lesser sandhill crane that would be the same as those discussed previously for greater sandhill crane. In addition, construction activities under the Reduced Permit Term Alternative may result in temporary effects as discussed for greater sandhill crane.

The Reduced Permit Term Alternative would include the implementation of the AMMs discussed previously for greater sandhill crane that would also avoid or minimize indirect impacts lesser sandhill crane during the permit term. Temporary impacts would also be avoided or minimized by the construction and species AMMs discussed for greater sandhill crane during the permit term. Although the greater sandhill crane species-specific AMMs would not apply to projects where only lesser sandhill crane is present, due to the habitat overlap of the two species both would benefit from the application of these species-specific AMMs.

The potentially suitable lesser sandhill crane habitat preserved under the Reduced Permit Term Alternative and the relation of that habitat preservation to the No Action/No Project Alternative would be the same as that for greater sandhill crane.

Significance of Direct and Indirect Effects

The Reduced Permit Term Alternative would impact approximately 1,262 fewer acres of potentially suitable habitat for lesser sandhill crane within the Planning Area than is estimated for the No Action/No Project Alternative. Additionally, the Reduced Permit Term Alternative would preserve approximately 1,712 more acres of habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would also provide some larger Preserves and increased

Preserve connectivity, improving ecosystem function. Multiple AMMs are also included during the 30-year permit term of the Reduced Permit Term Alternative that would avoid and minimize indirect and temporary effects on lesser sandhill crane individuals and habitat, and provide an additional mechanism for impact avoidance and oversight.

Therefore, the Reduced Permit Term Alternative would have less impact, and using the significance criteria presented in Section 9.2.1 and the impact analysis provided above, the Reduced Permit Term Alternative would have a ***Minor Beneficial*** effect on lesser sandhill crane when comparing the Reduced Permit Term Alternative to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Reduced Permit Term Alternative would generally be the same as described for the No Action/No Project Alternative in Section 9.2.2.

As discussed previously in this impact section, the Reduced Permit Term Alternative would result in direct (approximately 8,271 acres) and indirect (approximately 83 acres) impacts for a total impact of approximately 8,534 acres to lesser sandhill crane potentially suitable habitat within the Planning Area, which is approximately 1,262 acres less than the total impact under the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Reduced Permit Term Alternative would include AMMs, such as requirements to direct stormwater away from Preserves, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy implemented during the first 30 years of the Reduced Permit Term Alternative also would include Biological Goals and Measureable Objectives specific to the conservation of greater sandhill crane that would also benefit lesser sandhill crane. The Reduced Permit Term Alternative would also result in the preservation of approximately 1,712 more acres of lesser sandhill crane habitat than the preservation under the No Action/No Project Alternative. In addition, the modeled habitat preservation that would occur during the 30-year permit term of the Reduced Permit Term Alternative would occur within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action /No Project Alternative. The individual Preserves in the Preserve System under the Reduced Permit Term Alternative would also be subject to the Biological Goals and Measurable Objectives of the SSHCP applicable to lesser sandhill crane and would be operated under a comprehensive preserve management program.

The incremental effects of the Reduced Permit Term Alternative would result in less of an incremental contribution to the cumulative impact within the Planning Area for lesser sandhill crane than would occur under the No Action/No Project Alternative. However, at the scale of the study area, the incremental difference in impacts under the Proposed Action/Proposed Project Alternative compared to impacts under the No Action/No Project Alternative is not discernibly different. Therefore, the Reduced Permit Term Alternative would result in **No Cumulative Effect** for lesser sandhill crane compared to the No Action/No Project Alternative baseline condition.

9.2.4.16 Effects on Loggerhead Shrike and Its Habitat

Habitat use, natural history, documented occurrences, and existing acres of modeled habitat in the Planning Area of loggerhead shrike are described Appendix G.

Direct and Indirect Effects of the Alternative

The maximum anticipated total loss of loggerhead shrike modeled habitat is approximately 33,516 acres of modeled habitat (Table 9-56). This is greater than the estimated loss under the No Action/No Project Alternative of approximately 33,144 acres.

Table 9-56. Direct Effects and Modeled Habitat Conservation for Loggerhead Shrike Under the Reduced Permit Term Alternative

Modeled Habitat	Total Planning Area (acres)				
	Total Existing	Direct Effect	% of Existing Habitat Lost	Habitat Preservation	Habitat Re-establishment and/or Establishment
Nesting Habitat					
Mixed Riparian Woodland	5,785	197	3.4%	338	306
Mixed Riparian Scrub	1,424	194	13.6%	350	303
Mine Tailing Riparian Woodland	641	219	34.2%	5	0
<i>Total Nesting Habitat</i>	<i>7,850</i>	<i>610</i>	<i>7.8%</i>	<i>693</i>	<i>609</i>
Nesting/Foraging Habitat					
Valley Grassland	135,112	23,982	17.7%	24,096	0
<i>Total Nesting/Foraging Habitat</i>	<i>135,112</i>	<i>23,982</i>	<i>17.7%</i>	<i>24,096</i>	<i>0</i>
Foraging Habitat					
Cropland	47,905	5,465	11.4%	18,589	0
Irrigated Pasture-Grassland	15,991	2,665	16.7%	2,642	0
Vernal Pool	4,536	413	9.1%	1,199	413
Seasonal Wetland	2,600	111	4.3%	70	91
Swale	1,252	270	21.6%	495	216
<i>Total Foraging Habitat</i>	<i>72,284</i>	<i>8,924</i>	<i>12.3%</i>	<i>22,995</i>	<i>720</i>
Grand Total	215,246	33,516	15.6%	47,784	1,329

The Reduced Permit Term Alternative is not expected to remove any of the existing 34 occurrences of loggerhead shrike in the Planning Area; no occurrences would be removed under the No Action/No Project Alternative.

Indirect effects on loggerhead shrike modeled habitat may occur under the Reduced Permit Term, which would be the same in type and character as the indirect effects analyzed for the species in Section 9.2.2. The AMMs that would be required during the permit term are discussed for the species in Section 9.2.3.

Relative to the project avoidance and minimization measures of the No Action/Project alternative, the implementation of SSHCP AMMs during the permit term would reduce indirect impacts on loggerhead shrike. For example, EDGE-3 would require 50-foot setback distances between urban development and Preserves, which would not be required under the No Action/No Project Alternative, thereby increasing protection of modeled loggerhead shrike habitat from indirect impacts.

Some of the elements of the AMMs described previously and in Section 9.2.3 would also be implemented under the No Action/No Project Alternative as part of standard best practices and/or regulatory requirements (see Table 2-6). However, for those AMM elements implemented across alternatives, the additional oversight and guidance provided by the SSHCP would result in the requirements of these AMMs being implemented more frequently and consistently across the Planning Area.

The temporary effects on loggerhead shrike and potential loss of individuals that may occur under the Reduced Permit Term would be the same in type and character as those analyzed qualitatively in the species impact discussion in Section 9.2.2. The AMMs that would be required during the permit term that would reduce these temporary effects on loggerhead shrike during the permit term are listed for the species in Section 9.2.3. This would result in reduced temporary impacts to loggerhead shrike when compared with the No Action/No Project Alternative, under which AMMs would not be required of development projects for the full 50-year analysis period.

The Reduced Permit Term Alternative would include preservation of approximately 47,784 acres of modeled habitat. This exceeds the estimated 21,061 acres of modeled habitat preservation under the No Action/No Project Alternative. The Conservation Strategy implemented during the permit term would establish/re-establish a total of approximately 1,329 acres of habitat for loggerhead shrike, and implement Biological Goals and Measurable Objectives as discussed in Section 9.2.3.

Significance of Direct and Indirect Effects

The Reduced Permit Term Alternative would impact approximately 372 acres more modeled habitat for loggerhead shrike within the Planning Area than is estimated for the No Action/No Project Alternative. However, the Reduced Permit Term Alternative would preserve 26,723 acres more habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included during the 30-year permit term of the Reduced Permit Term Alternative that would avoid and minimize indirect and temporary effects on loggerhead shrike individuals and habitat, and provide an additional mechanism for impact avoidance and oversight.

Therefore, the overall impact of the Reduced Permit Term Alternative on loggerhead shrike would be slightly more than that of the No Action/No Project Alternative, and based on the significance criteria in Section 9.2.1, impacts from the Reduced Permit Term Alternative would have a **Less Than Significant Adverse** effect on loggerhead shrike when compared to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Reduced Permit Term Alternative would generally be the same as described for the No Action/No Project Alternative in Section 9.2.2.

As discussed previously in this impact section, the Reduced Permit Term Alternative would result in direct and indirect impacts to approximately 33,516 acres of loggerhead shrike modeled habitat within the Planning Area, which is approximately 372 acres greater than the total impact under the No Action/No Project Alternative. However, the SSHCP Conservation Strategy implemented under the Reduced Permit Term Alternative would include AMMs, such as requirements to direct stormwater away from Preserves, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy implemented during the first 30 years of the Reduced Permit Term Alternative also would include Biological Goals and Measureable Objectives specific to the conservation of loggerhead shrike. The Reduced Permit Term Alternative includes preservation of approximately 26,723 more acres of loggerhead shrike habitat than the preservation under the No Action/No Project Alternative. In addition, the modeled habitat preservation that would occur during the 30-year permit term of the Reduced Permit Term Alternative would occur within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is

anticipated from the project-by-project mitigation under the No Action /No Project Alternative. The individual Preserves in the Preserve System under the Reduced Permit Term Alternative would also be subject to the Biological Goals and Measurable Objectives of the SSHCP applicable to loggerhead shrike and be operated under a comprehensive preserve management program.

The incremental effects of the Reduced Permit Term Alternative would not be significantly different than the incremental effects that would occur under the No Action/No Project Alternative. The Reduced Permit Term Alternative would result in **No Cumulative Effect** to loggerhead shrike compared to the No Action/No Project Alternative baseline condition.

9.2.4.17 Effects on Grasshopper Sparrow and Its Habitat

Habitat associations and occurrence information for grasshopper sparrow within the Planning Area is provided in Appendix G.

Direct and Indirect Effects of the Alternative

Estimated losses of potentially suitable habitat under the Reduced Permit Term Alternative would consist of approximately 2,665 acres of Irrigated Pasture-Grassland and approximately 23,671 acres of Valley Grassland for a total land cover loss of approximately 26,336 acres. Of this habitat loss, approximately 25,511 acres would occur within the UDA, and approximately 825 acres would occur outside of the UDA. This is greater than the loss of potentially suitable grasshopper sparrow habitat under the No Action/No Project Alternative of 26,210 acres.

Indirect effects on potentially suitable grasshopper sparrow habitat may occur under the Reduced Permit Term, which would be the same in type and character as the indirect effects analyzed for the species in Section 9.2.2. The AMMs that would be required during the permit term are discussed for the species in Section 9.2.3.

Relative to the project AMMs of the No Action/Project Alternative, the implementation of SSHCP AMMs during the permit term would reduce indirect impacts on grasshopper sparrow. For example, EDGE-3 would require 50-foot setback distances between urban development and Preserves, which would not be required under the No Action/No Project Alternative, thereby increasing protection of potentially suitable grasshopper sparrow habitat from indirect impacts.

Some of the elements of the AMMs described previously and in Section 9.2.3 would also be implemented under the No Action/No Project Alternative as part of standard best practices and/or regulatory requirements (see Table 2-6). However, for those AMM elements implemented across alternatives, the additional oversight and guidance provided by the SSHCP

would result in the requirements of these AMMs being implemented more frequently and consistently across the Planning Area.

The temporary effects on grasshopper sparrow and potential loss of individuals that may occur under the Reduced Permit Term would be the same in type and character as those analyzed qualitatively in the species impact discussion in Section 9.2.2. The AMMs that would be required during the permit term that would reduce these temporary effects on grasshopper sparrow during the permit term are listed for the species in Section 9.2.3. This would result in reduced temporary impacts to grasshopper sparrow when compared with the No Action/No Project Alternative under which AMMs would not be required of development projects for the full 50-year analysis period.

The Reduced Permit Term Alternative would include preservation of approximately 21,231 acres of potentially suitable grasshopper sparrow habitat, and implement Biological Goals and Measurable Objectives as discussed in Section 9.2.3. This exceeds the estimated 14,302 acres of potentially suitable habitat preservation under the No Action/No Project Alternative.

Significance of Direct and Indirect Effects

The Reduced Permit Term Alternative would impact approximately 126 acres more potentially suitable habitat for grasshopper sparrow within the Planning Area than is estimated for the No Action/No Project Alternative. However, the Reduced Permit Term Alternative would preserve approximately 6,929 acres more habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included during the 30-year permit term of the Reduced Permit Term Alternative that would avoid and minimize indirect and temporary effects on grasshopper sparrow individuals and habitat and provide an additional mechanism for impact avoidance and oversight.

Therefore, the overall impact of the Reduced Permit Term Alternative on grasshopper sparrow would be similar to that of the No Action/No Project Alternative, and based on the significance criteria in Section 9.2.1, impacts from the Reduced Permit Term Alternative would have a ***Less Than Significant Adverse*** effect on grasshopper sparrow when compared to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Reduced Permit Term Alternative would generally be the same as described for the No Action/No Project Alternative in Section 9.2.2.

As discussed previously in this impact section, the Reduced Permit Term Alternative would result in direct impacts to approximately 26,336 acres of potentially suitable grasshopper sparrow habitat within the Planning Area, which is approximately 126 acres greater than the total impact under the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Reduced Permit Term Alternative would include AMMs, such as requirements to direct stormwater away from Preserves, that would reduce indirect impacts to remaining habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy implemented during the first 30 years of the Reduced Permit Term Alternative also would include Biological Goals and Measureable Objectives that would benefit conservation of grasshopper sparrow. The Reduced Permit Term Alternative would result in the preservation of approximately 6,929 more acres of potentially suitable grasshopper sparrow habitat than the preservation under the No Action/No Project Alternative. In addition, the habitat preservation that would occur during the 30-year permit term of the Reduced Permit Term Alternative would occur within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action /No Project Alternative. The individual Preserves in the Preserve System under the Reduced Permit Term Alternative would also be subject to the Biological Goals and Measurable Objectives of the SSHCP applicable to grasshopper sparrow and be operated under a comprehensive preserve management program.

The incremental effects of the Reduced Permit Term Alternative would not be significantly different than the incremental effects that would occur under the No Action/No Project Alternative. The Reduced Permit Term Alternative would result in **No Cumulative Effect** to grasshopper sparrow compared to the No Action/No Project Alternative baseline condition.

9.2.4.18 Effects on Song Sparrow (Modesto Population) and Its Habitat

Habitat associations and occurrence information for song sparrow in the Planning Area is provided in Appendix G. The land cover types in the Planning Area that are utilized by song sparrow are Seasonal Wetland, Freshwater Marsh, and Riparian Scrub.

Direct and Indirect Effects of the Alternative

The anticipated loss of potentially suitable habitat for song sparrow would be approximately 111 acres of Seasonal Wetland, approximately 137 acres of Freshwater Marsh, and approximately 194 acres of Mixed Riparian Scrub, which totals approximately 442 acres and is less than the approximately 448 acres estimated under the No Action/No Project Alternative.

Indirect effects on potentially suitable song sparrow habitat may occur under the Reduced Permit Term, which would be the same in type and character as the indirect effects analyzed for the species in Section 9.2.2. The AMMs that would be required during the permit term are discussed for the species in Section 9.2.3.

Relative to the project AMMs of the No Action/Project Alternative, the implementation of SSHCP AMMs during the permit term would reduce indirect impacts on song sparrow. For example, EDGE-3 would require 50-foot setback distances between urban development and Preserves, which would not be required under the No Action/No Project Alternative, thereby increasing protection of potentially suitable song sparrow habitat from indirect impacts.

Some of the elements of the AMMs described above and in Section 9.2.3 would also be implemented under the No Action/No Project Alternative as part of standard best practices and/or regulatory requirements (see Table 2-6). However, for those AMM elements implemented across alternatives, the additional oversight and guidance provided by the SSHCP would result in the requirements of these AMMs being implemented more frequently and consistently across the Planning Area.

The temporary effects on song sparrow and potential loss of individuals that may occur under the Reduced Permit Term would be the same in type and character as those analyzed qualitatively in the species impact discussion in Section 9.2.2. The AMMs that would be required during the permit term that would reduce these temporary effects on song sparrow during the permit term are listed for the species in Section 9.2.3. This would result in reduced temporary impacts to song sparrow when compared with the No Action/No Project Alternative, under which AMMs would not be required of development projects for the full 50-year analysis period.

The Reduced Permit Term Alternative would result in approximately 520 acres of modeled habitat preservation and would implement Biological Goals and Measurable Objectives as discussed in Section 9.2.3. This exceeds the estimated 24 acres of modeled habitat preservation under the No Action/No Project Alternative.

Significance of Direct and Indirect Effects

The Reduced Permit Term Alternative would impact 6 fewer acres of potentially suitable habitat for song sparrow within the Planning Area than is estimated for the No Action/No Project Alternative. However, the Reduced Permit Term Alternative would preserve approximately 496 acres more habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included during the 30-year permit term of the Reduced Permit Term Alternative that would avoid and minimize indirect and

temporary effects on song sparrow individuals and habitat, and provide an additional mechanism for impact avoidance and oversight.

Therefore, the Reduced Permit Term Alternative would have less impact, and using the significance criteria presented in Section 9.2.1 and the impact analysis provided previously, the Reduced Permit Term Alternative would have a ***Minor Beneficial*** effect on song sparrow when comparing the Reduced Permit Term Alternative to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Reduced Permit Term Alternative would generally be the same as described for the No Action/No Project Alternative in Section 9.2.2.

As discussed previously in this impact section, the Reduced Permit Term Alternative would result in direct and indirect impacts to approximately 442 acres of potentially suitable song sparrow habitat within the Planning Area, which is approximately 6 fewer acres than the total impact under the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Reduced Permit Term Alternative would include AMMs, such as requirements to direct stormwater away from Preserves, that would reduce indirect impacts to remaining habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy implemented during the first 30 years of the Reduced Permit Term Alternative also would include Biological Goals and Measureable Objectives that would benefit conservation of song sparrow. The Reduced Permit Term Alternative would result in preservation of approximately 496 more acres of song sparrow habitat than the preservation under the No Action/No Project Alternative. In addition, the modeled habitat preservation that would occur during the 30-year permit term of the Reduced Permit Term Alternative would occur within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected preserves than is anticipated from the project-by-project mitigation under the No Action/No Project Alternative. The individual preserves in the Preserve System under the Reduced Permit Term Alternative would also be subject to the Biological Goals and Measurable Objectives of the SSHCP applicable to song sparrow and would be operated under a comprehensive preserve management program.

The incremental effects of the Reduced Permit Term Alternative would result in less of an incremental contribution to the cumulative impact within the Planning Area for song sparrow than would occur under the No Action/No Project Alternative. However, at the scale of the

study area, the incremental difference in impacts under the Proposed Action/Proposed Project Alternative compared to impacts under the No Action/No Project Alternative is not discernibly different. Therefore, the Reduced Permit Term Alternative would result in **No Cumulative Effect** for song sparrow compared to the No Action/No Project Alternative baseline condition.

9.2.4.19 Effects on Bank Swallow and Its Habitat

Habitat associations and occurrence information for bank swallow in the Planning Area is provided in Appendix G. Bank swallow is associated with large cut banks in riverine habitats and sand bluffs, where it builds nest burrows, and with surrounding areas that it uses for foraging. The two documented occurrences of nesting colonies within the Planning Area are along the Cosumnes River between Rancho Murieta and Sloughhouse.

Direct and Indirect Effects of the Alternative

The potential loss of bank swallow nesting habitat from Preserve Covered Activities and other activities under the Reduced Permit Term Alternative are analyzed qualitatively. Under this alternative, the entire Cosumnes River/Deer Creek Corridor would not be part of the Preserve System, and it is uncertain if these nesting colonies would be part of a Preserve. Should the nesting colonies be part of a Preserve, Preserve Covered Activities that remove cut banks through use of bank stabilization techniques, or that remove potential foraging habitat within proximity to nest colonies, would result in impacts to bank swallow. If the nesting colonies are not part of a Preserve, then no other Covered Activities under the Reduced Permit Term are likely to adversely affect these nesting colonies. Projects and activities under the No Action/No Project Alternative would not likely remove cut banks through use of bank stabilization techniques, or remove foraging habitat within proximity to nest colonies or result in impacts to bank swallow.

Indirect effects on potentially suitable bank swallow habitat may occur under the Reduced Permit Term Alternative, which would be the same in type and character as the indirect effects analyzed for the species in Section 9.2.2. The AMMs that would be required during the permit term are discussed for the species in Section 9.2.3.

Relative to the project AMMs of the No Action/Project Alternative, the implementation of SSHCP AMMs during the permit term would reduce indirect impacts on bank swallow. For example, EDGE-3 would require 50-foot setback distances between urban development and Preserves, which would not be required under the No Action/No Project Alternative, thereby increasing protection of potentially suitable bank swallow habitat from indirect impacts.

Some of the elements of the AMMs described previously and in Section 9.2.3 would also be implemented under the No Action/No Project Alternative as part of standard best practices and/or regulatory requirements (see Table 2-6). However, for those AMM elements

implemented across alternatives, the additional oversight and guidance provided by the SSHCP would result in the requirements of these AMMs being implemented more frequently and consistently across the Planning Area.

The temporary effects on bank swallow habitat and potential loss of individuals that may occur under the Reduced Permit Term would be the same in type and character as those analyzed qualitatively in the species impact discussion in Section 9.2.. The AMMs that would be required during the permit term that would reduce these temporary effects on bank swallow during the permit term are listed for the species in Section 9.2.3. This would result in reduced temporary impacts to bank swallow when compared with the No Action/No Project Alternative, under which AMMs would not be required of development projects for the full 50-year analysis period. The total acreage of potentially suitable bank swallow habitat preserved under the Reduced Permit Term Alternative is analyzed qualitatively. However, the majority of nesting and foraging habitat in the Planning Area is likely within the Cosumnes River/Deer Creek Corridor, and it is uncertain where the acres that would be preserved as part of the corridor would be located under this alternative.

Significance of Direct and Indirect Effects

Preserve Covered Activities within the Cosumnes River/Deer Creek Corridor implemented under the Reduced Permit Term Alternative would potentially impact known nesting colonies of bank swallow within the Planning Area in contrast to the No Action/No Project Alternative. However, the Reduced Permit Term Alternative would preserve more potentially suitable habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included during the 30-year permit term of the Reduced Permit Term Alternative that would avoid or minimize indirect and temporary effects on bank swallow individuals and habitat, and provide an additional mechanism for impact avoidance and oversight.

Therefore, the overall impact of the Reduced Permit Term Alternative on bank swallow would be similar to that of the No Action/No Project Alternative, and based on the significance criteria in Section 9.2.1, impacts from the Reduced Permit Term Alternative would have a ***Less Than Significant Adverse*** effect on bank swallow when compared to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Reduced Permit Term Alternative would generally be the same as described for the No Action/No Project Alternative in Section 9.2.2.

As discussed previously in this impact section, if Preserve covered activities occur near known nest colonies, the Reduced Permit Term Alternative would result in greater direct and indirect impacts to potentially suitable bank swallow habitat within the Planning Area than under the No Action/No Project Alternative. However, the SSHCP Conservation Strategy implemented under the Reduced Permit Term Alternative would include AMMs, such as stream and Preserve Setbacks, that would reduce indirect impacts to remaining potentially suitable habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy implemented during the first 30 years of the Reduced Permit Term Alternative also would include Biological Goals and Measureable Objectives that would benefit conservation of bank swallow. The Reduced Permit Term Alternative would preserve more acres of bank swallow habitat than under the No Action/No Project Alternative. In addition, the modeled habitat preservation that would occur during the 30-year permit term of the Reduced Permit Term Alternative would occur within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action /No Project Alternative. The individual Preserves in the Preserve System under the Reduced Permit Term Alternative would also be subject to the Biological Goals and Measurable Objectives of the SSHCP applicable to bank swallow and would be operated under a comprehensive preserve management program.

The incremental effects of the Reduced Permit Term Alternative would not be significantly different than the incremental effects that would occur under the No Action/No Project Alternative. The Reduced Permit Term Alternative would result in **No Cumulative Effect** to bank swallow compared to the No Action/No Project Alternative baseline condition.

9.2.4.20 Effects on Western Red Bat and Its Habitat

Habitat use, natural history, documented occurrences, and existing acres of modeled habitat in the Planning Area of western red bat are described in Appendix G.

Direct and Indirect Effects of the Alternative

The maximum anticipated direct loss of western red bat modeled habitat totals approximately 25,771 acres of modeled habitat. This exceeds the estimated loss under the No Action/No

Project Alternative of approximately 25,488 acres. The percentage of habitat remaining shown in Table 9-57 only applies to those natural land covers listed and is an underestimation of total habitat remaining. Western red bat is known to roost and forage in developed areas and those acres are not included in the analysis.

The Reduced Permit Term Alternative is expected to remove three of the existing seven occurrences of western red bat in the Planning Area, which would be equal to the occurrences that would be removed under the No Action/No Project Alternative.

Table 9-57. Direct Effects and Modeled Habitat Conservation for Western Red Bat Under the Reduced Permit Term Alternative

Modeled Habitat	Total Planning Area (acres)				
	Total Existing	Direct Effect	% of Existing Habitat Lost	Habitat Preservation	Habitat Re-establishment and/or Establishment
Foraging Habitat					
Valley Grassland	135,112	23,671	17.5%	18,589	0
Vernal Pool	4,536	413	9.1%	1,199	413
Seasonal Wetlands	2,600	111	4.3%	70	91
Freshwater Marsh	2,922	137	4.7%	100	119
Stream/Creek	2,674	122	4.6%	122	105
Open Water	2,344	165	7.0%	43	104
Mixed Riparian Scrub	1,451	194	13.4%	350	303
Swale	1,252	270	21.6%	495	216
<i>Total Foraging Habitat</i>	<i>152,891</i>	<i>25,083</i>	<i>16.4%</i>	<i>20,968</i>	<i>1,351</i>
Roosting/Foraging Habitat					
Blue Oak Woodland	9,132	9	0.1%	9	9
Mixed Riparian Woodland	5,785	197	3.4%	338	306
Blue Oak Savanna	5,637	38	0.7%	37	37
Orchards	3,646	225	6.2%	10	0
Mine Tailing Riparian Woodland	641	219	34.2%	5	0
<i>Total Roosting/Foraging Habitat</i>	<i>24,841</i>	<i>688</i>	<i>2.8%</i>	<i>399</i>	<i>352</i>
Grand Total	177,732	25,771	14.5%	21,367	1,703

Indirect effects on western red bat modeled habitat may occur under the Reduced Permit Term, which would be the same in type and character as the indirect effects analyzed for the species in Section 9.2.2. The AMMs that would be required during the permit term are discussed for the species in Section 9.2.3.

Relative to the project AMMs of the No Action/Project alternative, the implementation of SSHCP AMMs during the permit term would reduce indirect impacts on western red bat. For

example, EDGE-3 would require 50-foot setback distances between urban development and Preserves, which would not be required under the No Action/No Project Alternative, thereby increasing protection of modeled western red bat habitat from indirect impacts.

Some of the elements of the AMMs described above and in Section 9.2.3 would also be implemented under the No Action/No Project Alternative as part of standard best practices and/or regulatory requirements (see Table 2-6). However, for those AMM elements implemented across alternatives, the additional oversight and guidance provided by the SSHCP would result in the requirements of these AMMs being implemented more frequently and consistently across the Planning Area.

The temporary effects on western red bat and potential loss of individuals that may occur under the Reduced Permit Term would be the same in type and character as those analyzed qualitatively in the species impact discussion in Section 9.2.2. The AMMs that would be required during the permit term that would reduce these temporary effects on western red bat during the permit term are listed for the species in Section 9.2.3. This would result in reduced temporary impacts to western red bat when compared with the No Action/No Project Alternative, under which AMMs would not be required of development projects for the full 50-year analysis period.

The Reduced Permit Term Alternative would result in the preservation of approximately 21,367 acres of modeled habitat. This exceeds the estimated 13,729 total acres of modeled habitat preservation under the No Action/No Project Alternative. During the permit term, the Conservation Strategy would establish/re-establish a total of approximately 1,703 acres of habitat for western red bat and would implement Biological Goals and Measurable Objectives as discussed in Section 9.2.3.

Significance of Direct and Indirect Effects

The Reduced Permit Term Alternative would impact approximately 283 acres more modeled habitat for western red bat within the Planning Area than is estimated for the No Action/No Project Alternative. However, the Reduced Permit Term Alternative would preserve approximately 7,638 acres more habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included during the 30-year permit term of the Reduced Permit Term Alternative that would avoid and minimize indirect and temporary effects on western red bat individuals and habitat and provide an additional mechanism for impact avoidance and oversight.

Therefore, the overall impact of the Reduced Permit Term Alternative on western red bat would be similar to that of the No Action/No Project Alternative, and based on the significance criteria in Section 9.2.1, impacts from the Reduced Permit Term Alternative would have a ***Less than Significant Adverse*** effect on western red bat when compared to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Reduced Permit Term Alternative would generally be the same as described for the No Action/No Project Alternative in Section 9.2.2.

As discussed previously in this impact section, the Reduced Permit Term Alternative would result in direct impacts to approximately 25,771 acres of western red bat modeled habitat within the Planning Area, which is approximately 283 acres greater than the total impact under the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Reduced Permit Term Alternative would include AMMs, such as requirements to direct stormwater away from Preserves, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy implemented during the first 30 years of the Reduced Permit Term Alternative also would include Biological Goals and Measureable Objectives specific to the conservation of western red bat. The Reduced Permit Term Alternative would Preserve approximately 7,638 more acres of western red bat habitat than under the No Action/No Project Alternative. In addition, the modeled habitat preservation that would occur during the 30-year permit term of the Reduced Permit Term Alternative would occur within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action /No Project Alternative. The individual Preserves in the Preserve System under the Reduced Permit Term Alternative would also be subject to the Biological Goals and Measurable Objectives of the SSHCP applicable to western red bat and would be operated under a comprehensive preserve management program.

The incremental effects of the Reduced Permit Term Alternative would not be significantly different than the incremental effects that would occur under the No Action/No Project Alternative. The Reduced Permit Term Alternative would result in ***No Cumulative Effect*** to western red bat compared to the No Action/No Project Alternative baseline condition.

9.2.4.21 Effects on American Badger and Its Habitat

Habitat use, natural history, known occurrences, and existing acres of modeled habitat in the Planning Area of American badger are described in Appendix G.

Direct and Indirect Effects of the Alternative

The maximum anticipated direct loss of American badger modeled habitat totals approximately 24,503 acres (Table 9-58). This exceeds the 24,192 acres estimated under the No Action/No Project Alternative.

The Reduced Permit Term Alternative is not expected to remove any of the existing nine occurrences of American badger in the Planning Area; no occurrences would be removed under the No Action/No Project Alternative.

Table 9-58. Direct Effects and Modeled Habitat Conservation for American Badger Under the Reduced Permit Term Alternative

Modeled Habitat	Total Planning Area (acres)				
	<i>Total Existing</i>	<i>Direct Effect</i>	<i>% of Existing Habitat Lost</i>	<i>Habitat Preservation</i>	<i>Habitat Re-establishment and/or Establishment</i>
Valley Grassland	135,112	23,671	17.5%	18,589	0
Blue Oak Savanna	5,637	38	0.7%	37	37
Vernal Pool	4,536	413	9.1%	1,199	413
Seasonal Wetland	2,600	111	4.3%	70	91
Swale	1,252	270	21.6%	495	216
GRAND TOTAL	149,137	24,503	16.4%	20,390	757

Indirect effects on American badger modeled habitat may occur under the Reduced Permit Term, which would be the same in type and character as the indirect effects analyzed for the species in Section 9.2.2. The AMMs that would be required during the permit term are discussed for the species in Section 9.2.3.

Relative to the project AMMs of the No Action/Project Alternative, the implementation of SSHCP AMMs during the permit term would reduce indirect impacts on American badger. For example, EDGE-3 would require 50-foot setback distances between urban development and Preserves, which would not be required under the No Action/No Project Alternative, thereby increasing protection of modeled American badger habitat from indirect impacts.

Some of the elements of the AMMs described previously and in Section 9.2.3 would also be implemented under the No Action/No Project Alternative as part of standard best practices

and/or regulatory requirements (see Table 2-6). However, for those AMM elements implemented across alternatives, the additional oversight and guidance provided by the SSHCP would result in the requirements of these AMMs being implemented more frequently and consistently across the Planning Area.

The temporary effects on American badger and potential loss of individuals that may occur under the Reduced Permit Term would be the same in type and character as those analyzed qualitatively in the species impact discussion in Section 9.2.2. The AMMs that would be required during the permit term that would reduce these temporary effects on American badger during the permit term are listed for the species in Section 9.2.3. This would result in reduced temporary impacts to American badger when compared with the No Action/No Project Alternative, under which AMMs would not be required of development projects for the full 50-year analysis period.

The Reduced Permit Term Alternative would include the preservation of approximately 20,390 acres of habitat. This modeled habitat preservation is greater than the estimated 13,489 total acres of modeled habitat preservation under the No Action/No Project Alternative. During the permit term, the Conservation Strategy would establish/re-establish a total of approximately 757 acres of habitat and would implement biological objectives as discussed in Section 9.2.3.

Significance of Direct and Indirect Effects

The Reduced Permit Term Alternative would impact approximately 311 acres more modeled habitat for American badger within the Planning Area than is estimated for the No Action/No Project Alternative. However, the Reduced Permit Term Alternative would preserve approximately 6,901 acres more habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included during the 30-year permit term of the Reduced Permit Term Alternative that would avoid and minimize indirect and temporary effects on American badger individuals and habitat and provide an additional mechanism for impact avoidance and oversight.

Therefore, the overall impact of the Reduced Permit Term Alternative on American badger would be similar to that of the No Action/No Project Alternative, and based on the significance criteria in Section 9.2.1, impacts from the Reduced Permit Term Alternative would have a **Less Than Significant Adverse** effect on American badger when compared to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Reduced Permit Term Alternative would generally be the same as described for the No Action/No Project Alternative in Section 9.2.2.

As discussed previously in this impact section, the Reduced Permit Term Alternative would result in direct and indirect impacts to approximately 24,503 acres of American badger modeled habitat within the Planning Area, which is approximately 311 acres greater than the total impact under the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Reduced Permit Term Alternative would include AMMs, such as requirements to direct stormwater away from Preserves, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy implemented during the first 30 years of the Reduced Permit Term Alternative also would include Biological Goals and Measureable Objectives specific to the conservation of American badger. The Reduced Permit Term Alternative would Preserve approximately 6,901 acres more American badger habitat than under the No Action/No Project Alternative. In addition, the modeled habitat preservation that would occur during the 30-year permit term of the Reduced Permit Term Alternative would occur within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action/No Project Alternative. The individual Preserves in the Preserve System under the Reduced Permit Term Alternative would also be subject to the Biological Goals and Measurable Objectives of the SSHCP applicable to American badger and would be operated under a comprehensive preserve management program.

The incremental effects of the Reduced Permit Term Alternative would not be significantly different than the incremental effects that would occur under the No Action/No Project Alternative. The Reduced Permit Term Alternative would result in **No Cumulative Impact** to American badger compared to the No Action/No Project Alternative baseline condition.

9.2.4.22 Effects on Sanford's Arrowhead and Its Habitat

The habitat requirements and known occurrences of Sanford's arrowhead in the Planning Area are described in Appendix G.

Direct and Indirect Effects of the Alternative

The maximum anticipated loss of Sanford's arrowhead modeled habitat totals approximately 11,835 acres (Table 9-59). The majority of that effect would be on valley grasslands within the UDA. This loss of modeled habitat is less than the estimated loss of 12,065 acres under the No Action/No Project Alternative.

Table 9-59. Direct Effects and Modeled Habitat Conservation for Sanford's Arrowhead Under the Reduced Permit Term Alternative

Modeled Habitat	Total Planning Area (acres)				
	<i>Total Existing</i>	<i>Direct Effect</i>	<i>% of Existing Habitat Lost</i>	<i>Habitat Preservation</i>	<i>Habitat Re-establishment and/or Establishment</i>
Freshwater Marsh	2,044	113	5.5%	82	98
Open Water	1,086	72	6.6%	19	45
Seasonal Wetlands	1,425	75	5.3%	47	62
Stream/Creek	893	87	9.7%	87	75
Valley Grassland	47,375	11,488	24.2%	6,516	0
Grand Total	52,823	11,835	22.4%	6,751	280

The Reduced Permit Term Alternative is expected to remove 4 of the existing 64 occurrences of Sanford's arrowhead in the Planning Area, which would be 2 fewer occurrences than would be removed under the No Action/No Project Alternative.

Indirect effects on Sanford's arrowhead modeled habitat may occur under the Reduced Permit Term, which would be the same in type and character as the indirect effects analyzed for the species in Section 9.2.2. The AMMs that would be required during the permit term are discussed for the species in Section 9.2.3.

Relative to the project AMMs of the No Action/Project alternative, the implementation of SSHCP AMMs during the permit term would reduce indirect impacts on Sanford's arrowhead. For example, STREAM-1, STREAM-2, and STREAM-3 would increase setback distances on Laguna Creek, UDA streams, and minor tributaries over what would be required under the No Action/No Project Alternative. These setbacks would minimize the indirect impact to stream and creek modeled habitat for Sanford's arrowhead.

Some of the elements of the AMMs described previously and in Section 9.2.3 would also be implemented under the No Action/No Project Alternative as part of standard best practices and/or regulatory requirements (see Table 2-6). However, for those AMM elements implemented across alternatives, the additional oversight and guidance provided by the SSHCP

would result in the requirements of these AMMs being implemented more frequently and consistently across the Planning Area.

The temporary effects on Sanford's arrowhead and potential loss of individuals that may occur under the Reduced Permit Term would be the same in type and character as those analyzed qualitatively in the species impact discussion in Section 9.2.2. The AMMs that would be required during the permit term that would reduce these temporary effects on Sanford's arrowhead during the permit term are listed for the species in Section 9.2.3. This would result in reduced temporary impacts to Sanford's arrowhead when compared with the No Action/No Project Alternative, under which AMMs would not be required of development projects for the full 50-year analysis period.

The Reduced Permit Term Alternative would include preservation of approximately 6,751 acres of habitat. This modeled habitat preservation is more than the estimated 5,907 acres of modeled habitat preservation under the No Action/No Project Alternative. During the permit term, the Conservation Strategy would establish/re-establish a total of approximately 280 acres of habitat for Sanford's arrowhead and would implement Biological Goals and Measureable Objectives as discussed in Section 9.2.3.

Significance of Direct and Indirect Effects

The Reduced Permit Term Alternative would impact approximately 230 acres less modeled habitat for Sanford's arrowhead within the Planning Area than is estimated for the No Action/No Project Alternative. Additionally, the Reduced Permit Term Alternative would preserve approximately 844 acres more habitat than what is estimated for the No Action/No Project Alternative. The Preserve System would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included during the 30-year permit term of the Reduced Permit Term Alternative that would avoid and minimize indirect and temporary effects on Sanford's arrowhead individuals and habitat and provide an additional mechanism for impact avoidance and oversight.

Therefore, the Reduced Permit Term Alternative would have less impact, and using the significance criteria presented in Section 9.2.1 and the impact analysis provided previously, the Reduced Permit Term Alternative would have a **Minor Beneficial** effect on Sanford's arrowhead when comparing the Reduced Permit Term Alternative to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Reduced Permit Term Alternative would generally be the same as described for the No Action/No Project Alternative in Section 9.2.2.

As discussed previously in this impact section, the Reduced Permit Term Alternative would result in direct and indirect impacts to approximately 11,835 acres of Sanford's arrowhead modeled habitat within the Planning Area, which is approximately 230 acres less than the total impact under the No Action/No Project Alternative. In addition, the SSHCP Conservation Strategy implemented under the Reduced Permit Term Alternative would include AMMs, such as requirements to direct stormwater away from Preserves, that would reduce indirect impacts to remaining modeled habitat compared to what is anticipated from the No Action/No Project Alternative.

The Conservation Strategy implemented during the first 30 years of the Reduced Permit Term Alternative also would include Biological Goals and Measureable Objectives specific to the conservation of Sanford's arrowhead. However, the Reduced Permit Term Alternative would preserve approximately 844 acres more Sanford's arrowhead habitat than under the No Action/No Project Alternative. In addition, the modeled habitat preservation that would occur during the 30-year permit term of the Reduced Permit Term Alternative would occur within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action /No Project Alternative. The individual Preserves in the Preserve System under the Reduced Permit Term Alternative would also be subject to the Biological Goals and Measurable Objectives of the SSHCP applicable to Sanford's arrowhead and would be operated under a comprehensive preserve management program.

The incremental effects of the Reduced Permit Term Alternative would result in less of an incremental contribution to the cumulative impact within the Planning Area for Sanford's arrowhead than would occur under the No Action/No Project Alternative. Therefore, the Reduced Permit Term Alternative does not result in a cumulatively considerable contribution to significant adverse cumulative impacts to this species. The Reduced Permit Term Alternative would result in a **Minor Beneficial Cumulative** effect for Sanford's arrowhead compared to the No Action/No Project Alternative baseline condition.

9.2.4.23 Effects on Special-Status Plant Species Not Covered by the SSHCP and Their Habitat

The habitat requirements, documented occurrences, and existing acres of potentially suitable habitat in the Planning Area for the 18 special-status plant species that are not covered by the SSHCP are described in Appendix G.

Direct and Indirect Effects of the Alternative

The maximum habitat loss under Reduced Permit Term Alternative is expected to be less than under the No Action/No Project Alternative for nine species (watershield, fleshy owl's clover, Brandegee's clarkia, Peruvian dodder, woolly rose-mallow, Delta tule pea, marsh skullcap, side-flowering skullcap, and Suisun Marsh aster) and greater for the remaining nine species (bristly sedge, Bolander's water hemlock, Tuolumne button-celery, stinkbells, Northern California black walnut, Heckard's pepper-grass, Mason's lilaeopsis, Delta mudwort, and saline clover) (Table 9-60).

Indirect effects on potentially suitable special-status plant species habitat may occur under the Reduced Permit Term, which would be the same in type and character as the indirect effects analyzed for the species in Section 9.2.2. The AMMs that would be required during the permit term are discussed for the species in Section 9.2.3.

Relative to the project AMMs of the No Action/Project alternative, the implementation of SSHCP AMMs during the permit term would reduce indirect impacts on special-status plant species. For example, STREAM-1, STREAM-2, and STREAM-3 would increase setback distances on Laguna Creek, UDA streams, and minor tributaries over what would be required under the No Action/No Project Alternative. These setbacks would minimize the indirect impact to stream and creek modeled habitat for special-status plant species.

Some of the elements of the AMMs described previously and in Section 9.2.3 would also be implemented under the No Action/No Project Alternative as part of standard best practices and/or regulatory requirements (see Table 2-6). However, for those AMM elements implemented across alternatives, the additional oversight and guidance provided by the SSHCP would result in the requirements of these AMMs being implemented more frequently and consistently across the Planning Area.

The temporary effects on special-status plant species and potential loss of individuals that may occur under the Reduced Permit Term would be the same in type and character as those analyzed qualitatively in the species impact discussion in Section 9.2.2. The AMMs that would be required during the permit term that would reduce these temporary effects on special-status plant species during the permit term are listed for the species in Section 9.2.3. This would result in reduced temporary impacts to special-status plant species when compared with the No Action/No Project Alternative under which AMMs would not be required of development projects for the full 50-year analysis period.

Table 9-60. Direct Effects for Special-Status Plant Species Not Covered by the SSHCP Under the Reduced Permit Term Alternative

Total Planning Area (acres)								
Plant Name (status)*	Potentially Suitable Habitat loss (direct and indirect) Reduced Permit Term Alternative							
	Vernal Wetlands	Non- vernal Wetlands	Riparian	Blue Oak Woodland/ Savanna	Valley Grassland	Total Loss	Potentially Suitable Habitat Preservation	Potentially Suitable Habitat Re-establishment/ Establishment
Watershield (State S2)	—	248	—	—	—	248	170	210
Bristly sedge (State S2)	683	248	—	—	—	931	1,864	839
Fleshy owl's clover (Federal - T; State - E)	—	248	—	—	—	248	170	210
Brandegee's clarkia (State S2)	—	—	—	47	—	47	46	46
Bolander's water-hemlock (State S2)	683	248	610	—	—	1,541	2,557	1,448
Peruvian dodder (CRPR 2B.2)	—	248	—	—	—	248	170	210
Tuolumne Button-celery (State S2)	683	—	—	47	—	730	1,740	675
Stinkbells (State S3)	—	—	—	47	23,671	23,718	18,635	46
Woolly rose-mallow (State S2)	—	248	—	—	—	248	170	210
Northern California black walnut (State S1)	—	—	610	—	—	610	693	609
Delta tule pea (State S2)	—	248	—	—	—	248	170	210
Heckard's pepper-grass (State S2)	—	—	—	—	23,671	23,671	18,589	0
Mason's lilaeopsis (State S2)	—	248	610	—	—	858	863	819
Delta mudwort (State S2)	—	248	610	—	—	858	863	819
Marsh skullcap (State S1)	—	248	—	—	—	248	170	210
Side-flowering skullcap (State S1)	—	248	—	—	—	248	170	210
Suisun marsh aster (State S2)	—	248	—	—	—	248	170	210
Saline clover (State S2)	683	248	—	—	23,671	24,602	20,453	839

For species with state or federal status no CRPR listing used.

* **Status Definitions**

Federal

E = listed as endangered under the ESA

T = listed as threatened under the ESA

State

E = listed as endangered under CESA

T = listed as threatened under CESA

S1 = Critically Imperiled by the State

S2 = Imperiled by the State

S3 = Vulnerable by the State

California Rare Plant Rank (CRPR)

2B = Rare, threatened, or endangered in California, but more common elsewhere

CRPR Threat Ranks

0.2 = Moderately threatened in California

(moderate degree/immediacy of threat)

The Reduced Permit Term Alternative would preserve and establish/re-establish habitat for special-status plants not covered by the SSHCP. In addition, during the permit term, the Conservation Strategy would implement Biological Goals and Measurable Objectives for covered species that would benefit non-covered plant species as discussed in Section 9.2.3. The acres of modeled habitat preservation under the Reduced Permit Term Alternative are greater than the acres preserved under the No Action/No Project Alternative for 17 species. Only for Brandegee's clarkia would the Reduced Permit Term Alternative result in fewer acres preserved than under the No Action/No Project Alternative.

Critical habitat has been designated for fleshy owl's clover south of Dry Creek at the extreme southern edge of the Planning Area. The Reduced Permit Term Alternative is not expected to impact any of this designated Critical Habitat for fleshy owl's clover.

Significance of Direct and Indirect Effects

The Reduced Permit Term Alternative would impact a greater number of acres of habitat for nine species-status plant species (bristly sedge, Bolander's water hemlock, Tuolumne button-celery, stinkbells, Northern California black walnut, Heckard's pepper-grass, Mason's lilaeopsis, Delta mudwort, and saline clover) within the Planning Area than is estimated for the No Action/No Project Alternative, and fewer acres for the remaining nine species (watershield, fleshy owl's clover, Brandegee's clarkia, Peruvian dodder, woolly rose-mallow, Delta tule pea, marsh skullcap, side-flowering skullcap, and Suisun Marsh aster).

However, the Reduced Permit Term Alternative would preserve more habitat than what is estimated for the No Action/No Project Alternative for all special-status plant species, with the exception of Brandegee's clarkia. The Preserve System implemented during the permit term would provide some larger Preserves and increased Preserve connectivity, improving ecosystem function. Multiple AMMs are also included in the Reduced Permit Term Alternative that would avoid and minimize indirect and temporary effects on special-status plant species individuals and habitat and provide an additional mechanism for impact avoidance and oversight.

Therefore, the overall impact of the Reduced Permit Term Alternative on bristly sedge, Brandegee's clarkia, Bolander's water hemlock, Tuolumne button-celery, stinkbells, Northern California black walnut, Heckard's pepper-grass, Mason's lilaeopsis, Delta mudwort, and saline clove would be similar to that of the No Action/No Project Alternative, and based on the significance criteria in Section 9.2.1, impacts from the Reduced Permit Term Alternative would have a **Less Than Significant Adverse** effect on these species when compared to the No Action/No Project Alternative baseline condition.

Therefore, the Reduced Permit Term Alternative would have less impact on watershield, fleshy owl's clover, Peruvian dodder, woolly rose-mallow, Delta tule pea, marsh skullcap, side-flowering skullcap, and Suisun Marsh aster, and using the significance criteria presented in Section 9.2.1 and the impact analysis provided previously, the Reduced Permit Term Alternative would have a **Significant Beneficial** effect on these species when comparing the Reduced Permit Term Alternative to the No Action/No Project Alternative baseline condition.

Cumulative Effect of the Alternative

The contribution of past, present, and reasonably foreseeable future projects to cumulative effects under the Reduced Permit Term Alternative would generally be the same as described for the No Action/No Project Alternative in Section 9.2.2.

As discussed previously in this impact section, the Reduced Permit Term Alternative would impact a greater number of acres of habitat for 9 species-status plant species (bristly sedge, Bolander's water hemlock, Tuolumne button-celery, stinkbells, Northern California black walnut, Heckard's pepper-grass, Mason's lilaeopsis, Delta mudwort, and saline clover) within the Planning Area than is estimated for the No Action/No Project Alternative and fewer acres for the remaining 9 species (watershield, fleshy owl's clover, Brandegee's clarkia, Peruvian dodder, woolly rose-mallow, Delta tule pea, marsh skullcap, side-flowering skullcap, and Suisun Marsh aster).

The Conservation Strategy implemented during the 30-year permit term of the Reduced Permit Term Alternative would include Biological Goals and Measureable Objectives that would benefit special-status plant species habitat. The Reduced Permit Term Alternative would preserve more habitat than what is estimated for the No Action/No Project Alternative for all special-status species with the exception of Brandegee's clarkia. In addition, the preservation under the Reduced Permit Term Alternative would be within a systematic, coordinated Preserve System implemented at the watershed scale. The Preserve System would result in more contiguous and more connected Preserves than is anticipated from the project-by-project mitigation under the No Action /No Project Alternative. The individual Preserves in the Preserve System under the Reduced Permit Term Alternative would also be subject to the Biological Goals and Measurable Objectives of the SSHCP applicable to special-status plant species and would be operated under a comprehensive preserve management program.

The incremental effects of the Reduced Permit Term Alternative on bristly sedge, Brandegee's clarkia, stinkbells, Northern California black walnut, Heckard's pepper-grass, Mason's lilaeopsis, Delta mudwort, and saline clover would not be significantly different than the incremental effects that would occur under the No Action/No Project Alternative. The Reduced Permit Term Alternative would result in **No Cumulative Effect** to these species compared to the No Action/No Project Alternative baseline condition. The incremental effects of the Reduced

Permit Term Alternative would result in less of an incremental contribution to the cumulative impact within the Planning Area for watershield, fleshy owl's clover, Bolander's water-hemlock, Peruvian dodder, Tuolumne button-celery, Woolly rose-mallow, Delta tule pea, marsh skullcap, side-flowering skullcap, and Suisun Marsh aster than would occur under the No Action/No Project Alternative. However, at the scale of the study area, the incremental difference in impacts under the Proposed Action/Proposed Project Alternative compared to impacts under the No Action/No Project Alternative is not discernibly different. Therefore, the Reduced Permit Term Alternative would result in **No Cumulative Effect** for these species compared to the No Action/No Project Alternative baseline condition.

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CHAPTER 10 – AQUATIC RESOURCES

Chapter 8 discussed the Planning Area’s Aquatic land cover types as natural communities that provide habitat for native species, and Chapter 9 discussed the Planning Area’s Aquatic land cover types as modeled habitat for special-status species. However, Chapter 10 will discuss and analyze the Aquatic land cover types within the context of the statutes, regulations, and local policies that regulate aquatic resources.

As discussed in Chapter 8, the Planning Area includes 10 Aquatic land cover types that are composed of, or contain, aquatic features (Table 8-1). For the purposes of the Chapter 10 analysis, these 10 land cover types are considered potentially jurisdictional aquatic resources under the Clean Water Act (CWA). Chapter 10 will analyze these 10 land covers within 3 aquatic resource categories: (1) Wetlands, (2) Other Waters, and (3) Riparian. As discussed in Section 10.1.1, Regulatory Framework, the Wetlands and the Other Waters land covers include **potentially jurisdictional** waters of the United States ~~that are~~ regulated under CWA Section 404 (CWA 404) and CWA Section 401 (CWA 401). The 10 Aquatic land covers also include waters of the state that are regulated under the Porter-Cologne Water Quality Control Act (Porter-Cologne Act) and include riparian areas, waterways, streambeds, lakes, and other aquatic resources that are regulated under the California Fish and Game Code.

Chapter 10 describes the existing conditions and presents the environmental effects of each Environmental Impact Statement/Environmental Impact Report (EIS/EIR) alternative on the Planning Area’s Aquatic land covers and on their functions and their services. “Functions” are the physical, chemical, and biological processes that occur in ecosystems. “Services” are the benefits that human populations receive from aquatic ecosystem functions (33 CFR 332.2).

Information and analysis of aquatic resources is provided in this chapter to assist the U.S. Army Corps of Engineers (USACE), the Central Valley Regional Water Quality Control Board (RWQCB), and the California Department of Fish and Wildlife (CDFW) in the decisions to be made (see Sections 1.5 and 1.6).

10.1 AFFECTED ENVIRONMENT/ENVIRONMENTAL SETTING

10.1.1 Regulatory Framework

To determine the scope of analysis needed in this chapter and to identify permits and other authorizations that must be obtained in implementing the EIS/EIR alternatives (40 CFR 1502.25), the lead agencies reviewed existing laws, regulations, plans, and policies. This section includes a summary of federal, state, and local statutes, regulations, and policies that apply to aquatic resources, including wetlands and other waters of the United States and state and riparian land covers that are present within the Planning Area.

Federal Statutes and Regulation

Clean Water Act Section 404 Implementation in the Planning Area

CWA 404 regulates the discharge of dredged and fill materials into the waters of the United States as defined in the Code of Federal Regulations (Title 33, Section 328.3 and Title 40, Section 230.3). Permits are issued under CWA 404 by USACE to projects and activities that discharge dredge or fill material into wetlands and other waters of the United States. USACE delineates and verifies waters of the United States, including wetlands at each project or activity site, through jurisdictional determinations (33 CFR 328.3, 40 CFR 230.3).

USACE evaluates the following two types of permits under CWA 404: (1) general permits (nationwide, regional, and programmatic), and (2) individual permits (letters of permission and standard permits). General permits are issued by USACE on a nationwide or regional basis for a category or categories of activities when (1) those activities are substantially similar in nature and cause only minimal individual and cumulative environmental impact; or (2) the general permit would result in avoiding unnecessary duplication of the regulatory control exercised by another federal, state, or local agency provided it has been determined that the environmental consequences of the action are individually and cumulatively minimal (33 CFR 322.2[f]). Individual permits are evaluated on a case-by-case basis for activities that do not qualify for a general permit (i.e., that may have more than a minimal adverse environmental impact).

For discharge of dredged or fill material authorized under CWA 404, adverse impacts to waters of the United States must be avoided and minimized to the extent practicable. For unavoidable impacts, compensatory mitigation ~~is~~ **may be** required to replace the loss of waters of the United States functions. In 2008, USACE and the U.S. Environmental Protection Agency jointly issued regulations for compensatory mitigation titled *Compensatory Mitigation for Losses of Aquatic Resources: Final Rule, 33 CFR Parts 325 and 332* (2008 Compensatory Mitigation Rule) (73 FR 19594–19705). The term “compensatory mitigation” refers to the restoration, establishment,¹ enhancement, and/or preservation of wetlands, streams, or other aquatic resources specifically for the purpose of offsetting losses to these aquatic resources caused by authorized discharges of dredged or fill material into waters of the United States. The 2008 Compensatory Mitigation Rule seeks to improve the planning, implementation, and management of wetland and stream compensatory mitigation projects by emphasizing a watershed approach in selecting compensatory mitigation project locations, requiring measurable and enforceable ecological performance standards with regular monitoring, and specifying the components of a complete compensatory mitigation plan.

¹ Note that in the context of this Plan, the word “establish” is synonymous with “create.”

If compensatory mitigation is required to offset unavoidable impacts to aquatic resources, the amount of compensatory mitigation must be sufficient to the extent practicable to replace lost aquatic resource functions and services, ~~to the extent practicable~~ (33 CFR 332.3[f][1]). In cases where functional or condition assessments or other suitable metrics are not used, a minimum one-to-one acreage or one-to-one linear foot compensation ratio must be used.

~~In addition to setting minimum compensatory mitigation amounts, the~~ The 2008 Compensatory Mitigation Rule establishes equivalent standards for types of aquatic resource compensatory mitigation ~~projects~~ regardless of whether they are conducted by mitigation banks, in-lieu fee programs, or permittees (33 CFR 332.2[b]). There are the following three ~~forms~~ general options for compensatory mitigation:

1. **Mitigation Bank:** A site or suite of sites where resources (e.g., wetlands, streams, riparian areas) are restored, established, enhanced, and/or preserved for to provide compensatory mitigation for impacts authorized by U.S. Department of the Army permits. In general, a mitigation bank sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the mitigation bank sponsor. The operation and use of a mitigation bank are governed by a mitigation banking instrument.
2. **In-Lieu Fee Program:** A program that conducts the restoration, establishment, enhancement, and/or preservation of aquatic resources through funds paid to a governmental agencies or non-profit natural resources management entity by permittees to satisfy compensatory mitigation requirements for their USACE permits. Similar to a mitigation bank, an in-lieu fee program sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the in-lieu program sponsor. The operation and use of an in-lieu fee program are governed by an in-lieu fee program instrument.
3. **CWA-Permittee-Responsible Mitigation:** An aquatic resource restoration, establishment, enhancement, and/or preservation activity undertaken by the permittee (or an authorized agent or contractor) to provide compensatory mitigation for which the permittee retains full responsibility.

Use of mitigation banks and in-lieu fee programs is the preferred form of compensatory mitigation under the 2008 Compensatory Mitigation Rule since they usually involve the consolidation of compensatory mitigation projects where ecologically appropriate and the use of a watershed approach, consolidation of resources, ~~provide financial planning and scientific expertise (which often is not practical for permittee responsible mitigation projects)~~, reduction of temporal losses of functions, and reduction of uncertainty over mitigation project success. The 2008 Compensatory Mitigation Rule requires the district engineer to consider compensatory

mitigation options in the following order: (1) Credits from a mitigation bank; (2) credits from an in-lieu fee program; (3) permittee-responsible mitigation under a watershed approach; (4) permittee-responsible mitigation through on-site and in-kind mitigation; and (5) permittee-responsible mitigation through off-site and/or out of kind mitigation. However, this preference hierarchy may be overridden in cases where forms of mitigation lower on the preference hierarchy are determined to better serve the aquatic resource needs of a watershed and are documented in the administrative record.

Clean Water Act Section 401

To comply with CWA 401, any project or activity that may result in a discharge of a pollutant into waters of the United States under CWA 404 must obtain a certification that the discharge will comply with the state's applicable effluent limitations and water quality standards. In California, the U.S. Environmental Protection Agency has delegated the authority to grant water quality certifications to the State Water Resources Control Board, which are typically processed by RWQCBs with local jurisdiction. The Planning Area is located within the jurisdiction of the Central Valley RWQCB. A water quality certification requires the project or activity to evaluate its potential impacts, implement appropriate measures to protect water quality, and comply with regulatory water quality standards. The issuance of CWA 404 authorizations by USACE for the discharge of dredged and fill materials into waters of the United States is a typical federal action that requires CWA 401 water quality certification.

Clean Water Act Section 402

The National Pollutant Discharge Elimination System (NPDES) program under CWA Section 402 (CWA 402) regulates the discharge of waste into waters of the United States. NPDES permit regulations apply to broad categories of discharges, including point-source municipal wastewater discharges and nonpoint-source stormwater runoff. NPDES permits typically identify the following:

- Effluent and receiving-water limits on allowable concentrations and/or mass emissions of pollutants contained in the discharge
- Prohibitions on discharges not specifically allowed under the permit
- Provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities

The California State Water Resources Control Board administers the NPDES permit program in California. Projects that disturb 1 or more acres of soil must obtain coverage under the state's NPDES General Permit for Discharges of Storm Water Associated with Construction Activity. A stormwater pollution prevention plan must be developed and implemented to provide specific construction-related best management practices (BMPs) to prevent soil erosion and loss of

topsoil. The required components and BMPs commonly included in a stormwater pollution prevention plan are described in Chapter 7.

Executive Order 11990, Protection of Wetlands

Executive Order 11990 (President Carter 1977), Protection of Wetlands, states that measures should be taken to “avoid to the extent possible the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative.”

State Statutes and Regulations

Porter-Cologne Water Quality Control Act

The Porter-Cologne Act is California’s primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater. The Porter-Cologne Act grants the State Water Resources Control Board and RWQCBs power to protect water quality. The Porter-Cologne Act grants the State Water Resources Control Board and RWQCBs authority to adopt plans and policies, regulate discharges of waste to surface and groundwater, regulate waste disposal sites, and require cleanup of discharges of hazardous materials and other pollutants.

The RWQCBs’ jurisdiction includes areas that meet the definition of “waters of the state,” which includes areas that are also waters of the United States. The waters of the state are defined as any surface water or groundwater, including saline waters, within the boundaries of the state. The RWQCBs have the discretion to take jurisdiction over areas not under the jurisdiction of CWA 404, provided the areas meet the definition of “waters of the state.”

California Fish and Game Code, Section 1602 (Lake or Streambed Alteration Agreements)

The California Fish and Game Code (Section 1602) requires any entity to notify CDFW before beginning any project or activity that may substantially divert or obstruct the natural flow of or substantially change or use any material from the bed, channel, or bank of any river, stream, or lake. If CDFW determines that the activity may substantially adversely affect fish and wildlife resources, a Lake or Streambed Alteration Agreement will be prepared.

Local Policies and Regulations

Sacramento County General Plan of 2005–2030

The Sacramento County General Plan of 2005–2030 (Sacramento County General Plan) provides a broad framework and direction for land use planning in Sacramento County. The Sacramento County General Plan contains a set of goals, policies, and programs that address important

community issues and natural resource protection. It is the basis for land use and public policy decisions made by the Board of Supervisors and other policy makers. As a long-term guide for future growth, the Sacramento County General Plan helps both Sacramento County leaders and residents make decisions about development projects.

The Sacramento County General Plan Conservation Element (Sacramento County 2011) includes goals and policies related to wetlands, waters of the United States and state, and riparian habitat. Applicable policies include the following (Sacramento County 2011):

Policy CO-58: Ensure no net loss of wetlands, riparian woodlands, and oak woodlands.

Policy CO-59: Ensure mitigation occurs for any loss of or modification to the following types of acreage and habitat function:

- vernal pools,
- wetlands,
- riparian,
- native vegetative habitat, and
- special status species habitat.

Policy CO-63: Vernal pools, wetlands, and streams within identified preserves shall not be drained, excavated, or filled for the purpose of converting the land to another use. If fill or modification is required for Drainage Master Plans, stormwater quality or levee maintenance, creation or restoration of an equal amount must occur within the boundaries of the preserve to achieve no net loss consistent with policy CO-58.

Policy CO-83: Preserve a representative portion of vernal pool resources across their range by protecting vernal pools on various geologic landforms, vernal pools that vary in depth and size, and vernal pool complexes of varying densities, in order to maintain the ecological integrity of a vernal pool ecosystem.

Policy CO-84: Ensure that vernal pool preserves are large enough to protect vernal pool ecosystems that provide intact watersheds and an adequate buffer, have sufficient number and extent of pools to support adequate species populations and a range of vernal pool types.

Policy CO-85: Utilize proper vernal pool restoration techniques as approved by USFWS [U.S. Fish and Wildlife Service], CDFW, and USACE.

Policy CO-86: Limit land uses within established preserves to activities deemed compatible with maintenance of the vernal pool resource, which may include ranching, grazing, scientific study, and education.

Policy CO-89: Protect, enhance and maintain riparian habitat in Sacramento County.

Policy CO-111: Channel modifications shall retain wetland and riparian vegetation whenever possible or otherwise recreate the natural channel consistent with the historical ecological integrity of the stream or river.

Policy CO-115: Provide setbacks along stream corridors and stream channels to protect riparian habitat functions:

- A functional setback of at least 100 feet and measured from the outside edge of the stream bank should be retained on each side of a stream corridor that prohibits development or agricultural activity. This buffer is necessary to protect riparian functions by allowing for the filtering of sediment, pesticides, phosphorus and nitrogen, organic matter and other contaminants that are known to degrade water quality. This buffer also provides for the protection of vegetation along the stream bank which provides bank stability, erosion control and flood attenuation.
- A transitional setback of at least 50 feet in width beyond the functional buffer should be retained along all stream corridors. This buffer is necessary to protect hydrogeomorphic functions that regulate water temperature, regulate micro-climate, maintain channel complexity and retain hydrologic flow regimes. This buffer also provides corridors to facilitate the movement of wildlife.
- An extended setback of at least 50 feet in width beyond the transitional setback should be retained along all stream corridors. This setback will allow for recreational uses such as bike, pedestrian and/or equestrian trails and will allow for the placement of infrastructure such as water and sewer lines.

Policy CO-124: Maintain and manage rivers and streams to encourage special status species.

2030 Galt General Plan: Policy Document

Galt's *2030 Galt General Plan: Policy Document* (Galt General Plan) (Galt 2009a) contains goals and policies in the Conservation and Open Space Element regarding protection and management of wetlands, waters of the United States and state, and riparian habitat. Applicable policies include the following:

Policy COS-1.10: Ecological Features Retention: The City shall retain to the extent feasible the ecological features of the creeks, sloughs, and rivers in their natural state.

Policy COS-1.11: Riparian Corridor Protection: The City shall endeavor to protect, preserve, and improve riparian corridors.

Policy COS-1.13: No Net Loss of Wetlands: The City shall review development proposals in accordance with applicable local, state, and federal statutes protecting jurisdictional wetlands (Section 404 of CWA) and require that new developments have no net loss of existing wetland habitats.

Policy COS-2.2: Wetland and Riparian Communities Management: The City shall support the protection, restoration, expansion, and management of wetland and riparian plant communities for passive recreation, groundwater recharge, and wildlife habitat.

Policy COS-2.4: Federal, State, and Local Statutes Compliance: The City shall review development proposals in accordance with applicable federal, state, and local statutes protecting special-status species and jurisdictional wetlands.

Policy COS-3.1: Riparian Protection: The City should require the protection of existing riparian vegetation along stream courses in the city.

Policy COS-4.4: Open Space Protection: The City shall, where appropriate, permanently protect as open space areas of natural resource value, including wetlands preserves, riparian corridors, woodlands, and floodplains.

City of Rancho Cordova General Plan

The *City of Rancho Cordova General Plan* (Rancho Cordova General Plan) (Rancho Cordova 2023) contains goals and policies in the Natural Resources Element to address protection of wetlands, waters of the United States and state, and riparian habitat. Applicable policies include the following:

Policy NR.1.9: The City shall require that impacts to riparian habitats be mitigated at a no net loss of existing function and value based on field survey and analysis of the riparian habitat to be impacted. No net loss may be accomplished by avoidance of the habitat, restoration of existing habitat, or creation of new habitat, or through some combination of the above.

Policy NR.2.1: Require mitigation that provides for “no net loss” of wetlands consistent with current state and federal policies.

Policy NR.2.2: Ensure that direct and indirect effects to wetland habitats are minimized by environmentally sensitive project siting and design, to the maximum extent feasible.

Policy NR.2.3: Work with private and non-profit conservation organizations to ensure competitive pricing for mitigation bank credits by allowing government agencies, non-profit organizations, and private landowners to establish vernal pool preserves, designate mitigation areas, create and restore vernal pools, and sell credits to developers for off-site mitigation.

Policy NR.3.4: Encourage projects that contain wetland preserves or creeks, or are located adjacent to wetland preserves or creeks, to be designed for visibility and, as appropriate, access.

10.1.2 Existing Conditions of Aquatic Resources

Section 10.1.2, Existing Conditions of Aquatic Resources, describes the existing conditions of each aquatic resource land cover type present in the Planning Area, including existing functions and existing services of the aquatic resource.

The Planning Area's 10 Aquatic land cover types have been placed in the following 3 aquatic resource categories: (1) Wetlands, (2) Other Waters, and (3) Riparian (Table 10-1, Aquatic Land Covers within the Planning Area). Because the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1992) is the wetland classification system used by USACE and the U.S. Environmental Protection Agency, this chapter also classifies the 10 South Sacramento Habitat Conservation Plan (SSHCP) Aquatic land cover types in terms of the Cowardin wetland classification system. Existing locations of the Planning Area Aquatic land covers are shown on Figure 10-1, Aquatic Resources in the Planning Area.

Wetlands in the Planning Area

Wetlands are defined in the Code of Federal Regulations (Title 33, Part 328.3) as areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation adapted for life in saturated soil conditions. Areas that meet three wetland delineation criteria (hydrophytic vegetation, hydric soil types, and wetland hydrology) may be under the authority of CWA 404 pending USACE verification of wetland boundaries and jurisdictional analysis. The following three SSHCP Aquatic land cover types support the vegetation, soil types, and hydrology conditions that typically meet the CWA definition of a wetland: (1) Vernal Pool, (2) Seasonal Wetland, and (3) Freshwater Marsh. In addition, some Swale land covers in the Planning Area sometimes meet the three wetland delineation criteria, as discussed below.

Table 10-1. Aquatic Land Covers within the Planning Area

Land Cover Type	Existing Acres in Planning Area	Percentage of the 317,655-Acre Planning Area
<i>Wetland Waters</i>		
Vernal Pool	4,536	1.4%
Swale	1,252	0.4%
Seasonal Wetland	2,600	0.8%
Freshwater Marsh	2,954	0.9%
<i>Total Wetland Waters</i>	<i>11,342</i>	<i><u>3.50%</u> 3.6%</i>
<i>Other Waters</i>		
Stream/Creek (VPIH) (Ephemeral)	73	0.02%
Stream/Creek (Intermittent and Perennial)	2,778	0.9%
Open Water	2,341	0.7%
<i>Total Other Waters</i>	<i>5,192</i>	<i><u>1.62%</u> 1.6%</i>
<i>Riparian</i>		
Mixed Riparian Woodland	5,805	1.8%
Mixed Riparian Scrub	1,274	0.4%
Mine Tailing Riparian Woodland	641	0.2%
<i>Total Riparian</i>	<i>7,720</i>	<i>2.4%</i>
Total	24,254	<u>4.80%</u> 7.7%

Note: VPIH = vernal pool invertebrate habitat

Vernal Pool Wetlands

Approximately 4,536 acres of vernal pools remain within the Planning Area (Table 10-1). Vernal pool locations are associated with specific types of landforms, geologic formations, and soils. Therefore, vernal pools tend to be clustered at the landscape scale (Smith and Verrill 1998). As discussed in Section 5.1.2 and Section 8.1.2, Planning Area vernal pools are found on four different landforms and associated geologic formations. The characteristics of the landforms and the geologic formation and soil conditions determined how the vernal pools developed, the general density and sizes of vernal pools in a vernal pool complex, and ultimately the water chemistry and hydrologic regime of each vernal pool. Consequently, different geological formations in the Planning Area support vernal pools that may look similar after filling with water but differ physically and biologically. Vernal pools are a type of seasonal wetland, and the closest Cowardin classification for Planning Area vernal pools is “Palustrine, Emergent Wetland, Nonpersistent.”

Seasonal Wetlands

Approximately 2,600 acres of Seasonal Wetland land cover is present within the Planning Area (Table 10-1). As discussed in Section 8.1.2, seasonal wetlands are defined in this EIS/EIR as wetlands that pond water for an extended period during a portion of the year, generally

filling during the rainy winter season, then dry relatively slowly, typically in the summer or early fall. Seasonal wetlands in the Planning Area tend to be isolated features that occur within moderate to large depressional features along streams, creeks, and rivers; along the edges of open water; or scattered within the Valley Grassland land cover. In addition, some impounded drainages; excavated stock ponds; and graded or excavated, **or otherwise disturbed** former vernal pools within the Planning Area may also be Seasonal Wetland. The Seasonal Wetland land cover is often characterized by herbaceous annual and perennial species such as curly dock (*Rumex crispus*), sedges (*Carex* spp.), nutsedges (*Cyperus* spp.), spikerushes (*Eleocharis* spp.), and occasionally cattail (*Typha* spp.). The Cowardin classification for Seasonal Wetland is “Palustrine, Emergent Wetland, Nonpersistent.”

Freshwater Marsh Wetlands

Approximately 2,954 acres of Freshwater Marsh is present within the Planning Area (Table 10-1). As discussed in Section 8.1.1, Freshwater Marsh is dominated by perennial emergent herbaceous plant species such as cattail, tule (*Schoenoplectus acutus* var. *occidentalis*), and other emergent hydrophytic (water-loving) plant species. The Freshwater Marsh land cover is generally found at the edges of other Planning Area aquatic resources such as ponds, lakes, and rivers. Freshwater marshes are perennial wetlands but will periodically drawdown to expose moist soil in some dry years.

The majority of Freshwater Marsh in the Planning Area occurs along the Cosumnes River and Deer Creek, located in the southern portion of the Planning Area. However, areas of Freshwater Marsh are also found along other perennial creeks and streams and on the margins of the Open Water land cover throughout the Planning Area (Figure 10-1). Freshwater Marsh is a type of wetland, and the Cowardin classification for Freshwater Marsh is “Palustrine, Emergent Wetland, Persistent.”

Swales

The Planning Area includes approximately 1,252 acres of Swale (Table 10-1). Swales are shallow ephemeral surface drainages found in association with vernal pools and vernal pool complexes.

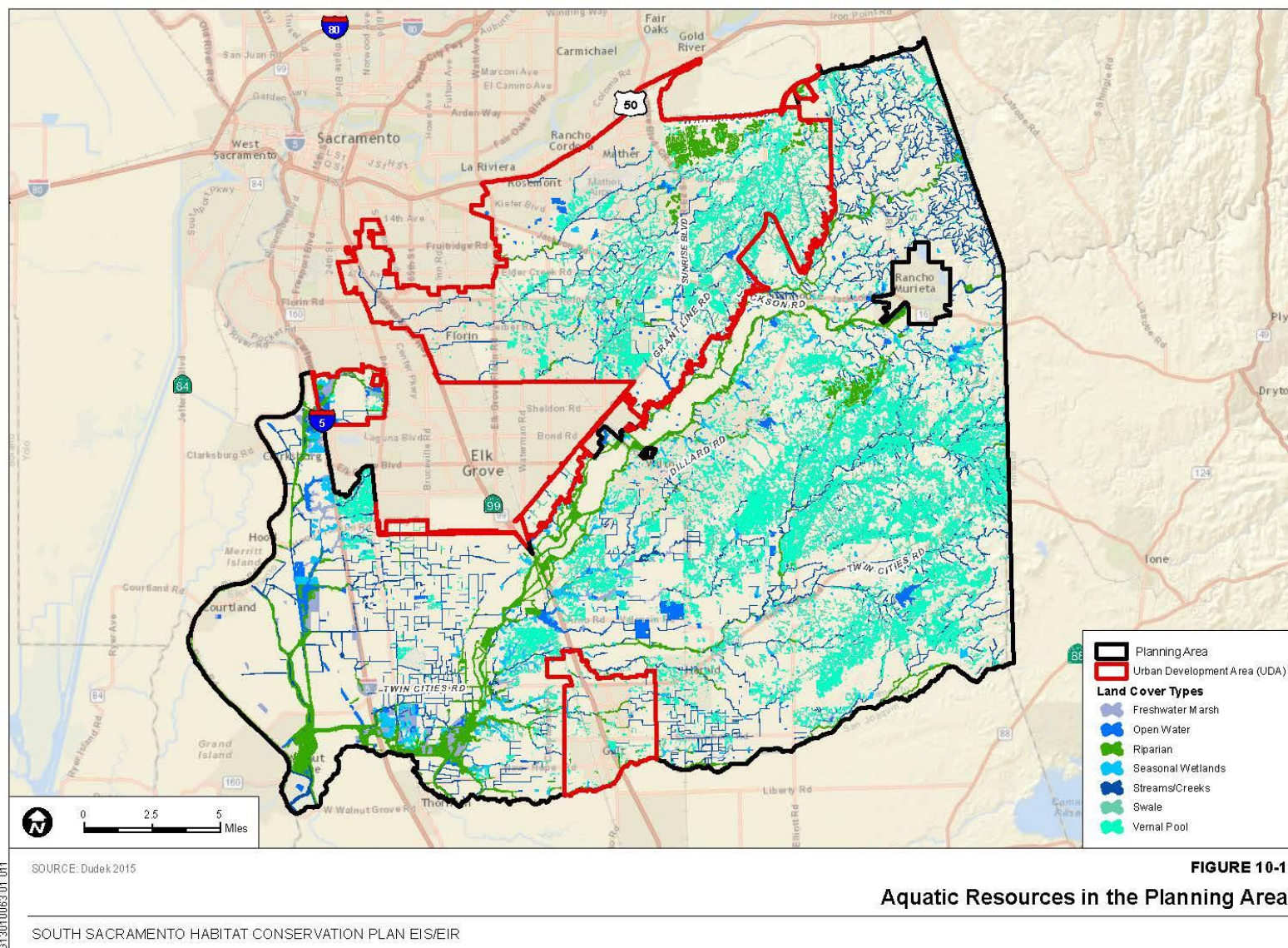
The movement of surface water between vernal pools can occur in a network of narrow and intermittent surface “swales” (Solomeshch et al. 2007). In many vernal pool landscapes, including those in the Planning Area, surface water flows through integrated ephemeral swales to other vernal pools, and ultimately **may flow into** a seasonal stream. Consequently, vernal pool landscapes comprise the upper watershed position of many stream systems (Rains et al. 2006). Due to the integrated hydrologic nature of vernal pool landscapes, disturbance of

upgradient vernal pools may have appreciable impacts on hydrologic and biogeochemical processes in all downgradient vernal pools and streams (Rains et al. 2008).

In a study of Mather Regional Park vernal pools, Rains et al. (2006) found that vernal pools filled only after soil layers above the claypan/duripan became saturated by seasonal rainfall in mid-December. During subsequent storm events, outflows to surface swales occurred, and lower vernal pools received ephemeral flows through interconnecting swales from upgradient vernal pools. Surface swale connections between vernal pools were maintained for approximately 10% to 60% of the days during which vernal pool water was present, with the longer periods of connectivity occurring between vernal pools located lower on the landscape. At no time was overland flow of rainwater observed delivering water from uplands directly to vernal pools (Rains et al. 2006, 2008).

All Swale land cover acres are directly associated with Planning Area vernal pools. Any Planning Area shallow surface drainages not directly connected or associated with a vernal pool or vernal pool complex were not mapped as “Swale” land cover under the SSHCP land cover classification system (see Chapter 3 of the SSHCP document). Some Swale land covers mapped in the Planning Area might include small shallow depressional features that pond water for longer periods during rainy seasons. Therefore, sections of some swales may be considered “vernal pool wetland” for CWA 404 purposes. The closest Cowardin classification for the Swale land covers in the Planning Area is “Riverine, Intermittent, Nontidal.”

Figure 10-1 Aquatic Resources in the Planning Area



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Other Waters in the Planning Area

Three of the SSHCP land cover types (Stream/Creek, Stream/Creek Vernal Pool Invertebrate Habitat [VPIH] and Open Water) are generally defined as “other waters” in the CWA 404 definition of waters of the United States (33 CFR 328.3).

Stream and Creek (Stream/Creek)

The Planning Area includes approximately 2,778 acres of Stream/Creek land cover (Table 10-1). As discussed in Section 8.1.2, the Stream/Creek land cover in the Planning Area includes the Cosumnes River, the large streams located in the Urban Development Area (UDA)² such as Laguna Creek, and the many smaller intermittent and perennial creeks located throughout the Planning Area (Figure 10-1). Consequently, the Stream/Creek land cover can occur adjacent to riparian aquatic resources or may occur within any of the Terrestrial land cover types, including Valley Grassland, Blue Oak Woodland, Blue Oak Savanna, the Farming land cover types, and the Developed land cover types (see Table 8-1a, Figure 8-2, and Figure 10-1). The Cowardin classification for the Stream/Creek land cover in the Planning Area is “Riverine, Perennial or Intermittent, Nontidal.”

As discussed in Section 7.1.2, some sections of the streams and creeks inside the UDA now have perennial flow in most years because of summer runoff from urban irrigation, discharges of treated groundwater existing groundwater-contamination cleanup activities}, and other ~~unseasonal~~ human-caused water sources.

Most streams in the Planning Area are valley floor streams characterized by slow-moving water, except after rain events, and often carry substantial sediment loads as a result of land disturbances. Some reaches of tributaries in the eastern portion of the Planning Area flow over gently sloping terrain and have more of a pool and riffle structure.

Due to relatively small size and location among urban and farming or rangeland uses, the functions and services of most creeks in the Planning Area have been substantially affected from adverse water quality, invasive species, vegetation removal, or other indirect impacts of urban development. However, Planning Area creeks still provide habitat for many native

² As discussed in Section 1.1.1, the term “UDA” is used by the EIS/EIR to discuss all lands where new urban development projects or activities could occur under the No Action/No Project Alternative, or where new urban development Covered Activities could occur under the two action alternatives. Therefore, the term “UDA” means all lands within the Sacramento County USB boundary that are also within the Planning Area (this includes lands within the Rancho Cordova city limits that are within the Planning Area); and all lands within Galt’s city limits and within the City of Galt’s sphere of influence (see Section 1.1.1 and Figure 1-1).

species and important ecological functions, especially where the streams and creeks are associated with other riparian and wetland communities.

As discussed in Section 3.7.1, over the last 150 years, there have been substantial human-caused alterations of streams and creeks in the Planning Area, including straightening and deepening of creek channels; construction of levees, dams, and other impoundments; installation of riprap and concrete walls; and vegetation clearing. These changes have adversely affected many stream and creek area functions by separating active channels from their natural floodplains, altering natural flow patterns, and disrupting many other dynamic physical processes that maintain stream and creek functions. In addition to adverse effects on hydrologic functions of Planning Area streams and creeks, these watershed modifications have also reduced overall habitat functions in these areas since negative impacts from disturbances such as urban development and vegetation clearing lead to decreased abundances and altered distributions of plant and animal species.

Stream and Creek Vernal Pool Invertebrate Habitat (Stream/Creek [VPIH])

The Planning Area includes approximately 73 acres of Stream/Creek (VPIH) land cover (Table 10-1). As discussed in Section 8.1.2, the Stream/Creek (VPIH) land cover type is defined in the SSHCP document as an intermittent drainage that conveys water after rain events (i.e., is ephemeral), is dominated by grassland plant species, and can provide habitat for vernal pool crustaceans. The Stream/Creek (VPIH) land cover type occurs within the Mather Core Area in association with the Vernal Pool and Swale land covers. Unlike the Swale land cover type, the Stream/Creek (VPIH) land cover is less likely to support plant species also found in vernal pools. However, the Stream/Creek (VPIH) land cover is known to provide movement and dispersal habitat for plant seeds/propagules and movement and dispersal habitat for vernal pool crustaceans, including mid-valley fairy shrimp (*Branchinecta mesoamericana*), vernal pool fairy shrimp (*Branchinecta lynchi*), and the vernal pool tadpole shrimp (*Lepidurus packardii*). The Stream/Creek (VPIH) land cover can also provide intermittent breeding habitat for some vernal pool crustaceans in depressional features of the drainage that pond water between storm events. The Cowardin classification for all Stream/Creeks land covers in the Planning Area is “Riverine, Intermittent, Nontidal.”

Although Stream/Creek (VPIH) is typically vegetated, it is included in the Other Waters land covers because it may not support conditions that meet the three-part definition of a wetland. However, it may still be considered a water of the United States, **or it may not be considered a water of the United States (e.g., neither a stream nor a wetland).**

Open Water

The SSHCP Open Water land cover type is scattered throughout the Planning Area and covers a total of 2,341 acres (Table 10-1) (Figure 10-1). The Open Water land cover type consists of perennial aquatic features, such as natural or constructed ponds, lakes, and reservoirs. Open water may contain no vegetation or non-rooted aquatic vegetation, such as algae, floating pondweeds, and other plants. Along shorelines, rooted, emergent vegetation may occur, forming Freshwater Marsh. The Cowardin classification is “Riverine and Limnetic, Unconsolidated Bottom, Nontidal.” The largest open water features within the Planning Area are found on or near the Cosumnes River and Deer Creek. These open water features are largely unnamed with the exception of Blodgett Reservoir inside the UDA and Rancho Seco Lake outside the UDA.

Riparian Areas

CWA regulations define “riparian areas” as lands adjacent to streams, lakes, estuarine, and marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems through which surface and sub-surface hydrology connects riverine, lacustrine, estuarine, and marine waters with their adjacent wetlands, other waters, or uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality (33 CFR 330.1–330.6). Riparian areas are distinguished by gradients in biophysical conditions, ecological processes, and biota and include those portions of terrestrial ecosystems that significantly influence exchanges of energy and matter with aquatic ecosystems (i.e., a zone of influence) (NRC 2002). Riparian areas in the Planning Area ~~are including~~ **include** Mixed Riparian Woodland, Mixed Riparian Shrub, and the Minetailing Riparian land covers. The Cowardin classification for Mixed Riparian Woodland land cover and Mixed Riparian Shrub land cover is “Palustrine, Forested or Scrub/Shrub Wetland.”

Over the last 150 years, there have been substantial anthropogenic alterations of the riparian areas along streams and creeks that support riparian plant and animal communities in the Central Valley. Anthropogenic alterations have resulted from by agriculture activities, rangeland use, and urban development (Katibah 1984), including the straightening and deepening of channels; construction of levees, dams, and other impoundments; installation of riprap and concrete walls; vegetation clearing; and other alterations. In the Planning Area, these alterations have often resulted in riparian vegetation occurring as small intermittent patches, usually as small clusters of trees and shrubs, or a thin strip of riparian vegetation that is only one or two trees wide.

In the eastern portion of the Planning Area, there are cottonwoods in some streamside locations. Along other streams, there is little or no woody riparian vegetation because streams

and creeks located in the Valley Grassland and Vernal Pool land covers are dominated by non-woody vegetation that exhibits little vegetation structure in the riparian zone along the stream and the adjacent uplands. In valley grassland riparian areas, there may be patchy distribution of mixed riparian scrub. Some streams in the urbanized UDA portions of the Planning Area are currently lined by concrete or bounded by concrete walls and support little or no riparian plant species, while others support narrow, relatively young, riparian vegetation with a mix of trees, shrubs, grasses, and sometimes seasonal wetlands.

As described in Section 8.1.2.1, there are three Riparian land cover types identified by the Permit Applicants within the Planning Area: Mixed Riparian Woodland, Mixed Riparian Scrub, and Mine Tailing Riparian Woodlands (Figure 10-1). These three woody Riparian land cover types currently total approximately 7,720 acres (Table 10-1).

The Mixed Riparian Woodland land cover type in the Planning Area is dominated by Fremont cottonwood trees (*Populus fremontii* ssp. *fremontii*) and may include Oregon ash (*Fraxinus latifolia*), Goodding's willow (*Salix gooddingii*), California black walnut (*Juglans californica* var. *hindsii*), or valley oak (*Quercus lobata*). In some areas, an understory of box elder (*Acer negundo*) or willow species, including arroyo willow (*Salix lasiolepis*) and sandbar willow (*Salix exigua*), may be present. A shrub layer may also present in the Mixed Riparian Woodland land cover type, particularly along the northern boundary of the Planning Area, and include species such as blue elderberry (*Sambucus mexicana*), Himalayan blackberry (*Rubus discolor*), coyote-brush (*Baccharis pilularis*), wild rose briar (*Rosa californica*), and California wild grape (*Vitis californica*). The ground layer is sparsely to densely vegetated with herbaceous species. Invasive weeds have colonized portions of the mixed riparian woodland in the Planning Area and giant reed (*Arundo donax*). Approximately 5,805 acres of the Planning Area is Mixed Riparian Woodland land cover (Table 10-1).

The Mixed Riparian Scrub land cover type is interspersed in riparian areas between Mixed Riparian Woodland and Annual Grassland land covers in the floodplains of waterways throughout Sacramento County. Approximately 1,274 acres of the Mixed Riparian Scrub land cover type is present in the Planning Area (Table 10-1). In the Planning Area, this land cover type consists of open-to-dense shrubby thickets dominated by a mixture of sandbar willow, arroyo willow, red willow (*Salix laevigata*), and immature stands of mixed riparian woodland tree species. Stands of riparian scrub in the Planning Area also support native and non-native species, including wild rose briar, California wild grape, perennial pepper weed (*Lepidium latifolium*), Himalayan blackberry, curly dock, and various non-native grasses. The highest-quality existing riparian areas in the Planning Area are outside the UDA along the Cosumnes River and Deer Creek (Figure 10-1). The Mixed Riparian Woodland present along the lower Cosumnes River is relatively wide and characterized by a multilayered vegetation structure, including an overstory of cottonwood, California sycamore (*Platanus racemosa*), and valley oak; an understory of narrow-leaf willow (*Salix*

exigua var. *exigua*), California and Himalayan blackberry, and California wild grape; and a patchy herbaceous layer of grasses, forbs, and sedges.

As discussed in Section 8.1.1, the Mine Tailing Riparian Woodland land cover type occurs as relatively narrow strips distributed among older mine tailings (Figure 8-1), and covers approximately 641 acres within the Planning Area (Table 10-1). This land cover type contains some of the plant species commonly found in the Mixed Riparian Woodlands and the Mixed Riparian Scrub land covers, such as Fremont cottonwood, blue elderberry, willow (*Salix* spp.), and coyote-brush. There are large areas of Mine Tailing Riparian Woodland land cover in the Planning Area, including approximately 219 acres of Mine Tailing Riparian Woodland in the northern portion of the Planning Area and approximately 345 acres of Mine Tailing Riparian Woodland just south of the Cosumnes River in the eastern portion of the Planning Area.

Existing Amounts (Abundance) of Each Aquatic Resource

As of 2015, there are approximately 24,254 acres of Aquatic land covers in the Planning Area (Table 10-2, Aquatic Resources by Watershed within the Planning Area). These 24,254 acres of aquatic resources are located within 1 or more of the Planning Area's 10 watersheds (see Section 7.1.2). Watersheds in the United States are delineated using a hierarchical system, which divides the United States into 21 regions, 221 subregions, 378 hydrologic accounting units, and 2,264 cataloging units (USGS 2013). Each hydrologic unit is identified by a unique Hydrologic Unit Code (HUC) consisting of 2 to 12 digits to define successively smaller units within the classification system (USGS 2013; USGS and NRCS 2013).

At the 10-digit HUC level, the Planning Area includes a portion or the entirety of 10 different watersheds (Figure 7-3). As also discussed in Section 7.1.2, the 10 Planning Area watersheds are American River (HUC 1802011102), Deer Creek (HUC 1804001305), Laguna Creek (HUC 1804001307), Lower Cosumnes River (HUC 1804001308), Lower Dry Creek (HUC 1804001209), Lower Mokelumne River (HUC 1804001211), Morrison Creek (HUC 1802016304), Sherman Lake–Sacramento River (HUC 1802016307), Snodgrass Slough (HUC 1804001210), and Upper Cosumnes River (HUC 1804001306) (Figure 10-2, HUC 10 Watersheds in the Planning Area). One additional watershed, Cache Slough, intersects the Planning Area but only comprises 6 acres in the Planning Area and, therefore, is not discussed in this chapter.

The Morrison Creek (located inside the UDA) and the Laguna Creek watershed (located in the south-southeastern parts of the Planning Area) cover approximately 37% of the Planning Area. The next three largest watersheds (Deer Creek, Lower Cosumnes River, and Snodgrass Slough) cover 41% of the Planning Area, resulting in the five largest watersheds draining approximately 78% of the Planning Area.

The watersheds containing the greatest abundance of aquatic resources are Snodgrass Slough and Lower Cosumnes River. The watersheds containing the least amounts of aquatic resources are the American River, Sherman Lake–Sacramento River, and Lower Mokelumne River.

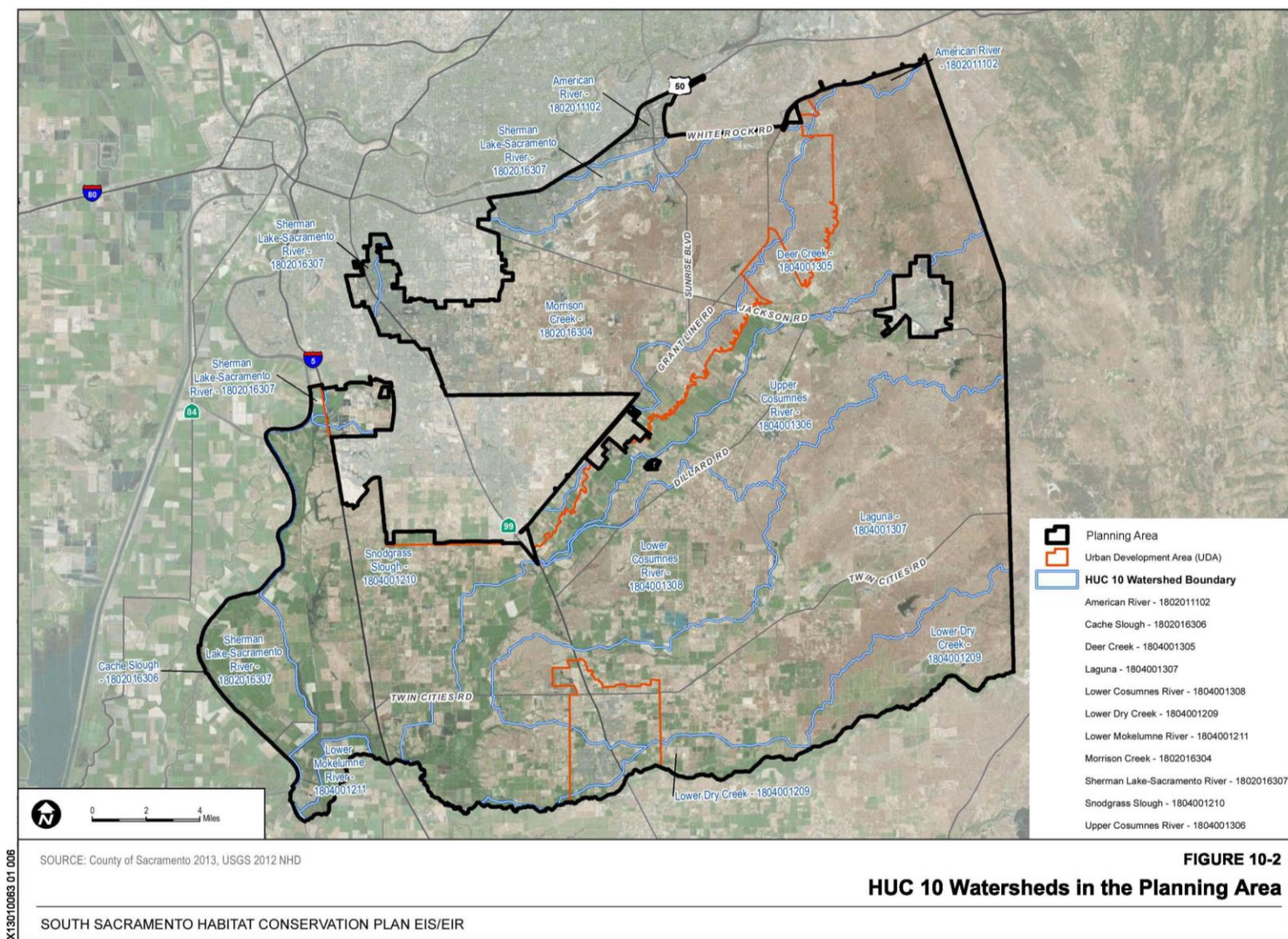
The most abundant Aquatic Resources land covers within the Planning Area are Mixed Riparian Woodland and Vernal Pool (Table 10-2). The least abundant are Stream/Creek (VPIH) (likely due to the narrow width of these ephemeral creeks) and Mine Tailing Riparian Woodland.

Table 10-2. Aquatic Resources by Watershed within the Planning Area

Land Cover Type	Acres per Watershed										Total
	American River	Deer Creek	Laguna Creek	Lower Cosumnes River	Lower Dry Creek	Lower Mokelumne River	Morrison Creek	Sherman Lake–Sacramento River	Snodgrass Slough	Upper Cosumnes	
Wetlands											
Vernal Pool	7	274	1,917	619	203	<1	766	5	421	324	4536
Seasonal Wetland	22	129	418	616	117	0	107	0	782	409	2,600
Swale	3	160	428	144	65	0	359	2	10	81	1,252
Freshwater Marsh	2	38	167	1,127	47	21	370	40	1,030	112	2,954
Total Wetland Waters	34	601	2,930	2,506	432	21	1602	47	2,243	926	11,342
Other Waters											
Open Water	3	200	297	663	9	3	157	9	720	280	2,341
Stream/Creek (Intermittent and Perennial)	5	228	416	345	78	68	123	24	1,141	350	2,778
Stream/Creek (VPIH) (Ephemeral)	0	19	0	0	0	0	54	0	0	0	73
Total Other Waters	8	447	713	1,008	87	71	334	33	1,861	630	5,192
Riparian											
Mine Tailing Riparian Woodland	48	41	158	17	0	0	129	2	0	246	641
Mixed Riparian Scrub	0	80	58	272	47	2	57	130	528	100	1,274
Mixed Riparian Woodland	<1	836	262	1,877	401	196	157	51	1,292	733	5,805
Total Riparian	48	957	478	2,166	448	198	343	183	1,820	1,079	7,720
Grand Total	90	2,005	4,121	5,680	967	290	2,279	263	5,924	2,635	24,254

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Figure 10-2 HUC 10 Watersheds in the Planning Area



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The total acreage of aquatic resources reported in the Aquatic Resources Program (ARP) is approximately 232 acres less than the total acreage of aquatic resources reported in the SSHCP (SSHCP Plan Partners 2017). This is due to the following three factors: (1) the use of different geographic information system (GIS) processes that result in fractional differences in acreage totals; (2) rounding; and 3) some of the acreage of Riparian land cover types reported in the SSHCP are considered non-jurisdictional because they are mitigation sites composed of created or restored riparian habitat. Non-jurisdiction aquatic resources are not discussed in the ARP. It is this last factor that accounts for the majority of the difference in reported aquatic resources acreage between the ARP and the SSHCP.

Of the 10 watersheds in the Planning Area, the Snodgrass Slough and the Lower Cosumnes River watersheds have the most acres of aquatic resources, and the American River, Sherman Lake–Sacramento River, and Lower Mokelumne River watersheds contain the least acreage of aquatic resources.

The Mixed Riparian Woodland and Vernal Pool land covers are the most abundant aquatic resources in the Planning Area. The Stream/Creek (VPIH) and Mine Tailing Riparian Woodland land covers are the least abundant aquatic resource in the Planning Area (Table 10-1).

Existing Quality of Aquatic Resources (Functions and Services)

Modification of natural landscapes (i.e., vegetation, topography, and hydrology) is one of the prime human impacts on waters and watersheds. Altering natural landscapes for development purposes, resource extraction, or recreation can affect collection, storage, and discharge functions of a watershed. Changes in the landscape resulting from these human activities can increase sedimentation and erosion, increase or redirect natural runoff, and alter hydrologic regimes, including timing of flows and groundwater recharge. In addition, land use modification or conversion can change the way a watershed is used by individual species or species communities, including their distribution and abundance within a watershed (i.e., habitat function) and can directly or indirectly affect the chemical reactions required for the watershed to sustain itself. Introduction of pollutants into the watershed can happen directly through agricultural activities and runoff from impervious surfaces in more urbanized areas. As discussed in Chapter 7, an increase of impervious surfaces has caused significant changes to the quality and quantity of the stormwater runoff, leading to degraded stream and watershed systems; an increased quantity of stormwater for stream process to absorb sedimentation; and an increased pollutant load carried by the stormwater. Land development threatens the remaining vernal pool ecosystem directly through destruction and fragmentation of habitat. However, loss of habitat may also indirectly affect the remaining areas by increasing the likelihood of other threats (e.g., habitat fragmentation, hydrologic alteration, invasion by noxious species, changes in land management options/practices,

pollution, inadequate mitigation measures). Non-native annual grasses of Mediterranean origin now dominate the uplands associated with vernal pool complexes in California. The transition from native vegetation to exotics began with European settlement and was hastened by years of drought and overgrazing during the late 1800s. Some suggest that rapid evapo-transpiration of water and built-up thatch from non-native grass species (e.g., foxtail chess [*Bromus madritensis*], Italian ryegrass [*Lolium multiflorum*], Mediterranean barley [*Hordeum marinum* ssp. *gussoneanum*], medusahead [*Elymus caput-medusae*], soft brome [*Bromus hordeaceus*]) may indirectly affect vernal pool species by lessening the amount of water entering the system through surface and sub-surface flow (Marty 2005; Robins and Vollmar 2002). The effects of thatch buildup in uplands may negatively affect obligate vernal pool bee pollinators as well. Thick stands of mulch may also impede juvenile California tiger salamander (*Ambystoma californiense*) and western spadefoot (*Spea hammondi*) during their migrations from their aquatic pool habitat to the upland areas and burrows used for summer activity and aestivation. Barbed awns and seed coats on non-native grasses can also injure or kill mammals by becoming lodged in their ears, eyes, throats, and fur.

An assessment of the existing functions and services of each Planning Area Aquatic land cover was prepared by the Permit Applicants (Dudek 2016a). The existing quality of the aquatic resources within in the Planning Area was assessed based on the following factors: acres of the aquatic resource, primary adjacent land cover, secondary adjacent land cover, and aquatic resource type. For each Aquatic land cover type, a functional score was assigned to each of these factors based on ability to maintain or improve the following aquatic functions: (1) provide habitat for special-status aquatic species; (2) improve or maintain water quality through such processes as filtration and/or trapping of contaminants, such as sediment or toxicants, and prevention of soil erosions; and (3) improve hydrology through storing floodwaters or flood flow modifications, or by facilitating groundwater recharge. Habitat was evaluated based on the existing ability of a Planning Area Aquatic Resources land cover to support aquatic wildlife and plant species, especially special-status aquatic species. Water quality was evaluated based on the existing ability to improve or maintain water quality through processes such as filtration and/or trapping of contaminants, such as sediment or toxics, and prevention of erosion. Hydrology was evaluated based on the existing ability of the aquatic resource to facilitate groundwater recharge and store floodwaters through beneficial flood storage and flood flow modifications (Dudek 2016a). The Functional Assessment of the Planning Area provided an overall functional score of (1) very low, (2) low, (3) moderate, or (4) high for each wetland, other waters, and riparian aquatic resource. Table 10-3 summarizes the current acreages of each Functional/Condition Assessment Method score for each Wetlands, Other Waters, and Riparian Aquatic Resources land cover type in the Planning Area.

Table 10-3. Functional Analysis Of Aquatic Resources in the Planning Area

Land Cover Type	(4) High	(3) Moderate	(2) Low	(1) Very Low	Total
	Acres	Acres	Acres	Acres	
Wetland					
Vernal Pools	3,067	1,312	157	0	4536
Seasonal Wetland	1,396	1,019	185	0	2,600
Swales	945	302	5	0	1,252
Freshwater Marsh	988	1,697	269	0	2,954
Total Wetland	6,396	4,330	616	0	11,342
Other Waters					
Open Water	298	1,206	821	16	2,341
Stream/Creek (Intermittent and Perennial)	841	1,759	177	1	2,778
Stream/Creek (VPIH) (Ephemeral)	44	27	2	0	73
Total Other Waters	1,183	2,992	1,000	17	5,192
Riparian					
Mine Tailing Riparian Woodland	68	364	183	26	641
Mixed Riparian Scrub	112	820	298	44	1,274
Mixed Riparian Woodland	521	3,710	1,555	19	5,805
Total Riparian	701	4,894	2,036	89	7,720
Grand Total	8,280	12,216	3,652	106	24,254

Of the four wetland land cover types, the existing vernal pools have the greatest acreage of high function features (approximately 3,067 high function acres out of 4,536 total Vernal Pool acres). Seasonal Wetlands, Swales, and Freshwater Marsh land covers also have a relatively large number of high function acreages (approximately 1,396 acres, 945 acres, and 988 acres, respectively). The mixed riparian woodland and the open water aquatic resources have the most acres of low function score features (approximately 1,555 acres and 821 acres, respectively) in the Planning Area. However, the Planning Area overall does not have large acreages of very low functional condition aquatic resources (approximately 106 acres total across all 10 Aquatic Resources land cover types).

Current conditions of the aquatic resources can be further examined at the watershed (HUC-10) level. The existing habitat, water quality, and hydrology functions of each Planning Area watershed (Dudek 2016a) were based on the results of a watershed study (Dudek 2016b). The watershed study results were used to develop appropriate functional scores for wetlands and other waters occurring in each HUC-10 watershed based on special-status species occurrences within each HUC-10 (habitat function score), the percentage of natural land cover within each HUC-10 (water quality function score), and the percentage of impervious surface within each HUC-10 (hydrology functional score).

The Deer Creek, Laguna Creek, Lower Cosumnes River, Lower Dry Creek, Morrison Creek, and Upper Cosumnes River watersheds were found to contain a majority of moderate to high condition aquatic resources. Of these, the watersheds with the greatest proportion of high function aquatic resources are the Laguna Creek and Morrison Creek watersheds. The American River, Lower Mokelumne River, Sherman Lake–Sacramento River, and Snodgrass Slough watersheds currently contain no high function aquatic resources, and the resources are mostly low to moderate in condition (Figure 10-2). The Sherman Lake–Sacramento River watershed contains the greatest acreage of very low condition aquatic resources and has the highest proportion of low condition resources. The following discussion summarizes aquatic resources existing condition acreages by watershed.

American River Watershed

Approximately 12,060 acres, or approximately 23%, of the 53,360-acre American River watershed is located within the Planning Area (Figure 10-2). This watershed makes up 3.2% of the entire Planning Area and is located in the northern portion of the Planning Area. A little more than half of the watershed contains non-habitat land cover types, which primarily include High-Density Development and Mine Tailings. The remaining undeveloped land consists of Valley Grassland, Mine Tailing Riparian Woodland, Mixed Riparian Woodland, Blue Oak Woodland, Blue Oak Savanna, and Mixed Riparian Scrub land covers. Aquatic resources account for approximately 130 acres, or approximately 1%, of the American River watershed. Impervious surfaces cover approximately 3,080 acres, or 26%, of the watershed within the Planning Area.

The American River watershed includes documented occurrences for 10 of the 28 Covered Species, including Boggs Lake hedge-hyssop (*Gratiola heterosepala*), tricolored blackbird (*Agelaius tricolor*), Cooper’s hawk (*Accipiter cooperii*), Swainson’s hawk (*Buteo swainsoni*), valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), vernal pool fairy shrimp, vernal pool tadpole shrimp, white-tailed kite (*Elanus leucurus*), burrowing owl (*Athene cunicularia*), and northern harrier (*Circus cyaneus*). However, approximately 58% of the American River watershed has been influenced by human activities, with over half of the watershed dominated by the aforementioned non-habitat land covers. Subsequently, in combination with making up only 3% of the Planning Area, the portions of the American River watershed within the Planning Area do not support a high overall percentage of the Covered Species occurrences (2%) in the Planning Area.

Current Conditions – Due to the low percentage of Covered Species occurrences, the American River watershed has a score of –3 for its habitat function. It has a moderate percentage of natural land cover, resulting in a water quality score of +1. It has a relatively large amount of impervious surface, resulting in a hydrology function score of –2 (Dudek 2016a).

Deer Creek Watershed

The Deer Creek watershed bisects the Planning Area, extending from the northeastern edge to halfway into the Planning Area (Figure 10-2). Of the 82,980 acres of the watershed, 46,810 acres (56%) are within the Planning Area. A majority (93%) of the watershed contains “habitat” land covers, which includes agriculture. Terrestrial land covers (32,980 acres and 70% of the watershed), consisting primarily of Valley Grassland (25,450 acres and 54% of the watershed), account for the majority of the watershed. Other Terrestrial land covers include Blue Oak Savanna and Blue Oak Woodland (14% of the watershed), Mixed Riparian Woodland, Mixed Riparian Scrub, Mine Tailing Riparian Woodland, and Valley Oak Riparian (0.02% of the watershed). Approximately 20% (9,940 acres) of the watershed consists of lands used for agricultural purposes, and 7% (3,300 acres) qualify for the non-habitat land cover type. The remaining 2% of the watershed (1,070 acres) consists of aquatic resources such as streams and creeks, open water, and vernal pools. Impervious surfaces cover approximately 370 acres, or only 1%, of the watershed within the Planning Area.

The Deer Creek watershed includes documented occurrences for 16 of the 28 Covered Species, including Boggs Lake hedge-hyssop, Sacramento Orcutt grass (*Orcuttia viscida*), Sanford’s arrowhead (*Sagittaria sanfordii*), burrowing owl, Cooper’s hawk, ferruginous hawk, loggerhead shrike (*Lanius ludovicianus*), northern harrier, Swainson’s hawk, tricolored blackbird, valley elderberry longhorn beetle, vernal pool fairy shrimp, vernal pool tadpole shrimp, western pond turtle (*Actinemys marmorata*), western spadefoot, and white-tailed kite. This watershed contains 6% of the known occurrences for these 16 Covered Species and a substantial percentage of occurrences for 2 of the Covered Species, including 49% of the Sacramento Orcutt grass records and 20% of the ferruginous hawk records. Covered Species have been recorded throughout the watershed, with the majority occurring along hydrologic features and within aquatic or terrestrial habitat. A cluster of vernal pool species records occurs along the border of the Deer Creek and Morrison watersheds east of the intersection of Grant Line Road and Keifer Boulevard.

Current Conditions – The Deer Creek watershed has a relatively low percentage of Covered Species occurrences and, therefore, had a score of -2 for its habitat function. However, it has a high percentage of natural land cover, resulting in a water quality score of +3. It also has a low percentage of impervious surface, resulting in a hydrology function score of +3 (Dudek 2016a).

Laguna Creek Watershed

The Laguna Creek watershed is approximately 98,150 acres, of which 75,350 acres are within the Planning Area, and makes up 20% of the Planning Area (Figure 10-2). It is located in the southeastern portion of the Planning Area and contains virtually all of the mapped land cover

types in the Planning Area. The majority (91%) of the Laguna Creek watershed is undeveloped. Combined, Valley Grassland, Blue Oak Savanna, and Blue Oak Woodland account for 61% (approximately 46,310 acres) of the land covers in the watershed and 68% of the “natural” land covers, including agriculture. Agriculture accounts for 24% (approximately 17,730 acres) of the land covers in the Planning Area. The Laguna Creek watershed also supports all of the Aquatic land cover types except wetland restoration, including approximately 2,820 acres of Vernal Pool, Seasonal Wetland, and Swale; approximately 420 acres of Stream/Creek; and almost 300 acres of Open Water. Non-habitat land cover types compose only 9% of the watershed, with Low-Density Development accounting for 61% of the non-habitat land cover types. Impervious surfaces cover approximately 2,010 acres, or 3%, of the watershed within the Planning Area.

The Laguna Creek watershed includes documented occurrences for 22 of the 28 Covered Species, reflecting both its large size and diversity of land cover types. Covered Species documented in the watershed include dwarf downingia (*Downingia pusilla*), legenere (*Legenere limosa*), pincushion navarretia (*Navarretia myersii* ssp. *myersii*), Sacramento Orcutt grass, vernal pool fairy shrimp, Ricksecker’s water scavenger beetle (*Hydrochara rickseckeri*), vernal pool tadpole shrimp, mid-valley fairy shrimp, California tiger salamander, western spadefoot, western pond turtle, giant garter snake (*Thamnophis gigas*), Cooper’s hawk, burrowing owl, loggerhead shrike, northern harrier, ferruginous hawk, greater sandhill crane (*Grus canadensis tabida*), Swainson’s hawk, tricolored blackbird, white-tailed kite, and western red bat (*Lasiurus blossevillii*). This watershed has the highest percentage (26%) of known occurrences for Covered Species after the Morrison Creek watershed, including 17% of the vernal pool covered plant occurrences and 40% of the vernal pool invertebrate occurrences.

Current Conditions – The Laguna Creek watershed has a relatively high percentage of Covered Species occurrence, yielding a habitat function score of +2. It also has a high percentage of natural land cover, resulting in a water quality score of +3, and a low percentage of impervious surface, resulting in a hydrology function score of +3 (Dudek 2016a).

Lower Cosumnes River Watershed

The Lower Cosumnes River watershed is 47,310 acres and entirely located within the south-central portion of the Planning Area (Figure 10-2). This watershed consists primarily of Terrestrial and Agricultural land covers, accounting for 81% of the land covers in the watershed. The Terrestrial category is dominated by valley grasslands (14,610 acres), which accounts for approximately 31% of the total Terrestrial land cover in the watershed. Agricultural areas total 21,220 acres and are the largest land covers in the Lower Cosumnes River watershed. Approximately 7% (3,510 acres) of the watershed is Aquatic land covers, including Seasonal Wetlands, Open Water, Freshwater Marsh, Vernal Pools, Wetland Restoration, Streams and Creeks and Swales. Approximately 12% (5,710 acres) of the watershed is non-habitat land cover

dominated by Low-Density Development (3,990 acres) and High-Density Development (1,260 acres). Impervious surfaces cover approximately 1,650 acres, or only 3%, of the watershed.

The Lower Cosumnes River watershed includes documented occurrences for 19 of the 28 Covered Species, including dwarf downingia, legenere, Sanford's arrowhead, vernal pool fairy shrimp, mid-valley fairy shrimp, Ricksecker's water scavenger beetle, valley elderberry longhorn beetle, California tiger salamander, giant garter snake, western pond turtle, burrowing owl, Cooper's hawk, ferruginous hawk, loggerhead shrike, northern harrier, greater sandhill crane, Swainson's hawk, tricolored blackbird, and white-tailed kite. This watershed contains 10% of the Planning Area's known occurrences of Covered Species.

Current Conditions – The Lower Cosumnes River watershed has a relatively low percentage of Covered Species occurrence, which gives it a habitat function score of -2. It has a mid-range percentage of natural land cover, resulting in a water quality score of 0. It has a low percentage of impervious surface, yielding a hydrology function score of +3 (Dudek 2016a).

Lower Dry Creek Watershed

The Lower Dry Creek watershed is located along the southern edge of the Planning Area. Approximately 50% of the watershed is located within the Planning Area (Figure 10-2). The watershed has very little non-agricultural development. Of the 18,570 acres in the watershed, approximately 56% are Terrestrial land covers and 38% are Agricultural land covers. Valley grasslands dominate the Terrestrial land cover in the watershed, comprising 14,610 of the 16,880 acres mapped as terrestrial. The majority (92%) of agricultural areas are cropland and vineyards. Aquatic and non-habitat land covers each make up approximately 3% of the remaining acreage within the watershed. Impervious surfaces cover approximately 140 acres, or 1%, of the watershed within the Planning Area.

The Lower Dry Creek watershed includes documented occurrences for 9 of the 28 Covered Species, including legenere, pincushion navarretia, vernal pool fairy shrimp, vernal pool tadpole shrimp, California tiger salamander, western spadefoot, northern harrier, Swainson's hawk, and tricolored blackbird. Overall, the watershed only contains 2% of the Covered Species occurrences, but it does contain 33% of the pincushion navarretia occurrences (16 of 49) and 19% of the California tiger salamander occurrences (6 of 29).

Current Conditions – Due to the low percentage of Covered Species occurrence, the Lower Dry Creek watershed has a habitat function score of -3. However, it has a relatively high percentage of natural land cover, which gives it a water quality score of +2. Its low percentage of impervious surface gives it a hydrology function score of +3 (Dudek 2016a).

Lower Mokelumne River Watershed

Although the Lower Mokelumne River watershed is more than 66,200 acres in size, only 3% of the watershed is located in the far southwestern corner of the southern Planning Area, and the watershed accounts for only 0.5% of the Planning Area (Figure 10-2). The small portion of this watershed located within the Planning Area is primarily made up of Agricultural land covers, specifically Cropland. The remaining acreage includes Mixed Riparian Scrub and Mixed Riparian Woodland, Aquatic land covers, and some residential areas. Impervious surfaces cover approximately 30 acres, or 1%, of the watershed within the Planning Area.

The Lower Mokelumne River watershed only contains three documented occurrences of one Covered Species: Sanford's arrowhead. This species is located on the boundary of the Planning Area within the Mokelumne River. Similar to the Lower Dry Creek watershed, the lack of occurrences of Covered Species within this watershed may be attributed to large amounts of land that have been converted for agricultural purposes. In addition, only a small portion of the watershed is actually located within the Planning Area. Due to its small size within the Planning Area, the Lower Mokelumne River watershed includes less than 1% of the modeled habitat for Covered Species.

Current Conditions – The Lower Mokelumne River watershed has a habitat function score of -3 due to its low percentage of species occurrence. It has a relatively low percentage of natural land cover, resulting in a water quality function score of -2. However, its low percentage of impervious surface yields a hydrologic function score of +3 (Dudek 2016a).

Morrison Creek Watershed

The Morrison Creek watershed is located within the northern half of the Planning Area and inside the UDA (Figure 10-2). Of the 82,790 acres that compose this watershed, 70,320 acres, or 85%, are located within the Planning Area and almost entirely inside the UDA. This is the second largest watershed in the Planning Area (second to the Laguna Creek watershed). Because it is located in the urbanizing portion of Sacramento County, approximately 45% of the watershed has already been developed and contains non-habitat land covers, primarily High-Density Development. Agriculture accounts for approximately 7% of the watershed. Terrestrial (44%) and Aquatic (4%) land covers account for the remaining land covers in the Morrison Creek watershed. Valley Grassland accounts for about 96% of the Terrestrial land cover. This watershed also supports all of the Aquatic land cover types, including approximately 890 acres of Vernal Pool, 430 acres of Swale, and 230 acres of Seasonal Wetland, which is embedded in Valley Grassland. Laguna Creek (north) is a significant east–west landscape feature that plays a prominent role in conservation. Impervious surfaces cover approximately 18,260 acres, or 26%, of the watershed. Along with the American River (26% impervious surfaces) and Sherman Lake–

Sacramento River (31% impervious surfaces) watersheds, the Morrison Creek watershed has one of the three highest percentages of impervious surfaces in the Planning Area. Reflecting both its large size and more urbanized character, it also has the highest amount of impervious surface acreage in the Planning Area, with Snodgrass Slough having the second highest amount at approximately 7,670 acres.

The Morrison Creek watershed includes documented occurrences for 26 of the 28 Covered Species despite substantial urbanization. Covered Species documented in the watershed include Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*), Boggs Lake hedge-hyssop, dwarf downingia, legenere, pincushion navarretia, Sacramento Orcutt grass, slender Orcutt grass (*Orcuttia tenuis*), Sanford's arrowhead, vernal pool fairy shrimp, vernal pool tadpole shrimp, mid-valley fairy shrimp, Ricksecker's water scavenger beetle, burrowing owl, Cooper's hawk, ferruginous hawk, loggerhead shrike, northern harrier, greater sandhill crane, Swainson's hawk, tricolored blackbird, white-tailed kite, western spadefoot, giant garter snake, western pond turtle, American badger (*Taxidea taxus*), and western red bat. This watershed has the highest percentage (33%) of known occurrences for Covered Species in the Planning Area, including 50% of both the covered vernal pool plants and vernal pool invertebrate occurrences. Due to the large area of vernal pools (almost 900 acres and second only to the Laguna Creek watershed), swale, and seasonal wetlands, vernal pool flora and fauna are the most important biological resources in the watershed.

Current Conditions – Because the Morrison Creek watershed contains the highest percentage of Covered Species occurrences, it has a habitat function score of +3. It has a moderate percentage of natural land cover, yielding a water quality function score of +1. It has a relatively large amount of impervious surface, giving it a hydrologic function score of -2 (Dudek 2016a).

Sherman Lake–Sacramento River Watershed

The Sherman Lake–Sacramento River watershed is located in the extreme western portion of the Planning Area, with approximately 29% located within the Planning Area (Figure 10-2). The watershed intersects the Planning Area in four separate locations that together compose approximately 5% of the Planning Area, including a large area along the northern portion of the Planning Area, a small area in the northwestern corner of the Planning Area, and two areas along the western portion of the Planning Area. The Sherman Lake–Sacramento River watershed in the Planning Area is dominated by human activities. Together, non-habitat and Agricultural land cover types account for 91% of the land covers in the watershed. Of these two land cover types, High-Density Development and Cropland contain the largest acreages at 5,360 and 5,440 acres, respectively, accounting for 58% of the total land covers in the watershed within the Planning Area. The Sherman Lake–Sacramento River watershed contains the Aquatic land cover types mapped within the Planning Area but in small amounts ranging from 2 to 40

acres and totaling 110 acres. Terrestrial land covers, primarily Valley Grassland, compose the remaining acreage, totaling 1,450 acres, or 8%, in the watershed within the Planning Area. Impervious surfaces cover approximately 5,690 acres, or 31%, of the watershed, which is the highest percentage of the watersheds in the Planning Area.

The Sherman Lake–Sacramento River watershed includes documented occurrences for 9 of the 28 Covered Species, including Sanford’s arrowhead, vernal pool fairy shrimp, burrowing owl, northern harrier, greater sandhill crane, Swainson’s hawk, tricolored blackbird, white-tailed kite, and western red bat. Overall, the watershed accounts for only 1% of the Covered Species occurrences in the Planning Area. The majority (91%) of the Sherman Lake–Sacramento River watershed is developed or agriculture, which is reflected in the relatively small number of Covered Species with occurrences in the watershed compared to several of the other watersheds.

Current Conditions – The Sherman Lake–Sacramento River watershed has the lowest scores (-3) for all three functions as a result of its low percentage of Covered Species occurrence, its low percentage of natural land cover, and its high percentage of impervious surface (Dudek 2016a).

Snodgrass Slough Watershed

The Snodgrass Slough watershed is the third largest watershed in the Planning Area behind the Laguna Creek and Morrison Creek watersheds and is entirely contained within the western portion of the Planning Area (Figure 10-2). Approximately 54% of the watershed is agriculture, of which approximately 66% are croplands; croplands cover approximately 35% of the entire watershed. Non-habitat land cover types, dominated by High-Density Development, account for 22% of the watershed. Terrestrial habitat, dominated by Valley Grassland (78%), Mixed Riparian Scrub, Mixed Riparian Woodland, and woodland restoration, covers approximately 16% of the watershed. The Snodgrass Slough watershed accounts for the highest acreage of Aquatic land cover within the Planning Area. Approximately 4,220 acres of the watershed supports the Aquatic land cover types mapped within the Planning Area, and represents 24% of the aquatic habitat in the Planning Area. Impervious surfaces cover approximately 7,670 acres, or 15%, of the watershed. Although this watershed has a relatively smaller proportion of impervious surfaces compared to the American River and Morrison Creek watersheds at 26% and Sherman Lake–Sacramento River watershed at 31%, it has a substantially higher level of impervious surfaces than the remaining watersheds, which range from 1% to 3%.

The Snodgrass Slough watershed includes documented occurrences for 19 of the 28 Covered Species, including dwarf downingia, legenere, Sanford’s arrowhead, vernal pool fairy shrimp, vernal pool tadpole shrimp, mid-valley fairy shrimp, giant garter snake, western pond turtle, burrowing owl, Cooper’s hawk, ferruginous hawk, loggerhead shrike, northern harrier, greater

sandhill crane, Swainson's hawk, tricolored blackbird, white-tailed kite, American badger, and Yuma myotis. This watershed contains 13% of known occurrences for Covered Species in the Planning Area, third only to the Morrison Creek (35%) and Laguna Creek (26%) watersheds.

Current Conditions – The Snodgrass Slough watershed has a moderate to low percentage of Covered Species occurrences, resulting in a habitat function score of -1. It has a relatively low percentage of natural land cover, which gives it a water quality score of -2. It has a mid-range percentage of impervious surface, yielding a hydrologic function score of 0 (Dudek 2016a).

Upper Cosumnes River Watershed

The Upper Cosumnes River watershed is located in the east-central portion of the Planning Area, which encompasses approximately 51% (32,000 acres) of the watershed (Figure 10-2). The majority of the watershed in the Planning Area (21,220 acres, or 66%), consists of terrestrial habitat dominated by valley grassland. Agricultural areas compose approximately 11%, and aquatic areas compose approximately 5% of the watershed in the Planning Area. Non-habitat land cover, primarily Low-Density Development, covers the remaining 18% of the watershed. Impervious surfaces cover approximately 340 acres, or 1%, of the watershed.

The Upper Cosumnes River watershed includes documented occurrences for 14 of the 28 Covered Species, including legenere, Sanford's arrowhead, vernal pool fairy shrimp, vernal pool tadpole shrimp, valley elderberry longhorn beetle, western spadefoot, Cooper's hawk, ferruginous hawk, loggerhead shrike, northern harrier, Swainson's hawk, tricolored blackbird, white-tailed kite, and western red bat. This watershed contains 9% of documented occurrences of Covered Species within the Planning Area. Most notably, the watershed contains 153 of the 156 known occurrences (98%) of valley elderberry longhorn beetle, with the largest concentration of occurrences along the Cosumnes River just south of Rancho Murieta.

Current Conditions – The Upper Cosumnes watershed has a relatively low percentage of Covered Species occurrences, which gives it a habitat function score of -2. However, it has a high percentage of natural land cover and a low percentage of impervious surface, yielding respective water quality and hydrologic function scores of +3 (Dudek 2016a).

10.2 ENVIRONMENTAL CONSEQUENCES/ ENVIRONMENTAL IMPACTS

10.2.1 Methodology for Assessing Impacts of Each Alternative on Aquatic Resources

This section describes the potential impacts of the projects and activities associated with each EIS/EIR alternative on the 10 Planning Area land covers that are potential jurisdictional aquatic

resources. Chapter 10 will analyze these 10 land covers within three aquatic resource categories: (1) Wetlands, (2) Other Waters, and (3) Riparian (see Table 10-1).

The future projects and activities expected under each EIS/EIR alternative are described in Chapter 2. As discussed in Section 3.6.5, the EIS/EIR impact methodology uses GIS datasets that were prepared using the best available information on the amounts and locations of ground disturbance from the future projects and activities expected under each alternative.

As discussed in Sections 3.6.5 and 3.6.6, direct impacts are effects caused by an action or project and occur at the same time and place as the action or project (40 CFR 1508.8; 14 CCR 15358). Indirect impacts are caused by an action or project but occur later in time or are farther removed in distance from the project site but are still reasonably foreseeable (40 CFR 1508.8; 14 CCR 15064(d)). Chapters 8 and 9 previously quantified indirect effects for the Vernal Pool, Swale, and Stream/Creek (VPIH) land covers as natural communities and species habitat, but Chapter 10 focuses on effects to these Aquatic land covers in the context of the CWA and Section 1600 of the California Fish and Game Code. Both statutes consider direct alteration, fill, or removal of aquatic resources, as well as the indirect impacts to the functions and services of each aquatic resource.

Activities and projects implemented under each EIS/EIR alternative could directly impact Planning Area aquatic resources by (1) removing an Aquatic land cover type by excavating, filling,³ draining, or flooding the Aquatic land cover; or (2) converting an Aquatic land cover type to a Terrestrial or a Developed land cover type (see Table 8-1a). The direct impacts to aquatic resources discussed in Chapter 10 are a permanent loss of the acres of the impacted aquatic resource, including loss of the existing functions and services of those impacted acres.

Indirect impacts to aquatic resources would occur when activities or projects implemented under an EIS/EIR alternative adversely alter the existing physical, biological, or ecological characteristics of an aquatic resource, either later in time or farther removed in distance from the project site. Indirect impacts to aquatic resources may become evident over a period of time (weeks, months, or years) and/or occur in aquatic resources located outside the project site or located downstream from the project site. Activities and actions implemented under each EIS/EIR alternative could indirectly impact Planning Area aquatic resources by (1) altering the surface hydrology or sub-surface hydrology in the watershed of the aquatic resource; (2) introducing particulate matter, sediments, pollutants, or toxins to the aquatic resource or the watershed of the aquatic resource; or (3) increasing other threats (e.g., colonization by weedy and noxious species, habitat fragmentation, changes in land management options/practices,

³ Direct adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody.

thatch buildup, inadequate mitigation measures). The indirect impacts discussed in Chapter 10 are permanent impacts to the physical, biological, or the ecological characteristics of an aquatic resource that provide habitat elements for aquatic species. However, those indirect impacts might not decrease the acres of the impacted aquatic resource or remove the functions and services of the impacted aquatic resource.

As discussed in Section 3.6.4, GIS methodology was used to quantitatively estimate the direct impacts (losses) of aquatic resources from each EIS/EIR alternative; GIS datasets of future projects and activities expected under each EIS/EIR alternative were digitally overlaid (compared) with separate GIS datasets of each Aquatic land cover type (Table 10-1). In addition, the potential indirect impacts of each action alternative on the Vernal Pool, Swale, and Stream/Creek (VPIH) land covers were quantified and provided in this chapter using the GIS methodology described in Section 3.6.5 and 3.6.6. However, the potential indirect impacts of each alternative on the other Aquatic Resources land covers (i.e., Seasonal Wetland, Freshwater Marsh, Stream/Creek, Open Water, Mixed Riparian Woodland, Mixed Riparian Scrub, and Mine Tailing Riparian Woodland) are described and analyzed qualitatively, as discussed in Section 3.6.6.

As discussed in Section 3.6.2, it is appropriate to consider impacts to some environmental resources within the context of other impacts occurring to the resource within the surrounding landscape, community, or region. Several of the HUC 10 watershed boundaries discussed in Section 10.1.2 extend beyond the EIS/EIR Planning Area boundary (Figure 10-2). Accordingly, the lead agencies determined that an appropriate geographic scale for evaluating the impacts of each EIS/EIR alternative on aquatic resources should include the Planning Area and all areas of each HUC 10 watershed discussed above in Section 10.1.2, including the areas located outside the Planning Area boundary.

As discussed in Sections 3.4 and 10.1.1, the EIR documents previously prepared for the General Plans of Sacramento County, Galt, and Rancho Cordova (Sacramento County 2010; Galt 2009b; Rancho Cordova 2006) analyzed direct and cumulative impacts of urban growth planned within their jurisdictions, including impacts to aquatic resources. When the impact analysis or conclusions provided in these General Plan EIR documents were determined by the lead agencies to be appropriate for use in the analysis of the EIS/EIR alternatives, a brief description of the incorporated information or analysis is provided in Sections 10.2.2, 10.2.3, and 10.2.4. However, as discussed in Section 3.4, the three General Plan EIRs used different study periods ending in 2030 (Galt 2009b), 2050 (Rancho Cordova 2006), and 2030 (Sacramento County 2010), respectively, and the 50-year study period for this EIS/EIR ends in 2065 (Section 3.6.3). As discussed in Section 3.4, the EIRs for the Rancho Cordova General Plan and the Galt General Plan analyzed full buildout of those jurisdictions. However, additional urban development is expected to occur within Sacramento County during the 35 years after the General Plan EIR study period ends in 2030 and before this EIS/EIR's study

period ends in 2065. Consequently, the impact analyses and conclusions incorporated from the *Sacramento County General Plan Update Final EIR* (Sacramento County General Plan EIR) may not have considered all of the future urban development that is included in the description of each EIS/EIR alternative (refer to Chapter 2). Therefore, the lead agencies considered the impact analysis and conclusions incorporated by reference from the three General Plan EIRs and the effects of all urban development activities and projects that are included in the description of each EIS/EIR alternative.

As discussed in Section 3.7, the cumulative analyses of impacts to aquatic resources in this chapter will consider (1) the effects of past and present (current) urban development within in the Planning Area (see the existing conditions in Section 10.1.2) and within the larger study area, and (2) future impacts expected from reasonably foreseeable other projects in the Planning Area (see Section 3.7) and foreseeable other projects within the larger study area. The cumulative analysis of each EIS/EIR alternative will then consider whether the incremental impacts of the alternative on aquatic resources would be significant (i.e., would be cumulatively considerable). ~~†~~ The cumulative analyses of each alternative in this chapter incorporates information about the past, **present, and reasonably foreseeable** impacts to wetlands and other waters from projects and activities within the SSHCP Planning Area that have been authorized under CWA 404 between 1979 and January 2013 by the USACE Sacramento District Regulatory Division (USACE 2014) (EIS/EIR Appendix A). The USACE 2014 report quantifies the total acres of direct loss of wetlands and other waters ~~from individual discharges of dredged or fill material from past CWA 404 actions within the Planning Area, to the extent reasonable and practical.~~ The USACE 2014 report also quantifies acres of preservation, re-establishment, and establishment of wetlands and other waters ~~undertaken~~ **provided** as compensatory mitigation for ~~authorized CWA 404 fill discharges~~ **loss of waters** between 1979 and January 2013. The USACE 2014 report also quantifies acres of wetlands and other waters that have been permanently preserved by the establishment of USACE-approved mitigation banks between 1979 and January 2013. The USACE 2014 report also considered ~~the progress of currently proposed projects in the CWA 404 permitting process, and the likelihood of a proposed project ultimately being implemented, to help identify reasonably foreseeable future CWA 404 actions and their~~ **foreseeable associated estimated** impacts to ~~the wetlands and the other water land covers~~ **waters of the United States.**

10.2.1.1 Determination of Impact Significance

As discussed in Section 3.8.1, the criteria used to evaluate the significance of impacts expected from each EIS/EIR alternative on ~~hydrology and water quality~~ **aquatic resources** are based on the California Environmental Quality Act Guidelines (14 CCR 15000 et seq.) and on typical thresholds used to evaluate impacts to aquatic resources in recent EIRs prepared by

Sacramento County. Based on these sources, a significant impact to the Planning Area's aquatic resources would occur if the alternative would:

- Have a substantial adverse effect on any riparian or other sensitive natural community identified in local or regional plans, local policies, or by state or federal regulations.
- Have a substantial adverse direct or indirect effect on aquatic resources.

The California Environmental Quality Act Guidelines (Appendix G) does not provide suggested criteria for evaluating a beneficial effect. The following criteria were developed by the lead agencies. A beneficial impact could occur if the alternative would:

- Discernibly reduce adverse effects on riparian or other sensitive natural communities identified in local or regional plans, policies, or regulations or by CDFW or the U.S. Fish and Wildlife Service.
- Discernibly reduce adverse direct or indirect effects to aquatic resources.

The impact analysis for the three EIS/EIR alternatives considers the context, intensity, and severity of potential impacts to each of these impact criteria and presents separate determinations of significance addressing each of these criteria.

10.2.2 No Action/No Project Alternative

The No Action/No Project Alternative is described in Section 2.2.1 of Chapter 2.

10.2.2.1 Direct and Indirect Effects of the No Action/No Project Alternative

As discussed in Section 10.2.1, much of the estimated total 35,532 acres of future urban development expected under the No Action/No Project Alternative (Section 2.2) is also described and analyzed in the Sacramento County General Plan, Galt General Plan, and Rancho Cordova General Plan (see Sections 3.4 and 10.2.1).

The Sacramento County General Plan EIR (Sacramento County 2010) determined that impacts of planned future development on ~~wetland and riparian~~ **aquatic** resources would be less than significant (Sacramento County 2010, pp. 8-31 through 8-34) because future projects would continue to comply with the existing regulations and policies discussed in Section 10.1.1. **In the Sacramento County General Plan EIR, the term “wetland” is used to encompass a variety of aquatic habitats, including both jurisdictional and non-jurisdictional wetlands and streams (i.e., aquatic habitats that could be affected through alteration of the bed and bank) (County of Sacramento 2010, p. 8-32).**

The *City of Rancho Cordova General Plan EIR* (Rancho Cordova General Plan EIR) (Rancho Cordova 2006) determined that impacts of future development to aquatic resources would be significant and unavoidable (Rancho Cordova 2006, “Biological Resources,” pp. 4.10-48 through 4.10-56).

The *City of Galt General Plan Update: 2030 Final EIR* (Galt General Plan EIR) (Galt 2009b) found that impacts from future development to aquatic resources within Galt would be significant and unavoidable (Galt 2008, pp. 8-16 through 8-20 in the Draft EIR [Galt 2008], the Final EIR did not reprint these conclusions).

The adverse impacts of planned urban development on aquatic resources identified in the Sacramento County, Rancho Cordova, and Galt General Plan EIRs and summarized above would also occur under the No Action/No Project Alternative, and the information, analyses, and conclusions from the three General Plan EIRs are incorporated here by reference.

As discussed in Sections 3.4 and 10.2.1, the Galt and the Rancho Cordova General Plan EIRs analyzed buildout of their jurisdictions. However, additional urban development would occur within Sacramento County during the 35-year period after the end of the General Plan EIR study period (2030) and the buildout of the UDA expected at end of this EIS/EIR’s study period in 2065. Consequently, the lead agencies considered the impact analysis and the conclusions incorporated by reference from the General Plan EIRs and the effects of the additional urban development activities and projects included in the description of the No Action/No Project Alternative. The lead agencies extrapolated from the impacts of the urban development implemented in the early part of the EIS/EIR study period (the period analyzed in the General Plan EIRs) the estimated impacts from the additional urban development that will occur in the remaining years of the 50-year EIS/EIR study period. The lead agencies assumed that impacts to aquatic resources from new urban development constructed in the latter part of the EIS/EIR study period would continue to result in significant and unavoidable impacts to wetlands, other waters, and riparian areas.

As discussed in Section 2.2.3, new urban development would occur on approximately 32,426 acres of existing natural land covers under the No Action/No Project Alternative. This new urban development would **be assumed to** directly impact (i.e., ~~be permanently impacted~~, according to the assumptions stated for direct impacts in Section 10.2.1) **aquatic resources**. Of the currently existing 24,254 acres of aquatic resources mapped in the Planning Area, implementation of the No Action/No Project Alternative would result in an estimated direct loss of approximately of 1,607 (6.6%) of ~~the its~~ current amount of aquatic resources (Table 10-3 ~~and Table 10-5~~). The 1,607 acres of direct loss of aquatic resources within the Planning Area under the No Action/No Project Alternative includes all three categories of aquatic

resources (see Table 10-4, Estimated Direct Loss of Aquatic Resources Under the No Action/No Project Alternative).

In addition, as described in Section 2.2.2, up to 1,900 acres of future planned urban development could be shifted or displaced from inside the Mather Core Recovery Area (located primarily within the Morrison Creek watershed) to one or more locations outside the current Sacramento County Urban Service Boundary (USB) (possibly to areas near Rancho Murieta in the Deer Creek watershed or south of the Elk Grove sphere of influence in the Upper Cosumnes River or the Snodgrass Slough watersheds), which could directly impact up to 50 acres of aquatic resources located outside the current USB boundary.

Table 10-4. Estimated Direct Loss of Aquatic Resources Under the No Action/No Project Alternative

Land Cover Type	Acres per Watershed										Displaced Development	Total
	American River	Deer Creek	Laguna Creek	Lower Cosumnes River	Lower Dry Creek	Lower Mokelumne River	Morrison Creek	Sherman Lake–Sacramento River	Snodgrass Slough	Upper Cosumnes		
Wetland Waters												
Vernal Pool	4	27	31	14	8	0	214	5	5	3	11	322
Seasonal Wetland	0	10	17	2	4	0	66	0	6	0	10	115
Swale	1	65	5	2	1	0	160	1	1	0	4	240
Freshwater Marsh	1	2	7	1	1	0	118	0	7	1	6	144
Total Wetland Waters	6	104	60	19	14	0	558	6	19	4	31	821
Other Waters												
Open Water	0	74	2	0	0	0	88	0	1	0	10	175
Stream/Creek (Intermittent and Perennial)	1	12	14	6	0	0	82	4	18	1	11	149
Streams/Creeks (VPIH) (Ephemeral)	0	7	0	0	0	0	28	0	0	0	0	35
Total Other Waters	1	93	16	6	0	0	198	4	19	1	21	359
Riparian												
Mine Tailing Riparian Woodland	48	40	0	0	0	0	128	2	0	0	0	218
Mixed Riparian Scrub	0	2	5	4	2	0	42	4	1	0	2	62
Mixed Riparian Woodland	0	15	9	17	13	0	82	3	2	5	1	147
Total Riparian	48	57	14	21	15	0	252	9	3	5	3	427
Grand Total	55	254	90	46	29	0	1,008	19	41	10	55	1,607

As discussed in Sections 2.2.1 and 3.4, the No Action/No Project Alternative includes the full development, or “full buildout,” of all lands presently zoned or ultimately planned/contemplated for urban development. These lands are discussed in Section 1.1.1 and on Figure 1-1 as the UDA. Most of the UDA area is within the Morrison Creek watershed (Figure 10-2); therefore, most future aquatic resource impacts from planned urban development (1,008 acres of the expected total 1,607 acres of impacts) would occur in the Morrison Creek watershed (Table 10-4). Smaller portions of the northern UDA area are within the Deer Creek and Sherman Lake–Sacramento River watersheds, where 254 acres and 19 acres of aquatic resources would be impacted, respectively. The southern UDA area is located in and around the Galt (Figure 1-1) and includes relatively small portions of the Laguna Creek, the Lower Cosumnes River, and the Dry Creek watersheds (Figure 10-2). Approximately 90 acres of aquatic resources would be directly impacted in the Laguna Creek watershed, 46 acres would be directly impacted in the Lower Cosumnes River watershed, and 29 acres would be directly impacted in the Lower Dry Creek watershed (Table 10-4).

As defined in Section 3.4.2, “full buildout” of the UDA will include some open space lands and some mitigation or conservation lands within the area planned for future urban development. The aquatic resources remaining within those open space, mitigation, or conservation lands would not be directly impacted (e.g., filled, removed, or changed to another Aquatic land cover type) by the expected “full buildout,” but those aquatic resources could become indirectly impacted by adjacent development or by development anywhere within the same landscape or watershed.

In addition to direct losses of aquatic resources, planned urban development under the No Action/No Project Alternative would also indirectly impact existing aquatic resources. Section 3.6.6 and Appendix G summarize the different types of indirect impact mechanisms (environmental stressors) that can result from the construction and the operation of urban development projects and activities. Urban development projects can cause indirect impacts to aquatic resources present in nearby open spaces and conservation lands by increasing the presence of invasive plant species that escape from urban landscaping and by disturbing areas that become colonized by weedy and invasive plants. These invasive plants are known to adversely affect the natural hydrology and the habitat quality of aquatic resources by outcompeting native species, by blocking infiltration of rainwater in vernal pool soils, by changing the hydrology of vernal pools and other wetlands, and by using more water than native grassland species, which shortens the ponding period of vernal pools. The functions and services of vernal pool wetlands are especially vulnerable to indirect changes to the natural hydrologic regime of the vernal pool ecosystem because both the timing of vernal pool fill and period of vernal pool inundation dictate whether vernal pool plants and crustaceans are able to germinate or hatch, survive, and reproduce in the relatively short winter wet season (see

discussion of vernal pool hydrology and ecology in Appendix G). As discussed in Appendix G, an impervious soil layer in Planning Area vernal pool landscapes results in the formation of a seasonal “perched aquifer,” which hydrologically connects vernal pools, swales, and stream/creek aquatic features within a landscape. New urban development projects and activities under the No Action/No Project Alternative implemented in vernal pool landscapes are expected to indirectly impact the functions and services of the vernal landscape in the following ways: by permanently damaging or interrupting the hydrologic connections of the perched aquifer; by interrupting or altering the formation of the perched aquifer, which allows soil to saturate, pools to fill, and swales to connect and flow to downgradient vernal pools; and by puncturing the impermeable soil hardpan (duripan) layer in a portion of a vernal pool landscape, permanently disrupting the existing hydrology of some or all of that landscape (see discussion of vernal pool hydrology and ecology in Appendix G). As discussed in Section 3.6.6, the EIS/EIR qualitatively describes and analyzes indirect impacts to most aquatic resources. However, three of the Planning Area aquatic resources (vernal pools, swales, and stream/creek [VPIH]) also provide habitat for federally listed vernal pool crustaceans and are analyzed in greater detail. As discussed in Sections 8.2.1 and 9.2.1, the Permit Applicants used LIDAR technology and GIS methodology to quantify acres of Vernal Pool, Swale, and Stream/Creeks (VPIH) land covers that could be indirectly impacted by changes to surface or sub-surface hydrology within their watersheds.

The project-by-project compensatory mitigation process expected under the No Action/No Project Alternative is described in Section 2.2.4. As discussed in Section 10.1.1, new development projects and activities implemented under the No Action/No Project Alternative that require authorizations from USACE under CWA 404 would comply with the 2008 Compensatory Mitigation Rule (73 FR 19594–19705), including appropriate mitigation ratios for unavoidable impacts to aquatic resources. Compensatory mitigation ratios ~~and amounts~~ to offset unavoidable impacts to aquatic resources would be determined by considering the factors used in the USACE South Pacific Division *Regulatory Program Standard Operating Procedure for Determination of Mitigation Ratios* (Mitigation Ratios Procedure) **or other policy guidance in effect at the time**, as discussed in Section 10.1.1. New urban development projects and activities could establish on-site or off-site mitigation preserves, purchase credits at an approved mitigation bank, or purchase mitigation credits through an established in-lieu fee program.

Table 10-5, Estimated Acres of Aquatic Resources Preserved Under the No Action/No Project Alternative, provides the estimated acreages of Aquatic Resources land cover types that would be preserved under the No Action/No Project Alternative inside the UDA and outside the UDA. As discussed in Section ~~2, 2.2.4~~ **2.2.3**, the lead agencies described the future No Action/No Project Alternative by estimating the minimum and maximum amounts of new urban development that could occur over a 50-year period inside the UDA under various mitigation

scenarios. Under the scenario with the largest feasible acres of new development and the smallest feasible acres of aquatic resource mitigation feasible, an estimated 1,740 acres of aquatic resources would be preserved in the Planning Area as project mitigation under the No Action/No Project Alternative (Table 10-5). **Table 10-5 identifies 0 acres of riparian land cover preservation under the No Action/No Project Alternative. This is because it is assumed that under the No Action/No Project Alternative all mitigation for unavoidable losses of riparian land covers would be achieved through re-establishment/establishment of mixed riparian scrub and mixed riparian woodland and not through preservation of existing riparian land covers (see Table 10-6, Estimated Acres of Aquatic Resources Re-Established/Established Under the No Action/No Project Alternative).**

Table 10-5. Estimated Acres of Aquatic Resources Preserved Under the No Action/No Project Alternative

Land Cover Type	Preserved Land (acres)		
	Inside UDA	Outside UDA	Total
Wetland Waters			
Vernal Pool	164	866	1,030
Seasonal Wetland	0	8	8
Swale	81	592	673
Freshwater Marsh	0	16	16
<i>Total Wetland Waters</i>	245	1,482	1,727
Other Waters			
Open Water	0	0	0
Stream/Creek (Intermittent and Perennial)	0	0	0
Stream/Creek (VPIH) (Ephemeral)	13	0	13
<i>Total Other Waters</i>	13	0	13
Riparian			
Mine Tailing Riparian Woodland	0	0	0
Mixed Riparian Scrub	0	0	0
Mixed Riparian Woodland	0	0	0
<i>Total Riparian</i>	0	0	0
Total Preserved	258	1,482	1,740

Notes: UDA = Urban Development Area; VPIH = vernal pool invertebrate habitat

Mitigation preserves (permittee-responsible mitigation) could occur within a project/activity site or occur outside a project/activity site. These preserves would include aquatic resources that have been avoided in accordance with regulatory requirements to first avoid and minimize direct and/or indirect impacts to aquatic resources. Smaller, on-site preserves located in proximity to new development tend to be more isolated from other natural lands and more susceptible to indirect effect mechanisms identified previously.

Individual on-site project preserves located in proximity to new development are expected to become surrounded by new urban development and isolated from other natural lands, and the existing functions and services of aquatic resources on those preserves would be **more likely to be** adversely impacted by the urban development indirect effect mechanisms discussed in Chapter 8 and Appendix G.

Table 10-6. Estimated Acres of Aquatic Resources Re-Established/Established Under the No Action/No Project Alternative

Land Cover Type	Re-Establishment/Establishment Mitigation (acres)
<i>Wetland Waters</i>	
Vernal Pool	322
Seasonal Wetland	57
Swale	240
Freshwater Marsh	72
<i>Total Wetland Waters</i>	691
<i>Other Waters</i>	
Open Water	87
Stream/Creek (Intermittent and Perennial)	75
Stream/Creek (VPIH) (Ephemeral)	17
<i>Total Other Waters</i>	179
<i>Riparian</i>	
Mine Tailing Riparian Woodland	0
Mixed Riparian Scrub	298
Mixed Riparian Woodland	256
<i>Total Riparian</i>	554
Total Preserved	1,424

Note: VPIH = vernal pool invertebrate habitat

The action of preserving existing aquatic resources would have no direct effect on the existing aquatic resources that are present inside or outside of the preserve. However, ground-disturbing actions necessary to re-establish/establish aquatic resources, especially vernal pools, on preserved land could result in indirect effects on existing natural aquatic resources. For example, some established (created) vernal pools have changed the existing hydrology of vernal pool landscapes in which they were created, impacting natural vernal pools within the same watershed. Construction activities associated with the re-establishment/establishment of aquatic resources generally include but are not limited to regrading or re-contouring of a site, typically up to 3 feet in depth for vernal pools, and seeding.

As discussed in Sections 2.2.2, 2.2.4, and 8.2.2, the No Action/No Project Alternative would also result in an estimated 1,424 acres of re-establishment or establishment of aquatic resources

(Table 10-6). As described in Section 8.2.2, the re-establishment/establishment acres of aquatic resources presented in Table 10-6 reflect the lead agencies' assumption that the requirements of the 2008 Compensatory Mitigation Rule to be re-established/established to replace lost aquatic resource functions and services at a minimum one-to-one acreage or one-to-one linear foot compensation ratio would continue under the No Action/No Project Alternative. It is assumed in Table 10-6 that compensatory mitigation for direct impact to Vernal Pools and Swales would occur within the Planning Area. However, compensatory mitigation for the other Aquatic land covers (Stream/Creek [VPIH], Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water) is assumed to continue to occur primarily by purchasing credits at an approved mitigation banks or through an in-lieu fee program. However, several mitigation banks and in-lieu fee programs with service areas that overlap the Planning Area actually re-establish, establish, or enhance wetlands or other waters at locations outside the Planning Area. Therefore, Table 8-5 assumes that only half of the necessary compensatory mitigation for direct impacts to Stream/Creek (VPIH), Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water would occur inside the Planning Area.

10.2.2.2 Cumulative Analysis of the No Action/No Project Alternative

As discussed in Sections 8.1.2 and 8.2.2, riparian woodlands, vernal pool wetlands, freshwater marsh wetlands, and other waters were once widespread across the Central Valley and in the Planning Area. Past human activities and projects, including farming operations; urban development inside the UDA; development of agricultural-residential neighborhoods in some areas outside the UDA; past mining operations; and the construction of associated energy, water conveyance, and transportation infrastructure projects (see Sections 3.7.1 and 10.1.2), have removed aquatic resources from the Planning Area and adversely altered the natural physical and biological processes of other aquatic resources, especially within the UDA portions of the Planning Area. The effects of past and of present (current) activities on Planning Area aquatic resources have resulted in the existing conditions described above in Section 10.1.2. These conditions represent an existing significant impact on aquatic resources within the EIS/EIR Planning Area and the larger resource study area.

The types of future foreseeable (probable) other projects, activities, and actions described in Section 3.7.2 are similar to the types of past activities and projects that have occurred in the study area. These foreseeable other projects and activities include new urban development projects within the City of Elk Grove and within the community of Rancho Murieta; proposed master planned developments within the UDA named "Rio Del Oro" (3,828 acres) and "Mather South" (885 acres); further rural residential development outside the UDA; continued urban development on currently cultivated agricultural lands; expansion of existing nature preserves, including the Stone Lakes National Wildlife Refuge and the Cosumnes River Preserve; and

construction of major infrastructure projects such as California High-Speed Rail and the California WaterFix.

A review of the USACE's CWA 404 project authorizations within the Planning Area between 1979 and 2013 indicated a small net gain of waters of the United States within individual project sites authorized under CWA 404 (USACE 2014). The foreseeable other projects that are subject to CWA 404 authorizations would also comply with existing regulatory requirements to avoid and minimize impacts to aquatic resources and provide compensatory mitigation for unavoidable impacts (see Section 10.1.1). Therefore, many of the foreseeable other actions discussed in Section 3.7.2 would not result in a loss of wetlands or other waters. Other existing regulations and policies described in Section 10.1.1, including Section 1602 of the California Fish and Game Code and policies of the three General Plans, would require the reasonably foreseeable other projects that are subject to the California Environmental Quality Act or local entitlements to avoid and minimize impacts to Riparian land covers and provide no net loss of riparian acres (see Section 10.1.1). Consequently, many of the foreseeable other projects and actions discussed in Section 3.7.2 would not result in additional losses of aquatic resource functions and services from the study area. However, the foreseeable rural residential developments, the agricultural activities on private lands, and **certain** other future activities **may not always trigger the regulations and policies listed above, and in those** cases, are likely to result in additional losses and adverse impacts to existing aquatic resources within the resource study area over the 50-year EIS/EIR study period.

As described previously, ~~implementation~~ **implementation** of the No Action/No Project Alternative is assumed to meet **the requirements of the 2008 Compensatory Mitigation Rule, and aquatic resources would be re-established/established to replace lost aquatic resource functions and services at a minimum one-to-one acreage or one-to-one linear foot compensation ratio. Compensatory mitigation under this alternative could occur inside and outside the Planning Area. With the resulting no net loss of aquatic resource functions and services,** ~~When~~ the incremental direct and indirect effects of the No Action/No Project Alternative are viewed in connection with the effects of the past, present, and reasonably foreseeable future other projects and actions, the incremental effects of the No Action/No Project Alternative would not make a considerable contribution to the existing significant cumulative impact on aquatic resources within the study area.

10.2.3 Proposed Action/Proposed Project Alternative

As described in Section 2.3.3, the Proposed Action/Proposed Project Alternative includes the same types of new urban development and infrastructure as those anticipated under the No Action/No Project Alternative. However, the locations of new urban development in the UDA under the Proposed Action/Proposed Project Alternative are expected to differ slightly from the No Action/No

Project Alternative, primarily because the Proposed Action/Proposed Project Alternative would consolidate the federal Endangered Species Act (ESA), California Endangered Species Act, and CWA 404 mitigation requirements of future projects and activities (Covered Activities) to form a managed and interconnected SSHCP Preserve System (see Section 2.3.5). The SSHCP and ARP would establish a network of Preserve Planning Units in the Planning Area that would preserve special-status species and their natural communities in perpetuity. Preservation of these natural communities includes many types of waters of the United States and waters of the state, riparian buffer areas, and adjacent upland areas. In addition, the Proposed Action/Proposed Project Alternative would allow urban development Covered Activities within the Mather Core Recovery Area portion of the UDA to be implemented consistent with planned urban development described in the approved Sacramento County and Rancho Cordova General Plans without urban development shifting or being displaced to locations outside the current USB boundary. Therefore, the Proposed Action/Proposed Project Alternative would allow for more urban development within the Mather Core Recovery Area than the No Action/No Project Alternative because approximately 1,900 acres of new urban development would not shift or be displaced to locations outside of the current Sacramento County USB boundary. Consequently, both the No Action/No Project Alternative and the Proposed Action/Proposed Project Alternative assume a full buildout of the UDA,⁴ but new urban developments would not occur outside the current USB boundary under the Proposed Action/Proposed Project Alternative.

As discussed in Section 2.3.5, the Proposed Action/Proposed Project Alternative's Conservation Strategy also includes landscape-level and project-level SSHCP Avoidance and Minimization Measures (SSHCP AMMs), which would be incorporated into the design or the implementation of each Covered Activity to avoid and minimize impacts to aquatic resources to the greatest extent practicable. The SSHCP AMMs include siting requirements, incorporation of low-impact development measure (LID) elements in project designs, incorporation of Stream Setbacks and Preserve Setbacks in project design, species-specific avoidance measures, and use of BMPs during ground disturbing Covered Activities (see Appendix D for details on each AMM).

10.2.3.1 Direct and Indirect Effects of the Alternative

As discussed in Section 10.1.2, approximately 24,254 acres of aquatic resources is present in the Planning Area (Table 10-1). Implementation of the Proposed Action/Proposed Project Alternative would directly impact (direct loss of) approximately 1,613 acres of aquatic resources, leaving approximately 22,611 acres (92.2% of existing condition) of aquatic

⁴ "Full buildout" means all currently undeveloped lands that are zoned for or ultimately planned/contemplated for future urban development (in the adopted General Plans of the Permit Applicants) would become developed. Full buildout would include some open space and mitigation preserves or other conservation lands within the areas planned for urban development.

resources in the Planning Area (Table 10-7, Estimated Loss of Aquatic Resources Under the Proposed Action/Proposed Project Alternative).

The total 1,613 acres of direct loss of aquatic resources within the Planning Area includes all three categories of aquatic resources (see Table 10-7), including the direct loss of 855 acres of the Wetland Waters land cover types. This direct loss of wetland waters is approximately 34 acres greater than the 821 acres of direct loss of wetland waters anticipated under the No Action/No Project Alternative (Tables 10-4 and 10-7). In addition, the Proposed Action/Proposed Project Alternative would result in the direct loss of 294 acres of other waters, which would be 65 acres less than the 359 acres that is anticipated to be lost under the No Action/No Project Alternative (Tables 10-4 and 10-7). Also, the Proposed Action/Proposed Project Alternative would result in the total direct loss of 464 acres of Riparian land cover types, which would be 37 acres greater than the 427 acres of loss estimated for the No Action/No Project Alternative (Tables 10-4 and 10-7).

The Morrison Creek watershed (see Section 7.1.2 and Figure 10-2) is within the UDA, where future urban development Covered Activities would occur. Therefore, the Morrison Creek watershed would lose the most acres of aquatic resources compared to other Planning Area watersheds. Approximately 994 (619 acres of Wetland Waters, 156 acres of Other Waters, and 219 acres of Riparian land covers) acres of Morrison Creek aquatic resources would be lost under the Proposed Action/Proposed Project Alternative (Table 10-7).

Because the types of urban development implemented under the Proposed Action/Proposed Project Alternative and the No Action/No Project Alternative are similar, the sources of indirect impacts (e.g., impact mechanisms or environmental stressors) that result from the construction and operation of urban development would be similar in type to those described previously for the No Action/No Project Alternative (e.g., altered surface or sub-surface hydrology, contaminated surface runoff, invasive species) (see Section 10.2.2.1).

Table 10-7. Estimated Loss of Aquatic Resources Under the Proposed Action/Proposed Project Alternative

Land Cover Type	Acres per Watershed										Total
	American River	Deer Creek	Laguna Creek	Lower Cosumnes River	Lower Dry Creek	Lower Mokelumne River	Morrison Creek	Sherman Lake–Sacramento River	Snodgrass Slough	Upper Cosumnes River	
Wetland Waters											
Vernal Pools	5	33	31	14	10	0	283	5	5	3	389
Seasonal Wetland	0	10	15	4	1	0	68	0	7	0	105
Swale	1	62	2	3	1	0	163	1	1	0	234
Freshwater Marsh	1	2	8	1	2	0	105	0	7	1	127
Total Wetland Waters	7	107	56	22	14	0	619	6	20	4	855
Other Waters											
Open Water	1	71	2	0	0	0	80	0	1	0	155
Streams/ Creeks (Perennial or Intermittent)	1	12	14	6	3	0	57	4	19	1	117
Streams/ Creeks (VPIH) (Ephemeral)	0	3	0	0	0	0	19	0	0	0	22
Total Other Waters	2	86	16	6	3	0	156	4	20	1	294
Riparian											
Mine Tailing Riparian Woodland	48	40	0	0	0	0	128	2	0	0	218
Mixed Riparian Scrub	0	2	5	4	10	0	36	4	1	0	62
Mixed Riparian Woodland	0	15	9	17	78	0	55	3	2	5	184
Total Riparian	48	57	14	21	88	0	219	9	3	5	464
Grand Total	57	250	86	49	105	0	994	19	43	10	1,613

The Proposed Action/Proposed Project Alternative's Conservation Strategy (Section 2.3.5) included~~s~~ required impact AMMs that would reduce or eliminate many of the impact mechanisms (environmental stressors) that indirectly impact aquatic resources functions and services. The Proposed Action/Proposed Project Alternative would require the following SSHCP AMMs to be applied to Covered Activities (these AMMs are also included in the ARP; details on the AMMs are provided in Appendix D of this EIS/EIR): BMP-1, BMP-2, BMP-3, BMP-4, BMP-5, BMP-9, Road-1, LID-1 through LID-3, EDGE-1 through EDGE-7, EDGE-9, EDGE-10, ROAD-1 through ROAD-3, NATURE TRAIL-1, NATURE TRAIL-2, NATURE TRAIL-4, STREAM-1 through STREAM-5, and UTILITY-2 through UTILITY-4 (see Table 2-6 and Appendix D for a description of all SSHCP AMMs). Relative to the AMMs of individual projects and activities implemented under the No Action/No Project Alternative, these SSHCP AMMs would better reduce indirect impacts on aquatic resources. For example, STREAM-1 through STREAM-3 would require wider Stream Setbacks between streams and new development than those required under the No Action/No Project Alternative regulatory environment, thereby providing greater protection of existing water quality and species habitats in stream/creek and other aquatic resources downstream. On-site project requirements to maintain hydrologic conditions, minimize effects on downstream hydrology through stormwater retention and other measures (LID), perform mandatory construction monitoring near Covered Species aquatic habitat, and perform mandatory implementation of erosion-control measures during project construction "scale up" such that the overall Planning Area would have reduced indirect impacts compared to the No Action/No Project Alternative.

BMP-1 through BMP-11 of the Proposed Action/Proposed Project Alternative are similar to the construction BMPs that would be implemented with projects under the No Action/No Project Alternative (see Table 2-6). However, the Proposed Action/Proposed Project Alternative includes additional on-site monitoring and measurement of the effectiveness of each AMM implemented and annual reporting of the effectiveness of each AMM. The Proposed Action/Proposed Project Alternative also includes a process for annual review of the effectiveness of each SSHCP AMM and a process to make adaptive changes to any AMM that was not effective at avoiding impacts to water quality and aquatic habitats. This additional oversight and guidance provided by the SSHCP would result in the BMP AMMs being implemented more frequently and consistently at all ground-disturbing activities than would occur under the No Action/No Project Alternative. The SSHCP AMMs also provide new AMMs that would not occur under the No Action/No Project Alternative (Table 2-6), and these new measures are expected to lessen the potential adverse effects to surface-water quality compared to the effects of the No Action/No Project Alternative.

Biological Goals and Measurable Objectives provide the broad guiding principles of a habitat conservation plan's (HCP's) operating Conservation Strategy and are required in all HCPs. The

stated Measureable Objectives of each Biological Goal are included as conditions in an HCP's permit. The primary components of the SSHCP Conservation Strategy are six Biological Goals for the operational SSHCP and the specific Measurable Objectives that would achieve each of the six SSHCP Biological Goals. As discussed in Section 7.3.2 of the Draft SSHCP document, SSHCP Biological Goal #2 is to "maintain or improve the existing physical, chemical, and biological functions of the aquatic resources located within the Planning Area." The stated intent of SSHCP Biological Goal #2 is to avoid or minimize impacts of future Covered Activities on Planning Area aquatic resources and to ensure no net loss of aquatic resources and aquatic functions by preserving existing aquatic resources and by re-establishing or establishing aquatic resources within the Planning Area.

SSHCP Biological Goal #2 and its Measurable Objectives prescribe a number of requirements that would benefit streams and creeks within the Planning Area. It requires increased avoidance of creeks in the UDA compared to the No Action/No Project Alternative (avoidance of a minimum of 20% of first and second order tributaries to Elder Creek, Frye Creek, Gerber Creek, Morrison Creek, Paseo Central, and Sun Creek in the UDA). It also requires establishment of Stream Setbacks, which are not currently a requirement within the Planning Area. Avoided creeks (including ephemeral streams) would have minimum setback requirements based on specific objectives of the overall ~~mitigation~~ **Conservation Strategy**. Additionally, aquatic resources preserved within the SSHCP Preserve System would be managed into perpetuity.

The SSHCP Conservation Strategy would create a Preserve System that would preserve and link the highest-quality natural land covers, cropland, and irrigated pasture-grassland within the Planning Area (described in detail in the SSHCP in Chapter 7, Section 7.2.2.1), with a Preserve System 32,426 acres in size, ~~and~~ 26,236 acres of which would be located outside the UDA. Avoidance and minimization of aquatic resources would be accomplished through preserve design and assembly, which includes protecting the rarest types and highest-functioning aquatic resources (e.g., vernal pools, streams, certain seasonal wetlands) and implementing inter-preserve connectivity. The SSHCP Preserve System would be designed to protect watershed functions, maintaining existing hydrologic regimes through linked preserves and setback requirements. This preserve design would be important to aquatic resources and their existing and potential beneficial uses and to the maintenance of aquatic-resource-dependent/associated plants and wildlife. It would also be designed to preserve natural upland landscapes associated with streams and wetland features for maintaining aquatic resource dependent/associated species.

The Proposed Action/Proposed Project Alternative would establish a coordinated and interconnected 33,426-acre SSHCP Preserve System in the Planning Area (see Section 2.3.5). The SSHCP Preserve System would contain at least 2,738 acres of Aquatic Resources land cover types (Table 10-8). The Proposed Action/Proposed Project Alternative would result in the preservation of

1,476 acres of Wetland Waters land cover types. This preservation of wetland waters would be 251 acres less than the 1,727 acres that are anticipated **to be preserved** under the No Action/No Project Alternative (Table 10-5). The Proposed Action/Proposed Project Alternative would result in the preservation of 298 acres of Other Water land cover types. This preservation of other waters would be 285 acres more than the 13 acres of other waters that are anticipated to be preserved under the No Action/No Project Alternative (Table 10-5).

Table 10-8. Estimated Acres of Aquatic Resources Preserved Under the Proposed Action/Proposed Project Alternative

Land Cover Type	Preserved Land (acres)		
	Inside UDA	Outside UDA	Total
Wetland Waters			
Vernal Pool	210	756	966
Seasonal Wetland	56	49	105
Swale	93	185	278
Freshwater Marsh	127	0	127
<i>Total Wetland Waters</i>	486	990	1,476
Other Waters			
Open Water	70	85	155
Stream/Creek (Intermittent and Perennial)	23	94	117
Stream/Creek (VPIH) (Ephemeral)	26	0	26
<i>Total Other Waters</i>	119	179	298
Riparian			
Mine Tailing Riparian Woodland	0 ^a	0 ^a	0 ^a
Combined Mixed Riparian Scrub and Mixed Riparian Woodland	74 ^a	890 ^a	964 ^a
<i>Total Riparian</i>	74	890	964
Total Preserved	679	2,059	2,738

Note: UDA = Urban Development Area

^a Impacts to Mixed Riparian Woodland, Mixed Riparian Scrub, and Mine Tailing Riparian Woodland would be mitigated by preserving any combination of Mixed Riparian Scrub and/or Mixed Riparian Woodland.

The Conservation Strategy of the Proposed Action/Proposed Project Alternative would preserve 964 acres of Riparian land cover types. Preservation of Riparian land cover under the No Action/No Project Alternative is not expected (Table 10-5).

The SSHCP's Conservation Strategy includes the re-establishment/establishment of 1,740 acres of Aquatic Resources land covers to compensate for unavoidable impacts (see Table 10-9, Estimated Acres of Aquatic Resources Re-established/Established Under the Proposed Action/Proposed Project Alternative). Section 7.3.2 of the SSHCP identifies the SSHCP Goals and Objectives, which establish minimum compensatory mitigation requirements for aquatic resources. For example, SSHCP Biological Goal #2's Measurable Objective W5 includes a

minimum 1:1 ratio, including land-cover-specific re-establishment/establishment ratios. As required by SSHCP Biological Goal #2, a minimum 1:1 re-establishment/establishment ratio would be required for all Covered Activities directly impacting wetlands, other waters, and riparian, and the re-establishment/establishment would occur within the SSHCP Preserve System. The Proposed Action/Proposed Project Alternative would result in the re-establishment/establishment of each of the three categories of aquatic resources (Table 10-9). These re-establishment/establishment amounts would ensure that the minimum one-to-one acreage and linear foot compensation ratios required per the 2008 Compensatory Mitigation Rule (33 CFR 332.3[f]) are met.

The compensatory mitigation ratios listed in the ARP are based on a landscape-level assessment of the diversity, abundance, and condition of aquatic resources types that occur in the Planning Area. The compensatory mitigation ratios are also designed to be consistent with USACE's 2008 Compensatory Mitigation Rule and to consider the factors used for determining compensatory mitigation requirements as required for processing Department of the Army permits under Section 404 of the CWA (Mitigation Ratios Procedure).

~~The ARP compensatory mitigation ratios are based upon factors consistent with the federal mitigation rule. The purpose of the ARP compensatory mitigation ratios strategy is to proactively offset unavoidable impacts to aquatic resources and maintain or improve physical, chemical, and biological functions of aquatic resources within the Planning Area.~~

As previously mentioned, two key components of the SSHCP Conservation Strategy are the Jump-Start and Stay-Ahead provisions (described in detail in Chapter 9, Section 9.5.5, of the SSHCP). These components of the SSHCP Conservation Strategy were developed to address the temporal loss consideration described in the Mitigation Ratios Procedure. Jump-Start and Stay-Ahead provisions require impacts to be mitigated in advance of Covered Activity project implementation and ensure that SSHCP Preserve System assembly would keep pace with urban development and make steady progress toward assembling the entire conceptual SSHCP Preserve System. Implementation of these provisions would ensure that lost aquatic resource functions are replaced ahead of Covered Activity project impacts, avoiding temporal loss.

Table 10-9. Estimated Acres of Aquatic Resources Re-Established/Established Under the Proposed Action/Proposed Project Alternative

Land Cover Type	Re-Establishment/Establishment Mitigation (acres)
Wetland Waters	
Vernal Pool	389
Seasonal Wetland	105
Swale	256
Freshwater Marsh	127
<i>Total Wetland Waters</i>	<i>877</i>
Other Waters	
Open Water	155
Stream/Creek (Intermittent and Perennial)	117
Stream/Creek (VPIH) (Ephemeral)	0 ^a
<i>Total Other Waters</i>	<i>272</i>
Riparian	
Mine Tailing Riparian Woodland	0 ^b
Combined Mixed Riparian Scrub and Mixed Riparian Woodland	591
<i>Total Riparian</i>	<i>591</i>
Total Re-Established/Established	1,740

Notes:

- ^a Re-establishment and/or establishment to mitigate effects on Stream/Creeks (VPIH) would be Swale, which is included in the approximately 256 acres shown for Swale.
- ^b Mine Tailing Riparian Woodland would be mitigated re-establishing or establishing Mixed Riparian Scrub or Mixed Riparian Woodland.

Because the Proposed Action/Proposed Project Alternative would result in greater impacts to aquatic resources, the ~~a~~ total acreage of re-established/established aquatic resources would be greater under the Proposed Action/Proposed Project Alternative (Table 10-9) than the No Action/No Project Alternative (Table 10-6). The No Action/No Project Alternative results in 1,424 acres of re-establishment/establishment mitigation **in the Planning Area (see Section 10.2.2 for an explanation of the use of mitigation banks and in-lieu fee programs and potential for some compensatory mitigation to be located outside the Planning Area)**, and the Proposed Action/Proposed Project Alternative results in 1,740 acres of re-establishment/establishment mitigation **in the Planning Area**. For both alternatives, the amount of re-establishment/establishment is directly tied to the amount of impact, with each acre of land cover loss resulting in **at least** 1 acre of establishment/~~re~~-establishment. For the No Action/No Project Alternative, this minimum one-to-one acreage is assumed based on the requirements of the 2008 Compensatory Mitigation Rule (33 CFR 332.3[f]). For the Proposed Project Alternative, it is a direct requirement of SSHCP Biological Goal #2, which would also provide compliance with the minimum standards of the 2008 Compensatory Mitigation Rule. Therefore, both alternatives result in no net loss of acreage of aquatic resources.

Mitigation for direct loss of Mine Tailing Riparian Woodland land cover would re-establish/establish Mixed Riparian Woodland or Mixed Riparian Scrub land covers. This mitigation strategy would replace Mine Tailing Riparian, a constructed land cover (see Section 8.1.2), with the natural Mixed Riparian Woodland or Mixed Riparian Scrub land covers. In addition, impacts to the Open Water land cover (which in the Planning Area consists largely of stock ponds, impoundments, and other constructed features ~~{[see Section 8.1.2]}~~), would be mitigated through the preservation and re-establishment/establishment of either Freshwater Marsh or Seasonal Wetlands land covers. Impacts to the Stream/Creek (VPIH) land cover would be mitigated through the preservation or re-establishment/establishment of the Vernal Pool land cover. Because compensatory mitigation for impact to Mine Tailing Riparian Woodland, Open Water, and the Stream/Creek (VPIH) land cover would not be in kind, these land covers would decrease relative impacts expected under the No Action/No Project Alternative. However, the re-establishment/establishment of total riparian communities and total wetland and other waters would result in a no net loss of acreage.

As discussed previously, implementation of the SSHCP Conservation Strategy, including the Preserve System and AMMs, the ARP, and ~~a~~ proposed state and federal aquatic resource permitting approaches for future Covered Activities (described in Section 1.5), would result in a comprehensive regional approach to avoidance, minimization, and compensation of adverse impacts to aquatic resources (Section 2.3.5).

Similar to the No Action/No Project Alternative, aquatic resources directly and indirectly ~~lost~~ **impacted** under the Proposed Action/Proposed Project Alternative would be mitigated to achieve no net loss of aquatic resources acreage, functions, and services.

The SSHCP Conservation Strategy also includes the goal to “maintain or improve physical, chemical, and biological functions of aquatic resources within the Planning Area.” The SSHCP Preserve System would result in larger individual preserves, and greater connectivity of preserves than is anticipated from the project-by-project mitigation under the No Action/No Project Alternative.

Also, the Conservation Strategy and ARP include goals and objectives to re-establish/establish aquatic resources to compensate for unavoidable adverse impacts, including direct loss of aquatic resources, that remain after AMMs (e.g., watershed-scale planning, project-scale AMMs) have been applied. The Conservation Strategy and ARP would preserve 81 less acres of aquatic resources than the anticipated amount of preservation under the No Action/No Project Alternative; however, the preservation under the Conservation Strategy and ARP would be implemented with a systematically coordinated Preserve System that also considers watersheds. The Preserve System would result in larger individual preserves and greater connectivity of preserves than anticipated from the project-by-project mitigation under the No Action/No Project Alternative.

In addition, as discussed previously, the SSHCP Conservation Strategy and ARP implemented under the Proposed Action/Proposed Project Alternative would include re-establishment/establishment, preservation, and AMMs, such as Stream Setbacks, that would reduce direct and indirect adverse impacts of project to aquatic resources compared to effects of the No Action/No Project Alternative.

Significance of Direct and Indirect Effects

In summary, compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project Alternative would include the following:

- Result in the loss of 855 acres of wetland waters, which is 34 acres more than the 821-acre loss anticipated under the No Action/No Project Alternative
- Result in the loss of 294 acres of other waters, which is 65 acres less than the 359-acre loss anticipated under the No Action/No Project Alternative
- Result in the loss of 464 acres of Riparian land cover types, which is 37 acres more than the 427 acres expected under the No Action/No Project Alternative
- In total, result in the loss of 1,613 acres of aquatic resources, which is a 6-acre greater loss of aquatic resources compared to the 1,607-acre loss of the No Action/No Project Alternative (Table 10-4)
- Preserve 2,738 acres of aquatic resources, which is greater by 998 acres compared to 1,740 acres under the No Action/No Project Alternative
- Require AMMs, such as increased Stream Setbacks, that would be more protective to aquatic resources relative to the No Action/No Project Alternative
- Implement the SSHCP and ARP and result in a greater area of aquatic resources protections and management than the No Action/No Project Alternative
- Improve aquatic resources abundance, diversity, and condition within the Planning Area over that expected under the No Action/No Project Alternative

Therefore, after considering the impacts from the Proposed Action/Proposed Alternative on each of the impact criteria for aquatic resources (Section 10.2.1.1), the Proposed Action/Proposed Project Alternative would result in **Minor Beneficial** effects to aquatic resources compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

10.2.3.2 Cumulative Effects of the Proposed Action/Proposed Project Alternative

The effects of past, and present, ~~and reasonably foreseeable other~~ projects on aquatic resources in the Planning Area were described in Section 10.2.2.2 and represent a significant adverse cumulative impact on the aquatic resources within the study area. **A subset of the reasonably foreseeable other projects (e.g., foreseeable rural residential developments, agricultural activities on private lands) is likely to result in additional losses and additional adverse impacts to existing aquatic resources within the resource study area over the 50-year EIS/EIR study period. However,** As discussed in Section 10.2.2.2, when the incremental direct and indirect effects of the No Action/No Project Alternative are viewed in connection with the significant adverse effects of the past, present, and reasonably foreseeable future other projects and actions, the incremental effects of the No Action/No Project Alternative would not make a considerable contribution to the existing significant cumulative impact on aquatic resources within the study area. Therefore, the No Action/No Project Alternative would result in a ***Less Than Significant Adverse*** effect.

As discussed previously, the implementation of the SSHCP Conservation Strategy, including the SSHCP AMMs, SSHCP ARP, and interconnected SSHCP Preserve System, is expected to result in more consistent and frequent conservation of aquatic resources compared to the No Action/No Project Alternative. Consequently, the incremental effects of the Proposed Action/Proposed Project Alternative would have a minor beneficial impact to aquatic resources compared to the incremental effects of the No Action/No Project Alternative baseline condition. Therefore, the incremental effects of the Proposed Action/Proposed Project Alternative are individually limited and would not make a cumulatively considerable contribution to the significant adverse cumulative impacts of the past, present, and reasonably foreseeable future other projects on aquatic resources. The Proposed Action/Proposed Project Alternative would result in a ***Minor Beneficial Cumulative*** effect to aquatic resources compared to the No Action/No Project Alternative baseline condition.

10.2.4 Reduced Permit Term Alternative

As described in Section 2.3.3, the Reduced Permit Term Alternative includes the same types of new urban development and infrastructure as those anticipated under the No Action/No Project Alternative.

Under the Reduced Permit Term Alternative, the core of the Preserve System established inside the UDA would be associated with the development of five large Master Plans (discussed in Section 2.3.4 for the Reduced Permit Term Alternative and Section 2.3.3 for the Proposed Action/Proposed Project Alternative). Because the Preserve System inside the UDA under both EIS/EIR action alternatives is associated with the same five large Master Plans, approximately 70% of the UDA preserves established under the Reduced Permit Term

Alternative would have similar sizes, boundaries, and locations as the UDA preserves established under the Proposed Action/Proposed Project Alternative. However, the shorter duration of the Reduced Permit Term Alternative—and the smaller amount of urban development and associated development fees collected by the Reduced Permit Term Alternative—would not allow the Reduced Permit Term Alternative to establish as many acres of new preserves in the Planning Area as would occur under the Proposed Action/Proposed Project Alternative’s 50-year permit term. Therefore, fewer new preserves would be established under the ~~e~~Conservation ~~s~~Strategy of the Reduced Permit Term Alternative. This difference would be especially pronounced outside the UDA.

As described in Section 2.4, the ESA and California Endangered Species Act Incidental Take Permits and the CWA permit strategy for HCP Covered Activities would be valid only during the 30-year permit term of the Reduced Permit Term Alternative, and the Reduced Permit Term Alternative’s ~~e~~Conservation ~~s~~Strategy would be implemented only during this 30-year term. The urban development Covered Activities and Conservation Strategies associated with the five Master Plans would be implemented inside the UDA during this 30-year period. However, the EIS/EIR uses a 50-year analysis study period to evaluate all alternatives (see Section 3.6.3), and the EIS/EIR study period extends beyond the end of the 30-year permit term for the Reduced Permit Term Alternative. Therefore, as described in Section 3.6.7.2, the EIS/EIR analysis of the Reduced Permit Term Alternative also considers future urban development that is not part of the project description of the Reduced Permit Term Alternative but is still expected to occur within the Planning Area after the end of the permit term (i.e., in Years 31–50 of the EIS/EIR study period).

As described in Section 3.6.7.2, project mitigation preserves established after the end of the 30-year Reduced Permit Term Alternative would be established under a project-by-project process for obtaining individual authorizations under CWA, ESA, California Endangered Species Act, and Section 1600 of the California Fish and Game Code. Consequently, mitigation preserves established in Years 31–50 of the EIS/EIR study period would not be established using a regional, landscape-based approach that balances new urban development with the need for conservation, which would be provided by an HCP. Therefore, much of the Preserve System inside the UDA would be very similar under the two action alternatives, but the Preserve System outside the UDA would be substantially different between the Reduced Permit Term Alternative and the Proposed Action/Proposed Project Alternative. Under the Reduced Permit Term Alternative, it is unlikely that mitigation preserves established outside the UDA would be contiguous or interconnected, and it is unlikely that a large, contiguous, 10,500-acre, landscape-size Vernal Pool Preserve would be established in the southwestern portion of the Planning Area. Likewise, the No Action/No Project Alternative also would not result in contiguous, interconnected preserves outside the UDA and would not establish a 10,500-acre Vernal Pool Preserve in the Planning Area. In these ways, the new mitigation

preserves established outside the UDA under the Reduced Permit Term Alternative and the No Action/No Project Alternative would be similar.

Direct and Indirect Effects of the Reduced Permit Term Alternative

As discussed in Section 2.4.3, the Covered Activities implemented under the 30-year Reduced Permit Term Alternative would include similar types of urban development expected under the No Action/No Project Alternative. Similar to the Proposed Action/Proposed Project Alternative, the displacement of planned urban development to areas outside of the County's existing USB expected under the No Action/No Project Alternative would not occur under the Reduced Permit Term Alternative. Therefore, the potential changes in location of aquatic resources identified for the No Action/No Project Alternative would not occur under the Reduced Permit Term Alternative. However, no significant changes in aquatic resources use associated with the displaced development were identified for the No Action/No Project Alternative.

~~The Reduced Permit Term Alternative would directly impact approximately 1,097 acres of aquatic resources during the 30 year permit term (Table 10-10). In the remaining 20 years of the 50 year EIS/EIR Study Period (Section 3.6.3) an estimated additional 758 acres of aquatic resources would be lost. Over the EIS/EIR 50 year study period, the Reduced Permit Term Alternative would result in the direct loss of approximately 1,856 acres of aquatic resources in the Planning Area (Table 10-8). This direct loss of aquatic resources is 124 acres greater than the direct loss of approximately 1,732 acres of aquatic resources under the No Action/No Project Alternative (Table 10-2).~~

The Reduced Permit Term Alternative would ~~also~~ result in the direct loss of 931 acres of Wetland Waters land cover types (Table 10-10, Estimated Loss of Aquatic Resources Under the Reduced Permit Term Alternative). This direct loss of wetland waters would be 110 acres greater than the 821 acres that is anticipated to be lost under the No Action/No Project Alternative (Table 10-4). The Reduced Permit Term Alternative would result in the direct loss of 315 acres of other waters. This direct loss of other waters would be 44 acres less than the 359 acres that is anticipated to be lost under the No Action/No Project Alternative (Table 10-4). The Reduced Permit Term Alternative would result in the direct loss of 482 acres of Riparian land cover types. This direct loss of Riparian land cover types would be 55 acres greater than the 427 acres that is anticipated to be lost under the No Action/No Project Alternative (Table 10-4).

Because most of the HCP Preserve System in the UDA would be established during the 30-year permit term, the locations of aquatic resources preservation by watershed would be similar under the Reduced Permit Term Alternative and the Proposed Action/Proposed Project Alternative. Under the Reduced Permit Term Alternative, the watershed with the largest direct loss of aquatic resources would continue to be the Morrison Creek watershed, with a total of 1,088 acres of direct loss (Table 10-10), which is 80 acres more than the Morrison Creek watershed direct losses of 1,008 acres under the No Action/No Project Alternative (Table 10-4).

Table 10-10. Estimated Loss of Aquatic Resources Under the Reduced Permit Term Alternative

Land Cover Type	Acres per Watershed										Total
	American River	Deer Creek	Laguna Creek	Lower Cosumnes River	Lower Dry Creek	Lower Mokelumne River	Morrison Creek	Sherman Lake–Sacramento River	Snodgrass Slough	Upper Cosumnes	
Wetland Waters											
Vernal Pool	4	29	31	14	10	0	312	5	5	3	413
Seasonal Wetland	0	8	17	5	6	0	68	0	7	0	111
Swale	1	75	5	3	1	0	183	1	1	0	270
Freshwater Marsh	1	2	8	1	2	0	115	0	7	1	137
Total Wetland Waters	6	114	61	23	19	0	678	6	20	4	931
Other Waters											
Open Water	1	73	2	0	0	0	88	0	1	0	165
Stream/Creek (Intermittent and Perennial)	1	12	14	6	2	0	63	4	19	1	122
Stream/Creek (VPIH) (Ephemeral)	0	8	0	0	0	0	20	0	0	0	28
Total Other Waters	2	93	16	6	2	0	171	4	20	1	315
Riparian											
Mine Tailing Riparian Woodland	48	40	0	0	0	0	129	2	0	0	219
Mixed Riparian Scrub	0	1	5	4	10	0	41	4	1	0	66
Mixed Riparian Woodland	0	14	9	17	78	0	69	3	2	5	197
Total Riparian	48	55	14	21	88	0	239	9	3	5	482
Grand Total	56	262	91	50	109	0	1,088	19	43	10	1,728

Notes: VPIH = vernal pool invertebrate habitat

The Reduced Permit Term Alternative would result in the loss of 931 acres of wetland waters, which is 110 more acres than the 821-acre loss anticipated under the No Action/No Project Alternative. The Reduced Permit Term Alternative would result in the loss of 315 other waters, which is 44 acres less than the 359-acre loss anticipated under the No Action/No Project Alternative. The Reduced Permit Term Alternative would result in the loss of 485 acres of Riparian land cover types, which is 55 acres more than the 427 acres expected under the No Action/No Project Alternative. In total, the Reduced Permit Term Alternative would result in the loss of 1,728 acres of aquatic resources, which is 121 acres more than the loss of aquatic resources under the No Action/No Project Alternative (Table 10-4); however, preservation of aquatic resources under the Reduced Permit Term Alternative, as discussed below, is greater by 1,038 acres compared to the No Action/No Project Alternative.

During the 30-year permit term, the SSHCP Conservation Strategy and ARP would implement aquatic resources preservation under the same Biological Goal and Measureable Objectives discussed previously for the Proposed Action/Proposed Project Alternative. Following the reduced permit term (Years 31–50 of the 50-year EIS/EIR study period), the preservation of aquatic resources would be expected to occur under the regulatory guidelines framework described for the No Action/No Project Alternative (Section 2.2.4). The acres preserved under the 30-year Reduced Permit Term Alternative are shown in Table 10-11.

Table 10-11. Estimated Preservation of Aquatic Resources Under the Reduced Permit Term Alternative

Land Cover Type	Preservation (acres)		
	Inside UDA	Outside UDA	Total
Wetland Waters			
Vernal Pool	101	1,098	1,199
Seasonal Wetland	55	15	70
Swale	57	478	535
Freshwater Marsh	100	0	100
<i>Total Wetland Waters</i>	313	1,591	1,904
Other Waters			
Open Water	43	0	43
Stream/Creek (Intermittent and Perennial)	41	81	122
Stream/Creek (VPIH) (Ephemeral)	16	0	16
<i>Total Other Waters</i>	100	81	181
Riparian			
Mine Tailing Riparian Woodland	0	5	5
Mixed Riparian Scrub	33	317	350
Mixed Riparian Woodland	54	284	338
<i>Total Riparian</i>	87	606	693
Grand Total	500	2,278	2,778

Notes: UDA = Urban Development Area; VPIH = vernal pool invertebrate habitat

The Reduced Permit Term Alternative would preserve 2,778 acres of aquatic resources in the Planning Area, which is 1,038 acres more than anticipated to be preserved under the No Action/No Project Alternative (1,740 acres) (Table 10-4).

The Reduced Permit Term Alternative would result in the preservation of 1,904 acres of Wetland Water land cover. This preservation of wetland waters would be 177 acres greater than the 1,727 acres that are anticipated under the No Action/No Project Alternative (Table 10-5).

The Reduced Permit Term Alternative would result in the preservation of 181 acres of Other Water land cover types. This preservation of waters would be 168 acres greater than the 13 acres that are anticipated under the No Action/No Project Alternative (Table 10-5).

The Reduced Permit Term Alternative would result in the preservation of 693 acres of Riparian land cover types. This preservation of Riparian land cover types are not anticipated under the No Action/No Project Alternative (Table 10-5).

During the permit term, as discussed for the Proposed Action/Proposed Project Alternative, re-establishment/establishment to compensate for unavoidable impacts to aquatic resources would be considered from a watershed approach and systematically prioritize re-establishment/establishment mitigation projects based on anticipated benefits to aquatic resources, considering both watershed- and function-based factors. The Conservation Strategy implemented during the 30-year permit term of the Reduced Permit Term Alternative would result in the re-establishment/establishment of 1,677 acres of aquatic resources in the Planning Area (Table 10-12, Estimated Re-Establishment/Establishment of Aquatic Resources Under the Reduced Permit Term Alternative).

Comparing Table 10-12 to Table 10-6, the Reduced Permit Term Alternative results in the following re-establishment/establishment: 160 acres more of Wetland Waters; 38 acres more of Other Waters; and 55 acres more Riparian land covers than that estimated for the No Action/No Project Alternative. The differences would likely be greater because the acreages are for a 30-year permit compared to a 50-year period under the No Action/No Project Alternative.

The Conservation Strategy implemented during the permit term would require AMMs, such as increased Stream Setbacks, that would be more protective to aquatic resources relative to the No Action/No project Alternative. Once the permit term has expired (Years 31–50) projects would be subject to the AMMs of the No Action/No Project Alternative.

In addition to direct losses of aquatic resources, planned urban development under the Reduced Permit Term No Action/No Project Alternative would also indirectly impact existing

aquatic resources. Section 3.6.6 and Appendix G summarize the different types of indirect impact mechanisms (environmental stressors) that can result from the construction and operation of urban development projects and activities.

As described previously in the analysis of the No Action/No Project Alternative, the functions and services of aquatic resources may be indirectly impacted by these stressors. During the 30-year permit term, the AMMs discussed in Table 2-6 and Appendix D would be applied to all HCP Covered Activities. The AMMs applied during the permit term would better reduce direct and indirect impacts to aquatic resources compared to the AMMs implemented on a project-by-project basis under the No Action/No Project Alternative. Once the 30-year permit term has expired (Years 31–50 of the 50-year EIS/EIR study period), individual urban development projects would comply with ESA, California Endangered Species Act, and CWA 404 on a project-by-project basis.

BMP-1 through BMP-11 of the Reduced Permit Term Alternative would be similar to the construction BMPs for projects implemented under the No Action/No Project Alternative (see Table 2-6). However, the Reduced Permit Term Alternative includes 30 years of additional on-site monitoring and measurement of the effectiveness of each AMM implemented and annual reporting of the effectiveness of each AMM. The Reduced Permit Term Alternative also includes a process for annual review of the effectiveness of each SSHCP AMM for a 30-year period and a process to make adaptive changes to any AMM that was not effective at avoiding impacts to water quality and aquatic resources. This additional oversight and guidance provided by the SSHCP would result in BMP AMMs being implemented more frequently and consistently at all ground-disturbing activities than would occur under the No Action/No Project Alternative. The SSHCP AMMs also provide new AMMs that would not occur under the No Action/No Project Alternative (Table 2-6), and these new measures are expected to lessen the potential adverse effects to surface-water quality and groundwater quality compared to the effects of the No Action/No Project Alternative.

During the permit term, the Reduced Permit Term Alternative would implement the SSHCP Conservation Strategy and ARP, which would work synergistically to preserve and re-establish/aquatic resources to provide compensatory mitigation for the direct loss of these resources at a 1:1 ratio as a result of implementing Covered Activities. Once the permit term has expired, preservation and re-establishment/establishment to mitigate for direct loss of aquatic resources as a result of project implementation would still be required to meet regulatory requirements in place at that time, which are expected to be mitigated at least at a 1:1 ratio but would occur on a project-by-project basis as discussed in Section 2.4.5. The Reduced Permit Term would achieve a no net loss of acres of aquatic resources function and value. The No Action/No Project Alternative would also be anticipated to result in no net loss of aquatic resources function and value (Section 10.2.2).

The ARP and SSHCP Conservation Strategy under the Reduced Permit Term Alternative contains the same Biological Goal #2 and associated Measureable Objectives, which would benefit aquatic resources and result in the preservation of 2,778 acres of aquatic resources in the Planning Area, which is a 1,038-acre larger area than the 1,740 acres that is expected to be preserved under the No Action/No Project Alternative. As discussed previously for expected re-establishment/establishment of aquatic resources, the preservation of aquatic resources that would be expected to occur during the permit term would be guided by the SSHCP Conservation Strategy and ARP. After the 30-year permit term concludes, preservation of aquatic resources would be accomplished on an individual project-by-project basis as discussed in Section 2.4.5.

The SSHCP Conservation Strategy and associated ARP that would be implemented during the first 30 years of the Reduced Permit Term Alternative would include re-establishment/establishment, preservation, and AMMs, such as increased Stream Setbacks, that would reduce direct and indirect adverse impacts to aquatic resources compared to what is anticipated from the No Action/No Project Alternative. In addition, the Conservation Strategy and the ARP implemented during the permit term also include goals and objectives to re-establish/establish aquatic resources to compensate for loss of aquatic resources at a no net loss level. During the permit term, the Conservation Strategy and ARP would preserve additional acres of aquatic resources that exceed the preservation acres under the No Action/No Project Alternative within a systematically coordinated Preserve System implemented at the watershed scale. The Preserve System implemented during the permit term would result in larger individual preserves and greater connectivity of preserves than anticipated from the project-by-project mitigation under the No Action/No Project Alternative.

Table 10-12. Estimated Re-Establishment/Establishment of Aquatic Resources Under the Reduced Permit Term Alternative

Land Cover Type	Re-Establishment/Establishment (acres)
Wetland Waters	
Vernal Pool	413
Seasonal Wetland	91
Swale	228
Freshwater Marsh	119
<i>Total Wetland Waters</i>	<i>851</i>
Other Waters	
Open Water	104
Stream/Creek (Intermittent and Perennial)	105
Stream/Creek (VPIH) (Ephemeral)	8
<i>Total Other Waters</i>	<i>217</i>
Riparian	
Mine Tailing Riparian Woodland	0
Mixed Riparian Scrub	303
Mixed Riparian Woodland	306
<i>Total Riparian</i>	<i>609</i>
Grand Total	1,677

Note: VPIH = vernal pool invertebrate habitat

Significance of Direct and Indirect Effects

In summary, compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would include the following:

- Result in the loss of 931 acres of wetland waters, which is 110 acres more than the 821-acre loss anticipated under the No Action/No Project Alternative.
- Result in the loss of 315 acres of other waters, which is 44 acres less than the 359-acre loss anticipated under the No Action/No Project Alternative.
- Result in the loss of 482 acres of Riparian land cover types, which is 55 acres more than the 427 acres expected under the No Action/No Project Alternative.
- In total, result in the loss of 1,728 acres of aquatic resources, which is 121 acres greater loss of aquatic resources compared to the No Action/No Project Alternative (Table 10-4).
- Preserve 2,778 acres of aquatic resources, which is greater by 1,038 acres compared 1,740 acres under No Action/No Project Alternative.
- Require AMMs, such as increased Stream Setbacks, that would be more protective to aquatic resources relative to the No Action/No Project Alternative. However, once the permit term has expired (Years 31–50 of the 50-year EIS/EIR study period),

projects would be subject to the AMMs of the No Action/No Project Alternative (which do not include, for example, the expectation of required Stream Setbacks).

- Implement the SSHCP and ARP for the first 30 years of the study period and result in a greater area of aquatic resources preserved than the No Action/No Project Alternative.
- Improve aquatic resource abundance, diversity, and condition within the Planning Area over that expected under the No Action/No Project Alternative.

Therefore, after considering the impacts from the Reduced Permit Term Alternative on each of the impact criteria for aquatic resources (Section 10.2.4), the Reduced Permit Term Alternative would result in a **Minor Beneficial** effect to aquatic resources compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

Cumulative Analysis of the Alternative

The effects of past, and present, ~~and reasonably foreseeable other~~ projects on aquatic resources in the Planning Area were described in Section 10.2.2.2 and represent a significant adverse cumulative impact on the aquatic resources within the study area. A subset of the reasonably foreseeable other projects (e.g., foreseeable rural residential developments, agricultural activities on private lands) are likely to result in additional losses and additional adverse impacts to existing aquatic resources within the resource study area over the 50-year EIS/EIR study period. However, As discussed in Section 10.2.2.2, when the incremental direct and indirect effects of the No Action/No Project Alternative are viewed in connection with the significant adverse effects of the past, present, and reasonably foreseeable future other projects and actions, the incremental effects of the No Action/No Project Alternative would not make a considerable contribution to the existing significant cumulative impact on aquatic resources within the study area. Therefore, the No Action/No Project Alternative would result in a **Less Than Significant Adverse** effect.

As discussed in this section, the 30-year implementation of the HCP ~~e~~Conservation ~~s~~Strategy, including the HCP AMMs, the HCP ARP, and the interconnected HCP Preserve System, is expected to result in more consistent and frequent conservation of aquatic resources compared to the No Action/No Project Alternative. Consequently, the incremental effects of Reduced Permit Term Alternative would have a minor beneficial impact to aquatic resources compared to the incremental effects of the No Action/No Project Alternative baseline condition. Therefore, the incremental effects of Reduced Permit Term Alternative are also individually limited and would not make a cumulatively considerable contribution to the significant adverse cumulative impacts of the past, present, and reasonably foreseeable future other projects on aquatic resources. The Reduced Permit Term Alternative would result in a **Minor Beneficial Cumulative** effect to aquatic resources compared to the No Action/No Project Alternative baseline condition.

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- 33 CFR 330.1–330.6. Nationwide Permit Program.
- 33 CFR 332.1–332.8. Compensatory Mitigation for Losses of Aquatic Resources.
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CHAPTER 11 – PALEONTOLOGICAL, CULTURAL, AND HISTORICAL RESOURCES

This chapter presents the environmental effects of each Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) alternative on paleontological resources and on cultural and historical resources. Paleontological resources are fossilized remains of plants and animals and may include bones, teeth, shells, and leaves found in geologic (rock) formations.

Historical resources are defined by the State of California as “any object, building, structure, site, area, or place, which is historically significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California” (Public Resource Code (PRC) section 5021.1(b)). Similarly, the term “historic property” is defined under the National Historic Preservation Act (NHPA) to include any prehistoric or historic district, site, building, structure, or object included in or eligible for inclusion in the National Register of Historic Places (NRHP) maintained by the Secretary of the Interior. The term “historic property” includes artifacts, records, and material remains that are related to and located within such properties. Properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization may also be historic properties eligible for inclusion in the NRHP (36 CFR 800.16(l)(1)).

The term “cultural resources” covers a wider range of resources than “historical resources” and “historic properties,” such as sacred sites, archeological collections, or archaeological sites not eligible for the federal NRHP or not eligible for the California Register of Historical Resources (CRHR). Cultural resources can include prehistoric archaeological sites, prehistoric artifacts, and tribal cultural resources.¹

11.1 AFFECTED ENVIRONMENT/ENVIRONMENTAL SETTING

This section describes the regulatory and physical environmental setting for paleontological, cultural, and historical resources within the Planning Area.

11.1.1 Regulatory Framework

Several federal, state, and local agency requirements apply to the identification, avoidance, and treatment of paleontological, cultural, and historical resources within the Planning Area. This section summarizes the statutes, regulations, policies, and agency planning documents that are relevant to the approval, permitting, or implementation of the alternatives analyzed in this EIS/EIR. This section also identifies any relevant federal permits or other entitlements that must

¹ Under the California Environmental Quality Act (CEQA), a tribal cultural resource is defined as a site feature, place, cultural landscape, sacred place, or object, which is of cultural value to a tribe and is either: (1) on or eligible for the CRHR or a local historic register, or (2) the CEQA lead agency, at its discretion, chooses to treat the resource as a tribal cultural resource.

be obtained prior to implementing the alternatives. To the extent possible, the analyses or studies required by these regulations and policies are integrated into the environmental effects analyses presented in Section 11.2 (40 CFR 1502.25).

11.1.1.1 Federal

National Environmental Policy Act

The definition of “effects” in the National Environmental Policy Act (NEPA) regulations includes adverse and beneficial effects on historic and cultural resources (40 CFR 1508.8). Therefore, the “Environmental Consequences” section of an EIS (see 40 CFR 1502.16(f)) must analyze potential effects to historic or cultural resources that could result from the proposed action and each alternative. As discussed in Section 3.8, in considering whether an alternative may “significantly affect the quality of the human environment,” a federal agency must consider, among other things:

- Unique characteristics of the geographic area such as proximity to historic or cultural resources (40 CFR 1508.27(b)(3)), and
- The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places (40 CFR 1508.27(b)(8)).

Therefore, because historic properties are a subset of “cultural resources,” they are one aspect of the “human environment” defined by NEPA regulations. The NEPA regulations also require that “To the fullest extent possible, agencies shall prepare draft environmental impact statements concurrently with and integrated with environmental impact analyses and related surveys and studies required by the National Historic Preservation Act (40 CFR 1502.25(a)).”

The federal government has a unique relationship with Indian tribes derived from the Constitution of the United States, treaties, Supreme Court decisions, and federal statutes. Consultation with an Indian tribe must recognize the government-to-government relationship between the federal government and Indian tribes, and should be conducted in a sensitive manner respectful of tribal sovereignty (36 CFR 800.2(c)(2)(ii)(B) and (C)). Under NEPA, federal agencies are encouraged to consult with Indian tribes early in the NEPA planning process, and to invite Indian tribes to be cooperating agencies in preparation of an EIS, when potential effects are on a reservation or affect tribal interests. Tribal consultations under NEPA can include effects to treaty, trust, and other natural resource issues, as well as to cultural resources in general, whether or not they meet the specific definition of historic property under the NHPA. The NEPA review of an action may also include the federal government’s responsibilities under Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations; EO 13175, Consultation and

Coordination with Indian Tribal Governments; the American Indian Religious Freedom Act; and related statutes and policies that have a consultation component.

National Historic Preservation Act

The NHPA (16 U.S.C. 470 et seq.) establishes the nation's policy for historic preservation and sets in place a program for the preservation of historic properties. Pursuant to the NHPA, the State Historic Preservation Officer (SHPO) advises and assists, as appropriate, federal agencies in carrying out their historic preservation responsibilities. Section 106 of the NHPA (NHPA 106) requires federal agencies to take into account the effects of their undertakings on cultural resources that are, or may be, eligible for inclusion in the NRHP. An undertaking is a project, activity, or program under the direct or indirect jurisdiction of a federal agency. Such jurisdiction includes funding an action in whole or in part; carrying out an action by or on behalf of a federal agency; issuance of a federal permit, license, or approval; and state or local regulation administered under a delegation or approval by a federal agency. As such, implementation of a habitat conservation plan (HCP) and issuance of an Endangered Species Act (ESA) Incidental Take Permit are an undertaking and subject to compliance with NHPA 106. Other federal actions, including issuing authorizations or permits or under the Clean Water Act (CWA), must also fulfill the requirements of NHPA 106.

NHPA 106 also requires federal agencies to afford the SHPO, tribal historic preservation officers, and the public a reasonable opportunity to comment on their undertakings. The U.S. Fish and Wildlife Service (USFWS) may use the public involvement procedures under NEPA or under other program requirements to satisfy NHPA public involvement requirements. The USFWS is also responsible for providing a project description as well as an effects analysis and determination to the SHPO and to any affected Tribes. Cultural resources are a relevant factor in a NEPA analysis, and both NHPA and NEPA regulations encourage coordination and incorporation of NHPA consultation with the NEPA process. There is overlap, but there are also differences, in the implementing regulations for NHPA 106 (36 CFR 800) and implementing regulations for NEPA (40 CFR 1500–1508; 43 CFR 46) with regard to conducting an effects analysis. Section 6 of the NHPA addresses potential effects to historic properties associated with the federal undertaking (36 CFR 800.16(y)), while NEPA considers a broader categories of resources that includes historic properties and other aspects of the human environment (40 CFR 1508.14; 40 CFR 1508.8(b)).

The USFWS's responsibilities under NHPA 106 are to identify historic properties that may be affected, and to take into account the effect of issuance of an Incidental Take Permit and implementing the HCP conservation program on these properties. The implementing regulations for NHPA 106 (at 36 CFR Part 800), define how the USFWS can meet these requirements through a consultation process. The goal of consultation is to identify historic

properties potentially affected by the federal undertaking, assess its effects, and seek ways to avoid, minimize, or mitigate any adverse effects on historic properties. The regulations implementing NHPA 106 require federal agencies to consult the SHPO, and these stakeholders:

- Tribal Historic Preservation Officers, if applicable;
- Federally recognized Indian tribes, including Native villages and Native Hawaiian organizations, if applicable;
- Local governments, if the action may affect historic properties within their jurisdiction;
- Applicants for federal permits, licenses, or assistance;
- Representatives from interested organizations, private citizens, and the public; and
- The Advisory Council on Historic Properties (ACHP) when circumstances warrant its participation.

Federal agencies and these consulting parties strive to reach agreement on measures to avoid, minimize, and mitigate adverse effects on historic properties and to find a balance between project goals and preservation objectives. Because NHPA regulations allow the federal agencies to coordinate with other programs, in states with cultural resource requirements that meet NHPA goals, the state consultations can be incorporated into USFWS reviews to minimize duplicative effort by the USFWS and HCP permit applicants. In California, the Office of Historic Preservation reviews projects and programs to ensure that they comply with federal and state historic preservation laws, and that projects are planned in ways that avoid, minimize or mitigate adverse effects to cultural or historical resources.

Compliance with the NHPA 106 process involves the following steps (see 36 CFR 800 Subpart B):

- Initiate consultation and public involvement, including with Tribal Historic Preservation Officer(s) if applicable.
- Identify the area of potential effect (APE).
- Identify historic properties.
- Evaluate historic properties.
- Assess effects on historic properties.
- Resolution of Adverse Effects Consult with the SHPO regarding adverse effects on historic properties, resulting in a memorandum of agreement (MOA).
- Coordinate with requirements of NEPA review.
- Submit the MOA to the federal ACHP.
- Proceed in accordance with the MOA.

A key step in the process is determination of the “area of potential effects” associated with a potential undertaking (i.e., a proposed HCP). 36 CFR 800.16(d) defines the APE as “the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of the undertaking and may be different for different kinds of effects caused by the undertaking.” The APE includes the areas where the USFWS would authorize take; areas where the USFWS influenced the project through negotiation of the avoidance, minimization, and mitigation measures; and activities associated with their implementation.

The regulations for implementing NHPA 106 directs the USFWS to make a “reasonable and good faith effort” to identify historic properties in consultation with the SHPO, the Tribal Historic Preservation Officers, and tribes, taking into consideration the magnitude and nature of the undertaking and degree of Federal involvement” (36 CFR 800.4(b)(1)). The identification effort includes, but is not limited to, a scientific literature review of the previous archaeological, historical, and historic structural resource information for a given APE.

The NHPA 106 process normally concludes with an agency finding of “no historic properties affected,” “no adverse effect,” or “adverse effects” that are resolved through avoidance, minimization, or mitigation.” For undertakings with adverse effects, the federal agency usually executes a legally binding document, an MOA or Programmatic Agreement, that stipulates the resolution of adverse effects agreed to by the signatories. In the rare circumstances where there is a failure to reach an agreed-upon solution, the ACHP issues formal advisory comments to the head of the federal agency, and the head of the agency must then take into account and respond to those comments.

NHPA under CWA 404 Actions: The permitting or authorization of projects by the U.S. Army Corps of Engineers (USACE) under CWA 404 is a federal undertaking that is subject to compliance with NHPA 106. The USACE follows procedures contained in 33 CFR 325, Appendix C (*Procedures for the Protection of Historic Properties*) to fulfill the requirements set forth in the NHPA, in other applicable historic preservation laws, and in presidential directives as they relate to the regulatory program of the USACE (33 CFR Parts 320-334). In addition to the requirements of the NHPA, all historic properties are also subject to consideration under the USACE’s NEPA processes (33 CFR Part 325, Appendix B), and the USACE’s public interest review requirements contained in 33 CFR 320.4. Therefore, historic properties are included as a factor in the district engineer’s decision on each CWA 404 permit application.

If the project or activity is found to have an “adverse effect” on NRHP-designated historic properties, the district engineer will coordinate with the SHPO to seek ways to avoid or reduce effects on designated historic properties. At any time during CWA 404 permit processing, the district engineer may consult with the involved parties to discuss and consider

possible alternatives or measures to avoid or minimize adverse effects of a proposed activity in accordance with the procedures described in 33 CFR Part 325, Appendix C. If the consultation results in a mutual agreement among the SHPO, the permit applicant, and the district engineer regarding the treatment of designated historic properties, then the district engineer may formalize that agreement either through special conditions added to the CWA 404 permit and/or by signing an MOA with these parties. Such MOA will constitute the comments of the SHPO and the ACHP. The criteria involved in making an adverse effect determination are described fully in 33 CFR Part 325, Appendix C.

In making the decision about a permit application, in accordance with 33 CFR 320.4, the USACE district engineer shall weigh all factors, including the effects of the undertaking on historic properties and any comments of the ACHP and the SHPO, and any views of other interested parties. The district engineer will add permit conditions to avoid or reduce effects on historic properties that he determines are necessary in accordance with 33 CFR 325.4. In reaching his determination, the district engineer will consider the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation* (48 FR 44716). If the district engineer concludes that permitting the project would result in the irrevocable loss of important scientific, prehistoric, historical, or archeological data, the district engineer, in accordance with the Archeological and Historic Preservation Act, will advise the Secretary of the Interior of the extent to which the data may be lost if the undertaking is permitted, any plans to mitigate such loss that will be implemented, and the permit conditions that will be included to ensure that any required mitigation occurs.

NHPA and Tribes. Under the NHPA, consultation with Indian tribes and Native Hawaiian organizations is mandatory. These consultations focus on identifying and evaluating historic properties, assessing effects, and, where appropriate, resolving adverse effects to those properties. Consultation is required with any Indian tribe or Native Hawaiian organization that may attach religious and cultural significance to historic properties that may be affected by a proposed undertaking, regardless of whether the property is located on or off tribal lands. Tribal consultation under NEPA can include effects to treaty, trust, and other natural resource issues, as well as to cultural resources in general, whether or not they meet the specific definition of a historic property under the NHPA.

Federal Land Policy Management Act

The Federal Land Policy Management Act (43 U.S.C. 1701 et seq.) requires the Secretary of the Interior to manage public lands in such a way that will protect the quality of scientific, scenic, historical, and archaeological values.

Antiquities Act

The Antiquities Act (16 U.S.C. 431 et seq.) establishes criminal penalties for unauthorized destruction or appropriation of “any historic or prehistoric ruin or monument, or any object of antiquity” on federal lands.

Executive Order 11593, Protection and Enhancement of the Cultural Environment

Executive Order 11593 (President Nixon 1971) requires federal agencies to administer cultural properties under their control and to initiate measures necessary to direct federal agency policies, plans, and programs in such a way that federally owned sites are preserved and maintained. In addition, this Executive Order also required federal agencies, in consultation with the ACHP (16 U.S.C. 4701), to institute procedures to ensure that federal plans and programs contribute to the preservation and enhancement of non-federally owned sites, structures, and objects of historical, architectural, or archaeological significance.

Executive Order 13007, Indian Sacred Sites

Executive Order 13007 (President Clinton 1996) requires federal land-managing agencies to the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions, to: (1) accommodate access to and ceremonial use of Native American sacred sites by Native American religious practitioners, and (2) avoid adversely affecting the physical integrity of such sacred sites. It also requires federal agencies to maintain confidentiality of sacred sites where appropriate.

American Indian Religious Freedom Act

The American Indian Religious Freedom Act (16 U.S.C. 1996) establishes a national policy to protect and preserve the inherent right of Native Americans and other indigenous groups to exercise their freedom to believe, express, and exercise their traditional religions, including, but not limited to, access to religious sites, use and possession of sacred objects, and freedom to worship through ceremonial and traditional rites. Federal agencies must obtain the views of Indian leaders and consider when a proposed land use might conflict with traditional Native American religious beliefs or practices and seek to avoid unnecessary interference with Native American religious practices during the implementation of an action. Potential conflict between an action and Native American religious practices does not bar federal agencies from approving a proposed land use or carrying out a proposed action.

Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act (Public Law 101–601; 25 U.S.C. 3001 et seq.) describes the rights of Native American lineal descendants and Native American

tribes with respect to the treatment, repatriation, and disposition of Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony, with which they can show a relationship of lineal descent or cultural affiliation. One major purpose of this act (Sections 5–7) is to require that federal agencies and museums receiving federal funds inventory holdings of Native American human remains and funerary objects and provide written summaries of other cultural items. Once lineal descent or cultural affiliation has been established, lineal descendants normally make the final determination about the disposition of cultural items. Disposition may take many forms from reburial to long-term curation, according to the wishes of the lineal descendent(s) or culturally affiliated tribe(s).

The second major purpose of the act is to provide greater protection for Native American burial sites and more careful control over the removal of Native American human remains, funerary objects, sacred objects, and items of cultural patrimony on federal and tribal lands. The act requires that Native American tribes be consulted whenever archaeological investigations encounter, or are expected to encounter, Native American cultural items or when such items are unexpectedly discovered on federal or tribal lands (Section 3). Excavation or removal of any such items also must be done under procedures required by the Archaeological Resources Protection Act (Section 3(c)(1)).

Archaeological and Historic Preservation Act

The Archaeological and Historic Preservation Act (16 U.S.C. 469–469c2) “specifically provides for the preservation of historical and archeological data (including relics and specimens) which might otherwise be irreparably lost or destroyed as the result of ...any alteration of the terrain caused as a result of any federal construction project or federally licensed activity or program.” Because the project includes issuance of federal permits under the ESA and CWA, this act would apply to the action alternatives. Under this act, a federal agency may request the Secretary of the Interior to undertake the recovery, protection, and preservation of historical and archeological data (including preliminary survey, or other investigation as needed, and analysis and publication of the reports resulting from such investigation), or it may, with funds appropriated for such project, program, or activity, undertake such activities.

Archaeological Resources Protection Act

The Archaeological Resources Protection Act (16 U.S.C. 470a et seq.) provides civil and criminal penalties for the unauthorized excavation, removal, damage, alteration, or defacement of any archaeological resource located on public lands or Indian lands unless permitted in accordance with Section 4 of the Archaeological Resources Protection Act.

11.1.1.2 State**California Environmental Quality Act**

The California Environmental Quality Act (CEQA) of 1970, as amended, (PRC Section 21000), requires state and local agencies to identify and reduce, if feasible, significant effects of land use decisions, including those to cultural resources.

CEQA Guidelines (Sections 1427, 15064.4(b), 15064.5, 15064.7, 15126.4, and Appendix G, Section V) collectively recognize the potential effects of development to resources and the need for preservation. Under CEQA, public agencies must consider the effects of their actions on both “historical resources” and “unique archaeological resources.” Pursuant to CEQA, Section 21084.1, a “project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.” CEQA, Section 21083.2, requires agencies to determine whether proposed projects would have effects on “unique archaeological resources.”

“Historical resource” is a CEQA term with a defined statutory meaning (PRC Section 21084.1 and CEQA Guidelines, Sections 15064.5(a) and 15064.5(b)). The definition includes any resource listed in or determined to be eligible for listing in the CRHR (see below).

The CEQA Guidelines, Section 15064.5(c), also provide specific guidance on the treatment of archaeological resources, depending on whether they meet the definition of a historical resource or the definition of a unique archaeological resource. If the site meets the definition of a unique archaeological resource, it must be treated in accordance with the provisions of PRC Section 21083.2.

CEQA Guidelines, Section 15064.5(e), requires that excavation activities be stopped whenever human remains are uncovered and that the County coroner be called in to assess the remains. If the County coroner determines that the remains are those of Native Americans, the Native American Heritage Commission (NAHC) must be contacted within 24 hours. At that time, the lead agency must consult with the appropriate Native Americans, if any, as identified in a timely manner by the NAHC. CEQA Guidelines, Section 15064.5, directs the lead agency (or applicant), under certain circumstances, to develop an agreement with the Native Americans for the treatment and disposition of the remains.

Discretionary projects would be subject to environmental review consistent with CEQA. As part of the CEQA review process, the local land use authority (e.g., Sacramento County, Galt, or Rancho Cordova) would make a determination as to whether a project-level cultural resource analysis is warranted. The project-level analysis could include, for example, a cultural records and literature search, pedestrian surveys, architectural analysis, extended phase one

evaluations, including subsurface testing programs, and/or data recovery operations. During future CEQA review of projects, any potential site-specific effects on cultural resources would be identified, and any necessary avoidance or mitigation measures to reduce potential effects would be recommended, as appropriate.

The EIS/EIR cultural resources study follows the basic guidelines presented in PRC Section 5024.1; CEQA Guidelines Section 15064.5, and Sections 21083.2 and 21084.1 of the CEQA statute (described below).

California Public Resources Code Section 5024.1

PRC Section 5024.1 authorizes the establishment of the CRHR. The purpose of the register is to maintain listings of the state's historical resources and to indicate which properties are to be protected from substantial adverse change. The criteria for listing resources on the California Register were expressly developed to be in accordance with previously established criteria developed for listing on the NRHP. See NRHP eligibility criteria at 40 CFR 60.4.

In order to be determined eligible for listing in the CRHR, a property must be significant at the local, state, or national level under one or more of four significance criteria:

- Associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States.
- Associated with the lives of persons important to local, California, or national history.
- Embodies the distinctive characteristics of a type, period, region, or method of construction or represents the work of a master or possesses high artistic values.
- Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

The CRHR includes resources listed in or formally determined eligible for listing in the NRHP, as well as some California State Landmarks and Points of Historical Interest.

California Public Resources Code, Section 5021.1

PRC Section 5021.1 provides a definition for such things as a "historical resource" and "substantial adverse change" (to such resources). Historical resources are defined as "any object, building, structure, site, area, or place, which is historically significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (PRC 5021.1(b)).

California Public Resources Code, Section 5097.5

PRC Section 5097.5 provides that unlawful removal or destruction of archaeological or paleontological resources from sites on public land is a misdemeanor, except with the express permission of the public agency having jurisdiction over the lands. As used in this section, “public lands” is defined as “lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or agency thereof.”

California Public Resources Code, Section 5097.98

PRC Section 5097.98 discusses the procedures to be followed upon the discovery of human remains, including immediately securing the site of the remains and establishing a safe distance around them to allow for negotiation between the land owner and consulting tribal parties.

California Public Resources Code, Sections 5097.99 and 5097.991

PRC Sections 5097.99 and 5097.991 establish that unlawful removal of Native American items of cultural patrimony or human remains is a felony, and that it is the policy of the state to repatriate Native American human remains and grave goods.

Senate Bill 297

Senate Bill 297 addresses the disposition of Native American burials in archaeological sites and protects such remains from disturbance, vandalism, or inadvertent destruction; establishes procedures to be implemented if Native American skeletal remains are discovered during construction; and establishes the NAHC to resolve disputes regarding the disposition of such remains. This bill has been incorporated into the CEQA Guidelines (Section 15064.5(e)).

Assembly Bill 52

Assembly Bill 52 expands the provisions CEQA (PRC Section 21000) to provide California Native American tribes, including those that are not federally recognized, an opportunity to engage in formal consultation with public agencies considering approval of projects that could result in impacts to “tribal cultural resources.” Assembly Bill 52 applies to projects with a Notice of Preparation of an EIR, or a Negative Declaration or Mitigated Negative Declaration issued on or after July 1, 2015 (note, because the Notice of Preparation associated with this EIS/EIR was released prior to July 1, 2015, the lead agency is not required to comply with this new regulation).

Health and Safety Code

Section 7050.5 of the Health and Safety Code establishes that any person who “knowingly mutilates, disinters, wantonly disturbs, or willfully removes any human remains in or from any

location” without authority of the law is guilty of a misdemeanor. In the event of discovery of any human remains outside of a cemetery, there shall be no further excavation or disturbance until the County coroner is notified. If the coroner determines the remains are Native American, or believes they may be Native American, the NAHC shall be notified within 24 hours.

11.1.1.3 Local

Sacramento County General Plan

The *Sacramento County General Plan Conservation Element* (Sacramento County 2011) states under Section VI, Cultural Resources, the following goal and six objectives that address the protection of cultural resources within the County:

Goal: Promote the inventory, protection, and interpretation of the cultural heritage of Sacramento County, including historical and archaeological settings, sites, buildings, features, artifacts and/or areas of ethnic historical, religious or socio-economic importance.

Objectives:

1. Comprehensive knowledge of archaeological and historic site locations.
2. Attention and care during project review and construction to ensure that cultural resource sites, either previously known or discovered on the project site, are properly protected with sensitivity to Native American values.
3. Structures with architectural or historical importance preserved to maintain contributing design elements.
4. Known cultural resources protected from vandalism, unauthorized excavation, or accidental destruction.
5. Properly stored and classified artifacts for ongoing study.
6. Public awareness and appreciation of both visible and intangible historic and cultural resources.

The Conservation Element contains the following policies that help implement the goal and objectives, as well as address paleontological resources:

CO-150: Utilize local, state and national resources, such as the North Central Information Center (NCIC), to assist in determining the need for a cultural resources survey during project review.

CO-153: Refer projects with identified archaeological and cultural resources to the Cultural Resources Committee to determine significance of resource and recommend

appropriate means of protection and mitigation. The Committee shall coordinate with the Native American Heritage Commission in developing recommendations.

CO-154: Protection of significant prehistoric, ethnohistoric, and historic sites within open space easements to ensure that these resources are preserved in situ for perpetuity.

CO-155: Native American burial sites encountered during preapproved survey or during construction shall, whenever possible, remain in situ. Excavation and reburial shall occur when in situ preservation is not possible or when the archaeological significance of the site merits excavation and recording procedure. On-site reinterment shall have priority. The project developer shall provide the burden of proof that off-site reinterment is the only feasible alternative. Reinterment shall be the responsibility of local tribal representatives.

CO-157: Monitor projects during construction to ensure crews follow proper reporting, safeguards, and procedures.

CO-158: As a condition of approval of discretionary permits, a procedure shall be included to cover the potential discovery of archaeological resources during development or construction.

CO-159: Request a Native American Statement as part of the environmental review process on development projects with identified cultural resources.

CO-161: As a condition of approval for discretionary projects, require appropriate mitigation to reduce potential impacts where development could adversely affect paleontological resources.

CO-162: Projects located within areas known to be sensitive for paleontological resources should be monitored to ensure proper treatment of resources and to ensure crews follow proper reporting, safeguards, and procedures.

CO-163: Require that a certified geologist or paleoresources consultant determine appropriate protection measures when resources are discovered during the course of development and land altering activities.

CO-169: Restrict the circulation of cultural resource location information to prevent potential site vandalism. This information is exempt from the "Freedom of Information Act."

Galt General Plan

The *Galt General Plan Policy Document* (Galt General Plan) (Galt 2009) includes two goals and the following policies that address the protection of cultural and paleontological resources within the City.

Goal HRE-1: To preserve and maintain sites and structures that serve as significant, visible connections to Galt’s social, cultural, economic, and architectural history.

Goal HRE-4: To encourage the identification, protection, and enhancement of Galt’s archaeological resources for their cultural values.

HRE-4.1: Archaeological Resource Surveys. For future development projects on previously unsurveyed lands, the City requires that a project applicant have a qualified archaeologist conduct the following activities: (1) conduct a record search at the North Central Information Center located at California State University, Sacramento and other appropriate historical repositories, (2) conduct field surveys where appropriate, and (3) prepare technical reports, where appropriate, meeting California Office of Historic Preservation Standards (Archaeological Resource Management Reports). These requirements shall be completed prior to the approval of the specific project.

HRE-4.2: Native American Resources. The City shall consult with Native American representatives regarding cultural resources to identify locations of importance to Native Americans, including archaeological sites and traditional cultural properties. Consistent with State requirements, consultation shall occur at the onset of an amendment to the City’s General Plan or a specific plan.

HRE-4.3: Discovery of Archaeological Resources. In the event that archaeological/paleontological resources are discovered during site excavation, the City shall require that grading and construction work on the project site be suspended until the significance of the features can be determined by a qualified archaeologist/paleontologist. The City will require that a qualified archaeologist/paleontologist make recommendations for measures necessary to protect a site or to undertake data recovery, excavation, analysis, and curation of archaeological/paleontological materials.

HRE-4.4: Discovery of Human Remains. Consistent with CEQA Guidelines (Section 15064.5), if human remains of Native American origin are discovered during development project construction, it is necessary to comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the Native American Heritage Commission (Public Resources Code Sec. 5097). If any human remains are discovered or recognized in any location on the project site, there shall be no further excavation or

disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until:

- a. The Sacramento County Coroner/Sheriff has been informed and has determined that no investigation of the cause of death is required; and
- b. If the remains are of Native American origin,
 1. The descendants of the deceased Native Americans have made a timely recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98, or
 2. The Native American Heritage Commission was unable to identify a descendant or the descendant failed to make a recommendation within 24 hours after being notified by the commission.

Rancho Cordova General Plan

The *Rancho Cordova General Plan* (Rancho Cordova 2006a) includes one goal, one policy, and two actions that address the protection of cultural and paleontological resources within Rancho Cordova.

Goal CHR.1: Identify and preserve the history of Rancho Cordova for future generations.

CHR.1.3: Establish review procedures for development projects that recognize the history of the area in conjunction with state and federal laws.

Action CHR.1.3.1. Require historic resources and paleontological studies (e.g., archaeological and historical investigations) for all applicable discretionary projects, in accordance with CEQA regulations. The studies should identify paleontological, historic, or cultural resources in the project area, determine their eligibility for inclusion in the California Register of Historical Resources, and provide mitigation measures for any resources in the project area that cannot be avoided.

Action CHR.1.3.2. Incorporate the following two conditions in applicable permits for all discretionary projects:

The Planning Department shall be notified immediately if any cultural resources (e.g., prehistoric or historic artifacts) or paleontological resources (e.g., fossils) are uncovered during construction. All construction must stop in vicinity of the find and an archaeologist that meets the Secretary of the Interior's Professional Qualifications

Standards in prehistoric or historical archaeology or a paleontologist shall be retained to evaluate the finds and recommend appropriate action.

The Planning Department shall be notified immediately if any human remains are uncovered and all construction must stop in vicinity of the find. The Planning Division shall notify the County Coroner according to Section 7050.5 of California's Health and Safety Code. If the remains are determined to be Native American, the procedures outlined in CEQA Section 15064.5 (d) and (e) shall be followed.

Paleontological Resources

Consideration of paleontological resources is required by CEQA, as described above. However, no state or local agencies have specific jurisdiction over paleontological resources. No state or local agency requires a paleontological collecting permit to allow for the recovery of fossil remains discovered as a result of construction-related earth moving on state or private land. However, Sacramento County, Galt, and Rancho Cordova each have General Plan policies/actions that address the protection of paleontological resources.

11.1.2 Existing Conditions of Paleontological, Cultural, and Historical Resources

This section provides a brief cultural history of the general region, including a description of prehistoric trends, ethnographic populations (i.e., Native Americans), and the historical context (Euro-American settlement and development). These descriptions provide context to understand the type, existing conditions, and general areas where cultural resources may be present in the Planning Area.

The existing "affected environment" that is reviewed under NEPA includes aesthetic, historic, and cultural resources, as these terms are commonly understood. As stated earlier, the "cultural resources" that are part of the existing affected environment of a study area include a broader array of properties than just the "historic properties" defined by Section 106. Section 106 is concerned exclusively with impacts to historic properties (prehistoric or historic districts, sites, buildings, structures, objects, and properties of traditional religious and cultural importance to an Indian tribe) that meet the NRHP criteria (40 CFR 60.4). Therefore, cultural resources that are not eligible for listing in the NRHP must also be included and considered in a NEPA review. These could include resources such as cultural institutions, resources that embody cultural practices, or sacred sites that do not otherwise meet the federal definition of a historic property.

11.1.2.1 Paleontological Resources

There are at least five recorded sites in Sacramento County that have revealed fossil vertebrate remains dating back to 100,000 years ago, including one location within the Planning Area at the Teichert aggregate plant on Kiefer Boulevard (Sacramento County 2011). A search of the University of California, Berkeley, Museum of Paleontology collections database conducted for the Rancho Cordova General Plan EIR (Rancho Cordova 2006b) did not identify any evidence of the existence of paleontological resources or potential resources in Rancho Cordova or in the Rancho Cordova sphere of influence (Rancho Cordova SOI).

As discussed in Section 5.1.2, most of the Planning Area is directly underlain by alluvial and sedimentary deposits that have been eroded from the adjacent mountain ranges and that make up the Sacramento Valley floor. While many of these deposits are too young to support paleontological resources, the soils below these deposits may be older and more sensitive for paleontological resources. Older Quaternary deposits of the Pleistocene age, such as the Modesto–Riverbank Formation, are widespread in the County and have been known to include paleontological resources.

11.1.2.2 Regional Prehistoric Context

The earliest known occupants of the Planning Area are from the Pre-Archaic Period (10,000–8,500 BC) based on fossil remains found in deep alluvial sediments. These fossils indicated the presence of large game animals that were likely hunted for food (Connector JPA 2012). Few archaeological sites from this period have been found in California, suggesting a small, widely dispersed population. These population conditions are likely influenced by the fact that the final Ice Age of the Pleistocene (1.8 million to about 10,000 years ago) was just ending; however, glaciers still existed in the Sierra Nevada, and conditions in general were much cooler and wetter than today, making the mountains an inhospitable habitat for humans (Chartkoff and Chartkoff 1984, as cited in Sacramento County 2012).

With the end of the Pleistocene, during the Early to Middle Archaic Period (8,500–4,000 BC), the climate began a warming and drying trend that lasted for several thousand years. People adapted to these changes by shifting their foraging emphasis away from hunting and increasing their use of plant resources, as evidenced by a marked increase in the presence of plant processing tools on archaeological sites dated to this time period. Another major change in subsistence came in the Late Archaic Period (4,000–2,000 BC) with the discovery of a method to remove the tannins from acorns, allowing this nearly ubiquitous nut to become a staple food for the indigenous people of California. It allowed people to gather and store large surpluses of food, which led to an increase in group size and population densities along with a less nomadic lifestyle. Sophisticated cultures developed in the Planning Area,

comparable to those found in farming areas in other parts of North America (Chartkoff and Chartkoff 1984, as cited in Sacramento County 2012).

Prehistoric sites, some of which are known to contain human remains, are located in the Planning Area along the American River, as well as elsewhere in the County (Rancho Cordova 2006b).

11.1.2.3 Local Prehistoric Context

The earliest evidence of the prehistoric inhabitants of the Planning Area comes from a single, deeply buried site in the bank of Arcade Creek (located just north of the Planning Area boundary), which contained grinding tools and large, stemmed projectile points. The points and grinding implements suggest an occupation date of sometime between 6,000 and 3,000 BC (Wallace 1978, as cited in Sacramento County 2012). However, it was not until after about 3,500 BC, in the late Archaic Period, that people began to move into the San Joaquin and Sacramento Valleys in any significant numbers (Chartkoff and Chartkoff 1984, as cited in Sacramento County 2012).

The earliest permanent settlement of the Delta region of the Sacramento River is called the Windmill Tradition and is known primarily from burial sites containing relatively elaborate grave goods (Chartkoff and Chartkoff 1984, Ragir 1972, Wallace 1978, as cited in Sacramento County 2012). The Windmill Tradition reflects the amplification of cultural trends begun in the Middle Archaic, as seen in the proliferation of finished artifacts, such as projectile points, shell beads, and pendants. Stone mortars and pestles, milling stones, and bone tools such as fishhooks, awls, and pins are also present. Based on linguistic evidence, it has been suggested that the Windmill culture was ancestral to several historic tribes in the Central Valley, including the Penutian-speaking Nisenan. The Windmill Tradition lasted until about 1,000 BC. Around 1,000 BC, subsistence strategies in the Planning Area changed to reliance on acorns and salmon (Chartkoff and Chartkoff 1984, Elsasser 1978, as cited in Sacramento County 2012). Culturally, this has been dubbed the Cosumnes Tradition (1,700 BC–AD 500), and appears to be an outgrowth of the Windmill Tradition (Ragir 1972, as cited in Sacramento County 2012).

11.1.2.4 Tribal Presence in the Planning Area

The Planning Area is located within the territory that could have been occupied by the ethnographic Nisenan or Plains Miwok (Sacramento County 2012).

Nisenan. The Planning Area is in the southwestern portion of the territory occupied by the Nisenan. The Nisenan lived along the Sacramento River, primarily in large villages with populations of several hundred each. Between the Sacramento River and the foothills, the grassy plains were largely unsettled, used mainly as a foraging ground. Residence was generally centered around the residence of the husband's family or tribe, but couples had choice in the matter (Wilson and Towne 1978, as cited in Sacramento County 2012). Politically, the Nisenan

were divided into “tribelets,” made up of a primary village and a series of outlying hamlets, presided over by a more-or-less hereditary chief (Kroeber 1976, Wilson and Towne 1978, as cited in Sacramento County 2012).

Plains Miwok. At the time of European contact, the Eastern (Plains) Miwok tribe occupied the Planning Area and vicinity. Archaeological investigations at sites on South Stone Lake (CA-SAC-65 and CA-SAC-145) indicate a considerable reliance on fishing for subsistence among the prehistoric populations. Each Plains Miwok tribelet was an independent political entity and functioned primarily within recognized tribelet boundaries. Large, multilineal villages were concentrated on rises along watercourses. In addition to gathering resources, the Plains Miwok obtained wild tobacco, planted tobacco seeds, and cultivated the plants (Schulz and Simons 1973, Schulz et al. 1979, as cited in Sacramento County 2010).

The only federally recognized tribe in the Planning Area is the Wilton Rancheria, which are descendants of the Plains Miwok. The Wilton Rancheria became federally recognized in 2009. The tribe’s indigenous territory encompasses Sacramento County. The Wilton Rancheria occupies approximately 39 acres near the community of Wilton, and the 39acre area is excluded from the Planning Area because it is sovereign tribal land. Four other tribes located outside the Planning Area could have an interest in cultural resources located within the Planning Area. These are the United Auburn Indian Community (Nisenan and Miwok), the Lone Band of Miwok Indians (Miwok), the Buena Vista Rancheria (Miwok), and the Shingle Springs Band of Miwok Indians (Nisenan and Miwok).

11.1.2.5 European Settlement History and Context

The Spanish arrived on the central California coast in 1769, and by 1776, the Miwok territory bordering the Nisenan on the south had been explored by Jose Canizares. In 1808, Gabriel Moraga crossed Nisenan territory, and in 1813, a major battle was fought between the Miwok and the Spaniards near the mouth of the Cosumnes River. Though the Nisenan appear to have escaped being removed to missions by the Spanish, they were not spared the ravages of European diseases. California became part of Mexico in 1821, when Mexico achieved its independence from Spain. In 1827, American trapper Jedediah Smith traveled along the Sacramento River and into the San Joaquin Valley to meet other trappers of his company who were camped there, but no permanent settlements were established by these fur trappers (Thompson & West 1880, as cited in Sacramento County 2012). In 1833, an epidemic (probably malaria) raged through the Sacramento Valley, killing an estimated 75% of the native population. When John Sutter erected his fort at the future site of Sacramento in 1839, he had little difficulty getting the few Nisenan survivors to settle nearby. As discussed in Section 1.3.1, the discovery of gold in 1848 at Sutter’s Mill, near the Nisenan village of Colluma (now Coloma) on the south fork of the American River in El Dorado County, drew thousands of miners to the region, and led to widespread killing of Nisenan tribal members and the virtual destruction of traditional Nisenan culture. By the 1930s, no Nisenan remained who could

remember the days before the arrival of the Euro-Americans (Wilson and Towne 1978, as cited in Sacramento County 2012).

The town of Sacramento was laid out by John Sutter in the fall of 1848, and developed as a supply center for gold miners (Gudde 1969, as cited in Sacramento County 2012). California became a state in 1850, as a result of the major increase in population that resulted from the gold rush of 1849 (Old Sacramento Foundation Inc. 2001, Lawson 2002, as cited in Sacramento County 2012). The Sacramento Valley Railroad was completed from Sacramento to Folsom in 1856 (FEDSHRA 2007, as cited in Sacramento County 2012). It facilitated shipment of goods from Sacramento to the mining areas to the east.

As discussed in Section 1.3.1, as the population in California continued to increase after the Gold Rush, so did the expansion of agricultural lands (both grazing and croplands) in the Planning Area, both to feed California residents and as a profitable export industry. During the early part of the twentieth century, agricultural and grazing lands dominated the landscape of Sacramento County interrupted only by small pockets of urbanization. By the 1940s and 1950s after World War II, Sacramento County experienced a rapid increase in population relative to before the war, with a majority of new urban and suburban development occurring within the Planning Area near the City of Sacramento and in smaller cities such as Folsom and Galt.

11.1.2.6 Potential for Cultural Resources to be Discovered in the Planning Area

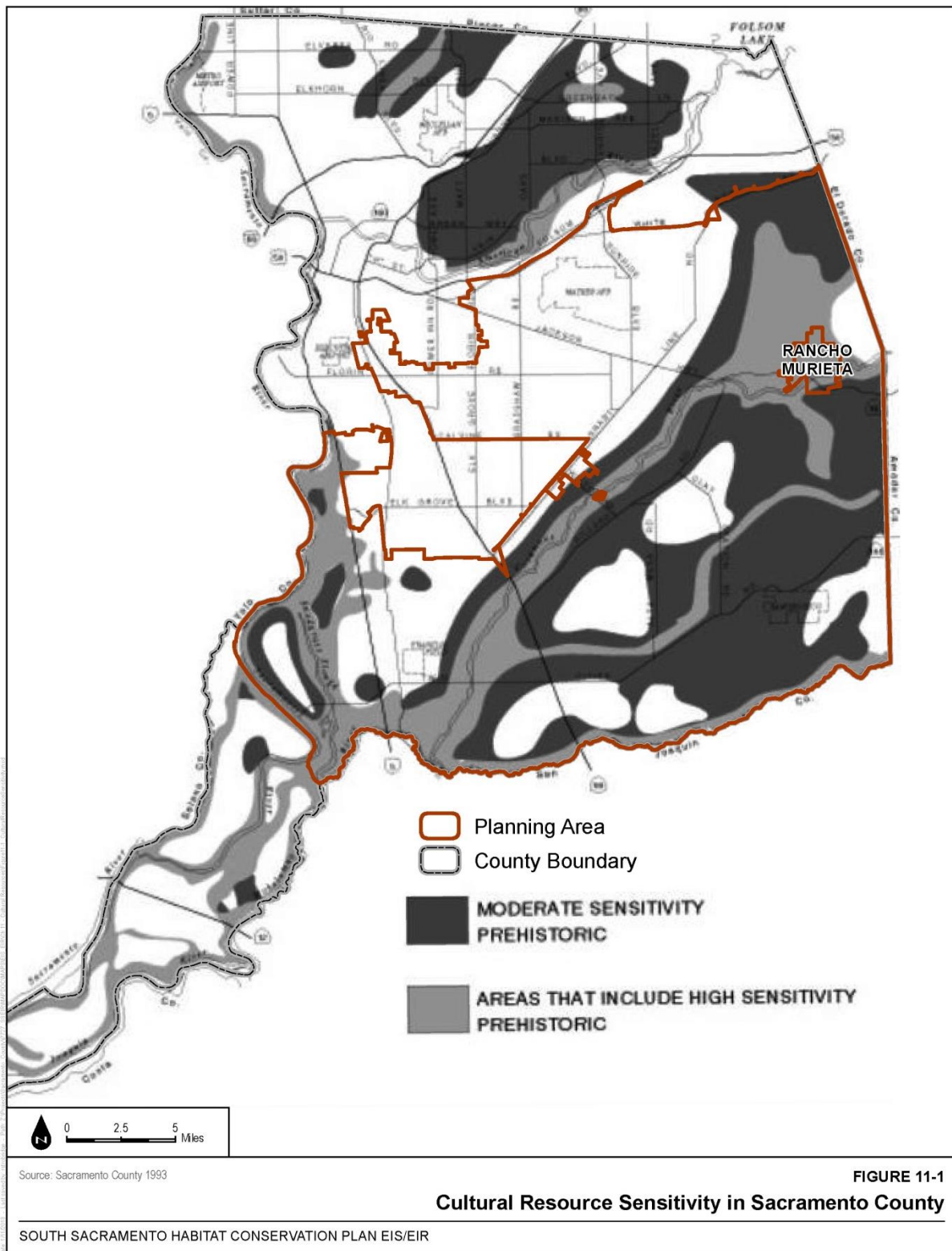
Based on the brief review presented above, the lead agencies expect that various types of cultural resources, including historic properties, may be encountered within the Planning Area.

According to the Sacramento County General Plan, the portions of the Planning Area that are likely or extremely likely to contain high sensitivity and moderate sensitivity² for existing prehistoric sites are located near the larger water courses (see Figure 7-4), such as the Cosumnes River and Laguna Creek, Snodgrass Slough, Beach and Stone Lakes, and in the legal Delta area³ (Figure 11-1) (Sacramento County 2010). Therefore, land cover types with high sensitivity for prehistoric cultural resources include the stream/creek land cover type, the natural riparian land cover types (mixed riparian woodland and mixed riparian scrub), and the valley grassland uplands near these larger waterways. These are consistent with the areas identified by Sacramento County as being moderate or high sensitivity for cultural resources (Figure 11-1) (Sacramento County 1993). Out of the 627 previously recorded prehistoric resources in the unincorporated areas of the County, 7 are currently listed on the NRHP and/or the CRHR.

² A copy of a 1993 map was included in the *Sacramento County General Plan of 2005–2030* (Sacramento County 2011), with no changes. Cultural resources sensitivity is another way to describe the likelihood of cultural resources being present within a particular area.

³ As defined in the Delta Protection Act (Section 12220 of the State Water Code), and shown on Figure 4-1.

Figure 11-1 Cultural Resource Sensitivity in Sacramento County



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A records search conducted for the Rancho Cordova General Plan EIR (Rancho Cordova 2006b) identified eight prehistoric sites and one prehistoric/historic site within Rancho Cordova and its SOI. Most of the prehistoric sites in Rancho Cordova and its SOI are located along the American River outside the Planning Area and along creeks both inside and outside the Planning Area. Some of the sites in Rancho Cordova or its SOI are known to contain human remains, and several of the prehistoric sites in Rancho Cordova or its SOI are eligible for inclusion in the NRHP and the CRHR. Archival research conducted for the Galt General Plan EIR indicates that most prehistoric settlement in Galt and the Galt SOI was focused within 1,000 feet of major waterways, especially the Cosumnes River, and along the Dry Creek corridor (Galt 2008a).

Known historical sites in the Planning Area, including historic properties listed on or known to be eligible for the NRHP, tend to be concentrated in developed areas. These include areas along old travel routes such as the Jackson Highway, the Central California Traction Railroad, and the Southern Pacific Railroad routes, and along rivers and in streambeds. The Planning Area, including Galt, Rancho Cordova, and the unincorporated areas of Sacramento County, has 18 historical sites listed on the NRHP and/or the CRHR (Table 11-1). Although there are only 15 historical resources currently listed on the NRHP and 3 on the CRHR, several other sites that have been determined eligible for listing but have never gone through the formal process of officially listing the resource in the NRHP and/or the CRHR. The 18 resources that are currently listed consist of historical structures, such as the Brewster Building in Galt, historic ranches, and large multi-component historic districts, such as the Walnut Grove Chinese-American Historical District.

Table 11-1. Planning Area Historical Sites that are Currently Listed on the National Register of Historic Places or on the California Register of Historical Resources

Name on NRHP or CRHR	Listing	Location	Date Listed/Notes
Alta Mesa Farm Bureau Hall	NRHP #86003577	10195 Alta Mesa Road, Wilton	January 7, 1987 The hall was destroyed by fire in 1987, although the detached restroom building still stood
American River Grange Hall No. 172	NRHP #96001079	2720 Kilgore Road, Rancho Cordova	October 10, 1996
Brewster Building	NRHP #00000981	201 Fourth St., Galt	August 16, 2000
Brewster House	NRHP #78000740	206 Fifth St., Galt	June 23, 1978
John Stanford Brown House	NRHP #04000733	13950 CA 160, Walnut Grove	July 28, 2004
Delta Meadows Site	NRHP #71000175	Locke	November 5, 1971
Fifteen Mile House—Overland Pony Express Route	CRHR #698	White Rock & Gold Valley Roads, Rancho Cordova	September 11, 1959
Grave of Alexander Hamilton Willard	CRHR #657	Franklin Cemetery, Franklin	September 26, 1958
Imperial Theatre	NRHP #82000980	Market St., Walnut Grove	October 29, 1982
Isleton Chinese and Japanese Commercial Districts	NRHP #91000297	Bounded by River Road and Union, E, and H Sts., Isleton	March 14, 1991
Locke Historic District	NRHP #71000174	Bounded on the west by the Sacramento River, on the north by Locke Road, on the east by Alley St., and on the south by Levee St., Isleton	May 6, 1971
Rosebud Ranch	NRHP #79000521	North of Hood	December 31, 1979
Runyon House	NRHP #00001270	12865 River Road, Courtland	October 27, 2000
Sheldon Grist Mill	CRHR #439	Meiss Road and Hwy 16, Sloughhouse	June 2, 1949
Walnut Grove Chinese—American Historic District	NRHP #90000484	Bounded by C, Tyler, and Bridge Sts., and River Road, Walnut Grove	March 22, 1990
Walnut Grove Commercial/Residential Historic District	NRHP #90000551	Browns Alley and River Road., Walnut Grove	April 12, 1990
Walnut Grove Gakuen Hall	NRHP #80000837	Pine and C Sts., Walnut Grove	June 17, 1980
Walnut Grove Japanese—American Historic District	NRHP #90000483	Bounded by Winnie St., Tyler St., C St., and River Road, Walnut Grove	March 22, 1990

Some prehistoric and historical cultural resources are buried and would only be discovered by activities and projects that include earth-moving activities. As discussed in Section 11.2.1, prior environmental documents prepared for projects proposed in the Planning Area, including the Cordova Hills EIR (Sacramento County 2012) and the Capital SouthEast Connector Project EIR (Connector JPA 2012), identified prehistoric and historic-era cultural

resources within their proposed project footprints that were not listed on the NRHP or CRHR. Therefore, it is likely that other unknown cultural resources are present within the undeveloped areas of the Planning Area. Table 11-2 includes types of cultural resources expected to be present within the currently undeveloped portions of the Planning Area. Considering the long and complex history of human settlement in the Planning Area, historical resources that may be encountered are diverse, including buildings, structures, and objects, as well as historical and archaeological sites and artifacts. Descriptions of these general types of cultural resources are provided in Table 11-2.

Table 11-2. Types of Cultural Resources Potentially Occurring in the Planning Area

Resource Type	Description	Example
Building	Structures created principally to shelter or assist in carrying out any form of human activity. May also refer to a historically and functionally related unit (e.g., courthouse and jail).*	Houses, barns, churches, factories, and hotels.
Structure	The term "structure" is used to describe a construction made for a functional purpose rather than creating human shelter.	Mines, bridges, and tunnels.
Object	The term "object" is used to describe those constructions that are primarily artistic in nature or are relatively small in scale and simply constructed, as opposed to a building or a structure. Although it may be moveable by nature or design, an object is associated with a specific setting or environment. Objects should be in a setting appropriate to their significant historic use, role, or character. Objects that are relocated to a museum are not eligible for listing in the CRHR.	Fountains, monuments, maritime resources, sculptures, and boundary markers.
Site	A site is the location of a significant event, a prehistoric or historic occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself possesses historical, cultural, or archaeological value regardless of the value of any existing building, structure, or object. A site need not be marked by physical remains if it is the location of a prehistoric event, and if no buildings, structures, or objects marked it at that time.	Trails, designed landscapes, battlefields, habitation sites, Native American ceremonial areas, rock art, historic period refuse deposits, and archaeological remains of historic period settlement.
Isolates	An isolate is a cultural item (typically found in archaeological contexts), that does not meet the criteria used to define a site.	Isolates may include prehistoric artifacts such as arrow points or milling stones, historic items such as bottle glass, and even certain ranching features such as cattle troughs if they are designated by the study as isolated features.

Note: * It is common to consider buildings over 50 years in age as potentially eligible as a historic resource; however, regulations do not restrict younger buildings from being designated as historic resources.

11.2 ENVIRONMENTAL CONSEQUENCES/ ENVIRONMENTAL IMPACTS

11.2.1 Methodology for Assessing Impacts of Each Alternative on Paleontological, Cultural, and Historical Resources

The Environmental Consequences/Environmental Impact section identifies and describes the potential impacts of the actions and projects associated with each EIS/EIR alternative on the paleontological, cultural, or historical resources in the Planning Area. Potential ways that the EIS/EIR alternatives could directly impact cultural resources would be through ground-disturbing activities (e.g., construction of new urban development or associated infrastructure), which could disturb unknown subsurface cultural resources. The projects and activities expected under each alternative are described in Chapter 2.

No systematic archaeological survey of Sacramento County has been conducted, including the 317,655-acre EIS/EIR Planning Area (Figure 1-1). However, records searches were conducted to prepare the Sacramento County, Rancho Cordova, and Galt General Plans and to prepare the impact analysis in the General Plan EIRs (see Section 3.4); to prepare the other EIRs described in Section 3.4; and to prepare EIRs for the five large Master Plans (see Sections 2.3.3 and 2.3.4). In addition, cultural resource studies conducted for individual projects within the Planning Area were reviewed, and the Sacramento County planning staff was consulted.

The Sacramento County General Plan EIR analyzed impacts of urban development within approximately 307,142 acres of the Planning Area; the Rancho Cordova General Plan EIR analyzed impacts of urban development within approximately 42,944 acres of the Planning Area; and the Galt General Plan EIR analyzed impacts of urban development within approximately 7,354 acres of the Planning Area.⁴ The Sacramento County General Plan mapped general locations of cultural resource sensitivity within the Planning Area (Figure 11-1). Similarly, the Rancho Cordova General Plan EIR (Rancho Cordova 2006b) mapped areas of cultural sensitivity in zones around each creek and stream in that study area. The Galt General Plan EIR (Galt 2008a) noted that riparian areas were especially sensitive for cultural resources, but did not attempt to map areas of cultural sensitivity.

Two approaches were used to estimate the effects of each EIS/EIR alternatives on cultural resources. First, the map from the Sacramento County General Plan (Figure 11-1) was used to estimate the potential for urban development to disturb cultural resources in the Planning Area. To do that, the expected locations of planned and expected future urban development

⁴ Because the Sacramento County General Plan EIR analyzed impacts within the Galt SOI and a portion of Rancho Cordova, there is approximately 33,000 acres of overlap between the area analyzed in the Sacramento General Plan EIR and the Galt and Rancho Cordova General Plan EIRs.

for each alternative (Chapter 2) were compared to the map from the Sacramento County General Plan (Figure 11-1), and areas where planned and expected future urban development overlapped with areas of moderate or high cultural resource sensitivity were noted. In addition, geographic information system (GIS) methodology (Section 3.6.5), which was used to quantitatively estimate the direct impacts of each EIS/EIR alternative on land cover types with higher cultural resource sensitivity (Section 11.1.2.6). To do this, GIS datasets of future projects and activities expected under each EIS/EIR alternative were digitally overlaid (compared) to GIS datasets of stream/creek and riparian land covers land cover types.

However, these analyses only quantify or describe the potential impacts to areas previously determined by the County to have high cultural resource sensitivity. Although these analyses are useful to identify differences between the alternatives, additional cultural resources can be “unknown” or undiscovered because the Planning Area has been inhabited or used by Native American peoples for many thousands of years. Therefore, it is possible or even likely that all of the areas historically inhabited or used by the Plains Miwok or Nisenan tribes have not been discovered. In addition, artifacts or human remains also could have also been transported to future development sites from outside the areas of known habitation by natural forces such as floods or animals, or included in fill material that was excavated from one area and deposited in another during construction activities. Accordingly, site-specific studies must be conducted to increase confidence about the cultural resources present a future urban development project sites; however, even after a site-specific study is done, unknown resources could still be unearthed during ground-disturbing construction activities. Therefore, although the EIS/EIR analysis of each alternative notes when an alternative would result in less disturbance to culturally sensitive areas, the EIS/EIR cannot conclude that the alternative would necessarily result in less impact to cultural resources.

In addition, as discussed in Section 3.4 and earlier in Section 11.1.1.3, the EIR documents previously prepared for the General Plans of Sacramento County, Galt, and Rancho Cordova (Sacramento County 2010; Galt 2009b; Rancho Cordova 2006b) analyzed direct and cumulative impacts of urban growth planned within their jurisdictions, including impacts to paleontological, cultural, and historical resources. When the impact analysis or conclusions provided in these General Plan EIR documents were determined by the lead agencies to be appropriate for use in the analysis of the EIS/EIR alternatives, a brief summary or description of the incorporated information or analysis is provided in Sections 11.2.1, 11.2.2, or 11.2.3.

It is appropriate to consider impacts to some environmental resources within the context of other impacts occurring in the surrounding landscape, community, or region (see Section 3.6.2). The lead agencies determined that an appropriate geographic scale for evaluating the impacts of each EIS/EIR alternative on cultural and historic resources should include the Sacramento Area Council of Government’s six-county region (SACOG 2016), which includes Sacramento,

Placer, El Dorado, Sacramento, Sutter, Yolo, and Yuba Counties. This cumulative study area was selected to capture the combined historic territories of the Plains Miwok and the Nisenan Native American tribes (refer to Section 11.1.2.4).

As discussed in Section 3.7, the Chapter 11 cumulative analyses of impacts to paleontological and cultural resources will consider: (1) the effects of past and present urban development within the Planning Area (see Existing Conditions in Section 11.1.2) and within the larger six-county study area, and (2) future impacts expected from reasonably foreseeable “other” projects in the Planning Area (see Section 3.7) and reasonably foreseeable “other” projects within the larger six-county study area. The cumulative analysis of each EIS/EIR alternative will then consider whether the incremental impacts of the alternative on paleontological and cultural resources would be significant (i.e., cumulatively considerable).

As discussed previously in Sections 1.6.4 and 3.6.1, the description and scope of each EIS/EIR alternative (Chapter 2) does not include local approvals or entitlements for individual, site-specific, urban development projects or activities. Accordingly, the analysis presented in this EIS/EIR does not provide project-level CEQA or NEPA coverage for the impacts of future Covered Activities on paleontological, cultural, or historical resources, and this EIS/EIR does not function as a programmatic or umbrella CEQA or NEPA document for regional development and infrastructure projects. This EIS/EIR evaluates only the adverse and beneficial environmental effects associated with the decisions of the lead agencies that are described in Section 1.5.

11.2.1.1 Determination of Impact Significance

As discussed in Section 3.8.1, the criteria used to evaluate the significance of each alternative’s impacts on paleontological, cultural, and historical resources are based on Appendix G of the CEQA Guidelines, the definition of adverse impact under NHPA 106 (see 36 CFR 800.5(a)(1)), and on typical thresholds used to evaluate impacts in recent EIRs prepared by Sacramento County. Based on these sources, a significant adverse impact could occur if the alternative would:

1. Result in a substantial adverse change in the significance of a historical or archaeological resource, as defined as defined in CEQA Guidelines Section 15064.5.
2. Directly or indirectly alter any of the characteristics of a historic property that qualifies the property for listing in the NRHP, in a manner that would diminish the integrity of the historic property’s location, design, setting, materials, workmanship, feeling, or association.
3. Disturb any human remains, including those interred outside of formal cemeteries.
4. Directly or indirectly destroy a unique paleontological resource or site.

Appendix G of the CEQA Guidelines does not provide suggested criteria for determining a beneficial effect. The following criteria were developed by the lead agencies. A beneficial impact could occur if the alternative would:

1. Discernibly reduce adverse changes in the significance of a historical or archaeological resource, as defined as defined in CEQA Guidelines Section 15064.5.
2. Discernibly reduce alteration of the characteristics and integrity of a property that may qualify it for listing in the NRHP, as defined in 40 CFR 60.4.
3. Discernibly reduce disturbance of any human remains, including those interred outside of formal cemeteries.
4. Discernibly reduce direct or indirect destruction of a unique paleontological resource or site.

The impact analysis for the three EIS/EIR alternatives will consider the context, intensity, and severity of potential impacts to each of these paleontological and cultural resources impact criteria, and will present a separate determination of significance for each of these criteria.

11.2.2 No Action/No Project Alternative

The No Action/No Project Alternative is described in Section 2.2.

11.2.2.1 Direct and Indirect Effects of the Alternative

Much of the estimated total 35,532 acres of future urban development expected under the No Action/No Project Alternative (Section 2.2) is also described and analyzed in the Sacramento County General Plan, the Galt General Plan, and the Rancho Cordova General Plan (see Section 3.4 and Section 11.2.1). Therefore, many of the cumulative effects on paleontological and cultural resources from future urban development within the Chapter 11 study area, including the Planning Area, were evaluated in the General Plan EIRs and the other EIRs listed in Section 3.4.

As discussed in Section 3.4 and in Section 11.2.1, the three General Plan EIRs used different study periods—ending in 2030 (Galt 2009b), in 2050 (Rancho Cordova 2006b), and 2030 (Sacramento County 2010), and the 50-year study period for this EIS/EIR ends in 2065 (Section 3.6.3). The Galt and Rancho Cordova General Plan EIRs analyzed buildout of their jurisdictions. However, additional urban development would occur within Sacramento County after the 2030 end of the General Plan EIR study period, until the expected buildout of the Urban

Development Area (UDA)⁵ at end of this EIS/EIR's study period in 2065. Consequently, the lead agencies considered the impact analysis and the conclusions incorporated by reference from the General Plan EIRs, along with the effects of the additional urban development activities and projects included in the description of each EIS/EIR alternative. The lead agencies extrapolated that the impacts of the additional urban development in the latter part of the 50-year EIS/EIR study period, including potential impacts to paleontological and cultural resources, would be similar to the impacts of urban development implemented in the early part of the EIS/EIR study period, which was analyzed in the General Plan EIRs.

The impact analysis presented in the *City of Galt General Plan Update: 2030 Final EIR* (Galt General Plan EIR)(Galt 2009b), determined that within the City of Galt and the Galt SOI:

- Historic resources, including structures and sites in the City's downtown area, may be vulnerable to urban development projects and activities associated with the planned buildout described in the Galt General Plan. The General Plan policies establish a framework for the preservation of Galt's historic resources and promote historic preservation, which will help avoid, minimize, and mitigate project impacts to historical resources. However, even with project implementation of the Galt General Plan policies, the Galt General Plan EIR determined that impacts of planned urban development are significant and unavoidable;
- Cultural resources, paleontological resources, and/or human remains could be damaged or inadvertently unearthed during ground-disturbing activities associated with the planned buildout described in the Galt General Plan. However, future project compliance with state laws and with the Galt General Plan policies that promote the protection of these resources (see Section 11.1.1) would ensure impacts to existing cultural resources, paleontological resources, or human remains would be less than significant (Galt 2008, pp. 9-1 to 9-8).

The Galt General Plan EIR assumed full buildout of the existing Galt city limits and the Galt SOI by the end of the General Plan EIR's study period.

⁵ As discussed in Section 1.1.1, the term Urban Development Area (UDA) is used by the EIS/EIR to discuss all lands where urban development Covered Activity projects or activities could occur under the action alternatives. Therefore, the term "UDA" means all lands within the County's Urban Service Boundary (USB) that are also within the Planning Area (including lands within the Rancho Cordova city limits that are within the Planning Area), all lands within Galt's city limits, and all lands within the City of Galt's SOI (see Figure 1-1).

The *City of Rancho Cordova General Plan Final EIR* (Rancho Cordova General Plan EIR) (Rancho Cordova 2006b), determined that within Rancho Cordova and its SOI:

- Existing historic resources and cultural resources may be vulnerable to urban development projects and activities associated with the planned buildout described in the Rancho Cordova General Plan. Compliance with Rancho Cordova General Plan policies that promote the protection of these resources (see Section 11.1.1) would help to reduce impacts to historic resources and cultural resources. However, even with project implementation of the Rancho Cordova General Plan policies, the Rancho Cordova General Plan EIR determined that impacts to prehistoric and historic cultural resources, and human remains would be significant and unavoidable (Rancho Cordova 2006c, pp. 4.11-5 to 4.11-19).
- Paleontological resources could be damaged or inadvertently unearthed during ground-disturbing activities associated with the planned buildout described in the Rancho Cordova General Plan. Future project compliance with Rancho Cordova General Plan policies that promote the protection of these resources (see Section 11.1.1) would ensure impacts to paleontological resources would be reduced to less than significant (Rancho Cordova 2006c, pp. 4.11-5 to 4.11-19).

The Rancho Cordova General Plan EIR assumed full buildout of Rancho Cordova and the Rancho Cordova SOI by the end of the General Plan EIR's study period.

The impact analysis presented in the *Capital SouthEast Connector Project Final Program Environmental Impact Report* (Connector EIR) (Connector JPA 2012), determined that construction and operation of the Capital Southeast Connector:

- Could result in significant impacts to cultural resources from construction in areas where cultural resources are present. Project-level mitigation measures identified in the Connector EIR would reduce these impacts to less than significant; however, in areas of the Capital Southeast Connector right-of-way footprint where avoidance of cultural resources is not possible, impacts would remain significant and unavoidable (Connector JPA 2012, pp. 6-13 to 6-15).
- Could result in significant impacts to human remains due to ground disturbance during construction. A mitigation measure requiring construction to stop if human remains are encountered would reduce this potential impact to less than significant (Connector JPA 2012, pp. 6-15 to 6-16).

The impact analysis presented in the *Final Environmental Impact Report: Sacramento County General Plan Update* (Sacramento County General Plan EIR) (Sacramento County 2010), determined that within Sacramento County:

- Historic resources and cultural resources may be vulnerable to planned urban development projects and activities associated with buildout of the Sacramento County General Plan. Compliance with Sacramento County General Plan policies would avoid or minimize impacts to cultural resources associated with future planned development in unincorporated Sacramento County. However, direct and indirect impacts would still occur to existing cultural and historic resources, resulting in a significant and unavoidable impact.
- Impacts to important cultural resources existing in areas identified in the Sacramento County General Plan EIR as “new growth areas,” (includes the Jackson Highway Corridor⁶ and Grant Line East area), would also result in significant and unavoidable impacts.
- Paleontological resources may be at risk for unintentional destruction during construction of planned urban development (residential, commercial, and industrial), during construction of associated infrastructure; and during the expansion of existing mining operations, resulting in significant and unavoidable impacts (Sacramento County 2010, pp. 15-22 to 15-34).

The Sacramento County General Plan EIR analyzed the effects of ground-disturbing projects and activities resulting from infill development of all acreage within the current 223,193-acre Urban Policy Area, combined with development in two “New Growth Areas” that total approximately 20,000 acres.⁷ Approximately 43,719 acres of the current Urban Policy Area overlaps with the EIS/EIR Planning Area. However, the Sacramento County General Plan EIR did not address the potential to disturb human remains.

As discussed earlier, additional urban development would occur within Sacramento County after the 2030 end of the Sacramento County General Plan EIR study period, until the expected full buildout of the UDA at end of this EIS/EIR’s study period in 2065. This additional urban development within the UDA would result in additional effects on existing cultural, historical,

⁶ The Sacramento County General Plan EIR’s proposed project (Sacramento County 2010) included development within a designated “Jackson Highway Corridor New Growth Area” that was not a part of the alternative ultimately selected by Sacramento County. However, Sacramento County is currently processing proposed Master Plans in the Jackson Highway Corridor, so the conclusions of the Sacramento County General Plan EIR’s analysis of this proposed project are applicable to the EIS/EIR No Action/No Project Alternative.

⁷ The two “New Growth Areas” were Jackson Highway Corridor (approximately 12,000 acres) and Grant Line East (approximately 8,000 acres). The Jackson Highway Corridor encompasses land on the northern and southern sides of Highway 16, beginning at South Watt Avenue and ending at Sunrise Boulevard. Grant Line East begins on the eastern side of Grant Line Road and ends at the Sacramento County USB.

and paleontological resources present in the Planning Area, especially inside the UDA where all new urban development would occur. The areas of highest cultural sensitivity in Sacramento County are generally along the larger waterways, which are located outside the UDA (Figure 11-1)(Sacramento County 1993). However, as described in Section 11.1.2.6, unknown cultural resources have potential to be present anywhere in the Planning Area. Therefore, the additional urban development (which would occur after the 2030 end of the Sacramento County General Plan EIR study period, until the buildout of the UDA at end of this EIS/EIR's study period in 2065) would add to the already significant and unavoidable effects on cultural resources previously identified in the Sacramento County General Plan EIR, described earlier.

Additionally, as explained above and in Section 2.2.2, approximately 1,900 acres of planned urban development would be shifted or displaced from inside the Mather Core Recovery Area (MCRA) to one or more locations outside the current Sacramento County USB boundary under the No Action/No Project Alternative. Based on the map of prehistoric cultural resource sensitivity in Sacramento County (Figure 11-1):

- The potential displacement areas in the northeast of the Planning Area and east of Galt have moderate prehistoric cultural resource sensitivity.
- The area surrounding Rancho Murieta and the area near Wilton have high prehistoric cultural resources sensitivity.
- The area south of Elk Grove has low prehistoric cultural resource sensitivity.

By shifting or displacing development from the MCRA (an area of low prehistoric cultural resource sensitivity), to areas with moderate or high prehistoric cultural sensitivity, the No Action/No Project Alternative could result in more impact to prehistoric cultural resources than was analyzed in the Sacramento County General Plan EIR. However, this impact analysis of the No Action/No Project Alternative assumes that all future development projects would comply with applicable policies and regulations identified in the General Plans for Rancho Cordova and Sacramento County (see Section 11.1.1.3).

All future projects and activities that require local permits, approvals, or entitlements (e.g., planning entitlements such as rezones, lot line splits, and subdivision maps) over the 50-year EIS/EIR study period would be required to comply with the Sacramento County, Galt, or Rancho Cordova policies for paleontological and cultural resources (see Section 11.1.1.3). These local policies require future projects to avoid or minimize impacts to cultural, paleontological, or historical resources. If full avoidance of cultural, paleontological, or historical resources is not feasible, Sacramento County, Galt, or Rancho Cordova policies require projects to incorporate additional mitigation measures before permits or entitlements. Examples of project-level mitigation measures to address unavoidable impacts to paleontological and cultural resources include data recovery, curation of recovered materials, repatriation of human remains and/or grave goods, and documentation of

results. In some cases, these mitigation measures would fully mitigate for the effects of a project. However, for many individual projects, the effects on cultural resources would remain significantly adverse after mitigation. Therefore, the No Action /No Project Alternative, including the 1,900 acres of displaced development outside the UDA and the expected buildout of the UDA over the 50-year EIS/EIR study period, would add to the already significant impacts to paleontological, cultural, and historic resources that were identified in the Sacramento County, Galt, and Rancho Cordova General Plan EIRs presented earlier.

As discussed in Section 2.2.2 and 2.2.4, individual projects and activities implemented under the No Action/No Project Alternative would continue to establish new mitigation preserves to meet requirements of ESA, California Endangered Species Act, CWA, and local environmental policies. A total of 23,430 acres of existing natural land covers would be permanently preserved under the No Action/No Project Alternative (Table 2-2). The establishment of new on-site or off-site mitigation preserves alone would not adversely impact paleontological or cultural resources present at the new preserve sites. Likewise, the purchase of credits at an approved mitigation bank, or through an established in-lieu fee program, would not adversely impact paleontological or cultural resources.

As discussed in Section 2.2.4, and Section 8.2.2, approximately 380 acres of stream/creek, freshwater marsh, and riparian land cover types would be preserved under the No Action/No Project Alternative. These aquatic resource land cover types generally have high sensitivity for prehistoric cultural resources (Section 11.1.2.6), and preserving them would prevent adverse effects of constructing new urban development and on the cultural and historic resources that might be present. Approximately 554 acres of riparian land covers would be re-established or established in Planning Area riparian areas under the No Action/No Project alternative (Table 8-5). The re-establishment of a riparian plant community is primarily by planting of tree, shrub, and herbaceous species, and results in minimal ground disturbance.

However, the establishment or re-establishment of 562 acres of vernal pools and swales as compensatory mitigation for projects and activities implemented under the No Action/No Project Alternative (Table 8-5) would require use of heavy equipment, and may require grading or excavation of soil to depths up to 3 feet, which has potential to impact existing paleontological or cultural resources. However, the re-establishment/establishment of vernal pools and swales would occur only on the specific soil types that form seasonal perched aquifers (see Chapter 8), and these soil types are typically not located in floodplains, where cultural resource sensitivity is highest. In addition, these small areas of shallow grading are less likely to disturb unknown cultural resources than the deeper grading that occurs with new urban development projects. Furthermore, future urban development projects and activities would comply with the regulations and local policies and regulations discussed in Section 11.1.1.3 and in the General Plan EIRs, and these existing regulations and policies would

continue to ensure that re-establishment or establishment of wetlands and other waters would not adversely affect cultural resources. Therefore, habitat re-establishment and establishment of vernal pools and swales on mitigation preserves is expected to have a ***Less Than Significant Adverse*** effect on existing cultural, paleontological, or historical resources.

In summary, the additional urban development from buildout of the UDA during the 50-year EIS/EIR study period and the effects of the approximately 1,900 acres of urban development that would be displaced to areas outside the UDA, would result in significant and unavoidable impacts to paleontological, cultural and historic resources. Therefore, the ***Significant and Unavoidable Adverse*** effects to paleontological, cultural, and historic resources identified in the Sacramento County, Galt, and the Rancho Cordova General Plan EIRs would continue under the No Action/No Project Alternative.

11.2.2.2 Cumulative Effects of the Alternative

The past and present urban development and associated infrastructure projects and human activities discussed in Section 3.7.1 and in Section 11.1.2 have damaged or destroyed paleontological and cultural resources within the EIS/EIR Planning Area, especially within the UDA. These past and present alterations have resulted in the existing conditions of the Planning Area (see Section 5.1.2), and represent a significant adverse impact on cultural resources from past and present development. Historical, cultural, and paleontological resources in other parts of the cumulative study area such as Yolo County and Sutter County have also been damaged by ground-disturbing activities of urban development.

The types of reasonably foreseeable “other” projects, activities, and actions described in Section 3.7.2, are similar to the types of past and present actions that occurred in the study area. The foreseeable other actions in the study area (see Section 3.7.2) that were not included in the Section 2.2.2 description of the No Action/No Project Alternative include additional new urban development in the Elk Grove SOI and in Rancho Murieta, development of the Wilton Rancheria Casino, master planned developments inside the UDA named Rio Del Oro and Mather South, further rural residential development outside the UDA, continued urban development of cultivated agricultural lands, major infrastructure projects such as California High-Speed Rail and the California WaterFix, and expansion of the existing National Wild Refuge and the Cosumnes River Preserve (see Section 3.7.2) These reasonably foreseeable other projects in the study area are expected to further impact paleontological and cultural resources. The combined impacts of the past, present, and reasonably foreseeable future projects are a significant cumulative impact to paleontological and cultural resources in the study area.

As discussed in the Section 11.2.2.1 direct and indirect analysis of the No Action/No Project, future projects and activities under the No Action/No Project Alternative would continue to implement applicable regulations and policies discussed in Section 11.1.1. However, although the policies in the Sacramento County General Plan (Sacramento County 2011) and Rancho Cordova General Plan (Rancho Cordova 2006a) are designed to minimize protect impacts to paleontological and cultural resources, additional losses of paleontological and cultural resources would result from the new urban development projects, activities, and actions included in the No Action/No Project Alternative. Therefore, the direct and indirect impacts of the No Action/No Project Alternative would further increase the significant loss of cultural and paleontological resources that already exists in the study area. Therefore, the incremental impacts to cultural and paleontological resources from the No Action/No Project Alternative are significant and cumulatively considerable, and would make a considerable contribution to the previously identified significant cumulative impacts on cultural and paleontological resources from the past, present, and reasonably foreseeable other projects.

11.2.3 Proposed Action/Proposed Project Alternative

The Proposed Action/Proposed Project Alternative is described in Section 2.3.

11.2.3.1 Direct and Indirect Effects of the Alternative

As discussed in Section 2.3, Covered Activities under the Proposed Action/Proposed Project Alternative include the same types of urban development that are anticipated under the No Action/No Project Alternative. Covered Activities implemented under the Proposed Action/Proposed Project would result in new urban development projects and activities on approximately 33,500 acres of existing natural landscapes in the Planning Area (see Section 2.3.3), which is approximately 2,000 fewer acres of new urban development projects on natural landscapes than the No Action/No Project Alternative.

As discussed in Section 2.3.1, the Proposed Action/Proposed Project Alternative would allow urban development Covered Activities within the MCRA portion of the UDA to be implemented consistent with the approved Sacramento County and Rancho Cordova General Plans, without urban development shifting or being displaced to up to four locations outside the current USB boundary. Therefore, the Proposed Action/Proposed Project Alternative does not assume that approximately 1,900 acres of new urban development would be shifted or “displaced” to locations outside of the current USB boundary for Sacramento County. As discussed in Section 11.2.2.2, the four areas where urban development might be displaced under the No Action/No Project are areas of moderate or high sensitivity for cultural resources (Figure 11-1). Therefore, the Proposed Action/Proposed Project may result in fewer disturbances to cultural resources relative to the impact of the No Action/No Project Alternative baseline condition. However,

unknown cultural resources could be present anywhere in the Planning Area (Section 11.2.1), so the EIS/EIR does not assume that effects on cultural resources would be less under the Proposed Action/Proposed Project than under the No Action/No Project Alternative.

As discussed in Section 11.1.1, existing regulations and policies that apply to paleontological and cultural resources, including historic properties and human remains, will continue to be required of urban development Covered Activities over the 50-year permit term.

As discussed in Section 1.5.4, the USACE is developing a multilevel CWA Section 404 permitting program for future SSHCP Covered Activity projects and activities that discharge dredged or fill material to waters of the United States, which would be a federal undertaking under the NHPA. To meet the NHPA 106 requirements, the USACE may develop a Programmatic Agreement with the SHPO specifically to address NHPA 106 compliance for future SSHCP Covered Activities authorized under CWA 404. If this were to occur, as part of developing a Programmatic Agreement, the USACE would also consult with regional Native American tribal contacts, and may consider establishing a MOU with Native American tribes concerning future coordination on the protection of cultural resources. Compared to the impacts expected under the No Action/No Project baseline condition, the MOU developed as part of this process would provide equal or better protection for cultural resources and human remains. The other existing federal, state, and local regulatory requirements would provide protection for paleontological resources and historical resources.

As discussed in Section 2.3.5, the conservation strategy of the Proposed Action/Proposed Project Alternative would include a 36,027-acre interconnected and coordinated SSHCP Preserve System, with 7,162 acres preserved inside the UDA, and 36,027 acres preserved outside the UDA. Any paleontological and cultural resources located within the SSHCP Preserve System would be protected from urban development and associated infrastructure projects. As noted in Section 11.2.2, individual mitigation preserves established under the No Action/No Project Alternative would also protect paleontological and cultural resources. However, under the Proposed Action/Proposed Project, approximately 2,740 acres of stream/creek and riparian habitat would also be protected in preserves, which is approximately three times the acreage of these culturally sensitive areas preserved under the No Action/No Project Alternative.

In addition, under the Proposed Action/Proposed Project, additional stream setback areas would be established between new urban development and UDA streams, creeks, and first and second order tributaries to those streams and creeks. Avoidance and Minimization Measure (AMM) AMM STREAM-2 would require new urban development to be at least 100 feet from the top of each bank of several creeks in the Planning Area, even for creek reaches that are not within preserves. AMM STREAM-1 would require minimum 150-foot setbacks from the top of each bank along Laguna Creek in the UDA. Although the project-by-project approvals and

project mitigation that would occur under the No Action/No Project Alternative (Section 2.2.4) may include some setbacks from creeks and streams, the setbacks required under the Proposed Action/Proposed Project would be larger and would apply to more streams and creeks than the setbacks under the No Action/No Project Alternative. The greater setbacks under the Proposed Action/Proposed Project would limit disturbance of soils in floodplains and riparian areas, which are the areas with the greatest potential for cultural resource presence in the Planning Area (Sacramento County 1993, 2011; Rancho Cordova 2006a; Galt 2008b). The establishment of the Preserve System and requirements for larger stream setbacks would be a **Minor Beneficial** effect as compared to the No Action/No Project Alternative baseline condition,

As described for the No Action/No Project Alternative in Section 11.2.2, vernal pool and swale re-establishment/establishment activities on preserves would include land disturbances up to 3 feet depth. However, the acreage of re-established/established wetlands and other waters, and re-established/established riparian land covers under the Proposed Action/Proposed Project would total approximately 1,740-acres, approximately 50% more acres of re-established/established aquatic resources than under the No Action/No Project Alternative. The additional acreage of re-establishment/establishment under the Proposed Action/Proposed Project would increase the risk of disturbance of unknown cultural resources on preserves, as compared to the No Action/No Project Alternative. However, the re-establishment/establishment of vernal pools and swales would continue to occur only on the specific soil types that form seasonal perched aquifers (see Chapter 8), and these soil types are typically not located in floodplains or riparian areas, where cultural resource sensitivity is highest. In addition, these small areas of shallow grading are less likely to disturb unknown cultural resources than the deeper grading that occurs with new urban development projects. Furthermore, future urban development projects and activities would continue to comply with the regulations and local policies and regulations discussed in Section 11.1.1.3 and in the General Plan EIRs, and these existing regulations and policies would continue to ensure that re-establishment or establishment of aquatic resources would not significantly affect known or unknown cultural resources in the SSHCP Preserve System. In addition, the amount of ground disturbance associated with re-establishment/establishment projects on preserves would remain minimal compared to the ground disturbance from urban development. Therefore, aquatic resource re-establishment/establishment under the Proposed Action/Proposed Project would continue to have a **Less than Significant Adverse** effect on paleontological, cultural, and historical resources, when compared to the impacts of the No Action/No Project Alternative baseline condition.

11.2.3.2 Significance of Direct and Indirect Effects

In summary, when compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would:

- Not result in disturbance of up to 1,900 acres outside the UDA identified as “moderate” or “high” cultural resource sensitivity by Sacramento County;
- Provide additional setback preserves along stream, creeks, and riparian areas, which generally have the highest sensitivity for cultural resources in the Planning Area;
- Result in similar effects to existing historical resources and paleontological resources.

Therefore, after considering the significance of impacts from the Proposed Action/Proposed Alternative on all of the impact criteria for paleontological, cultural, and historical resources listed above in Section 11.2.1.1, the Proposed Action/Proposed Project overall would result in a **Minor Beneficial** effect to Planning Area paleontological, cultural, and historical resources, when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

11.2.3.3 Cumulative Effects of the Proposed Action/Proposed Project

The effects of past, present, and the reasonably foreseeable other projects on paleontological, cultural, and historical resources in the Planning Area were described above in Section 11.2.2.2, and represent a significant adverse cumulative impact on the paleontological, cultural, and historical resources within the study area. As discussed in Section 11.2.2.1, the incremental direct and indirect effects of the No Action/No Project Alternative were determined to be significant and to be cumulatively considerable, when viewed in connection with the effects of the past, present, and reasonably foreseeable other projects in the study area.

As discussed here, the implementation of the Proposed Action/Proposed Project SSHCP conservation strategy, including the SSHCP AMMs, the SSHCP Aquatics Resources Plan, and the interconnected SSHCP Preserve System is expected to reduce the potential for impacts to cultural resources as compared to the No Action/No Project Alternative. Compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would include less development outside the current Sacramento County USB boundary, where cultural resource sensitivity is higher. The Proposed Action/Proposed Project would also include stream setbacks on streams, creeks, and first and second order tributaries to those streams and creeks. Because stream/creek and riparian areas have greater cultural resource sensitivity, these setbacks would reduce the potential for impacts to cultural resources. Consequently, the incremental effects of the Proposed Action/Proposed Project would have a minor beneficial impact to paleontological, cultural and historical resources when compared to the incremental effects of the No Action/No

Project Alternative baseline condition; therefore, the Proposed Action/Proposed Project does not result in a cumulatively considerable contribution to the significant adverse cumulative impacts on paleontological, cultural, and historical resources. The Proposed Action/Proposed Project would result in a ***Minor Beneficial Cumulative*** effect to paleontological, cultural, and historical resources compared to the No Action/No Project baseline condition.

11.2.4 Reduced Permit Term Alternative

The Reduced Permit Term Alternative is described in Section 2.4.

11.2.4.1 Direct and Indirect Effects of the Alternative

As described in Section 2.4.3 and Section 3.6.3, the Reduced Permit Term Alternative would include similar types of development in the UDA as the No Action/No Project Alternative. Over the 50-year EIS/EIR study period, the Reduced Permit Term Alternative would result in new urban development projects and activities on approximately 35,358 acres of existing natural land covers in the Planning Area (Table 8-12).

As discussed in Section 2.4.1, the Reduced Permit Term Alternative would allow urban development within the MCRA portion of the UDA to be consistent with the approved Sacramento County and Rancho Cordova General Plans, without urban development shifting or being displaced to up to four locations outside the current USB boundary. Therefore, the Reduced Permit Term Alternative does not assume that approximately 1,900 acres of new urban development would be shifted or “displaced” to locations outside of the current USB boundary for Sacramento County. As discussed above in section 11.2.2, the four areas where urban development might be displaced under the No Action/No Project Alternative are areas of moderate or high sensitivity for cultural resources (Figure 11-1). By not resulting in shifting or displacement of 1,900 acres of urban development to areas outside the UDA, the Reduced Permit Term Alternative would result in fewer disturbances of the areas identified by the County as having moderate or high cultural sensitivity (Figure 11-1) as compared to the No Action/No Project Alternative. However, as explained above in Section 11.2.1, unknown cultural resources could be present anywhere in the Planning Area, so the EIS/EIR does not assume that effects on cultural resources would necessarily be less under the Reduced Permit Term Alternative than under the No Action/No Project Alternative.

The existing regulations and local policy requirements discussed in Section 11.1.1 for cultural resources and human remains, if encountered during ground disturbance, would continue under the Reduced Permit Term Alternative. To meet the requirements of Section 106 for CWA permits, the USACE and the local jurisdictions could develop a Programmatic Agreement for Section 106 consultations with the SHPO in effect during the 30-year permit term of the

Reduced Permit Term Alternative. As part of developing a Programmatic Agreement, the USACE would consult with the local Native American tribes, which may include establishing a MOU with Native American tribes concerning future coordination and the protection of cultural resources. The MOU developed as part of this process would provide equal or better protection for cultural resources and human remains during the 30-year permit term than currently occurs. The other existing federal, state, and local regulatory requirements would provide protections for paleontological resources and historical resources.

As discussed in Section 2.4.5, the Reduced Permit Term Alternative would include an interconnected and coordinated preserve system, established during the 30-year permit term. Any paleontological, cultural, or historical resources present within the SSHCP Preserve System would not be disturbed or destroyed by future urban development. Relative to the No Action/No Project Alternative baseline condition, the 30-year Preserve System would result in a **Minor Beneficial** effect to paleontological, cultural, or historical resources.

However, during years 31–50 of the EIS/EIR study period, project ESA, California Endangered Species Act, and CWA mitigation preserves would be established under the uncoordinated, project-by-project process that currently occurs under the existing conditions and under the No Action/No Project Alternative. Any cultural, paleontological, or historical resources located within these on-site or off-site mitigation preserves would not be directly disturbed by new urban development. In addition, approximately 1,512 acres of stream/creek and riparian land covers would be preserved over the 50-year EIS/EIR study period, approximately double the acreage of these culturally sensitive areas that would be preserved under the No Action/No Project Alternative over the 50-year EIS/EIR study period. As in the No Action Alternative's expected regulatory environment (Section 2.2.2), project use of mitigation and conservation banks to meet CWA404 requirements has become common since 2008, and is expected to continue during years 31–50 of the Reduced Permit Term's 50 year study period)

In addition, during the 30-year permit term of the Reduced Permit Term Alternative, stream setbacks would be established that would require new urban development inside the UDA to be at least 50 feet from the top of the bank of many creeks in the Planning Area, even for creeks that are not within preserves. For the Laguna Creek in the UDA, development setbacks would be a minimum of 150 feet from the top of each bank during the 30-year permit term. Although project-by-project ESA and CWA authorizations under the existing conditions and under the No Action/No Project Alternative may requires small setbacks from creeks, the setbacks required under the Reduced Permit Term Alternative during the 30-year permit term would be larger, and would occur on more streams and creeks than under the No Action/No Project Alternative. The larger stream and creek setbacks established during the 30-year permit of the Reduced Permit Term Alternative would reduce disturbance of soils in riparian areas, which have the greatest cultural resource sensitivity (Sacramento County 1993, 2011; Rancho

Cordova 2006a; Galt 2008b). The Preserve System and requirements for stream setbacks during the 30-year permit term would be a **Minor Beneficial** effect as compared to the No Action/No Project Alternative baseline condition.

As for the No Action/No Project Alternative, aquatic resource re-establishment/establishment activities on preserves could involve land disturbance up to 3 feet deep to construct re-established/established vernal pool wetlands and swales, or for re-establishment/establishment of other waters. However, the acreage of re-establishment/establishment of aquatic resources and riparian land covers under the Reduced Permit Term Alternative would be approximately 40% more than that under the No Action/No Project Alternative. The additional acreage of re-establishment/establishment under the Reduced Permit Term Alternative would increase the risk of disturbance of unknown cultural resources as compared to the No Action/No Project Alternative. However, Covered Activity projects and activities implemented during the 30-year permit term, and during the 50-year EIS/EIR study period, would continue to be required to comply with the existing cultural resource regulations and local policies described above in Section 11.1.1. Therefore, habitat re-establishment/establishment under the Reduced Permit Term Alternative would continue to have **Less Than Significant Adverse** effects on paleontological, cultural, and historical resources when compared to the No Action/No Project Alternative baseline condition.

11.2.4.2 Significance of Direct and Indirect Effects

In summary, when compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would:

- Not result in disturbance of up to 1,900 acres outside the UDA identified as “moderate” or “high” cultural resource sensitivity by Sacramento County;
- Provide 30-years of additional protections for stream, creeks, and riparian areas, which generally have the highest sensitivity for cultural resources in the Planning Area;
- Result in similar effects on historical resources and paleontological resources.

Therefore, after considering the significance of impacts from the Reduced Permit Term Alternative on all of the impact criteria for paleontological, cultural, and historical resources listed in Section 11.2.1, the Reduced Permit Term Alternative would result in **Minor Beneficial** effects to paleontological, cultural, and historical resources when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

11.2.4.3 Cumulative Effects of the Alternative

The effects of past, present, and reasonably foreseeable other projects on paleontological, cultural, and historical resources in the Planning Area are described in Section 11.2.2.1, and represent a significant adverse cumulative impact on the paleontological, cultural, and historical resources within the Study Area. As discussed in Section 11.2.2.1, the direct and indirect incremental effects of the No Action/No Project were determined to be significant and cumulatively considerable, when viewed in connection with the effects of the past, present, and foreseeable other projects in the Study Area.

As discussed here, the implementation of the Reduced Permit Term Alternative's conservation strategy, including the SSHCP AMMs, the SSHCP Aquatics Resources Plan, and the interconnected SSHCP Preserve System is expected to reduce the impacts to cultural resources when compared to the No Action/No Project Alternative. Compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would not displace or shift urban development outside the current Sacramento County USB boundary where cultural resource sensitivity is moderate or high (Figure 11-1). The Reduced Permit Term Alternative would also include 30 years of additional setbacks between new urban development and UDA streams, creeks, and first and second order tributaries to those streams and creeks. Because stream/creek and riparian areas have greater cultural resource sensitivity, the 30 years of larger and more numerous setbacks are expected to reduce impacts to cultural resources. Consequently, the direct and indirect incremental effects of the Reduced Permit Term Alternative would have a minor beneficial impact to paleontological, cultural, and historical resources when compared to the incremental effects of the No Action/No Project Alternative baseline condition; therefore, the Reduced Permit Term Alternative would not result in a cumulatively considerable contribution to the significant adverse cumulative impacts on paleontological, cultural, and historical resources. The Reduced Permit Term Alternative would result in a **Minor Beneficial Cumulative** effect to paleontological, cultural, and historical resources, when compared to the No Action/No Project Alternative baseline condition.

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CHAPTER 12 – PUBLIC SERVICES AND FACILITIES

This chapter presents the environmental effects of each Environmental Impact Statement (EIS)/ Environmental Impact Report (EIR) alternative on public services and facilities within the Planning Area. Services and facilities assessed include fire protection, law enforcement, water supply, wastewater treatment, solid waste (landfill capacity), parks and recreation, energy services (natural gas and electricity), and mosquito abatement.

12.1 AFFECTED ENVIRONMENT/ENVIRONMENTAL SETTING

This section describes the regulatory and physical environmental setting for traffic and circulation within the Planning Area.

12.1.1 Regulatory Framework

Several federal, state, and local agency requirements apply to public services and facilities within the Planning Area. This section summarizes the statutes, regulations, policies, and agency planning documents that are relevant to the approval, issuance of permits, or implementation for the alternatives analyzed in this EIS/EIR. This section also identifies any relevant federal permits or other entitlements that must be obtained prior to implementing the alternatives. To the extent possible, the analyses or studies required by these regulations and policies are integrated into the environmental effects analyses presented in Section 12.2, Environmental Consequences/Environmental Impacts (40 CFR 1502.25). The statutes, regulations, policies, and agency planning documents pertaining to each public service or facility are presented separately.

12.1.1.1 Fire Protection and Emergency Services

State

Petroleum Safety Orders. In accordance with 8 CCR 6773, “Fire Protection and Fire Equipment,” the California Occupational Safety and Health Administration has established minimum standards for fire suppression and emergency medical services. The standards include, but are not limited to, guidelines on the handling of highly combustible materials; fire hose sizing requirements; restrictions on the use of compressed air; access roads; and the testing, maintenance, and use of all firefighting and emergency medical equipment.

Emergency Response/Evacuation Plans. The State of California passed legislation authorizing the Office of Emergency Services to prepare a Standard Emergency Management System program, which sets forth measures by which a jurisdiction should handle emergency disasters. Noncompliance with the Standard Emergency Management System program could result in the state withholding disaster relief from the noncomplying jurisdiction in the event of an emergency disaster.

Local

Sacramento County General Plan. Applicable goals and policies from the Public Facilities Element of the *Sacramento County General Plan of 2005–2030* (Sacramento County General Plan) that address fire protection services include the following:

Fire Protection and Emergency Services

Goal: Efficient and effective fire protection and emergency response serving existing and new development.

Fire Hazards

Goal: Minimize the loss of life, injury, and property damage due to fire hazards.

Policy SA-24: The County shall require, unless it is deemed infeasible to do so, the use of both natural and mechanical vegetation control in lieu of burning or the use of chemicals in areas where hazards from natural cover must be eliminated, such as levees and vacant lots (Sacramento County 2011).

Galt General Plan. Applicable goals and policies from the Public Facilities Element of the *Galt General Plan: Policy Document* (Galt General Plan) that address fire protection services include the following:

Fire Protection and Emergency Medical Services

Policy PFS-7.1: Fire Protection. The City shall continue to support the Cosumnes Community Services District Fire Department for fire protection and emergency medical service capable of meeting the needs of the community based on the benefit received. In addition, the City shall work with the Cosumnes Community Services District regarding necessary public fire facilities, equipment, and operational costs for the provision of fire prevention, fire protection, and emergency medical services to Galt residents (Galt 2009a).

Rancho Cordova General Plan. The Safety Element of the *Rancho Cordova General Plan* (Rancho Cordova General Plan) includes policies for fire protection. The applicable policy is as follows:

Policy S.9.1: Cooperate with the Sacramento Metropolitan Fire District (SMFD) to reduce fire hazards, assist in fire suppression, and ensure efficient emergency medical response (Rancho Cordova 2006a).

12.1.1.2 Law Enforcement***Local***

Sacramento County General Plan. The applicable goal from the Public Facilities Element of the Sacramento County General Plan that addresses law enforcement is shown below:

Law Enforcement

Goal: Adequate Sheriff Services and Facilities for the Unincorporated Areas of Sacramento County (Sacramento County 2011).

Galt General Plan. Law enforcement is addressed in the Galt General Plan Public Facilities and Services Element. The applicable policy is as follows:

Policy PFS-6.2: Police Protection. The City should continue to provide adequate police protection and law enforcement by maintaining a police department capable of meeting the needs of the community (Galt 2009a, p. PFS-8).

Rancho Cordova General Plan. The Rancho Cordova General Plan Safety Element includes policies for law enforcement. The applicable policy is as follows.

Policy S.8.1: Monitor and review the level of police staffing provided in the City to ensure that sufficient staffing and resources are available to serve local needs (Rancho Cordova 2006a).

12.1.1.3 Water Supply***Federal***

Safe Drinking Water Act. The Safe Drinking Water Act gives the U.S. Environmental Protection Agency (EPA) the authority to set standards for contaminants in drinking water supplies. The EPA establishes primary regulations for the control of contaminants that affected public health and secondary regulations for compounds that affect the taste, odor, and aesthetics of drinking water. Under the provisions of the Safe Drinking Water Act, the California Department of Health Services has the primary enforcement responsibility. Title 22 of the California Administrative Code establishes Department of Health Services authority, and stipulates state drinking water quality and monitoring standards.

State

California Department of Water Resources. The Department of Water Resources is responsible for the preparation of the California Water Plan, management of the State Water Project, protection and restoration of the Sacramento–San Joaquin River Delta, regulation of dams, and provision of flood protection and other functions related to surface water and groundwater resources. The California Water Plan evaluates different combinations of regional and statewide resource management strategies to reduce water demand, increase water supply, reduce flood risk, improve water quality, and enhance environmental and resource stewardship. The California Water Plan is updated every 5 years; the latest version was updated in 2013.

California Department of Public Health. Recycled water regulations are administered by both San Francisco Bay Regional Water Quality Control Board (RWQCB) and the California Department of Public Health (CDPH). The regulations governing recycled water are found in a combination of sources, including the Health and Safety Code, Water Code, and Titles 22 and 17 of the California Code of Regulations (CCR). Issues related to the treatment and distribution of recycled water are generally under the permitting authority of RWQCB, while issues related to use and quality of recycled water are the responsibility of CDPH.

Title 22 of the CCR, Division 4, Environmental Health, Chapters 1 through 3, outline California’s health laws related to recycled water. The intent of these regulations is to ensure protection of public health associated with the use of recycled water. The regulations establish acceptable levels of constituents in recycled water for a range of uses and assurance of reliability in the production of recycled water. The State Water Resources Control Board (SWRCB) has jurisdiction over the distribution of recycled wastewater and the enforcement of Title 22 regulations. Chapter 3, Article 3, of Title 22 indicates that disinfected tertiary-recycled water can be used for surface irrigation of food crops (including edible root crops, where the recycled water comes into contact with the edible portion of the crop), parks and playgrounds, school yards, residential landscaping, and unrestricted-access golf courses. Orchards and vineyards where the recycled water does not come into contact with the edible portion of the crop must be treated at least to un-disinfected secondary level for surface irrigation (CCR Section 60304).

State Water Resources Control Board. The SWRCB administers state water rights and water quality functions. The SWRCB and its nine RWQCBs administer water rights and enforce pollution control standards. The SWRCB is responsible for the granting of water rights permits and licenses through an appropriation process following public hearings and appropriate environmental review by applicants and responsible agencies. In granting water right permits and licenses, the SWRCB must consider all beneficial uses, including water for downstream human and environmental uses.

Central Valley Regional Water Quality Control Board. The Central Valley RWQCB is responsible for preparation and implementation of basin water quality plans consistent with the Clean Water Act and enforcement of those plans to ensure that local water quality is protected. The Central Valley RWQCB may become involved in water services programs as a responsible agency with respect to project impacts on downstream beneficial uses.

Local

Sacramento County General Plan. Applicable goals and policies from the Public Facilities Element of the Sacramento County General Plan that address water service include the following:

Water Facilities

Goal: Water facilities developed in an environmentally sound, economically efficient, and financially equitable manner.

Policy PF-1: New water facilities shall be planned to minimize impacts to in-stream water flow in the Sacramento and American Rivers.

Policy PF-2: Municipal and industrial development within the Urban Service Boundary but outside of existing water purveyors' service areas shall be served by either annexation to an existing public agency providing water service or by creation or extension of a benefit zone of the SCWA (Sacramento County 2011).

Galt General Plan. Water service is addressed in the Galt General Plan Public Facilities and Services Element. The applicable policy is as follows:

Water Services, Treatment, and Delivery

Policy PFS-2.9: Water services. The City shall monitor water demand growth trends to anticipate water service needs (Galt 2009a).

Rancho Cordova General Plan. The Rancho Cordova General Plan Infrastructure, Services, and Finance Element includes policies for water services, including the following:

Policy ISF.2.4: Ensure that water services and delivery systems are available in time to meet the demand created by new development, or are guaranteed to be built by bonds or securities.

Policy ISF.2.5: Ensure that water flow and pressure are provided at sufficient levels to meet domestic, commercial, industrial, and firefighting needs (Rancho Cordova 2006a).

12.1.1.4 Wastewater

Federal

Clean Water Act. The federal Clean Water Act (CWA) prohibits the discharge of pollutants to navigable waters from a point source unless the discharge is authorized by a National Pollutant Discharge Elimination System (NPDES) permit. Discharge of treated wastewater to surface water of the United States, including wetlands, requires an NPDES permit. In California, the RWQCBs administer the issuance of these federal permits. Obtaining an NPDES permit requires preparation of detailed information, including characterization of wastewater sources, treatment processes, and effluent quality.

State

Porter–Cologne Water Quality Control Act. The Porter–Cologne Water Quality Control Act requires the SWRCB to adopt water quality control plans and set waste discharge requirements for discharges into surface and groundwater. The Central Valley RWQCB is responsible for administering and enforcing waste discharge requirements, permits, and water quality control plans.

Local

Sacramento Regional Wastewater Treatment Plant Master Plan 2020. ~~The Sacramento Regional Wastewater Treatment Plant Master Plan 2020 (2020 SRWTP Master Plan; Regional San 2008) identifies wastewater treatment facility needs for a 20-year planning period through the year 2020. The 2020 SRWTP Master Plan provides a phased program of recommended facilities to accommodate planned growth while at the same time maintaining treatment reliability, meeting future regulatory requirements, and optimizing costs. To meet this goal, the 2020 SRWTP Master Plan integrates overall strategies for wastewater treatment, effluent management, and biosolids disposal into an effective wastewater treatment management program. The 2020 SRWTP Master Plan proposes that treatment facility expansion occur in stages or phases as the sewage generated by the population increases (Regional San 2008).~~

Interceptor System Master Plan 2000. ~~The Interceptor System Master Plan 2000 (Interceptor System Master Plan; Regional San 2000) identifies existing and future capacity needs in the regional interceptor system and provide a strategic approach to plan for near-term and long-term improvements needed for the regional wastewater conveyance system. The Interceptor System Master Plan updates and refines regional conveyance facilities, service area, growth projections, and the existing system's response to rainfall; provides dynamic modeling; estimates the cost of facilities; identifies right-of-way acquisition needs; and identifies near- and long-term improvements required for regional wastewater conveyance. The Interceptor~~

~~System Master Plan uses land use and population projections based on the Sacramento Area Council of Governments Blueprint criteria and the land use plans of the member jurisdictions. The Interceptor System Master Plan also provides wastewater flow estimates, information on hydraulic modeling, and interceptor design criteria, and identifies conveyance systems and policies to accommodate planned growth (Regional San 2000).~~

Sacramento Regional County Sanitation District EchoWater Project. As a result of permit requirements adopted by the Central Valley RWQCB in 2010, as amended by orders of the Central Valley RWQCB and the SWRCB in 2011, 2012, 2013, and 2014, Sacramento Regional County Sanitation District (Regional San) is required to reduce total nitrogen and ammonia levels in its effluent substantially below existing concentrations. Biological nutrient removal is in progress to meet ammonia and nitrate effluent limitations. Regional San is also required to install tertiary filtration treatment for pathogen removal. Full compliance with the adopted and amended permit is required by May 2021 for ammonia and nitrate removal and May 2023 for filtration-related requirements.

Regional San Interceptor Sequencing Study. The Interceptor Sequencing Study (ISS) was prepared to determine Regional San's long-term needs to provide sanitary sewer service to a growing Sacramento region. The ISS evaluated proposed interceptor facilities identified in Regional San's previous planning document, the *Interceptor System Master Plan 2000* (Regional San 2000), to determine if there were other alternatives including delaying, realigning, or eliminating proposed interceptors. The ISS performed the following six tasks: 1) re-evaluated planning area growth predictions; 2) identified alternative flow-generation criteria based on projected population densities and anticipated future flow per household; 3) developed additional modeling capabilities to evaluate conservative and realistic flow conditions; 4) prepared multiple interceptor sewer service alternatives; 5) evaluated recycled water alternatives, including satellite treatment and scalping facilities; 6) prepared a cost analysis for the top interceptor alternatives.

The ISS provides a high-level evaluation of interceptor alternatives and identifies interceptor alignment corridors as well as anticipated capacity needs and interceptor pipe sizes. Proposed projects will be further evaluated through Regional San's asset management program and must be approved by the Project Authorization Committee before requesting approval from the Regional San Board of Directors to begin environmental review and project implementation. The Regional San Board of Directors adopted the ISS in February 2013.

Sacramento Area Sewer District Sewer System Management Plan. The Sacramento Area Sewer District (SASD) Sewer System Management Plan is a system-wide living management plan for the operation, maintenance, expansion, repair, and replacement of SASD's sewer collection system. The intent of this document is to be a day-to-day working management plan that also

meets the requirements of the Statewide General Waste Discharge Requirements Water Quality Order No. 2006-0003 approved on May 2, 2006, D: Provisions, no. 13 (D13).

Sacramento Area Sewer District Sewer System Capacity Plan 2010 Update. This is a high-level planning and dynamic sewer capacity plan that addresses existing, mid-range, and buildout sewer capacity needs. Existing capacity needs are based on SASD's current sewer system conditions. The mid-range capacity needs are based on plans to provide sewer service to SASD's service area within the next 10 years. The buildout capacity needs are based on providing sewer service to the entire SASD service area, which corresponds to Sacramento County's Urban Service Boundary (USB) with the exception of the areas served by the City of Sacramento, the City of Folsom, and the Rancho Murieta Community Services District.

Sacramento County General Plan. Applicable goals and policies from the Public Facilities Element of the Sacramento County General Plan that address wastewater are as follows:

Wastewater Collection and Treatment

Goal: Treatment plant, regional interceptors and trunk system expansion completed prior to construction in urban expansion areas and/or flows reaching critical capacity limits.

Policy PF-9: Design trunk and interceptor systems to accommodate flows generated by full urban development at urban densities within the ultimate service area. System design may take into consideration land that cannot be developed for urban uses due to long-term circumstances including but not limited to conservation easements, floodplains, public recreation areas etc. This could include phased construction where deferred capital costs are appropriate.

Goal: Establish limits on extension of public sewer service in the unincorporated area to ensure long-term availability of conveyance and treatment capacity, cost-effective use of revenues and support open space preservation objectives (Sacramento County 2011).

Galt General Plan. Sewer services are addressed in the Galt General Plan Public Facilities and Services Element. Applicable goals and policies are as follows:

Wastewater Collection, Treatment, Disposal, and Reuse

Policy PFS-3.7: Compliance with the Clean Water Act. The City shall comply with the requirements of the Clean Water Act with the intent of minimizing the discharge of pollutants to surface waters.

Policy PFS-3.9: Expand use of Reclaimed Water. The City shall encourage the use of tertiary treated wastewater for irrigation of agricultural lands, large landscaped areas,

and recreation/open space areas within close proximity to the City’s WWTP to help ensure ongoing compliance with RWQCB requirements (Galt 2009a).

Rancho Cordova General Plan. The Rancho Cordova General Plan Infrastructure, Services, and Finance Element applicable policy for sewer services is as follows:

Policy ISF.2.4: Ensure that sewage conveyance and treatment capacity are available in time to meet the demand created by new development, or are guaranteed to be built by bonds or other sureties (Galt 2009a).

12.1.1.5 Solid Waste

Federal

Resource Conservation and Recovery Act. The Resource Conservation and Recovery Act (RCRA) was enacted to protect human health and the environment from potential hazards of waste disposal, to conserve energy and natural resources, to reduce the amount of waste generated, and to ensure that wastes are managed in an environmentally sound manner. Under RCRA, the EPA has the authority to control hazardous wastes from “cradle to grave.” This includes the generation, transportation, treatment, storage, and disposal of hazardous wastes. RCRA also sets a framework for the management of nonhazardous solid wastes. RCRA enables the EPA to address underground storage tanks storing petroleum and other hazardous substances. RCRA authorizes states to develop and enforce their own waste management programs; the state programs must be approved and authorized by the EPA.

State

California Integrated Waste Management Act. The California Integrated Waste Management Act mandates a focus on the conservation of natural resources. Cities and counties are required to create comprehensive source reduction, recycling, and composting programs. The goal of these programs is to reduce the amount of waste sent to landfills by 50%. The act also requires counties to prepare an Integrated Waste Management Plan. The California Integrated Waste Management Act shifts the emphasis from landfill disposal toward waste reduction, recycling, and composting whenever possible. This approach conserves natural resources, saves energy, decreases pollution, and provides new jobs in the waste industry.

The California Integrated Waste Management Act established the following priorities for waste management: waste reduction, recycling and composting, controlled combustion of waste to generate electricity, and landfilling.

Public Resources Code Division 30/California Code of Regulations Title 14. These regulations establish minimum standards for solid waste handling and disposal, and clarify local responsibilities for enforcement of these standards. Local enforcement agencies have the primary responsibility for ensuring the correct operation and closure of solid waste facilities in the state. They also have responsibilities for guaranteeing the proper storage and transportation of solid wastes. The Sacramento County Environmental Management Department is authorized as the local enforcement agency under Division 30 of the Public Resources Code and Title 14 of the California Code of Regulations.

Local

Sacramento County General Plan. Applicable goals and policies from the Public Facilities Element of the Sacramento County General Plan that address solid waste are as follows:

Solid Waste Services and Facilities

Goal: Land use compatibility with all solid waste facilities.

Policy PF-21: Property buffering the County landfill shall remain in agricultural, recreational or other open space uses and extend at least 2,000 feet in all directions, measured from the landfill's permitted boundary, unless the Department of Waste Management and Recycling determines that the use is compatible with landfill operations and the Board of Supervisors makes the finding that the uses are compatible with the existing or future operations of the landfill (Sacramento County 2011).

Galt General Plan. Solid waste is addressed in the Galt General Plan Public Facilities and Services Element. The applicable policy is as follows.

Solid Waste Collection and Disposal

Policy PFS-5.3: Solid Waste Facilities. The City shall require that all solid waste facilities be located in areas free of incompatible land uses and prohibit future incompatible land uses on surrounding lands (Galt 2009a).

Rancho Cordova General Plan. The policy in the Rancho Cordova General Plan Natural Resources Element applicable to solid waste is as follows.

Policy NR.8.1: Support recycling efforts by developing a set of programs to educate residents on recycling and provide recycling services (Rancho Cordova 2006a).

12.1.1.6 Parks and Recreation

State

Quimby Act. The Quimby Act states that the legislative body of a city or county may, by ordinance, require the dedication of land or impose a requirement of the payment of fees in lieu thereof, or a combination of both, for park or recreational purposes as a condition to the approval of a tentative or parcel map. The Quimby Act only applies to the acquisition of new parkland and does not apply to the physical development of new park facilities or associated operations and maintenance costs. The Quimby Act effectively preserves open space needed to develop parkland and recreational facilities; however, the designation of parks and other recreational facilities is subject to discretionary approval and is evaluated on a case-by-case basis with new residential development. The Quimby Act also finds that a minimum of 3 acres, up to a maximum of 5 acres, of park area is required per 1,000 persons.

Local

Sacramento County General Plan. Applicable goals and policies from the Public Facilities Element of the Sacramento County General Plan that address parks and recreation are as follows:

Local and Regional Park Acquisition, Development, and Maintenance

Goal: Adequate and well-funded local and regional park facilities serving existing and newly developing neighborhoods.

Policy PF-122: To help assure that local recreation and park district Master Plan standards for levels of service may be achieved and maintained, the County may require new development to dedicate land, pay in-lieu fees, development impact fees, or otherwise contribute a fair share to the acquisition and development of parks and recreation facilities. For development in infill areas where land dedication may not be practical, the County in cooperation with the affected park district may explore creative alternatives for providing park and recreation facilities.

Policy PF-123: At a minimum, new residential developments approved by the County shall provide sites for local parks for their prospective residents consistent with the Quimby Act and the land dedication standards for each local recreation and park district adopted by Sacramento County in Chapter 22.40 of the Sacramento County Code. These requirements may be satisfied by land dedication, payment of fees in lieu of dedication, or on-site improvements per the provisions of Chapter 22.40, which will be regularly updated to reflect changing demography. These include the baseline standard of three

acres of land for parks per 1,000 residents or in cases where existing parklands within a park district exceed three acres per 1,000 population, that higher ratio shall be the standard for new developments up to a maximum of five acres of land for parks per 1,000 residents based on calculations specified in SCC Chapter 22.40.

Policy PF-124: Consistent with its infill development standards and mixed use Commercial Corridor plans, the County in consultation with the local recreation and park districts shall encourage new infill and Corridor development projects to provide small plazas, pocket parks, civic spaces, and other gathering places that are available to the public to help encourage pedestrian activity, meet recreational needs and service standards consistent with Smart Growth principles.

Policy PF-125: The County shall promote the provision of on-site recreational amenities and gathering places that are available to the public by large scale development projects and may consider providing incentives such as density bonuses or increases in building coverage for that purpose.

Policy PF-126: Encourage local park districts to develop user fee supporting recreation programs for those activities that go beyond providing for basic recreation needs. Examples include sports leagues, tennis and other court complexes, leisure enrichment classes for all ages, aquatic centers and splash parks, and community centers.

Policy PF-127: Require new residential developments to participate in park O & M financing mechanisms where established by local park districts or the County.

Policy PF-128: Encourage park development adjacent to school sites and the formation of joint use agreements between school and park districts.

Policy PF-129: In cooperation with local park districts and County Regional Parks, the County shall assist in establishing permanent financing systems for the purpose of supporting an adequate level of park services and maintenance (Sacramento County 2011).

Sacramento County Pedestrian Master Plan. The Sacramento County Pedestrian Master Plan (SACDOT 2007) was conceived to improve pedestrian safety and access on public streets within the unincorporated portions of Sacramento County. The goal is to optimize the pedestrian experience, to provide safe and usable pedestrian facilities for all pedestrians, and to assure compliance with all federal, state, and local regulations and standards. The Pedestrian Master Plan identifies a number of pedestrian projects within the Planning Area, including sidewalks/asphalt walkways along Dillard Road, Twin Cities Road, and Latrobe Road. The Pedestrian Master Plan focuses only on public streets and not on off-road trails.

Galt General Plan. Parks and recreation are addressed in the Galt General Plan Public Facilities and Services Element. Applicable goals and policies are as follows:

Parks and Recreational Open Space

Policy PFS-8.1: Parks/Resident Ratio. The City shall require new development to provide for park acreages at a minimum of 5 acres/1,000 acres and make land acquisition for parks and open space a recreation priority.

Policy PFS-8.11: Park Linkages. The City shall encourage pedestrian and bicycle trail linkages between parks, open space areas, wildlife habitat, and significant community activity centers.

Policy PFS-8.12: Natural Resource Protection in Park and Open Space Design. The City shall incorporate natural resource protection, wildlife habitat, and stormwater quality techniques into parks and open space design to encourage sustainability (Galt 2009a).

Rancho Cordova General Plan. The Rancho Cordova General Plan Open Space, Parks, and Trails Element includes policies for parks and recreation. Applicable goals and policies are as follows:

Goal OSPT.3: Create a system of pedestrian and bicycle trails that maximize usage while providing places for walking and bicycling without conflicts with motor vehicles.

Policy OSPT.2.3: Maximize the potential benefits of natural resource mitigation lands within urban development.

Policy OSPT.3.1: Develop a trails system that provides for maximum connectivity, so that all trails are linked for greater use as recreational and travel routes (Rancho Cordova 2006a).

12.1.1.7 Energy

Local

Sacramento County General Plan. Applicable objectives and policies from the Public Facilities Element of the Sacramento County General Plan that address energy are as follows:

General Energy Facility Policy

Objective: Minimize the health, safety, aesthetic, cultural, agricultural and biological impacts of energy facilities in Sacramento County.

Policy PF-69: Cooperate with the serving utility to minimize the potential adverse impacts of energy production and distribution facilities to environmentally sensitive areas by, when possible, avoiding siting in the following areas:

- Wetlands.
- Permanent marshes.
- Riparian habitat.
- Vernal pools.
- Oak woodlands.
- Historic and/or archaeological sites and/or districts

Electric Distribution Policy

Objective: Ensure the provision of safe, reliable, efficient and economical electric service while minimizing potential land use conflicts, and health, safety, environmental, and aesthetic impacts of transmission facilities.

Policy PF-83. New transmission corridors should be identified in all master plans created for new growth areas.

Policy PF-84. New transmission lines constructed within existing and planned urban areas should utilize existing transmission corridors whenever practical. Secondary preferred locations are adjacent to railway and freeway corridors when feasible.

Policy PF-85. To minimize visual impacts and protect the county's visual and aesthetic resources new bulk substations should be located in industrial and non-retail commercial areas when possible. To further minimize visual intrusion and potential land use conflicts, substations shall be enclosed with site-appropriate security fence in concert with a landscaped setback along all public street frontages.

Policy PF-89. Wherever feasible, utilize existing transmission poles to accommodate new overhead transmission lines. If practical, existing and future transmission corridors should be shared by more than one utility company subject to the Northern California Joint Pole Agreement.

Policy PF-90. Transmission rights-of-way should avoid bisecting parcels wherever possible.

Policy PF-91. Careful consideration shall be taken when transmission lines cross farmland. The crossing of prime or statewide importance farmland with

transmission lines should be avoided whenever possible. In those cases when crossing farmland in these categories is unavoidable, the County should recommend routing of the lines along the periphery of the site as the preferred alternative.

Policy PF-92. Transmission lines should avoid to the greatest extent possible, cultural resources and biological resources such as wetlands, permanent marshes, riparian habitats, vernal pools, and oak woodlands. When routed through such areas, transmission lines should have maximum line spans and cross at the narrowest points which involve minimal cutting and cropping of vegetation, maintaining the drainage regime of wetland basins. Additionally, when feasible, such routes should be maintained to serve as biological dispersion corridors between areas of high biodiversity.

Policy PF-95. Transmission lines should avoid paralleling recreation areas, historic areas, rural scenic highways, landscaped corridors, drainage basins, wetland mitigation, tree planting, and designated federal or state wild and scenic river systems, although these areas may be considered as options if facilities already exist there.

Policy PF-101. Route new overhead sub-transmission lines within existing transmission line corridors, along railroad tracks, or major roadways. In an effort to reduce the visual impact of new lines combine circuits on existing 69 kV power poles, wherever feasible.

Natural Gas Production and Distribution Facility Policy

Objective: Distribute natural gas safely and efficiently, and withdraw underground gas reserves in an environmentally sensitive manner.

Policy PF-113. Route new high pressure gas mains within railway and electric transmission corridors, along collector roads, and wherever possible, within existing easements. If not feasible these gas mains shall be placed as close to the easement as possible.

Coordination With Energy Providers

Objective: Well-planned and timely siting of efficiently operating energy delivery facilities.

Policy PF-117. All Community Plans shall include an Energy Facility Siting Element which indicates the location of existing and planned energy facilities. Community Plan Siting Elements and SMUD's Electric Study Plans for the corresponding area shall be consistent.

Policy PF-118. All tentative subdivision maps should identify the location of all utility easements sufficient to accommodate existing and future needs as determined by SMUD and PG&E (Sacramento County 2011).

Galt General Plan. Gas and electric services are addressed in the Galt General Plan Public Facilities and Services Element. The applicable policy is as follows:

Policy PFS-11.4: Coordination with Utility Providers. The City should coordinate with gas and electricity service providers to locate and design gas and electric systems to minimize environmental and other impacts to existing and future residents (Galt 2009a).

Rancho Cordova General Plan. The Rancho Cordova General Plan Infrastructure, Services, and Finance Element includes no applicable goals or objectives.

12.1.1.8 Mosquito Abatement

Federal

Mosquito Abatement for Safety and Health Act. The Mosquito Abatement for Safety and Health Act authorizes grants through the Centers for Disease Control and Prevention for mosquito programs to prevent mosquito-borne diseases. It also requires the National Institute of Environmental Health Sciences to conduct or support research into methods for controlling the populations of insects and vermin that transmit deadly diseases to humans.

State

Mosquito Abatement and Vector Control District Law Act (California Health and Safety Code, Section 2000–2007). The Mosquito Abatement and Vector Control District Law Act was adopted to help protect people from health risks associated with mosquitos. The act provides the basis for creating Mosquito Abatement Districts throughout the state, including the Sacramento–Yolo Mosquito and Vector Control District that covers the Planning Area.

California Mosquito-Borne Virus Surveillance and Response Plan. This plan describes an enhanced surveillance and response program for mosquito-borne viruses in the State of California. Implementation obligations are shared across the California Department of Public Health, the Mosquito and Vector Control Association of California, and the University of California at Davis.

Local

Sacramento County General Plan. The applicable policy from the Conservation Element of the Sacramento County General Plan that addresses mosquito abatement is as follows:

Policy CO-71: Development design shall help protect natural resources by:

- Minimizing total built development in the floodplain, while designing areas of less frequent use that can support inundation to be permitted in the floodplain,

- Ensuring development adjacent to stream corridors and vernal pools provide, where physically reasonable, a public street paralleling at least one side of the corridor with vertical curbs, gutters, foot path, street lighting, and post and cable barriers to prevent vehicular entry.
- Projects adjacent to rivers and streams shall integrate amenities, such as trail connectivity, that will serve as benefits to the community and ecological function.
- Siting of wetlands near residential and commercial areas should consider appropriate measures to minimize potential for mosquito habitation.
- Development adjacent to steam corridors and vernal pools shall be designed in such a manner as to prevent unauthorized vehicular entry into protected areas (Sacramento County 2011).

Galt General Plan. The Galt General Plan does not contain any policies related to mosquito abatement.

Rancho Cordova General Plan. The Rancho Cordova General Plan Natural Resources Element includes the following policy applicable to mosquito abatement:

Policy NR.5.6: Incorporate Storm Water, Urban Runoff, and Wetland Mosquito Management Guidelines and Best Management Practices into the design of water retention structures, drainage ditches, swales, and the construction of mitigated wetlands in order to reduce the potential for mosquito-borne disease transmission (Rancho Cordova 2006a).

12.1.2 Planning Area Public Services and Facilities

This section describes the existing fire and law enforcement, parks and recreational facilities, and water and wastewater infrastructure that serve the Planning Area. Solid waste disposal, energy facilities, and existing mosquito abatement activities are also described.

12.1.2.1 Fire Protection and Emergency Services

Fire protection service in the Planning Area is provided by the following independent districts: the Sacramento Metropolitan Fire District, Cosumnes Community Services District, Wilton Fire District, Herald Fire District Walnut Grove Fire Protection District, and Courtland Fire District. All fire districts provide emergency medical rescue and fire protection services. Some districts also provide advanced life support via fire department ambulances, paramedic squads, and/or by assigning firefighter/paramedics to fire engines. Most of the calls fire districts receive are for medical-related aid; a minor portion of the calls are for fire suppression (Sacramento County

2011). The California Department of Forestry and Fire Protection (CAL FIRE) provides fire protection and other emergency services for the easternmost portion of the Planning Area.

12.1.2.2 Law Enforcement

Law enforcement in the Planning Area is provided by the Sacramento County Sheriff's Department in the unincorporated areas, and within city limits, by the Galt Police Department and Rancho Cordova Police Department. In the Prairie City State Vehicular Recreation Area (described below under Parks and Recreation), California State Park Rangers who are fully sworn peace officers provide law enforcement.

12.1.2.3 Water Supply

The Sacramento County Water Agency (SCWA) is the largest water purveyor for the Planning Area. The SCWA is currently divided into eight zones. Within the Planning Area, Zones 40 and 41 overlap each other and provide water service to the portions of the Planning Area within the USB. Water for both urban land uses and non-urban demand (i.e., agriculture) is taken from surface water and local groundwater aquifers. Recycled water makes up a small percentage of the total supply within Sacramento County (Sacramento County 2010). Groundwater serving SCWA Zone 40 is provided from the Central Groundwater Basin and South Groundwater Basin. The County's Water Forum Agreement allocates a long-term supply of up to 40,900 acre-feet of groundwater per year (AFY) for Zone 40 (Sacramento County 2000). Surface water is supplied from three sources: a water rights permit issued by the SWRCB (21,700 AFY), Central Valley Project water services contracts (39,551 AFY), and wholesale water via an agreement between SCWA and Sacramento County (9,300 AFY).

SCWA has adopted a Water System Infrastructure Plan for Zone 40 (SCWA 2006), which describes the infrastructure needed to meet current and future demand as described in the Water Services Master Plan for Zone 40 (SCWA 2005). The purpose of the Water System Infrastructure Plan is to describe and quantify the facilities necessary to extract, treat, convey, and retail/wholesale groundwater; purchase wholesale water from the City of Sacramento for retail to Zone 40 customers; and treat, convey, and retail/wholesale surface water at the Vineyard Surface Water Treatment Plant (SCWA 2006). Connections between the Vineyard Surface Water Treatment Plant and customers throughout the Planning Area make up the majority of the infrastructure proposed in the infrastructure plan. Future water treatment plants, storage tanks, and pipelines are also proposed in the southeastern portion of the Planning Area (SCWA 2006).

Other water service districts located in the Planning Area include Galt and Folsom, California American Water Company, Golden State Water Company, Florin County Water District,

Fruitvale Vista Water Company, Tokay Park Water District, Omoichumne–Hartnell Water District, Galt Irrigation District, Clay Water District, and Sacramento Municipal Utilities District (SMUD) Rancho Seco. These water districts and SCWA operate distribution infrastructure throughout the Planning Area. Improvements to pipelines and other underlying infrastructure are generally tied to specific development projects.

The U.S. Bureau of Reclamation operates Folsom Dam, Nimbus Dam, and the Folsom South Canal. Although the Bureau of Reclamation's original purpose was to provide for the reclamation of arid and semiarid lands in the west, its current mission covers a wider range of interrelated functions. These functions include providing municipal and industrial water supplies through the Central Valley Project; generating hydroelectric power; providing irrigation water for agriculture; improving water quality, flood control, and river navigation; providing river regulation and control and fish/wildlife enhancement; offering water-based recreation opportunities; and conducting research on a variety of water-related topics.

Regional San currently owns and operates a 5-million-gallon-per-day (mgd) water reclamation facility that has been producing Title 22 tertiary-recycled water since 2003. The water reclamation facility is located within the Sacramento Regional Wastewater Treatment Plant (SRWTP) property in Elk Grove. Regional San uses a portion of the recycled water at the SRWTP and the rest is wholesaled to the SCWA. SCWA retails the recycled water, primarily for landscape irrigation use, to select customers in Elk Grove outside the Planning Area. Regional San is not a water purveyor and any potential use of recycled water in the Planning Area must be coordinated between the key stakeholders, e.g., land use jurisdictions, water purveyors, users, and the recycled water producers.

12.1.2.4 Wastewater

The SASD and Regional San provide sewer service within the portions of unincorporated County in the USB and Rancho Cordova. Some locations within the Planning Area rely on on-site septic systems for wastewater treatment. The SASD is responsible for the construction and maintenance of sewer trunk lines, which convey wastewater to Regional San's system of interceptor lines. Regional San operates the SRWTP. ~~The SRWTP is a high-purity oxygen-activated sludge facility; it is permitted to treat an average dry weather flow of 181 million gallons per day (mgd) and a daily peak wet weather flow of 392 mgd (Sacramento County 2010). The majority of the treated wastewater is dechlorinated and discharged into the Sacramento River. The SRWTP is located in the westernmost portion of the Planning Area, just south of the community of Freeport.~~ **The SRWTP provides secondary treatment using an activated sludge process. The design of the SRWTP and interceptor system was balanced to have SRWTP facilities accommodate some of the wet weather flows while minimizing idle SRWTP facilities during dry weather. Regional San designed the SRWTP to accommodate**

some wet weather flows with the storage basins and interceptors designed to accommodate the remaining wet weather flows. The SRWTP is located in the westernmost portion of the Planning Area, just south of the community of Freeport. The Central Valley RWQCB issued an NPDES permit to Regional San in December 2010. In adopting the new discharge permit, the RWQCB required Regional San to meet significantly more restrictive treatment levels over its current levels. Regional San began the necessary activities, studies, and projects to meet the permit conditions in August of 2014. Regional San must complete construction of the new treatment facilities to achieve the permit and settlement requirements by May 2021 for ammonia and nitrate and May 2023 to meet these pathogen requirements. The main SASD collection system includes over 2,800 miles of sewer pipelines ranging in size from 4 to 75 inches in diameter. Regional San interceptors are a large system of pipes up to 10 feet in diameter, which carry wastewater directly to the SRWTP (Sacramento County 2010).

~~Regional San adopted the 2020 SRWTP Master Plan to identify wastewater treatment and facility needs. The Master Plan identifies treatment facilities, conveyance, and storage facilities necessary to serve anticipated population growth within the Sacramento metropolitan area and meet regulatory requirements related to discharge quality (Regional San 2008).~~ Regional San has also adopted the Interceptor Master Plan 2000, which specifies regional conveyance facility improvements (Regional San 2000) that were further investigated in the Regional San ISS adopted in 2013.

~~In October 2008, SASD adopted the Sewerage Facilities Expansion Master Plan Update (SASD 2008), which operates as a companion document to the SASD's Sewerage Facilities Expansion Master Plan (SASD 2004).~~ The 2010 SASD System Capacity Plan Update (SASD 2010) also contains ~~improvements are proposed in these documents~~ to meet the demand of development anticipated within the USB (Sacramento County 2011).

The Galt Public Works Department operates Galt's sanitary sewer collection system and the wastewater treatment plant (WWTP). Galt's collection system consists of collection lines and trunk lines ranging in size from 4 to 24 inches in diameter. Sewage is lifted by sanitary sewer lift stations and placed in a 2-mile-long, 16-inch-diameter force main where it is transported to Galt's WWTP, located north of the City (Galt 2008). The WWTP has a design capacity of 3.0 mgd; however, the location and design of the plant would allow expansion to 6.0 mgd (Galt 2008). Treated water is discharged to Laguna Creek during the winter and to ponds used to irrigate land surrounding the WWTP during the summer.

Improvements to the sewer collection and treatment system are presented in Galt's Adopted Capital Improvement Program 2010–2015 (Galt 2010). These improvements include regular collection infrastructure replacement and upgrades to the City's WWTP. Galt requires new

development projects to include constructing the sanitary sewer collection system associated with the projects.

12.1.2.5 Solid Waste

The Sacramento County Department of Waste Management and Recycling provides solid waste services to the unincorporated portions of Sacramento County. The County owns and operates the 1,084-acre Kiefer Landfill, which is located in the northern portion of the Planning Area, north of the community of Sloughhouse (Sacramento County 2015). Kiefer Landfill is classified as a Class III municipal solid waste landfill facility and is permitted to accept general residential, commercial, and industrial refuse for disposal, including municipal solid waste, construction and demolition debris, green materials, agricultural debris, dead animals, and other designated debris (Sacramento County 2010). The Sacramento Regional Solid Waste Authority has certified three construction and demolition debris sorting facilities to meet the construction waste diversion rates required under the California Green Building Code: Florin-Perkins Public Disposal, L&D Landfill, and Sierra Waste (Sacramento Regional Solid Waste Authority 2015). Rancho Cordova also disposes of municipal solid waste at Kiefer Landfill.

Residential and commercial solid waste in Galt is collected by California Waste Recovery Systems and delivered to the Materials Recovery Facility in Galt to capture recyclable material. All material that is not recyclable is disposed of at a number of different landfills, including Arvin Sanitary Landfill (Kern County); Foothill Sanitary Landfill, Forward Landfill Inc., and North County Landfill (all in San Joaquin County); and L&D Landfill and Kiefer Landfill (both in Sacramento County).

12.1.2.6 Parks and Recreational Facilities

In the Planning Area, recreation services are provided by a mix of park districts, Sacramento County service areas, the County's regional park system, and the California Department of Parks and Recreation. Services within Galt are provided by Galt's Parks and Recreation Department. County Service Areas 4B (Wilton–Cosumnes) and 4D (Galt–Herald) provide park and recreation services in the eastern section of the Planning Area. The Cordova and Southgate Recreation and Park Districts provide service in the northern section of the Planning Area. County Service Area 4C (Delta) provides facilities and service in the southwestern portion of the Planning Area.

State and Regional Parks

Figure 12-1 indicates the location of the larger parks, recreation areas, and public golf courses within the Planning Area. The characteristics of these facilities are summarized in Table 12-1.

Table 12-1. Existing Regional Parks and Recreational Facilities

Facility Name	Acreage	Inside or Outside the UDA?	Owners/Managers	Activities
Cosumnes River Preserve ^a	±50,000	Outside	The Nature Conservancy, BLM, CDFW, Sacramento County, DWR, Ducks Unlimited, CSLC	Habitat preservation, agriculture, recreation, limited hunting and fishing
Deer Creek Hills ^a	±4,060	Outside	Sacramento Valley Conservancy, Sacramento County, CDFW, DPR	Habitat preservation, cattle grazing, recreation
Mather Regional Park	±1,600	Inside	Sacramento County	Vernal pool habitat, recreation
McFarland Ranch	±35	Outside	Sacramento County, Galt Area Historical Society	Recreation, education
Prairie City State Vehicular Recreation Area	±836	Outside	DPR Off-Highway Motor Vehicular Recreation Division	Recreation (off-highway vehicle use)
Rancho Seco Recreational Area ^a	±400	Outside	SMUD	Recreation
Stone Lakes National Wildlife Refuge ^{a,c}	±18,000	Outside	Sacramento County, USFWS	Habitat preservation, limited wildlife viewing
Mather Golf Course	±212	Inside	Sacramento County	Golf course
Cordova Golf Course	±81	Inside	Cordova Recreation and Park District	Golf course
Bradshaw Ranch Golf Course	±20	Inside	Privately owned	Golf course
Bartley Cavanaugh Golf Course	±95	Outside	Privately owned	Golf course
Dry Creek Ranch Golf Course	±5.5 ^b	Outside	Privately owned	Golf course

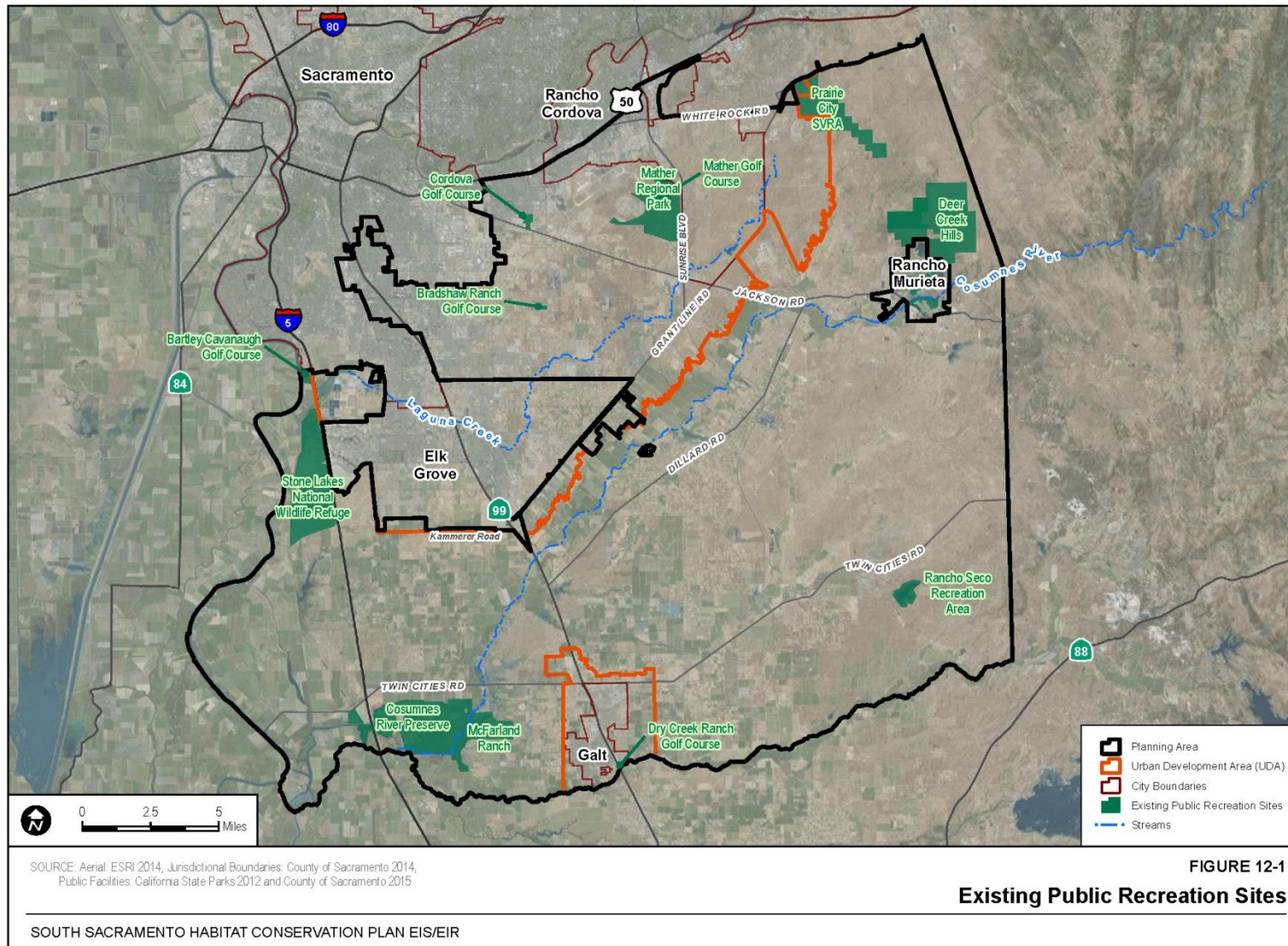
UDA = Urban Development Area; BLM = Bureau of Land Management; CDFW = California Department of Fish and Wildlife; DWR = California Department of Water Resources; CSLC = California State Lands Commission; DPR = California Department of Parks and Recreation; SMUD = Sacramento Metropolitan Utilities District; USFWS – U.S. Fish and Wildlife Service.

^a Facilities that are considered part of the existing Preserve System.

^b Acreage within the Planning Area (remaining acreage is outside the Planning Area).

^c **Stone Lakes National Wildlife Refuge has an approved boundary of approximately 18,000 acres within the Planning Area. At the time of EIS/EIR preparation, approximately 6,420 acres within that boundary have been acquired for the National Wildlife Refuge.**

Figure 12-1 Existing Public Recreation Sites



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Cosumnes River Preserve. This more than 50,000-acre preserve is centered on the Cosumnes River outside the USB. The property consists of wildlife habitat and agricultural lands owned by The Nature Conservancy, Bureau of Land Management, California Department of Fish and Wildlife, the County, California Department of Water Resources, Ducks Unlimited, and the California State Lands Commission (Cosumnes River Preserve 2015). The Cosumnes River Preserve allows hiking, kayaking, hunting, and fishing.

Deer Creek Hills. This oak woodlands preserve area is located outside the USB, north of Rancho Murieta. The 4,062-acre preserve is owned by the Sacramento Valley Conservancy, the County, California Department of Fish and Wildlife, and the California Department of Parks and Recreation. Preserve uses include habitat preservation, cattle grazing, and public use including hiking and mountain biking (Sacramento County and Sacramento Valley Conservancy 2011).

Mather Regional Park. This regional park, located within the USB and owned by Sacramento County, consists of approximately 1,600 acres. The park contains recreational uses, including picnic areas and trails, and also provides vernal pool habitat. The park is adjacent to the 169-acre Mather Golf Course.

McFarland Ranch. This historical “living history” ranch is owned by the County and managed by the Galt Area Historical Society. The park contains the former home of John McFarland, a prominent rancher who gave Galt its name, as well as the surrounding 35 acres of land. The ranch currently serves to educate regional schools and families about pioneer life at the turn of the century (Galt Area Historical Society 2015).

Prairie City State Vehicular Recreation Area. The 836-acre state facility is located outside the USB, but within the Planning Area. This state recreation area allows the use of off-highway vehicles and other passive recreational resources (DPR 2015).

Rancho Seco Recreational Area. This 400-acre recreational area surrounding Rancho Seco Lake is owned by SMUD and is open to the public for recreational activities, including camping and hiking (SMUD 2015a).

Stone Lakes National Wildlife Refuge. The purpose of this 18,000-acre refuge, owned and operated by the U.S. Fish and Wildlife Service, is to preserve and protect two rare natural Central Valley lakes and their surrounding riparian habitat and grassland areas. The property lies within the Sacramento–San Joaquin Delta as well as within the Pacific Flyway, thereby providing wintering grounds for a variety of waterfowl and other migratory birds, as well as habitat for indigenous species such as Swainson’s hawk (*Buteo swainsoni*), giant garter snake (*Thamnophis gigas*), and the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*). The

property also contains a number of cultural resource sites. Stone Lakes National Wildlife Refuge also provides recreational trails and guided hiking and kayaking tours.

Local Parks

Numerous neighborhood and community parks exist within the Planning Area, primarily within developed residential communities. These facilities are operated by the park districts and County service areas described previously.

Golf Courses

There are numerous golf courses within the Planning Area. A description of these recreational amenities is provided below.

Mather Golf Course. This County-owned 212-acre golf course is located adjacent to Mather Regional Park, inside the USB. Like Mather Regional Park, Mather Golf Course is located on the former Mather Air Force Base. Mather Golf Course was one of the first golf courses in California to become fully designated as a Certified Audubon Cooperative Sanctuary.

Bradshaw Ranch Golf Course. This 20-acre golf course is located south of Jackson Highway and north of Gerber Road within the Planning Area. This golf course is privately owned and operated.

Bartley Cavanaugh Golf Course. This 95-acre golf course is located in the community of Freeport, west of Interstate 5, within the Planning Area. This golf course is privately owned and managed.

Dry Creek Ranch Golf Course. Located in Galt, a portion of this golf course is located just south of the Planning Area. The course is privately owned and operated.

12.1.2.7 Energy

SMUD and Pacific Gas & Electric Company (PG&E) provide electricity services to the Planning Area. SMUD serves a population of 1.4 million users in a 900-square-mile service area. SMUD derives its power from a variety of sources, including biomass, geothermal, solar, wind, hydroelectric, and natural gas (SMUD 2014). SMUD operates the gas-powered Cosumnes Power Plant and the Upper American River Project (SMUD 2015b). In 2013, SMUD generated 10,467 gigawatt-hours of electricity (CEC 2015).

PG&E's power is generated in fossil-fueled plants, hydroelectric powerhouses, geothermal generators, solar energy facilities, and a nuclear power plant.¹ PG&E also buys power from

¹ PG&E's Diablo Canyon Power Plant is planned for closure in 2026.

independent power producers and other utilities. According to its website, PG&E provides service to approximately 5.4 million customers in Northern and Central California and has approximately 18,616 miles of interconnected transmission lines and 141,215 miles of distribution lines (PG&E 2016). PG&E's services are provided in accordance with California Public Utilities Commission rules and regulations. PG&E also supplies natural gas to homes and businesses in the Planning Area.

Kiefer Landfill operates a gas-to-energy plant (which collects gas from decaying garbage and converts it into energy) that powers 8,900 homes in the Sacramento area (Sacramento County 2015).

SMUD and PG&E operate a variety of existing energy facilities within the Urban Development Area (UDA).² Expansions to infrastructure and/or construction of new facilities are generally tied to new development.

12.1.2.8 Mosquito Abatement

The Sacramento–Yolo Mosquito and Vector Control District (District) provides mosquito and other vector surveillance and control services in compliance with the state's Mosquito Abatement and Vector Control District Law Act (California Health and Safety Code, Sections 2000–2007). Recognizing that organisms such as mosquitos can serve as vectors of human disease pathogens, the District acts to minimize public health risks by controlling vector populations in Sacramento and Yolo Counties.

Mosquito and vector control is based on an integrated pest management approach, including public information and education, surveillance, biological control, physical control, and microbial and chemical control. Biological control consists of the use of living organisms to reduce pest population levels. Biological control efforts use predators (like mosquitofish (*Gambusia affinis*) or guppy (*Poecilia reticulata*)), parasites, or pathogens to attack the harmful vector. Physical control measures reduce environmental conditions that support vectors, such as standing water, wetlands/irrigated farmland, and contained areas of water. Examples of physical control practices include promoting effective drainage; controlling emergent vegetation; promoting the appropriate timing of irrigation; and encouraging mosquito-reduction best management practices (BMPs) in urban, agricultural, and conservation areas

² As discussed in Section 1.1.1, Geographic Scope of the EIS/EIR Planning Area, the term Urban Development Area is used by the EIS/EIR to discuss all lands where urban development Covered Activity projects or activities could occur under the action alternatives. Therefore, the term "UDA" means all lands within the County's USB that are also within the Planning Area (including lands within the Rancho Cordova city limits that are within the Planning Area), all lands within Galt's city limits, and all lands within the City of Galt's sphere of influence (see Figure 1-1).

(Sacramento–Yolo Mosquito and Vector Control District 2013). The Ecological Management Department of the District has developed a BMP manual for land-use-specific mosquito reduction activities (Sacramento–Yolo Mosquito and Vector Control District 2008). Microbial and chemical control methods use chemical compounds such as insecticides to reduce mosquito populations. Microbial/chemical control methods are typically applied when other methods have been unsuccessful or when rapid disruption of disease spread is needed (Sacramento–Yolo Mosquito and Vector Control District 2013).

The District makes inspections and responds to customer requests for service. Surveillance research provides information on mosquito and vector dynamics in Sacramento and Yolo Counties to guide effective control practices. The District also conducts regular educational outreach (Sacramento–Yolo Mosquito and Vector Control District 2013).

12.2 ENVIRONMENTAL CONSEQUENCES/ ENVIRONMENTAL IMPACTS

12.2.1 Methodology for Assessing Impacts of Each Alternative on Public Services and Facilities

Impacts on public services and facilities were assessed on the basis of the alternatives, and the existing services or facilities provided within the Planning Area. Impacts are identified where the actions or projects associated with the alternative would affect the ability of the service providers to provide necessary services now as well as in the future. As described in Section 3.6.1, EIS/EIR Environmental Baseline, impacts of the No Action/No Project Alternative were determined using a baseline of existing conditions. The impacts of the two Action Alternatives were evaluated using a baseline of the No Action/No Project future condition. Potential ways that alternatives could affect the ability of service providers would be by increasing service demand, encouraging growth in areas where services are not available to accommodate that growth, impeding the ability of service providers to deliver services, impeding development of planned expansion areas, or damaging existing or planned infrastructure. The projects and activities expected under each alternative, including establishment of preserves, are described in Chapter 2, Alternatives, Including the Proposed Action/Proposed Project Alternative.

The locations of future preserves, vernal pools, and wetland waters could require developers to adjust the routes of future public infrastructure within the Mather Core Recovery Area (MCRA). To identify areas where these adjustments might be required, the lead agencies used GIS methodology, described in Section 3.6.5, GIS Methodology Used in Chapters 4–16 to Estimate Direct Impacts of Each EIS/EIR Alternative, to identify where infrastructure related to water

supply, sewer services, and landfill space expected under each alternative could intersect with future preserve locations, vernal pools, or wetlands.

To identify potential impacts of the No Action/No Project Alternative on mosquito abatement programs, for each alternative the lead agencies quantified the acres of vernal pools and other aquatic land cover types that would be protected within preserves or re-established/established for compensatory mitigation. The lead agencies assumed that mosquito abatement activities would be limited within these protected resources, so that application of pesticides or introduction of predatory species such as mosquitofish would not be allowed.

As discussed in Section 3.7, Cumulative Effects Analysis in Resource Chapters 4 through 16, the Chapter 12 cumulative analyses of impacts to public services and facilities will consider (1) the effects of past and present urban development in the Planning Area (see Section 12.1.2, Planning Area Public Services and Facilities), and (2) future impacts expected from reasonably foreseeable other projects in the Planning Area (see Section 3.7). The cumulative analysis of each EIS/EIR alternative will then consider whether the incremental impacts of the alternative on public services and facilities would be significant (i.e., cumulatively considerable).

As discussed in Section 3.4, Previous Planning Area Environmental Reviews, the EIR documents previously prepared for the General Plans of Sacramento County and Galt and Rancho Cordova (Sacramento County 2010; Galt 2009b; Rancho Cordova 2006b) analyzed direct and cumulative impacts of urban growth planned within their jurisdictions, including impacts to public services and facilities. When the impact analysis or conclusions provided in these General Plan EIR documents were determined by the lead agencies to be appropriate for use in the analysis of the EIS/EIR alternatives, a brief summary or description of the incorporated information or analysis is provided in Sections 12.2.2, 12.2.3, and 12.2.4.

However, as discussed in Section 3.4, the three General Plan EIRs used different study periods—ending in 2030 (Galt 2008; Rancho Cordova 2006b) and 2050 (Sacramento County 2010)—and the 50-year study period for this EIS/EIR ends in 2065 (Section 3.6.3, EIS/EIR Study Period). As discussed in Section 3.4, the EIRs for the Rancho Cordova General Plan and Galt General Plan analyzed full buildout of those jurisdictions. However, additional urban development can be expected to occur in Sacramento County during the 35 years after the General Plan EIR study period ended, and before this EIS/EIR’s study period ends in 2065. Consequently, the impact analyses and conclusions incorporated from the *Final Environmental Impact Report: Sacramento County General Plan Update* (Sacramento County General Plan EIR) may not have considered all of the future urban development that is included in the Chapter 2 project description of each EIS/EIR alternative. Therefore, the lead agencies considered the impact analysis and the conclusions incorporated by reference from the three General Plan EIRs along

with the effects of all urban development activities and projects that are included in the description of each EIS/EIR alternative.

The lead agencies determined that the study area for determining the cumulative impacts of each alternative on public services and utilities varies depending on the service.

The cumulative study area for each resource area topic is defined below.

- **Fire Protection.** Cumulative study area is the Planning Area, which includes combined service areas for the Sacramento Metropolitan Fire District, Cosumnes Community Services District, Wilton Fire District, Herald Fire District, Walnut Grove Fire Protection District, Courtland Fire District, and CAL FIRE.
- **Law Enforcement.** Cumulative study area is the Planning Area, which includes areas under the jurisdiction of the Sacramento County Sheriff Department, Galt Police Department, and Rancho Cordova Police Department.
- **Water Supply.** Cumulative study area is the combined service areas of SCWA, Galt and Folsom, California American Water Company, Golden State Water Company, Florin County Water District, Fruitvale Vista Water Company, Tokay Park Water District, Omochumne–Hartnell Water District, Galt Irrigation District, Clay Water District, and SMUD Rancho Seco.
- **Wastewater Treatment.** Cumulative study area is the combined service area of SASD and Regional San.
- **Solid Waste.** Cumulative study area is the combined service areas of Kiefer Landfill (Sacramento County); Arvin Sanitary Landfill (Kern County); Foothill Sanitary Landfill, Forward Landfill Inc., and North County Landfill (San Joaquin County); and L&D Landfill (Sacramento County).
- **Parks and Recreation.** Cumulative study area is the Planning Area, which includes the service area of the County’s regional park system; Galt’s Parks and Recreation Department; County Service Areas 4B (Wilton–Cosumnes), 4D (Galt–Herald), and 4C (Delta); and the Cordova and Southgate Recreation and Park Districts.
- **Energy.** Cumulative study area is the combined service area for SMUD (electricity) and the portion of the PG&E (natural gas and electricity) service area that includes Sacramento County.
- **Mosquito Abatement.** Cumulative study area is the jurisdictional boundary of the Sacramento–Yolo Mosquito and Vector Control District, which includes over 2,000 square miles in Sacramento and Yolo Counties.

As discussed in Section 3.8.1, Significance Thresholds, the criteria used to evaluate the significance of each alternative’s impacts on public services and facilities are based on

Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.) and on typical thresholds used to evaluate impacts in recent EIRs prepared by Sacramento County. Based on these sources, a significant adverse impact could occur if the alternative would:

1. Result in substantial adverse physical impacts associated with the provision of law enforcement services or fire protection;
2. Result in substantial adverse physical impacts associated with the provision of emergency services;
3. Result in inadequate water supply for full buildout of the project;
4. Result in inadequate wastewater treatment and disposal facilities for full buildout of the project;
5. Result in substantial adverse physical impacts associated with the construction of new water supply or wastewater treatment and disposal facilities or expansion of existing facilities;
6. Result in substantial adverse physical impacts associated with the provision of park and recreation services, or result in substantial physical deterioration of an existing facility due to increased use;
7. Result in a service demand that cannot be met by existing or reasonably foreseeable future service capacity;
8. Be serviced by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs;
9. Result in substantial adverse physical impacts associated with the provision of electric or natural gas service; or
10. Create new breeding areas for mosquitos or interfere with existing mosquito abatement activities to the extent that public health would be substantially affected.

Appendix G of the CEQA Guidelines does not provide suggested criteria for determining a beneficial effect. The following criteria were developed by the lead agencies. A beneficial impact could occur if the alternative would:

1. Improve or increase provision of law enforcement services or fire protection;
2. Improve or increase provision of emergency services;
3. Increase water supply at full buildout of the project;
4. Improve or increase capacity of wastewater treatment and disposal facilities at full buildout of the project;
5. Reduce adverse physical impacts associated with the construction of new water supply or wastewater treatment and disposal facilities or expansion of existing facilities;

6. Reduce adverse physical impacts associated with the provision of park and recreation services, or reduce physical deterioration of an existing facility that could be caused by increased use;
7. Reduce a service demand that cannot be met by existing or reasonably foreseeable future service capacity;
8. Reduce solid waste disposal needs in an area with served by a landfill with insufficient permitted capacity;
9. Reduce adverse physical impacts associated with the provision of electric or natural gas service; or
10. Reduce breeding areas for mosquitos or improve existing mosquito abatement activities to the extent that public health would be beneficially affected.

The impact analysis for the three EIS/EIR alternatives will consider the context, intensity, and severity of potential impacts to each of these impact criteria and will present a separate determination of significance for each of these criteria.

12.2.2 No Action/No Project Alternative

The No Action/No Project Alternative is described in Section 2.2.

12.2.2.1 Law Enforcement, Fire Protection, and Emergency Services

Direct and Indirect Effects of the Alternative

The effects of future urban development and the increased demand for public services and facilities in Sacramento County and Galt and Rancho Cordova, including the Planning Area, were evaluated in the analysis of the EIRs listed in Section 3.4. As discussed in Section 12.2.1, the relevant analyses from each of these EIRs are summarized and incorporated by reference into the analysis of the No Action/No Project Alternative.

The impact analysis presented in the *Final Environmental Impact Report: Sacramento County General Plan Update* (Sacramento County General Plan EIR; County of Sacramento 2010) determined that within Sacramento County:

- Increased demand on law enforcement and fire and emergency services for the entire County, including portions outside the Planning Area, would result in less than significant impacts through buildout of the general plan (Sacramento County 2010, pp. 4-19 to 4-41). General plan policies direct that law enforcement services maintain a particular ratio of officers to population. Any new proposed development would, under discretion of the Board of Supervisors, be required to pay mitigation fees to fund

adequate fire protection and emergency medical response if existing methods of financing are inadequate.

The impact analysis presented in the *Final Environmental Impact Report for the 2030 Galt General Plan* (Galt General Plan EIR; Galt 2009b), determined that within Galt’s sphere of influence (SOI):

- Increased demand for law enforcement would be less than significant with mitigation. Future response times for fire protection and emergency services would be significant and unavoidable with mitigation (Galt 2008, pp. 6-5 to 6-47). The Galt General Plan EIR found this impact significant and unavoidable because addressing staffing and facility needs for fire protection would require cooperation and funding from entities other than Galt.

The impact analysis presented in the *City of Rancho Cordova General Plan Final EIR* (Rancho Cordova General Plan EIR; Rancho Cordova 2006b), determined that within Rancho Cordova:

- Increased demand for fire protection services and law enforcement would be less than significant (Rancho Cordova 2006b, pp.12-28 to 12-109).

As discussed in Section 3.4 and Section 12.2.1, the three General Plan EIRs used different study periods—ending in 2030 (Galt 2009b; Rancho Cordova 2006b) and 2050 (Sacramento County 2010). However, the 50-year study period for this EIS/EIR ends in 2065 (Section 3.6.3). Therefore, additional urban development can be expected to occur in Sacramento County and Galt and Rancho Cordova in the years after their General Plan EIR study periods end and until this EIS/EIR’s study period ends in 2065. Therefore, the impact analyses and conclusions incorporated from the three General Plan EIRs may not have considered all of the future urban development that is included in the project description of each EIS/EIR alternative. Consequently, when determining the significance of each impact described in the EIS/EIR, the lead agencies considered the impact analysis and the conclusions incorporated by reference from the General Plan EIRs and the Capital Southeast Connector EIR, along with the effects of all urban development activities and projects included in the description of each EIS/EIR alternative.

Additional urban development in the Planning Area beyond that considered in the previous EIRs would result in additional demand for law enforcement, fire, and emergency services in the Planning Area. Anticipated future urban development would be consistent with the goals and policies listed in Section 12.1.1, specifically Galt General Plan Policies PFS-7.1 and PFS-6.2, which state that Galt shall continue to support the Cosumnes Community Services District Fire Department, emergency medical services, and police department to meet the needs of the

community; Rancho Cordova General Plan Policy S.9.1, which ensures that Rancho Cordova cooperates with the Sacramento Metropolitan Fire District to reduce fire hazards; and Rancho Cordova General Plan Policy S.8.1, which ensures that the City provides adequate police services to ensure sufficient staffing and resources are available to serve local needs. The lead agencies anticipate that the additional demand in the final 15 (for Rancho Cordova) to 35 years (for Sacramento County) of the EIS/EIR study period would result in less than significant impacts to fire protection and law enforcement in the jurisdictions of Sacramento County and Rancho Cordova. In addition, less than significant impacts would occur to law enforcement in Galt. However, development in Galt and the Galt SOI over the final 35 years of the EIS/EIR study period would add a further burden to the fire protection resources in Galt, incrementally adding to an impact that was identified as significant and unavoidable (Galt 2008).

As explained in Section 2.2, approximately 1,900 acres of planned urban development would be shifted or displaced to locations outside the UDA under the No Action/No Project Alternative. As more development occurs adjacent to open space, the risk of wildfire posing a danger to people and property would increase, as would the likelihood of a human-initiated wildfire. Fire suppression, fuel reduction, and fire planning efforts of local fire departments would continue, and assistance with wildland fires from CAL FIRE would continue (USFS 2015). The presence of additional urban development outside the UDA under the No Action/No Project Alternative would result in increased demand for fire protection services. However, new urban development outside the UDA would, under the discretion of the Board of Supervisors, be required to pay mitigation fees to fund adequate police, fire protection, and emergency medical response if existing methods of financing are inadequate.

As explained in Section 2.2, No Action/No Project Alternative, under the No Action/No Project Alternative, mitigation for impacts to listed species or wetlands from new urban development would continue to include avoidance and compensation, including establishment of on-site or off-site preserves. Preserve management could include a variety of habitat management activities, such as fence repair, transport of livestock for grazing management, and maintenance and monitoring visits from Preserve Managers. These types of activities would not generate an increase in demand for police services. However, many of these preserves established under the No Action/No Project Alternative would be located in the UDA and would eventually be surrounded by urban development. Vandalism, trespassing, and illegal hunting could occur in areas set aside for preserves, especially for preserves near urban development and preserves without active management. However, those same lands could also be subject to vandalism, trespassing, or illegal hunting under existing conditions. Therefore, the presence of preserves would not increase the need for law enforcement and thus would not result in the need to hire new officers or construct new stations.

Because some preserves would likely be established in remote or rural areas, wildland fires could be a concern. Fire suppression, fuel reduction, and fire planning efforts of local fire departments would continue, and assistance with wildland fires from CAL FIRE would also continue (USFS 2015). Preserves established as mitigation for urban development impacts under the No Action/No Project Alternative may also use prescribed fire to manage grassland biomass and improve habitat values. Prescribed burns provide ecological benefits, including nutrient recycling and the removal of weeds and other unwanted species. Unlike wildfire, prescribed burns occur at pre-designated locations and times for maximum control and are intended to reduce the amount of vegetative fuels that could produce a larger, uncontrolled fire with a greater chance of threatening human communities. The Cosumnes Community Services District, Sacramento County, and CAL FIRE issue burn permits that control the scope, location, and timing of prescribed burns. In order to regulate air quality impacts associated with burning activities, the Sacramento Metropolitan Air Quality Management District schedules planned burn days. Prescribed burns would occur on scheduled burn days to minimize air quality impacts. CAL FIRE and other local fire protection agencies would need to oversee these controlled burns in order to maximize safety of human communities and habitat benefits. Adherence to existing controlled burn policies would minimize impacts associated with prescribed burns. The overall increase in demand for fire protection services associated with development analyzed in the General Plan EIRs captures the small increase in fire protection needs from preserve activities. Any prescribed burning activities under the No Action/No Project Alternative would be highly regulated and would not substantially increase demand for local fire departments or CAL FIRE beyond current levels.

Cumulative Effects of the Alternative

As discussed in Section 3.7.2, Reasonably Foreseeable Other Actions, substantial past and present urban development has occurred in the cumulative study area, especially within the USB of Sacramento County, increasing demand for law enforcement, fire protection, and emergency services. Existing funding mechanisms have ensured that law enforcement, fire protection, and emergency services were expanded to meet that demand.

Reasonably foreseeable other future projects in the cumulative study area that would further increase demand for law enforcement, fire protection, and emergency services include expansion of Rancho Murieta development, urban development in the Elk Grove SOI, development of the City of Folsom south of US 50, and additional development in the Natomas Basin. This reasonably foreseeable development would be subject to the same, or similar, funding mechanisms to ensure that law enforcement, fire protection, and emergency services are expanded to meet demand. Therefore, the effects of past, present, and reasonably foreseeable other future projects would have a less than significant adverse cumulative effect on law enforcement, fire protection, and emergency services.

Development under the No Action/No Project Alternative would include additional demand for police and fire services after the time frame evaluated in General Plan EIRs of Rancho Cordova and Galt and Sacramento County, ranging from 15 to 35 additional years. That additional development would include 1,900 acres of urban development displaced or shifted outside the UDA. However, existing funding mechanisms for law enforcement, fire protection, and emergency services would ensure that the new development would also provide new funding for these services. The additional increment of development under the No Action/No Project Alternative to the effects of past, present, and reasonably foreseeable other projects would result in a less than significant adverse cumulative effect on law enforcement, fire protection, and emergency services.

12.2.2.2 Water and Wastewater Services

Direct and Indirect Effects of the Alternative

The effects of future urban development and the increased demand for potable water service and wastewater treatment in Sacramento County and Galt and Rancho Cordova, including the Planning Area, were evaluated in the analysis of the EIRs listed in Section 3.4. As discussed in Section 12.2.1, the relevant analyses from each of these EIRs are summarized and incorporated by reference into the analysis of the No Action/No Project Alternative.

The impact analysis presented in the Sacramento County General Plan EIR (Sacramento County 2010) determined that within Sacramento County:

- Increased demand for water supply within Zone 40 and in the California American Water Company's South Area would be significant and unavoidable and the increase in water demand would require new treatment facilities and pipelines that would also result in significant and unavoidable impacts. Impacts to groundwater recharge from increases in impervious surfaces were determined to be significant and unavoidable (Sacramento County 2010, pp. 6-22 to 6-87).
- Increased demand for water supply outside Zone 40 and the California American Water Company's South Area would be less than significant with implementation of a policy that requires that availability of water supply be demonstrated for a new development before building permits are issued (Sacramento County 2010, p. 6-53).
- The increase in demand for sewer treatment would result in significant unavoidable impacts because flows would exceed permitted capacity even with policy compliance (Sacramento County 2010, pp. 5-12 to 5-22). ~~However, this finding was based on pending litigation at the time of the Sacramento General Plan EIR that brought into question the ability of Regional San to expand its wastewater treatment capacity. That~~

~~litigation was resolved and Regional San is now in the process of constructing a tertiary treatment facility that will expand their permitted capacity to accommodate projected development in the Planning Area. With this new information, the lead agencies expect that the previously identified significant unavoidable impact to sewer treatment would be revised to less than significant.~~ **At this time, there are no plans to expand the capacity of Regional San facilities beyond the existing permitted capacity, so this impact would remain significant and unavoidable.**

The impact analysis presented in the Galt General Plan EIR (Galt 2009b) determined that within the Galt SOI:

- Increased demand for water supply would be less than significant because with water conservation programs, buildout of the general plan would not in itself trigger the need for new or expanded surface water supply entitlements and future demands would be met through additional groundwater pumping (Galt 2008, pp. 6-5 to 6-47).
- Increased demand for wastewater treatment would result in significant and unavoidable impacts because flows would exceed permitted capacity at the City's wastewater treatment plant, even with compliance with general plan policies, and the City could not identify a timeframe for the needed upgrades to the plant (Galt 2008, pp. 6-5 to 6-47).

The impact analysis presented in the Rancho Cordova General Plan EIR (Rancho Cordova 2006b) determined that within Rancho Cordova:

- Increased demand for adequate water supply and treatment would result in significant and unavoidable impacts because projected development would require additional treatment capacity, storage capacity, and other conveyance facilities to meet the projected water demands (Rancho Cordova 2006b, pp. 12-28 to 12-109).
- Increased demand for wastewater treatment would be significant and unavoidable despite recommended mitigation because projected development would substantially increase wastewater flows and require additional infrastructure and may require additional treatment capacity to accommodate anticipated demands (Rancho Cordova 2006b, pp. 12-28 to 12-109).

As discussed in Section 3.4 and Section 12.2.1, the three General Plan EIRs used different study periods—ending in 2030 (Galt 2009b; Rancho Cordova 2006b) and 2050 (Sacramento County 2010). However, the 50-year study period for this EIS/EIR ends in 2065 (Section 3.6.3).

Therefore, additional urban development can be expected to occur in Sacramento County and Galt and Rancho Cordova in the years after their General Plan EIR study periods end and until this EIS/EIR's study period ends in 2065. Therefore, the impact analyses and conclusions incorporated from the three General Plan EIRs may not have considered all of the future urban

development that is included in the project description of each EIS/EIR alternative. Consequently, when determining the significance of each impact described in the EIS/EIR, the lead agencies considered the impact analysis and the conclusions incorporated by reference from the General Plan EIRs and the Connector EIR, along with the effects of all urban development activities and projects included in the description of each EIS/EIR alternative.

Additional urban development would result in additional demand for potable water service and wastewater treatment in the Planning Area. The lead agencies anticipate that this additional increment of development in the Planning Area through 2065 would increase the severity of the significant and unavoidable impacts to potable water supply and wastewater treatment identified previously for Sacramento County, Rancho Cordova, and Galt.

Additionally, as explained previously in this chapter and in Section 2.2.2, Expected Regulatory Environment Under the No Action/No Project Alternative, approximately 1,900 acres of planned urban development would be shifted or displaced from inside the MCRA to one or more locations outside the current Sacramento County USB boundary under the No Action/No Project Alternative. This displaced urban development may be located in areas that are not currently served by adequate water or wastewater infrastructure and would thus require construction of new water or wastewater infrastructure outside the current USB boundary.

Under the No Action/No Project Alternative, there would be no comprehensive aquatic resource permitting program in place. New water or wastewater infrastructure projects would have to seek individual permits and authorizations to fill or impact wetlands and other waters. The permit requirements may include avoidance of wetlands or waters or preserves that are located within the routes of planned pipelines or other infrastructure. Depending on the other constraints of the infrastructure project, such avoidance could make a planned pipeline or infrastructure project infeasible.

As explained in Section 2.2, projects impacting wetlands and waters under the No Action/No Project Alternative would continue to mitigate those impacts through avoidance, minimization of impacts, and compensatory mitigation, including establishment of on-site or off-site preserves. Preserve management could include a variety of habitat management activities, such as repairing fences, trash removal, and mowing and/or vegetation removal to control thatch and invasive species. Re-establishment and establishment projects implemented as mitigation could require supplemental water, typically for 2–3 years while new plantings are established. This water is often drawn from on-site wells or taken from non-potable recycled water sources. In general, preserves would require very little water and would not require a connection to potable water or sewer lines.

Cumulative Effects of the Alternative

As discussed in Section 3.7.2, substantial past and present urban development has occurred in the cumulative study area, especially within the USB of Sacramento County, increasing demand for water and wastewater services from SCWA, Galt and Folsom, California American Water Company, Golden State Water Company, Florin County Water District, Fruitvale Vista Water Company, Tokay Park Water District, Omoichumne–Hartnell Water District, Galt Irrigation District, Clay Water District, SMUD Rancho Seco, SASD, and Regional San. Existing funding mechanisms have ensured that water and wastewater services were expanded to meet that demand.

Reasonably foreseeable future projects in the cumulative study area that would further increase demand for water and wastewater services include expansion of Rancho Murieta development, urban development in the Elk Grove SOI, development of the City of Folsom south of US 50, and additional development in the Natomas Basin. Existing funding mechanisms would also ensure that water and wastewater services are expanded to meet that new demand. New development could not be permitted by local land use authorities unless it could demonstrate availability of an adequate water supply. Therefore, the effects of past, present, and reasonably foreseeable other future projects would have a less than significant adverse cumulative effect on water and wastewater services.

Cumulative effects on water and wastewater services not evaluated in the General Plan EIRs of Rancho Cordova and Galt and Sacramento County would include the additional increment of growth in the Planning Area after the end of their study periods, which range from 15 to 35 years of additional growth and development. That additional development would include 1,900 acres of urban development displaced or shifted outside the UDA. The additional demand for water and wastewater infrastructure outside the UDA from these projects would be offset through payment of fees by project developers and by rate increases passed on to residents of the Planning Area. Therefore, the additional increment of development under the No Action/No Project Alternative, when added to the effects of past, present, and reasonably foreseeable other projects, would result in a less than significant adverse cumulative effect on water and wastewater services.

12.2.2.3 Solid Waste Disposal

Direct and Indirect Effects of the Alternative

The effects of future urban development and the increased demand for solid waste disposal in Sacramento County and Galt and Rancho Cordova, including the Planning Area, were evaluated in the analysis of the EIRs listed in Section 3.4. As discussed in Section 12.2.1, the relevant

analyses from each of these EIRs are summarized and incorporated by reference into the analysis of the No Action/No Project Alternative.

The impact analysis presented in the Sacramento County General Plan EIR (Sacramento County 2010) determined that within Sacramento County:

- The increase in demand for solid waste disposal within the entire County, including portions outside the Planning Area, would result in less than significant impacts because buildout of the general plan would not require expansion of Kiefer Landfill. No impacts from construction of new solid waste facilities would occur (Sacramento County 2010, p. 4-21).

The impact analysis presented in the Galt General Plan EIR (Galt 2009b) determined that within Galt and the Galt SOI:

- Increase in solid waste may exceed available landfill capacity by 2030, and the availability of disposal options after that time is unknown, so the EIR concluded that impacts would be significant and unavoidable. The permitted capacities of landfills serving Galt do not appear to have been considered in the analysis (Galt 2008, pp. 6-5 to 6-47).

The impact analysis presented in the Rancho Cordova General Plan EIR (Rancho Cordova 2006b) determined that within Rancho Cordova:

- Available landfill capacity would be available to serve buildout of the General Plan, resulting in a less than significant impact (Rancho Cordova 2006b, pp. 12-28 to 12-109).

As discussed in Section 3.4 and Section 12.2.1, the three General Plan EIRs used different study periods—ending in 2030 (Galt 2009b; Rancho Cordova 2006b) and 2050 (Sacramento County 2010). However, the 50-year study period for this EIS/EIR ends in 2065 (Section 3.6.3).

Therefore, additional urban development can be expected to occur within Galt and Rancho Cordova and Sacramento County in the years after their General Plan EIR study periods end and until this EIS/EIR's study period ends in 2065. Therefore, the impact analyses and conclusions incorporated from the three General Plan EIRs may not have considered all of the future urban development that is included in the project description of each EIS/EIR alternative.

Consequently, when determining the significance of each impact described in the EIS/EIR, the lead agencies considered the impact analysis and the conclusions incorporated by reference from the General Plan EIRs and the Connector EIR, along with the effects of all urban development activities and projects included in the description of each EIS/EIR alternative.

That additional urban development would result in additional demand for solid waste disposal in the Planning Area. The lead agencies anticipate that this additional increment of development in the Planning Area through 2065 could result in further exceedance of solid waste disposal

facilities for Galt. However, as noted previously, the analysis of solid waste impacts in the Galt General Plan EIR was very conservative, reaching a conclusion that impacts were significant and unavoidable mostly due to uncertainty. Kiefer Landfill would accommodate solid waste resulting from buildout of the Sacramento County General Plan and Rancho Cordova General Plan. Preserve establishment, management, and monitoring activities under the No Action/No Project Alternative would generate little to no solid waste.

Cumulative Effects of the Alternative

As discussed in Section 3.7.2, substantial past and present urban development has occurred in the cumulative study area, especially within the USB of Sacramento County, increasing demand for solid waste disposal. Existing funding mechanisms have ensured that landfills and solid waste handling facilities were expanded to meet that demand.

Reasonably foreseeable future projects in the cumulative study area that would further increase demand for solid waste disposal include expansion of Rancho Murieta development, urban development in the Elk Grove SOI, development of the City of Folsom south of US 50, and additional development in the Natomas Basin. Existing funding mechanisms would also ensure that solid waste disposal is expanded to meet that new demand.

Cumulative effects to solid waste disposal under the No Action/No Project alternative that were not evaluated in the General Plan EIRs of Rancho Cordova and Galt and Sacramento County would include the additional increment of growth in the Planning Area after the end of their study periods, which range from 15 to 35 years of additional growth and development. That additional development would include 1,900 acres of urban development displaced or shifted outside the UDA. The additional demand for solid waste disposal from these projects would be offset through payment of fees by project developers and by rate increases passed on to residents of the Planning Area. Therefore, the additional increment of development under the No Action/No Project Alternative, when added to the effects of past, present, and reasonably foreseeable other projects, would result in a less than significant adverse cumulative effect on solid waste disposal.

12.2.2.4 Parks and Recreational Facilities

Direct and Indirect Effects of the Alternative

The effects of future urban development on increased demand for parks and recreational facilities in Sacramento County and Galt and Rancho Cordova, including the Planning Area, were evaluated in the analysis of the EIRs listed in Section 3.4. As discussed previously in Section 12.2.1, the relevant analyses from each of these EIRs are summarized and incorporated by reference into the analysis of the No Action/No Project Alternative.

The impact analysis presented in the Sacramento County General Plan EIR (Sacramento County 2010) determined that within Sacramento County:

- Increased demand on parks and recreation within the entire County, including portions outside the Planning Area, would result in less than significant impacts through buildout of the general plan, because general plan policies and ordinances would ensure that funding is available to construct new parks and recreational facilities to meet demand (Sacramento County 2010, pp. 4-19 to 4-41).

The impact analysis presented in the Galt General Plan EIR (Galt 2009b) determined that within the Galt SOI:

- Compliance with general plan policies and implementation programs would ensure that impacts to parks would be less than significant, because new parks and recreational facilities would be constructed as needed to meet demand (Galt 2008, pp. 6-44 to 6-47).

The impact analysis presented in the Rancho Cordova General Plan EIR (Rancho Cordova 2006b) determined that within Rancho Cordova:

- Increased demand on parks and recreation due to urban development would result in a less than significant impact, because general plan policies and ordinances would ensure that funding is available to construct new parks and recreational facilities to meet demand (Rancho Cordova 2006b, pp. 12-28 to 12-109).

As discussed in Section 3.4 and Section 12.2.1, the three General Plan EIRs used different study periods—ending in 2030 (Galt 2009b; Rancho Cordova 2006b) and 2050 (Sacramento County 2010). However, the 50-year study period for this EIS/EIR ends in 2065 (Section 3.6.3).

Therefore, additional urban development can be expected to occur in Sacramento County and Galt and Rancho Cordova in the years after their General Plan EIR study periods end and until this EIS/EIR's study period ends in 2065. Therefore, the impact analyses and conclusions incorporated from the three General Plan EIRs may not have considered all of the future urban development that is included in the project description of each EIS/EIR alternative.

Consequently, when determining the significance of each impact described in the EIS/EIR, the lead agencies considered the impact analysis and the conclusions incorporated by reference from the General Plan EIRs and the Connector EIR, along with the effects of all urban development activities and projects included in the description of each EIS/EIR alternative.

Additional urban development under the No Action/No Project Alternative, especially the 1,900 acres of development shifted or displaced outside the UDA, would result in additional demand for parks and recreational areas in the Planning Area. However, the lead agencies anticipate that existing development fee programs in the Planning Area, such as those required under

County Policy PF-123 or Galt Policy PFS-8.1, would allow for establishment of new parks and recreational facilities to meet this additional demand.

Cumulative Effects of the Alternative

As discussed in Section 3.7.2, substantial past and present urban development has occurred in the EIS/EIR Planning Area, especially within the UDA, increasing demand for parks and recreational areas. As discussed in Section 12.1.2, a substantial amount of parkland acquisition and development has occurred in the Planning Area along with the urban development. These parks provide diverse recreational opportunities to residents in the Planning Area and surrounding areas. Although some portions of the parks are strictly managed for preservation (e.g., Deer Creek Preserve), most areas are managed for passive and active recreational uses such as hiking, biking, picnicking, boating, camping, and off-road vehicle use.

Reasonably foreseeable future projects in the EIS/EIR Planning Area that would further increase demand for parks and recreational areas include expansion of Rancho Murieta development, urban development in the Elk Grove SOI, development of the City of Folsom south of US 50, and additional development in the Natomas Basin. The effects of the demand for parks and recreational facilities from past, present, and reasonably foreseeable other projects would not be cumulatively considerable (i.e., significant).

Under the No Action/No Project Alternative, parks and recreational facilities would continue to be developed along with urban development in the cumulative impacts study area, maintaining a similar per capita availability of parks and recreational facilities despite increases in population. Therefore, the additional increment of development under the No Action/No Project Alternative, when added to the effects of past, present, and reasonably foreseeable other projects, would result in a less than significant adverse cumulative effect on parks and recreational facilities.

12.2.2.5 Energy

Direct and Indirect Effects of the Alternative

The effects of future urban development on increased demand for energy and energy infrastructure in Sacramento County and Galt and Rancho Cordova, including the Planning Area, were evaluated in the analysis of the EIRs listed in Section 3.4. As discussed in Section 12.2.1, the relevant analyses from each of these EIRs are summarized and incorporated by reference into the analysis of the No Action/No Project Alternative.

The impact analysis presented in the Sacramento County General Plan EIR (Sacramento County 2010) determined that within Sacramento County:

- Increased demand on energy services would result in less than significant impacts through buildout of the general plan because any needed energy infrastructure would be constructed in developed areas (Sacramento County 2010, pp. 4-19 to 4-41).

The impact analysis presented in the Galt General Plan EIR (Galt 2009b) determined that within the Galt SOI:

- Impacts to electricity and natural gas consumption from buildout of the general plan would be less than significant because future development would occur in an area currently served with adequate supplies of both electricity and gas service, and compliance with City policies would improve energy conservation (Galt 2008, pp. 6-5 to 6-47).

The impact analysis presented in the Rancho Cordova General Plan EIR (Rancho Cordova 2006b) determined that within Rancho Cordova:

- Impacts to electricity and natural gas would be less than significant because the City is required to ensure that sufficient capacity for electrical and natural gas service is available, and would coordinate with service providers to ensure that occurs. Construction of needed infrastructure would be located within roadways and other public rights-of-way to minimize construction impacts (Rancho Cordova 2006b, pp. 4.12-28 to 4.12-109).

As discussed in Section 3.4 and Section 12.2.1, the three General Plan EIRs used different study periods—ending in 2030 (Galt 2009b; Rancho Cordova 2006b) and 2050 (Sacramento County 2010). However, the 50-year study period for this EIS/EIR ends in 2065 (Section 3.6.3).

Therefore, additional urban development can be expected to occur in Sacramento County and Galt and Rancho Cordova in the years after their General Plan EIR study periods end and until this EIS/EIR's study period ends in 2065. Therefore, the impact analyses and conclusions incorporated from the three General Plan EIRs may not have considered all of the future urban development that is included in the project description of each EIS/EIR alternative.

Consequently, when determining the significance of each impact described in the EIS/EIR, the lead agencies considered the impact analysis and the conclusions incorporated by reference from the General Plan EIRs and the Connector EIR, along with the effects of all urban development activities and projects included in the description of each EIS/EIR alternative.

That additional increment of urban development would result in additional demand for energy in the Planning Area, which the lead agencies anticipate could be met by energy providers. Further, due to improved energy conservation, energy use per capita or per building square

foot would be less than existing levels by 2065. As explained in Section 2.2, approximately 1,900 acres of planned urban development would be shifted or displaced to locations outside the UDA under the No Action/No Project Alternative. That shifted or displaced development would require extension of natural gas and electrical infrastructure to areas that currently support agricultural operations or natural land covers. The construction activities needed to install the necessary electrical and natural gas infrastructure could result in removal of natural land covers.

Under the No Action/No Project Alternative, compliance with the CWA or federal Endangered Species Act may require that new subsurface natural gas and electrical infrastructure avoid areas with high densities of aquatic resources or species habitat. Energy providers would have to develop alternative routing for that energy infrastructure, which would likely be more expensive than if they were able to impact the wetland areas. This additional cost to provide energy infrastructure could increase energy prices in the Planning Area.

Preserve activities would not include development or land uses that consume substantial electrical or natural gas energy resources. Therefore, preserve activities under the No Action/No Project Alternative would not significantly increase demand on the existing energy system.

Cumulative Effects of the Alternative

As discussed in Section 3.7.1 and Section 12.2.1, past and present urban development and associated infrastructure projects and activities have occurred in the EIS/EIR Planning Area, especially within the UDA. Energy demands of these past and present projects and activities have been met by energy providers through additional energy generation and development of new energy transmission infrastructure.

Reasonably foreseeable future projects in the EIS/EIR Planning Area that would further increase energy demand include expansion of Rancho Murieta development, urban development in the Elk Grove SOI, development of the Wilton Rancheria Casino, construction of the high-speed rail, and the California WaterFix projects (Section 3.7.2).

The additional increment of energy demand generated by these reasonably foreseeable other projects would be accommodated by utility providers by purchasing additional electricity or natural gas on the open market and by constructing additional infrastructure. Any additional infrastructure required for these projects would be developed by the utility providers and would generally be located within existing County, city, or utility rights-of-way to minimize impacts. The cumulative effects of the demand for energy and energy infrastructure from past, present, and reasonably foreseeable other projects would not be cumulatively considerable (i.e., significant).

Cumulative effects to energy not evaluated in the General Plan EIRs of Rancho Cordova and Galt and Sacramento County would include the additional increment of growth in the Planning Area after the end of their study periods, which range from 15 to 35 years of additional growth and development. That additional development would include 1,900 acres of urban development displaced or shifted outside the UDA. The additional demand for energy infrastructure outside the UDA from these projects would be offset by rate increases passed on to residents of the Planning Area. Therefore, the additional increment of development under the No Action/No Project Alternative added to the effects of past, present, and reasonably foreseeable other projects would result in a less than significant adverse cumulative effect on energy.

12.2.2.6 Mosquito Abatement

Direct and Indirect Effects of the Alternative

The presence of mosquitos could affect future urban development within the UDA, resulting in potential impacts on demand for mosquito abatement services. Currently the Sacramento–Yolo Mosquito and Vector Control District performs a variety of services to reduce the risk of vector-transferred disease, including the preparation of integrated pest management approaches, public outreach, mosquito and vector surveillance, and vector control activities such as aerial spraying, as described in Section 12.1.2. These activities would continue under the No Action/No Project Alternative, and may be expanded to control mosquito populations in currently undeveloped areas as urban development moves closer to existing wetlands.

Mitigation for the impacts of development on waters and wetlands would include the re-establishment or establishment of vernal pools and other wetlands, especially within or near the MCRA. Healthy vernal pools that have adequate hydrology, native vegetation, and invertebrates are not a breeding ground for mosquitos. In these healthy pools, other invertebrates eat the mosquito larvae and prevent most mosquitos from hatching. Further, vernal pools in the Planning Area that have natural hydrology are typically dry by early June, preventing mosquito breeding in the summer. This means that vernal pools could provide mosquito breeding opportunities in the late spring only when rain events occur and are immediately followed by a warming trend (over 75°F). However, many varieties of mosquitos will reproduce in artificial containers that collect water, such as tires, buckets, flower pots, and bird baths that are not refreshed regularly. Similarly, re-established and established vernal pools and other wetlands could provide breeding habitat for mosquitos if they are not managed to ensure that hydrology, vegetation, and resident fauna are consistent with the characteristics of healthy vernal pools. Because there would not be a comprehensive management plan designed to oversee vernal pool areas (some of which may be located within open space areas in developed communities), there is the potential for existing unhealthy pools and unhealthy

re-established and established vernal pools and other wetlands to provide the right conditions for mosquitos to breed.

To control mosquitos, wetlands are sometimes drained, insecticides are applied to stagnant waters, or aerial spraying is done by the Sacramento–Yolo Mosquito and Vector Control District in areas where mosquitos are particularly abundant. Chemicals applied to kill mosquitos/eggs would likely also kill vernal pool branchiopods. Mosquito-eating fish that are introduced by the Sacramento–Yolo Mosquito and Vector Control District or by private landowners also eat vernal pool branchiopods. Because these traditional control agents would severely impact the health of the vernal pool ecosystems and the listed species that re-established vernal pools are designed to support, it is highly likely that mosquito abatement activities would be restricted in these preserve areas. However, the Sacramento–Yolo Mosquito and Vector Control District’s primary goal is to protect public health and welfare by managing mosquito populations so they do not present a risk to the surrounding community. If mosquito populations pose a significant public nuisance or when emergency control measures are needed to rapidly disrupt or terminate the transmission of disease to humans, the District will respond by spraying using either hand sprayers, truck-mounted sprayers, or aircraft for aerial spraying. The District does not include any provisions where spraying would be restricted (Sacramento–Yolo Mosquito and Vector Control District 2009).

Cumulative Effects of the Alternative

Past and present projects and activities in the cumulative study area relevant to mosquito abatement include many decades of urban development within a natural floodplain that contains many seasonal wetlands and other waters. Mitigation for impacts of past and present urban development has included avoidance of wetlands, establishment of on-site preserves, and on-site establishment of wetlands. This development and mitigation pattern has exposed residents of urban development to mosquito populations that breed in wetland areas and in poorly designed or managed stormwater systems.

Reasonably foreseeable other projects such as urban development in the Elk Grove SOI or Rancho Murieta (Section 3.7.2) and elsewhere in the cumulative study area, such as the community of Natomas, the City of Folsom, or the City of Davis, would increase human populations near existing wetlands and vernal pools. In addition, this urban development would increase impermeable surfaces and contribute urban runoff to drainage structures that can stagnate and create breeding habitat for mosquitos. However, this urban development in the cumulative study area would also remove wetlands and vernal pools, potentially reducing existing breeding areas for mosquitos. Under most circumstances, creation or expansion of mosquito breeding habitat can be avoided or minimized through proper planning and design or maintenance elements. Increased demand on the Sacramento–Yolo Mosquito and Vector Control District for mosquito

abatement services would be offset through increased funding of the District. The District is funded through property taxes and other assessments based on property value, and urban development of currently undeveloped land would substantially increase the assessed value of parcels. That increased parcel value would increase property taxes, and thus increase funding for the District. Therefore, less than significant adverse cumulative impacts would result from past, present, and reasonably foreseeable other projects.

Urban development under the No Action/No Project Alternative would contribute to cumulative impacts on mosquito abatement similar to that described under the reasonably foreseeable future projects. As noted previously, existing patterns of development have resulted in avoidance of wetlands, establishment of on-site preserves, and on-site wetland establishment projects, which expose residents and employees to potential mosquito hazards. The lead agencies anticipate that avoidance of wetlands, establishment of on-site preserves, and wetland establishment projects would continue to be a common mitigation strategy under the No Action/No Project Alternative. However, funding for mosquito abatement would continue to be provided by the additional property taxes and other assessments on new development, so any additional demand for mosquito abatement would be met. Therefore, the incremental contribution of the No Action/No Project Alternative to cumulative impacts would not be considerable, and implementation of this alternative would result in a less than significant adverse cumulative effect.

12.2.3 Proposed Action/Proposed Project Alternative

The Proposed Action/Proposed Project Alternative is described in Section 2.3.

12.2.3.1 Law Enforcement, Fire Protection, and Emergency Services

Direct and Indirect Effects of the Alternative

Covered Activities under the Proposed Action/Proposed Project Alternative include the types of urban development that are anticipated under the No Action/No Project Alternative. However, the Proposed Action/Proposed Project Alternative would result in more development in the MCRA than the No Action/No Project Alternative (refer to Section 2.2.2). This would allow urban development Covered Activities within the MCRA and the rest of the UDA to be implemented in a manner consistent with the approved general plans of Sacramento County and Rancho Cordova and Galt, with the only Covered Activity urban development beyond the UDA being road and pipeline projects that would also occur under the No Action/No Project Alternative. This may slightly reduce demand for new fire and police facilities to serve new urban development because new development would be nearer to existing fire stations and police stations. Therefore, urban development under the Proposed Action/Proposed Project

would have a **Minor Beneficial** effect on law enforcement, fire protection, and emergency services as compared to the No Action/No Project Alternative baseline condition.

Preserve management under the Proposed Action/Proposed Project Alternative would require a variety of habitat management activities, including grazing management, repairing fences, wildlife or vegetation surveys, trash removal, mowing and/or vegetation removal to control thatch and invasive species, and overall maintenance and monitoring. The preserve management strategy proposed in the SSHCP includes use of prescribed burns. As described for the No Action/No Project Alternative, prescribed burning activities under the Proposed Action/Proposed Project would be highly regulated and would not substantially increase demand for local fire departments or CAL FIRE beyond current levels. Therefore, management of the Preserve System under the Proposed Action/Proposed Project would have **No Effect** on fire protection as compared to the No Action/No Project Alternative baseline condition.

SSHCP Preserves would maintain areas of natural land cover that could result in an increase in wildfire hazards. As described for the No Action/No Project Alternative, there could be instances where fire suppression is required due to a wildfire or illegal activities that require law enforcement, but these would be indirect effects of the preserves. Law enforcement, medical, rescue, firefighting, and other emergency service providers would be allowed access to SSHCP Preserves to carry out operations necessary for the health, safety, and welfare of the public. As required by Section 11.4.3.2 of the SSHCP, the Implementing Entity would develop Memoranda of Understanding with all applicable fire agencies to be included with each Preserve Management Plan that identify appropriate response and fire suppression techniques, including access points, priority locations for fire camps, firebreak construction, water uptake, use of chemical retardants, heavy equipment operation, and post-fire cleanup. Firebreaks would be allowed inside Preserve Setbacks when necessary, and would comply with applicable local codes. This coordination and planning with fire, police, and emergency service providers would result in a **Minor Beneficial** effect when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

Significance of Direct and Indirect Effects

In summary, when compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would:

- Reduce the potential for adverse physical impacts associated with the provision of law enforcement services, fire protection, or emergency services to meet demands of urban development outside the UDA;

- Reduce demand for law enforcement, fire protection, or emergency services by not resulting in urban development remote from existing concentrations of law enforcement services, fire protection, or emergency services;
- Not change demand for local fire departments or CAL FIRE beyond current levels as a result of preserve management activities; and
- Not impede delivery of fire, police, and emergency services to preserve areas by improving coordination with local and state service providers.

Therefore, after considering the significance of impacts from the Proposed Action/Proposed Project on the impact criteria for law enforcement, fire protection, and emergency services, the Proposed Action/Proposed Project would result in **Minor Beneficial** effects on law enforcement, fire protection, and emergency services when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

Cumulative Effects of the Alternative

As discussed in Section 3.7.2, substantial past and present urban development has occurred in the cumulative study area, especially within the USB of Sacramento County, increasing demand for law enforcement, fire protection, and emergency services. Existing funding mechanisms have ensured that law enforcement, fire protection, and emergency services were expanded to meet that demand.

Reasonably foreseeable other future projects in the cumulative study area that would further increase demand for law enforcement, fire protection, and emergency services include expansion of Rancho Murieta development, urban development in the Elk Grove SOI, development of the City of Folsom south of US 50, and additional development in the Natomas Basin.

The Proposed Action/Proposed Project would not include urban development outside the UDA where law enforcement, fire protection, and emergency services are less available. The Proposed Action/Proposed Project would also improve coordination between Preserve Managers and local or state service providers. Therefore, the Proposed Action/Proposed Project would have a smaller incremental contribution to impacts on demand for new facilities or law enforcement services, fire protection, or emergency services as compared to the No Action/No Project alternative. Therefore, because the incremental effect of the Proposed Action/Proposed Project on law enforcement, fire protection, and emergency services would be somewhat less than the incremental effect of the No Action/No Project Alternative, the Proposed Action/Proposed Project would result in a **Minor Beneficial Cumulative effect** (when compared to the future No Action/No Project baseline condition).

12.2.3.2 Water and Wastewater Services

Direct and Indirect Effects of the Alternative

The Proposed Action/Proposed Project Alternative Covered Activities include the urban development that are anticipated under the No Action/No Project Alternative, including the construction, maintenance, and operation of water supply, recycled water, and wastewater facilities. Future urban development under the Proposed Action/Proposed Project would be consistent with the goals and policies listed in Section 12.1.1 that require local agencies to design water and wastewater infrastructure to accommodate the increase in demand; ensure that water flow and pressure meet domestic, commercial, industrial and fire suppression needs; and comply with the CWA. However, under the Proposed Action/Proposed Project, urban development would not be shifted or displaced to areas outside the UDA (Section 2.3) that may not be served by existing water or wastewater infrastructure. The Proposed Action/Proposed Project would not result in the impacts associated with expanding infrastructure outside the UDA that would occur under the No Action/No Project Alternative. Therefore, urban development under the Proposed Action/Proposed Project would have a **Minor Beneficial** effect on water and wastewater infrastructure needs as compared to the No Action/No Project Alternative baseline condition.

Subsurface sewage disposal systems currently exist within the area proposed as the Laguna Creek Wildlife Movement Corridor. These systems are not Covered Activities under the SSHCP, but would be “grandfathered in” and allowed to remain in the Laguna Creek Wildlife Movement Corridor once the corridor is established. Parcels already entitled for installation of subsurface sewage disposal systems at the time of permit issuance would be allowed in the Laguna Creek Wildlife Movement Corridor. Operation, maintenance, and replacement of existing and entitled subsurface sewage disposal systems are not Covered Activities, but would be allowed in the Laguna Creek Wildlife Movement Corridor (Sacramento County 2016). These septic systems would also be allowed under the No Action/No Project Alternative. Therefore, the Proposed Action/Proposed Project Preserve System would have **No Effect** on water and wastewater infrastructure as compared to the No Action/No Project Alternative baseline condition.

Under the Proposed Action/Proposed Project, project proponents constructing or expanding water and wastewater pipelines would not necessarily have to develop alternative routes to avoid wetlands and waters in the Preserve System, whereas under the No Action/No Project Alternative, pipelines would be more likely to have to route around wetlands, other waters, and preserves. New ~~water or~~ wastewater facilities could be expanded or extended **within the MCRA under the Proposed Action/Proposed Project Alternative** as envisioned by the ~~2020 SRWTP Master Plan (Regional San 2008)~~ within the MCRA for the Proposed Action/Proposed Project. **Regional San ISS and EchoWater Project. New water facilities could be expanded or extended as envisioned in the SCWA Water Supply Master Plans.** Horizontal drilling would be used

where the lines might impact waters and wetlands, which would limit the construction impacts to the entrance and exit locations of the pipeline. Using this method would minimize potential impacts to wetland areas. Specifically, Avoidance and Minimization Measures (AMMs) UTILITY-3 and UTILITY-4 require the use of trenchless construction methods to avoid impacts to preserves, and siting of entry/exit locations to minimize impacts to vernal pool soils, vernal pools, and Riparian Woodland areas (SSHCP Chapter 5). Implementation of new infrastructure could be expanded as envisioned by the Sacramento County and Rancho Cordova General Plans in compliance with AMMs EDGE-1, EDGE-8, BMP-1 through BMP-11, STREAM-1 through STREAM-5, and UTILITY-1 and UTILITY-2. Implementation of the Proposed Action/Proposed Project would not adversely impact the ability of service providers to extend water and wastewater infrastructure, and service would be continued to be provided as outlined in the service district providers' planning documents (Radmacher, pers. comm. 2015). Therefore, the Proposed Action/Proposed Project Alternative would be less likely than the No Action/No Project Alternative to limit planned infrastructure development. The Proposed Action/Proposed Project Preserve System would result in **Minor Beneficial** effects on water and wastewater infrastructure when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

Preserve management and monitoring activities under the Proposed Action/Proposed Project would not require substantial water, nor would there be a need for any wastewater treatment. The preserve activities would depend on on-site wells or water brought to the site, and would not require any new water or wastewater connections. Therefore, the Proposed Action/Proposed Project Preserve System would result in **No Effect** on demand for water treatment, water supply, and wastewater treatment when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

Significance of Direct and Indirect Effects

In summary, when compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would:

- Reduce the impacts from expanding water and wastewater infrastructure to serve urban development outside the UDA;
- Reduce the potential for existing aquatic resources or future preserves to conflict with planned infrastructure development; and
- Result in similar impacts on adequacy of water supply for full buildout of the project.

Therefore, after considering the significance of impacts from the Proposed Action/Proposed Project on the impact criteria for water and wastewater services, the Proposed Action/Proposed Project would result in **Minor Beneficial** effects on water and wastewater services

when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

Cumulative Effects of the Alternative

As discussed in Section 3.7.2, substantial past and present urban development has occurred in the cumulative study area, especially within the USB of Sacramento County, increasing demand for water and wastewater services. Existing funding mechanisms, including payment of fees by project developers and rate increases passed on to residents of the Planning Area, have ensured that water and wastewater services were expanded to meet that demand.

Reasonably foreseeable other future projects in the cumulative study area that would further increase demand for water and wastewater services include expansion of Rancho Murieta development, urban development in the Elk Grove SOI, development of the City of Folsom south of US 50, and additional development in the Natomas Basin. The additional demand for water and wastewater infrastructure from these projects would also be offset through payment of fees by project developers, and by rate increases passed on to residents of the Planning Area. Therefore, the effects of past, present, and reasonably foreseeable other future projects would have a less than significant cumulative effect on water and wastewater services.

The Proposed Action/Proposed Project would not include urban development outside the UDA where water and wastewater infrastructure are less available. Therefore, because the incremental effect of the Proposed Action/Proposed Project on water or wastewater facilities would be somewhat less than the incremental effect of the No Action/No Project Alternative, the Proposed Action/Proposed Project would result in a **Minor Beneficial Cumulative** effect (when compared to the future No Action/No Project baseline condition).

12.2.3.3 Solid Waste Disposal

Direct and Indirect Effects of the Alternative

The Proposed Action/Proposed Project Alternative Covered Activities include the types of urban development that are anticipated under the No Action/No Project Alternative. The urban development under the Proposed Action/Proposed Project would accommodate the same population increase as the No Action/No Project Alternative, and would generate approximately the same amount of solid waste. Future urban development would be consistent with the goals and policies listed in Section 12.1.1 that require that only compatible land uses be located near solid waste facilities and that recycling programs be developed to educate residents. Therefore, the Proposed Action/Proposed Project would result in **No Effect** on demand for solid waste disposal when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

Establishment, management, and monitoring of the SSHCP Preserves would not increase demand for solid waste service. Overall, there would be no difference in impacts to landfills from preserve activities when compared to similar preserve activities under the No Action/No Project Alternative. Therefore, the Proposed Action/Proposed Project Preserve System would result in **No Effect** on demand for solid waste disposal when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

Significance of Direct and Indirect Effects

In summary, when compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would:

- Be serviced by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs; and
- Result in the same demand for solid waste disposal services.

Therefore, after considering the significance of impacts from the Proposed Action/Proposed Project on the impact criteria for solid waste disposal, the Proposed Action/Proposed Project would result in **No Effect** on solid waste disposal when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

Cumulative Effects of the Alternative

As discussed in Section 3.7.2, substantial past and present urban development has occurred in the cumulative study area, especially within the USB of Sacramento County, increasing demand for solid waste disposal. Existing funding mechanisms such as development fees or usage fees paid to the solid waste service providers have ensured that landfills and solid waste handling facilities were expanded to meet that demand.

Reasonably foreseeable future projects in the cumulative study area that would further increase demand for solid waste disposal include expansion of Rancho Murieta development, urban development in the Elk Grove SOI, development of the City of Folsom south of US 50, and additional development in the Natomas Basin. Existing funding mechanisms would also ensure that solid waste disposal is expanded to meet that new demand. The effects of the demand for solid waste disposal from past, present, and reasonably foreseeable other projects would not be cumulatively considerable (i.e., significant).

The urban development under the Proposed Action/Proposed Project would accommodate the same population increase as the No Action/No Project Alternative, and would generate approximately the same amount of solid waste. Therefore, because the incremental effect of the Proposed Action/Proposed Project on solid waste disposal would not be discernibly

different from the incremental effect of the No Action/No Project Alternative, the Proposed Action/Proposed Project would result in **No Cumulative Effect** (when compared to the future No Action/No Project baseline condition).

12.2.3.4 Parks and Recreational Facilities

Direct and Indirect Effects of the Alternative

The Proposed Action/Proposed Project Alternative Covered Activities include the types of urban development that are anticipated under the No Action/No Project Alternative. The urban development under the Proposed Action/Proposed Project would accommodate the same population increase as the No Action/No Project Alternative, and would generate approximately the same amount of demand for parks and recreational facilities. The lead agencies anticipate that future urban development would be consistent with the goals and policies listed in Section 12.1.1, including those such as County Policy PF-122 and PF-123, or Galt Policy PFS-8.1, that establish fees that new development projects must pay to support parks and recreational facility development. However, the Proposed Action/Proposed Project Alternative would result in more development in the MCRA than the No Action/No Project Alternative (refer to Section 2.2.2). This would allow urban development Covered Activities within the MCRA and the rest of the UDA to be implemented in a manner consistent with the approved general plans of Sacramento County and Rancho Cordova and Galt. By not shifting or displacing urban development outside the UDA, the Proposed Action/Proposed Project would reduce the demand for new park and recreational facilities in areas outside the UDA. Therefore, urban development under the Proposed Action/Proposed Project would have a **Minor Beneficial** effect on parks and recreational facilities as compared to the No Action/No Project Alternative baseline condition.

Future recreational facilities, including trails, would be permitted in the Preserve Setbacks and in some of the Preserve System. For preserve areas within the USB, a 50-foot setback would be established in accordance with AMM EDGE-3 (Table 2-7) to allow a transition between development and the preserves. AMM NATURE TRAIL-1 through NATURE TRAIL-5 provide requirements for the construction of trails adjacent to preserve areas. Setbacks would also be required around streams and creeks in the UDA (AMM STREAM-1 and STREAM-2), and trails would also be allowed in those Stream Setbacks.

Other trails are proposed as part of developments in the UDA. For example, the Cordova Hills project includes a paved bicycle/pedestrian trail that bisects the preserve area (Core Preserve C1). As shown on Figure 12-2, trails are proposed around most of the SSHCP Preserve areas, with trails crossing the Laguna Creek Wildlife Preserve and the proposed Linkage Preserve L2. Trails adjacent to and crossing any preserves would be required to comply with the AMMs

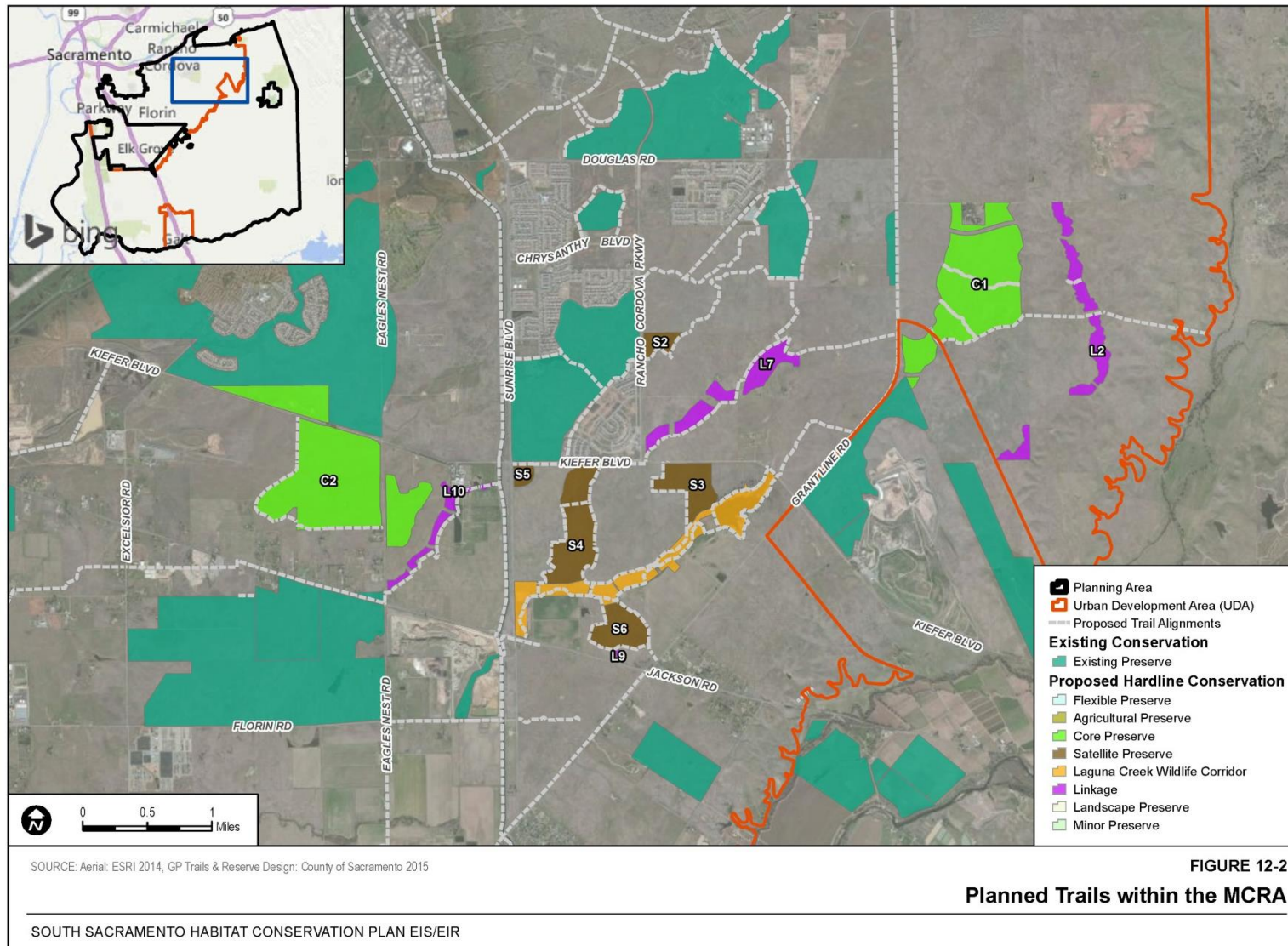
listed previously to protect the preserve from disturbance due to proximity to developed areas. Provided they comply with those AMMs, new trails and trail extensions that are planned in the Sacramento County, Galt, or Rancho Cordova General Plan Public Facilities or Open Space, Parks, and Trails Elements or in bicycle or pedestrian plans would not be affected by the establishment of an interconnected preserve system. Therefore, the Proposed Action/Proposed Project Preserve System would have **No Effect** on parks and recreational facilities as compared to the No Action/No Project Alternative baseline condition.

Significance of Direct and Indirect Effects

In summary, when compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would:

- Reduce the potential for substantial adverse physical impacts associated with the provision of park and recreation services outside the UDA, or result in substantial physical deterioration of an existing facility due to increased use; and
- Allow for development of trails planned in the Sacramento County, Galt, or Rancho Cordova General Plan.

Figure 12-2 Planned Trails within the MCRA



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Therefore, after considering the significance of impacts from the Proposed Action/Proposed Project on the impact criteria for parks and recreational facilities, the Proposed Action/Proposed Project would result in **Minor Beneficial** effects on parks and recreational facilities when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

Cumulative Effects of the Alternative

Section 12.1.2 describes the substantial amount of parkland acquisition and development that has occurred in the Planning Area. These parks provide diverse recreational opportunities to residents in the Planning Area and surrounding areas. Although some portions of the parks are strictly managed for preservation (e.g., Deer Creek Preserve), most areas are managed for passive and active recreational uses such as hiking, biking, picnicking, boating, camping, and off-road vehicle use.

Reasonably foreseeable other future projects such as urban development in the Elk Grove SOI or expansion of Rancho Murieta, as described in Section 3.7, would increase the population in the Planning Area and increase demand for parks and recreational facilities. However, this development would generate fees and taxes that would pay for additional parks and recreational facilities in the Planning Area to meet these additional needs.

Urban development under the Proposed Action/Proposed Project would also increase the Planning Area population and result in increased demand for parks and recreational facilities, but this new urban development would generate fees and taxes to pay for additional parks and recreational facilities. The Proposed Action/Proposed Project Alternative would provide limited park and recreational facility benefits by providing nature trails in some preserves, designed consistent with AMMs NATURE TRAIL-1 through NATURE TRAIL-5. Therefore, because the incremental effect of the Proposed Action/Proposed Project on parks and recreational facilities would not be discernibly different from the incremental effect of the No Action/No Project Alternative, the Proposed Action/Proposed Project would result in **No Cumulative Effect** (when compared to the future No Action/No Project baseline condition).

12.2.3.5 Energy

Direct and Indirect Effects of the Alternative

Covered Activities under the Proposed Action/Proposed Project Alternative include the types of urban development that are anticipated under the No Action/No Project Alternative. However, under the Proposed Action/Proposed Project urban development would not be displaced or shifted to areas outside the UDA (Section 2.3) that may not be served by existing natural gas or electrical infrastructure. Impacts associated with expanding natural gas and electrical supply

infrastructure to serve urban development would be somewhat less under the Proposed Action/Proposed Project Alternative than the No Action/No Project Alternative. Therefore, urban development under the Proposed Action/Proposed Project would have a **Minor Beneficial** effect on energy as compared to the No Action/No Project Alternative baseline condition.

Energy infrastructure under the Proposed Action/Proposed Project could be expanded, extended, or located as envisioned by the Sacramento County and Rancho Cordova General Plans' Public Facilities Elements and local energy providers' master plans. The SSHCP Preserve System would not require the construction of energy infrastructure; therefore, the SSHCP would not create any physical impacts associated with construction of new energy infrastructure. The regional energy infrastructure plans follow the growth and land use plans laid out in the general plans, and the Proposed Action/Proposed Project Alternative would be consistent with these general plans. Therefore, urban development under the Proposed Action/Proposed Project would have a **Minor Beneficial** effect on planned development of energy infrastructure as compared to the No Action/No Project Alternative baseline condition.

SSHCP Preserve management and maintenance activities under the Proposed Action/Proposed Project would not generate an increase in demand for energy because they would not introduce new urban uses or people. Therefore, the Proposed Action/Proposed Project Preserve System would have **No Effect** on energy demand or planned development of energy infrastructure as compared to the No Action/No Project Alternative baseline condition.

Significance of Direct and Indirect Effects

In summary, when compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would:

- Reduce the potential for impacts associated with building new electric or natural gas infrastructure to meet demands of urban development outside the UDA;
- Reduce the potential for urban development patterns to conflict with regional energy infrastructure plans; and
- Result in similar demand for electricity and natural gas service because total amounts of urban development within the Planning Area would be similar.

Therefore, after considering the significance of impacts from the Proposed Action/Proposed Alternative on the energy impact criteria, the Proposed Action/Proposed Project would result in **Minor Beneficial** effects on energy when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

Cumulative Effects of the Alternative

As discussed in Section 3.7.1 and Section 12.2.1, past and present urban development and associated infrastructure projects and activities have occurred in the EIS/EIR Planning Area, especially within the UDA. Energy demands of these past and present projects and activities have been met by energy providers through additional energy generation and development of new energy transmission infrastructure.

Reasonably foreseeable future projects in the EIS/EIR Planning Area that would further increase energy demand include expansion of Rancho Murieta development, urban development in the Elk Grove SOI, development of the Wilton Rancheria Casino, construction of the high-speed rail, and the California WaterFix projects (Section 3.7.2).

The additional increment of energy demand generated by these reasonably foreseeable other projects would be accommodated by utility providers by purchasing additional electricity or natural gas on the open market and by constructing additional infrastructure. Any additional infrastructure required for these projects would be developed by the utility providers and would generally be located within existing County, city, or utility rights-of-way to minimize impacts. The effects of the demand for energy and energy infrastructure from past, present, and reasonably foreseeable other projects would constitute a less than significant cumulative effect.

The additional development from urban development under the Proposed Action/Proposed Project would offset its impacts similarly, through payment of usage fees. Because the Proposed Action/Proposed Project would include an Aquatic Resources Plan and expedited permitting process for aquatic resources, proponents constructing or expanding energy infrastructure would be less likely to have to develop alternative routes to avoid wetlands and waters. Generally, development of utility infrastructure within the Preserve System could occur as long as those projects complied with SSHCP AMMs. Therefore, because the incremental effect of the Proposed Action/Proposed Project on energy would not be discernibly different from the incremental effect of the No Action/No Project Alternative, the Proposed Action/Proposed Project would result in **No Cumulative Effect** (when compared to the future No Action/No Project baseline condition).

12.2.3.6 Mosquito Abatement

Direct and Indirect Effects of the Alternative

Covered Activities under the Proposed Action/Proposed Project Alternative include the types of urban development that are anticipated under the No Action/No Project Alternative. However, the Proposed Action/Proposed Project Alternative would result in more development in the MCRA than the No Action/No Project Alternative (refer to Section 2.2.2). This would allow

urban development Covered Activities within the MCRA and the rest of the UDA to be implemented consistent with the approved general plans of Sacramento County and Rancho Cordova and Galt, with the only Covered Activity urban development beyond the UDA being road and pipeline projects that would also occur under the No Action/No Project Alternative. Funding for mosquito abatement would continue to be provided by the additional property taxes and other assessments on new development, so any additional demand for mosquito abatement would be met. There is no reason to expect that urban development under the Proposed Action/Proposed Project would result in greater or less exposure to mosquitos for people than the No Action/No Project Alternative. Impacts associated with the potential for urban development to create breeding areas for mosquitos or increase human populations near mosquito breeding areas would be largely the same as described for the No Action/No Project Alternative (Section 12.2.2.6, Mosquito Abatement). Therefore, urban development under the Proposed Action/Proposed Project would have **No Effect** on mosquito abatement as compared to the No Action/No Project Alternative baseline condition.

The Proposed Action/Proposed Project Preserve System would include the re-establishment and establishment of 389 acres of vernal pools, approximately 67 more acres than under the No Action/No Project Alternative. The Proposed Action/Proposed Project Alternative would also re-establish and/or establish 387 more acres of seasonal wetland, freshwater marsh, and/or open water within the Planning Area compared to the No Action/No Project Alternative. Re-established and/or established aquatic resources would be closely monitored to ensure that they meet success criteria as agreed on by the U.S. Army Corps of Engineers and that they remain functional as habitat for Covered Species. There is a potential for unhealthy existing or re-established/established aquatic resources to create an environment conducive to mosquito breeding. The coordinated monitoring and management program under the Proposed Action/Proposed Project would reduce the chances that existing, re-established, or established aquatic resources would be unhealthy and provide breeding habitat for mosquitos by controlling species such as the non-native plant *Glyceria declinata*. Therefore, the Proposed Action/Proposed Project Preserve System would result in a **Less Than Significant Adverse** effect on mosquito abatement when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

Significance of Direct and Indirect Effects

In summary, when compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project would:

- Potentially create more new breeding areas for mosquitos, but would include monitoring and management to ensure that aquatic resources do not generate substantial populations of mosquitos and affect public health.

- Potentially restrict mosquito abatement activities within preserves, but would include monitoring and management to ensure that aquatic resources do not generate substantial populations of mosquitos and affect public health.

Therefore, after considering the significance of impacts from the Proposed Action/Proposed Alternative on the mosquito abatement impact criteria, the Proposed Action/Proposed Project would result in ***Less Than Significant Adverse*** effects on mosquito abatement when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

Cumulative Effects of the Alternative

Past and present projects and activities in the cumulative study area relevant to mosquito abatement include many decades of urban development within a natural floodplain that contains many seasonal wetlands and other waters. Mitigation for impacts of past and present urban development has included avoidance of wetlands, establishment of on-site preserves, and on-site establishment of wetlands. This development and mitigation pattern has exposed residents of urban development to mosquito populations that breed in wetland areas and in poorly designed or managed stormwater systems.

Reasonably foreseeable other projects such as urban development in the Elk Grove SOI or Rancho Murieta (Section 3.7.2) and elsewhere in the cumulative study area, such as the community of Natomas, the City of Folsom, or the City of Davis, would increase human populations near existing wetlands and vernal pools. In addition, this urban development would increase impermeable surfaces and contribute urban runoff to drainage structures that can stagnate and create breeding habitat for mosquitos. However, this urban development in the cumulative study area would also remove wetlands and vernal pools, potentially reducing existing breeding areas for mosquitos. Under most circumstances, creation or expansion of mosquito breeding habitat can be avoided or minimized through proper planning and design or maintenance elements. Increased demand on the Sacramento–Yolo Mosquito and Vector Control District for mosquito abatement services would be offset through increased funding of the District. The District is funded through property taxes and other assessments based on property value, and urban development of currently undeveloped land would substantially increase the assessed value of parcels. That increased parcel value would increase property taxes and thus increase funding for the District. Therefore, less than significant adverse cumulative impacts would result from past, present, and reasonably foreseeable other projects.

The Proposed Action/Proposed Project would contribute to cumulative impacts on mosquito abatement by establishing new aquatic resources and potentially making it more difficult to conduct mosquito abatement activities on preserves. However, the Preserve System would be carefully monitored and managed to avoid the aquatic resource conditions conducive to

mosquito breeding. Further, funding for mosquito abatement would continue to be provided by the additional property taxes and other assessments on new development, so additional demand for mosquito abatement would be met. Therefore, because the incremental effect of the Proposed Action/Proposed Project on mosquito abatement would be somewhat more than the incremental effect of the No Action/No Project Alternative, the Proposed Action/Proposed Project would result in a ***Less Than Significant Adverse Cumulative*** effect (when compared to the future No Action/No Project baseline condition).

12.2.4 Reduced Permit Term Alternative

The Reduced Permit Term Alternative is described in Section 2.4.

12.2.4.1 Law Enforcement, Fire Protection, and Emergency Services

Direct and Indirect Effects of the Alternative

Covered Activities under the Reduced Permit Term Alternative include the types of urban development that are anticipated under the No Action/No Project Alternative. However, the Reduced Permit Term Alternative would result in more development in the MCRA than the No Action/No Project Alternative (refer to Section 2.2.2). This would allow urban development Covered Activities within the MCRA and the rest of the UDA to be implemented in a manner consistent with the approved general plans of Sacramento County and Rancho Cordova and Galt, with the only Covered Activity urban development beyond the UDA being road and pipeline projects that would also occur under the No Action/No Project Alternative. This may slightly reduce demand for new fire and police facilities to serve new urban development because new development would be nearer to existing fire stations and police stations. Therefore, urban development under the Reduced Permit Term Alternative would have a ***Minor Beneficial*** effect on law enforcement, fire protection, and emergency services as compared to the No Action/No Project Alternative baseline condition.

Preserve management under the Reduced Permit Term Alternative would require a variety of habitat management activities, including grazing management, repairing fences, wildlife or vegetation surveys, trash removal, mowing and/or vegetation removal to control thatch and invasive species, and overall maintenance and monitoring. Preserve management under the Reduced Permit Term Alternative would include use of prescribed burns. As described for the No Action/No Project Alternative, prescribed burning activities under the Reduced Permit Term Alternative would be highly regulated and would not substantially increase demand for local fire departments or CAL FIRE beyond current levels. Therefore, management of the Preserve System under the Reduced Permit Term Alternative would have ***No Effect*** on fire protection as compared to the No Action/No Project Alternative baseline condition.

SSHCP Preserves would maintain areas of natural land cover that could result in an increase in wildfire hazards. As described for the No Action/No Project Alternative, there could be instances where fire suppression is required due to a wildfire or illegal activities that require law enforcement, but these would be indirect effects of the preserves. Law enforcement, medical, rescue, firefighting, and other emergency service providers would be allowed access to SSHCP Preserves to carry out operations necessary for the health, safety, and welfare of the public. As required by Section 11.4.3.2 of the SSHCP, the Implementing Entity would develop Memoranda of Understanding with all applicable fire agencies to be included with each Preserve Management Plan that identify appropriate response and fire suppression techniques, including access points, priority locations for fire camps, firebreak construction, water uptake, use of chemical retardants, heavy equipment operation, and post-fire cleanup. Firebreaks would be allowed inside Preserve Setbacks when necessary, and would comply with applicable local codes. This coordination and planning with fire, police, and emergency service providers would result in a **Minor Beneficial** effect when comparing the Reduced Permit Term Alternative to the No Action/No Project Alternative baseline condition.

Significance of Direct and Indirect Effects

In summary, when compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would:

- Reduce the potential for adverse physical impacts associated with the provision of law enforcement services, fire protection, or emergency services to meet demands of urban development outside the UDA;
- Reduce demand for law enforcement, fire protection, or emergency services by not resulting in urban development remote from existing concentrations of law enforcement services, fire protection, or emergency services;
- Not change demand for local fire departments or CAL FIRE beyond current levels as a result of preserve management activities; and
- Not impede delivery of fire, police, and emergency services to preserve areas by improving coordination with local and state service providers.

Therefore, after considering the significance of impacts from the Reduced Permit Term Alternative on the impact criteria for law enforcement, fire protection and emergency services, the Reduced Permit Term Alternative would result in **Minor Beneficial** effects on law enforcement, fire protection, and emergency services when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

Cumulative Effects of the Alternative

As discussed in Section 3.7.2, substantial past and present urban development has occurred in the cumulative study area, especially within the USB of Sacramento County, increasing demand for law enforcement, fire protection, and emergency services. Existing funding mechanisms have ensured that law enforcement, fire protection, and emergency services were expanded to meet that demand.

Reasonably foreseeable other future projects in the cumulative study area that would further increase demand for law enforcement, fire protection, and emergency services include expansion of Rancho Murieta development, urban development in the Elk Grove SOI, development of the City of Folsom south of US 50, and additional development in the Natomas Basin.

The Reduced Permit Term Alternative would not include urban development outside the UDA where law enforcement, fire protection, and emergency services are less available. The Reduced Permit Term Alternative would also improve coordination between Preserve Managers and local or state service providers and therefore would have a smaller incremental contribution to impacts on demand for new facilities of law enforcement services, fire protection, or emergency services as compared to the No Action/No Project alternative. Therefore, because the incremental effect of the Reduced Permit Term Alternative on law enforcement, fire protection, and emergency services would be somewhat less than the incremental effect of the No Action/No Project Alternative, the Reduced Permit Term Alternative would result in a ***Minor Beneficial Cumulative*** effect (when compared to the future No Action/No Project baseline condition).

12.2.4.2 Water and Wastewater Services

Direct and Indirect Effects of the Alternative

Covered Activities under the Reduced Permit Term Alternative include the types of urban development that are anticipated under the No Action/No Project Alternative. However, the Reduced Permit Term Alternative would result in more development in the MCRA than the No Action/No Project Alternative (refer to Section 2.2.2). This would allow urban development Covered Activities within the MCRA and the rest of the UDA to be implemented consistent with the approved general plans of Sacramento County and Rancho Cordova and Galt, with the only Covered Activity urban development beyond the UDA being road and pipeline projects that would also occur under the No Action/No Project Alternative. The Reduced Permit Term Alternative would not result in the impacts associated with expanding infrastructure outside the UDA that would occur under the No Action/No Project Alternative. Therefore, urban

development under the Reduced Permit Term Alternative would have a **Minor Beneficial** effect on water and wastewater infrastructure needs as compared to the No Action/No Project Alternative baseline condition.

Project proponents constructing or expanding water and wastewater pipelines during the 30-year permit term of the Reduced Permit Term Alternative would not necessarily have to develop alternative routes to avoid wetlands and waters. New ~~water or~~ wastewater facilities could be expanded or extended **within the MCRA under the Reduced Permit Term Alternative** as envisioned by the ~~SRWTP Master Plan 2020 (Regional San 2008)~~ within the MCRA and would ~~not be adversely affected by the establishment of preserves under the Reduced Permit Term Alternative.~~ **Regional San ISS and EchoWater Project. New water facilities could be expanded or extended as envisioned by the SCWA Water Supply Master Plans.** Covered Activity water and wastewater infrastructure projects within the MCRA are all planned for completion by the end of year 30. In years 31–50 of the EIS/EIR study period, the SSHCP permits would expire, and there would be no comprehensive plan in place to mitigate potential project impacts to aquatic resources and special-status species associated with construction of new wastewater infrastructure in the Planning Area. Therefore, in years 31–50 of the EIS/EIR study period projects would again be required to mitigate impacts on a project-by-project basis, and CWA 404 and federal Endangered Species Act mitigation for project impacts in the MCRA would require greater levels of avoidance and preservation to be in the MCRA. However, the MCRA and any required wastewater infrastructure would have been largely developed during the 30-year permit term. Construction of any wastewater infrastructure outside the MCRA that would occur during years 31–50 of the EIS/EIR study period would be able mitigate impacts on a project-by-project basis, as described for the No Action/No Project Alternative. This would be a **Minor Beneficial** effect on water and wastewater infrastructure, as compared to the No Action/No Project Alternative baseline condition.

The Reduced Permit Term Alternative would assemble a preserve system in the Planning Area during the 30-year permit term, but planned water and wastewater infrastructure could be extended through preserves using horizontal directional drilling in adherence with SSHCP AMMs. Implementation of AMMs EDGE-1, EDGE-8, BMP-1 through BMP-11, STREAM-1 through STREAM-5, and UTILITY-1 through UTILITY-4 during the 30-year permit term could affect design and construction of infrastructure. Relative to the No Action/No Project Alternative, this would be a **Minor Beneficial** effect.

Preserve management and monitoring activities under the Reduced Permit Term Alternative would not require substantial water, nor would there be a need for any wastewater treatment. The preserve activities would depend on on-site wells or water brought to the site, and would not require any new water or wastewater connections. Therefore, the Reduced Permit Term Alternative preserve system would result in **No Effect** on demand for water treatment, water

supply, and wastewater treatment when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

Significance of Direct and Indirect Effects

In summary, when compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would:

- Reduce the impacts from expanding water and wastewater infrastructure to serve urban development urban development outside the UDA;
- Reduce the potential for existing aquatic resources or future preserves to conflict with planned infrastructure development; and
- Result in similar impacts on adequacy of water supply for full buildout of the project.

Therefore, after considering the significance of impacts from the Reduced Permit Term Alternative on the impact criteria for water and wastewater services, the Reduced Permit Term Alternative would result in **Minor Beneficial** effects on water and wastewater services when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

Cumulative Effects of the Alternative

As discussed in Section 3.7.2, substantial past and present urban development has occurred in the cumulative study area, especially within the USB of Sacramento County, increasing demand for water and wastewater services. Existing funding mechanisms, including payment of fees by project developers and rate increases passed on to residents of the Planning Area, have ensured that water and wastewater services were expanded to meet that demand.

Reasonably foreseeable other future projects in the cumulative study area that would further increase demand for water and wastewater services include expansion of Rancho Murieta development, urban development in the Elk Grove SOI, development of the City of Folsom south of US 50, and additional development in the Natomas Basin. The additional demand for water and wastewater infrastructure from these projects would also be offset through payment of fees by project developers, and by rate increases passed on to residents of the Planning Area. Therefore, the effects of past, present, and reasonably foreseeable other future projects would have a less than significant cumulative effect on water and wastewater services.

The Reduced Permit Term Alternative would not include urban development outside the UDA where water and wastewater infrastructure are less available, and would have a smaller incremental contribution to impacts on demand for new water or wastewater facilities as compared to the No Action/No Project alternative. Therefore, because the incremental effect of

the Reduced Permit Term Alternative on water or wastewater facilities would be somewhat less than the incremental effect of the No Action/No Project Alternative, the Reduced Permit Term Alternative would result in a ***Minor Beneficial Cumulative*** effect (when compared to the future No Action/No Project baseline condition).

12.2.4.3 Solid Waste Disposal

Direct and Indirect Effects of the Alternative

The Reduced Permit Term Alternative includes the types of urban development that are anticipated under the No Action/No Project Alternative. The urban development under the Reduced Permit Term Alternative would accommodate the same population increase as the No Action/No Project Alternative, and would generate approximately the same amount of solid waste. Future urban development would be consistent with the goals and policies listed in Section 12.1.1 that require that only compatible land uses be located near solid waste facilities and that recycling programs be developed to educate residents. Therefore, the Reduced Permit Term Alternative would result in ***No Effect*** on demand for solid waste disposal when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

Establishment, management, and monitoring of the preserves under the Reduced Permit Term Alternative would not increase demand for solid waste service. Overall, there would be no difference in impacts to landfills from preserve activities when compared to similar preserve activities under the No Action/No Project Alternative. Therefore, the Reduced Permit Term Alternative preserves would result in ***No Effect*** on demand for solid waste disposal when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

Significance of Direct and Indirect Effects

In summary, when compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would:

- Be serviced by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs; and
- Result in the same demand for solid waste disposal services.

Therefore, after considering the significance of impacts from the Reduced Permit Term Alternative on the impact criteria for solid waste disposal, the Reduced Permit Term Alternative would result in ***No Effect*** on solid waste disposal when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

Cumulative Effects of the Alternative

As discussed in Section 3.7.2, substantial past and present urban development has occurred in the cumulative study area, especially within the USB of Sacramento County, increasing demand for solid waste disposal. Existing funding mechanisms such as development fees or usage fees paid to the solid waste service providers have ensured that landfills and solid waste handling facilities were expanded to meet that demand.

Reasonably foreseeable future projects in the cumulative study area that would further increase demand for solid waste disposal include expansion of Rancho Murieta development, urban development in the Elk Grove SOI, development of the City of Folsom south of US 50, and additional development in the Natomas Basin. Existing funding mechanisms would also ensure that solid waste disposal is expanded to meet that new demand. The effects of the demand for solid waste disposal from past, present, and reasonably foreseeable other projects would not be cumulatively considerable (i.e., significant).

The urban development under the Reduced Permit Term Alternative would accommodate the same population increase as the No Action/No Project Alternative and would generate approximately the same amount of solid waste. Therefore, because the incremental effect of the Reduced Permit Term Alternative on solid waste disposal would not be discernibly different from the incremental effect of the No Action/No Project Alternative, the Reduced Permit Term Alternative would result in ***No Cumulative Effect*** (when compared to the future No Action/No Project baseline condition).

12.2.4.4 Parks and Recreational Facilities

Direct and Indirect Effects of the Alternative

The Reduced Permit Term Alternative includes the types of urban development that are anticipated under the No Action/No Project Alternative. The urban development under the Reduced Permit Term Alternative would accommodate the same population increase as the No Action/No Project Alternative and would generate approximately the same amount of demand for parks and recreational facilities. However, the Reduced Permit Term Alternative would result in more development in the MCRA than the No Action/No Project Alternative (refer to Section 2.2.2). This would allow urban development Covered Activities within the MCRA and the rest of the UDA to be implemented in a manner consistent with the approved general plans of Sacramento County and Rancho Cordova and Galt. By not shifting or displacing urban development outside the UDA, the Reduced Permit Term Alternative would reduce the demand for new park and recreational facilities in areas outside the UDA. Therefore, urban development

under the Reduced Permit Term Alternative would have a **Minor Beneficial** effect on parks and recreational facilities as compared to the No Action/No Project Alternative baseline condition.

The Reduced Permit Term Alternative would implement AMMs such as EDGE-1, EDGE-3, EDGE-3a, and NATURE TRAIL-1 through NATURE TRAIL-5 that would provide standards for design and operation of trails within the preserve areas. Public access on trails through preserve areas would be limited by AMMs NATURE TRAIL-1 through NATURE TRAIL-5, and most would not be open to unguided public access. Provided they comply with those AMMs, new trails and trail extensions that are planned in the Sacramento County, Galt, or Rancho Cordova General Plan Public Facilities or Open Space, Parks, and Trails Elements or in bicycle or pedestrian plans would not be affected by the establishment of an interconnected preserve system. Therefore, the Reduced Permit Term Alternative would have **No Effect** on parks and recreational facilities as compared to the No Action/No Project Alternative baseline condition.

Significance of Direct and Indirect Effects

In summary, when compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would:

- Not result in substantial adverse physical impacts associated with the provision of park and recreation services, or result in substantial physical deterioration of an existing facility due to increased use; and
- Allow for development of trails planned in the Sacramento County, Galt, or Rancho Cordova General Plan.

Therefore, after considering the significance of impacts from the Reduced Permit Term Alternative on the impact criteria for parks and recreational facilities, the Reduced Permit Term Alternative would result in **No Effect** on parks and recreational facilities when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

Cumulative Effects of the Alternative

Section 12.1.2 describes the substantial amount of parkland acquisition and development that has occurred in the Planning Area. These parks provide diverse recreational opportunities to residents in the Planning Area and surrounding areas. Although some portions of the parks are strictly managed for preservation (e.g., Deer Creek Preserve), most areas are managed for passive and active recreational uses such as hiking, biking, picnicking, boating, camping, and off-road vehicle use.

Reasonably foreseeable other future projects such as urban development in the Elk Grove SOI or expansion of Rancho Murieta, as described in Section 3.7, would increase the population in the

Planning Area and increase demand for parks and recreational facilities. However, this development would generate fees and taxes that would pay for additional parks and recreational facilities in the Planning Area to meet these additional needs.

Urban development under the Reduced Permit Term Alternative would also increase the Planning Area population and result in increased demand for parks and recreational facilities, but as with the past, present, and reasonably foreseeable future projects, this new urban development would generate fees and taxes to pay for additional parks and recreational facilities. The Reduced Permit Term Alternative would provide limited park and recreational facility benefits by providing nature trails in some preserves established during the 30-year permit term, designed in a manner consistent with AMMs NATURE TRAIL-1 through NATURE TRAIL-5. Additional trails would likely be constructed within preserves that are established as mitigation for project impacts in years 31–50 of the EIS/EIR study period. Therefore, because the incremental effect of the Reduced Permit Term Alternative on parks and recreational facilities would not be discernibly different from the incremental effect of the No Action/No Project Alternative, the Reduced Permit Term Alternative would result in **No Cumulative Effect** (when compared to the future No Action/No Project baseline condition).

12.2.4.5 Energy

Direct and Indirect Effects of the Alternative

The Reduced Permit Term Alternative includes the types of urban development that are anticipated under the No Action/No Project Alternative. However, under the Reduced Permit Term Alternative, urban development would not be displaced or shifted to areas outside the UDA (Section 2.3) that may not be served by existing natural gas or electrical infrastructure. Impacts associated with expanding natural gas and electrical supply infrastructure to serve urban development would be somewhat less under the Reduced Permit Term Alternative than the No Action/No Project Alternative. Therefore, urban development under the Reduced Permit Term Alternative would have a **Minor Beneficial** effect on energy as compared to the No Action/No Project Alternative baseline condition.

Energy infrastructure under the Reduced Permit Term Alternative could be expanded, extended, or located as envisioned by the Sacramento County and Rancho Cordova General Plans' Public Facilities Elements and local energy providers' master plans. The regional energy infrastructure plans follow the growth and land use plans laid out in the general plans, and the Reduced Permit Term Alternative would be consistent with these general plans. Therefore, urban development under the Reduced Permit Term Alternative would have a **Minor Beneficial** effect on planned development of energy infrastructure as compared to the No Action/No Project Alternative baseline condition.

Similar to the No Action/No Project Alternative, preserve management and maintenance activities would not generate an increase in demand for energy because they do not introduce new urban uses or people. Therefore, the Reduced Permit Term Alternative preserves would have **No Effect** on energy demand or planned development of energy infrastructure as compared to the No Action/No Project Alternative baseline condition.

Significance of Direct and Indirect Effects

In summary, when compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would:

- Reduce the potential for impacts associated with building new electric or natural gas infrastructure to meet demands of urban development outside the UDA;
- Reduce the potential for urban development patterns to conflict with regional energy infrastructure plans; and
- Result in similar demand for electricity and natural gas service due to similar total amounts of urban development within the Planning Area.

Therefore, after considering the significance of impacts from the Reduced Permit Term Alternative on the energy impact criteria, the Reduced Permit Term Alternative would result in **Minor Beneficial** effects on energy when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

Cumulative Effects of the Alternative

As discussed in Section 3.7.1 and Section 12.2.1, past and present urban development and associated infrastructure projects and activities have occurred in the EIS/EIR Planning Area, especially within the UDA. Energy demands of these past and present projects and activities have been met by energy providers through additional energy generation and development of new energy transmission infrastructure.

Reasonably foreseeable future projects in the EIS/EIR Planning Area that would further increase energy demand include expansion of Rancho Murieta development, urban development in the Elk Grove SOI, development of the Wilton Rancheria Casino, construction of the high-speed rail, and the California WaterFix projects (Section 3.7.2).

The additional increment of energy demand generated by those reasonably foreseeable other projects would be accommodated by utility providers by purchasing additional electricity or natural gas on the open market and by constructing additional infrastructure. Any additional infrastructure required for these projects would be developed by the utility providers and would generally be located within existing County, city, or utility rights-of-way to minimize

impacts. The effects of the demand for energy and energy infrastructure from past, present, and reasonably foreseeable other projects would be a less than significant cumulative effect.

The additional development from urban development under the Reduced Permit Term Alternative would offset its impacts similarly, through payment of usage fees. Because the Reduced Permit Term Alternative would include an Aquatic Resources Plan and expedited permitting process for aquatic resources, proponents constructing or expanding energy infrastructure would be less likely to have to develop alternative routes to avoid wetlands and waters. Generally, development of utility infrastructure within the SSHCP preserve system could occur, as long as those projects complied with SSHCP AMMs. Therefore, because the incremental effect of the Reduced Permit Term Alternative on energy would not be discernibly different from the incremental effect of the No Action/No Project Alternative, the Reduced Permit Term Alternative would result in **No Cumulative Effect** (when compared to the future No Action/No Project baseline condition).

12.2.4.6 Mosquito Abatement

Direct and Indirect Effects of the Alternative

Covered Activities under the Reduced Permit Term Alternative include the types of urban development that are anticipated under the No Action/No Project Alternative. However, the Reduced Permit Term Alternative would result in more development in the MCRA than the No Action/No Project Alternative (refer to Section 2.2.2). This would allow urban development Covered Activities within the MCRA and the rest of the UDA to be implemented in a manner consistent with the approved general plans of Sacramento County and Rancho Cordova and Galt, with the only Covered Activity urban development beyond the UDA being road and pipeline projects that would also occur under the No Action/No Project Alternative. Funding for mosquito abatement would continue to be provided by the additional property taxes and other assessments on new development, so any additional demand for mosquito abatement would be met. There is no reason to expect that urban development under the Reduced Permit Term Alternative would result in greater or less exposure to mosquitos for people than the No Action/No Project Alternative. Therefore, impacts associated with the potential for urban development to create breeding areas for mosquitos or increase human populations near mosquito breeding areas would be largely the same as described for the No Action/No Project Alternative (Section 12.2.2.6). Therefore, urban development under the Reduced Permit Term Alternative would have **No Effect** on mosquito abatement as compared to the No Action/No Project Alternative baseline condition.

The Reduced Permit Term Alternative includes a preserve system established during the 30-year permit term and a comprehensive preserve management program for those preserves.

The Reduced Permit Term Alternative would include the re-establishment and establishment of 413 acres of vernal pools, approximately 91 more acres than under the No Action/No Project Alternative. The Reduced Permit Term Alternative would also re-establish and/or establish 213 more acres of seasonal wetland, freshwater marsh, and/or open water within the Planning Area compared to the No Action/No Project Alternative. Re-established and/or established aquatic resources would be closely monitored to ensure that they meet success criteria as agreed on by the U.S. Army Corps of Engineers and that they remain functional as habitat for Covered Species. There is a potential for unhealthy existing or re-established/established aquatic resources to create an environment conducive to mosquito breeding. The coordinated monitoring and management program under the Reduced Permit Term Alternative would reduce the chances that existing, re-established, or established aquatic resources would be unhealthy and provide breeding habitat for mosquitos by controlling species such as the non-native plant *Glyceria declinata*. Therefore, the Reduced Permit Term Alternative preserve system would result in a **Less Than Significant Adverse** effect on mosquito abatement when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

Significance of Direct and Indirect Effects

In summary, when compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would:

- Potentially create more new breeding areas for mosquitos, but would include monitoring and management to ensure that aquatic resources do not generate substantial populations of mosquitos and affect public health; and
- Potentially restrict mosquito abatement activities within preserves, but would include monitoring and management to ensure that aquatic resources do not generate substantial populations of mosquitos and affect public health.

Therefore, after considering the significance of impacts from the Reduced Permit Term Alternative on the mosquito abatement impact criteria, the Reduced Permit Term Alternative would result in **Less Than Significant Adverse** effects on mosquito abatement when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

Cumulative Effects of the Alternative

Past and present projects and activities in the cumulative study area relevant to mosquito abatement include many decades of urban development within a natural floodplain that contains many seasonal wetlands and other waters. Mitigation for impacts of past and present urban development has included avoidance of wetlands, establishment of on-site preserves,

and on-site establishment of wetlands. This development and mitigation pattern has exposed residents of urban development to mosquito populations that breed in wetland areas and in poorly designed or managed stormwater systems.

Reasonably foreseeable other projects such as urban development in the Elk Grove SOI or Rancho Murieta (Section 3.7.2) and elsewhere in the cumulative study area, such as the community of Natomas, the City of Folsom, or the City of Davis, would increase human populations near existing wetlands and vernal pools. In addition, this urban development would increase impermeable surfaces and contribute urban runoff to drainage structures that can stagnate and create breeding habitat for mosquitos. However, this urban development in the cumulative study area would also remove wetlands and vernal pools, potentially reducing existing breeding areas for mosquitos. Under most circumstances, creation or expansion of mosquito breeding habitat can be avoided or minimized through proper planning and design or maintenance elements. Increased demand on the Sacramento–Yolo Mosquito and Vector Control District for mosquito abatement services would be offset through increased funding of the District. The District is funded through property taxes and other assessments based on property value, and urban development of currently undeveloped land would substantially increase the assessed value of parcels. That increased parcel value would increase property taxes and thus increase funding for the District. Therefore, less than significant adverse cumulative impacts would result from past, present, and reasonably foreseeable other projects.

The Reduced Permit Term Alternative would contribute to cumulative impacts on mosquito abatement by establishing new aquatic resources and potentially making it more difficult to conduct mosquito abatement activities on preserves. However, the preserve system would be carefully monitored and managed to avoid the aquatic resource conditions conducive to mosquito breeding. Further, funding for mosquito abatement would continue to be provided by the additional property taxes and other assessments on new development, so additional demand for mosquito abatement would be met. Therefore, because the incremental effect of the Reduced Permit Term Alternative on mosquito abatement would be somewhat more than the incremental effect of the No Action/No Project Alternative, the Reduced Permit Term Alternative would result in a ***Less Than Significant Adverse Cumulative*** effect (when compared to the future No Action/No Project baseline condition).

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CHAPTER 13 – TRAFFIC AND CIRCULATION

This chapter presents the environmental effects of each Environmental Impact Statement/ Environmental Impact Report (EIS/EIR) alternative on traffic and circulation within the Planning Area. The analysis focuses on impacts to transportation systems that support the movement of goods and people. These systems include roads and freeways that support motorized vehicles; railways; public transit; and nonmotorized travel, including bicycles and pedestrians.

Environmental effects on airports are addressed in Chapter 4, Land Use. Environmental effects on recreation trails are discussed in Chapter 12, Public Services and Facilities, as a component of the recreation facilities available in the Planning Area.

13.1 AFFECTED ENVIRONMENT/ENVIRONMENTAL SETTING

This section describes the regulatory and physical environmental setting for traffic and circulation within the Planning Area.

13.1.1 Regulatory Framework

Several federal, state, and local agency requirements apply to traffic and circulation within the Planning Area. This section summarizes the statutes, regulations, policies, and agency planning documents that are relevant to the approval, issuance of permits, or implementation of the alternatives analyzed in this EIS/EIR. This section also identifies any relevant federal permits or other entitlements that must be obtained prior to implementing the chosen alternative. To the extent possible, the analyses or studies required by these regulations and policies are integrated into the environmental effects analyses presented in Section 13.2 (40 CFR 1502.25).

13.1.1.1 Federal and State

California Department of Transportation

In California, the Federal Highway Administration has delegated some authority for the federal highway system to the California Department of Transportation (Caltrans). Therefore, Caltrans is responsible for the planning of, operating, and maintaining the federal and state highway systems within the Planning Area (e.g., Interstate [I] 5 and State Route [SR] 99). The role of Caltrans has also evolved to oversee funding and technical assistance for passenger rail and public transit throughout the state. Any potential encroachment by development or infrastructure projects onto the land or the rights-of-way of Caltrans must be reviewed and approved by Caltrans. Planned development or infrastructure projects, such as some SSHCP transportation Covered Activities, must be reviewed by Caltrans to assess potential effects on the operation and safety of the federal or state highway system, as well as to local roads, railroads, public transit, and aeronautics facilities under Caltrans' authority.

The Caltrans SR-99 and I-5 Corridor System Management Plan (Caltrans 2009) and the SR-99 Transportation Corridor Concept Report (Caltrans 2010) provide long-range planning for SR-99 and I-5 within Sacramento, Sutter, and Butte Counties over the next 20 years.

California Public Utilities Commission

In addition to the role the California Public Utilities Commission plays in overseeing energy facilities in California (see Chapter 12), it also oversees the safety of railroads, rail crossings, and light-rail transit systems, including highway rail crossings, and has permit authority over all new rail crossings.

13.1.1.2 Regional

Sacramento Area Council of Governments

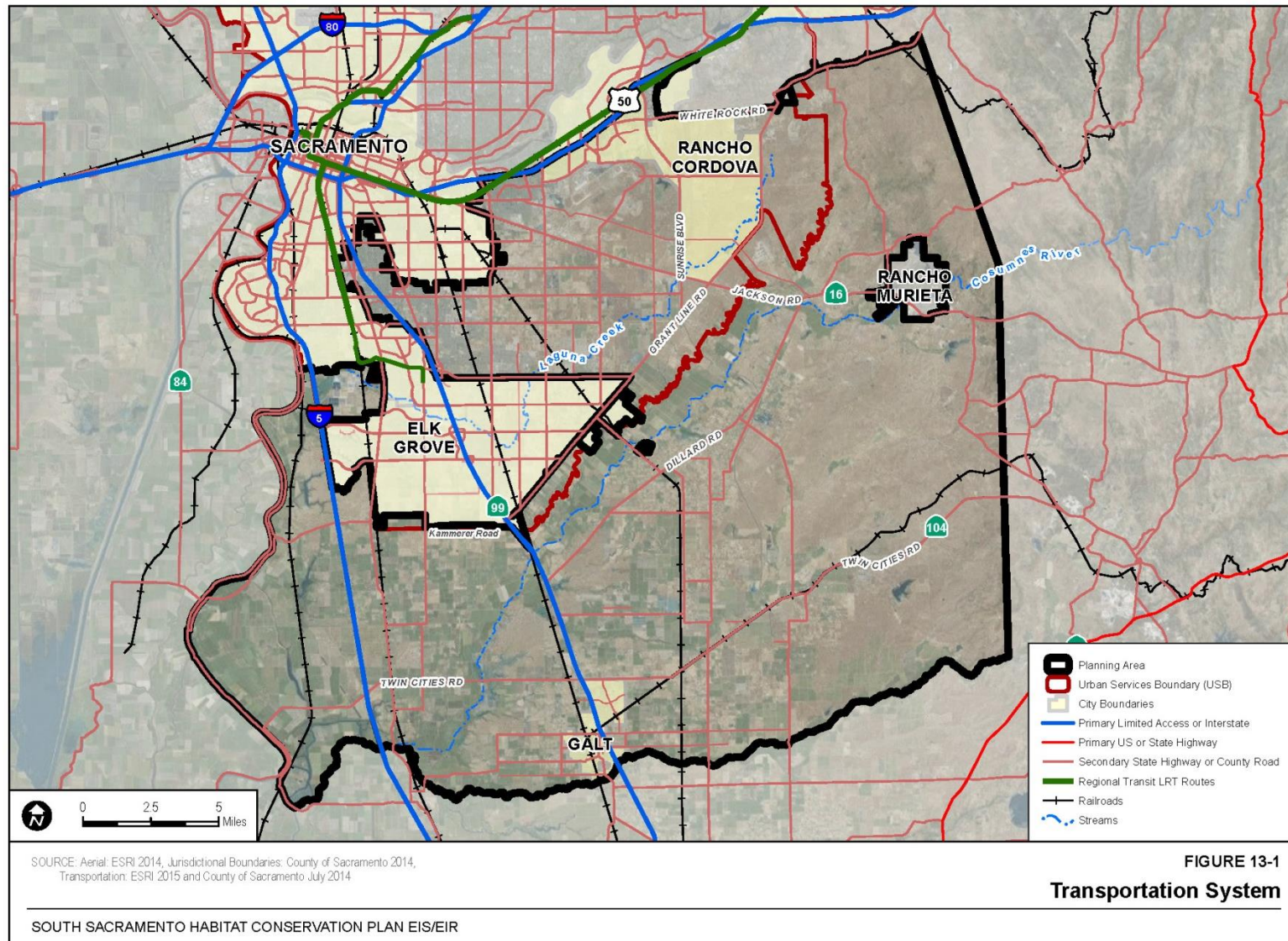
The Sacramento Area Council of Governments (SACOG) is an association that includes the Counties of El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba, as well as 22 cities, including the proposed Plan Permittees of Galt and Rancho Cordova. As a metropolitan transportation organization, SACOG is required to prepare a long-range transportation plan for all modes of transportation—including public transit, automobiles, bicycles, and pedestrians—every 4 years for the six-county area. Refer to Section 3.4.4 for a description of the Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) 2035 (SACOG 2016a) and its associated EIR (SACOG 2016b).

Sacramento Regional Transit District

The Sacramento Regional Transit District oversees bus and light-rail transit within the region, covering a 418-square-mile service area that includes Sacramento, Elk Grove, Citrus Heights, Rancho Cordova, and Folsom, as well as unincorporated Sacramento County. The existing passenger light-rail transit system consists of the Blue Line, Green Line, and Gold Line. The Gold Line and Blue Line link the northern, eastern, and southern areas in Sacramento County to downtown Sacramento. The Green Line serves downtown Sacramento. A small portion of the Gold Line is within the Planning Area (running roughly parallel to U.S. Highway 50 within the Urban Services Boundary [USB]) (see Figure 13-1, Transportation System).

In addition, the Sacramento Regional Transit District provides bus service between Sacramento and Rancho Cordova, and recently opened the Blue Line extension from the Meadowview Station south to Cosumnes River College in Sacramento (Sacramento County Regional Transit 2015). See Section 13.1.2 for more detail regarding the existing bus and light-rail transit system within the Planning Area.

Figure 13-1 Transportation System



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13.1.1.3 Local

Sacramento County

The Sacramento County Department of Transportation is responsible for the planning, construction, maintenance, and operation of streets, roads, and bike trails in the unincorporated areas of Sacramento County.

Sacramento County provides Improvement Standards (Sacramento County 2006) that regulate and guide the design and construction of streets, highways, alleys, and roadway drainage systems. Design parameters include specifications for turning movements, intersections, lighting, sidewalks, landscaping, emergency vehicle access, and clearance. The Improvement Standards provide detailed design specifications to ensure that all Sacramento County roadways meet safety and functionality requirements by roadway type.

Sacramento County's Standard Construction Specifications (Sacramento County 2008) provides specific guidance to ensure safe vehicle, pedestrian, and bicycle access is provided for development projects that affect roadways and public safety. The Standard Construction Specifications also addresses traffic control for construction work that affects roadway access, and requires project proponents to prepare a traffic control plan consistent with the current California Manual on Uniform Traffic Control Devices.

Sacramento County 2030 General Plan Circulation Element. The Sacramento County General Plan Circulation Element (Sacramento County 2011a) outlines a transportation system that will move people and goods in a safe, efficient way that minimizes environmental effects, supports urban land uses, and serves rural needs. The Circulation Element contains goals, policies, and implementation programs that apply to Sacramento County's transportation system.

Pedestrian Master Plan. The Sacramento County Pedestrian Master Plan (SACDOT 2007) identifies methods to improve pedestrian connectivity and pedestrian safety within the public right-of-way within unincorporated Sacramento County.

Bicycle Master Plan. The Sacramento County Bicycle Master Plan (Sacramento County 2011b) identifies existing and planned bicycle routes throughout Sacramento County. The Bicycle Master Plan was developed to serve the recreational and transportation needs of the public, and to reduce the amount of vehicle emissions and therefore improve air quality (Sacramento County 2011b). Class II bikeways are present along some roadways within the Planning Area. The Bicycle Master Plan anticipates that future bikeways would be developed concurrently with planned urban development within the Sacramento County USB.

Galt

Galt follows the guidance of the Sacramento County Improvement Standards and Standard Construction Specifications, as discussed earlier (Galt 2012). However, in some cases, Galt modified these standards to better fit its needs. Galt's Improvement Standards ensure that roadway safety and access for all modes of transportation occur during the design phase and once an improvement project is underway (Galt 2007).

2030 Galt General Plan Circulation Element. The Circulation Element in the Galt General Plan (Galt 2009a) includes goals, policies, and actions designed to guide and implement Galt's future circulation system as it grows. Goals and policies address the roadway network, transit facilities and services, and bicycle and pedestrian facilities, including lands within the Planning Area.

Galt Bicycle Transportation Plan. The Galt Bicycle Transportation Plan encourages development of Galt's future bikeway network, consistent with the Galt General Plan (Galt 2009a). The Galt Bicycle Transportation Plan (Galt 2011) includes planned Class II bike lanes within Galt's sphere of influence and the Planning Area to connect to existing bicycle facilities.

Rancho Cordova

Similar to Galt, Rancho Cordova follows the Sacramento County Improvement Standards and Standard Construction Specifications discussed earlier (Rancho Cordova 2015). In addition, Rancho Cordova has prepared general guidance on the design, width, and geometry of different roadway types, intersections, overpasses, pedestrian and bikeway facilities, and street signs (Rancho Cordova 2015). Chapter 22.110 of the Rancho Cordova Municipal Code also includes design and improvement standards for all types of roadways within Rancho Cordova to ensure that all roads are designed to be functional and to allow the safe passage of all modes of transportation.

Rancho Cordova General Plan Circulation Element. The Rancho Cordova General Plan Circulation Element (Rancho Cordova 2006a) establishes goals, policies, and actions that will guide Rancho Cordova's future circulation system, including the roadway network, transit facilities and services, and bicycle and pedestrian facilities within the USB.

Transit Master Plan. The purpose of the Transit Master Plan (Rancho Cordova 2006b) is to provide a multimodal approach to support mobility as presented in the General Plan. The Transit Master Plan outlines a system of city, neighborhood, and regional services.

Bicycle Master Plan. The Rancho Cordova Bicycle Master Plan (Rancho Cordova 2011) maps a system of bike paths and bike lanes that encourages bicycle commuting and recreational activities. This Bicycle Master Plan focuses on expanding the existing bicycle network (see

Section 13.1.2) in developed areas and outside of existing developed areas within the USB to provide bicycle access to existing and future activity centers, light-rail, and the existing American River Parkway. The Bicycle Master Plan describes and maps future bike routes and regional bicycle trails along Upper Laguna Creek and in the eastern and southern portions of Rancho Cordova, east of Sunrise Boulevard, in coordination with future development plans.

13.1.2 Existing Traffic and Circulation

This section describes the existing roadway network, transit system, and bikeway system that serve the Planning Area. Figure 13-1 shows the major roadways, light-rail transit, and heavy-rail transportation network in and around the Planning Area. (Due to the scale of the map, it does not include local roadways or bikeway facilities in the Planning Area.)

13.1.2.1 Existing Roadway Network in the Planning Area

Major Roadways

Major roadways carry large volumes of vehicle traffic in the Planning Area and typically connect cities and communities. I-5 and SR-99 are the two major highways running north–south in the Planning Area. U.S. Highway 50, serving east–west traffic, is located on the northern edge of the Planning Area. SR-16 (Jackson Road) and SR-104 (Twin Cities Road) cross the Planning Area and also provide east–west connectivity (see Figure 13-2, Existing Roadways within Unincorporated Sacramento County).

Other major roadways within the Planning Area are four-lane thoroughfares or heavily used two-lane arterial roads, including Folsom Boulevard, White Rock Road, Gerber Road, Kiefer Boulevard, Scott Road, Lone Road, Excelsior Road, Bradshaw Road, Vineyard Road, Elk Grove-Florin Road, South Watt Avenue, French Road, Power Inn Road, Stockton Boulevard, Florin Road, Jackson Highway, Grant Line Road, Calvine Road, Wilton Road, Dillard Road, Clay Station Road, Hood-Franklin Road, Bruceville Road, Franklin Boulevard, and Twin Cities Road (see Figure 13-2).

Within Galt, existing major roadways include Twin Cities Road (SR-104), Walnut Avenue, Elm Avenue, Simmerhorn Road, Boessow Road (C Street), A Street, New Hope Road, Lincoln Way, and Carillion Boulevard (see Figure 13-3, Existing Roadways within Galt).

Within the portion of Rancho Cordova located within the Planning Area, existing major streets include Sunrise Boulevard, White Rock Road, International Drive/Mather Field Road, Douglas Road, Grant Line Road, Zinfandel Drive, Rancho Cordova Parkway/Jaeger Road, Folsom Boulevard, Nike Road, and Bradshaw Road (see Figure 13-4, Existing Roadways within Rancho Cordova).

Local Roadways

Local roadways include smaller collector streets, residential streets, and unimproved agricultural roads. Examples of local roadways in the eastern portion of the Planning Area within and outside of the USB include Eagles Nest Road, Latrobe Road, and numerous agricultural roads. Examples of local roadways in Galt include McFarland Street, Pringle Avenue, and F Street. Examples of local roads in Rancho Cordova include Jaeger Road, Nike Road, and Fitzgerald Road.

13.1.2.2 Public Transit in the Planning Area

The Sacramento Regional Transit District operates a bus and light-rail transit system in the Sacramento County area. A short segment of the light-rail system enters and exits the north end of the Planning Area in Rancho Cordova around where Sunrise Avenue crosses U.S. Highway 50. No adopted plans identify additional future light-rail routes within the Planning Area.

Galt and Rancho Cordova both provide bus service that consists of intercity service; connections to light-rail transit system stations; and service to Lodi, Elk Grove, and Sacramento.

13.1.2.3 Bicycle Network in the Planning Area

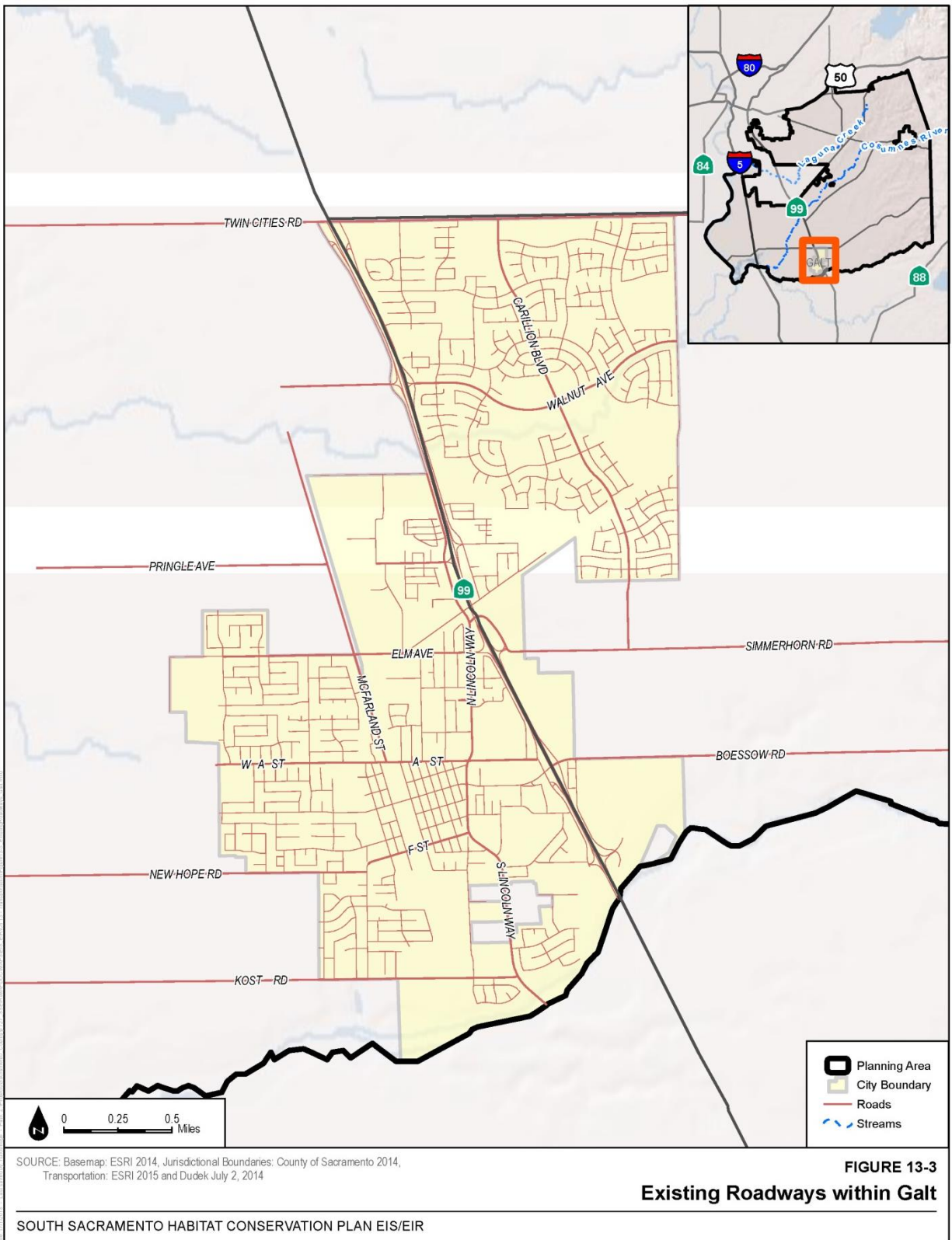
Existing bicycle facilities within the Planning Area consist of Class I, Class II, and Class III facilities. Class I Bikeways provide a separated right-of-way for the exclusive use of bicycles and pedestrians, with crossflow by motorists minimized. Class II Bikeways (Bike Lanes) provide a striped lane for bicycles on a street or highway. Class III Bikeways (Bike Routes) provide for shared use with pedestrian or motor vehicle traffic.

13.1.2.4 Railroads in the Planning Area

In addition to the existing light-rail transit system operated by the Sacramento Regional Transit District, rail service in the Planning Area is operated by Union Pacific, which provides freight service, and Amtrak, which provides passenger service. Existing major rail lines are shown in Figure 13-1. There are approximately 154 railroad crossings at existing roadways within the Planning Area (CPUC 2012). Of these, more than 100 are at-grade crossings, meaning that the roadway and railroad tracks are not separated by an overcrossing.

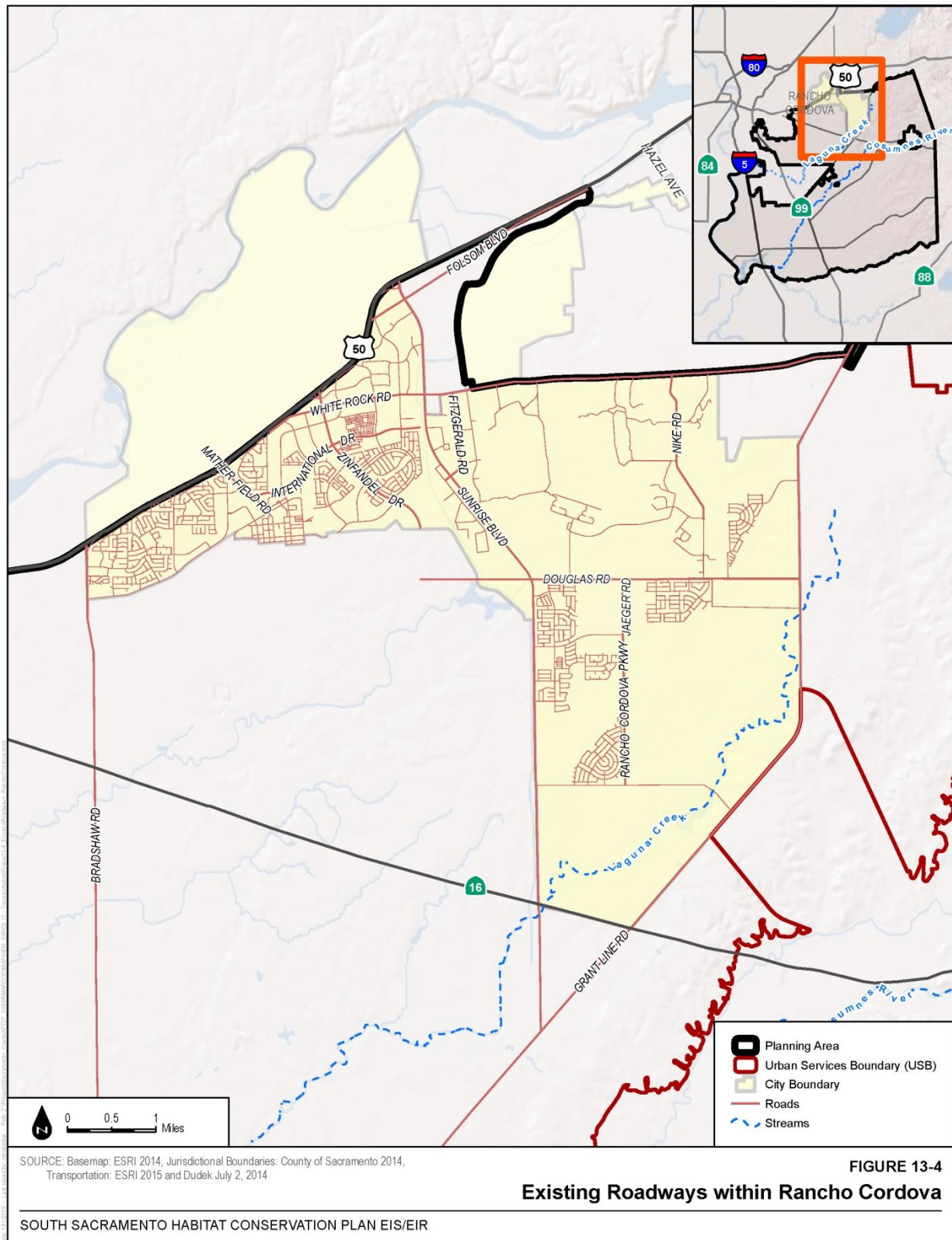
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Figure 13-3 Existing Roadways within Galt



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Figure 13-4 Existing Roadways within Rancho Cordova



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13.2 ENVIRONMENTAL CONSEQUENCES/ ENVIRONMENTAL IMPACTS

13.2.1 Methodology for Assessing Effects of Each Alternative on Traffic and Circulation

As described in Section 3.6, the Environmental Consequences/Environmental Impacts section describes the potential impacts of the actions and projects associated with each EIS/EIR alternative on transportation and circulation in the Planning Area. As described in Section 3.6, impacts of the No Action/No Project Alternative are described and analyzed relative to the existing conditions (see Section 13.1.2, above). The impacts of the two action alternatives were described and analyzed relative to the expected No Action/No Project Alternative future conditions (see Section 3.6.1).

Potential ways that an EIS/EIR alternative could affect the transportation system would be by increasing overall usage of the system, encouraging growth in areas where the transportation system is not designed to accommodate that growth, impeding development of planned transportation infrastructure, or damaging existing or planned transportation infrastructure.

The locations of vernal pools and other aquatic resources could require adjustments to the routes of planned roadways within the Mather Core Recovery Area (MCRA) under some alternatives. To identify areas where these adjustments might be required, the lead agencies used GIS methodology, described in Section 3.6.5. Potential impacts to existing transportation plans from establishing new preserves (see Sections 2.2.2, 2.3.1, and 2.4.1) were also determined for each alternative using the GIS methods described in Section 3.6.5.

The level of additional vehicle trips assumed for preserve activities under each alternative was estimated, including expected re-establishment/establishment of vernal pools and other aquatic landcovers, and preserve maintenance activities. The lead agencies then qualitatively determined if the transportation infrastructure could accommodate this temporary traffic increase and determined if substantial congestion or safety issues could occur.

Because traffic patterns and transportation facilities are interconnected over a large region, the lead agencies determined that the study area for determining the cumulative effects of each EIS/EIR alternative on traffic and transportation resources should extend beyond the EIS/EIR Planning Area boundary (see discussion in Section 3.6.2). The lead agencies determined that the SACOG six-county region (Sacramento, Yolo, Sutter, Yuba, Placer, and El Dorado Counties) is the appropriate study area for evaluating cumulative effects to traffic and transportation resources. The effects on traffic and circulation of future urban development within the six-county region, including past, present, and reasonably foreseeable future projects, were

evaluated in the analysis of the EIRs mentioned in Section 3.4 (Connector JPA 2012; Galt 2009b; Rancho Cordova 2006c; SACOG 2016b; Sacramento County 2010). The traffic impact analyses included in each of these EIRs used SACOG traffic models, and thus reflected regional traffic impacts. Due to the interconnected nature of the transportation system within the six-county region, planning-level transportation impact analyses take into account vehicle trip generation from land uses within the larger region and, therefore, reflect the cumulative condition. For this reason, the description of existing and future traffic conditions in each alternative is the cumulative condition. Therefore, a separate cumulative effects discussion is not included for any alternative in this chapter.

As discussed in Section 3.8.1, the criteria used to evaluate the significance of each alternative's effects on traffic and circulation are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines, and on typical thresholds used to evaluate effects in recent EIRs prepared by Sacramento County. Based on these sources, a significant adverse effect could occur if the alternative would:

1. Result in a substantial increase in traffic compared to baseline traffic volumes and the capacity of the road system;
2. Result in a substantial adverse impact to public safety on area roadways;
3. Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks);
4. Result in a substantial adverse impact to access and/or circulation;
5. Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system;
6. Conflict with an applicable congestion management program;
7. Substantially increase hazards due to design features or incompatible uses; and/or
8. Result in inadequate emergency access.

Appendix G of the CEQA Guidelines does not provide suggested criteria for determining a beneficial effect. The following criteria were developed by the lead agencies. A beneficial effect could occur if the alternative would:

1. Result in a substantial decrease in traffic compared to the baseline traffic volumes and the capacity of the road system;
2. Result in improved public safety on area roadways;
3. Reduce existing conflicts with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks);
4. Result in improved access and/or circulation;

5. Reduce existing conflicts with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system;
6. Reduce an existing conflict with an applicable congestion management program;
7. Substantially reduce hazards due to design features or incompatible uses; and/or
8. Result in improved emergency access.

The impact analysis for the three EIS/EIR alternatives consider the context, intensity, and severity of potential effects to each of the impact criteria above, and present a separate determination of significance for each of these criteria.

13.2.2 No Action/No Project Alternative

The No Action/No Project Alternative is described in Section 2.2 of Chapter 2.

13.2.2.1 Direct and Indirect Effects of the Alternative

The effects on traffic and circulation of future urban development within the six-county region, including the Planning Area, were evaluated in the analysis of the EIRs mentioned in Section 3.4. As discussed above in Section 13.2.1, the relevant analyses from each of these EIRs are summarized and incorporated by reference into the analysis of the No Action/No Project Alternative.

The impact analysis presented in the Final Environmental Impact Report: Sacramento County General Plan Update¹ (Sacramento County General Plan EIR) (Sacramento County 2010) determined that within Sacramento County:

- Increased traffic and resulting demand on the circulation network would result in significant unavoidable impacts to roadway levels of service and transit, and
- Urban development envisioned in the Sacramento County General Plan and associated traffic would not adversely affect bicycle and pedestrian facilities or transportation-related safety issues, resulting in less-than-significant impacts to public safety (Sacramento County 2010, pp. 1-20 to 1-26, and pp. 9-1 to 9-93).

¹ As described further in Section 3.4.1, the proposed project analyzed within the Sacramento County General Plan EIR assumed development within a designated “Jackson Highway Corridor New Growth Area” that was not a part of the alternative ultimately selected by Sacramento County. However, Sacramento County is currently processing Master Plans in the Jackson Highway Corridor, so the referenced conclusions from the proposed project analysis are relevant to the No Action/No Project Alternative.

The impact analysis presented in the City of Galt General Plan Update: 2030 Final EIR (Galt General Plan EIR) (Galt 2009b), determined that within the Galt sphere of influence:

- Urban development described in the Galt's General Plan would result in significant unavoidable impacts to the existing street system and traffic would exceed Galt's level of service standard through planning horizon year 2030, and
- Urban development would not result in significant impacts to regional transportation facilities through compliance with policies contained in the Land Use, Circulation, and Conservation and Open Space Elements of the Galt General Plan (Galt 2008, pp. 5-17 to 5-25).

The Galt General Plan EIR did not address transportation-related safety issues (Galt 2009a).

The impact analysis presented in the City of Rancho Cordova General Plan Final EIR (Rancho Cordova General Plan EIR) (Rancho Cordova 2006c), determined that within Rancho Cordova:

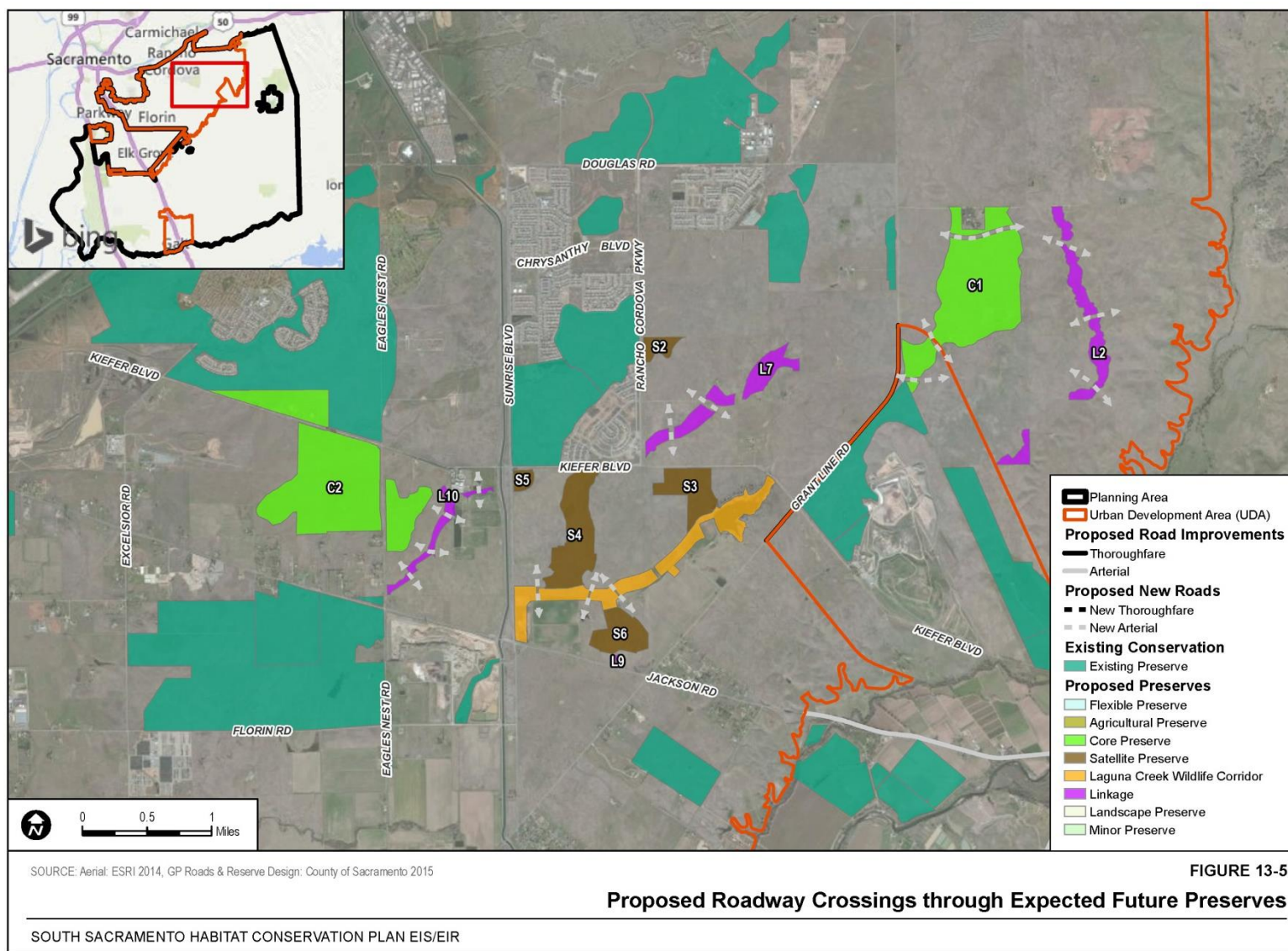
- New urban development would increase demand on the existing circulation network as well as generate an increase in traffic that would result in significant unavoidable impacts to roadway levels of service through the planning horizon year of 2050, and
- Less-than-significant impacts would occur to transit, pedestrian, and bicycle systems through compliance with General Plan policies and actions. In addition, safety conflicts would be less than significant with Rancho Cordova General Plan policies and actions (Rancho Cordova 2006c, pp. 4.5-6 to 4.5-60).

The type and extent of effects to the existing transportation system of smaller developing communities within the SACOG six-county region are described in the SACOG MTP/SCS EIR as being similar to the impacts identified in the Sacramento County General Plan EIR, Galt General Plan EIR, and Rancho Cordova General Plan EIR, and were also determined to be significant and unavoidable (SACOG 2016b).

The impact analysis presented in the Capital SouthEast Connector Final Program EIR (Connector JPA 2012) determined that the Capital Southeast Connector (shown in Figure 13-5, Proposed Roadway Crossings through Expected Future Preserves) would do the following:

- Result in significant unavoidable impacts to level of service and traffic volumes on nearby roadway segments and intersections during operation.
- Result in less-than-significant impacts on local freeways, pedestrian and bicycle facilities, and transit due to increased traffic volumes, and therefore level of service.
- Not result in transportation-system-related safety impacts (Connector JPA 2012, pp. 16-1 to 16-66).

Figure 13-5 Proposed Roadway Crossings through Expected Future Preserves



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As discussed in Section 3.4 and above Section 13.1.1.3, the three General Plan EIRs used different study periods: ending in 2030 (Galt 2009b; Rancho Cordova 2006c) and 2050 (Sacramento County 2010). The 50-year study period for this EIS/EIR ends in 2065 (Section 3.6.3). Additional urban development can be expected to occur within Galt, Rancho Cordova, and Sacramento County in the years after their General Plan EIR study periods end, and until this EIS/EIR's study period ends in 2065. Therefore, the impact analyses and conclusions incorporated from the three General Plan EIRs may not have considered all of the future urban development that is included in the project description of each EIS/EIR alternative. Consequently, when determining the significance of each impact described in this EIS/EIR, the lead agencies considered the impact analysis and the conclusions incorporated by reference from the General Plan EIRs, along with the effects of all urban development activities and projects included in the description of each EIS/EIR alternative.

The additional urban development that would occur after the study periods of the EIRs described above end would result in additional impacts on local and regional circulation systems because the projected increase in vehicle trips would exceed the capacity of the existing and planned roadways.

As explained in Section 2.2, approximately 1,900 acres of planned urban development would be shifted or displaced to locations outside the Urban Development Area (UDA)² under the No Action/No Project Alternative. This shifted or displaced development would be remote from commercial and employment centers such as Sacramento and Rancho Cordova, and would result in longer or increased vehicle trips, greater demand on transit to serve outlying areas, and increased overall demand on the local and regional transportation system. Increased vehicle trips and vehicle miles traveled would contribute further to the already significant, unavoidable effects to existing traffic, circulation, transportation facilities, and transit described in the EIRs above (Connector JPA 2012; Galt 2009b; Rancho Cordova 2006c; SACOG 2016b; Sacramento County 2010).

As explained in Section 2.2.2, under the No Action/No Project Alternative, mitigation for effects to listed species or aquatic resources from new urban development would continue to require avoidance, minimization, and compensatory mitigation for effects that cannot be avoided. As discussed in Section 2.2.2, project Clean Water Act 404 compensatory mitigation and/or federal and California Endangered Species Act mitigation under the No Action/No Project Alternative

² As discussed in Section 1.1.1, the term Urban Development Area (UDA) is used by the EIS/EIR to discuss all lands where urban development Covered Activity projects or activities could occur under the action alternatives. Therefore, the term "UDA" means all lands within Sacramento County's Urban Services Boundary that are also within the Planning Area (including lands within the Rancho Cordova city limits that are within the Planning Area), all lands within Galt's city limits, and all lands within Galt's sphere of influence (see Figure 1-1).

could include purchase of credits at existing mitigation banks, payment of in-lieu fees, and/or establishment of on-site or off-site preserves by the permittee. Under the No Action/No Project Alternative, there would be no comprehensive plan in place to mitigate potential project impacts to aquatic resources and special-status species associated with construction or expansion of roadways in the Planning Area. Projects would be required to mitigate impacts on a project-by-project basis, and mitigation for project impacts in the MCRA would require greater levels of avoidance and preservation. If mitigation sites are not available in the MCRA, some road projects in the MCRA may not be able to proceed. If segments of roadways are not expanded or extended as envisioned by Sacramento County's and Rancho Cordova's General Plan Circulation Elements, increased congestion on and reduced functionality of these regional circulation systems may occur. This would be a significant adverse effect to existing transportation and circulation plans.

Management of preserves established under the No Action/No Project Alternative would include a variety of habitat management activities that would cause vehicle trips, such as transporting livestock for grazing management, repairing fences, and visits by preserve managers for maintenance and monitoring. Some habitat re-establishment or establishment activities may also require heavy equipment and the associated crews to use local roadways. These activities would result in localized, temporary effects to the local roadway and bikeway systems. However, vehicle trips associated with preserves would be infrequent and intermittent, would occur throughout the day, and would not be focused on peak traffic periods (i.e., commute hours). In addition, these preserve operation and maintenance activities would be similar in frequency, location, and intensity to the existing agricultural and ranching activities that occur on the lands under existing conditions. The minimal increase in traffic from preserve activity would not add appreciably to the significant and unavoidable effects identified in the General Plan EIRs.

13.2.2.2 Cumulative Effects of the Alternative

As described in Section 13.2.1, the future traffic effects analyzed in this EIS/EIR are, by definition, cumulative. Therefore, cumulative effects of the No Action/No Project Alternative on existing and future traffic and circulation are identical to the direct and indirect effects described in Section 13.2.2.1.

13.2.3 Proposed Action/Proposed Project Alternative

The Proposed Action/Proposed Project Alternative is described in Section 2.3.

13.2.3.1 Direct and Indirect Effects of the Alternative

Covered Activities under the Proposed Action/Proposed Project Alternative include the types of urban development that are anticipated under the No Action/No Project Alternative. However, the Proposed Action/Proposed Project Alternative would result in more development in the MCRA than the No Action/No Project Alternative (refer to Section 2.2.2). This would allow urban development Covered Activities within the MCRA and the rest of the UDA to be implemented consistent with the approved general plans of Galt, Rancho Cordova, and Sacramento County, with the only Covered Activity urban development beyond the UDA being road and pipeline projects that would also occur under the No Action/No Project Alternative. As a result, vehicle trips, demand on transit to serve outlying areas, and overall demand on the local and regional transportation system would be lower under the Proposed Action/Proposed Project Alternative than under the No Action/No Project Alternative. Urban development under the Proposed Action/Proposed Project Alternative would have a **Minor Beneficial** effect on traffic and circulation compared to the No Action/No Project Alternative baseline condition.

The Proposed Action/Proposed Project Alternative includes design requirements for future roadways. Avoidance and Minimization Measure (AMM) ROAD-1 would require transportation Covered Activities to adjust alignment of roadways to avoid aquatic resources and Covered Species habitat to the maximum extent feasible. AMM ROAD-2 would require construction of wildlife crossing structures when roadway projects occur in the vicinity of the Preserve System. Implementation of these AMMs could influence roadway safety, function, or operation. However, all roadway projects would be subject to the design standards of Galt, Rancho Cordova, and Sacramento County (Section 13.1.1). These standards ensure that roadway Covered Activities would be designed to maintain or provide roadway function and operation, and meet all safety requirements for vehicle, transit, and bicycle movement. There would be **No Impact** to traffic and circulation compared to the No Action/No Project Alternative baseline condition.

Under the Proposed Action/Proposed Project Alternative, project proponents constructing or expanding roadways in the MCRA would not be required to mitigate effects to aquatic resources or Covered Species habitat within the MCRA, as would occur under the No Action/No Project Alternative (see Sections 2.2.2 and 2.3.1). This difference would make it more likely that road projects in the MCRA under the Proposed Action/Proposed Project Alternative could be implemented consistent with Sacramento County and Rancho Cordova General Plans compared to the No Action/No Project Alternative. This would be a **Minor Beneficial** effect on conflicts with adopted transportation plans compared to the No Action/No Project Alternative baseline condition.

As discussed in Section 2.3.5, the Proposed Action/Proposed Project Alternative would include an interconnected and coordinated SSHCP Preserve System. The Preserve System would allow for the passage of planned roadways. In some instances, the roadway would be allowed to bisect an SSHCP Preserve. For example, the proposed Sun Creek Preserve (Linkage Preserve L7), the Laguna Creek Wildlife Movement Corridor Preserve, and Core Preserve C2 would be bisected by the extension of future roadways through each of these planned preserves (Figure 13-5). Therefore, future planned roadways, extensions of existing roadways, and roadway widening and improvements that are planned in the Sacramento County, Galt, and Rancho Cordova General Plan Circulation Elements would not be affected by the establishment of an interconnected Preserve System. Further, by allowing transportation infrastructure to be developed according to adopted plans, the Proposed Action/Proposed Project Alternative would not increase hazards by requiring changes in roadway design features or adversely affect emergency access. As discussed above in Section 13.2.1 under the No Action/No Project Alternative, planned roadways may need to be designed to avoid aquatic resources because those projects could not receive permits or authorizations to fill or remove wetlands and other waters. Therefore, the Proposed Action/No Project Alternative Preserve System would have a **Minor Beneficial** effect on conflicts with adopted transportation plans compared to the No Action/No Project Alternative.

Preserve management under the Proposed Action/Proposed Project Alternative would require a variety of habitat management activities, including transporting sheep, goats, or cattle for grazing management; repairing fences; wildlife or vegetation surveys; and other visits by preserve managers for maintenance and monitoring, all of which would entail vehicle trips in or around preserve areas. These trips would be few and intermittent, would occur throughout the day, and would not be focused on peak traffic periods (i.e., commute hours). Preserve management under the Proposed Action/Proposed Project Alternative would be more intensive than under the No Action/No Project Alternative. Therefore, preserve management under the Proposed Action/Proposed Project Alternative would result in a greater increase in vehicle trips compared to management of mitigation preserves expected under the No Action/No Project Alternative. However, the relative increase in trips would be minimal compared to existing traffic volumes, and the Proposed Action/Proposed Project Alternative Preserve System would have a **Less Than Significant Adverse** effect on traffic volumes, public safety, access, and circulation compared to the No Action/No Project Alternative baseline condition.

Habitat re-establishment/establishment activities in the Preserve System would generate vehicle trips, including heavy truck trips. Because the Proposed Action/Proposed Project Alternative would include more re-establishment/establishment than the No Action/No Project Alternative baseline condition, more vehicle trips would be generated. These activities could result in localized, temporary impacts to the local roadway and bikeway systems by introducing heavy equipment. However, these activities would be infrequent and short-term, and it is

unlikely that construction-related vehicle trips would occur during peak hours. Re-establishment or establishment of habitat would not result in a substantial increase in traffic; affect public safety on area roads; increase hazards due to design features or incompatible uses; or conflict with adopted plans, policies, or ordinances. Habitat re-establishment/establishment under the Proposed Action/Proposed Project Alternative would be a ***Less Than Significant Adverse*** effect on traffic and circulation compared to the No Action/No Project Alternative baseline condition.

13.2.3.2 Significance of Direct and Indirect Effects

Compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project Alternative would:

- Reduce vehicle trips, demand on transit to serve outlying areas, and overall demand on the local and regional transportation system by not resulting in displacement and shifting of urban development outside the UDA;
- Reduce potential conflicts with future planned roadways; extensions of existing roadways; and roadway widening and improvements that are planned in the Sacramento County, Galt, and Rancho Cordova General Plan Circulation Elements;
- Result in a minimal amount of additional vehicle trips for Preserve System management and monitoring; and
- Result in a minimal amount of additional heavy vehicle trips for Preserve System habitat re-establishment/establishment.

Therefore, after considering the significance of effects from the Proposed Action/Proposed Alternative on all of the traffic and circulation criteria, the Proposed Action/Proposed Project Alternative would result in a ***Minor Beneficial*** effect to traffic and circulation compared to the effects that would occur under the No Action/No Project Alternative baseline condition.

13.2.3.3 Cumulative Effects of the Alternative

As described in Section 13.2.1, future traffic effects analyzed in this EIS/EIR are, by definition, cumulative. Therefore, cumulative impacts of the Proposed Project/Proposed Action Alternative on existing and future traffic and circulation are identical to the direct and indirect impacts described in Section 13.2.3.1.

13.2.4 Reduced Permit Term Alternative

The Reduced Permit Term Alternative is described in Section 2.4.

13.2.4.1 Direct and Indirect Effects of the Alternative

As described in Section 2.4, the Reduced Permit Term Alternative would include similar types of new urban development as the No Action/No Project Alternative (Section 13.2.2). Under the Reduced Permit Term Alternative, all new urban development would occur inside the UDA, as directed by the general plans of Sacramento County, Rancho Cordova, and Galt, and no new urban development would “shift” or be displaced to areas outside the UDA. As a result, vehicle trips, demand on transit to serve outlying areas, and overall demand on the local and regional transportation system would be lower under the Reduced Permit Term Alternative than under the No Action/No Project Alternative. Urban development under the Reduced Permit Term Alternative would have a **Minor Beneficial** effect on traffic and circulation compared to the No Action/No Project Alternative baseline condition.

Covered Activity transportation infrastructure projects within the MCRA are all planned for completion by the end of the 30-year permit term, but their actual completion may not occur until beyond 30 years depending on a number of factors. Some planned Covered Activity transportation infrastructure projects outside the MCRA are anticipated by Sacramento County and other transportation planners after Year 30. However, transportation infrastructure projects in the MCRA are expected to be permitted during the 30-year permit term, and would be able to use the Reduced Permit Term Habitat Conservation Plan to mitigate impacts. Construction or routing of transportation infrastructure projects would not be limited by the acreage of vernal pools in the MCRA that are available for preservation. Expansion or extension of roadways as envisioned by the Rancho Cordova and Sacramento County General Plan Circulation Elements (Rancho Cordova 2006a; Sacramento County 2011a) would not be adversely affected by the establishment of preserves under the Reduced Permit Term Alternative. This would be a **Minor Beneficial** effect compared to the No Action/No Project Alternative.

Implementation of AMMs ROAD-1 and ROAD-2 during the 30-year permit term, requiring adjustment of roadway alignments to avoid aquatic resources and construction of wildlife crossing structures, could affect roadway safety, function, and/or operation. However, all roadway projects would be subject to the design standards of Sacramento County, Galt, and Rancho Cordova (Section 13.1.1). These standards would ensure that roadway Covered Activities would be designed to maintain or provide roadway function and operation, and meet all safety requirements for vehicle, transit, and bicycle movement. There would be **No Impact** to traffic and circulation compared to the No Action/No Project Alternative baseline condition.

The preserves established during the 30-year permit term would be interconnected but would be designed to allow the completion of planned roadways. Planned roadways in the Planning Area should be mostly completed by the end of the 30-year permit term, so preserves established as mitigation on a project-by-project basis in Years 31–50 of the EIS/EIR study

period would not accommodate future roadways crossing preserves. The Reduced Permit Term Alternative would allow transportation infrastructure to be developed according to adopted plans, and it would not increase hazards due to roadway design features or incompatible uses, or adversely affect emergency access. Therefore, the Reduced Permit Term Preserve System would have **No Impact** on conflicts with adopted transportation plans compared to the No Action/No Project Alternative.

Preserve management during the 30-year permit term of the Reduced Permit Term Alternative would be more intensive than under the No Action/No Project Alternative, resulting in a small increase in trips compared to the No Action/No Project Alternative. Management of preserves established after the 30-year permit term would likely undergo less management and monitoring than preserves established during the permit term and would generate fewer trips. Regardless, traffic and circulation impacts from preserve management activities would be minimal in the context of traffic from urban development. Preserve management under the Reduced Permit Term Alternative would have a **Less Than Significant Adverse** effect on traffic volumes, public safety, access, and circulation compared to the No Action/No Project Alternative baseline condition.

Habitat re-establishment/establishment activities in the Preserve System would generate vehicle trips, including heavy truck trips. Because the Reduced Permit Term Alternative would include more re-establishment/establishment than the No Action/No Project Alternative baseline condition, more related vehicle trips would be generated. These activities could result in localized, temporary impacts to the local roadway and bikeway systems by introducing heavy equipment. However, these activities would be infrequent and short-term, and it is unlikely that construction-related vehicle trips would occur during peak hours. Re-establishment or establishment of habitat would not result in a substantial increase in traffic; affect public safety on area roads; increase hazards due to design features or incompatible uses; or conflict with adopted plans, policies, or ordinances. Habitat re-establishment/establishment under the Reduced Permit Term Alternative would be a **Less Than Significant Adverse** effect on traffic volumes, public safety, access, and circulation compared to the No Action/No Project Alternative baseline condition.

13.2.4.2 Significance of Direct and Indirect Effects

In summary, when compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would do the following:

- Reduce vehicle trips, demand on transit to serve outlying areas, and overall demand on the local and regional transportation system by not resulting in displacement and shifting of urban development outside the UDA;

- Reduce potential conflicts with future planned roadways, extensions of existing roadways, and roadway widening and improvements that are planned in the Sacramento County, Galt, and Rancho Cordova General Plan Circulation Elements;
- Result in a minimal amount of additional vehicle trips for Preserve System management and monitoring; and
- Result in a minimal amount of additional heavy vehicle trips for Preserve System habitat re-establishment/establishment.

Therefore, after considering the significance of effects from the Reduced Permit Term Alternative on all of the traffic and circulation impact criteria, the Reduced Permit Term Alternative would result in a **Minor Beneficial** effect to traffic and circulation compared to the effects that would occur under the No Action/No Project Alternative baseline condition.

13.2.4.3 Cumulative Effects of the Alternative

As described in Section 13.2.1, the future traffic effects analyzed in this EIS/EIR are, by definition, cumulative. Therefore, cumulative effects of the Reduced Permit Term Alternative on existing and future traffic and circulation are identical to the direct and indirect effects described in Section 13.2.4.1.

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CHAPTER 14 – AIR QUALITY

This chapter presents the potential effects of each alternative on air quality within the Planning Area. General topics addressed include existing air quality conditions and construction and operational air emissions. Air quality impacts are evaluated for emissions of criteria air pollutants, fugitive dust, toxic air contaminants (TACs), and odors. These terms and general effects of various pollutants are described in Section 14.1.2, Planning Area Air Quality Conditions.

14.1 AFFECTED ENVIRONMENT/ENVIRONMENTAL SETTING

14.1.1 Regulatory Framework

The regulatory responsibilities for the protection of air quality within the Planning Area include several federal, state, regional, and local agencies. This section summarizes the statutes, regulations, policies, and agency planning documents that are relevant to the approval, issuance of permits, or implementation of the alternatives analyzed in this Environmental Impact Statement/Environmental Impact Report (EIS/EIR). This section also identifies any relevant federal permits or other entitlements that must be obtained prior to implementing the alternatives. To the extent possible, the analyses or studies required by these regulations and policies are integrated into the environmental effects analyses presented in Section 14.2, Environmental Consequences/Environmental Impacts (40 CFR 1502.25).

14.1.1.1 Federal

The primary legislation that governs federal air quality regulations is the Clean Air Act. The Clean Air Act delegates primary responsibility with implementing national air quality programs to the U.S. Environmental Protection Agency (EPA).

The Clean Air Act required the EPA to establish¹ national ambient air quality standards. As shown in Table 14-1, EPA has established primary and secondary national ambient air quality standards for the following criteria air pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), respirable and fine particulate matter (PM₁₀ and PM_{2.5}), and lead.

If an area does not meet the national ambient air quality standards, federal clean air planning requirements specify that states develop and adopt State Implementation Plans, which are air quality plans showing how air quality standards will be attained. In California, the EPA has delegated authority to prepare State Implementation Plans to the California Air Resources Board (CARB), which has delegated that authority to individual air districts.

14.1.1.2 State

California Air Resources Board

CARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and implementation of the California Clean Air Act. The California

¹ Note that in the context of this Plan, the word “establish” is synonymous with “create.”

Clean Air Act required CARB to establish California ambient air quality standards (Table 14-1). CARB has established California ambient air quality standards for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and the previously mentioned criteria air pollutants.

In addition to the pollutants described previously, TACs are regulated primarily through the Tanner Air Toxics Act (Assembly Bill 1807, Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (Assembly Bill 2588, Chapter 1252, Statutes of 1987). Assembly Bill 1807 set a formal procedure for CARB to designate substances as TACs. Research, public participation, and scientific peer review are required before CARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs and adopted EPA's list of hazardous air pollutants as TACs. Most recently, particulate-matter exhaust from diesel engines (diesel PM) was added to CARB's list of TACs. PM₁₀ is considered a surrogate for diesel PM and, therefore, is the pollutant used to describe TAC emissions in this analysis.

CARB has adopted an asbestos Airborne Toxic Control Measure (ATCM) for construction, grading, quarrying, and surface mining operations (17 CCR 93105). This statewide regulation requires use of control measures to minimize emissions of asbestos-laden dust. The ATCM applies to any size construction project although there are more stringent mitigation requirements for projects that exceed 1 acre.

Naturally occurring asbestos is known to be present in eastern Sacramento County (CDOC 2006). See Chapter 5, Soils, Geology, and Mineral Resources, for more information on the locations of naturally occurring asbestos in the Planning Area (Figure 5-4). Further, the Sacramento Metropolitan Air Quality Management District (SMAQMD) has regulatory authority to ensure compliance with the asbestos ATCM.

14.1.1.3 Local

Sacramento Metropolitan Air Quality Management District

At the local level, SMAQMD is the primary agency responsible for planning to meet federal and state ambient air quality standards in the Planning Area. SMAQMD is responsible for establishing and enforcing local air quality rules and regulations that address the requirements of federal and state air quality laws. SMAQMD has jurisdiction over the Planning Area, which is within the Sacramento Valley Air Basin (SVAB).

SMAQMD also enforces air quality regulations, educates the public about air quality, and implements a number of programs to provide incentives for the replacement or retrofit of older diesel engines and to influence land use development in Sacramento County. Other local jurisdictions within the Planning Area include Sacramento County, Galt, and Rancho Cordova. Each jurisdiction currently has adopted General Plans that contain goals and policies relating to the

reduction of air pollution (these are listed in the following text). Generally, the goals and policies require new development within these jurisdictions to comply with SMAQMD California Environmental Quality Act (CEQA) guidance and thresholds of significance (SMAQMD 2014).

Table 14-1. Ambient Air Quality Standards

Pollutant	Averaging Time	California ^{a,b}	National ^c	
			Primary ^{b,d}	Secondary ^{b,e}
Ozone	1-hour	0.09 ppm (180 µg/m ³)	— ^e	Same as primary standard
	8-hour	0.070 ppm (137 µg/m ³)	0.070 ppm (137 µg/m ³)	
CO	1-hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)	Same as primary standard
	8-hour	9 ppm (10 mg/m ³) ^f	9 ppm (10 mg/m ³)	
NO ₂ ^g	Annual arithmetic mean	0.030 ppm (57 µg/m ³)	53 ppb (100 µg/m ³)	Same as primary standard
	1-hour	0.18 ppm (339 µg/m ³)	100 ppb (188 µg/m ³)	—
SO ₂	24-hour	0.04 ppm (105 µg/m ³)	—	—
	3-hour	—	—	0.5 ppm (1300 µg/m ³)
	1-hour	0.25 ppm (655 µg/m ³)	75 ppb (196 µg/m ³)	—
PM ₁₀	Annual arithmetic mean	20 µg/m ³	—	Same as primary standard
	24-hour	50 µg/m ³	150 µg/m ³	
PM _{2.5}	Annual arithmetic mean	12 µg/m ³	12.0 µg/m ³	15.0 µg/m ³
	24-hour	—	35 µg/m ³	Same as primary standard
Lead	Calendar quarter	—	1.5 µg/m ³	Same as primary standard
	30-day average	1.5 µg/m ³	—	—
	Rolling 3-month average	—	0.15 µg/m ³	Same as primary standard
Hydrogen sulfide	1-hour	0.03 ppm (42 µg/m ³)	No national standards	
Sulfates	24-hour	25 µg/m ³		
Vinyl chloride ^f	24-hour	0.01 ppm (26 µg/m ³)		
Visibility-reducing particulate matter	8-hour	Extinction of 0.23 per km		

Source: CARB 2017.

Notes: µg/m³ = micrograms per cubic meter; CO = carbon monoxide; km = kilometers; NO₂ = nitrogen dioxide; PM₁₀ = respirable particulate matter; PM_{2.5} = fine particulate matter; ppb = parts per billion; ppm = parts per million; SO₂ = sulfur dioxide

^a California standards for ozone, SO₂ (1- and 24-hour), NO₂, particulate matter, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

^b Concentration expressed first in units in which it was issued. Equivalent units given in parentheses are based on a reference temperature of 25 degrees Celsius (°C) and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume or micromoles of pollutant per mole of gas.

^c National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. The PM₁₀ 24-hour standard is attained when 99% of the daily concentrations, averaged over 3 years, are equal to or less than the standard. The PM_{2.5} 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the EPA for further clarification and current federal policies.

^d National primary standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

^e National secondary standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

^f CARB has identified lead and vinyl chloride as TACs with no threshold of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Sacramento County

Sacramento County 2030 General Plan

The *Sacramento County General Plan of 2005–2030* (Sacramento County General Plan) (Sacramento County 2011) Air Quality Element includes goals, objectives, and policies related to the protection of air quality in the County. Applicable policies include the following (Sacramento County 2011):

Policy AQ-1: New development shall be designed to promote pedestrian/bicycle access and circulation to encourage community residents to use alternative modes of transportation to conserve air quality and minimize direct and indirect emission of air contaminants.

Policy AQ-3: Buffers and/or other appropriate mitigation shall be established on a project-by-project basis and incorporated during review to provide for protection of sensitive receptors from sources of air pollution or odor. [C]ARB’s “Air Quality and Land Use Handbook: A Community Health Perspective”, and SMAQMD’s approved Protocol (Protocol for Evaluating the Location of Sensitive Land uses Adjacent to Major Roadways) shall be utilized when establishing these buffers.

Policy AQ-4: Developments which meet or exceed thresholds of significance for ozone precursor pollutants as adopted by SMAQMD, shall be deemed to have a significant environmental impact. An Air Quality Mitigation Plan shall be submitted to the County of Sacramento prior to project approval, subject to review and recommendation as to technical adequacy by SMAQMD.

Policy AQ-10: Encourage vehicle trip reduction and improved air quality by requiring development projects that exceed the SMAQMD’s significance thresholds for operational emissions to provide on-going, cost-effective mechanisms for transportation services that help reduce the demand for existing roadway infrastructure.

Policy AQ-11: Encourage contractors operating in the county to procure and to operate low-emission vehicles, and to seek low emission fleet status for their off-road equipment.

Policy AQ-12: Minimize air pollutant emissions from Sacramento County facilities and operations.

Policy AQ-13: Use [C]ARB and SMAQMD guidelines for Sacramento County facilities and operations to comply with mandated measures to reduce emissions from fuel consumption, energy consumption, surface coating operations, and solvent usage.

Policy AQ-14: Support SMAQMD's development of improved ambient air quality monitoring capabilities and the establishment of standards, thresholds and rules to more adequately address the air quality impacts of plans and proposals proposed by the County.

Policy AQ-16: Prohibit the idling of on-and off-road engines when the vehicle is not moving or when the off-road equipment is not performing work for a period of time greater than five minutes in any one-hour period.

Policy AQ-17: Promote optimal air quality benefits through energy conservation measures in new development.

Policy AQ-19: Require all feasible reductions in emissions for the operation of construction vehicles and equipment on major land development and roadway construction projects.

Policy AQ-20: Promote Cool Community strategies to cool the urban heat island, reduce energy use and ozone formation, and maximize air quality benefits by encouraging four main strategies including, but not limited to: plant trees, selective use of vegetation for landscaping, install cool roofing, and install cool pavements.

Policy AQ-21: Support SMAQMD's particulate matter control measures for residential wood burning and fugitive dust.

2030 Galt General Plan

The *2030 Galt General Plan: Policy Document* (Galt General Plan) Conservation Element (Galt 2009a) includes goals, objectives, and policies related to the protection of air quality. Applicable policies include the following (Galt 2009a):

Policy COS-5.1: Vehicle Emission Reduction Programs: The City should support land use, transportation management, infrastructure, and environmental planning programs that reduce vehicle emissions and improve air quality.

Policy COS-5.2: Walkable Design: The City shall require subdivision and site plan designs to maximize pedestrian and bicycle circulation and promote street designs that strongly encourage biking and walking.

Policy COS-5.6: SMAQMD Coordination: The City shall coordinate with SMAQMD on the review of proposed development projects. The City shall use SMAQMD Guide to Air Quality Assessment for determining and mitigating project air quality impacts and related thresholds of significance for use in environmental documents.

Policy COS-5.9: Air Quality Mitigation Measures: The City shall enforce construction and operation related air quality mitigation measures adopted through the CEQA process.

Policy COS-5.10: New Development Operational Emission Reductions: The City shall require all new development projects which have the potential to result in significant operational air quality impacts (exceeding SMAQMD adopted thresholds), to incorporate design or operational features that result in a reduction in emissions equal to 15 percent from the level that would be produced by an unmitigated project, based upon feasible mitigation under CEQA.

Policy COS-5.11: Construction Mitigation Measures: The City shall require developers to implement dust suppression measures as well as the applicable standard construction mitigation measures associated with exhaust [oxides of nitrogen] NO_x and PM₁₀ reduction in accordance with the current SMAQMD CEQA Guide to Air Quality Assessment.

Policy COS-5.12: Construction Mitigation Fees: The City shall require developers to comply with the current SMAQMD construction mitigation fee offset program.

Policy COS-5.13: Air Pollution Control Technology: The City shall follow the rules and regulations as adopted by the SMAQMD to maintain healthful air quality and high visibility standards. These measures shall be applied to new development approvals and permit modifications as appropriate.

Rancho Cordova General Plan

The *City of Rancho Cordova General Plan* (Rancho Cordova General Plan) (Rancho Cordova 2013) Air Quality Element includes goals, objectives, and policies related to the protection of air quality. Applicable policies include the following (Rancho Cordova 2013):

Policy AQ.1.2: Evaluate projects for compliance with state and federal ambient air quality standards and the SMAQMD thresholds of significance.

Policy AQ.1.5: Require odor impact analyses be conducted for evaluating new development requests that either could generate objectionable odors that may violate SMAQMD Rule 402 or any subsequent rules and regulations regarding objectionable odors near sensitive receptors or locate new sensitive receptors near existing sources of objectionable odors.

Should objectionable odor impacts be identified, odor mitigation shall be required in the form of setbacks, facility improvements or other appropriate measures.

Policy AQ.2.2: Encourage mixed-use developments that put residences in close proximity to services, employment, transit, schools, and civic facilities/services.

Policy AQ.2.4: Maximize air quality benefits through selective use of landscaping vegetation that is low in emission of volatile organic compounds, and through re-vegetation of appropriate areas.

Policy AQ.2.5: Utilize the guidelines in the [C]ARB Compatibility and Land Use Handbook: A Community Health Perspective when evaluating new development requests that either would generate toxic air contaminant emissions near sensitive receptors or locate new sensitive receptors near existing sources of air toxic emissions or order to minimize health hazards, and implement all feasible best available control technology, as required by SMAQMD.

Policy AQ.4.1: Promote improved air quality benefits through energy conservation measures for new and existing development.

Policy AQ.4.2: Support vehicle improvements and the use of clean vehicles that reduce emissions and improve air quality.

Policy AQ.4.3: Support SMAQMD’s program of retrofitting construction equipment to reduce air pollution.

14.1.2 Planning Area Air Quality Conditions

This section provides information on criteria pollutants and the health effects of these pollutants and describes the existing air quality conditions in the Planning Area.

14.1.2.1 Pollutants and Effects

Concentrations of criteria air pollutants are used to indicate the quality of the ambient air. A brief description of key criteria air pollutants in the SVAB is provided in the following text, including emission source types and health effects. For descriptions of health effects, “acute” refers to effects of short-term exposures to criteria air pollutants, usually at fairly high concentrations, whereas “chronic” refers to effects of long-term exposures to criteria air pollutants, usually at lower, ambient concentrations.

Ozone

Ozone is a photochemical oxidant (a molecule whose oxygen combines chemically with another substance in the presence of sunlight) and the primary component of smog. Ozone is not directly emitted into the air but is formed through complex chemical reactions between precursor emissions of reactive organic gasses (ROG) and NO_x in the presence of sunlight. ROGs are volatile organic compounds that are photochemically reactive. ROG emissions result primarily from incomplete combustion and the evaporation of chemical solvents and fuels. NO_x are a group of gaseous compounds of nitrogen and oxygen that result from the combustion of fuels.

Emissions of the ozone precursors ROG and NO_x have decreased over the past several years because of more stringent motor vehicle standards and cleaner burning fuels. Emissions of ROG and NO_x decreased from 2000 to 2010 and are projected to continue decreasing from 2010 to 2035 (CARB 2013).

Acute health effects include increased respiration and pulmonary resistance, including cough, pain, shortness of breath, and lung inflammation. Chronic health effects include permeability of respiratory epithelia and possibility of permanent lung impairment.

Carbon Monoxide

CO is a colorless, odorless gas produced by incomplete combustion of fuels (i.e., motor vehicle exhaust). Acute health effects include headache, dizziness, fatigue, nausea, vomiting, and eventually death. Chronic health effects include permanent heart and brain damage.

Nitrogen Dioxide

NO_2 is a brownish, highly reactive gas that is present in all urban environments. The major human-made sources of NO_2 are combustion devices, such as boilers, gas turbines, and mobile and stationary internal combustion engines. Combustion devices emit primarily nitric oxide (NO), which reacts through oxidation in the atmosphere to form NO_2 . The combined emissions of NO and NO_2 are referred to as NO_x and are reported as equivalent NO_2 . Because NO_2 is formed and depleted by reactions associated with photochemical smog (ozone), the NO_2 concentration in a particular geographical area may not be representative of the local sources of NO_x emissions (EPA 2017).

Acute health effects include coughing, difficulty breathing, vomiting, headache, eye irritation, chemical pneumonitis (inflammation of the lung tissue) or pulmonary edema (fluid accumulation in the lungs), breathing abnormalities, cough, chest pain, rapid heartbeat, and ultimately death. Chronic health effects include chronic bronchitis and decreased lung function.

Sulfur Dioxide

SO₂ is a gaseous compound of sulfur and oxygen. Sources of SO₂ include coal and oil combustion, refineries, and pulp and paper mills. Acute health effects include irritation of upper respiratory tract and increased asthma symptoms. There is insufficient evidence linking SO₂ exposure to chronic health impacts.

Particulate Matter

PM with an aerodynamic diameter of 10 micrometers or less is referred to as PM₁₀. This size particle is of concern because it is small enough to reach deep into the lungs. PM₁₀ consists of particulate matter emitted directly into the air, such as fugitive dust, soot, and smoke from mobile and stationary sources, construction operations, fires and natural windblown dust, and particulate matter formed in the atmosphere by reaction of gaseous precursors (CARB 2013). PM_{2.5} includes a subgroup of smaller particles that have an aerodynamic diameter of 2.5 micrometers or less. PM₁₀ and PM_{2.5} emissions in the SVAB are dominated by emissions from area sources, primarily fugitive dust from vehicle travel on unpaved and paved roads, farming operations, construction and demolition, and particles from residential fuel combustion (CARB 2013).

Direct emissions of PM₁₀ are projected to remain relatively constant through 2035. Direct emissions of PM_{2.5} have steadily declined in the SVAB between 2000 and 2010 and are projected to increase slightly through 2035.

Acute health risks include breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular diseases, and premature death. Chronic effects include alterations to the immune system and cancer formation.

Lead

Lead is a relatively soft and chemically resistant metal. Lead is present in small particles as a result of a variety of industrial activities. Acute effects include developmental disruptions in fetuses and children. Chronic effects include neurological, endocrine, and cardiovascular damage.

Toxic Air Contaminants

A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, the high toxicity or health risk of TACs may pose a threat to public health even at low concentrations.

According to the California Almanac of Emissions and Air Quality (CARB 2013), the majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being diesel PM. Diesel PM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emissions control system is being used. Unlike the other TACs, no ambient monitoring data are available for diesel PM because no routine measurement method currently exists. However, CARB has made preliminary concentration estimates based on a PM exposure method. This method uses the CARB emissions inventory's PM₁₀ database, ambient PM₁₀ monitoring data, and the results from several studies to estimate concentrations of diesel PM. In addition to diesel PM, the TACs for which data are available that pose the greatest existing ambient risk in California are benzene, 1 and 3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene.

Diesel PM poses the greatest health risk among these 10 TACs mentioned. Based on receptor modeling techniques, the CARB estimated its health risk to be 360 excess cancer cases per million people in the SVAB in the year 2000. Since 1990, the health risk associated with diesel PM has been reduced by 52%. Overall, levels of most TACs, except para-dichlorobenzene and formaldehyde, have decreased since 1990 (CARB 2013).

14.1.2.2 Existing Air Quality Conditions

Regional Air Quality

The Planning Area is located within Sacramento County, California, which is within the SVAB. The SVAB also includes all of Butte, Colusa, Glenn, Shasta, Sutter, Tehama, Yolo, and Yuba Counties; the western portion of Placer County; and the eastern portion of Solano County. The ambient concentrations of air pollutants are determined by the amount of emissions released by the sources of air pollutants and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and sunlight. Therefore, existing air quality conditions in the area are determined by such natural factors as topography, meteorology, and climate, in addition to the amount of emissions released by existing air pollutant sources, as discussed in the following text.

Climate and Meteorology

The SVAB is a relatively flat area bordered by the northern Coast Ranges to the west and the northern Sierra Nevada to the east. Air flows into the SVAB through the Carquinez Strait, the

only breach in the western mountain barrier, and moves across the Sacramento River–San Joaquin River Delta from the San Francisco Bay area.

The Mediterranean climate type in the SVAB is characterized by hot, dry summers and cool, rainy winters. During the summer, daily temperatures range from 50 degrees Fahrenheit (°F) to more than 100°F. The inland location and surrounding mountains shelter the area from much of the ocean breezes that keep the coastal regions moderate in temperature. Most precipitation in the area results from air masses that move in from the Pacific Ocean, usually from the west or northwest, during the winter months. More than half the total annual precipitation falls during the winter rainy season (November through February); the average winter temperature is a moderate 49°F. Also characteristic of SVAB winters are periods of dense and persistent low-level fog, which is most prevalent between storms. The prevailing winds are moderate in speed and vary from moisture-laden breezes from the south to dry land flows from the north.

The mountains bordering the eastern and western sides of the SVAB create a barrier to airflow, which leads to the entrapment of air pollutants when meteorological conditions are unfavorable for transport and dilution. The highest frequency of poor air movement occurs in the fall and winter when high-pressure cells are present over the SVAB. The lack of surface wind during these periods, combined with the reduced vertical flow caused by a decline in surface heating, reduces the influx of air and leads to the concentration of air pollutants under stable meteorological conditions. Surface concentrations of air pollutants are highest when these conditions occur in combination with agricultural burning activities or with temperature inversions, which hamper dispersion by creating a ceiling over the area and trapping air pollutants near the ground.

May through October is ozone season in the SVAB. This period is characterized by poor air movement in the mornings with the arrival of the Sacramento River–San Joaquin River Delta sea breeze from the southwest in the afternoons. In addition, longer daylight hours provide a plentiful amount of sunlight to fuel photochemical reactions between ROG and NO_x, which result in ozone formation. Typically, the Sacramento River–San Joaquin River Delta breeze transports air pollutants northward out of the SVAB; however, a phenomenon known as the Schultz Eddy prevents this from occurring during approximately half of the time from July to September. The Schultz Eddy phenomenon causes the wind to shift southward and blow air pollutants back into the SVAB. This phenomenon exacerbates the concentration of air pollutant emissions in the area and contributes to the area violating the ambient air quality standards.

The local meteorology of the Planning Area is represented by measurements recorded at the Western Regional Climate Center Sacramento 5 ESE station. The normal annual precipitation is approximately 18 inches. January temperatures range from a normal minimum of 40°F to a normal maximum of 53.5°F. July temperatures range from a normal

minimum of 59.2°F to a normal maximum of 92°F (WRCC 2015). The predominant wind direction is from the south (WRCC 2002).

Local Air Quality

The Clean Air Act requires the EPA to classify areas in the country as attainment or nonattainment with respect to each criteria air pollutant, dependent on whether the areas meet the national standards. In addition, the CARB makes area designations within California for state ambient air quality standards. The SVAB is in nonattainment for the national and state ozone standards, the state PM₁₀ standard, and the national and state PM_{2.5} standards. The attainment status of each pollutant within the SVAB (which includes the Planning Area) for both the California ambient air quality standards and national ambient air quality standards are shown in Table 14-2.

Table 14-2. Attainment Status Designations for the SVAB

Pollutant	National Standard	State Standard
Ozone	Nonattainment (1-hour) ^a classification = severe	Nonattainment (1-hour) classification = serious ^b
	Nonattainment (8-hour) ^c classification = severe	Nonattainment (8-hour)
	Nonattainment (8-hour) ^d classification = severe	
PM ₁₀	Attainment (24-hour)	Nonattainment (24-hour)
		Nonattainment (annual)
PM _{2.5}	Nonattainment (24-hour)	(No state standard for 24-hour)
	Unclassified/attainment (annual)	Nonattainment (annual)
CO	Attainment (1-hour)	Attainment (1-hour)
	Attainment (8-hour)	Attainment (8-hour)
NO ₂	Unclassified/attainment (1-hour)	Attainment (1-hour)
	Unclassified/attainment (annual)	Attainment (annual)
SO ₂	(Attainment pending) (1-hour)	Attainment (1-hour)
		Attainment (24-hour)
Lead (particulate)	Unclassified/attainment (3-month rolling average)	Attainment (30-day average)
Hydrogen sulfide	No national standard	Unclassified (1-hour)
Sulfates		Attainment (24-hour)
Visibility-reducing particles		Unclassified (8-hour)

Source: SMAQMD 2013.

Notes: CO = carbon monoxide; NO₂ = nitrogen dioxide; PM₁₀ = respirable particulate matter; PM_{2.5} = fine particulate matter; SO₂ = sulfur dioxide

^a Air quality meets federal 1-hour ozone standard (77 FR 64036–64039). The EPA revoked this standard, but some associated requirements still apply. SMAQMD attained the standard in 2009. SMAQMD has requested the EPA recognize attainment to fulfill the requirements.

^b Per California Health and Safety Code, Section 40921.5(c), the classification is based on 1989–1991 data and, therefore, does not change.

^c 1997 standard.

^d 2008 standard.

Criteria air pollutant concentrations are measured at several monitoring stations in the SVAB. In general, the ambient air quality measurements from these stations are representative of the air quality in and around the Planning Area. Table 14-3 summarizes

the air quality data from the last 3 years (2012–2014) for pollutants in nonattainment within the SVAB, including the frequency of exceedances of applicable federal and state air quality standards. CARB and EPA use this type of monitoring data to designate an area's attainment status for criteria air pollutants.

Table 14-3. Summary of Annual Sacramento Valley Air Basin Air Quality for Nonattainment Pollutants (2012–2014)

Averaging Time	2012	2013	2014
<i>Ozone^a</i>			
Maximum concentration (1-hour/8-hour average ppm)	0.122/0.107	0.12/0.088	0.11/0.085
Number of days national standard exceeded (8-hour)	46	12	23
Number of days state standard exceeded (1-hour /8-hour)	22/75	8/32	12/49
<i>Fine Particulate Matter (PM₁₀)^a</i>			
Maximum concentration (24-hour µg/m ³)	96.7	96.4	125.3
Number of days national standard exceeded (estimates/measured)	0/0	*/0	*/0
Number of days state standard exceeded (estimated/measured ^b)	18.7/3	23.3/21	13.2/13
<i>Respirable Particulate Matter (PM_{2.5})^a</i>			
Number of days national standard exceeded (24-hour measured ^b)	3.1	13.0	4.0
High annual state standard designation value	15	14	13
Maximum concentration (24-hour µg/m ³)	123.3	75.6	190.2

Source: CARB 2014.

Notes: µg/m³ = micrograms per cubic meter; ppm = parts per million; * = insufficient data to determine value

^a Data for ozone and PM_{2.5} based on Sacramento County summary tables. Data for PM₁₀ based on the T Street Site located at 1309 T Street, Sacramento California, 95814.

^b Measured days are those days that an actual measurement was greater than the level of the state daily standard or the national daily standard. Measurements are typically collected every 6 days. Estimated days are the estimated number of days that a measurement would have been greater than the level of the standard had measurements been collected every day. The number of days above the standard is not necessarily the number of violations of the standard for the year.

14.2 ENVIRONMENTAL CONSEQUENCES/ ENVIRONMENTAL IMPACTS

14.2.1 Methodology for Assessing Impacts of Each Alternative on Air Quality

Air quality impacts are typically evaluated in terms of temporary emissions, most commonly associated with construction activities, and operational emissions, such as those resulting from land use development, increased mobile-source emissions, or additional and new stationary emission sources, such as industrial facilities. The alternatives were evaluated in the context of the planned urban development, land use patterns within the Planning Area, and emissions sources associated with them (e.g., stationary, mobile, area). Impacts were identified where the actions associated with the alternative would result in new or additional emissions of concern.

The projects and activities included in each alternative, including the conceptual preserve, are described in Chapter 2, Alternatives, Including the Proposed Action/Proposed Project. Potential temporary and permanent air quality impacts for each alternative were analyzed based on the anticipated development projects and preserve establishment, management, and maintenance over the 50-year EIS/EIR study period, as described in Section 3.6.3.

Specific to emissions from preserve establishment/re-establishment, emissions from construction- and operational-related activities were quantified using the California Emissions Estimate Model. Modeling was for an estimated high-activity day implementing habitat establishment/re-establishment and used conservative assumptions (i.e., assumptions that would lead to higher emissions) so as to not underestimate emissions from this activity. For example, the modeling assumed that approximately 385 acres of habitat establishment/re-establishment would be completed in a single year, which is roughly 20% of the total habitat establishment/re-establishment required for each alternative over the entire 50-year study period. This is above what would actually be expected to occur as each alternative is implemented over time. The modeling included the use of heavy-duty equipment for earth movement and grading and operational-related vehicle use. Model assumptions and parameters are included in Appendix H, Modeling Data and Assumptions for Air Quality and Greenhouse Gas Analyses.

Cumulative effects are analyzed consistently with the methodology described in Section 3.7, Cumulative Effects Analysis in Resource Chapters 4 through 16.

By nature, pollutants emitted into the air are a regional issue since emissions from multiple sources over a large regional area combine to create the overall air quality conditions. However, the types of emissions and sources within each air basin are regulated through local agencies. As described previously, SMAQMD regulates emissions and sources within the SVAB. Further, significance thresholds determined by SMAQMD are designed to ensure compliance with state air quality planning efforts. Thus, the planning framework is structured such that compliance with regional planning efforts and regulations would ensure compliance with state and federal efforts as well. As such, the lead agencies determined that an appropriate geographic scale for evaluating the cumulative impacts of each EIS/EIR alternative on air quality resources should include air emissions occurring within the SVAB as regulated by SMAQMD.

As discussed in Section 3.4, Previous Planning Area Environmental Reviews, the EIR documents previously prepared for the General Plans of Sacramento County, Galt, and Rancho Cordova (Sacramento County 2010; Galt 2009b; Rancho Cordova 2006) analyzed direct and cumulative impacts of urban growth planned within each jurisdiction, including impacts to air quality. When the impact analyses or conclusions provided in these General Plan EIR documents were determined by the lead agencies to be appropriate for use in the analysis of the EIS/EIR alternatives, a brief summary or description of the incorporated information or analysis is

provided in Sections 14.2.2, No Action/No Project Alternative; 14.2.3, Proposed Action/Proposed Project Alternative; and 14.2.4, Reduced Permit Term Alternative.

14.2.1.1 Determination of Impact Significance

For the air quality analysis in this chapter, the evaluation of the significance of air quality effects considers both a federal conformity analysis process and more typical specific significance criteria found in other chapters of this EIS/EIR. Both are described in the following text.

Federal Conformity Analysis

A non-transportation project located in a nonattainment or maintenance area must undergo a general conformity analysis in accordance with Title 40 of the Code of Federal Regulations, Section 93, to ensure that the project does not:

- Cause or contribute to new violations or any standard in any area
- Increase the frequency or severity of an existing violation of any standard
- Delay timely attainment of any standard requiring interim emission reduction or other milestones

As a part of the general conformity process, a conformity analysis is required if a federal action satisfies one of the following two conditions:

- The action's direct and indirect emissions have the potential to emit one or more of the six criteria pollutants at or above emission rates in Table 14-4.
- The action's direct and indirect emissions of any criteria pollutant represent 10% of a nonattainment or maintenance area's total emissions inventory for that pollutant.

Table 14-4. Federal *De Minimis* Levels

Pollutant	Federal Attainment Classification	<i>De Minimis</i> Level (Tons/Year)
Ozone (VOC ^a)	Severe nonattainment	25
Ozone (NO _x)	Severe nonattainment	25
CO	Attainment	NA
PM ₁₀	Attainment	NA
PM _{2.5}	Nonattainment	100
Lead	Attainment	NA

Notes: CO = carbon monoxide; NA = not applicable; NO_x = oxides of nitrogen; PM_{2.5} = fine particulate matter; PM₁₀ = coarse, respirable, or inhalable particulate matter

^a Volatile organic compounds (VOCs) are similar to ROG; however, VOC is the term used in the federal conformity analysis regulations for this component of ozone precursors.

If the total direct emissions associated with the action are below the *de minimis* levels indicated in Table 14-4, general conformity requirements do not apply; the action is considered in

conformity and would not result in an adverse impact. Because the air basin encompassing the Planning Area is in attainment (based on federal standards) for the criteria pollutants indicated in Table 14-4 except ozone (severe nonattainment status) and PM_{2.5} (nonattainment status), a conformity analysis for ozone and PM_{2.5} must be completed for the alternatives.

Significance Criteria

As discussed in Section 3.8.1, Significance Thresholds, the criteria used to evaluate the significance of each alternative's impacts on air quality are based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.) and typical thresholds used to evaluate effects on air quality in recent EIRs prepared by Sacramento County. Based on these sources, a significant adverse impact could occur if the alternative would:

1. Conflict with or obstruct implementation of the applicable air quality plan.
2. Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
3. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard.
4. Expose sensitive receptors to pollutant concentrations in excess of standards.
5. Create objectionable odors affecting a substantial number of people.

Thresholds provided by the SMAQMD are used to further define applicable air quality standards. Based on numeric criteria used by the SMAQMD, a significant adverse impact would occur if the alternative would:

1. Cause construction-generated criteria air pollutant or precursor emissions to exceed the SMAQMD-recommended thresholds of 85 pounds/day (lb/day) for NO_x, 80 lb/day and 14.6 tons/year for PM₁₀, and 82 lb/day and 15 tons/year for PM_{2.5}.
2. Result in a net increase in long-term operational criteria air pollutant or precursor emissions that exceed the SMAQMD-recommended thresholds of 65 lb/day for ROG and NO_x, 80 lb/day and 14.6 tons/year for PM₁₀, and 82 lb/day and 15 tons/year for PM_{2.5}.
3. Result in long-term operational local mobile-source CO emissions that would violate or contribute substantially to concentrations that exceed the 1-hour California ambient air quality standards of 20 ppm or the 8-hour California ambient air quality standards of 9 ppm.
4. Expose sensitive receptors to a substantial increase in TAC emissions that exceed 10 in 1 million for carcinogenic risk (i.e., the risk of contracting cancer) and/or a noncarcinogenic hazard index of 1.0 or greater.

Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.) does not provide suggested criteria for evaluating a beneficial effect. The following criteria were developed by the lead agencies. A beneficial impact could occur if the alternative would:

1. Result in a net reduction in criteria pollutant emissions compared to a baseline environmental condition.
2. Result in a net reduction in TAC emissions compared to a baseline environmental condition.
3. Reduce the exposure of sensitive receptors to pollutants compared to a baseline environmental condition.
4. Prevent or eliminate the generation of objectionable odors affecting a substantial number of people, or reduce the number of people exposed to an objectionable odor.

The impact analysis for the three EIS/EIR alternatives considers the context, intensity, and severity of potential impacts to each of these air quality impact criteria and presents a determination of significance applicable to each of these criteria.

14.2.1.2 Significance Criteria That Will Not be Evaluated Further

This section identifies topics related to air quality and the significance criteria that are not carried forward into the impact analysis and provides the reasoning for this determination.

Naturally occurring asbestos is known to be present in eastern Sacramento County. As previously discussed, CARB adopted an ATCM to control exposure to asbestos from construction, grading, quarrying, and surface-mining operations (17 CCR 93105). Compliance with the requirements of the ATCM would avoid any potential impacts associated with naturally occurring asbestos. Further, the release of naturally occurring asbestos and associated impacts are discussed in Chapter 5. This issue is not discussed further in this chapter.

Controlled burns may be required in habitat preserves under any of the alternatives as a plant-pest management tool. Open burns are regulated through SMAQMD by Rule 407. Controlled burns would be infrequent (typically up to once annually at a limited number of preserves and not every year), and before initiating a controlled burn, an open burn permit must be obtained from SMAQMD. Burn implementation must comply with all permit requirements to limit air emissions. Further, controlled burns would not be a primary plant-pest control method, with other options, such as managed grazing, available. This issue is not discussed further in this chapter.

14.2.2 No Action/No Project Alternative

The No Action/No Project Alternative is described in Section 2.2, No Action/No Project Alternative, in Chapter 2 of this EIS/EIR.

14.2.2.1 Direct and Indirect Effects of the Alternative

Construction Emissions

Much of the future urban development included in the No Action/No Project Alternative is described in the General Plans of Sacramento County, Galt, and Rancho Cordova (see Section 2.2.1, Future Projects/Activities Likely Under the No Action/No Project Alternative).

Construction associated with future development could result in emissions of criteria air pollutants, TACs, and odors. Activities such as the construction of new urban and rural developments and the required infrastructure (e.g., roads, utilities) to support these developments would generate ozone precursors (NO_x and ROG), particulate matter (PM₁₀ and PM_{2.5}), and odors and TACs associated with diesel exhaust (i.e., PM₁₀) from the use of heavy-duty construction equipment. Local mobile CO emissions could result from construction vehicle exhaust associated with worker commute vehicles and operations of heavy equipment. Fugitive dust emissions of PM₁₀ and PM_{2.5} would occur as a result of grading activities, earth movement, and vehicle movement on unpaved surfaces.

The impact analysis presented in the *Sacramento County General Plan Update Final EIR* (Sacramento County 2010, pp. 11-1 through 11-118) determined the following within Sacramento County:²

- Construction-related emissions of criteria air pollutants (ROG, NO_x, PM₁₀, and PM_{2.5}) would be considered significant and unavoidable
- Construction-related exposure of sensitive receptors to TACs would be less than significant

The *Sacramento County General Plan Update Final EIR* did not explicitly evaluate odor from construction activities.

The impact analysis presented in the *City of Galt General Plan Update Final EIR* (Galt 2009b, pp. 10-38 to 10-58), determined the following within Galt:

- Construction-related emissions of criteria air pollutants (ROG, NO_x, PM₁₀, and PM_{2.5}) would be considered significant and unavoidable
- Construction-related exposure of sensitive receptors to TACs would be significant and unavoidable
- Construction-related odors would be considered less than significant

² As described further in Section 3.4.1, the proposed project analyzed within the *Sacramento County General Plan EIR* assumed development within a designated “Jackson Highway Corridor New Growth Area” that was not part of the alternative ultimately selected by Sacramento County. However, Sacramento County is currently processing master plans in the Jackson Highway Corridor; therefore, the referenced conclusions from the proposed project analysis are relevant to the No Action/No Project Alternative.

The impact analysis presented in the *City of Rancho Cordova General Plan Final EIR* (Rancho Cordova 2006, pp. 4.6-1 to 4.6-39), determined the following within Rancho Cordova:

- Construction-related emissions of criteria air pollutants (ROG, NO_x, PM₁₀, and PM_{2.5}) would be considered significant and unavoidable
- Construction-related exposure of sensitive receptors to TACs would be significant and unavoidable
- Construction-related odors would be considered less than significant

As discussed in Section 3.4, the three General Plan EIRs used different study periods ending in 2030 (Galt 2008), 2030 (Rancho Cordova 2006), and 2050 (Sacramento County 2010), respectively. However, the 50-year study period for this EIS/EIR ends in 2065 (Section 3.6.3). Therefore, additional urban development can be expected to occur within Galt, Rancho Cordova, and Sacramento County in the years after each General Plan EIR study period ends but before this EIS/EIR's study period ends in 2065. Therefore, the impact analyses and conclusions incorporated from the three General Plan EIRs may not have considered all of the future urban development that is included in the project description of each EIS/EIR alternative. Consequently, when determining the significance of each impact described in the EIS/EIR, the lead agencies considered the impact analysis and the conclusions incorporated by reference from the General Plan EIRs, along with the effects of all urban development activities and projects that are included in the description of each EIS/EIR alternative.

As explained in Section 2.2.2, Expected Regulatory Environment Under the No Action/No Project Alternative, the regulatory environment of the No Action/No Project Alternative is expected to restrict the ability of local agencies to permit approximately 1,900 acres of future urban development in the Mather Core Recovery Area (MCRA), and this future urban development would be shifted or displaced to one or more of the areas of undeveloped land outside of the Urban Services Boundary (USB) discussed in Section 2.2.3, Loss of Natural Lands Under the No Action/No Project Alternative.

Development shifted or displaced outside of the USB could result in construction worker commute and vendor haul trips being longer in distance, resulting in higher vehicle miles traveled (VMT), relative to what would be expected if urban development was confined to the USB. An increase in regional VMT associated with construction trips would result in increased exhaust emissions of ROG, NO_x, PM₁₀, PM_{2.5}, odor (exhaust odors), and TACs. Construction-related emissions as a result of increased vehicle trips and VMT would contribute further to the already significant unavoidable impacts to existing air quality described in the documents referenced previously.

Regarding emissions of local mobile CO, CO concentrations that could result in significant effects may occur at intersections experiencing extreme delays and congestion, typically over 31,600 vehicles per hour (SMAQMD 2014). However, mobile CO emissions are expected to decrease per VMT over time due to cleaner burning fuels and improved vehicle engine technology. The No Action/No Project Alternative would be expected to result in increases in regional VMT associated with construction worker trips (associated with urban development and mitigation preserve construction) as a result of longer travel distances between construction sites. However, this would not result in substantial increases in congestion at any one intersection because trips would be dispersed throughout the region rather than concentrated in any one area, and construction activity and associated trips would be spread over the 50-year study period because individual projects are constructed over time.

Under the No Action/No Project Alternative, new urban development would continue to include mitigation actions to offset impacts to listed species, wetlands, and other regulated natural resources, including on-site or off-site mitigation preserves (Sections 2.2.1 and 2.2.2). Mitigation for unavoidable impacts could also continue to occur through purchasing credits at a mitigation or conservation bank approved by the applicable resource agencies (e.g., U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers), by payment into an in-lieu fee program, on-site project developer–responsible mitigation, or off-site project developer–responsible mitigation.

Where on-site and off-site project developer responsible mitigation preserves are established (constructed) under the No Action/No Project Alternative, they would typically be established in an uncoordinated project-by-project manner. This would often result in smaller, more isolated preserves predominantly located within the MCRA and elsewhere in the USB since projects would establish on-site mitigation preserves associated with resource avoidance areas and only establish off-site mitigation preserves for resource impacts that could not be avoided. Emissions associated with establishment/construction of mitigation preserves would be evaluated on a project-by-project basis and, therefore, have not been specifically described within the General Plan EIRs.

Activities associated with the establishment of habitat mitigation preserves would vary depending on the type of preserve. A preserve intended solely to protect existing habitat might require little work to shift the existing use to preserve. However, a preserve that includes habitat establishment/re-establishment would include minor construction activities, such as earth movement and grading. Both types of preserves could require fence installation, installation of interpretive features, and other minor work. The use of heavy equipment for grading and earth moving could result in exhaust emissions (ROG, NO_x, PM, CO) and mobilization of fugitive dust (i.e., PM₁₀ and PM_{2.5}).

Although specific details regarding the size of mitigation preserves and types of construction activities under the No Action/No Project Alternative are not known, as stated in Section 14.2.1, Methodology for Assessing Impacts of Each Alternative on Air Quality, an estimate of emissions was conducted based on conservative assumptions of preserve size and likely construction equipment that would be used (e.g., trucks, loaders, backhoes) for a preserve involving habitat establishment/re-establishment. Refer to Appendix H for information on the assumptions entered into the emissions modeling.

Based on the modeling conducted, mitigation preserve establishment during periods of maximum activity could result in emissions of up to 75 lb/day of NO_x, 12.5 lb/day of PM₁₀, and 6.9 lb/day of PM_{2.5} from the use of heavy equipment, worker commute trips, and vendor haul trips. Emissions from ROG were quantified and included in Appendix H of this EIS/EIR, but SMAQMD does not have a construction threshold for ROG; therefore, it is not evaluated here. This level of emissions would not exceed applicable SMAQMD thresholds of significance of 82 lb/day for NO_x. With regards to PM₁₀ and PM_{2.5}, SMAQMD requires incorporation of all available emissions and dust control measures as a threshold of significance for projects subject to CEQA review. Where establishment of individual on-site and off-site preserves are implemented as mitigation under the No Action/No Project Alternative, preserve establishment would occur on a project-by-project basis, and projects of sufficient scale and impacts to require mitigation preserve establishment would likely also undergo CEQA review. Therefore, all aspects of these projects, including mitigation preserve establishment, would likely be required to include all available dust control measures/best management practices (BMPs) required by SMAQMD for projects subject to CEQA. However, all projects within the SMAQMD jurisdiction, even those not subject to CEQA review, would be subject to SMAQMD rules adopted for the purpose of reducing fugitive dust emissions (e.g., Rules 401, 402, and 403). Nonetheless, based on the conservative emissions modeling, dust emissions would be relatively minor and, therefore, would not contribute significantly to the existing nonattainment status of the SVAB. Thus, based on the relatively low emissions of PM₁₀ and PM_{2.5}, because any potential grading or earth moving would be subject to currently adopted rules to reduce dust, and because no emissions thresholds related to criteria pollutants would be exceeded, construction-related emissions associated with mitigation preserve establishment would not result in new or additional impacts to air quality.

Regarding exposure of sensitive receptors to TACs, odors, and local CO, construction activities associated with mitigation preserve establishment would be relatively minor and temporary. As such, exposure would be minimal and would not result in excessive exposure at any one receptor for an extended period of time.

Operational Emissions

Operations associated with future development could result in emissions of criteria air pollutants, TACs, and odors. Emissions of criteria air pollutants would be associated with mobile (on-road and off-road vehicles), area-wide, and stationary sources associated with proposed development. TAC and odor emissions would be associated with operational-related mobile and stationary sources, such as diesel exhaust on roadways and various developments, such as dry cleaners, gas stations, and other industrial or commercial land uses.

The impact analysis presented in the *Sacramento County General Plan Update Final EIR* (Sacramento County 2010, pp. 11-1 through 11-118) determined the following within Sacramento County:

- Operational-related emissions of criteria air pollutants (ROG, NO_x, PM₁₀, and PM_{2.5}) would be significant and unavoidable.
- Operational-related (on and off road mobile) emissions of criteria air pollutants (ROG, NO_x, PM₁₀, and PM_{2.5}) would be significant and unavoidable.
- Operational-related mobile CO emissions would be less than significant.
- Operational-related emissions of TACs from mobile sources would be significant and unavoidable.
- Operational-related emissions of TACs from stationary sources would be significant and unavoidable.

The Sacramento County General Plan Update Final EIR (Sacramento County 2010) did not explicitly evaluate odor emissions.

The impact analysis presented in the *City of Galt General Plan Update Final EIR* (Galt 2008, pp. 10-38 to 10-58) determined the following within Galt:

- Operational-related (stationary, area-wide) emissions of criteria air pollutants (ROG, NO_x, PM₁₀, and PM_{2.5}) would be significant and unavoidable.
- Operational-related (on and off road mobile) emissions of criteria air pollutants (ROG, NO_x, PM₁₀, and PM_{2.5}) would be significant and unavoidable.
- Operational-related mobile CO emissions would be less than significant.
- Operational-related emissions of TACs from mobile sources would be significant and unavoidable.
- Operational-related odor emissions would be considered less than significant.
- Operational-related emissions of TACs from stationary sources would be significant and unavoidable.

The impact analysis presented in the *City of Rancho Cordova General Plan Final EIR* (Rancho Cordova 2006, pp. 4.6-1 to 4.6-39) determined the following within Rancho Cordova:

- Operational-related (stationary, area-wide) emissions of criteria air pollutants (ROG, NO_x, PM₁₀, and PM_{2.5}) would be significant and unavoidable.
- Operational-related (on and off road mobile) emissions of criteria air pollutants (ROG, NO_x, PM₁₀, and PM_{2.5}) would be significant and unavoidable.
- Operational-related mobile-CO emissions would be less than significant.
- Operational-related emissions of TACs from mobile sources would be significant and unavoidable.
- Operational-related emissions of TACs from stationary sources would be less than significant.
- Operational-related odor emissions would be considered less than significant.

As stated previously, the General Plan EIRs analyzed the effects of urban development through a period between 2030 and 2050; however, the lead agencies anticipate that urban development projects would continue through the end of the EIS/EIR 50-year study period (2065). Therefore, the lead agencies extrapolated that the significant and unavoidable air quality impacts identified in the EIRs would continue to be significant and unavoidable as additional urban development is implemented. However, less-than-significant CO and odor impacts would remain less than significance according to the reasons described in the following text.

Operational-related mobile-source emissions would be associated with vehicular exhaust as a function of VMT within the Planning Area. Most VMT would be generated by urban development in the Planning Area. As described previously and in Section 2.2.2, the regulatory environment of the No Action/No Project Alternative is expected to restrict the ability of local agencies to permit approximately 1,900 acres of future urban development in the MCRA, and this future urban development would be shifted or displaced to one or more of the areas of undeveloped land outside of the USB, as described in Section 2.2.3. Urban development shifted or displaced outside of the USB could result in longer or increased vehicle trips and, therefore, increase mobile-source emissions of ROG, NO_x, PM₁₀, PM_{2.5}, odor, and TACs relative to what would occur if urban development was confined to the USB. Increased mobile-source emissions would contribute further to the already significant unavoidable impacts to air quality described in the documents listed previously. Regarding emissions of mobile CO, as stated previously, CO concentrations that could result in significant effects may occur at intersections experiencing extreme delays and congestion, typically over 31,600 vehicles per hour (SMAQMD 2014). However, mobile CO emissions are expected to decrease per VMT over time due to cleaner burning fuels and improved vehicle engine technology. Although regional VMT may increase as a result of dispersed development patterns anticipated under the No Action/No Project

Alternative, regional VMT would be spread throughout the region and would not result in increases in congestion at any one intersection of sufficient scale to cause adverse CO concentrations. No substantial increases in mobile CO would be anticipated.

The shifted or displaced urban development under the No Action/No Project Alternative would not result in an overall change in stationary emission sources compared to what is identified in the General Plan EIRs listed previously because it is assumed that, although the location of some urban development might change, the overall types and amounts of development would generally remain the same. Therefore, the emissions of TACs, odors, and criteria air pollutant from stationary sources under the No Action/No Project Alternative would remain similar to the impacts described previously for each jurisdiction.

Operational emissions associated with mitigation preserve management include mobile-source exhaust emissions (i.e., vehicle trips) associated with visits by Preserve Managers/crews for maintenance and monitoring and transporting livestock for grazing management specific to mitigation preserve management activities. Additionally, depending on the specifics of the activities associated with mitigation preserve maintenance, several pieces of heavy equipment and the associated crews may infrequently use local roadways, resulting in on- and off-site exhaust emissions and fugitive dust. These activities could result in localized, temporary emissions. Mitigation preserves may be established on existing grazing or agricultural lands. For impact analysis purposes, maximum day vehicle trips and emissions associated with mitigation preserve operations are estimated as additional to the continuation of existing agricultural operations that are not specific to mitigation preserve management; however, during most days, the level of activity would not be substantially different from typical agricultural and range management occurring on the land prior to being established as a mitigation preserve. The types of activities on existing rangeland and farmland are similar to what would occur on mitigation preserves established on these land types, such as fence installation or repair, access road maintenance, and drainage repairs.

Although specific details regarding the mitigation preserve activities or operational/maintenance trip numbers are not known, an estimate of preserve operational emissions was calculated based on conservative assumptions of preserve numbers, size, activities that would take place, and equipment that would be used for those activities. The emissions modeling represents a maximum day of mitigation preserve operation and maintenance, where an estimated 159 vehicle trips and 32 hours of heavy-duty equipment use would occur, such as a day when heavy maintenance or repairs (e.g., landscape contouring, drainage infrastructure repairs, alteration of graded access roads) are needed along with regular operations. During the majority of days over the 50-year EIS/EIR study period, the amount of mitigation preserve management activity and attendant vehicle trips and heavy-duty equipment operations would be much less and not substantially different from activities

associated with agricultural and rangeland operations and management on lands prior to being established as mitigation preserves. The maximum activity estimate is intended to be conservative to avoid the risk of understating the impacts of the alternative. Refer to Appendix H for more information on the emissions modeling assumptions for the alternatives.

Based on the modeling conducted, preserve maintenance and operations during periods of high activity could result in 19 lb/day of NO_x and up to 3.5 lb/day of ROG emissions. Emissions of PM₁₀ would be 2 lb/day and PM_{2.5} 1 lb/day. This level of emissions would not exceed applicable SMAQMD thresholds of significance of 65 lb/day for NO_x or ROG. Regarding PM₁₀ and PM_{2.5}, emissions from regular mitigation preserve operations and maintenance activities, such as fence repair, firebreak mowing, and management of grazing animals, would be minor, and as shown by the modeling, would not exceed 2 lb/day. Preserve operational- and maintenance-related activities would not result in substantial dust emissions; therefore, they would not contribute to the existing nonattainment status of the SVAB.

With regards to exposure of sensitive receptors to TACs, odors, and local CO, activities associated with mitigation preserve operations and maintenance under this alternative would be relatively minor and temporary and similar to existing rangeland and farmland operations. As such, exposure would be minimal and would not result in excessive exposure at any one receptor for an extended period of time.

14.2.2.2 Cumulative Effects of the Alternative

Emissions from past and present urban development, agricultural activities, and other stationary and mobile emission sources in the SVAB have resulted in the existing air quality conditions described in Section 14.1.2.2, Existing Air Quality Conditions. The existing nonattainment status for ozone, PM₁₀, and PM_{2.5} indicate a significant adverse impact on air quality from these past and present emission sources.

The types of future reasonably foreseeable “other” projects, activities, and actions, described in Section 3.7.2, Reasonably Foreseeable Other Actions, are similar to the types of past and present actions that occurred in the study area. The other reasonably foreseeable future actions in the study area (see Section 3.7.2) that were not included in the Section 2.2.2 description of the No Action/No Project Alternative include additional new urban development in the Elk Grove sphere of influence and in Rancho Murieta, development of the Wilton Rancheria Casino, master planned developments inside the Urban Development Area (UDA)³

³ As discussed in Section 1.1.1, the term Urban Development Area (UDA) is used by the EIS/EIR to discuss all lands where urban development Covered Activity projects or activities could occur under the action alternatives. Therefore, “UDA” means all lands within Sacramento County’s USB boundary that are also within the Planning Area (including lands within the Rancho Cordova city limits that are within the Planning Area), all lands within Galt’s city limits, and all lands within the City of Galt’s sphere of influence (see Figure 1-1).

named “Rio Del Oro” and “Mather South,” further rural residential development outside the UDA, continued urban development of cultivated agricultural lands, major infrastructure projects such as California High-Speed Rail and the California WaterFix, and expansion of the existing National Wild Refuge and the Cosumnes River Preserve (see Section 3.7.2 for details of these projects). Some of these foreseeable projects, such as urban development in the Elk Grove sphere of influence, would result in criteria pollutant emissions during construction and from mobile and stationary sources during operation. Large infrastructure projects would likely have a larger proportion of emissions during construction versus operation, and in the case the California High-Speed Rail Project, could result in a net reduction in emissions during operation. Expansion of refuges and preserves would result in relatively minor emissions compared to other categories of foreseeable projects. However, in total, the reasonably foreseeable future projects would result in increased emissions of criteria pollutants into the SVAB and result in an incremental contribution to significant adverse effects on air quality.

The construction, stationary, and mobile-source air emissions from these foreseeable other projects were generally included in the analysis of cumulative air emissions impacts incorporated from the General Plan EIRs. These General Plan EIRs identified significant and unavoidable air quality impacts from emissions of criteria pollutants during construction and operation. Consequently, the combination of past, present, and reasonably foreseeable future projects would result in continued significant adverse cumulative air quality effects, with the SVAB likely remaining in nonattainment for ozone, PM₁₀, and PM_{2.5}.

As discussed previously, the direct and indirect impacts of No Action/No Project Alternative would adversely affect existing air quality through the emissions of criteria pollutants. Therefore, the No Action/No Project Alternative incremental effects are determined to be significant and cumulatively considerable when viewed in connection with the significant cumulative impact of the past, present, and foreseeable other projects in the study area.

14.2.3 Proposed Action/Proposed Project Alternative

The Proposed Action/Proposed Project Alternative is described in Section 2.3, Proposed Action/Proposed Project.

14.2.3.1 Direct and Indirect Effects of the Alternative

Construction Emissions

The Proposed Action/Proposed Project Alternative includes types of urban development similar to those anticipated under the No Action/No Project Alternative; therefore, the sources and types of emissions associated with construction of this development would also be similar to those described for the No Action/No Project Alternative. However, the Proposed

Action/Proposed Project Alternative does not include the MCRA regulatory requirements of the No Action/No Project Alternative (refer to Section 2.2.2); this provides the opportunity for urban development Covered Activities within the MCRA to be implemented consistent with the Sacramento County and Rancho Cordova General Plans without development occurring outside the USB. As a result, a portion of construction worker commute and vendor haul trips between future construction sites for development could be shorter in distance compared to the No Action/No Project Alternative. This would result in lower VMT and, therefore, reduced exhaust emissions of ROG, NO_x, and PM, under the Proposed Action/Proposed Project Alternative compared to the No Action/No Project Alternative.

Further, the SSHCP includes Avoidance and Minimization Measures (SSHCP AMMs) that would be included in all Covered Activity projects and activities over the 50-year permit term. As summarized in Table 2-6 of this EIS/EIR, SSHCP AMMs BMP-5, BMP-9, and BMP-11 would require implementation of BMPs to control dust emissions by watering disturbance sites, returning disturbed areas to pre-project conditions and limiting vehicle travel speed. Several elements of these SSHCP AMMs would also be implemented under the No Action/No Project Alternative as part of standard best practices or regulatory requirements (see Table 2-6). However, the Proposed Action/Proposed Project Alternative includes additional on-site monitoring and measurement of the effectiveness of each SSHCP AMM implemented and annual reporting of the effectiveness of each SSHCP AMM. The Proposed Action/Proposed Project Alternative includes processes for annual review of SSHCP AMM effectiveness and a process to make adaptive changes to an SSHCP AMM that is not effective for avoiding impacts to air quality. This additional layer of oversight of SSHCP AMM implementation and SSHCP AMM effectiveness under the Proposed Action/Proposed Project Alternative increases avoidance and minimization of impacts to air quality from dust emissions during construction activities.

The potential adverse effects from construction emissions identified previously for the No Action/No Project Alternative future condition without the SSHCP would still occur under the Proposed Action/Proposed Project Alternative but to a lesser extent because of the reduced vehicle trips resulting from not having urban development shifted or displaced outside the MCRA and more effective reductions in dust emissions resulting from SSHCP AMMs BMP-5, BMP-9, and BMP-11. This would result in a **Minor Beneficial** effect when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

Regarding emissions of localized mobile CO, the potential for individual intersections to experience sufficient vehicle trips per hour to result in adverse CO concentrations is not appreciably different between the Proposed Action/Proposed Project Alternative and the No Action/No Project Alternative. Although the Proposed Action/Proposed Project Alternative is expected to result in decreases in regional VMT associated with construction worker trips as a result of shorter travel distances between construction sites, this would not result in changes to

congestion or delays at intersections sufficient to appreciably alter CO concentrations because trips would be dispersed throughout the region and spread over the 50-year EIS/EIR study period; that is, as described previously for the No Action/No Project Alternative, no potential adverse effects from CO emissions are anticipated for the No Action/No Project Alternative future condition without the SSHCP, which would still be the case with implementation of the SSHCP under the Proposed Action/Proposed Project Alternative. Therefore, there would be **No Impact** when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

As discussed in Section 2.3.5, the Proposed Action/Proposed Project Alternative would include the establishment of an interconnected Preserve System in the Planning Area and a comprehensive preserve management program that would be implemented in perpetuity. The Preserve System under the Proposed Action/Proposed Project Alternative would be more contiguous and more connected than the preserves that would be established under the No Action/No Project Alternative. Preserve establishment could include a variety of activities during construction that would result in emissions. Activities associated with the construction/establishment of preserves under the Proposed Action/Proposed Project Alternative would be the same as those described for the No Action/No Project Alternative. However, under the Proposed Action/Proposed Project Alternative, preserves would often be larger, more frequently linked, and established/constructed by the SSHCP Implementing Entity rather than by different entities on a project-by-project basis. The SSHCP AMMs described above for development would also apply to relevant preserve activities (e.g., grading for vernal pool establishment/re-establishment). Therefore, the Proposed Action/Proposed Project Alternative, through the SSHCP AMMs, provides for more effective reductions in dust emissions during implementation of preserve activities relative to the No Action/No Project Alternative. This would be a **Minor Beneficial** effect when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

In addition to on-site emissions associated with heavy equipment and earth movement at preserve sites, construction and worker vehicle trips would also result in mobile-source emissions associated with the establishment of preserves. As a result of a more contiguous and connected Preserve System, construction-related vehicular trips associated with vendor and worker trips for preserve establishment/construction could be fewer because of a smaller number of “job sites” and coordinated preserve activities directed by the SSHCP Implementing Entity. This would result in fewer mobile-source emissions; that is, construction-related mobile-source emissions as identified for the No Action/No Project Alternative future condition associated with mitigation preserve activities without the SSHCP would still occur but potentially to a lesser extent with implementation of the SSHCP under the Proposed Action/Proposed Project Alternative. This

would be a **Minor Beneficial** effect when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

Operational Emissions

The Proposed Action/Proposed Project Alternative Covered Activities include types of urban development consistent with those anticipated under the No Action/No Project Alternative. However, under the Proposed Action/Proposed Project Alternative, urban development would not be shifted or displaced outside of the USB. Therefore, operational-related vehicular trips associated with development would be shorter, resulting in fewer mobile-source emissions; that is, potential significant adverse effects from operation of development identified previously for the No Action/No Project Alternative future condition without the SSHCP would also occur, but to a lesser extent, with implementation of the SSHCP under the Proposed Action/Proposed Project Alternative. This would be a **Minor Beneficial** effect when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

As identified previously, the types of urban development under Proposed Action/Proposed Project Alternative would be consistent with those identified for the No Action/No Project Alternative. Therefore, stationary and area-wide sources of TACs, odors, and criteria air pollutants (e.g., ROG, NO_x, PM₁₀, and PM_{2.5}) associated with operation of the Proposed Action/Proposed Project Alternative would be similar to those described for the No Action/No Project Alternative. Adverse effects from emissions of TACs and criteria air pollutants from stationary and area-wide sources described for the No Action/No Project Alternative would also apply to the Proposed Action/Proposed Project Alternative. However, no significant potential adverse effects from generation of odors are anticipated for either alternative. Thus, with respect to TACs, odors, and stationary and area-wide sources of criteria air pollutants, there would be **No Impact** when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

Regarding emissions of localized mobile CO, for the reasons described for construction emissions associated with the Proposed Action/Proposed Project Alternative (i.e., there would be no changes in operations of individual intersection of sufficient scale to result in harmful CO concentrations), there would be **No Impact** when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

As a result of development being confined to the UDA under the Proposed Action/Proposed Project Alternative, regional VMT associated with urban development may be redirected to other roadways throughout the Planning Area relative to the No Action/No Project Alternative. Thus, individual receptors that may be exposed to mobile-source TACs and odors may not be

the same under the two alternatives. However, because the overall duration, types, and numbers of trips past any particular receptor resulting from urban development would be similar, overall mobile-source TAC and odor generation and related exposure impacts in the Planning Area would also be similar; that is, potential adverse effects from operational-related mobile-sources of TACs and odors as described for the No Action/No Project Alternative would also occur for the Proposed Action/Proposed Project Alternative. However, no significant potential adverse effects from generation of, or exposure to, odors are anticipated for either alternative. Thus, with respect to mobile-source TACs and odors, there would be **No Impact** when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

Activities associated with the operation and maintenance of preserves under the Proposed Action/Proposed Project Alternative would be very similar to those described for the No Action/No Project Alternative. However, under the Proposed Action/Proposed Project Alternative, preserves would often be larger, more frequently linked, and managed by the SSHCP Implementing Entity rather than by different entities on a project-by-project basis. As a result of a more contiguous and connected Preserve System with larger preserves overall, operational-related vehicular trips associated with maintenance and worker trips for preserve maintenance could be fewer because of a smaller overall number of individual preserves to be visited. Trips to multiple preserves could also be consolidated as personnel directed by the SSHCP Implementing Entity would have activities to perform at multiple preserves and could drive to multiple preserves in a single vehicle “trip.” However, preserve management under the Proposed Action/Proposed Project Alternative would be more intensive than under the No Action/No Project Alternative, resulting in an increase in trips to implement the more active management strategy compared to the No Action/No Project Alternative. Therefore, overall, operational-related mobile-source emissions associated with preserve activities for the Proposed Action/Proposed Project Alternative would be similar to those identified previously for the No Action/No Project Alternative. This would be a **Less Than Significant Adverse** effect when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

As identified for the No Action/No Project Alternative, exposure of sensitive receptors to TACs, odors, and local CO from mitigation preserve operations would be relatively minor and temporary. As such, exposure would be minimal and would not result in excessive exposure at any one receptor for an extended period of time. For the same reasons described for mobile-source emissions resulting from Preserve System operations, this conclusion would not change for the Proposed Action/Proposed Project Alternative. Therefore, there would be **No Impact** when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

General Conformity

With regards to general conformity *de minimis* levels, the net change in peak annual emissions between the Proposed Action/Proposed Project Alternative and the No Action/No Project Alternative would be subject to the General Conformity Rule. These emissions include construction-related mobile sources and operational-related mobile, stationary, and area-wide sources, as described for the Proposed Action/Proposed Project Alternative.

As discussed previously, construction and operational emissions associated with the Proposed Action/Proposed Project Alternative would be similar or reduced compared to the No Action/No Project Alternative. As such, implementation of the Proposed Action/Proposed Project Alternative would not result in a net increase in emissions that would be subject to general conformity. Therefore, the Proposed Action/ Proposed Project Alternative would be exempt from general conformity (i.e., assumed to conform).

14.2.3.2 Significance of Direct and Indirect Effects

In summary, compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project Alternative would result in the following:

- Reduced mobile-source criteria pollutant, TAC, and odor emissions and dust emissions from construction of urban development and preserve establishment
- Similar CO emissions during construction of urban development and preserve establishment
- Reduced mobile-source criteria pollutant emissions from operation of urban development
- Similar emissions of criteria pollutants, TACs, and odors from stationary and area-wide sources associated with operation of urban development
- Similar CO emissions during the operation of urban development
- Similar exposure of sensitive receptors to mobile-source TACs and odors from operation of urban development
- Reduced mobile-source emissions from Preserve System operation
- Similar exposure of sensitive receptors to TACs, odors, and CO from Preserve System operation

Therefore, after considering the significance of impacts from the Proposed Action/Proposed Alternative on the air quality impact criteria, the Proposed Action/Proposed Project Alternative would result in **Minor Beneficial** effects to air quality compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

14.2.3.3 Cumulative Effects of the Alternative

The effects of past, present, and reasonably foreseeable other projects on air quality in the SVAB were described in Section 14.2.2.2, Cumulative Effects of the Alternative, and represent a significant adverse cumulative impact on air quality within the SVAB. As discussed in Section 14.2.2.2, the incremental effects of the No Action/No Project Alternative were determined to be significant and cumulatively considerable when viewed in connection with the effects of the past, present, and foreseeable other projects in the SVAB.

Various elements of the Proposed Action/Proposed Project Alternative would reduce emissions of criteria pollutants compared to the No Action/No Project Alternative, including more effective emission reductions from implementation of SSHCP AMMs and the lack of urban development being shifted or displaced outside the USB, reducing VMT. The reduced emissions result in the minor beneficial effects identified previously, and the Proposed Action/Proposed Project Alternative would make a smaller incremental contribution to any cumulative air quality impacts compared to the incremental effects of the No Action/No Project Alternative. Therefore, the Proposed Action/Proposed Project Alternative does not result in a cumulatively considerable (i.e., significant) contribution to the significant adverse cumulative impacts on air quality. The Proposed Action/Proposed Project Alternative would result in a **Minor Beneficial Cumulative** effect to air quality compared to the No Action/No Project Alternative baseline condition.

14.2.4 Reduced Permit Term Alternative

As described in Section 2.3.3, Covered Activities and Loss of Natural Land Covers Under the Proposed Action/Proposed Project Alternative, the Reduced Permit Term Alternative includes the same types of new urban development and infrastructure as those anticipated under the No Action/No Project Alternative.

Under the Reduced Permit Term Alternative, the core of the Preserve System established inside the UDA would be associated with the development of five large Master Plans, as discussed in Section 2.3.4, Covered Species Under the Proposed Action/Proposed Project Alternative, for the Reduced Permit Term Alternative and Section 2.3.3 for the Proposed Action/Proposed Project Alternative. Because the core of the Preserve System inside the UDA under both EIS/EIR action alternatives is associated with the same five large Master Plans, approximately 70% of the UDA preserves established under the Reduced Permit Term Alternative would have similar sizes, boundaries, and locations as the UDA preserves established under the Proposed Action/Proposed Project Alternative. However, the shorter duration of the Reduced Permit Term Alternative, as well as the smaller amount of urban development and associated development fees collected by the Reduced Permit Term SSHCP, would not allow the SSHCP Implementing Entity to establish as many acres of new preserves in the Planning Area as would occur under the Proposed Action/Proposed Project

Alternative's 50-year permit term. Therefore, fewer new preserves would be established under the Conservation Strategy for the Reduced Permit Term Alternative. This difference would be especially pronounced outside the UDA.

As described in Section 2.4, Reduced Permit Term Alternative, the federal Endangered Species Act and the California Endangered Species Act incidental take permits and the Clean Water Act permit strategy for SSHCP Covered Activities would be valid only during the 30-year permit term of the Reduced Permit Term SSHCP, and the Reduced Permit Term SSHCP Conservation Strategy would be implemented only during this 30-year term. The urban development Covered Activities and Conservation Strategies associated with the five master plans would be implemented inside the UDA during this 30-year period. However, the EIS/EIR uses a 50-year analysis study period to evaluate all alternatives (see Section 3.6.3); therefore, the EIS/EIR study period extends beyond the end of the 30-year permit term for the Reduced Permit Term Alternative. Therefore, as described in Section 3.6.7.2, Analysis of the Reduced Permit Term Alternative, After the End of the Permit Term (Years 31–50), the EIS/EIR analysis of the Reduced Permit Term Alternative also considers future urban development that is not part of the project description of the Reduced Permit Term Alternative but is still expected to occur within the Planning Area after the end of the permit term (i.e., in Years 31–50 of the EIS/EIR study period).

As described in Section 3.6.7.2, project mitigation preserves established after the end of the 30-year Reduced Permit Term Alternative would be established under a project-by-project process for obtaining individual authorizations under the Clean Water Act, federal Endangered Species Act, California Endangered Species Act, and Section 1600 of the California Fish and Game Code. Consequently, mitigation preserves established in Years 31–50 of the EIS/EIR study period would not be established using a regional, landscape-based approach that balances new urban development with the need for conservation, which would be provided by an HCP. Therefore, much of the Preserve System inside the UDA would be very similar under the two action alternatives, but the Preserve System outside the UDA would be substantially different between the Reduced Permit Term Alternative and the Proposed Action/Proposed Project Alternative. Under the Reduced Permit Term Alternative, it is unlikely that mitigation preserves established outside the UDA would be contiguous or interconnected, and it is unlikely that a large, contiguous, 10,500-acre, landscape-sized Vernal Pool Preserve would be established in the southwestern portion of the Planning Area. Likewise, the No Action/No Project Alternative would not result in contiguous, interconnected preserves outside the UDA or establish a 10,500-acre Vernal Pool Preserve in the Planning Area. In these ways, the new mitigation preserves established outside the UDA under the Reduced Permit Term Alternative and the No Action/No Project Alternative would be similar.

14.2.4.1 Direct and Indirect Effects of the Alternative

Construction Emissions

The Reduced Permit Term Alternative includes types of urban development similar to those anticipated under the No Action/No Project Alternative; therefore, the sources and types of emissions associated with construction of this development would also be similar to those described previously for the No Action/No Project Alternative. However, the Reduced Permit Term Alternative does not include the MCRA regulatory requirements of the No Action/No Project Alternative (refer to Section 2.2.2). This provides the opportunity for urban development Covered Activities within the MCRA to be implemented consistently with the Sacramento County and Rancho Cordova General Plans without development occurring outside the USB. As a result, a portion of construction worker commute and vendor haul trips between future construction sites for development could be shorter in distance compared to the No Action/No Project Alternative. This would result in lower VMT and, therefore, reduced mobile-source emissions of ROG, NO_x, and PM under the Reduced Permit Term Alternative compared to the No Action/No Project Alternative.

Further, during the 30-year permit term under the Reduced Permit Term Alternative, AMMs like those included in the SSHCP would be included in all Covered Activity projects and activities within the Planning Area. As summarized in Table 2-6 of this EIS/EIR, SSHCP AMMs BMP-5, BMP-9, and BMP-11 would require implementation of BMPs to control dust emissions during construction by watering disturbance sites, returning disturbed areas to pre-project conditions, and limiting vehicle travel speed. Several of the elements of these SSHCP AMMs would also be implemented under the No Action/No Project Alternative as part of standard BMPs or regulatory requirements (see Table 2-6). However, the Reduced Permit Term Alternative would include additional on-site monitoring and measurement of the effectiveness of each SSHCP AMM implemented and annual reporting of the effectiveness of each SSHCP AMM. The Reduced Permit Term Alternative would include processes for annual review of SSHCP AMM effectiveness and a process that makes adaptive changes to an SSHCP AMM that is not effective at avoiding impacts to air quality. This additional layer of oversight of SSHCP AMM implementation and SSHCP AMM effectiveness under the Reduced Permit Term Alternative increases avoidance and minimization of impacts to air quality from dust emissions during construction activities.

The potential adverse effects from construction emissions identified previously for the No Action/No Project Alternative future condition would still occur under the Reduced Permit Term Alternative but to a lesser extent because of the reduced vehicle trips resulting from not having urban development shifted or displaced outside the MCRA and more effective reductions in dust emissions resulting from SSHCP AMMs BMP-5, BMP-9, and BMP-11. This

would result in a **Minor Beneficial** effect when comparing the Reduced Permit Term Alternative to the No Action/No Project Alternative baseline condition.

Regarding emissions of localized mobile CO, the potential for individual intersections to experience sufficient vehicle trips per hour to result in adverse CO concentrations is not appreciably different between the Reduced Permit Term Alternative and the No Action/No Project Alternative. The Reduced Permit Term Alternative would result in decreases in regional VMT associated with construction worker trips as a result of shorter travel distances between construction sites. However, these reductions in VMT would not result in changes to congestion or delays at intersections sufficient to appreciably alter CO concentrations because trips would be dispersed throughout the region and spread over the 50-year EIS/EIR study period. That is, as described previously for the No Action/No Project Alternative, no potential adverse effects from CO emissions are anticipated for the No Action/No Project Alternative future condition, which would still be the case with implementation of the Reduced Permit Term Alternative. Therefore, there would be **No Impact** when comparing the construction CO emissions and concentrations under the Reduced Permit Term Alternative to the No Action/No Project Alternative baseline condition.

The Reduced Permit Term Alternative includes an interconnected Preserve System established during the 30-year permit term and a comprehensive preserve management program for those preserves to be implemented in perpetuity. The Preserve System established during the 30-year permit term under the Reduced Permit Term Alternative would be consolidated and linked (similar to the Proposed Action/Proposed Project Alternative). As described in Section 2.4.5, Conservation Strategy Under the Reduced Permit Term Alternative, in Chapter 2, continued establishment of a coordinated preserve management and monitoring program would cease after the end of the 30-year permit term. The interconnected Preserve System established during the permit term would remain intact, whereas future mitigation preserves established during Years 31–50 of the EIS/EIR study period would not be established in an as consolidated manner and would resemble mitigation preserve establishment patterns under the No Action/No Project Alternative. The resulting scenario would be such that a portion of preserves would reflect a more interconnected Preserve System, although with fewer acres compared to the Proposed Action/Proposed Project Alternative, and a portion would reflect an establishment pattern like the No Action/No Project Alternative.

Impacts to air quality from preserve establishment during the 30-year permit term under the Reduced Permit Term Alternative would be similar to those identified previously for the Proposed Action/Proposed Project Alternative; therefore, a minor beneficial effect to air quality (e.g., mobile-source emissions, dust emissions) would occur during this time when comparing the Reduced Permit Term Alternative to the No Action/No Project Alternative baseline condition. During Years 31–50 of the 50-year EIS/EIR study period, project-by-project mitigation for impacts to listed species would resemble the No Action/No Project Alternative. During this

period, impacts to air quality from mitigation preserve establishment under the Reduced Permit Term Alternative would be very similar to those that would occur under No Action/No Project Alternative. Given the reduced emissions resulting from preserve establishment during the 30-year permit term, over the total 50-year EIS/EIR study period, the Reduced Permit Term Alternative would result in an overall **Minor Beneficial** effect to air quality resulting from preserve establishment compared to the No Action/No Project Alternative baseline condition.

Operational Emissions

The Reduced Permit Term Alternative includes types of urban development consistent with those anticipated under the No Action/No Project Alternative. However, under the Reduced Permit Term Alternative, urban development would not be shifted or displaced outside of the USB. Therefore, operational-related vehicular trips associated with development would be shorter, resulting in fewer mobile-source emissions. That is, potential significant adverse effects from operation of development identified previously for the No Action/No Project Alternative future condition would also occur but to a lesser extent with implementation of the Reduced Permit Term Alternative. This would be a **Minor Beneficial** effect when comparing the Reduced Permit Term Alternative to the No Action/No Project Alternative baseline condition.

As identified previously, the types of urban development under the Reduced Permit Term Alternative would be consistent with those identified for the No Action/No Project Alternative. Therefore, stationary and area-wide sources of TACs, odors, and criteria air pollutants (e.g., ROG, NO_x, PM₁₀, and PM_{2.5}) associated with operation of the Reduced Permit Term Alternative would be similar to those described for the No Action/No Project Alternative. Adverse effects from emissions of TACs and criteria air pollutants from stationary and area-wide sources described previously for the No Action/No Project Alternative would also apply to the Reduced Permit Term Alternative. However, no significant potential adverse effects from generation of odors are anticipated for either alternative. Thus, with respect to TACs, odors, and stationary and area-wide sources of criteria air pollutants, there would be **No Impact** when comparing the Reduced Permit Term Alternative to the No Action/No Project Alternative baseline condition.

Regarding emissions of localized mobile CO, for the reasons described previously for construction emissions associated with the Reduced Permit Term Alternative (i.e., there would be no changes in operations of individual intersections of sufficient scale to result in harmful CO concentrations), there would be **No Impact** when comparing the Reduced Permit Term Alternative to the No Action/No Project Alternative baseline condition.

As a result of development being confined to the UDA under the Reduced Permit Term Alternative, regional VMT associated with urban development may be redirected to other roadways throughout the Planning Area relative to the No Action/No Project Alternative. Thus,

individual receptors that may be exposed to mobile-source TACs and odors may not be the same under the two alternatives. However, because the overall duration, types, and numbers of trips past any particular receptor resulting from urban development would be similar, overall mobile-source TAC and odor generation and related exposure impacts in the Planning Area would also be similar. That is, potential adverse effects from operational-related mobile-sources of TACs and odors as described previously for the No Action/No Project Alternative would also occur for the Reduced Permit Term Alternative. However, no significant potential adverse effects from generation of or exposure to odors are anticipated for either alternative. Thus, with respect to mobile-source TACs and odors, there would be a **No Impact** when comparing the Reduced Permit Term Alternative to the No Action/No Project Alternative baseline condition.

Impacts to air quality from the management and operation of preserves established during the 30-year permit term under the Reduced Permit Term Alternative would be similar to those identified previously for the Proposed Action/Proposed Project Alternative; therefore, a minor beneficial effect to air quality (e.g., mobile-source emissions, dust emissions) would occur when comparing the Reduced Permit Term Alternative to the No Action/No Project Alternative baseline condition. Management and operation of mitigation preserves established during Years 31–50 of the 50-year EIS/EIR study period would resemble the No Action/No Project Alternative. Impacts to air quality from the operation and management of these mitigation preserves included in the Reduced Permit Term Alternative would be very similar to those that would occur under No Action/No Project Alternative. Given the reduced preserve operations and management emissions resulting from the preserves established during the 30-year permit term, the Reduced Permit Alternative would result in an overall **Minor Beneficial** effect to air quality resulting from preserve operation and management compared to the No Action/No Project Alternative baseline condition.

As identified for the No Action/No Project Alternative, exposure of sensitive receptors to TACs, odors, and local CO from mitigation preserve operations would be relatively minor and temporary. As such, exposure would be minimal and would not result in excessive exposure at any one receptor for an extended period of time. For the same reasons described previously in Sections 14.2.2 and 14.2.3 for mobile-source emissions resulting from Preserve System operations, this conclusion would not change for the Reduced Permit Term Alternative. Therefore, there would be **No Impact** when comparing the Reduced Permit Term Alternative to the No Action/No Project Alternative baseline condition.

General Conformity

Regarding general conformity *de minimis* levels, the net change in peak annual emissions between the Reduced Permit Term Alternative and the No Action/No Project Alternative would be subject to the General Conformity Rule. These emissions include construction-related mobile

sources and operational-related mobile, stationary, and area-wide sources, as described previously for the Reduced Permit Term Alternative.

As discussed previously, construction and operational emissions associated with the Reduced Permit Term Alternative would either be similar or reduced compared to the No Action/No Project Alternative. As such, implementation of the Reduced Permit Term Alternative would not result in a net increase in emissions that would be subject to general conformity. Therefore, the Reduced Permit Term Alternative would be exempt from general conformity (i.e., assumed to conform).

14.2.4.2 Significance of Direct and Indirect Effects

In summary, compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would result in the following:

- Reduced mobile-source criteria pollutant, TAC, and odor emissions and dust emissions from construction of urban development and preserve establishment
- Similar CO emissions and concentrations during construction of urban development and preserve establishment
- Reduced mobile-source criteria pollutant emissions from operation of urban development
- Similar emissions of criteria pollutants, TACs, and odors from stationary and area-wide sources associated with operation of urban development
- Similar CO emissions during the operation of urban development
- Similar exposure of sensitive receptors to mobile-source TACs and odors from operation of urban development
- Reduced mobile-source emissions from Preserve System operation
- Similar exposure of sensitive receptors to TACs, odors, and CO from Preserve System operation

Therefore, after considering the significance of impacts from the Reduced Permit Term Alternative on the air quality impact criteria, the Reduced Permit Term Alternative would result in **Minor Beneficial** effects to air quality compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

14.2.4.3 Cumulative Effects of the Alternative

The effects of past, present, and reasonably foreseeable other projects on air quality in the SVAB were described in Section 14.2.2.2 and represent a significant adverse cumulative impact on air quality within the SVAB. As discussed in Section 14.2.2.2, the incremental effects of the No Action/No Project Alternative were determined to be significant and cumulatively

considerable when viewed in connection with the effects of the past, present, and foreseeable other projects in the SVAB.

Various elements of the Reduced Permit Term Alternative would reduce emissions of criteria pollutants compared to the No Action/No Project Alternative, including more effective emission reductions from implementation of SSHCP AMMs and the lack of urban development being shifted or displaced outside the USB, thereby reducing VMT. The reduced emissions result in the minor beneficial effects identified previously, and the Reduced Permit Term Alternative would make a smaller incremental contribution to any cumulative air quality impacts compared to the incremental effects of the No Action/No Project Alternative. Therefore, the Reduced Permit Term Alternative does not result in a cumulatively considerable (i.e., significant) contribution to the significant adverse cumulative impacts on air quality. The Reduced Permit Term Alternative would result in a ***Minor Beneficial Cumulative*** effect to air quality compared to the No Action/No Project Alternative baseline condition.

14.3 REFERENCES CITED

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

17 CCR 93105. Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations.

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CHAPTER 15 – GREENHOUSE GASES AND CLIMATE CHANGE

This chapter presents the potential effects of each alternative on global climate change and impacts of global climate change on the alternatives. General topics addressed include construction- and operational-related greenhouse gas (GHG) emissions. An explanation of what GHGs are, how they contribute to climate change, and how climate change affects the environment is provided in Section 15.1.2, Greenhouse Gas Emissions and Consequences of Climate Change in the Planning Area.

15.1 AFFECTED ENVIRONMENT/ENVIRONMENTAL SETTING

15.1.1 Regulatory Framework

The regulatory responsibilities for reducing emissions of GHGs and combatting the impacts of climate change include several federal, state, regional, and local agencies. This section summarizes the statutes, regulations, policies, and agency planning documents that are relevant to the approval, permitting, or implementation of the alternatives analyzed in this Environmental Impact Statement/Environmental Impact Report (EIS/EIR). This section also identifies any relevant federal permits or other entitlements that must be obtained prior to implementing the alternatives. To the extent possible, the analyses or studies required by these regulations and policies are integrated into the environmental effects analyses presented in Section 15.2, Environmental Consequences/Environmental Impacts (40 CFR 1502.25).

15.1.1.1 Federal

Supreme Court Ruling

The U.S. Environmental Protection Agency is the federal agency responsible for implementing the federal Clean Air Act and its amendments. The Supreme Court of the United States ruled on April 2, 2007, that carbon dioxide (CO₂), a GHG contributing to global climate change (see Section 15.1.2), is an air pollutant as defined under the Clean Air Act, and that the U.S. Environmental Protection Agency has the authority to regulate emissions of GHGs. The ruling in this case resulted in the U.S. Environmental Protection Agency taking steps to regulate GHG emissions and lent support for state and local agencies' efforts to reduce GHG emissions.

President's Council on Environmental Quality Guidance

On December 18, 2014, the President's Council on Environmental Quality released draft guidance for public comment that described how federal departments and agencies should consider the effects of climate change and GHG emissions as a result of proposed actions. The guidance explains that agencies should consider both the potential effects of a proposed action on climate change, as indicated by its estimated GHG emissions, and the implications of climate

change for the environmental effects of a proposed action. The draft guidance also provided a numeric emissions level for consideration, identifying that, if emissions from a federal action exceed 25,000 metric tons of carbon dioxide equivalent (MT CO₂e), a qualitative and quantitative assessment of a proposed action would be meaningful to decision makers and the public. For actions where emissions are below the 25,000 MT CO₂e/year reference point, quantitative analysis of GHG emissions is not recommended unless it is easily accomplished based on available tools and data.

The Council on Environmental Quality finalized its nonregulatory guidance on GHG emissions and the effects of climate change in the National Environmental Policy Act reviews in August 2016 (CEQ 2016). The final guidance no longer includes the 25,000 MT CO₂e emissions reference point. The final guidance removes identification of any quantitative emissions limit and instead advises federal agencies to consider the GHG emissions caused by federal actions, adapts the agency's actions to consider climate change effects throughout the process, and addresses these issues in the agency's procedures.

15.1.1.2 State

Executive Order S-3-05

Executive Order S-3-05, which was signed by Governor Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea level. To combat those concerns, the Executive Order established¹ total GHG emission targets. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80% below the 1990 level by 2050.

As described below, legislation was passed in 2006 (Assembly Bill [AB] 32) to limit GHG emissions to 1990 levels by 2020 with continued "reductions in emissions" beyond 2020, but no specific additional reductions were enumerated in the legislation. Further, Senate Bill (SB) 375 (sustainable community strategies [SCS]/transportation) established goals for emissions from light-duty truck and automobiles for 2020 and 2035.

A recent California Appellate Court decision, *Cleveland National Forest Foundation v. San Diego Association of Governments* (November 24, 2014), further examined the executive order and whether it should be viewed as having the equivalent force of a legislative mandate for specific emissions reductions. The case has been accepted for review by the California Supreme Court and, therefore, is not currently considered a precedent.

¹ Note that in the context of this Plan, the word "establish" is synonymous with "create."

Assembly Bill 32: Global Warming Solutions Act of 2006

In September 2006, Governor Schwarzenegger signed the California Global Warming Solutions Act of 2006 (AB 32). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. AB 32 also requires that these reductions (California Health and Safety Code, Section 38551):

- (a) . . . shall remain in effect unless otherwise amended or repealed.
- (b) It is the intent of the Legislature that the statewide GHG limit continue in existence and be used to maintain and continue reductions in emissions of GHGs beyond 2020.
- (c) The (Air Resources Board) shall make recommendations to the Governor and the Legislature on how to continue reductions of GHG emissions beyond 2020.

Climate Change Scoping Plan

In December 2008, the California Air Resources Board (CARB) adopted its Climate Change Scoping Plan, which contains the main strategies California will implement to achieve reduction of approximately 118 million metric tons (MMT) of CO₂e (further explained in Section 15.1.2) emissions, or approximately 21.7% from the state's projected 2020 emission level of 545 MMT CO₂e under a business-as-usual scenario (this is a reduction of 47 MMT CO₂e, or almost 10%, from 2008 emissions). CARB's original 2020 projection was 596 MMT CO₂e, but the current 545 MMT CO₂e 2020 projection takes into account the economic downturn that occurred in 2008 and associated reductions in statewide GHG emissions (CARB 2011). The Scoping Plan reapproved by CARB in August 2011 includes the Final Supplement to the Scoping Plan Functional Equivalent Document, which further examined various alternatives to Scoping Plan measures. The Scoping Plan also includes CARB-recommended GHG reductions for each emissions sector of the state's GHG inventory. CARB estimates the largest reductions in GHG emissions to be achieved by 2020 will be by implementing the following measures and standards (CARB 2011):

- Improved emissions standards for light-duty vehicles (estimated reductions of 26.1 MMT CO₂e)
- The Low-Carbon Fuel Standard (15.0 MMT CO₂e)
- Energy efficiency measures in buildings and appliances (11.9 MMT CO₂e)
- A renewable portfolio and electricity standards for electricity production (23.4 MMT CO₂e) and the Cap-and-Trade Regulation for certain types of stationary emission sources (e.g., power plants)

In May 2014, CARB released, and has since adopted, the *First Update to the Climate Change Scoping Plan* to identify the next steps in reaching AB 32 goals and evaluate the progress that has been made between 2000 and 2012 (CARB 2014a). According to the update, California is on track to meet the near-term 2020 GHG limit and is well positioned to maintain and continue reductions beyond 2020 (CARB 2014a). The update also reports the trends in GHG emissions from various emission sectors.

The update summarizes sector-specific actions needed to stay on the path toward the Executive Order S-3-05 2050 target. While the update acknowledges certain reduction targets by others (such as in the Copenhagen Accord), it stops short of recommending a specific target for California, instead acknowledging that mid-term targets need to be set “consistent with the level of reduction needed [by 2050] in the developed world to stabilize warming at 2 °C [degrees Celsius] (3.6 °F [degrees Fahrenheit]) [above pre-industrial levels].”

Actions are recommended for the energy sector, transportation (clean cars, expanded zero-emission vehicle program, fuels policies), land use (compliance with regional sustainability planning targets), agriculture, water use (more stringent efficiency and conservation standards, runoff capture), waste (elimination of organic material disposal, expanded recycling, use of Cap-and-Trade Program), green building (strengthening of Green Building Standards), and other sectors. Many of the actions that result in meeting targets will need to be driven by new or modified regulations.

Executive Order B-30-15

On April 20, 2015, Governor Edmund G. Brown Jr. signed Executive Order B-30-15 to establish a California GHG reduction target of 40% below 1990 levels by 2030. California is on track to meet or exceed the current target of reducing GHG emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (SB 32 discussed previously). California’s new emission reduction target of 40% below 1990 levels by 2030 will make it possible to reach the ultimate goal of reducing emissions 80% below 1990 levels by 2050.

Senate Bill 32 of 2016

In August 2016, Governor Brown signed SB 32, which serves to extend California’s GHG reduction programs beyond 2020. SB 32 amended the California Health and Safety Code to include Section 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40% below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by the governor’s Executive Order B-30-15 for 2030, which set the next interim step in the state’s continuing efforts to pursue the long-term target expressed in Executive Orders S-3-05 and B-30-15 of 80% below 1990 emissions levels by 2050.

Senate Bill 375: Statutes of 2008

SB 375, signed into law by Governor Schwarzenegger in 2008, requires regional transportation plans, developed by metropolitan planning organizations, to incorporate an SCS that will achieve GHG emission reduction targets set by the CARB.

The Sacramento Area Council of Governments (SACOG) serves as the metropolitan planning organization for Sacramento, Placer, El Dorado, Yuba, Sutter, and Yolo Counties, excluding those lands located in the Lake Tahoe Basin. The Planning Area is located within Sacramento County and includes Galt and Rancho Cordova. SACOG adopted its Metropolitan Transportation Plan (MTP)/SCS 2035 in 2016. SACOG was tasked by CARB to achieve a 9% per capita reduction compared to 2012 emissions by 2020 and a 16% per capita reduction by 2035, which CARB confirmed the region would achieve by implementing its SCS (CARB 2013). The 2016 MTP/SCS forecasts land use development by community types: Center and Corridor Communities, Established Communities, Developing Communities, Rural Residential Communities, and Lands Not Identified for Development in the 2016 MTP/SCS study period (SACOG 2016a). CARB is currently in the process of updating the GHG reduction targets pursuant to the provisions of SB 375.

The Planning Area includes Sacramento County, Galt, and Rancho Cordova, which are jurisdictions with areas slated for development in the SCS growth projections.

15.1.1.3 Local**Sacramento Metropolitan Air Quality Management District**

The Planning Area is entirely within the jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD). The SMAQMD's *Guide to Air Quality Assessment in Sacramento County* establishes analysis expectations with regard to GHG emissions in California Environmental Quality Act (CEQA) documents, such as EIRs, for projects in the SMAQMD's jurisdiction (SMAQMD 2016). SMAQMD recommends that an analysis of potential impacts of project-generated GHG emissions should include a description of GHGs, summary of existing regulations, and discussion of GHG emissions sources in the Planning Area. The guidelines further state that the analysis should quantify the mass emissions associated with project construction and operation. SMAQMD has adopted thresholds of significance, which are further described in Section 15.2.1, Methodology for Assessing Impacts of Each Alternative on Greenhouse Gases and Climate Change.

Sacramento County***Sacramento County Climate Action Plan***

In 2009, Sacramento County began a multiphase Climate Action Plan to meet the state's targets for GHG reductions. The Climate Action Plan Strategy and Framework Document was adopted

on November 9, 2011, by the Sacramento County Board of Supervisors, and the Government Operations Climate Action Plan was adopted on September 11, 2012. The plan includes a GHG inventory for the entire Sacramento County (discussed further below), a GHG emission reduction target, and goals and implementation measures developed to help Sacramento County reach these targets. Reduction strategies address GHG emissions associated with transportation and land use, energy, water, waste management and recycling, and agriculture and open space. Although parts of the plan encompass countywide emissions issues, the focus of the currently adopted plan is on Sacramento County facilities and operations. Sacramento County is currently working to update and expand the Climate Action Plan to address countywide emissions sources.

Sacramento County 2030 General Plan

The *Sacramento County General Plan of 2005–2030* (Sacramento County General Plan) (Sacramento County 2011) includes the following policy in the Land Use Element related to reducing GHG emissions in Sacramento County:

Policy LU-115: It is the goal of the County to reduce GHG emissions to 1990 levels by the year 2020. This shall be achieved through a mix of State and local action.

2030 Galt General Plan

The *2030 Galt General Plan: Policy Document* (Galt General Plan) (Galt 2009a) contains numerous policies related to GHG emission reduction. However, only the following three are applicable to the analysis in this EIS/EIR:

Policy COS-7.1: Greenhouse Gas Emission Reduction: The City shall reduce GHG emissions from City operations as well as from private development in compliance with the California Global Warming Act of 2006 and any applicable State regulations. To accomplish this, the City will coordinate with SMAQMD and [C]ARB in developing a GHG Emissions Reduction Plan that identifies GHG emissions within the City as well as ways to reduce those emissions. The plan will parallel the requirements adopted by [C]ARB specific to this issue. Specifically, the City will work with the SMAQMD to include the following key items in the plan:

- Inventory all known, or reasonably discoverable, sources (both public and private) of GHG in the City;
- Inventory estimated 1990 GHG emissions based on available data, the current level, those projected for the 2020 milestone year (consistent with AB 32), and that projected for the year 2030;

- Set a target for the reduction of emissions attributable to the City's discretionary land use decisions and its own internal government operations, and;
- Identify specific actions that will be undertaken by the City to meet the emission reduction targets set by the City.

Policy COS-7.2: Statewide Global Warming Solutions Support: The City should monitor and support the efforts of [C]ARB, under AB 32, to formulate mitigation strategies, if any that may be implemented by local government. If and when any such strategies become available, the City should consider whether to implement them in some form, such as, for example, by imposing new mitigation measures on new development. If the City Council, after seeking public input on the subject, chooses to implement any such measures it considers to be feasible and desirable, the City's commitment may take the form of a new ordinance, resolution, or other type of policy document.

Policy COS-7.3: Motor Vehicle Trip Reduction: The City shall encourage strategic land use patterns for businesses that reduce the number and length of motor vehicle trips and/or encourage alternative modes of travel.

Rancho Cordova General Plan

The *City of Rancho Cordova General Plan* (Rancho Cordova General Plan) (Rancho Cordova 2006a) does not have any policies related to GHG emissions or global climate change; however, the Rancho Cordova General Plan does include the following policies within the Air Quality Element that would result in reductions in GHG emissions:

Policy AQ.4.1: Promote improved air quality benefits through energy conservation measures for new and existing development.

Policy AQ.4.2: Support vehicle improvements and the use of clean vehicles that reduce emissions and improve air quality.

15.1.2 Greenhouse Gas Emissions and Consequences of Climate Change in the Planning Area

This section provides information on GHGs and their effect on climate change.

Certain gases in the Earth's atmosphere, classified as GHGs, play a critical role in determining the Earth's surface temperature. Solar radiation enters the Earth's atmosphere from space. A portion of the radiation is absorbed by the Earth's surface, and a smaller portion of this radiation is reflected back toward space. This absorbed radiation is then emitted from the Earth as low-frequency infrared radiation. The Earth has a much lower temperature than the Sun;

therefore, the Earth emits lower frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead “trapped,” resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on Earth. Without the greenhouse effect, Earth would not be able to support life as we know it.

Prominent GHGs contributing to the greenhouse effect are CO₂, methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (SF₆). Different gases have varying global warming potential and therefore are commonly normalized based on each gasses’ global warming potential and expressed as CO₂e (i.e., the global warming potential of each gas is converted to the equivalent global warming potential for CO₂). Human-caused emissions of these GHGs in excess of natural ambient concentrations are widely regarded as being responsible for intensifying the greenhouse effect, which has led to a trend of unnatural warming of the Earth’s climate, known as global climate change or global warming. It is *extremely unlikely* that global climate change of the past 50 years can be explained without the contribution from human activities (IPCC 2007).

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (approximately 1 day), GHGs have long atmospheric lifetimes (1 year to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule is dependent on multiple variables and cannot be pinpointed, it is understood that more CO₂ is emitted into the atmosphere than is sequestered (i.e., taken out of gaseous form in the atmosphere and bound into a solid or liquid) by ocean uptake, vegetation, and other forms of sequestration. Of the total annual human-caused CO₂ emissions, approximately 54% is sequestered through ocean uptake, uptake by northern hemisphere forest regrowth, and other terrestrial sinks within a year, whereas the remaining 46% of human-caused CO₂ emissions remains stored in the atmosphere (IPCC 2013).

Similarly, impacts of GHGs are realized globally as opposed to localized air quality effects of criteria air pollutants and toxic air contaminants. The quantity of GHGs that it takes to ultimately result in climate change is not precisely known. However, the quantity is enormous, and no single project alone would measurably contribute to a noticeable change in the global average temperature or to global, local, or micro climates. From the standpoint of a National Environmental Policy Act and CEQA impact analysis, GHG impacts to global climate change are inherently cumulative, and the key question is whether a project’s contribution to the impact is “cumulatively considerable” in combination with other sources.

15.1.3 Attributing Climate Change—Greenhouse Gas Emission Sources

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the transportation, industrial/manufacturing, utility, residential, commercial and agricultural emissions sectors (CARB 2014b). In California, the transportation sector is the largest emitter of GHGs followed by electricity generation (CARB 2014b). Emissions of CO₂ are byproducts of fossil fuel combustion. CH₄, a highly potent GHG, results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices, landfills, and wastewater treatment plants. N₂O, an even more potent GHG, is also largely attributable to agricultural practices and soil management. Carbon sinks, or reservoirs, include vegetation and the ocean, which absorb CO₂ through sequestration and dissolution (absorption of the molecules into the liquid medium), respectively, which are two of the most common processes for removing CO₂ from the atmosphere.

15.1.3.1 Existing Emissions Inventory

A GHG emissions inventory was conducted in 2009 for Sacramento County, including Galt and Rancho Cordova (Sacramento County 2009). The inventory was developed based on 2005 data and quantified baseline emissions by sector for the included jurisdictions. Total emissions for each jurisdiction within the Planning Area are shown in Table 15-1.

Table 15-1. 2005 Community GHG Emissions Inventory

Jurisdiction	CO ₂ e (MT)
Sacramento County	13,938,537
Galt	172,428
Rancho Cordova	557,943

Source: Sacramento County 2009.

Notes: CO₂e = carbon dioxide equivalent; MT = metric tons

15.1.4 Effects of Climate Change on the Environment

According to the IPCC, global average temperature is expected to increase by 3°F to 7°F by the end of the century, depending on future GHG emission scenarios (IPCC 2007). According to the California Natural Resources Agency, temperatures in California are projected to increase 2°F to 5°F by 2050 and by 4°F to 9°F by 2100 (CNRA 2012).

Other environmental resources could be indirectly affected by the accumulation of GHG emissions and resulting rise in global average temperature. For example, an increase in the global average temperature is expected to result in a decreased volume of precipitation falling as snow in California and an overall reduction in snowpack in the Sierra Nevada. According to

the California Energy Commission (2012), the snowpack portion of the state's water supply could potentially decline 30% to 90% by the end of the twenty-first century. An increase in precipitation falling as rain rather than snow also could lead to increased potential for floods because water that would normally be held in the snowpack of the Sierra Nevada until spring would flow into the Central Valley concurrently with winter storm events. This scenario would place more pressure on California's levee/flood control system.

As the existing climate throughout California changes over time, the ranges of various plant and wildlife species could shift or be reduced depending on the favored temperature and moisture regimes of each species. In the worst cases, some species could become extinct or be extirpated from the state if suitable conditions are no longer available (CNRA 2012).

Changes in precipitation patterns and increased temperatures could also alter the distribution and character of natural vegetation and associated moisture content of plants and soils. An increase in frequency of extreme heat events and drought are also expected. These changes are expected to lead to increased frequency and intensity of wildfires (CNRA 2012).

However, attempting to predict the response of any one particular species, habitat, or ecosystem to climate change, particularly when considering a specific geographic area, would require significant speculation. Assumptions would need to be made regarding the type and extent of changes in climatic conditions in the area of interest (e.g., average maximum temperature, average minimum temperature, volume and timing of precipitation, changes in wind patterns), as well as the response of the organism or ecosystem to these changes. For example, while the Mediterranean climate of mild wet winters and hot dry summers is conducive to the formation of vernal pools, climate may not be integral to vernal pool formation. As defined by Keeley and Zelder (1998), vernal pool habitat is defined by the source of water, duration of inundation, and the timing of these phases. According to Keeley and Zelder (1998), as long as conditions support (1) inundation during periods wherein temperature is sufficient for plant growth, followed by (2) a brief, water-logged terrestrial stage that proceeds (3) extreme, extended soil desiccation, climate type is not integral to the formation of vernal pools. It is unknown to what extent these parameters would need to change to substantially affect the long-term viability of vernal pools in the Planning Area.

The potential effects from climate change on vernal pools in the Planning Area may ultimately prove to be important. However, California has experienced climatic variation throughout geologic time and vernal pool species survived and evolved under these changing conditions. Various paleontological records, including evaluation of tree rings, pollen deposits, and salinity records support these findings. For example, California experienced a dry period between 10,000 and 5,000 years ago that is associated with deglaciation combined with influences from the Milankovitch solar maximum (i.e., a period of intense solar activity when increased solar

energy reached the earth) (Minnich 2007, p. 59; Malamud-Roam et. al. 2006, p. 1,576). Limited growth of bristlecone pine trees (*Pinus longaeva*) during this period, as observed through the study of tree rings, supports the conclusion that water was scarce. Additionally, pollen deposits sampled at an assortment of high elevation meadows indicate a more open forest containing a greater number of shrubs than the current forests of the Sierra Nevada. Records of high salinity within the San Francisco Estuary at this time also correspond with dryer conditions in the watershed because less runoff would allow more salt water intrusion into the estuary.

Following this dry period, California experienced an extended wet period. From 5,000 years ago to 3,500 years ago, paleontological evidence suggests an increase in precipitation coinciding with a reduction in the strength of wind-driven upwelling off the coast of California. During this period, the salinity of the San Francisco Estuary was relatively low, and tree rings within these dates are thicker, which is indicative of higher precipitation rates. Glaciers also began forming in the Sierra Nevada where they had previously been absent during the early Holocene; therefore, temperatures are thought to be cooler (Minnich 2007, p. 61).

A shift back to a drier climate then occurred, extending from approximately 2,050 to 650 years ago (i.e., approximately 1,350 AD), culminating in an additional period of global cooling known as the Little Ice Age from 1,250 to 1,750 AD (Malamud-Roam et. al. 2006, p. 1,584). Tree ring chronologies indicate a moderately cool period extending from the seventeenth century to the early nineteenth century, followed by relatively stable climatic conditions during the twentieth century.

Therefore, while current climate change projections trend towards a generally hotter, drier climate, there is evidence that the state has experienced these conditions before, with vernal pools persisting through these periods. However, other variables, such as stresses from degradation of water quality or human disturbance, could alter how vernal pools respond to future hotter and drier conditions relative to similar past climatic conditions. Given the amount of uncertainty and number of variables involved, it would be speculative to attempt to predict the future effects of climate change on any particular species or ecosystem in the Planning Area.

Another outcome of global climate change is sea-level rise. Sea level rose approximately 7 inches during the last century, and it is predicted to rise an additional 7 to 22 inches by 2100, depending on the future levels of GHG emissions (IPCC 2007). The California Natural Resources Agency projects that sea levels along California will rise 5 to 24 inches by 2050 and 17 to 66 inches by 2100 (CNRA 2012). However, the Planning Area is approximately 90 miles inland, and although some of the southwestern portions of the Planning Area are near sea-level, they are protected by levees and other flood control features.

15.2 ENVIRONMENTAL CONSEQUENCES/ ENVIRONMENTAL IMPACTS

15.2.1 Methodology for Assessing Impacts of Each Alternative on Greenhouse Gases and Climate Change

GHG emissions are typically categorized by direct (e.g., emissions directly emitted from a source, such as vehicle tailpipe emissions) and indirect (e.g., emissions that occur off site, such as energy consumption from a local utility). The alternatives were evaluated in the context of the planned urban development, land use patterns within the Planning Area, and emissions sources associated with them (e.g., stationary, mobile). Impacts were identified where the actions or projects associated with the alternative would result in new or additional GHG emissions.

There are multiple ways that alternatives could increase GHG emissions, such as by increasing regional vehicle miles traveled (VMT) and, thus, mobile-source CO₂; increasing other fossil fuel consumption, such as for energy production; and decreasing the amount of CO₂ sequestered in vegetation. GHG emissions would occur during both construction and operations. Construction and operations could also result in the use of heavy duty equipment, which would be a source of exhaust. The projects and activities expected under each alternative, including expected or conceptual preserves, are described in Chapter 2, Alternatives, Including the Proposed Action/Proposed Project. Potential impacts of the alternatives were analyzed using a 50-year study period, as discussed in Section 3.6.3, EIS/EIR Study Period.

Potential impacts from GHG emissions from each alternative were analyzed based on the anticipated development projects and preserve establishment, management, and maintenance over the 50-year study period, as described in Section 3.6.3.

Specific to emissions from preserve establishment, emissions from construction- and operational-related activities were quantified using the California Emissions Estimate Model. Modeling was for an estimated high activity day implementing habitat establishment/re-establishment and used conservative assumptions (i.e., assumptions that would lead to higher emissions) so as not to underestimate emissions from this activity. For example, the modeling assumed that approximately 385 acres of habitat establishment/re-establishment would be completed in a single year, which is roughly 20% of the total habitat establishment/re-establishment required for each alternative over the entire 50-year study period. The parameters of the model represent what would be expected to occur as each alternative is implemented over time. The modeling included the use of heavy-duty equipment for earth movement and grading, as well as operational-related vehicle use. Model assumptions and parameters are included in Appendix H, Modeling Data and Assumptions for Air Quality and Greenhouse Gas Analyses.

As described previously, GHG emissions are global pollutants and, therefore, contribute to a global, not local or regional, problem; however, the regulatory framework in California is such

that SMAQMD regulates local emissions and sources within the Sacramento Valley Air Basin with the intent to achieve the region's fair share of GHG emission reduction such that state GHG reduction targets (i.e., goals set by the Scoping Plan) are met. As such, significance thresholds determined by SMAQMD and other local agencies (e.g., Sacramento County) are designed to ensure compliance with state GHG reduction planning efforts. The emissions attributable to each alternative result from activities that occur in the Planning Area. Therefore, the lead agencies determined that the appropriate geographic scale for evaluating GHG emissions is the Planning Area.

Based on the global nature of GHG emissions, the global climate change analysis is inherently cumulative. No single action or project would emit sufficient GHGs to result in a change in Earth's climate. Therefore, GHG emissions identified for a single action or project are inherently an expression of that action's or project's contribution to the cumulative effect of global climate change. Direct and indirect emissions as a result of any alternative evaluated in this EIS/EIR would be a cumulative contribution to a global issue. For these reasons, the description of direct and indirect effects for each alternative reflects the alternative's contribution to cumulative impacts. A separate cumulative impact discussion is not needed for any alternative in this chapter.

As discussed in Section 3.4, Previous Planning Area Environmental Reviews, the EIR documents previously prepared for the General Plans of Sacramento County, Galt, and Rancho Cordova (Sacramento County 2010; Galt 2009b; Rancho Cordova 2006b) analyzed direct and cumulative impacts of urban growth planned within the respective jurisdictions. The Sacramento County and Galt General Plan EIRs identified effects related to GHG emissions, while the Rancho Cordova General Plan EIR did not. When the impact analysis or conclusions provided in the General Plan EIR documents were determined by the lead agencies to be appropriate for use in the analysis of the EIS/EIR Alternatives, a brief summary or description of the incorporated information or analysis is provided in Sections 15.2.2, No Action/No Project Alternative; 15.2.3, Proposed Action/Proposed Project Alternative; and 15.2.4, Reduced Permit Term Alternative.

15.2.1.1 Determination of Impact Significance

Significance Criteria

As discussed in Section 3.8.1, Significance Thresholds, the criteria used to evaluate the significance of each alternative's GHG and climate change impacts are based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.) and on typical thresholds used to evaluate effects on global climate change in recent EIRs prepared by Sacramento County. Based on these sources, a significant adverse impact would occur if the alternative would:

1. Generate GHG emissions, either directly or indirectly, that may have a significant effect on the environment.

2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

SMAQMD currently recommends that lead agencies use mass emission thresholds of significance for evaluating construction- and operational-related GHG emissions and stationary sources. Projects with GHG emissions that are below the thresholds are considered to be consistent with AB 32 and CARB's Climate Change Scoping Plan goal to reduce GHG emissions. Thus, compliance with these thresholds would ensure compliance with CEQA, Appendix G, thresholds as described previously and will be applied to the South Sacramento Habitat Conservation Plan (SSHCP). These thresholds are the following:

- Construction phase of projects: 1,100 MT CO₂e/year
- Operational phase of projects: 1,100 MT CO₂e/year
- Stationary source projects: 10,000 MT CO₂e/year

Appendix G of the CEQA Guidelines does not provide suggested criteria for evaluating a beneficial effect. The following criteria were developed by the lead agencies. A beneficial impact could occur if the alternative would:

1. Result in a net reduction in GHG emissions compared to a baseline environmental condition.

The impact analysis for the three EIS/EIR Alternatives considers the context, intensity, and severity of potential impacts to each of these GHG and climate change impact criteria and presents a determination of significance applicable to each of these criteria.

15.2.2 No Action/No Project Alternative

The No Action/No Project Alternative is described in Section 2.2, No Action/No Project Alternative, of Chapter 2.

15.2.2.1 Direct and Indirect Effects of the Alternative

Construction Emissions

Much of the future urban development included in the No Action/No Project Alternative is described in the General Plans of Sacramento County, Galt, and Rancho Cordova (see Section 3.4).

Construction associated with future development could result in GHG emissions from the use of heavy-duty construction equipment and from construction vehicle (i.e., worker commute vehicles and haul truck trips) exhaust.

The impact analysis presented in the *Final Environmental Impact Report: Sacramento County General Plan Update* (Sacramento County General Plan EIR) (Sacramento County 2010, pp., 12-1 to 12-42) determined the following within Sacramento County:

- Construction-related GHG emissions would be considered significant and unavoidable.²

The impact analysis presented in the *City of Galt General Plan Update: 2030 Final EIR* (Galt General Plan EIR) (Galt 2009b) determined the following within Galt:

- Construction-related GHG emissions would be considered significant and unavoidable.

The *City of Rancho Cordova General Plan Final Environmental Impact Report* (Rancho Cordova General Plan EIR) (Rancho Cordova 2006b) did not explicitly evaluate impacts associated with GHG emissions; however, type and character of urban development within Rancho Cordova would be similar to that described for Sacramento County and Galt (e.g., residential, commercial). As such, it is expected that impacts associated with GHG emissions and global climate change in Rancho Cordova would be similar to those described for Sacramento County and Galt.

As discussed in Section 3.4, the three General Plan EIRs used different study periods—ending in 2030 (Galt 2009b), 2030 (Rancho Cordova 2006b), and 2050 (Sacramento County 2010). However, the 50-year study period for this EIS/EIR ends in 2065 (Section 3.6.3). Therefore, additional urban development can be expected to occur within Galt, Rancho Cordova, and Sacramento County in the years after each General Plan EIR study period ends but before this EIS/EIR’s study period ends in 2065. Therefore, the impact analyses and conclusions incorporated from the three General Plan EIRs may not have considered all of the future urban development that is included in the project description of each EIS/EIR Alternative. Consequently, when determining the significance of each impact described in the EIS/EIR, the lead agencies considered the impact analysis and the conclusions incorporated by reference from the General Plan EIRs, along with the effects of all urban development activities and projects that are included in the description of each EIS/EIR Alternative.

As explained in Section 2.2.2, Expected Regulatory Environment Under the No Action/No Project Alternative, the regulatory environment of the No Action/No Project Alternative is expected to restrict the ability of local agencies to permit approximately 1,900 acres of future urban development in the Mather Core Recovery Area (MCRA), and this future urban development would be shifted or displaced to one or more of the areas of undeveloped land

² As described further in Section 3.4.1, the proposed project analyzed within the Sacramento County General Plan EIR assumed development within a designated “Jackson Highway Corridor New Growth Area” that was not a part of the alternative ultimately selected by Sacramento County. However, Sacramento County is currently processing land use entitlements in the Jackson Highway Corridor; therefore, the referenced conclusions from the proposed project analysis are relevant to the No Action/No Project Alternative.

outside the Urban Service Boundary (USB) discussed in Section 2.2.3, Loss of Natural Lands Under the No Action/No Project Alternative.

Urban development shifted or displaced outside of the USB could result in construction worker commute and vendor haul trips being longer in distance, resulting in higher VMT (and associated GHG mobile-source emissions) relative to what would be expected if urban development was confined to the USB. An increase in regional VMT associated with construction trips would result in increased emissions of GHGs. Construction-related GHG emissions as a result of increased vehicle trips and VMT would contribute further to the already significant unavoidable impacts to global climate change described in the EIRs referenced previously.

Under the No Action/No Project Alternative, new urban development would continue to include mitigation actions to offset impacts to listed species, wetlands, and other regulated natural resources, including off-site or on-site mitigation preserves (See Section 2.2.2). Mitigation for unavoidable impacts could also continue to occur through purchasing credits at a mitigation or conservation bank approved by the applicable resource agencies (e.g., U.S. Fish and Wildlife Service or U.S. Army Corps of Engineers), by payment into an in-lieu fee program, on-site project developer–responsible mitigation, or off-site project developer–responsible mitigation.

Under the No Action/No Project Alternative, mitigation preserves would frequently be established (constructed) in an uncoordinated manner by multiple entities. This would often result in smaller, more isolated preserves mostly located within the MCRA and elsewhere in the USB since some projects would establish on-site mitigation preserves for resource impacts that could not be avoided. Emissions associated with establishment/construction of mitigation preserves would be evaluated on a project-by-project basis and, therefore, have not been described within the referenced General Plan EIRs.

Establishment of mitigation preserves would include minor construction activities, such as earth movement and grading, fence installation, and other minor work. The use of heavy equipment for grading and earth moving could result in exhaust GHG emissions. Although specific details regarding the size of mitigation preserves and types of construction activities are not known, an estimate of GHG emissions was conducted based on conservative assumptions of preserve numbers, size, and likely construction equipment that would be used (e.g., trucks, loaders, backhoes). Refer to Appendix H for detailed assumptions. Based on the modeling conducted, preserve establishment and/or re-establishment could result in up to 397 MT CO₂ per year from the use of heavy-duty equipment, worker commute, and vendor haul trips. This level of emissions would not exceed applicable SMAQMD thresholds of significance of 1,100 MT CO₂ per year and, therefore, would not further contribute to already existing significant and unavoidable cumulative GHG impacts.

Operational Emissions

Operational-related GHG emissions associated with future development would originate from mobile and stationary sources (e.g., electricity). To characterize impacts on global climate change resulting from operation of urban development, the same documents described in Section 3.4 are referenced here. Impacts are summarized below.

The impact analysis presented in the Sacramento County General Plan EIR (Sacramento County 2010, pp., 12-1 to 12-42) determined the following within Sacramento County:

- Operational-related GHG emissions would be considered significant and unavoidable.
- Impacts on urban development from climate change would also be significant and unavoidable.

The impact analysis presented in the Galt General Plan EIR (Galt 2009b) determined the following within Galt:

- Operational-related GHG emissions would be considered significant and unavoidable.

The Galt General Plan EIR (Galt 2009b) did not evaluate impacts from climate change on urban development. However, because Galt is located within Sacramento County, the same climate changes and associated effects (e.g., precipitation pattern changes, increases fire, decreases snow pack, sea-level rise) that would occur within Sacramento County would also occur in Galt. As such, impacts to these areas would be the same as those described for Sacramento County.

The Rancho Cordova General Plan EIR (Rancho Cordova 2006b) did not evaluate operational-related impacts from GHG emissions or impacts from climate change on urban development. However, urban development within Rancho Cordova would be similar to that described for Sacramento County and Galt (e.g., residential, commercial). As such, it is expected that impacts associated with to GHG emissions and global climate change in Rancho Cordova would be similar to those described for Sacramento County and Galt. Further, because Rancho Cordova is located within Sacramento County, the same climate changes and associated effects (e.g., precipitation pattern changes, increases fire, decreases snow pack, sea-level rise) that would occur within Sacramento County would also occur in Rancho Cordova. As such, impacts to these areas would be the same as those described for Sacramento County.

The impact analysis presented in the 2016 MTP/SCS Final EIR (SACOG 2016b) determined the following within the SACOG Planning Area:

- The GHG impacts resulting from land use changes and transportation improvements identified in the 2016 MTP/SCS that are associated with achieving the SB 375 GHG emissions reduction targets are considered less than significant.

Implementation of the No Action/No Project Alternative would result in operational-related mobile-source emissions associated with vehicular exhaust as a function of VMT traveled within the Planning Area (e.g., as a result of urban development). As stated previously, the previously referenced EIRs analyzed the effects of urban development through a period between 2030 and 2050; however, the lead agencies anticipate that urban development projects would continue through the end of the EIS/EIR 50-year study period (2065). Therefore, the lead agencies extrapolated that the significant and unavoidable GHG impacts identified in the EIRs would continue to be significant and unavoidable as additional urban development is implemented.

Similar to what was described previously for construction emissions, urban development shifted or displaced outside of the USB could result in resident and employee commute trips being longer in distance, resulting in higher VMT (and associated GHG mobile-source emissions) relative to what would be expected if urban development was confined to the USB. An increase in regional VMT associated with operational trips would result in increased emissions of GHGs. Operation-related GHG emissions as a result of increased vehicle trips and VMT would contribute further to the already significant unavoidable impacts to global climate change described in the EIRs referenced previously.

In addition to mobile-source GHG emissions, urban development would result in the conversion of undeveloped carbon-sequestering terrestrial land covers (e.g., agriculture/cropland land, oak woodlands, grasslands) to developed land, decreasing the total sequestering capacity of land within the Planning Area. This would result in a net increase in GHG emissions. Based on Table 8-4, Acres of Direct Impacts to Each Natural Land Cover Under the No Action/No Project Alternative, in Chapter 8, Natural Land Cover Habitat Types and Associated Plant and Animal Communities, and as shown in Appendix H, expected urban development could result in a loss of 34,352 acres of vegetated carbon-sequestering land. It is estimated that this would amount to approximately 772 MT/year of CO₂e that would have otherwise continued to be sequestered by the undeveloped land. The loss of carbon sequestering land, resulting primarily from urban development, would be part of the already significant and unavoidable impacts in the referenced EIRs. See Appendix H for land coverage and carbon sequestration calculations.

Operational emissions associated with mitigation preserve management include mobile-source exhaust emissions associated with transportation of livestock for grazing management specific to preserve management activities and visits by Preserve Managers/crews for maintenance and monitoring. Additionally, depending on the specifics of the habitat re-establishment or establishment activity, several pieces of heavy equipment and the associated crews may use local roadways, resulting in on- and off-site exhaust emissions. Most days, vehicle trips and heavy equipment use on mitigation preserves under the No Action/No Project Alternative would not be substantially different from the daily vehicle trips and heavy equipment activities associated with typical existing rangeland and farmland uses. The types of activities are similar (e.g., fence installation or repair, access road maintenance, drainage repairs) between the No Action/No Project Alternative and existing conditions on the mitigation preserve lands and rangeland or farmland. However, for extra activities specific to the use of the land as a mitigation preserve, these activities could result in additional GHG emissions throughout the Planning Area.

Although specific details regarding the specific mitigation preserve activities or operational/maintenance trip number are not known, an estimate of emissions was conducted based on conservative assumptions of preserve numbers, size, activities that would take place and equipment that would be used for those activities (e.g., trucks, loaders, backhoes). Refer to Appendix H for detailed assumptions. The emissions modeling represents a maximum day of preserve operation and maintenance, assuming both vehicle maintenance trips and operation of heavy-duty equipment, such as a day when heavy maintenance or repairs (e.g., landscape contouring, drainage infrastructure repairs, alteration of graded access roads) are needed along with regular operations. During the majority of days over the 50-year EIS/EIR study period, the amount of mitigation preserve management activity and attendant vehicle trips and heavy-duty equipment operations would be much less and not substantially different from activities associated with agricultural and rangeland operations undertaken on lands prior to being established as a mitigation preserve. The maximum activity estimate is intended to be conservative to avoid the risk of understating the impacts of the alternative. Based on the modeling conducted, preserve maintenance and operational activities could result in up to 180 MT CO₂ per year. This level of emissions would not exceed applicable SMAQMD thresholds of significance of 1,100 MT CO₂ per year. Operational activities associated with mitigation preserve management would not result in substantial GHG emissions.

15.2.2.2 Cumulative Effects of the Alternative

As described in Section 15.2.1, the GHG emission impacts analyzed in this EIS/EIR are, by definition, cumulative. Therefore, cumulative GHG emission impacts of the No Action/No Project Alternative are identical to the direct and indirect impacts described in Section 15.2.2.1, Direct and Indirect Effects of the Alternative.

15.2.3 Proposed Action/Proposed Project Alternative

The Proposed Action/Proposed Project Alternative is described in Section 2.3.

15.2.3.1 Direct and Indirect Effects of the Alternative

Construction Emissions

As described in Section 2.3.3, the Proposed Action/Proposed Project Alternative Covered Activities include types of urban development similar to those anticipated under the No Action/No Project Alternative; however, under the Proposed Action/Proposed Project Alternative, urban development would not be shifted or displaced outside of the USB.

Construction associated with future development could result in GHG emissions from the use of heavy-duty construction equipment and from construction vehicle (i.e., worker commute vehicles and haul truck trips) exhaust. Because the Proposed Action/Proposed Project Alternative includes types of urban development consistent with those anticipated under the No Action/No Project Alternative, the sources and types of GHG emissions associated with construction of development, such as the operation of heavy-duty construction equipment, would be the same as those described for the No Action/No Project Alternative; however, the Proposed Action/Proposed Project Alternative does not include the MCRA regulatory requirements of the No Action/No Project Alternative (refer to Section 2.2.2). This provides the opportunity for urban development Covered Activities within the MCRA to be implemented consistent with the Sacramento County and Rancho Cordova General Plans without the 1,900 acres of shifted or displaced urban development occurring outside the USB under the No Action/No Project Alternative. As a result, a portion of construction worker commute and vendor haul trips between future construction sites for development could be shorter in distance compared to the No Action/No Project Alternative. This would result in lower VMT and, therefore, reduced exhaust emissions of GHGs under the Proposed Action/Proposed Project Alternative compared to the No Action/No Project Alternative.

The potential adverse effects from construction emissions identified above for the No Action/No Project Alternative future conditions within the Planning Area would still occur under the Proposed Action/Proposed Project Alternative but to a lesser extent under the Proposed Action/Proposed Project Alternative because of the reduced vehicle trip lengths resulting from not having urban development shifted or displaced outside the MCRA. This would result in a **Minor Beneficial** effect when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

As discussed in Section 2.3.5, Conservation Strategy Under the Proposed Action/Proposed Project Alternative, the Proposed Action/Proposed Project Alternative would include the

establishment of an interconnected Preserve System in the Planning Area and a comprehensive preserve management program that would be implemented in perpetuity. The Preserve System under the Proposed Action/Proposed Project Alternative would be more contiguous and connected than the mitigation preserves that would be established under the No Action/No Project Alternative. Preserve establishment and management could include a variety of activities during construction that would result in emissions.

Activities that would generate GHG emissions associated with the construction/establishment of individual preserves under the Proposed Action/Proposed Project Alternative would be the same as those described for the No Action/No Project Alternative, such as vehicle trips and operation of heavy equipment for grading. However, under the Proposed Action/Proposed Project Alternatives, overall preserves would be larger and better linked and established/constructed by the SSHCP Implementing Entity rather than by different entities.

In addition to on-site emission associated with heavy equipment at preserve sites, construction and worker vehicle trips would also result in mobile-source emissions associated with the establishment of preserves. As a result of a more contiguous and connected Preserve System, construction-related vehicular trips associated with vendor and worker trips for preserve establishment/construction could be fewer because of a smaller number of “job sites” and coordinated preserve activities directed by the SSHCP Implementing Entity. This would result in fewer mobile-source GHG emissions. Construction-related mobile-source emissions as identified above for the No Action/No Project Alternative future condition associated with mitigation preserve activities would still occur but potentially to a lesser extent under the Proposed Action/Proposed Project Alternative. This would be a **Minor Beneficial** effect when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

Operational Emissions

As described previously for the No Action/No Project Alternative, potential significant adverse effects from operational GHG emissions from stationary and mobile sources are anticipated for urban development under the No Action/No Project Alternative future condition. These conclusions would still be the case under the Proposed Action/Proposed Project Alternative. However, under the Proposed Action/Proposed Project Alternative, 1,900 acres of urban development would not be shifted or displaced outside of the USB. Therefore, operational related vehicular trips associated with development would be shorter, resulting in fewer mobile-source GHG emissions. Therefore, potential significant adverse effects from operation of development identified previously for the No Action/No Project Alternative future condition would also occur but to a lesser extent under the Proposed Action/Proposed Project Alternative. This would be a **Minor Beneficial** effect when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

In addition to mobile-source GHG emissions, urban development would result in the conversion of undeveloped carbon-sequestering terrestrial land covers (e.g., agriculture/cropland land, oak woodlands, grasslands) to developed land, decreasing the total sequestering capacity of land within the Planning Area. This would result in a net increase in GHG emissions. Based on Table 8-8, Expected Direct Impacts to Natural Land Covers – Proposed Action/Proposed Project Alternative, and as shown in Appendix H, expected urban development could result in a loss of 32,348 acres of vegetated carbon-sequestering land under the Proposed Action/Proposed Project Alternative. This would amount to approximately 745 MT/year of CO₂ that would have otherwise continued to be sequestered by the undeveloped land. Compared to the No Action/No Project Alternative, the Proposed Action/Proposed Project Alternative would result in approximately 2,004 fewer acres of vegetated land converted to non-carbon sequestering land. Compared to the No Action/No Project Alternative, the Proposed Action/Proposed Project Alternative would result in approximately 27 MT/year of CO₂ less emissions from changes in carbon-sequestering land coverage. The total loss in carbon sequestration (i.e., 745 MT/year of CO₂) would be substantially below applicable GHG thresholds of 1,100 MT CO₂/year. Because net annual GHG emissions associated with the loss of carbon-sequestering land would be slightly lower under the Proposed Action/Proposed Project Alternative relative to the No Action/No Project Alternative, this would be a **Minor Beneficial** effect when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

Activities associated with the operation and maintenance of preserves under the Proposed Action/Proposed Project Alternative, such as monitoring and maintenance, would be similar to those described for the No Action/No Project Alternative; however, under the Proposed Action/Proposed Project Alternative, overall, preserves would be larger and better linked, and managed by the SSHCP Implementing Entity rather than by different entities. As a result of a more contiguous and connected Preserve System with larger preserves overall, operational-related vehicular trips associated with maintenance and work trips for preserve maintenance could be fewer because of a smaller overall number of individual preserves to be visited. Trips to multiple preserves could also be consolidated as personnel directed by the SSHCP Implementing Entity would have activities to perform at multiple preserves and could drive to multiple preserves in a single vehicle “trip.” However, preserve management under the Proposed Action/Proposed Project Alternative would be more intensive than under the No Action/No Project Alternative, with more management and monitoring activities implemented on an annual basis. This would result in an increase in trips as compared to the No Action/No Project Alternative to implement the more active management strategy. Therefore, overall operational-related mobile-source emissions associated with preserve activities for the Proposed Action/Proposed Project Alternative would be similar to those identified above for the No Action/No Project Alternative future condition without the SSHCP. This would be a **Less**

Than Significant Adverse effect when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

As discussed previously in Section 15.1.4, Effects of Climate Change on the Environment, climate change may result in various effects to precipitation amounts and patterns, temperature, snow pack, and sea-level rise. These changes may result in effects to Preserve Systems. However, as described previously, given the amount of uncertainty and number of variables involved, it would be speculative to attempt to predict the future effects of climate change on any particular species or ecosystem in the Planning Area. Although, if adverse effects from climate change were to occur in preserves, the typically larger and more interconnected preserves associated with the Proposed Action/Proposed Project Alternative would be more resilient to changing climatic conditions than the often smaller and more isolated mitigation preserves associated with the No Action/No Project Alternative. This would result in **Minor Beneficial** effect when comparing the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

15.2.3.2 Significance of Direct and Indirect Effects

In summary, compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project Alternative would result in the following:

- A net reduction in GHG emissions resulting from construction of urban development
- Net reduction in GHG emissions resulting from Preserve System construction/establishment
- A net reduction in GHG emissions resulting from operations of urban development
- A net reduction in GHG emissions resulting from the loss of carbon-sequestering terrestrial land covers
- Little difference in GHG emissions resulting from Preserve System management
- A Preserve System that is more resilient to climate change

Therefore, after considering the significance of impacts from the Proposed Action/Proposed Alternative related to the GHG and climate change impact criteria, the Proposed Action/Proposed Project Alternative would result in **Minor Beneficial** effects to GHG emissions and climate change compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

15.2.3.3 Cumulative Effects of the Alternative

As described in Section 15.2.1, the GHG emission impacts analyzed in this EIS/EIR are, by definition, cumulative. Therefore, cumulative GHG emission impacts of the Proposed

Action/Proposed Project Alternative are identical to the direct and indirect impacts described in Section 15.2.3.1, Direct and Indirect Effects of the Alternative. Therefore, after considering the significance of impacts from the Proposed Action/Proposed Alternative on GHG emissions and climate change, the Proposed Action/Proposed Project Alternative would result in **Minor Beneficial** effects compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

15.2.4 Reduced Permit Term Alternative

As described in Section 2.3.3, the Reduced Permit Term Alternative includes the same types of new urban development and infrastructure as those anticipated under the No Action/No Project Alternative.

Under the Reduced Permit Term Alternative, the core of the Preserve System established inside the UDA would be associated with the development of five large land use entitlements, as discussed in Section 2.3.4, Covered Species Under the Proposed Action/Proposed Project Alternative, for the Reduced Permit Term Alternative and in Section 2.3.3 for the Proposed Action/Proposed Project Alternative. Because the core of the Preserve System inside the UDA under both EIS/EIR action alternatives is associated with the same five large land use entitlements, approximately 70% of the UDA preserves established under the Reduced Permit Term Alternative would have similar sizes, boundaries, and locations as the UDA preserves established under the Proposed Action/Proposed Project Alternative. However, the shorter duration of the Reduced Permit Term Alternative—and the smaller amount of urban development and associated development fees collected by the Reduced Permit Term Alternative—would not allow the SSHCP Implementing Entity to establish as many acres of new preserves in the Planning Area as would occur under the Proposed Action/Proposed Project Alternative’s 50-year permit term. Therefore, fewer new preserves would be established under the Conservation Strategy of the Reduced Permit Term Alternative. This difference would be especially pronounced outside the UDA.

As described in Section 2.4, Reduced Permit Term Alternative, the ESA and CESA Incidental Take Permits and the CWA permit strategy for HCP Covered Activities would be valid only during the 30-year permit term of the Reduced Permit Term Alternative, and the Reduced Permit Term Alternative’s Conservation Strategy would be implemented only during this 30-year term. The urban development Covered Activities and Conservation Strategies associated with the five land use entitlements would be implemented inside the UDA during this 30-year period. However, the EIS/EIR uses a 50-year analysis study period to evaluate all alternatives (see Section 3.6.3); therefore, the EIS/EIR study period extends beyond the end of the 30-year permit term for the Reduced Permit Term Alternative. Therefore, as described in Section 3.6.7.2, Analysis of the Reduced Permit Term Alternative, After the End of the Permit Term

(Years 31–50), the EIS/EIR analysis of the Reduced Permit Term Alternative also considers future urban development that is not part of the project description of the Reduced Permit Term Alternative but is still expected to occur within the Planning Area after the end of the permit term (i.e., in Years 31–50 of the EIS/EIR study period).

As described in Section 3.6.7.2, mitigation preserves established after the end of the 30-year Reduced Permit Term Alternative would be established under a project-by-project process for obtaining individual authorizations under CWA, ESA, CESA, and Section 1600 of the California Fish and Game Code. Consequently, mitigation preserves established in Years 31–50 of the EIS/EIR study period would not be established using a regional, landscape-based approach that balances new urban development with the need for conservation, as would be provided by an HCP. Therefore, much of the Preserve System inside the UDA would be very similar under the two action alternatives, but the Preserve System outside the UDA would be substantially different between the Reduced Permit Term Alternative and the Proposed Action/Proposed Project Alternative. Under the Reduced Permit Term Alternative, it is unlikely that mitigation preserves established outside the UDA would be contiguous or interconnected, and it is unlikely that a large, contiguous, 10,500-acre, landscape-size Vernal Pool Preserve would be established in the southwestern portion of the Planning Area. Likewise, the No Action/No Project Alternative would not result in contiguous, interconnected preserves outside the UDA and would not establish a 10,500-acre Vernal Pool Preserve in the Planning Area. In these ways, the new mitigation preserves established outside the UDA under the Reduced Permit Term Alternative and the No Action/No Project Alternative would be similar.

15.2.4.1 Direct and Indirect Effects of the Alternative

Construction Emissions

As described in Section 2.4.3, Covered Activities/Projects Under the Reduced Permit Term Alternative, the Reduced Permit Term Alternative Covered Activities include types of urban development similar to those anticipated under the No Action/No Project Alternative; however, under the Reduced Permit Term Alternative, urban development would not be shifted or displaced outside of the USB.

Construction associated with future development could result in GHG emissions from the use of heavy-duty construction equipment and construction-vehicle (i.e., worker commute vehicles and haul truck trips) exhaust. Because the Reduced Permit Term Alternative includes types of urban development consistent with those anticipated under the No Action/No Project Alternative, the sources and types of GHG emissions associated with construction of development, such as the operation of heavy-duty construction equipment, would be the same as described for the No Action/No Project Alternative; however, the Reduced Permit Term

Alternative does not include the MCRA regulatory requirements of the No Action/No Project Alternative (refer to Section 2.2.2). This provides the opportunity for urban development Covered Activities within the MCRA to be implemented consistent with the Sacramento County and Rancho Cordova General Plans without the 1,900 acres of shifted or displaced urban development occurring outside the USB under the No Action/No Project Alternative. As a result, a portion of construction worker commute and vendor haul trips between future construction sites for development could be shorter in distance compared to the No Action/No Project Alternative. This would result in lower VMT and, therefore, reduced exhaust emissions of GHGs under the Reduced Permit Term Alternative compared to the No Action/No Project Alternative.

The potential adverse effects from construction emissions identified above for the No Action/No Project Alternative future conditions within the Planning Area would still occur under the Reduced Permit Term Alternative but to a lesser extent under the Reduced Permit Term Alternative because of the reduced vehicle trip lengths resulting from not having urban development shifted or displaced outside the MCRA. This would result in a ***Minor Beneficial*** effect when comparing the Reduced Permit Term Alternative to the No Action/No Project Alternative baseline condition.

As discussed in Section 2.4.5, Conservation Strategy Under the Reduced Permit Term Alternative, the Reduced Permit Term Alternative includes a Preserve System established during the 30-year permit term and a comprehensive preserve management program implemented in perpetuity for those preserves. The Preserve System established during the 30-year permit term under the Reduced Permit Term Alternative would be more consolidated and linked than for the No Action/No Project Alternative. As outlined in Section 2.4.5 in Chapter 2, further establishment of a coordinated preserve management and monitoring program would cease after the end of the 30-year permit term; however, the preserves established in a consolidated manner during the permit term would remain intact, whereas future (i.e., beyond the 30-year permit term) mitigation preserves would not be established in such a manner. The mitigation preserves under the Reduced Permit Term Alternative established during Years 31–50 of the 50-year EIS/EIR study period would resemble preserve establishment patterns under the No Action/No Project Alternative.

As described previously for the Proposed Action/Proposed Project Alternative, overall GHG emissions associated with preserve establishment are considered similar for the Proposed Action/Proposed Project Alternative and the No Action/No Project Alternative. Because the Reduced Permit Term Alternative implements aspects of both alternatives in the same manner as described previously for each alternative, overall GHG emissions associated with preserve establishment under the Reduced Permit Term Alternative would be similar to emissions from the other two alternatives. Because GHG emissions from preserve establishment under the Reduced Permit Term Alternative would, overall, be similar to those describe for the No

Action/No Project Alternative, a ***Less Than Significant Adverse*** effect to climate change would occur when comparing the Reduced Permit Term Alternative to the No Action/No Project Alternative baseline condition.

Operational Emissions

As described previously for the No Action/No Project Alternative, potential significant adverse effects from operational GHG emissions from stationary and mobile sources are anticipated for urban development under the No Action/No Project Alternative future condition. These conclusions would still be the case under the Reduced Permit Term Alternative. However, under the Reduced Permit Term Alternative, 1,900 acres of urban development would not be shifted or displaced outside of the USB. Therefore, operational related vehicular trips associated with development would be shorter, resulting in fewer mobile-source GHG emissions; that is, potential significant adverse effects from operation of development identified above for the No Action/No Project Alternative future condition would also occur but to a lesser extent under the Reduced Permit Term Alternative. This would be a ***Minor Beneficial*** effect when comparing the Reduced Permit Term Alternative to the No Action/No Project Alternative baseline condition.

Urban development under the Reduce Permit Term Alternative would also result in the conversion of undeveloped terrestrial carbon-sequestering terrestrial land covers (e.g., agriculture/cropland land, oak woodlands, grasslands) to developed land, decreasing the total sequestering capacity of land within the Planning Area. This would result in a net increase in GHG emissions. Based on Table 8-12, Expected Direct Impacts to Natural Land Covers – Reduced Permit Term Alternative, and as shown in Appendix H, expected urban development could result in a loss of approximately 34,113 acres of vegetated carbon-sequestering land under the Reduced Permit Term Alternative. This would amount to approximately 771 MT/year of CO₂ that would have otherwise continued to be sequestered by the undeveloped land. Compared to the No Action/No Project Alternative, the Reduced Permit Term Alternative would result in 239 fewer acres of vegetated land converted to non-carbon sequestering land. Compared to the No Action/No Project Alternative, the Reduced Permit Term Alternative would result in approximately 1 MT/year of CO₂ fewer emissions from changes in carbon-sequestering land coverage.

This small difference in emissions resulting from 239 fewer acres of terrestrial carbon-sequestering land being converted is because some land cover types sequester more carbon than others. As shown in Appendix H, riparian woodland habitats are estimated to result in approximately 0.74 MT of carbon sequestered in the woody vegetation per acre per year. However, other land covers, such as annual grasslands, quickly reach an equilibrium between carbon sequestered in the growing vegetation and carbon released back into the atmosphere through decomposition of dead vegetation. Therefore, grassland land covers were assumed to

result in no net increases in carbon sequestration over time. That is, for this analysis, grasslands were assumed to sequester 0 MT of carbon per acre per year. The calculations of carbon sequestration potential reflect these conditions, as shown in Appendix H.

The total loss in carbon sequestration for the Reduced Permit Term Alternative (i.e., 771 MT/year of CO₂) would be below the applicable GHG thresholds of 1,100 MT CO₂/year. Because net annual GHG emissions associated with the loss of carbon-sequestering land would be negligibly lower under the Reduced Permit Term Alternative relative to the No Action/No Project Alternative, there would be **No Impact** when comparing the Reduced Permit Term Alternative to the No Action/No Project Alternative baseline condition.

As described previously for the Proposed Action/Proposed Project Alternative, overall GHG emissions associated with preserve operations are considered similar for the Proposed Action/Proposed Project Alternative and the No Action/No Project Alternative. Because the Reduced Permit Term Alternative implements aspects of both alternatives in the same manner as described previously for each alternative, overall GHG emissions associated with preserve operations under the Reduced Permit Term Alternative would be similar to emissions from the other two alternatives. Because GHG emissions from preserve operations under the Reduced Permit Term Alternative would, overall, be similar to those describe for the No Action/No Project Alternative, a **Less Than Significant Adverse** effect on climate change would occur when comparing the Reduced Permit Term Alternative to the No Action/No Project Alternative baseline condition.

As discussed previously in Section 15.1.4, climate change may result in various effects to precipitation amounts and patterns, temperature, snow pack, and sea-level rise. These changes may result in effects to Preserve Systems. However as described previously, given the amount of uncertainty and number of variables involved, it would be speculative to attempt to predict the future effects of climate change on any particular species or ecosystem in the Planning Area. If adverse effects from climate change were to occur in preserves, the typically larger and more interconnected preserves established during the 30-year permit term under the Reduced Permit Term Alternative would be more resilient to changing climatic conditions than the smaller and more isolated mitigation preserves associated with the No Action/No Project Alternative. This would result in **Minor Beneficial** effect compared to the No Action/No Project Alternative baseline condition.

15.2.4.2 Significance of Direct and Indirect Effects

In summary, compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project Alternative would result in the following:

- A net reduction in GHG emissions resulting from construction of urban development
- A net reduction in GHG emissions resulting from operations of urban development

- A negligible difference in GHG emissions resulting from the loss of carbon-sequestering terrestrial land covers
- Little difference in GHG emissions resulting from Preserve System construction/establishment
- Little difference in GHG emissions resulting from Preserve System management
- A Preserve System that is more resilient to climate change

Therefore, after considering the significance of impacts from the Reduced Permit Term Alternative related to the GHG and climate change impact criteria, the Reduced Permit Term Alternative would result in **Minor Beneficial** effects to GHG emissions and climate change compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

15.2.4.3 Cumulative Effects of the Alternative

As described in Section 15.2.1, the GHG emission impacts analyzed in this EIS/EIR are, by definition, cumulative. Therefore, cumulative GHG emission impacts of the Reduced Permit Term Alternative are identical to the direct and indirect impacts described in Section 15.2.4.1. Therefore, after considering the significance of impacts from the Reduced Permit Term Alternative on GHG emissions and climate change, the Reduced Permit Term Alternative would result in **Minor Beneficial** effects compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

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CHAPTER 16 – POPULATION AND HOUSING, SOCIOECONOMICS, AND ENVIRONMENTAL JUSTICE

This chapter provides an overview of the existing social and economic conditions, demographics, and the characteristics of minority and low-income populations in the Planning Area that are relevant for the analysis of environmental justice, and presents the potential effects of each Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) alternative on population and housing, socioeconomics, and environmental justice within the Planning Area.

An evaluation of population and housing focuses on the potential for projects and actions to remove or displace existing housing and the availability of, and demand for, housing relative to the size of the population.

Socioeconomics considers how the economic changes resulting from a project or action affect the human population in the area, such as changes in the number or type of jobs or changes in tax generation affecting the provision of government services.

As described in Sections 16.1.1 and 16.1.2, the core of an environmental justice analysis determines whether a project or an action would result in disproportionately high and adverse effects on minority or low-income populations. The adverse effects can be physical or economic.

16.1 AFFECTED ENVIRONMENT/ENVIRONMENTAL SETTING

This section describes the regulatory and environmental setting for population and housing, socioeconomics, and environmental justice.

16.1.1 Regulatory Framework

There are several federal, state, and local agency requirements that apply to the evaluation of population and housing, socioeconomics, and/or environmental justice. This section summarizes the statutes, regulations, policies, and agency planning documents that are relevant to the approval, issuance of permits, or implementation of the alternatives analyzed in this EIS/EIR. To the extent possible, the analyses or studies required by these regulations and policies are integrated into the environmental effects analyses presented in Section 16.2 (40 CFR 1502.25).

16.1.1.1 Federal

National Environmental Policy Act

The National Environmental Policy Act (NEPA) regulations require an effects analysis to consider social and economic effects, whether those effects are direct, indirect, or cumulative (40 CFR 1508.8). However, social and economic effects by themselves do not require preparation of an

EIS document. An EIS is prepared to analyze the natural and physical environment and the relationship of people with that environment. When economic or social effects are interrelated to natural or physical environmental effects, then an EIS must discuss all of those effects on the human environment (40 CFR 1508.14). Therefore, if a lead agency determines that there may be a sufficient effect on the physical or natural environment that an EIS is the proper NEPA document to prepare, then social and economic effects must be quantified and analyzed if the social and economic effects may be interrelated to the effects on the natural or physical environment.

Environmental Justice in Minority Populations and Low-Income Populations

President Clinton signed Executive Order 12898 (Clinton 1994) to underscore that provisions of existing environmental and civil rights statutes can help ensure that all communities and persons of the nation live in a safe and healthy environment. Under Executive Order 12898, each federal agency must identify and address, as appropriate and as required by NEPA, any disproportionately high and adverse human health, economic, social, and environmental effects of its programs, policies, or actions on minority or low-income populations. Each federal agency must make achieving environmental justice part of its mission.

The document *Environmental Justice Guidance Under the National Environmental Policy Act* (CEQ 1997) defined the terms minority and low-income to include:

- **A minority** is defined as individual(s) who are members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic. However, individuals of Hispanic background can also identify themselves as any racial group because Hispanic is an ethnicity based on a shared language, Spanish—not a racial identity.
- **Low-income populations** in an affected area are identified with the annual poverty thresholds from the U.S. Census Bureau's *Current Population Reports, Series P-60 on Income and Poverty* (CEQ 1997). The *Current Population Reports, Series P-60 on Income and Poverty* is an annual report prepared by the U.S. Census Bureau. The most recent report was published in 2016 (Proctor et al. 2016). The report, among other data, identifies income levels for individuals and different-sized families, and if the individual or family earns below that level, they are considered in poverty. The Council on Environmental Quality identifies that these poverty thresholds should be used to define low-income populations.

Environmental Compliance Memorandum 95-3 (ECM 95-3) describes federal agency responsibilities under the Department of the Interior environmental justice policy. ECM 95-3 states: "Therefore, henceforth all environmental documents should specifically analyze and

evaluate the impacts of any proposed projects, actions or decisions on minority and low-income populations and communities, as well as the equity of the distribution of benefits and risks of those decisions.” In addition, ECM 95-3 also states: “If a federal action is expected to have either an insignificant impact or no impact on minority/low-income populations, the NEPA document prepared for the action, under the scoping section in an environmental impact statement, should specifically state that the proposed project or action was considered during scoping and/or planning and is expected to have either insignificant impact or no impact, direct or indirect, with reasons given.”

16.1.1.2 State

California Environmental Quality Act

The California Environmental Quality Act (CEQA) Guidelines require analysis of a proposed project’s potential effects on population growth and housing supply. However, CEQA does not require a discussion of socioeconomic effects except where they would result in physical changes, and states that economic or social effects “shall not be treated as significant effects on the environment. An EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes. The intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on the physical changes” (CEQA Guidelines, Section 15131).

16.1.1.3 Local

Sacramento County 2030 General Plan

The *Sacramento County 2030 General Plan* (Sacramento County General Plan) (Sacramento County 2011) includes goals, objectives, and policies related to socioeconomic and environmental justice. Applicable policies include the following:

Policy CI-23: Consider the transit needs of senior, disabled, low-income, and transit-dependent persons in making recommendations regarding transit services.

Policy LU-45: Mix affordable housing units with market rate units to the extent feasible, as opposed to building segregated affordable housing developments.

Policy ED-1: Achieve complete communities that have enough land capacity to accommodate the development of general commercial, industrial, and office uses which support community needs in all areas of the County.

Policy ED-8: Create plans for new growth areas with a mix of land uses, including a balance of residential and employment (jobs-housing balance) as well as providing for neighborhood-oriented services and diverse commercial amenities to serve a broader portion of the population.

Policy ED-10: Revitalize distressed and aging commercial corridors by developing mixed-use centers and urban villages along corridors to improve community quality of life, optimize economic development, balance land uses, and foster the opportunity to accommodate a portion of the anticipated future growth.

Policy ED-19: Support and encourage the maintenance and growth of commercial agricultural businesses in Sacramento County.

Policy ED-29: Strive to further the County's economic base through cooperative efforts of local businesses and agencies.

Policy ED-34: Identify and attract industries that are consistent with the County's goal of economic vitality and providing a high quality of life.

Policy ED-36: Pursue new developments and businesses that add to the County's economic base, particularly those that generate sales tax and property tax revenue.

Policy ED-37: Assist local firms in the trade and service sectors to expand their existing markets.

Policy ED-38: Identify and recruit new firms that supply or otherwise support businesses already located in the Sacramento area.

2030 Galt General Plan

The *2030 Galt General Plan* (Galt General Plan) (Galt 2009a) includes goals, objectives, and policies related to socioeconomics and environmental justice. Applicable policies include the following:

Policy LU-10.1: Environmental Justice. The City shall ensure the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of land use and environmental laws, regulations, and policies. The City shall ensure that no part of the community suffers disproportionately from adverse human health or environmental effects, and all people live in clean, healthy, and sustainable communities.

Policy LU-10.2: Equal Public Participation. The City shall ensure that all community residents have an opportunity for public participation in the decision-making process.

Policy LU-10.3: Equitable Distribution of New Public Facilities and Services. The City shall plan for the equitable distribution of new public facilities and services that increase and enhance the community's quality of life.

Policy LU-10.4: Location of Industrial Facilities. The City shall provide for the location of industrial facilities and uses that pose a significant hazard to human health and safety in a manner that seeks to avoid proximity to schools or residential dwellings.

Policy ED-4.1: Business Retention and Expansion (BRE) Priority. The City should prioritize local business retention by focusing BRE resources on retaining and expanding those businesses that already serve as significant sources for jobs and/or tax revenue for the City.

Policy C-5.3: ADA Compliance. The City shall consider the transit needs of senior, disabled, minority, low-income, and transit-dependent persons in making decisions regarding transit services and in compliance with the Americans with Disabilities Act.

Rancho Cordova General Plan

The *Rancho Cordova General Plan* (Rancho Cordova General Plan) (Rancho Cordova 2006a) includes goals, objectives, and policies related to the socioeconomics and environmental justice. Applicable policies include the following:

Policy H.1.1: Improve the City's jobs-housing balance through ensuring that housing development in Rancho Cordova provides opportunities for all income levels in order to serve the full range of available and projected jobs in the City.

Policy H.2.1: Encourage private investment to increase property values and resale prices.

Policy H.2.7: Preserve housing units at risk of losing affordability status for units that are subsidized with federal, state, or local funds.

Policy H.7.4: Require non-residential development to provide for the affordable housing needs generated or contributed to by their development.

Policy ED.1.5: Heavy industrial uses should include transitions in intensity, buffers, or other methods to reduce potential impacts on residential uses. Buffers may include land designated for other uses, such as light industry, commercial, or open spaces. The ten-acre minimum parcel size shall apply until the land is zoned to an M-1, M-2, MP, or GC designation.

Policy ED.1.8: Provide a variety of housing types in Rancho Cordova to support a diverse economy, including workforce housing, move-up housing, and executive housing.

Policy ED.7.1: Provide support that makes it attractive and profitable for private sector developers to produce infill development. At the same time, encourage infill development that is attractive to potential residents and beneficial to existing residents.

Policy ED.8.1: Increase the number of jobs that go to Rancho Cordova residents by coordinating economic development efforts with employment placements.

16.1.2 Population and Socioeconomic Conditions in the Planning Area

Information on existing population and socioeconomic conditions in this section is based primarily on data published by the U.S. Census Bureau. The U.S. Census Bureau compiles data by county, city, and census tract. A census tract is a permanent geographic area, typically smaller than a city or county, recognized by the U.S. Census Bureau, to allow the collection and analysis of census data at a more refined geographic scale. Once established, census tract boundaries are rarely changed to support the comparison of census data collected in each tract over time. Census tracts that overlap with the Planning Area are shown in Figure 16-1.

The Planning Area is a geographic boundary unique to this EIS/EIR (see Section 1.1.1). The census tracts used by the Census Bureau do not directly correspond to the boundaries of the Planning Area. Therefore, census tract data was used for tracts that are completely, or mostly, within the Planning Area boundary (see Figure 16-1). Because the census tract boundaries do not exactly correspond to the Planning Area boundary, the population and socioeconomic data provided for the Planning Area should be considered as an estimate based on the best available information.

16.1.2.1 Resident Population Size

All of Sacramento County (County) has approximately 1.4 million residents (Table 16-1). The Planning Area portion of the County has approximately 240,000 residents, with most of those individuals living in unincorporated County areas and the other portion in Galt and Rancho Cordova (Table 16-1).

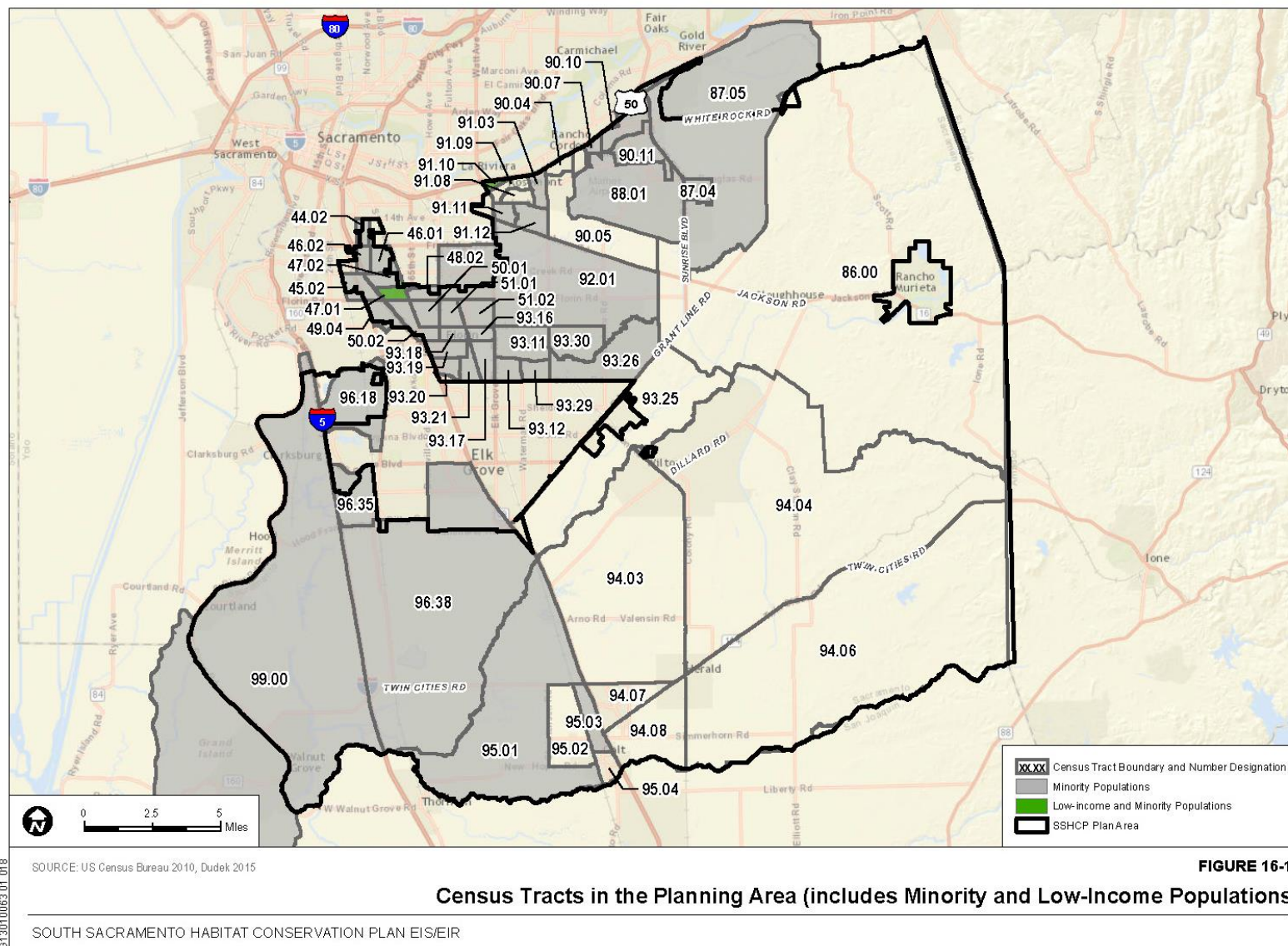
Table 16-1. Existing Populations of the Project Proponents and Inside the Planning Area

Project Proponents with Jurisdiction	Population
Sacramento County	1,435,207
Galt	23,997
Rancho Cordova	66,027
Total for Planning Area*	242,133

Source: U.S. Census Bureau 2013a

* Planning Area population was estimated using data from census tracts that were located completely or mostly within the Planning Area and includes Galt and Rancho Cordova and portions of unincorporated Sacramento County.

Figure 16-1 Census Tracts in the Planning Area and Identification of Minority and Low-Income Populations



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16.1.2.2 Race and Ethnicity

The term “race” refers to the race categories used by the Census Bureau when collecting data on the U.S. population. The seven race categories used by the Census Bureau are identified in Table 16-2. The Census Bureau also provides individuals the opportunity to identify as Hispanic or Latino, which is an ethnicity or ethnic identity and not a race. A person of any race may also identify as Hispanic or Latino. Hispanic or Latino persons are those of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin. The term “minority” is defined in Section 16.1.1.1. Persons of any race identified by the Census Bureau except for “white alone,” and persons identifying as Hispanic or Latino ethnicity are considered a minority. Minorities currently comprise 64.5% of the overall population in the Planning Area, a higher proportion of minority residents relative to the total population in all of Sacramento County (53.1%) (U.S. Census Bureau 2013a). In addition, the Planning Area has a higher proportion of minority residents relative to the overall populations than Galt and Rancho Cordova (48.9% and 47.9%, respectively).

Because individuals can identify as both a race and by Hispanic or Latino ethnicity when providing information to the Census Bureau, there is the potential to count one individual two times when compiling minority population data. In order to show minority populations without double-counting those who identify as both Hispanic or Latino ethnicity and as a particular race on census questionnaires, Table 16-2 shows the percentage of the Planning Area population that identifies themselves as either Hispanic or Latino of any race, or identifies themselves as one or more races not of Hispanic or Latino origin, but does not record any individuals in more than one category.

Within the Planning Area, there is no distinct racial or ethnic majority. In individual census tracts in the Planning Area, 13 out of 52 census tracts have a white majority (not shaded in Table 16-3). Two census tracts have a majority of Hispanic or Latino peoples (shaded in dark grey in Table 16-3). All other census tracts do not have more than 50% of any one racial or ethnic group. Forty census tracts would be considered as minority populations under Executive Order 12898 as “the cumulative percentage of minorities within the affected community is greater than 50 percent.” These 40 census tracts are shaded grey in Table 16-3, and as shown in Figure 16-1, are located within Rancho Cordova, portions of Galt, the unincorporated County between the City of Sacramento and Elk Grove, and the area directly south of Elk Grove.

16.1.2.3 Income and Poverty

In 2013, the most recent year for which data is available from the Census Bureau, the nationwide poverty threshold (sometimes referred to as the “poverty line”) for a family/household of four people was \$23,834 (U.S. Census Bureau 2013b). The median

household income in the County as a whole is well above the poverty line at \$55,064; however, 13.4% of families and 17.6% of individuals live below the nationwide poverty line. Most census tracts in the Planning Area have median household incomes above the poverty line. There are two census tracts in the Planning Area with a median household income below the four-person poverty threshold (shaded green in Table 16-4). These are located in unincorporated Sacramento County, near its boundary with the City of Sacramento (see Figure 16-1). These census tracts are also locations where minorities make up more than 50% of the population.

Table 16-2. Race and Ethnicity Population Ratios for the Project Proponent Jurisdictions and Inside the Planning Area (2013)

Place	Hispanic or Latino (of any race)	White Alone	Black or African American Alone	American Indian and Alaska Native Alone	Asian Alone	Native Hawaiian and Other Pacific Islander Alone	Some Other Race Alone	Two or More Races
Sacramento County	21.8%	47.9%	9.7%	0.5%	14.4%	1.0%	0.3%	4.5%
Galt	19.2%	51.1%	2.7%	0.3%	1.4%	0.7%	0.3%	1.2%
Rancho Cordova	42.3%	52.1%	10.1%	0.3%	12.0%	0.9%	0.2%	5.2%
Planning Area*	28.0%	36.5%	10.7%	0.5%	19.0%	1.1%	0.3%	4.0%

Source: U.S. Census Bureau 2013a

* Planning Area population was estimated using data per census tracts that were completely or mostly within the Planning Area and includes Galt and Rancho Cordova and portions of unincorporated Sacramento County.

Table 16-3. 2013 Race and Ethnicity Population Ratios by Planning Area Census Tract

Census Tract	Hispanic or Latino (of any race)	White Alone	Black or African American Alone	American Indian and Alaska Native Alone	Asian Alone	Native Hawaiian and Other Pacific Islander Alone	Some Other Race Alone	Two or More Races	Percent Minority (non-white)
44.02	58.6%	13.2%	10.3%	0.0%	12.3%	0.0%	0.5%	5.1%	87%
45.02	45.6%	19.0%	11.2%	0.0%	15.0%	6.4%	0.5%	2.2%	81%
46.01	47.4%	21.6%	9.5%	0.0%	19.2%	0.0%	0.0%	2.3%	78%
46.02	48.9%	26.5%	13.1%	0.5%	6.6%	1.2%	0.4%	2.7%	74%
47.01	50.5%	14.4%	13.1%	0.8%	19.6%	0.3%	0.0%	1.3%	86%
47.02	46.4%	15.6%	13.2%	0.0%	18.1%	0.6%	0.0%	6.2%	84%
48.02	33.0%	20.7%	11.1%	0.1%	29.3%	0.7%	0.0%	5.2%	79%
49.04	33.8%	31.9%	11.1%	0.2%	18.2%	0.2%	0.3%	4.4%	68%
50.01	37.4%	13.9%	13.1%	0.7%	27.1%	2.2%	0.0%	5.6%	86%
50.02	25.0%	29.6%	19.4%	1.9%	15.9%	3.2%	0.0%	4.9%	70%
51.01	29.2%	25.7%	17.7%	0.0%	23.1%	1.4%	0.0%	2.9%	74%
51.02	29.2%	30.9%	10.3%	1.7%	22.5%	0.0%	0.1%	5.3%	69%

Table 16-3. 2013 Race and Ethnicity Population Ratios by Planning Area Census Tract

Census Tract	Hispanic or Latino (of any race)	White Alone	Black or African American Alone	American Indian and Alaska Native Alone	Asian Alone	Native Hawaiian and Other Pacific Islander Alone	Some Other Race Alone	Two or More Races	Percent Minority (non-white)
86	7.8%	75.6%	5.9%	2.2%	4.1%	0.0%	0.9%	3.5%	24%
87.04	16.0%	37.9%	6.2%	0.3%	35.6%	0.0%	0.0%	4.0%	62%
87.05	12.4%	46.1%	8.4%	0.0%	23.3%	0.8%	1.0%	7.9%	54%
88.01	17.7%	42.9%	11.0%	0.3%	19.6%	2.8%	0.0%	5.7%	57%
90.04	18.9%	51.7%	16.1%	1.7%	6.1%	2.0%	0.2%	3.3%	48%
90.05	13.5%	53.6%	14.1%	1.8%	11.2%	0.6%	0.0%	5.1%	46%
90.07	28.8%	38.2%	22.0%	0.7%	7.6%	0.0%	0.2%	2.6%	62%
90.1	16.6%	38.9%	15.3%	0.0%	22.3%	1.4%	0.0%	5.5%	61%
90.11	12.7%	43.1%	3.3%	0.4%	36.2%	1.8%	0.3%	2.2%	57%
91.03	17.8%	48.2%	17.8%	0.0%	11.0%	0.0%	0.0%	5.2%	52%
91.08	13.9%	56.8%	8.2%	0.0%	13.2%	0.3%	0.0%	7.5%	43%
91.09	14.7%	53.3%	12.2%	0.0%	8.5%	0.0%	0.3%	10.9%	47%
91.1	26.4%	24.9%	35.9%	0.4%	5.6%	0.7%	3.4%	2.8%	75%
91.11	37.7%	35.2%	7.0%	0.0%	16.9%	0.0%	0.0%	3.1%	65%
91.12	25.7%	47.5%	12.0%	0.0%	11.4%	0.0%	0.0%	3.4%	52%
92.01	22.1%	41.9%	3.3%	1.1%	24.5%	1.5%	0.0%	5.6%	58%
93.11	24.0%	31.2%	8.0%	1.6%	32.4%	0.1%	0.1%	2.6%	69%
93.12	18.0%	32.6%	14.4%	0.4%	31.7%	0.5%	0.1%	2.3%	67%
93.16	13.7%	16.6%	11.6%	1.6%	46.7%	0.5%	0.0%	9.3%	83%
93.17	21.1%	30.8%	18.3%	0.1%	21.7%	0.0%	1.5%	6.2%	69%
93.18	25.6%	18.0%	13.3%	2.8%	26.3%	8.3%	0.0%	5.7%	82%
93.19	23.1%	10.4%	13.2%	0.0%	42.0%	2.5%	0.0%	8.8%	90%
93.2	34.9%	15.1%	10.8%	0.0%	30.2%	2.7%	0.2%	6.0%	85%
93.21	20.8%	25.3%	14.5%	0.3%	32.8%	2.2%	0.0%	4.1%	75%
93.25	10.3%	79.3%	0.0%	0.0%	10.3%	0.0%	0.0%	0.0%	21%

Table 16-3. 2013 Race and Ethnicity Population Ratios by Planning Area Census Tract

Census Tract	Hispanic or Latino (of any race)	White Alone	Black or African American Alone	American Indian and Alaska Native Alone	Asian Alone	Native Hawaiian and Other Pacific Islander Alone	Some Other Race Alone	Two or More Races	Percent Minority (non-white)
93.26	12.5%	45.1%	5.8%	0.0%	32.4%	0.0%	0.0%	4.2%	55%
93.29	33.4%	20.8%	23.3%	0.4%	19.6%	0.0%	0.0%	2.5%	79%
93.3	18.7%	41.7%	7.2%	0.2%	30.2%	0.0%	1.4%	0.6%	58%
94.03	28.9%	63.9%	0.0%	0.0%	5.9%	0.2%	0.6%	0.5%	36%
94.04	15.3%	71.9%	0.6%	0.8%	6.4%	0.0%	1.0%	4.1%	28%
94.06	13.5%	79.1%	3.1%	0.2%	2.0%	0.0%	0.8%	1.3%	21%
94.07	42.6%	51.4%	1.4%	0.1%	1.2%	1.4%	0.5%	1.3%	49%
94.08	26.7%	62.2%	5.5%	0.0%	4.0%	0.0%	0.3%	1.3%	38%
95.01	61.7%	36.3%	0.1%	0.1%	1.5%	0.0%	0.0%	0.2%	64%
95.02	30.9%	60.7%	5.8%	0.4%	1.0%	0.0%	0.2%	1.0%	39%
95.03	46.4%	47.9%	0.1%	1.4%	2.2%	0.8%	0.0%	1.2%	52%
95.04	40.9%	57.5%	0.0%	0.0%	0.0%	0.0%	0.0%	1.5%	42%
96.18	19.1%	32.2%	11.0%	0.0%	26.6%	6.1%	0.0%	5.0%	68%
96.35	18.9%	23.9%	20.6%	0.0%	31.7%	1.5%	0.0%	3.4%	76%
96.38	25.2%	36.5%	20.2%	0.9%	14.3%	0.2%	0.0%	2.7%	64%
99	41.7%	44.7%	0.0%	1.2%	9.7%	0.1%	0.5%	2.2%	55%

Source: U.S. Census Bureau 2013a

Notes: Grey shading = Minority population under Executive Order 12898 as “the cumulative percentage of minorities within the affected community is greater than 50%”

Dark grey shading = majority of Hispanic or Latino peoples

No shading = White majority

* Planning Area population was estimated using data per census tracts that were completely or mostly within the Planning Area and includes Galt and Rancho Cordova and portions of unincorporated Sacramento County.

Table 16-4. Income and Poverty Conditions for the Project Proponents and in each Planning Area Census Tract (2013)

Place/Census Tract	Median Household Income (\$)	Percent Families with Total Income Below Poverty Level	Percent Individuals Below Poverty Level
Sacramento County	55,064	13.4%	17.6%
Galt	57,100	14.4%	19.5%
Rancho Cordova	52,152	13.6%	17.8%
44.02	27,556	45.2%	50.2%
45.02	26,224	45.3%	47.2%
46.01	25,007	36.3%	40.8%
46.02	31,845	23.4%	31.5%
47.01	17,133	51.2%	59.4%
47.02	32,931	23.5%	29.0%
48.02	34,428	27.5%	40.5%
49.04	45,588	8.1%	14.1%
50.01	46,372	21.3%	24.7%
50.02	25,313	21.2%	30.4%
51.01	34,368	34.2%	35.1%
51.02	48,445	11.8%	14.8%
86	97,472	2.9%	4.2%
87.04	93,814	6.9%	8.7%
87.05	107,768	1.4%	5.0%
88.01	81,538	15.5%	17.3%
90.04	58,173	11.3%	14.0%
90.05	44,760	11.9%	19.0%
90.07	43,333	21.3%	29.8%
90.1	46,496	14.9%	21.4%
90.11	95,146	2.1%	3.9%
91.03	56,200	13.8%	14.8%
91.08	62,820	6.7%	9.5%
91.09	72,230	4.0%	10.1%
91.1	21,788	40.4%	41.7%
91.11	48,892	18.0%	20.1%

Table 16-4. Income and Poverty Conditions for the Project Proponents and in each Planning Area Census Tract (2013)

Place/Census Tract	Median Household Income (\$)	Percent Families with Total Income Below Poverty Level	Percent Individuals Below Poverty Level
91.12	62,140	16.3%	19.2%
92.01	42,650	22.2%	24.9%
93.11	73,932	9.8%	13.8%
93.12	66,964	11.9%	18.7%
93.16	60,417	11.9%	13.3%
93.17	66,816	12.5%	16.6%
93.18	62,132	15.1%	16.2%
93.19	53,154	14.1%	18.4%
93.2	47,650	15.4%	19.4%
93.21	69,969	12.3%	13.3%
93.25	71,690	1.7%	8.3%
93.26	111,170	1.9%	3.5%
93.29	61,625	13.9%	14.6%
93.3	85,365	5.6%	6.8%
94.03	76,176	15.7%	17.1%
94.04	79,643	15.5%	14.9%
94.06	87,844	1.6%	7.8%
94.07	66,809	12.9%	14.6%
94.08	77,361	3.0%	17.8%
95.01	44,958	19.8%	22.8%
95.02	66,726	8.3%	15.0%
95.03	39,504	15.4%	25.1%
95.04	50,167	25.0%	34.3%
96.18	77,276	8.2%	7.4%
96.35	93,347	2.7%	3.6%
96.38	70,605	4.6%	7.4%
99	60,833	8.7%	14.7%

Source: U.S. Census Bureau 2013c**Note:** Green shading = A median household income below the four-person poverty guideline

16.2 ENVIRONMENTAL CONSEQUENCES/ ENVIRONMENTAL IMPACTS

16.2.1 Methodology for Assessing Impacts of Each Alternative on Population and Housing, Socioeconomics, and Environmental Justice

The effects of each EIS/EIR alternative on population and housing, socioeconomics, and environmental justice are described and analyzed qualitatively, as discussed in Section 3.6. The projects and activities expected under each alternative, including expected or conceptual preserves, are described in Chapter 2.

The lead agencies determined that an appropriate geographic study scale for evaluating the effects on population and housing, socioeconomics, and environmental justice of each EIS/EIR alternative is the Planning Area as this is the location where physical changes in the environment resulting from the alternatives could affect these resources. However, as stated in Section 16.1.2, the available data used to support the analysis is sometimes presented for the County as a whole, or by census tract. Therefore, by necessity, the impact analysis considers the data using these geographic boundaries, which, in some cases, extends beyond the boundaries of the Planning Area.

Potential effects from each alternative were analyzed based on the best available information about types and locations of new urban development projects and activities. The impact analyses incorporate by reference relevant impact analyses from the three planning documents and the EIRs discussed Section 3.4.

Environmental justice effects are evaluated using the guidance, methodology, and definitions established by Executive Order 12898, and by the Council on Environmental Quality publications and guidance documents identified in Section 16.1.1. Topics considered under the environmental justice analysis include all the resource topics analyzed in this EIS/EIR (see Section 3.2).

The first step of an environmental justice analysis includes identifying areas where a minority or low-income population exists within the Planning Area. Using census tracts, which are the smallest geographic unit available for this kind of data, these areas were identified using the following criteria:

- The cumulative percentage of minorities within a census tract is greater than 50%; or
- The median household income for a census tract is below the national poverty line established by the Census Bureau (U.S. Census Bureau 2013b).

The second step of an environmental justice analysis requires the identification of a “high and adverse” human health, economic, social, and/or environmental effect. The Council on

Environmental Quality indicates that when determining whether the effects are high and adverse, federal agencies are to consider whether the risks or rates of impact on the human environment “are significant or above generally accepted norms” (CEQ 1997). Typically, a significant adverse effect identified in a NEPA document is treated as a high and adverse effect in an environmental justice analysis.

The final step of an environmental justice analysis requires a finding on whether a minority or low-income population is disproportionately affected by a high and adverse effect. A high and adverse effect is considered to disproportionately affect a minority or low-income population if the effect on that population appreciably exceeds the overall effect, risk of effect, or rate of effect to the general population (CEQ 1997).

Cumulative effects are analyzed consistent with the methodology described in Section 3.7 and consider whether the incremental effects of the alternative on population and housing, socioeconomics, and environmental justice would be significant (i.e., cumulatively considerable).

As discussed in Section 3.4, the EIR documents previously prepared for the General Plans of Sacramento County, Galt, and Rancho Cordova (Galt 2009b; Rancho Cordova 2006b; Sacramento County 2010) analyzed direct and cumulative impacts of urban growth planned within each jurisdiction, including effects to population and housing. When the impact analysis or conclusions provided in these General Plan EIR documents were determined by the lead agencies to be appropriate for use in the analysis of the EIS/EIR alternatives, a brief summary or description of the incorporated information or analysis is provided below. As described further in Section 16.2.1.1, these EIRs, being CEQA documents, did not include an analysis of environmental justice. The evaluation of environmental justice is a NEPA requirement.

16.2.1.1 Determination of Impact Significance

As discussed in Section 3.8.1, the criteria used to evaluate the significance of each alternative’s effects on population and housing, on socioeconomics, or on environmental justice are based on Appendix G of the CEQA Guidelines, and on typical thresholds used to evaluate effects to population and housing in recent EIRs prepared by Sacramento County, and typical thresholds used to evaluate effects on socioeconomics and environmental justice in similar EIS/EIRs for habitat conservation plans. Based on these sources, a significant adverse effect could occur if the alternative would:

1. Displace substantial numbers of residences in the Planning Area;
2. Create a substantial demand for additional housing that could not be sustained within the Planning Area;
3. Substantially displace or disrupt businesses;
4. Substantially reduce property tax revenue;

5. Cause a disproportionately high and adverse human health, economic, social, or environmental impact on a minority population; or
6. Cause a disproportionately high and adverse human health, economic, social, or environmental impact on a low-income population.

Appendix G of the CEQA Guidelines does not provide suggested criteria for evaluating a beneficial effect. The following criteria were developed by the lead agencies. A beneficial effect could occur if the alternative would:

1. Displace fewer residences in the Planning Area compared to a baseline environmental condition;
2. Alleviate or reduce an unsustainable housing demand within the Planning Area;
3. Displace fewer businesses, or result in less disruption to businesses compared to a baseline environmental condition;
4. Result in less of a reduction in property tax revenue, or increase property tax revenue, compared to a baseline environmental condition; or
5. Reduce or eliminate a disproportionately high and adverse human health, economic, social, or environmental impact on minority or low-income populations compared to a baseline environmental condition.

The impact analysis for the three EIS/EIR alternatives will consider the context, intensity, and severity of potential effects to population and housing, socioeconomics, and environmental justice, and will present a determination of significance applicable to each of these criteria.

16.2.2 No Action/No Project Alternative

The No Action/No Project Alternative is described in Section 2.2.1 of Chapter 2.

16.2.2.1 Direct and Indirect Effects of the Alternative

Much of the future urban development included in the No Action/No Project Alternative is described in the General Plans of Sacramento County, Galt, and Rancho Cordova (see Section 2.2.1).

Under the No Action/No Project Alternative, grazing land and farmland would be converted to developed land uses. These changes would be accompanied by a transition of jobs and tax revenues from grazing and farming uses to jobs and tax revenues from urban uses. Many of the activities would also result in temporary increases in construction-related employment. Although this is expected to result in an overall benefit to employment and tax revenues, there could be a decline in the businesses associated with agricultural activity.

Under the No Action/No Project Alternative individual urban development projects would continue to provide mitigation to offset effects to listed species, wetlands, and other regulated

natural resources. Mitigation for unavoidable effects to listed species, wetlands, and other regulated natural resources would continue to occur through purchasing credits at a mitigation or conservation bank approved by the applicable regulatory agencies (e.g., U.S. Army Corps of Engineers and/or U.S. Fish and Wildlife Service), when project proponents pay into an existing Clean Water Act (CWA) 404 in-lieu fee program, provide on-site project proponent responsible mitigation, or provide off-site project proponent responsible mitigation (see Sections 2.2.1 and 2.2.2). The CWA 404 in-lieu fee program would need to meet the requirements of the 2008 CWA Compensatory Mitigation Rule. Once the program is established, the in-lieu fee program Implementing Entity would collect funds from project proponents when their projects result in fill of aquatic resources. The funds would then be used by the Implementing Entity to complete required compensatory mitigation (i.e., wetland re-establishment and establishment).

Biological mitigation activities expected under the No Action/No Project Alternative (described in more detail in Section 2.2) are expected to maintain existing land uses, such as continuing grazing or crop production on a mitigation preserve, consistent with existing wildlife habitat on the site. However, farmland could be purchased for a mitigation preserve and a portion converted to wetland or riparian habitat. The labor required to implement re-establishment/establishment of aquatic resources and aquatic habitat would have short-term economic value. However, once the farmland is converted to another land cover, the labor force needed to operate the remaining farmland could be reduced. Tax revenues could decline because farmland acres could be taken out of production. However, only a relatively small portion of existing farmland in the Planning Area would be taken out of production to support establishment of mitigation preserves. It is more likely that mitigation preserves would be established on properties with lower land values, such as grazing lands. Mitigation preserves for habitats such as vernal pools can continue to support grazing operations, and therefore maintain employment and tax revenues at similar levels and prevent socioeconomic effects.

As discussed in Section 16.1.2, minority individuals make up more than 50% of the total population in many portions of the County, especially within the Urban Development Area (UDA).¹ As seen on Figure 16-1, minority communities reside in the Planning Area within Rancho Cordova, portions of Galt, the unincorporated County between the City of Sacramento and Elk Grove, and the area directly south of Elk Grove. Only two census tracts have a median household income below the poverty line. These are also communities where minorities make up more than 50% of the population.

¹ As discussed in Section 1.1.1, the term Urban Development Area (UDA) is used by the EIS/EIR to discuss all lands where urban development Covered Activity projects or activities could occur under the action alternatives. Therefore, the term “UDA” means all lands within the County’s Urban Service Boundary that are also within the Planning Area (including lands within the Rancho Cordova city limits that are within the Planning Area), all lands within Galt’s city limits, and all lands within Galt’s sphere of influence (see Figure 1-1).

As explained in Section 2.2.2, the regulatory environment of the No Action/No Project Alternative is expected to restrict the ability of local agencies to permit approximately 1,900 acres of future urban development in the Mather Core Recovery Area (MCRA), and this future development would be shifted or displaced to one or more of the areas of undeveloped land outside of the Urban Service Boundary (USB). This development would occur in areas not currently considered as low-income or minority.

Although some urban development would be shifted or displaced from the MCRA to other locations under the No Action/No Project Alternative, the alternative includes a sufficient amount of urban development and associated infrastructure to meet the development objectives ultimately planned/contemplated in the adopted general plans of Sacramento County, Galt, and Rancho Cordova. Therefore, implementation of the No Action/No Project Alternative would not be an impediment to meeting current or future residential development needs.

The No Action/No Project Alternative could have various adverse effects on human health and the environment, as identified in the No Action/No Project Alternative impact discussions in Chapters 4 through 15 of this EIS/EIR. As discussed in Section 16.2.1, resource topics considered under this environmental justice analysis includes all the resource topics analyzed in this EIS/EIR (see Section 3.2). New urban development is planned for areas that intersect where minority and low-income populations reside and with that development comes both the potential for effects on human health and the environment as well as beneficial effects resulting from the proximity of urban services, parks, schools, employment opportunities, and transit. In addition, minority populations are spread across multiple locations in the planning area, indicating that minority populations are not concentrated in particular locations where they are disproportionately exposed to high and adverse human health, economic, social, and or environmental effects. Furthermore, the County and city general plans include policies that consider low-income and minority populations.

Preserves and other activities that would be implemented to mitigate for the negative effects of urban development, typically do not negatively impact human populations. Mitigation preserves provide for natural areas that could have a beneficial effect on individuals living or working near a preserve. Beneficial effects of mitigation preserves could include recreation opportunities, visual relief from urban development, and enjoyment of nature. Benefits of trails and some other positive preserve externalities are discussed in Chapter 12. Under the No Action/No Project Alternative, some mitigation preserves would be included in the UDA as projects are developed and some projects would include on-site preserves as mitigation. This would provide a beneficial effect as these mitigation preserves would be created within the UDA where many of the low-income and minority communities reside. The locations of off-site preserves would be dependent on the type of habitat mitigation required and available land.

The potential effects related to population and housing were analyzed in the general plan EIRs for the County and the cities. As discussed in Section 16.2.1, the relevant conclusions from each of these general plan EIRs are summarized below and incorporated into the analysis of the No Action/No Project Alternative.

The impact analysis presented in the *Sacramento County General Plan Update Final EIR* (Sacramento County 2010), determined that within Sacramento County:

- Impacts associated with division or disruption of an established community and displacement of housing, were considered to be less than significant (Sacramento County 2010, pp. 1-2, 3-60, 3-61, 3-72, 3-76 to 3-78).²

The impact analysis presented in the *City of Galt General Plan Update: 2030 Final EIR* (Galt 2009b), determined that within Galt:

- Impacts to social or economic impacts were not found to have a physical impact on the environment nor would the changes in the environment result in adverse impacts on social or economic concerns (Galt 2009b, pp. 6-10 and 7-1).

The impact analysis presented in the *City of Rancho Cordova General Plan Final EIR* (Rancho Cordova 2006b), determined that within Rancho Cordova:

- Impacts potentially contributing to a substantial displacement of housing units or people as a result of implementation of the General Plan were found to be less than significant (Rancho Cordova 2006b, p. 4.3-14).

As discussed in Section 3.4, the three General Plan EIRs used different study periods—ending in 2030 (Galt 2009b), in 2030 (Rancho Cordova 2006b), and 2050 (Sacramento County 2010). However, the 50-year study period for this EIS/EIR ends in 2065 (Section 3.6.3). Therefore, additional urban development can be expected to occur within Galt, Rancho Cordova, and Sacramento County in the years after each General Plan EIR study period ends, but before this EIS/EIR’s study period ends in 2065. Therefore, the impact analyses and conclusions incorporated from the three General Plan EIRs may not have considered all of the future urban development that is included in the project description of each EIS/EIR alternative. Consequently, when determining the significance of each impact described in the EIS/EIR, the lead agencies considered the impact analysis and the conclusions incorporated by reference

² The Sacramento County General Plan EIR analyzed development within a designated “Jackson Highway Corridor New Growth Area” that was not a part of the alternative ultimately selected by the County. However, the County is currently processing Master Plans in the Jackson Highway Corridor, so the referenced conclusions are relevant to the No Action/No Project Alternative.

from the General Plan EIRs, along with the effects of all urban development activities and projects that are included in the description of each EIS/EIR alternative.

The above EIRs, being CEQA documents, did not include an analysis of environmental justice and whether the general plans would result in a disproportionately high and adverse effect on minority or low-income populations. Each of the general plans includes policies that would reduce effects to minority or low-income populations, such as considering low-income populations for transit and housing; providing for affordable housing units; ensuring most residential units are close to amenities; and reducing incompatibilities associated with land use, noise, air quality, and other potential conflicts. Galt included a specific section in the city's general plan to address fair treatment of all persons in the city with an emphasis on ensuring no part of the community "suffers disproportionately from adverse human health or environmental effects" (Galt 2009a, Land Use Element, p. LU-21).

The general plan EIRs also did not address tax revenue or business displacement. However, each of the general plans includes policies that would reduce negative effects to businesses and revenue, including protecting farmland and agricultural uses, addressing property and sales taxes, business retention and attraction, economic development, urban revitalization, and other relevant topics.

16.2.2.2 Cumulative Effects of the Alternative

Past and present urban development projects in Sacramento County and the Planning Area have resulted in the existing population and housing, socioeconomic, and environmental justice conditions described in Section 16.1.2. There are only two census tracts in the planning area identified as containing a low-income population. There are multiple census tracts supporting minority populations. These minority populations are spread across multiple locations in the planning area, indicating that minority populations are not concentrated in any particular location where they are disproportionately exposed to high and adverse human health, economic, social, and or environmental effects. These conditions indicate that there is not an existing significant adverse cumulative environmental justice impact in the Planning Area. There is also no indication of substantial displacements of housing or businesses or other adverse populations and housing effects.

The types of future reasonably foreseeable "other" projects, activities, and actions, described in Section 3.7.2, are similar to the types of past and present actions that have occurred in the Planning Area. The other reasonably foreseeable future actions in the Planning area (see Section 3.7.2) that were not included in the Section 2.2.2 description of the No Action/No Project Alternative include additional new urban development in the Elk Grove sphere of influence and in Rancho Murieta, development of the Wilton Rancheria Casino, master planned

developments inside the UDA named Rio Del Oro and Mather South, further rural residential development outside the UDA, continued urban development of cultivated agricultural lands, major infrastructure projects such as California High-Speed Rail and the California WaterFix, and expansion of the existing National Wild Refuge and the Cosumnes River Preserve (see Section 3.7.2). Population and housing effects from these foreseeable other projects were generally included in the analysis of impacts incorporated from the General Plan EIRs. These General Plan EIRs identified less-than-significant adverse effects related to population and housing. When considered together, the effects of the past, present, and foreseeable other projects on population and housing within this Planning Area are not a significant cumulative impact.

The regional scale analysis provided in the Sacramento Area Council of Governments *2016 Metropolitan Transportation Plan/Sustainable Communities Strategy* (the 2016 MTP/SCS) (SACOG 2016a) (described in Section 3.4.4) provides relevant information for evaluating the cumulative effects of the No Action/No Project Alternative. The 2016 MTP/SCS plans for future transportation projects while considering expected development and population growth in the region. The *Final Environmental Impact Report for the 2016 Metropolitan Transportation Plan/Sustainable Communities Strategy* (MTP/SCS EIR) (SACOG 2016b) found that there would be a less-than-significant effect from implementation of the MTP/SCS on population and housing.

Similar to the General Plan EIRs, the MTP/SCS EIR did not include an analysis on environmental justice or socioeconomics. However, the 2016 MTP/SCS itself did include an analysis of environmental justice (SACOG 2016a). Chapter 8 of the 2016 MTP/SCS discusses how low-income and minority residents were considered in the planning effort, and how the 2016 MTP/SCS would serve those residents. The 2016 MTP/SCS found that 62% of the low income and minority populations lived in transit priority areas and 82% of the jobs were in the transit priority areas, providing minority, and low-income residents with greater opportunities to live and/or work near quality transit and provides for more access to parks and higher education. This supports a conclusion that the combination of past, present, and reasonably foreseeable future projects do not represent a significant cumulative effect on environmental justice.

As discussed in Section 16.2.2.1, the incremental direct and indirect effects of the No Action/No Project Alternative would not have an adverse effect on population and housing, socioeconomics, or environmental justice. Therefore, when the incremental effects of the No Action/No Project Alternative are viewed in connection with the effects of the past projects, current projects, and the effects of foreseeable other actions, the effects of the No Action/No Project Alternative would not cause, or make a considerable contribution, to a significant adverse cumulative effect on population and housing, socioeconomics, or environmental justice. The No Action/No Project Alternative would result in a ***Less Than Significant Adverse Cumulative*** effect to population and housing, socioeconomics, and environmental justice.

16.2.3 Proposed Action/Proposed Project

16.2.3.1 Direct and Indirect Effects of the Alternative

As described in Section 2.3.3, the Proposed Action/Proposed Project Covered Activities include types and intensities of urban development similar to those anticipated under the No Action/No Project Alternative.

Under the Proposed Action/Proposed Project Alternative, urban development would not be shifted or displaced to areas outside of the current Sacramento County USB boundary (Figure 1-1). As described in Section 16.2.2.1, this displacement was shown to not have a negative effect on population and housing, socioeconomics, or environmental justice under the No Action/No Project Alternative. Therefore, impacts as a result of urban development Covered Activities under the Proposed Action/Proposed Project Alternative, which do not include the shifted/displaced development, would be largely the same as those described for urban development under the No Action/No Project Alternative. In addition, like the No Action/No Project Alternative, the Proposed Action/Proposed Project Alternative includes a sufficient amount of urban development and associated infrastructure to meet the development objectives planned/contemplated in the adopted general plans of Sacramento County, Galt, and Rancho Cordova. Therefore, the Proposed Action/Proposed Project Alternative would not be an impediment to meeting current or future residential development needs. Because of the lack of significant adverse population and housing, socioeconomic, and environmental justice impacts from urban development under both the Proposed Action/Proposed Project Alternative and the No Action/No Project Alternative, and the overall similarity in effects across both alternatives, there would be **No Impact** from the Proposed Action/Proposed Project Alternative relative to the impacts expected under the No Action/No Project Alternative baseline condition.

As discussed in Section 2.3.5, the Proposed Action/Proposed Project Alternative would include the establishment of an interconnected SSHCP Preserve System in the Planning Area, which includes a comprehensive preserve management program that would be implemented in perpetuity. The Preserve System under the Proposed Action/Proposed Project Alternative would be more contiguous and more connected than the mitigation preserves established under the project-by-project regulatory approval process of the No Action/No Project Alternative. The SSHCP Preserve System and Preserve management activities would not have substantial negative impacts on population and housing, socioeconomics, or environmental justice, similar to what was described for the No Action/No Project Alternative. Benefits provided by access to preserves by minority and low-income populations could be slightly greater under the No Action/No Project Alternative because more numerous but less connected preserves are expected to be located in the UDA, closer to census tracts with

minority or low-income populations. Because the large landscape-level preserves would occur outside the UDA under the Proposed Action/Proposed Project Alternative, the benefits to minority and low-income populations could be slightly less because of greater distance between some preserves and these populations. However, this does not constitute a high and adverse effect on minority or low-income populations. Overall, because of the lack of significant adverse population and housing, socioeconomic, and environmental justice impacts from Preserve System establishment and operation under both the Proposed Action/Proposed Project Alternative and the No Action/No Project Alternative, and the overall similarity in effects of the Proposed Action/Proposed Project Alternative and the No Action/No Project Alternative, there would be **No Impact** when comparing the urban development under the Proposed Action/Proposed Project Alternative to the No Action/No Project Alternative baseline condition.

16.2.3.2 Significance of Direct and Indirect Effects

In summary, when compared to the No Action/No Project Alternative baseline condition, the Proposed Action/Proposed Project Alternative would:

- Result in similar population and housing impacts;
- Result in similar socioeconomic impacts; and
- Result in similar environmental justice impacts.

Therefore, after considering the significance of effects from the Proposed Action/Proposed Alternative on population and housing, socioeconomic, and environmental justice, the Proposed Action/Proposed Project Alternative would result in **No Impact** when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

16.2.3.3 Cumulative Effects of the Alternative

The effects of past, present, and reasonably foreseeable other projects on population and housing, socioeconomic, and environmental justice were described in Section 16.2.2.2, and there is no significant adverse cumulative effect on these issue areas existing in Sacramento County or the Planning Area. As discussed in Section 16.2.2.2, the incremental effects of the No Action/No Project Alternative were determined to be less than significant (individually limited) and not cumulatively considerable, when viewed in connection with the effects of the past projects, other current projects, and the foreseeable other projects.

As identified in Sections 16.2.3.1 and 16.2.3.2, the incremental direct and indirect effects on population and housing, socioeconomic, and environmental justice under the Proposed Action/Proposed Project Alternative are similar to the incremental effects of the No Action/No Project Alternative. Therefore, the Proposed Action/Proposed Project Alternative would result

in no impact when compared to the effects that would occur under the No Action/No Project Alternative baseline condition. Therefore, the incremental effects of Proposed Action/Proposed Project Alternative are individually limited, and do not result in a contribution to an existing cumulative effect. The Proposed Action/Proposed Project Alternative would result in **No Cumulative Impact** to population and housing, socioeconomics, and environmental justice, compared to the effects under the No Action/No Project Alternative baseline condition.

16.2.4 Reduced Permit Term

The Reduced Permit Term Alternative would include the same types of new urban development and infrastructure projects and activities as those anticipated under the No Action/No Project Alternative.

Under the Reduced Permit Term Alternative, the core of the Preserve System located inside the UDA would be associated with the development of five large Master Plans, as discussed in Chapter 2 for the Reduced Permit Term Alternative and for the Proposed Action/Proposed Project Alternative. Because the core of the Preserve System inside the UDA under both EIS/EIR action alternatives is associated with the same five large Master Plans, approximately 70% of the UDA preserves established under the Reduced Permit Term Alternative would have similar sizes, boundaries, and locations as the UDA preserves established under the Proposed Action/Proposed Project Alternative. However, the shorter duration of the Reduced Permit Term Alternative—and the smaller amount of urban development and associated development fees collected by the Reduced Permit Term Alternative—would not allow the Habitat Conservation Plan’s (HCP’s) Implementing Entity to establish as many acres of new preserves in the Planning Area as would occur under the Proposed Action/Proposed Project Alternative’s 50-year permit term. Therefore, fewer new preserves would be established under the Conservation Strategy of the Reduced Permit Term Alternative. This difference would be especially pronounced outside the UDA.

As described in Section 2.4, the federal and state Environmental Species Act Incidental Take Permits and the CWA permit strategy for future SSHCP Covered Activities would be valid only during the 30-year permit term of the Reduced Permit Term Alternative, and the Reduced Permit Term Alternative’s Conservation Strategy would be implemented only during this 30-year term. The urban development Covered Activities and conservation strategies associated with the five Master Plans would be implemented inside the UDA during this 30-year period. However, the EIS/EIR uses a 50-year analysis study period to evaluate all alternatives (see Section 3.6.3), so the EIS/EIR study period extends beyond the end of the 30-year permit term for the Reduced Permit Term Alternative. Therefore, as described in Section 3.6.7.2, the EIS/EIR analysis of the Reduced Permit Term Alternative also considers future urban development that is not part of the project description of the

Reduced Permit Term Alternative, but is still expected to occur within the Planning Area after the end of the permit term (i.e., in Years 31–50 of the EIS/EIR Study Period).

As described in Section 3.6.7.2, project mitigation preserves established after the end of the 30-year Reduced Permit Term Alternative would be established under a project-by-project process for obtaining individual authorizations under the CWA, federal and state Environmental Species Acts, and Section 1600 of the California Fish and Game Code. Consequently, mitigation preserves established in Years 31–50 of the EIS/EIR study period would not be established using a regional, landscape-based approach that balances new urban development with the need for conservation, as would be provided by an HCP. Therefore, much of the Preserve System inside the UDA would be very similar under the two action alternatives, but the Preserve System outside the UDA would be substantially different between the Reduced Permit Term Alternative and the Proposed Action/Proposed Project Alternative. Under the Reduced Permit Term Alternative, it is unlikely that mitigation preserves established outside the UDA would be contiguous or would be interconnected, and it is unlikely that a large, contiguous 10,500-acre landscape-size vernal pool preserve would be established in the southwestern portion of the Planning Area. Likewise, the No Action/No Project Alternative also would not result in contiguous, interconnected preserves outside the UDA, and would not establish a 10,500-acre vernal-pool preserve in the Planning Area. In these ways, the new mitigation preserves established outside the UDA under the Reduced Permit Term Alternative and the No Action/No Project Alternative would be similar.

16.2.4.1 Direct and Indirect Effects of the Alternative

The Reduced Permit Term Alternative includes types of urban development similar to those anticipated under the No Action/No Project Alternative. However, the Reduced Permit Term Alternative does not include the regulatory requirements within the MCRA portion of the UDA, as expected under the No Action/No Project Alternative (refer to Section 2.2.2). Therefore, future urban development within the MCRA under the Reduced Permit Term Alternative would be implemented consistent with the Sacramento County and Rancho Cordova General Plans, without development being displaced or shifted to locations outside the USB. As described in Section 16.2.2.1 for the No Action/No Project Alternative (where urban development would be shifted or displaced outside the USB), and as described in Section 16.2.3.1 for the Proposed Action/Proposed Project (where all urban development occurs within the USB), the Reduced Permit Term Alternative is expected to have no significant adverse effects on population and housing, socioeconomics, or environmental justice. Because of the lack of significant adverse population and housing, socioeconomic, and environmental justice effects from urban development under both the Reduced Permit Term Alternative and the No Action/No Project Alternative, and the overall similarity in effects in both alternatives, there would be **No Impact**

of the Reduced Permit Term when comparing the impacts of the Reduced Permit Term Alternative to the No Action/No Project Alternative baseline condition.

The Reduced Permit Term Alternative includes a consolidated and interconnected Preserve System, which would be established during the 30-year permit term, and a comprehensive preserve management program to be implemented in perpetuity. The Preserve System established during the 30-year permit term under the Reduced Permit Term Alternative would be smaller than the SSHCP Preserve System that would be established under the Proposed Action/Proposed Project Alternative, especially outside the UDA. As described in Section 2.4.5, the interconnected Preserve System established during the 30-year permit term of the Reduced Permit Term Alternative would remain intact. However, future mitigation required of new urban development implemented after the end of the permit term would not be established in an organized, consolidated manner, as would occur under the No Action/No Project Alternative.

As described in Section 16.2.2.1 for the No Action/No Project Alternative, and in Section 16.2.3.1 for the Proposed Action/Proposed Project Alternative, the preserves established under both of these alternatives would not result in significant adverse effects on population and housing, on socioeconomics, or on environmental justice. Therefore, the Preserve System established under the Reduced Permit Term Alternative, which would reflect elements of both the No Action/No Project Alternative and the Proposed Action/Proposed Project Alternatives, also would not result in significant adverse effects on population and housing, socioeconomics, or environmental justice. Because the establishment and operation of preserves under Reduced Permit Term Alternative and under the No Action/No Project Alternative would not impact population and housing, socioeconomic, and environmental justice, there would be **No Impact** of the Reduced Permit Term Alternative when compared to the No Action/No Project Alternative baseline condition.

16.2.4.2 Significance of Direct and Indirect Effects

In summary, when compared to the No Action/No Project Alternative baseline condition, the Reduced Permit Term Alternative would:

- Result in similar population and housing impacts;
- Result in similar socioeconomic impacts; and
- Result in similar environmental justice impacts.

Therefore, after considering the significance of impacts of the Reduced Permit Term Alternative on population and housing, socioeconomics, and environmental justice, the Reduced Permit

Term Alternative would result in **No Impact**, when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition.

16.2.4.3 Cumulative Effects of the Alternative

The effects of past, present, and reasonably foreseeable other projects on population and housing, socioeconomics, and environmental justice were described in Section 16.2.2.2, which determined that there is no significant adverse cumulative effects on these issue areas in Sacramento County or the Planning Area. As discussed, the incremental effects of the No Action/No Project Alternative were determined to be less than significant and not cumulatively considerable, when viewed in connection with the effects of the past, present, and foreseeable other projects.

As identified in Sections 16.2.4.1 and 16.2.4.2, the direct and indirect effects on population and housing, socioeconomics, and environmental justice under the Reduced Permit Term Alternative are similar to the effects under the No Action/No Project Alternative. The similarities in direct and indirect effects are sufficient to conclude that the Reduced Permit Term Alternative would result in No Impact when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition. Consequently, the incremental contribution of the Reduced Permit Term Alternative to cumulative effects on population and housing, socioeconomics, and environmental justice would also be similar to the No Action/No Project Alternative. Therefore, the Reduced Permit Term Alternative does not result in a cumulatively considerable (i.e., significant) contribution to cumulative impacts on population and housing, socioeconomics, and environmental justice. The Reduced Permit Term Alternative would result in **No Cumulative Impact** to population and housing, socioeconomics, and environmental justice compared to the No Action/No Project Alternative baseline condition.

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CHAPTER 17 – OTHER REQUIRED ANALYSES FOR CEQA AND NEPA

The California Environmental Quality Act (CEQA) and the National Environmental Protection Act (NEPA) require that Environmental Impact Reports (EIRs) prepared under CEQA and Environmental Impact Statements (EISs) prepared under NEPA include certain analyses, in addition to the analyses already presented in the preceding EIS/EIR resource chapters.

The additional analyses required under NEPA and CEQA are in many cases similar; therefore, the additional NEPA and CEQA required analyses presented in this chapter are combined, where appropriate.

17.1 SIGNIFICANT EFFECTS THAT CANNOT BE AVOIDED (CEQA AND NEPA)

Section 15126.2(b) of the CEQA Guidelines requires that an EIR describe any significant impacts that cannot be avoided or minimized to a less-than-significant level with the implementation of feasible mitigation measures. Similarly, Section 40 CFR 1502.16 of the Council on Environmental Quality's NEPA regulations requires an EIS to discuss and disclose any adverse environmental effects that cannot be avoided.

The Executive Summary and Chapters 4 through 16 of this EIS/EIR provide a comprehensive identification of the significant environmental effects of the action alternatives, including the level of significance after mitigation (if needed). When compared to the No Action/No Project baseline condition, there are no significant and unavoidable project-specific or cumulative impacts to any environmental resource studied in the EIS/EIR, for either action alternative.

17.2 POTENTIALLY SIGNIFICANT EFFECTS WHICH COULD BE AVOIDED (CEQA)

Chapters 4 through 16 of this EIS/EIR provide a comprehensive identification and evaluation of the environmental impacts for the Proposed Action/Proposed Project Alternative and Reduced Permit Term Alternative. Cumulative impacts are also evaluated in Chapters 4 through 16, following the approach outlined in Section 3.4 of this EIS/EIR. Each impact included in this EIS/EIR is also listed in the Executive Summary. As compared to the No Action/No Project baseline condition, there are no project-specific or cumulative impacts requiring mitigation for either action alternative.

17.3 EFFECTS FOUND NOT TO BE SIGNIFICANT (CEQA)

The EIS/EIR identified no significant effects for either action alternative, relative to the effects expected under the No Action/No Project baseline condition, for any resource topic studied in Chapters 4 through 16 of the EIS/EIR, including each of the following chapter topics:

- Land Use
- Soils, Geology, and Mineral Resources
- Agriculture
- Hydrology and Water Quality
- Natural Communities, Land Cover Habitat Types, and Common Plant and Animal Species
- Special-Status Species, Including HCP Covered Species
- Aquatic Resources
- Paleontological, Cultural, and Historical Resources
- Public Services and Facilities
- Traffic and Circulation
- Air Quality
- Greenhouse Gases and Climate Change
- Population and Housing, Socioeconomics, and Environmental Justice

17.4 RELATIONSHIP BETWEEN SHORT-TERM USES OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY (NEPA)

In accordance with NEPA (42 U.S.C. 4332) and NEPA regulations (40 CFR 1502.16 and 43 CFR 46.415), an EIS must include a discussion of the relationship between the short-term uses of man's environment and the maintenance and enhancement of long-term productivity.

This information is provided in each EIS because the agency decision-maker and members of the public must have a clear sense of what they are gaining or losing in the short term, and in the long term. The terms "short term" and "long term" are defined differently for each EIS and each resource area, taking into account the scope of the proposed alternatives and resource-specific information. Therefore, each resource studied has its own definitions of "short term" and "long term" (Freeman 1992). For example, "long term" would be quite different for a project within eastern vs. western U.S. forests—eastern forests can grow to maturity in 80 to 100 years, but western forests would take two or three times as long to reach maturity.

For this EIS, short-term uses of the environment would be those occurring during construction of urban development and other project types described in Sections 2.2.1, 2.3.3, and 2.4.3 of this EIS/EIR. Most of the activities analyzed in the EIS/EIR would have an impact on long-term productivity, either of the built environment or the natural or agricultural environment. In this way, construction of a commercial or residential structure would be a short-term use of the environment, but the occupation of that structure and the removal of natural land cover types by urban development would affect long-term productivity.

In the short-term, a wide range of urban development and infrastructure projects would be constructed under the environmental commitments and requirements of the action alternatives. Urban development under the action alternatives would be as envisioned in the General Plans of Sacramento County, Galt, and Rancho Cordova. These plans consider both short-term uses of the environment as well as long-term maintenance of the built environment like transportation or water infrastructure. As such, the local short-term impacts and use of resources by the action alternatives are consistent with the maintenance and enhancement of long-term productivity of the built environment.

Although some urban development and infrastructure projects would result in a loss of habitat, take of sensitive species, increased air emissions, transportation impacts, as well as other impacts described in Chapters 4 through 16 of this EIS/EIR, these activities would be undertaken pursuant to a Habitat Conservation Plan (HCP). A conservation strategy is included in each action alternative, and is designed to ensure that the long-term productivity in the Planning Area is maintained, even with the short-term uses of the environment that would occur from implementing the Covered Activities of either action alternative. The two action alternatives (Sections 2.3.5 and 2.4.5) include a regional conservation strategy to avoid, minimize, and mitigate for impacts on sensitive species, natural communities, wetlands and waters, and balance environmental and economic development needs on a regional and landscape scale. Implementation of the HCP's comprehensive and balanced approach to natural resource preservation would provide a greater level of landscape- and watershed-scale protection of natural resources than would be possible under the No Action/No Project Alternative's project-by-project individual authorizations under the U.S. Endangered Species Act, California Endangered Species Act, Clean Water Act Sections 404 and 401, and the California Fish and Game Code 1600 programs. The two action alternatives also include "get ahead and stay ahead" provisions for preservation of lands to ensure that the long-term conservation and enhancement measures are in place before the short-term impacts of Covered Activities occur.

17.5 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES (NEPA)/SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES (CEQA)

The CEQA Guidelines (Section 15126.2(c)) mandate EIRs discuss any significant irreversible environmental effects that would be caused by a proposed project. The analysis required under this section must consider whether the project would have primary and secondary impacts that would generally commit future generations to similar uses, involve a large commitment of nonrenewable resources, unjustifiably consume resources (i.e., use energy or water wastefully), or involve the uses in which irreversible damage could result from any potential accidents associated with the project.

In accordance with NEPA Section 102 (42 U.S.C. 4332) and NEPA regulations, an EIS must discuss any irreversible or irretrievable commitment of resources that would be involved in the proposed project, should it be implemented (40 CFR 1502.16, 43 CFR 46.415). In general, “irreversible” commitments of resources are those that cannot be reversed, and “irretrievable” commitment of resources are those that are lost for a period of time. Examples of irreversible commitments include the extinction of a species, the mining of ore, and use of fossil fuels. An example of an irretrievable commitment is the establishment of a utility right-of-way where timber productivity on the right-of-way is lost over the time that the right-of-way remains (Freeman 1992). Furthermore, this regulation specifically requires each EIS to discuss the energy requirements and energy conservation potential for each alternative, including mitigation measures (40 CFR 1502.16(e)). Likewise, each EIS must discuss the natural resource and depletable resource requirements of each alternative, and discuss the potential of each alternative to conserve natural and depletable resources, including mitigation measures (40 CFR 1502.16(f)).

Irreversible environmental changes attributable to planned urban development were analyzed in the following sections of the three General Plan EIRs discussed in Section 3.4:

- Chapter 12, Section 12.4, Significant Irreversible Environmental Changes, in the *Galt General Plan Update: 2030 Final Environmental Impact Report* (Galt 2008)
- Chapter 7, Section 7.2.7, Significant Irreversible Environmental Effects, in the *City of Rancho Cordova General Plan Final EIR* (Rancho Cordova 2006b)
- Chapter 17, Irreversible Environmental Changes, in the *Sacramento County General Plan Update Final EIR* (Sacramento County 2010)

The three General Plan EIRs analyzed the potential for urban development to result in the permanent conversion of currently undeveloped open space and agricultural land areas to become residential, commercial, industrial, office, public, and recreational land covers. All three

alternatives would result in additional urbanization of Sacramento County, Galt, and Rancho Cordova, and all three alternatives would result in irreversible and irretrievable commitment of existing agricultural land covers and other natural land covers to urban development, and loss of productive agricultural resources and natural resources. In addition, development under the General Plans would irreversibly commit building materials and energy resources to the construction and maintenance of such development. Finally, construction of new urban development consistent with the three General Plans, under any of the EIS/EIR alternatives would result in the consumption of fossil fuels such as natural gas and gasoline, as well as commit limited renewable resources, such as water.

As discussed in Section 3.4, the three General Plan EIRs used different study periods—ending in 2030 (Galt 2009), in 2030 (Rancho Cordova 2006b), and 2050 (Sacramento County 2010). However, the 50-year study period for this EIS/EIR ends in 2065 (Section 3.6.3). Additional urban development can be expected to occur within Galt, Rancho Cordova, and Sacramento County in the years after their General Plan EIR study periods end, and until this EIS/EIR’s study period ends in 2065. Therefore, the impact analyses and conclusions incorporated from the three General Plan EIRs may not have considered all of the future urban development that is included in the project description of each EIS/EIR alternative. Consequently, additional irreversible commitments of resources and significant irreversible environmental changes would occur that were not analyzed in the General Plan EIRs. The lead agencies considered the impact analysis and the conclusions incorporated by reference from the General Plan EIRs, along with the effects of all urban development activities and projects included in the description of each EIS/EIR alternative.

As discussed in Section 3.6.7, only the No Action/No Project Alternative would result in the displacement or shifting of 1,900 acres of planned development to areas located outside the current Sacramento County Urban Services Boundary (USB). Therefore, the two action alternatives would result in fewer vehicle miles traveled (VMT) than the No Action/No Project Alternative (see Chapter 13, Traffic and Circulation). Consequently, the commitment of fossil fuel resources is expected to be slightly lower for each of the two action alternatives when compared to the No Action/No Project Alternative baseline condition, because of the smaller VMT.

As discussed in Chapter 2, new Preserves would be established under each of the alternatives to mitigate the effects of future urban development on species, waters, and the natural environment. Establishment of Preserves, whether purchased in fee title or easements, would not be an irreversible or irretrievable commitment of natural resources. However, establishment of Preserves under each of the alternatives would result in a minor irreversible commitment of fossil fuels to perform surveys and construct relatively small habitat re-establishment/establishment projects. However, the habitat Preserves would

continue existing ranching or farming operations on the preserved lands, so the new Preserve operation and maintenance vehicle trips would be replacing vehicle trips currently occurring under the existing agricultural operations. Therefore, vehicle trips and consumption of fossil fuels would not be discernably different from the new Preserves.

17.6 GROWTH INDUCEMENT AND RELATED EFFECTS (CEQA)

The CEQA Guidelines require the analysis of a project's potential to induce growth. Specifically, Section 15126.2(d) requires that environmental documents "discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment." Growth-inducing impacts can occur if a project would induce urban growth either directly or indirectly in the surrounding environment. Furthermore, Section 15126.2(d) of the CEQA Guidelines states that "[i]t must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment."

The action alternatives would not have any direct growth-inducing impacts because no development would be specifically authorized by either action alternative. As discussed previously in Sections 1.6.4 and 3.6.1, the description and scope of each EIS/EIR alternative (Chapter 2) does not include local approvals or entitlements for individual urban development projects or activities. Accordingly, the analysis presented in this EIS/EIR does not provide project-level CEQA or NEPA coverage for the impacts of future Covered Activities on inducement of urban growth. The action alternatives would not directly cause growth to occur, but rather would accommodate growth that is already planned in the urban growth boundaries by the approved General Plans (Sacramento County 2011; Galt 2009; Rancho Cordova 2006a). However, the action alternatives would provide a mechanism for individual future development projects to comply with the federal Endangered Species Act, California Endangered Species Act, and the Clean Water Act. Therefore, the two action alternatives would not remove a barrier to growth, but would expedite the regulatory and local approvals of future individual development projects and activities. This is an indirect growth-inducing effect of each action alternative.

17.7 ENVIRONMENTALLY PREFERABLE ALTERNATIVE (NEPA) AND ENVIRONMENTALLY SUPERIOR ALTERNATIVE (CEQA)

NEPA regulations requires that the Record of Decision (ROD) on a final EIS must identify all alternatives that were considered by the agency in reaching its decision, and specify the alternative or alternatives that were considered to be environmentally preferable (40 CFR 1505.2(b)). Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative that best protects, preserves, and

enhances historic, cultural, and natural resources (CEQ 1981). The identification of the environmentally preferable alternative may involve difficult judgements, particularly when one environmental value must be balanced against another environmental value. Normally, the lead agency will select and identify the environmentally preferable alternative in the EIS document (CEQ 1981; 43 CFR 46.450). The public and other agencies reviewing a draft EIS can assist the lead agency in identifying the environmentally preferable alternative by providing their views in comments on the draft EIS. However, the lead agency must identify the environmentally preferable alternative in each ROD.

The CEQA Guidelines (Section 15126.6(e)(2)) require that an environmentally superior alternative be identified among the alternatives considered. The CEQA Guidelines do not define “environmentally superior;” however, the environmentally superior alternative is generally defined as the alternative that would result in the least adverse environmental impacts to the project site and surrounding area, based on the analysis included in the EIR.

The impacts of each EIS/EIR alternative on the different elements of the human environment analyzed in Chapters 4 through 16 are compiled and summarized in Tables ES-1 and ES-2 of the Executive Summary. The Proposed Action/Proposed Project Alternative would provide the greatest level of preservation of remaining natural communities in the Planning Area, particularly outside the current USB boundary. Preservation of these natural communities would provide greater preservation of habitat for Planning Area native species, better conservation of Planning Area special-status species, including the Covered Species, and more preservation of aquatic resources. The Proposed Action/Proposed Project Alternative would provide more linkages and wider linkages to existing Preserves, maintaining wildlife movement corridors as well as hydrologic connectivity. For all of these reasons, the benefits to native species, natural communities, and watersheds would therefore be greatest under the Proposed Action/Proposed Project Alternative. In addition, the Proposed Action/Proposed Project Alternative would establish Avoidance and Minimization Measures (AMMs) that would provide new and enhanced methods to avoid and minimize impacts to wetlands and other waters, including requirements that urban development be set back 50–150 feet from the banks of each stream and creek in the Planning Area. These AMMs would better reduce potential direct and indirect impacts to existing stream hydrology, water quality, and downstream habitat as compared to the expected protections under the No Action/No Project Alternative. The Proposed Action/Proposed Project Alternative would also have minor beneficial effects to land use compatibility (Chapter 4), the protection of agricultural resources (Chapter 6), hydrology and water quality (Chapter 7), cultural resources (Chapter 11), demand for expanded public services and facilities (Chapter 12), transportation planning and transportation infrastructure (Chapter 13), air quality (Chapter 14), and greenhouse gases (Chapter 15). Therefore, the Proposed Action/Proposed Project Alternative is the environmentally preferable alternative

under NEPA and the environmentally superior alternative under CEQA. **Consequently, the USFWS has also identified the Proposed Action/Proposed Project Alternative as the USFWS's preferred alternative.**

17.8 CONSISTENCY WITH EXECUTIVE ORDERS

17.8.1 Executive Order 11988 – Floodplain Management

As discussed in Section 7.1.1.1, Executive Order 11988 (Floodplain Management), requires federal agencies to prepare floodplain assessments for proposed federal actions located in or affecting floodplains. An agency proposing to conduct an action in a floodplain must consider alternatives to avoid adverse effects and incompatible development in the floodplain. If the only practicable alternative involves siting in a floodplain, the agency must minimize potential harm to or development in the floodplain and explain why the action is proposed in the floodplain.

Under the two action alternatives, the Implementing Entity would implement stream restoration actions within floodplains and active floodways (see Section 2.3.5 and Section 2.4.5). The Implementing Entity would take appropriate precautions to ensure that stream restoration projects implemented under either action alternative do not have adverse effects to floodplains (see Chapter 7). This would include implementation of AMM LEVEE-1, which would require the Implementing Entity to conduct a hydrologic analysis to ensure that riparian restoration and other habitat restoration activities will not result in an increase in flood stage elevations or flood risk on lands outside the Preserve. Because the lands would be managed consistent with the stated HCP biological goals and objectives, which would not conflict with floodplain management, no floodplain impacts are expected.

17.8.2 Executive Order 11190 – Protection of Wetlands

As discussed in Section 10.1.1, Executive Order 11990 (Protection of Wetlands), requires federal agencies to prepare wetland assessments for federal actions located in or affecting wetlands. Agencies must avoid undertaking new construction in wetlands unless no practicable alternative is available and the proposed action includes all practicable measures to minimize harm to wetlands.

The action alternatives have been designed to avoid and minimize impacts on wetlands and other aquatic resources, and mitigate for impacts that cannot be avoided. As described in Section 2.3.5, the South Sacramento Habitat Conservation Plan (SSHCP) includes specific biological goals and measureable objectives for aquatic resources, and the Conservation Strategy includes a range of specific AMMs to avoid and minimize impacts to these resources (see Section 2.3.5).

17.8.3 Executive Order 12898 – Environmental Justice

As discussed in Section 16.1.1, Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority and Low-Income Populations), requires federal agencies to identify and address disproportionately high and adverse human health or environmental effects of their actions on minority and low-income populations and communities. Potential impacts related to environmental justice are discussed in Chapter 16.

Executive Order 12898 includes the requirement for federal agencies to ensure effective public participation and access to information. Consequently, a key component of compliance with Executive Order 12898 is outreach to potentially affected minority and/or low-income populations to discover issues of importance that may not otherwise be apparent. Outreach to affected communities has been conducted as part of the decision-making process for the SSHCP and alternatives. This outreach is described in Chapter 1 of this EIS/EIR.

17.9 REFERENCES CITED

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CHAPTER 18 – LIST OF PREPARERS

As required by 40 CFR 1502.17, the following individuals prepared a particular analysis, background papers, or were primarily responsible for the preparation of the basic components of the Environmental Impact Statement (EIS)/Environmental Impact Report (EIR).

Name and Professional Title	Qualifications	Years of Professional Experience	Analysis or Content of EIS/EIR
USFWS Sacramento Fish and Wildlife Office (Lead Agency)			
Nina Bicknese <i>Senior Wildlife Biologist</i>	M.S. Wetland Ecology B.S. Biology	30	Scope of document; oversight of NEPA content; identification of reasonable alternatives; formulation of alternatives; oversight of natural resource content and analysis; review and technical editing
Sacramento County (Lead Agency)			
Catherine Hack <i>County Environmental Coordinator/Principal Planner</i>	B.S. Range Management	32	Scope of document; oversight of CEQA content; identification of reasonable alternatives; formulation of alternatives; document review and technical editing; project management.
Marianne Biner <i>Senior Environmental Analyst/Planner</i>	B.A. Environmental Studies	16	Scope of document; oversight of CEQA content; identification of reasonable alternatives; formulation of alternatives; technical editing; project management.
USACE Sacramento District (Cooperating Agency)			
Mary Pakenham-Walsh <i>Senior Project Manager, Regulatory Division</i>	M.S. Ecology B.S. Biology	21	Review and development of information about waters, other wetlands, or the CWA within Chapters 1, 2, 7, 10, 11; preparation of Appendix C (Draft CWA 404 Permit Strategy); preparation of Appendix A (CWA Cumulative-Impact Report).
Kate Dadey <i>Chief of California South Branch, Regulatory Division.</i>	B.S. Civil Engineering; M.S. Ocean Engineering; PhD Geological Oceanography	25	Identification of reasonable alternatives including the No Action Alternative; review and approval of Appendix A (CWA Cumulative-Impact Report).
Dudek (Lead consultant for preparing EIS/EIR Chapters 2, 3, 4, 6, 11, 12, 13, 17, 18, and Executive Summary)			
Sarah Lozano <i>Principal-in-Charge/Project Manager</i>	M.R.P., Regional Planning; B.A., Environmental Science and History; American Institute of Certified Planners (AICP)	18	Review of Chapters 2, 3, 4, 6, 11, 12, 13, 17. Oversight of document preparation and production.

Name and Professional Title	Qualifications	Years of Professional Experience	Analysis or Content of EIS/EIR
Mike Henry <i>Deputy Project Manager</i>	Ph.D. Ecology, Evolution and Marine Biology; B.S. Aquatic Biology	16	Primary author of Chapters 2, 3, 11, 12, 17. Prepared project description (Chapter 2) and the methods for impact analysis (Chapter 3). Edited description of existing setting and wrote analysis of impacts for public services and facilities (Chapter 12) and traffic/circulation (Chapter 13). Senior review and editing of analysis of impacts to land use (Chapter 4), agriculture (Chapter 6), and cultural resources (Chapter 11). Prepared analysis of other CEQA and NEPA requirements in Chapter 17. Prepared Executive Summary and associated tables. Oversight of document preparation and production.
Christine Kronenberg <i>Senior Environmental Planner</i>	M.C.P., City Planning; B.A., Political Science; AICP	20	Described existing setting and draft impact analysis for land use (Chapter 4), and agriculture (Chapter 6).
Anita Hayworth <i>Senior Biologist</i>	Ph.D., Ecology; M.S., Avian Sciences; B.S., Ecology, Ethology, and Evolution	40	Described aircraft bird strike hazard in the existing setting, and identified potential impacts related to bird strike hazard in Chapter 4 (Land Use).
Brian Grattidge <i>Senior Environmental Planner</i>	M.A., Political Science; B.A., International Relations	20	Prepared initial drafts of the existing setting and impact analysis for public utilities and services (Chapter 12) and traffic and circulation (Chapter 13).
Micah Hale <i>Senior Archaeologist</i>	Ph.D., Anthropology; Register of Professional Archaeologists (RPA)	20	Provided initial drafts of the existing setting and impact analysis for cultural resources (Chapter 11). Provided expert review of chapter revisions.
Tyler Friesen <i>GIS Technician</i>	B.A., Geography (Minor: Environment and Society); Specialized training: GPS for GIS, June 2009; LIDAR in ArcGIS 10.1, February 2013	6	Calculations of impact acres and conservation acres for each EIS/EIR Alternative using GIS; prepared figures for Chapter 2, 3, 4, 6, and 13.
Rachel Strobridge <i>GIS Technician</i>	B.A., Geography; GIS Vocational Certificate	2	Assisted in preparing figures for Chapter 2, 3, 4, 6, and 13.
Becky Golden-Harrell <i>Publications Manager</i>	M.S., Marketing; B.A., English	15	Editorial review..
Steve Taffolla <i>Editorial Lead</i>	B.A., English	8	Editorial review.
Amy Seals <i>Technical Editor</i>	M.A., English	16	Editorial review.
Devin Brookhart <i>Publications Specialist Lead</i>	B.A., Political Science, Public Law Emphasis	7	Formatting of all chapters.

Name and Professional Title	Qualifications	Years of Professional Experience	Analysis or Content of EIS/EIR
Ascent Environmental (Lead consultant for preparing EIS/EIR Chapters 1, 5, 7, 8, 9, 10, 14, 15, and 16)			
Curtis Alling <i>Principal-in-Charge</i>	M.A., Natural Resources Planning and Development; B.S., Wildlife Science	35	Oversight of technical analysis and impact analysis for Chapters 5, 7, 8, 9, 14 and 15. Evaluation of alternatives. NEPA/CEQA compliance.
Sean Behta <i>Project Manager</i>	B.S., Wildlife Biology	25	Oversight of technical analysis and impact analysis for Chapters 5, 7, 8, 9, 14 and 15. Development and evaluation of alternatives. NEPA/CEQA compliance. Cumulative effects.
Elizabeth Boyd <i>Deputy Project Manager</i>	M.C.P., City Planning; B.A., Geography	16	Described existing setting and analyzed impacts to population, housing, socioeconomics and environmental justice (Chapter 16). Described results of public scoping in Scoping Summary (Appendix B).
Ted Thayer <i>Wildlife Biologist</i>	M.S., Biology; B.S., Biology	15	Described existing setting and analyzed impacts to hydrology and water quality (Chapter 7), natural land covers and associated species habitats (Chapter 8), special status species (Chapter 9), and aquatic resources (Chapter 10). Also prepared the supporting information for biological resource analysis in Appendix G. Primary author for Chapters 7, 8, 9, 10, and Appendix G.
Dimitri Antoniou <i>Environmental Planner</i>	M.S., City and Regional Planning; B.S., Environmental Management and Protection	7	Described existing setting and analyzed impacts to air quality (Chapter 14) and greenhouse gases (Chapter 15), including modeling of criteria air pollutants carbon dioxide equivalents. Also prepared supporting analysis in Appendix H.
Stephanie Rasmussen <i>Environmental Planner</i>	B.S., Environmental Biology and Management	13	Described existing setting and analyzed impacts to geological resources, soils and minerals (Chapter 5).
Lisa Merry <i>GIS Specialist</i>	M.S., Environmental Science and Management; B.S., Environmental Biology and Management	6	Calculated impacts to species habitat using GIS, and prepared figures for Chapters 5, 7, 8, 9, 10, and 16.
Robertson-Bryan Inc.			
Michael Bryan <i>Managing Partner</i>	Ph.D., Toxicology and Fisheries Biology	30	Oversight of impact analysis for hydrology and water quality (Chapter 7).
Jeff Lafer <i>Water Quality Specialist</i>	M.S., Environmental Science	26	Described existing setting and analyzed impacts to hydrology and water quality (Chapter 7).

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CHAPTER 19 – SUMMARY OF COMMENTS RECEIVED AND RESPONSES TO COMMENTS ON THE DRAFT DOCUMENTS

INTRODUCTION

As summarized in Chapter 1, the Draft Environmental Impact Statement (EIS) and Environmental Impact Report (EIR) and Draft South Sacramento Habitat Conservation Plan (SSHCP) were released for concurrent public reviews on June 2, 2017, when the U.S. Fish and Wildlife Service (USFWS) published a Notice of Availability (NOA) for both documents (82 FR 25612), and Sacramento County published an NOA for the Draft EIS/EIR with the California State Clearinghouse (control number 2008062030). Separately, the U.S. Army Corps of Engineers (USACE) released their draft Clean Water Act (CWA) Permitting Strategy for the SSHCP.

Pursuant to federal Endangered Species Act (ESA) Section 10 policy, the USFWS provided a minimum 90-day public review and comment period for both draft documents, which ended on September 5, 2017. A total of 26 comment letters were received on the Draft EIS/EIR, the Draft SSHCP, and the Clean Water Act Permitting Strategy.

During the 90-day comment period, the lead agencies and the SSHCP Plan Partners jointly conducted three public meetings in Wilton, Rancho Cordova, and Galt, to provide additional opportunities for the public to provide comments on the Draft SSHCP and the Draft EIS/EIR (see NOAs for locations). A total of two comments letters were submitted at these public meetings.

The Draft SSHCP and the Proposed Action/Proposed Project Alternative in the Draft EIS/EIR describe a proposed multi-tiered approach for permitting future SSHCP Covered Activities under Section 404 of the CWA (CWA Permit Strategy). Therefore, as required by CWA regulations, the USACE also posted a Public Notice on June 2, 2017, to announced a 30-day comment period on the proposed USACE action titled: *Public Notice SPK-1995-00386: Proposed Section 404 Clean Water Act Permit Strategy Aligned with the South Sacramento Habitat Conservation Plan, Sacramento, California* (USACE Public Notice). Attachment 2 of the USACE Public Notice is identical to Appendix C of the Draft EIS/EIR.

Public comments were received on the Draft EIS/EIR, the Draft SSHCP, and the USACE Public Notice. Table 19-1 presents a numbered list of all comment letters received, in alphabetical order. Each numbered comment letter is included in this chapter.

Each letter has been annotated to distinguish each comment within the letter. The annotation assigns a number code for each response to comment (RTC). The RTC comment code is the number assigned to the comment letter, followed by the number assigned to the comment within the letter. The RTC code is also labeled as *SSHCP*, *EIS/EIR*, or *CWA* to indicate if the comment was on the Draft SSHCP, the Draft EIS/EIR, or the USACE Public Notice.

The lead agencies prepared the RTCs on the Draft EIS/EIR, and the Plan Partners prepared RTCs on the Draft SSHCP in collaboration with the USFWS. The USACE prepared the RTCs on their Public Notice. If a response to a comment on the Draft SSHCP resulted in changes to the Final SSHCP, those changes were carried into the project description of the Proposed Action/Proposed Project Alternative in the Final EIS/EIR. Likewise, if the response to comments on the USACE Public Notice resulted in changes to the proposed CWA Permit Strategy, those changes were copied into relevant sections of the Final SSHCP, and into the description of the Proposed Action/Proposed Project Alternative in the Final EIS/EIR, as needed. Using this process, the Proposed Action/Proposed Project Alternative that is described and studied in the Final EIS/EIR is consistent with the Final SSHCP.

Approximately 125 of the RTCs resulted in a change to the Final SSHCP or the Final EIS/EIR. The RTCs that resulted in revised text in the Final EIS/EIR are clearly marked in the RTCs and Final EIS/EIR. Additions to the Draft EIS/EIR are shown with **bold underline**. Changes from the Draft EIS/EIR resulting in deleted text are shown with ~~strikethrough~~.

Minor technical edits not associated with a RTC are shown in Table 19-2 at the end of this Chapter (19).

A total of 361 comments and RTCs are presented below in Chapter 19. The number of discrete comments shown in the table below totals to greater than 361 because some discrete comments applied to more than one of the documents. Most of the changes in the Final SSHCP or Final EIS/EIR were confined to minor factual corrections and minor text clarifications. The changes from the Draft to the Final EIS/EIR do not alter impact analyses or any of the conclusions presented in Chapters 4 through 16 of the Final EIS/EIR.

TABLE 19-1. COMMENT LETTERS NUMBERED IN ALPHABETICAL ORDER

Comment Letter Number	Commenter (Representing)	Number of Discrete Comments		
		On SSHCP	On CWA Permitting Strategy	On EIS/EIR
1	Bryan Plant (representing Brookfield Sacramento Holdings LLC)	0	2	0
2	Carol Witham and the California Native Plant Society	14	0	3

TABLE 19-1. COMMENT LETTERS NUMBERED IN ALPHABETICAL ORDER

Comment Letter Number	Commenter (Representing)	Number of Discrete Comments		
		On SSHCP	On CWA Permitting Strategy	On EIS/EIR
3	Cay C Goude and Eric S Goude	37	0	23
4	City of Elk Grove	12	0	0
5	City of Elk Grove	0	0	15
6	Delta Protection Commission	0	0	3
7	Delta Stewardship Council	2	0	20
8	Earl Seaberg	1	0	0
9	Environmental Council of Sacramento, Habitat 2020, the Sierra Club, the Institute for Ecological Health, and Save our Sandhill Cranes	99	0	2
10	Eugene Rose	1	0	0
11	Friends of Swainson's Hawk	21	0	5
12	Institute for Ecological Health	0	1	0
13	Law Offices of Gregory D. Thatch (representing Cordova Hills LLC)	7	0	0
14	Michael Mahon	21	0	0
15	Pacific Legal Foundation	9	0	0
16	Sacramento Regional County Sanitation District (Regional San)	1	0	24

TABLE 19-1. COMMENT LETTERS NUMBERED IN ALPHABETICAL ORDER

Comment Letter Number	Commenter (Representing)	Number of Discrete Comments		
		On SSHCP	On CWA Permitting Strategy	On EIS/EIR
17	Sacramento County Agricultural Commissioner	0	0	10
18	Sacramento County Farm Bureau	10	0	8
19	Sacramento Metropolitan Air Quality Management District	0	0	3
20	Sacramento Metropolitan Utility District (SMUD)	5	0	0
21	Taylor & Wiley (representing Tsakopolous Investments)	1	1	0
22	Taylor & Wiley (representing Tsakopolous Investments)	0	1	0
23	U.S. Army Corps of Engineers	0	0	26
24	U.S. Environmental Protection Agency	2	2	0
25	U.S. Environmental Protection Agency	2	0	3
26	Wilton Rancheria	0	5	0
Total		243	12	145

**LETTER 1 BRYAN PLANT, ON BEHALF OF BROOKFIELD
SACRAMENTO HOLDINGS LLC
(CWA PERMIT STRATEGY)**

From: [Brian Plant](#)
To: [Pakenham-Walsh, Mary R. CIV USARMY CESPK \(US\)](#)
Cc: [John Norman \(John.Norman@brookfieldrp.com\)](#); [Stacey McKinley \(stacey.mckinley@gmail.com\)](#)
Subject: [Non-DoD Source] SPK - Proposed CWA 404 Permit Strategy - South Sacramento Habitat Conservation Plan
Date: Monday, July 24, 2017 1:50:16 PM

Dear Ms. Pakenham-Walsh: On behalf of Brookfield Sacramento Holdings LLC which owns and develops property in Sacramento and Placer Counties and is a stakeholder in the Natomas Basin Habitat Conservation Plan and the proposed Placer County Conservation Plan, please accept these comments on the proposed Clean Water Act permitting strategy for the South Sacramento Habitat Conservation Plan (Corps Action ID SPK-1995-00386). The proposed permitting strategy describes a three-tiered approach to CWA permitting for the SSHCP covered activities: 1) a programmatic general permit (PGP) to be implemented via local ordinance which includes conditions limiting its use to fill activities that do not exceed either 2 acres or waters or 1.5 acres fill of vernal pools within the Mather Core Recovery Area; 2) a Letter of Permission (LOP) for "more than minimal" but less than significant effects on the human environment, including aquatic resources; and 3) an "abbreviated" process for issuing standard permits for activities that "may have" a significant impact on the human environment.

The proposed permitting process and the limitations imposed provide little incentive for projects moving forward within the SCCHCP plan area. One of the major benefits of habitat conservation planning and the use of HCPs is to provide certainty for stakeholders and to allow regulatory permit streamlining in addition to the certainty that key resources are preserved in significant quantities. While the Corps District recognizes these benefits, the permit program as currently proposed does not go far enough in reaching the goal of permitting certainty. In particular, the 2-acre limitation for use of the proposed PGP appears arbitrary and is too low for meaningful streamlining of the CWA permit process. The regional conservation planning efforts underpinning the SSHCP and protections afforded the aquatic environment under the SSHCP should ensure that proposed fill greater than 2-acres would have less than minimal individual and cumulative effects. In fact, the District should consider any covered activity that follows the requirements of the SSHCP (avoidance, minimization and compensatory mitigation as part of the conservation strategy) would have less than minimal individual and cumulative impacts on the aquatic environment. All other activities should be covered by the proposed abbreviated process for issuing standard permits.

1.1

Further, the current process as described is unnecessarily vague. Specifically, the description of the process for the LOP and SP process affords little insight into the process envisioned for permitting under those two scenarios. For the SP process, all that is described is the threshold that certain projects that "may" have a significant impact under NEPA would not be entitled to permit treatment under PGP, RGP or LOP. No specifics are given, despite the fact that there is meaningful information prepared under the draft SSHCP to more specifically describe that threshold. Likewise, some description at this point should be possible for how on-site adequate avoidance, minimization and mitigation can be achieved under the SP process.

1.2

Thank you for the opportunity to comment on this critically important component of the SSHCP and by implication ongoing HCP planning efforts such as Placer County Conservation Plan. If you have any questions, please don't hesitate to call me.

Sincerely,

Brian J. Plant
 Of Counsel



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RTC 1.1 (CWA Permit Strategy) – With regard to the concern that the permit program “as currently proposed does not go far enough in reaching the goal of permitting certainty,” the proposed CWA 404 Permit Strategy substantially increases certainty, based on several anticipated efficiencies noted in the permit strategy, inclusive of explanations of key procedural elements (e.g., no off-site alternatives analysis would be required for standard permits), and the proposed locally driven aquatic permit program that would be authorized under clearly demarcated terms and conditions described in the USACE’s (draft) Programmatic General Permit (PGP). Additionally, there is no quantitative threshold for “far enough” in this context; that said, the USACE has sought through the draft CWA 404 Permit Strategy, and is committed to continuing to seek, the highest levels of certainty and streamlining that are practicable while ensuring compliance with the CWA 404 regulations and related laws and policies (e.g., NEPA).

With regard to the concern that a 2-acre threshold for the proposed PGP “appears arbitrary and is too low for meaningful streamlining...,” terms and conditions for the USACE’s general permits are subject to the best professional judgment of the USACE, in light of their primary function of ensuring minimal individual and cumulative adverse effects to the environment based on use of the general permit they are associated with. For example, USACE headquarters has relied on a 0.5-acre threshold of loss of waters of the U.S. applying to several renditions of the ubiquitously utilized Nationwide Permits; while this threshold does not apply to all Nationwide Permits (NWP), it is the most common loss of waters threshold across the NWP program. By extension, a regionally applicable proposed threshold of 2 acres for the proposed PGP is four times larger than 0.5 acre, while aquatic resources in this region of California tend to be valuable given the cumulative loss of resources over time, provision of habitat for state- and/or federal-listed species, and other functions and services. The USACE used key documents as the basis for identification of an upper acreage threshold for loss of waters of the U.S. in the proposed PGP, inclusive of its cumulative impact assessment, avoidance, minimization, and compensatory mitigation measures in the SSHCP, the compensatory mitigation outlook (including a proposed in-lieu fee program) for activities that would be authorized under the proposed PGP, the Plan Partners’ Aquatic Resources Program (ARP) and (draft) local ARP ordinances, and consideration of what would be a reasonable upper limit of loss of waters of the U.S. to ensure impacts of activities authorized by the PGP would result in no more than minimal individual and cumulative adverse effects to the environment.

With regard to the statement that any Covered Activity should be considered to have “less than minimal individual and cumulative impacts on the aquatic environment,” while all Covered Activities would be assumed to follow the avoidance, minimization, and mitigation provisions of the SSHCP per the comment, this would not ensure that the resulting impacts of all Covered Activities could meet this threshold, which applies only to general permits in the USACE’s Regulatory Program.

RTC 1.2 (CWA Permit Strategy) – With regard to the statement that the CWA 404 permit “process as described is unnecessarily vague,” with specific reference to the description of the Letter of Permission (LOP) and abbreviated standard permit (SP) processes, the LOP process is defined in specifics in the (updated) draft LOP procedure

contained in the Final EIS/EIR. The comment appears to focus more on concerns for more specificity to be provided in the abbreviated SP process outlook. In response to this concern, the USACE is updating the proposed CWA 404 permit process to include more specificity and clarification on the abbreviated SP process (e.g., a new stand-alone document in addition to the summary provided in the CWA 404 Permit Strategy overview document in Appendix C of the EIS/EIR). Clarification provided includes a reference to the Regulatory Program's implementing regulations for NEPA (33 CFR Part 325, Appendix B). Similar to existing practices for evaluating permit applications that do not fit under a general permit authority, the USACE would review the proposed project for its appropriate level of NEPA analysis, in the context of it being a covered project under the SSHCP inclusive of SSHCP-required avoidance, minimization, and compensatory mitigation requirements. If a project "...may have a significant impact on the human environment, and require the preparation of an EIS under NEPA," this case-by-case project-level decision provides a clear threshold (i.e., an EIS is required), triggering the need to evaluate the permit under the abbreviated SP process vs. under the LOP procedure. Wording has been added to the CWA Permit Strategy (Final EIS/EIR Appendix C) to clarify the EIS requirement threshold for the SP process, and case-by-case process of evaluating future permit applications in accordance with Appendix B of the USACE's Public Notice SPK-1995-00386. Lastly, the comment indicates there should be some description of how on-site avoidance, minimization, and mitigation can be achieved under the SP process.

**LETTER 2 CAROL WITHAM AND THE CALIFORNIA NATIVE PLANT
SOCIETY
(SSHCP AND EIS/EIR)**

Carol W. Witham, consulting
1141 37th Street, Sacramento CA 95816
(916) 452-5440, (916) 761-7886
carolwwitham@gmail.com

September 5, 2017

Environmental Coordinator
 County of Sacramento
 Office of Planning and Environmental Review
 827 7th Street, Room 225
 Sacramento, CA 95814

via email SSHCP@saccounty.net

Jan C. Knight, Deputy Field Supervisor
 U.S. Fish and Wildlife Service
 Sacramento Field Office
 2800 Cottage Way, Room W-2605
 Sacramento, CA 95825

via email jan_knight@fws.gov

RE: South Sacramento Habitat Conservation Plan
Control Number: 2003-0637
State Clearinghouse Number: 2008062030

On behalf of the Sacramento Valley Chapter of the California Native Plant Society and myself, thank you for the opportunity to review and provide comments upon this important step forward in providing a framework for regional conservation planning in Sacramento County.

The Sacramento Valley Chapter of CNPS has been highly involved in participating in and commenting upon land use decisions at all levels that affect vernal pool ecosystems in Sacramento County. Chapter volunteers serve on the South Sacramento Habitat Conservation Plan (SSHCP) steering committee and biological subcommittee. Chapter volunteers serve on a stakeholders group to determine land use planning for the former Mather Air Force Base and its vernal pool grassland ecosystem. Chapter volunteers serve on local land trust boards, steering committees, and management committees. Chapter volunteers have testified at innumerable planning commission, board of supervisors, and city council meetings on projects that impact vernal pool resources. The Sacramento Valley Chapter of CNPS has long viewed the general area proposed for development under the SSHCP as the “Yellowstone” of vernal pool landscapes in Sacramento County.

I have been personally involved in this planning process since 1996 when I served as chair of an early technical advisory committee. Since then, I have devoted innumerable hours attending meetings of various biological subcommittees and providing comments on draft materials. I have voluntarily provided my expertise on multiple aspects of the vernal pool species and landscapes addressed in this plan. My participation has been both as a representative of the California Native Plant Society and as a recognized expert in vernal pool species ecology and landscape management.

The comments provided below are primarily general in nature and related to the SSHCP document. Detailed comments are not provided as they are too numerous to be compiled into a comment letter. Suffice it to say that there are internal inconsistencies within the document, omitted numerical values, incomplete sentences, and other rather simple errors. Perhaps significant, there are numerous references to the ARP which is not included as an appendix to the SSHCP, and the Orcutt grass in the proposed S-1 of PPU-1 is still listed as the wrong species.

2.1

2.2

Witham SSHCP Comments
September 5, 2017, Page 2

SSHCP COMMENTS

<p>The document language needs to be strengthened in order to ensure covered plant species mitigation actually occurs. Important goals, objectives and actions outlined in Table 7-1 (and other tables within Chapter 7) are not carried through the remainder of the document. This is particularly true for implementation of Goal 5 and its related objectives and actions for covered plants. Examples include:</p>	2.3
<ul style="list-style-type: none"> While Section 5.4.2 discusses AMMs for covered plant species (PLANTS-1 and PLANTS-2), they are not as specific as the objectives outlined in Table 7-1. Additionally, Tables 6-3 (summary of AMMs), 8-2 (AMM compliance monitoring) and 8-3 (AMM effectiveness monitoring) don't even mention PLANTS-1 and PLANTS-2 and do not include any of the the important conservation information from Goal 5 related to the covered plants. These omissions i) undervalue the importance of doing plant surveys prior to any covered activity approval, and ii) fail to measure success of the conservation objectives. 	2.4
<ul style="list-style-type: none"> Section 6.6 (effects of covered activities) is confusing because there are no specified limits on take as described in Section 7. Instead it just talks about limiting indirect and temporary effects through AMMs, but again with no mention of PLANTS-1 and PLANTS-2. This section would benefit from a few sentences for each of the covered plant species that spells out the limitations on take and the focus on preserving known occurrences (protect X populations before any take by covered activities). 	2.5
<p>On a similar note, the SSHCP document should clearly state that a satellite preserve will be created to protect a covered plant if no other populations can be found to preserve and fulfill the objectives under Goal 5. This may be implied by the information in Table 7-1, but needs to be clearly detailed in the text. This could be modeled after similar requirements for the Orcutt grasses.</p>	2.6
<p>Section 7.6.2.1 and Table 7-18 are inconsistent in the number of populations that must be preserved prior to allowing take of Ahart's dwarf rush (page 7-121). Six populations must be protected before any take can occur. After that, another population needs to be protected for each population proposed for take. This section also fails to recognize that grazing and conservation of populations of Ahart's dwarf rush may be incompatible.</p>	2.7
<p>Section 7.6.2.4 and Table 7-26 (plus the pertinent section of Table 7-1) are confusing about the exact nature of the conservation strategy for Legenere. There is discussion of both a minimum of 14 occurrences (text has 15 occurrences) and preserving one for take of one. Is the plan assuming that the seven within the hard line preserves immediately allows take of seven other populations?</p>	2.8
<p>For Bogg's Lake hedge-hyssop, dwarf downingia, (possibly) legenere, pincushion navarretia and Sanford's arrowhead, it appears that the SSHCP considers 50% preservation of known occurrences to be a satisfactory mitigation ratio. While this will prevent extinction, it is unlikely to contribute toward recovery or prevent the need to list some of these species at a future date.</p>	2.9
<p>Chapter 8 is very disappointing. It defers development of programs, procedures, techniques, criteria and formats to future dates ranging from 6 to 18 months after approval of the SSHCP. These are to be developed by the Implementing Entity and presumably approved by the Agencies. This deferment completely circumvents the public process by implying that the to-be-developed materials will be adequate. It is especially troubling that population studies and the definition of take for the covered plant species are being deferred to a later date and will not be subject to public review.</p>	2.10
<p>Chapter 8 does not sufficiently stress the importance of obtaining information on historic management practices before adding a parcel (or group of parcels) to the Preserve system. More detail on this requirement should be spelled out in both Chapter 8 and Appendix F (as that documentation will be prepared before or at the time of acquisition). Obtaining the historic record should be part of the due diligence process prior to obtaining a parcel for inclusion in the Preserve system. This requirement also needs to be spelled out in sections that discuss land dedication as the mitigation being proposed by third parties. It is important to obtain the historic information as early</p>	2.11

Witham SSHCP Comments
September 5, 2017, Page 3

as possible in the land acquisition process while it is still fresh in the mind of the current owner/manager/livestock operator.

DEIS/DEIR COMMENTS

I find the alternatives analysis somewhat baffling. I am not sure that current economics and projected population growth support the assumption that projects and infrastructure development (at the same level as proposed under the SSHCP) would occur under the No Action/No Project Alternative. 2.12

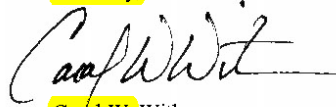
GENERAL COMMENTS

It is unfortunate that the County of Sacramento does not embrace smart growth principals to the extent that they would limit new development to the edges of existing cities. Adhering to this type of growth pattern would allow significantly more habitat to be preserved within the UDA and would reduce many other environmental stressors (e.g. air quality) present in the region. 2.13

After spending 20 years working on this planning process, I am disappointed that during the past several years the entire project has been commandeered to cater to five large-scale, leap-frog developments. It is unfortunate that future projects, many of which will be more economically and environmentally appropriate, will have to fill the gap to complete the SSHCP conservation strategy. 2.14

And finally, while I remain a staunch supporter of regional conservation planning, I am no longer sure that the SSHCP as currently formulated will actually achieve more or better conservation than project-by-project permitting. This is particularly important to consider in light of the USACE Record of Decision for the Sunridge Projects. 2.15

Sincerely,



Carol W. Witham

RTC 2.1 (SSHCP) – We have attempted to identify and correct inconsistencies, omitted numerical values, and incomplete sentences in the Final SSHCP. Without more details regarding these issues, it is not possible to respond further.

RTC 2.2 (SSHCP and EIS/EIR) – The draft Aquatic Resourced Program (ARP) is Appendix I to the EIS/EIR. It was included as an appendix to the EIS/EIR instead of the SSHCP because, though the documents are consistent, they may be subject to different timeframes for revisions, amendments, or other changes. Therefore, it was simplest to separate them in this way. References to the draft ARP have been added to the Final SSHCP where appropriate. In addition, the reference to slender Orcutt grass (*Orcuttia tenuis*) in Satellite Preserve S-1 has been changed in Final SSHCP Section 7.5.1 to correctly identify the species as Sacramento Orcutt grass (*Orcuttia viscida*).

RTC 2.3 (SSHCP) – The comment states that plant avoidance and minimization measures (AMMs) identified in Chapter 5 of the Draft SSHCP were not appropriately discussed in Chapters 6 and 7. References to AMMs ORCUTT-1 and ORCUTT-2 have been added to the two Orcutt Covered Species analyses in Section 7.6.2 of the Final SSHCP. AMMs PLANT-1 and PLANT-2 have been added to all other plant Covered Species analyses in Section 7.6.2 of the Final SSHCP.

AMMs PLANT-1 and PLANT-2 have been added to Tables 6-3, 8-2, and 8-3 in the Final SSHCP as suggested by the comment. Table 8-3 in the Final SSHCP also now identifies how the compliance and effectiveness of these AMMs will be monitored.

RTC 2.4 (SSHCP) – Refer to response to Comment 2.3. The operational SSHCP will place appropriate importance on plant surveys. By adding the two plant AMMs (PLANT-1 and PLANT-2) to these tables, they are included in the compliance and effectiveness monitoring that will be conducted for the SSHCP.

RTC 2.5 (SSHCP) – Refer to response to Comment 2.3.

The limitations on take are species objectives that first appear in Table 7-1 in Chapter 7 because that is when the effects of the Conservation Strategy are analyzed. Chapter 6 examines the effects of the Covered Activities, without the measurable objectives of the Conservation Strategy.

RTC 2.6 (SSHCP) – Text has been added to Section 7.6.2 clarifying that Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*), Boggs Lake hedge-hyssop (*Gratiola heterosepala*), dwarf downingia (*Downingia pusilla*), pincushion navarretia (*Navarretia myersii*), and legenere (*Legenere limosa*) occurrences would be protected in a minimum satellite-sized preserve. In addition, conservation actions for preservation of Ahart's dwarf rush, Boggs Lake hedge-hyssop, dwarf downingia, pincushion navarretia, and legenere now state that the minimum preserve size to protect an occurrence of these species is satellite-sized.

RTC 2.7 (SSHCP) – The text in Section 7.6.2.1 of the Final SSHCP has been corrected to reflect that prior to take of any occurrence of Ahart's dwarf rush, **six** currently unpreserved and "biologically equivalent or superior" (as defined by the Technical

Advisory Committee [TAC]) occurrences of Ahart's dwarf rush within the Plan Area will be preserved. In addition, text has been added to Section 7.6.2.1 reflecting the text in Objective VPP1:

"After six currently unpreserved occurrences are protected, prior to take of an occurrence of Ahart's dwarf rush, one currently unpreserved and 'biologically equivalent or superior' (as defined by the TAC) occurrence of Ahart's dwarf rush will be preserved within the Plan Area."

As described in Section 8.3.1, each individual Preserve Management Plan (PMP) will outline the activities that can occur in each Preserve. Based on monitoring results, animals used in grazing on Preserves, as well as the timing or patterns of grazing, will be managed for the benefit of the Preserve and Covered Species. Text has been added to Section 7.6.2.1 in the Final SSHCP noting that grazing may be incompatible with Ahart's dwarf rush.

RTC 2.8 (SSHCP) – Section 6.6.4 of the Draft SSHCP indicates that Covered Activities will directly impact two documented occurrences of legenera within the Urban Development Area (UDA) (one in Preserve Planning Unit [PPU] 1 and one in PPU 3) and will indirectly impact three documented occurrences of legenera within the UDA (one in PPU 1 and two in PPU 3).

Objective VPP4 in Table 7-1 of the Final SSHCP has been revised to reflect that 15 occurrences of legenera will be conserved. The comment asks whether 50% preservation of legenera in the Plan Area will achieve the Conservation Strategy for the species. The Plan Preparers took into account the fact that several occurrences of this species are already protected in existing Preserves in the Plan Area. Further, populations outside the UDA will not necessarily be taken, even though they may not be within a Preserve. The Plan Area also does not enclose the entire range of the species. These factors, taken together, support the Conservation Strategy's conclusion that implementation of the SSHCP is mitigation to the maximum extent possible. The comment also asks whether preservation of seven legenera within the Preserve System will allow for take of seven legenera from Covered Activities. That interpretation is correct.

RTC 2.9 (SSHCP) – As described in Section 7.6 of the Draft SSHCP, an occurrence of each of these Covered Species must be conserved prior to take of an occurrence. The SSHCP Conservation Strategy will benefit each of these species by maintaining them within their current distribution in the Plan Area, by maintaining or re-establishing their historical distribution in the Plan Area, and by providing for the re-establishment and establishment of additional habitat for these species in the Plan Area. Moreover, the SSHCP Preserves will maintain connectivity between existing occurrences and modeled habitat. Implementation of the SSHCP will benefit each of these Covered Species. These activities will assist in species recovery.

RTC 2.10 (SSHCP) – Chapter 8 provides the criteria by which each program and procedure and plan shall be prepared, including by whom, and how compliance and success will be assessed. The implementation schedule for these programs is included

in the Draft SSHCP in Section 9.11, Table 9-3. Chapter 8 of the Draft SSHCP includes sufficient detail on the required types, timing, and methods of monitoring to allow the EIS/EIR to analyze its effectiveness. For example, Table 8-2 in the Draft SSHCP identifies for each AMM: (1) what we need to know to assess compliance, (2) how we would monitor what we need to know, (3) when and how often that monitoring would occur, and (4) what protocols or methods need to be developed in order to achieve that required monitoring. Similar tables are presented for compliance monitoring of the Conservation Strategy (Table 8-1), effectiveness monitoring of the AMMs (Table 8-3), and effectiveness of the Conservation Strategy (Table 8-4). This chapter was prepared with direct involvement of an agency committee and representatives of environmental groups such as ECOS, California Native Plant Society, Sierra Club, and the Institute for Ecological Health. It was decided that rather than preparing a detailed program as part of the SSHCP, it was preferable to prepare a programmatic template that could guide development of detailed programs, procedures, and plans within 6 to 18 months following plan adoption. Since potential properties to be incorporated in the Preserve System are not yet known, preparation of detailed plans, programs, and management and monitoring procedures at this stage may not ensure accuracy in measuring Preserve System performance in the future. Thus, the performance standards described above will guide development of the plans and must be met as a requirement of the SSHCP and permit conditions. This will be done in an open public process with full engagement of a Technical Advisory Committee (TAC) made up of plan partners, agency representatives, and stakeholders, including the environmental, landowner, and development community. Further, the programs and procedures will undergo public disclosure and adoption by the Implementation Committee. All meetings of the Implementation Committee will be called, noticed, held, and conducted in compliance with the provisions of the Ralph M. Brown Act, Government Code Section 54950 et seq. Individual Preserve Management Plans based on these programs will also be developed in coordination with the TAC.

RTC 2.11 (SSHCP) – The SSHCP Implementing Entity understands the importance of recording the management history on all properties that will be incorporated into the Preserve System. Management history will be recorded when a Preserve Documentation Report (PDR) is prepared. A PDR is prepared for each property that is being considered for acquisition by the SSHCP Implementing Entity. Table 8-1 in Section 8.2.1 of the SSHCP describes how Objective HAB3 will be implemented. Objective HAB3: “Record management history for Preserve parcels as they are obtained. Consider management history when developing initial preserve management approach.”

Sections 8.3.1 and 8.3.4.2 in the Draft SSHCP also describe the process for preparation of a Preserve Management Plan (PMP) for each Preserve. Each initial PMP must document the management history for each parcel (via records, interviews of ranch managers or landowners, etc.). The importance of documenting existing and historical management of Preserve properties has been noted in several locations in the Final SSHCP, including Section 9.4.2, where the process for acquiring preserve land is described.

RTC 2.12 (EIS/EIR) – The analysis in the EIS/EIR does not generate new estimates of population growth and development within the Plan Area. These estimates are based

on growth assumptions contained in the general plans of Sacramento County, Rancho Cordova, and Galt, plus additional development that might occur within the county's Urban Service Boundary (USB). The USB is the ultimate future growth boundary adopted by the county in its 1993 general plan update. The EIS/EIR alternatives assumptions include similar growth for each alternative using the estimates endorsed by the County and cities through their general planning processes.

RTC 2.13 (SSHCP and EIS/EIR) – The SSHCP and EIS/EIR do not establish new projections or assumptions about population growth in southern Sacramento County. Assumptions about growth projections underlying these documents are made in general plans developed in accordance with the local land use planning process, which includes public comment and which ultimately are approved by local elected officials. The SSHCP Plan Preparers cannot modify or change the County's or the City's land use planning decisions or processes. For example, the Sacramento County General Plan includes a USB that identifies an area where urban development is anticipated to occur. The SSHCP uses the USB as the basis for its UDA. Limiting new development to the edges of a city would not ultimately limit the total amount of development that is anticipated to occur under the County's General Plan and therefore would not result in additional preservation within the UDA.

RTC 2.14 (SSHCP) – The Plan Partners recognize and appreciate the important contributions this commenter has made to the SSHCP planning process over many years. It is assumed that the comment is referring to five large-scale master plans that are within the SSHCP's UDA, two of which are already approved and three of which are in the entitlement approval process. Because these projects were seeking land use entitlements while the SSHCP was being developed, it was necessary to incorporate these five master plans into the SSHCP planning process as SSHCP Covered Activities, even as they each pursued their own permits from the resource agencies. Each of the five master plans was required to set aside significant on-site preserves, which became the "hard-line" preserves of the SSHCP Conservation Strategy. As development of SSHCP progressed, there was opportunity to also apply SSHCP AMMs to the master plans to satisfy the SSHCP's Conservation Strategy. These "hard line preserves" are the only Preserve areas that can be mapped at this time, but are not the only Preserves that SSHCP will create within the UDA.

Where the County or cities were actively working with project applicants that were required to prepare a master plan per County or city General Plan Policy and that Master Plan was within the SSHCP's Plan Area, the County or cities, along with the wildlife agencies, worked with the project applicant to design on-site Preserves consistent with the SSHCP's Conservation Strategy. Project applicants required to provide on-site Preserves will receive credit for their on-site Preserves towards their mitigation obligations.

It is accurate to suggest that future projects will benefit from the SSHCP's streamlined permitting process and will contribute to the establishment of the SSHCP's Conservation Strategy.

RTC 2.15 (SSHCP) – The comment questions whether the SSHCP will achieve more or better conservation than would occur under the project-by-project permitting that currently occurs. While it is not possible to forecast how requirements under project-by-project permitting could change over the permit term (e.g., mitigation ratios), the SSHCP Preserve System would include more consistent and rigorous qualification for Preserve properties, consistent management and monitoring across the Preserve System, a single local agency with oversight and decision-making authority, and many other benefits as laid out in Section 1.1.2 of the Draft SSHCP. As noted in the ARP that is included as Appendix I to the EIS/EIR, the SSHCP would also be integrated with an ARP that would support watershed-level conservation of aquatic resources.

LETTER 3 CAY C GOUDE AND ERIC S GOUDE
(SSHCP AND EIS/EIR)

August 29, 2017

To: Sacramento County Environmental Coordinator and Sacramento Fish and Wildlife Service

From: Cay C. Goude and Eric S. Goude

Subject: South Sacramento HCP and EIR/EIS

RECEIVED
SEP 05 2017
SACRAMENTO FISH & WILDLIFE OFFICE

These comments pertain both to the South Sacramento HCP and Draft EIR/EIS and must be addressed in both revised documents. First, we find these documents to be inadequate and difficult to understand. This comment letter will identify certain topic areas that are especially concerning. Based on the level of concerns and the documents inadequacies they should be revised and recirculated as new Draft documents. Although we applaud the goal of addressing conservation on a large scale this Plan will not result in overall conservation of the covered species and will NOT mitigate to the maximum extent practicable the impacts to these covered species.

ALTERNATIVES

The Alternatives are inadequate in scope. The documents discounts a larger percentage of preserves within the USB/UDA based on no real analysis. Basically it was discounted because developers own certain parcels within the area. In addition, there is no systematic analysis or alternative that would preclude piece meal and leap frog development within the USB/UDA and no analysis on how this would be precluded. The analysis must be revised to address these concerns. The 50 percent retention of lands to be preserved within the USB/UDA should be the preferred alternative which would allow for greater conservation. However, even this alternative should only allow development within City boundaries, not as part of the County. For example, development should occur systematically from Rancho Cordova City limits on the north or from City of Sacramento on the Plan's western boundary. Sacramento County should not continue to act like they are City. An analysis must be done that identifies the range of development within the greater geographic area and their cumulative impacts. Currently there are large scale development within Natomas, El Dorado Hills, Folsom and Placer County. There is not enough incoming population to sustain this large

demographic growth. This influx of home building again makes the need for this development within the remaining open space of Sacramento County questionable. This development should be addressed within the entire context of this Plan for all impacts including air quality, water availability, potential flooding, loss of open space and agricultural land and natural resources. All documents must be revised to address the concerns provided in this letter.

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PERMIT TERM

The Permit Term proposed is 50 years. This is totally inappropriate since all the County Planning and City Planning documents do not extend for this period of time. In addition, based on climate change and other unforeseen factors having the permit term be so far into the future does not make sense. The Permit Term should be based on the Planning Documents current length. There is no justification for this permit duration and this must be provided in new draft documents. This HCP is not a NCCP and although it tries to mirror a NCCP in terminology it is a mitigation plan which makes the risk to the covered species even more precarious and therefore there is a need for shorter permit term.

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COVERED ACTIVITIES

It appears that the analysis considers everything developed within the USB/UDA except for some preserves. However, the analysis does not include the Jackson Road proposed enlargement which includes both lane enlargement and numerous traffic lights. In fact at the scoping meeting, we were told this road enlargement was not being considered by the County, but a month later it was being discussed by the County, as reported in the Sacramento Bee. The proposed Jackson Road modifications are only being considered because of the proposed development within this HCP. Therefore, the impacts to the local communities that will be adversely impacted, loss of economic development for towns within Amador County, traffic time, air quality and other factors must be addressed. Jackson Road enlargement is an interrelated and an interdependent impact that must be considered as part of the HCP and EIR/EIS. Also, there is no analysis of the adverse impacts to the listed salmonid species or delta smelt. Although water to support this large level of development may have been considered as part of the "Fazio" water deal, much has changed since the time of that analysis and since the conclusion of the biological opinion for this water contract. Numerous new developments are relying on this limited resource that were never

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envisioned and since the development of the “Fazio” biological opinion the status of the species has also declined. This analysis did not even consider climate change and adverse effects to all the covered species as well as salmonids and delta smelt. In essence, if you have a one gallon bucket of water that was enough for one person to use that same bucket will not support 100 people. Therefore, the revised documents must consider the impacts to salmonid species and the delta smelt. The covered activities states that there will be a need for additional wells and pipelines and that these the details will be analyzed in future environmental documents. But there is no analysis of the impact to the already depleted ground water aquifer. There are numerous ranches, nurseries and homeowners that would be adversely impacted from these wells. For example, three wells were developed as a “temporary” use for the Sunrise Douglas development along Excelsior roads. These wells are still being used although they were expected not to be in used in the future. How will these wells be used and is there truly adequate water supply for the large development proposed. The impacts to ground water resources must be evaluated and more details analyzed on the locations and potential impacts. The Mather development is stated that it is being developed independently but it seems you are relying on their proposed conservation. Is this a covered activity or not? In addition, within your EIS/EIR you state the following, “For this EIS/EIR, the lead agencies determined that using the existing condition as the baseline to describe and determine the significance of each action alternative’s expected impacts would be misleading. This determination was made because the two action alternatives include, as Covered Activities, future urban development and infrastructure projects that are also reasonably expected to occur under the No Action/No Project Alternative. Although the details of this future development are not completely known at this time, it is anticipated that new urban development under all of the EIS/EIR alternatives would accommodate the same population and development growth, and that this urban growth would occur in areas where public infrastructure and services are planned for the 50-year EIS/EIR study period (i.e., within the spheres of influence for the Cities of Galt and Rancho Cordova and within Sacramento County’s USB). As a result, the types of new urban development and associated infrastructure would be the same, and the general locations and the acres of new urban development would be very similar for all alternatives. Therefore, using existing conditions as the baseline for describing the effects of each action alternative and for determining the significance of those effects would misrepresent the impacts of the action alternative because that development

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would occur whether or not an HCP is approved and implemented in south Sacramento County. Further, the future urban development and infrastructure Covered Activity projects and activities are not part of the “project” under CEQA that is subject to approval by the CEQA lead agency and by the other HCP Permit Applicants (see Section 1.5), are not part of the “project” under CEQA that would be subject to permitting by the California Department of Fish and Wildlife (CDFW) (see Section 1.5), and are not part of the “action” under NEPA that would be subject to permitting by the U.S. Fish and Wildlife Service (USFWS) (see Section 1.5). The EIS/EIR “project” (under CEQA) and “action” (under NEPA) consists of the approval and implementation of the HCP, SSHCP Aquatic Resources Plan (ARP), and issuance of associated take permits, but not the actual construction of or the discretionary entitlements of urban development projects and activities. Thus, the future environmental impacts of new urban development in the Planning Area would not result from the decisions to be made about the Proposed Action/Proposed Project (Section 1.5). For these reasons, the EIS/EIR basis of comparison (the EIS/EIR baseline) for describing the environmental impacts of each action alternative is the future condition of the Planning Area expected to occur under the No Action/No Project Alternative.” It appears that your analysis does not address individual impacts under CEQA nor any infrastructure. We are confused how your EIS can be sufficient without this analysis. We do not agree that you can conclude that existing condition is the same as your baseline. If individual projects were proposed outside of this proposed HCP they would be developed as economics allowed, infrastructure developed and have detailed site specific mitigation proposal that would have details of site-specific conditions. It is our belief that over time this most likely would result in greater conservation or avoidance due to various factors some economic and some environmental. The revised Documents must analyze the baseline separately from the existing condition.

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COVERED SPECIES

Many of the covered plant species and the tadpole shrimps known occurrences are only within the USB/UDA or significantly so, but most of the mitigation is proposed outside their known occurrences. It is unclear how your proposed preserves match with the needs of the Vernal Pool Recovery Plan and designated critical habitat. An analysis for each species where applicable should be done to demonstrate how you will not preclude recovery or have adversely modified

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critical habitat. This type of analysis should also be done for all the species where it is unclear that there are known occurrences outside the USB/UDA. All covered species must be treated as a listed species, so simply doing preconstruction surveys for example for burrowing owls or tri-colored blackbirds without assurance that you have mitigated for their occurrence is not acceptable. How will you ensure that you have mitigated for each of these covered species to the maximum extent practicable? It is not sufficient to simply say you are acquiring preserves within modeled habitat without knowledge if they occur on site. Again this is not a NCCP. In addition, your mapping is inadequate for emergent marshes along Jackson road where there is a large known tri-colored blackbird colony. Your mapping needs to be revised with more recent information and this occurrence noted. It seems that your modeled habitat is overly broad when it comes to various covered species due to the lack of known occurrences. The Plan could result in preservation of vernal pool grasslands without the species occurring within these preserves and ultimately the destruction of the known occurrences. Again the Plan must be revised to address this concern.

MITIGATION

We are totally baffled what the actual mitigation is for a project that is proposed within the USB/UDA. It appears where there are known developers you simply used their proposed preserve designs as their mitigation. However, what if a future project is proposed that has vernal pools and listed species, what is the mitigation? It is totally confusing to determine if this Plan has sufficient funding mechanisms to meet the mitigation requirements. Many of the properties within the USB/UDA will not be developed but the Plans treat all lands within this area as lands to be developed. This is an erroneous assumption, any individual's lands that are currently not owned by a developer should NOT be considered as developed within these revised documents. We have not found any information on how you plan to fund the plan, how fees are collected or other information on how you would actually propose to stay-ahead and how the funds increase over time. Do you actually have a mechanism for jump-start? Possibly this is in some appendix within the EIE/EIS but it must be within the overall information presented within the HCP. The mitigation plan for a HCP is the heart of the document and should be treated with sufficient depth and understanding for each species. It is important that the public understand and interpret the intent

and ramifications of the proposed Plan and draft EIR/EIS. The Plan includes vague Biological Goals and Objectives but by definition they are Goals and Objectives without sufficient detail to determine how you will pay for their implementation and with language that allows discretion if they will be implemented. The connections of the various preserves within the Hard Scale preserves are insufficient and there are numerous large vernal pool complexes that were not avoided. What was your basis for the lines for the Hard Scale preserves? The Hard Scale preserves must be enlarged and interconnected and where feasible attached to a stream corridor. The stream corridors are also inadequate, each stream especially Elder and Morrison Creeks must have a corridor and setback similar to Laguna Creek. In addition, the preserves proposed on Mather should be shown to see if they are connected to any of the Hard Scale Preserves. We are not going to individually address each biological goal and objective since without an overall understanding of the actual mitigation for the proposed project it would be useless.

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We could have provided additional specific comments but there are so many glaring deficiencies it did not seem prudent. Again, we are very supportive of good conservation efforts and large scale planning, however this plan and the draft EIR/EIS are insufficient.

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Sincerely,

Cay C. Goude and Eric S. Goude

10685 Jackson Road

Sacramento, CA 95830

RTC 3.1 (SSHCP and EIS/EIR) – Each comment in the letter has been reviewed for its applicability to the SSHCP and the EIS/EIR. If a change is needed to one or both documents, those changes have been made in the documents and noted in the response to the comment.

RTC 3.2 (SSHCP and EIS/EIR) – This comment makes a general statement that the SSHCP and EIS/EIR are inadequate and difficult to understand, and that the documents should be recirculated. Please refer to responses to specific concerns in subsequent comments in this comment letter. Based on the responses to comments and analysis contained in the SSHCP and EIS/EIR, no new information has been identified that would result in substantial changes or revisions to the conclusions of the documents that may necessitate recirculation.

RTC 3.3 (SSHCP) – As pointed out in the comment, the SSHCP does address conservation on a large scale. Based on the analysis contained in Chapter 7 of the SSHCP, the Plan Preparers believe that the SSHCP would mitigate to the maximum extent practicable the impacts to Covered Species. Please refer to responses to specific concerns in subsequent comments in this comment letter.

RTC 3.4 (EIS/EIR) – The process used to screen potential alternatives is described in Chapter 2 and Appendix E of the Draft EIS/EIR. Each potential alternative was assessed for its ability to satisfy the purpose, need, and objectives identified for the project in Section 1.3 of the Draft EIS/EIR. Please refer to the response to Comment 5.3 regarding the range of alternatives analyzed in the Draft EIS/EIR.

RTC 3.5 (EIS/EIR) – The comment requests that the EIS/EIR analyze how “piecemeal” or “leap-frog” development patterns during the permit term would affect resources. The EIS/EIR did not examine the effects of this development pattern because each of the alternatives assumes that the USB and UDA would be fully “built out” by the end of the proposed 50-year permit term. With that assumption, all of the resources within the UDA that are not already preserved or proposed to be preserved under the SSHCP are assumed to be impacted, and would need to be mitigated. The comment also requests that an alternative be analyzed that would preclude that pattern of development. The growth and development that is anticipated under the SSHCP is governed not by the SSHCP itself, but by the current and future General Plans of Sacramento County, Rancho Cordova, and Galt. The growth pattern described in the comment, with most development occurring within the UDA, is the pattern that was planned for in those General Plans. Actual development under the SSHCP will proceed in accordance with general and specific plans that have or will be circulated for public review and comment and accepted or rejected by local elected officials. Please refer to response to Comment 5.6 regarding the range of alternatives analyzed in the EIS/EIR.

RTC 3.6 (EIS/EIR) – Any alternative studied in the EIS/EIR cannot supersede or replace the general plan planning process, nor provide the local land use entitlements required to construct or implement the Covered Activities. The boundaries of the USB and UDA were decided by Sacramento County through the general plan planning process and other planning efforts that involve public comment and approval by local elected

officials, and the SSHCP and the EIS/EIR alternatives must be consistent with those plans. Therefore, consistency with the general plan of the land use authority permittees was used as a screening criterion for alternatives, as shown in Appendix E of the Draft EIS/EIR. Please refer to Section 3.4 of the Draft EIS/EIR for a summary of the general plans that are relevant to the Plan Area, and from which analyses were incorporated by reference in the Draft EIS/EIR resource area sections. Refer also to response to Comment 3.5 regarding the growth and development projections used in the EIS/EIR.

RTC 3.7 (SSHCP and EIS/EIR) – Cumulative impacts of development in the County, and when appropriate within larger study areas, including Folsom and other counties within the Sacramento Area Council of Governments (SACOG) five-county region, were analyzed in the Draft EIS/EIR and incorporated by reference in the EIS/EIR from the General Plan EIRs of Sacramento County, Rancho Cordova, and Galt. Some of the key sections where this more regional study area were considered, include Agriculture (refer to Section 6.2.2.2 in the Draft EIS/EIR), and Population, Housing, and Socioeconomics (refer to Section 16.2.2.2 in the Draft EIS/EIR). The SSHCP relies on general plan growth boundaries as opposed to population projections. The County uses the USB to identify their ultimate area of urbanization. The USB was established in the 1993 General Plan and was largely based on geographic limits to growth, such as floodplains. Further, the lead agencies are not aware of any studies that demonstrate regional development is exceeding projected population growth.

RTC 3.8 (SSHCP and EIS/EIR) – Development within the region, when relevant to the resource area being analyzed, is included in the analysis of cumulative impacts provided in Chapters 4, 6, 7, 9, 10, 12, 13, 14, and 15 of the Draft EIS/EIR. Refer to response to Comment 3.6 regarding the cumulative study area used for the EIS/EIR.

RTC 3.9 (SSHCP) – Justification for the 50-year permit term is provided in Chapter 1, Section 1.2.3, of the Draft SSHCP.

The Plan Preparers reviewed comparable HCPs within the State of California and found that a 50-year permit term is not uncommon. For instance, HCPs currently being prepared in Yolo and Placer Counties are also seeking a 50-year permit term. Approved plans in Santa Clara County and San Joaquin County, as well as the Natomas Basin HCP and the North County Multiple Habitat Conservation Program in San Diego County, were granted 50-year permits. Moreover, the Western Riverside County Multiple Species Habitat Conservation Plan and Coachella Valley Multiple Species Habitat Conservation Plan were both granted a 75-year permit term.

Nonetheless, the Draft SSHCP EIS/EIR analyzes an alternative with a 30-year permit term, the Reduced Permit Term Alternative. Refer to Section 2.4 of the Draft EIS/EIR for a detailed description of that assumption. As stated in Section 17.7 of the Draft EIS/EIR, the SSHCP (Proposed Action/Proposed Project Alternative) was determined to be the environmentally preferable alternative under NEPA, and the environmentally superior alternative under CEQA.

RTC 3.10 (SSHCP and EIS/EIR) – Modifications to Jackson Highway are Covered Activities in the SSHCP and the direct and indirect effects of that and other rural transportation projects are analyzed in the Draft EIS/EIR for all resource areas. As with other rural transportation project Covered Activities, modifications to Jackson Highway are approved pursuant to the circulation element of Sacramento County's 2030 General Plan. These improvements were proposed and vetted through a public participation process and approved by local elected officials. The SSHCP does not replace or supercede the local land use planning process. Refer to the list of rural transportation projects in Section 5.2.3 of the SSHCP, and shown on Figure 5-5 in the Draft SSHCP.

RTC 3.11 (SSHCP and EIS/EIR) – Refer to response to Comment 3.10. The Plan Preparers are not aware of why the Jackson Highway modifications would have been presented in that scoping meeting as not part of the SSHCP Covered Activities.

RTC 3.12 (SSHCP and EIS/EIR) – Refer to response to Comment 3.10.

RTC 3.13 (SSHCP and EIS/EIR) – Refer to response to Comment 3.10 regarding Jackson Highway modifications as Covered Activities. As noted in response to Comment 3.10, these modifications are approved pursuant to the circulation element of Sacramento County's 2030 General Plan. The cumulative impacts of those Covered Activities were analyzed in the Sacramento County General Plan EIR, and the analyses were incorporated by reference in the Draft EIS/EIR, as appropriate. Therefore, whether or not the SSHCP goes forward, such modifications are expected to occur.

RTC 3.14 (SSHCP and EIS/EIR) – Refer to response to Comment 3.10.

RTC 3.15 (SSHCP and EIS/EIR) – The potential for the action alternatives to affect listed fish species was considered in Table 1.2.2 of Appendix F to the Draft EIS/EIR. As identified in the table, although habitat for some listed fish species may exist in the Planning Area, there is low likelihood of take from the alternatives because these areas are outside of the UDA. For some species, there is also a very low probability for individuals to be present in the habitat available in the Planning Area. Regarding the delta smelt (*Hypomesus transpacificus*) and listed salmonids in the Delta, the County of Sacramento will use water from its Central Valley Project (CVP) contract in Zone 40, which includes the majority of the SSHCP Plan Area, in accordance with schedules and limits imposed through Bureau of Reclamation's annual CVP water allocation process. Effects on listed fishes in the Delta, including delta smelt and listed salmonids, of diverting that water for use in Zone 40 are addressed in other environmental documents and biological opinions on CVP and State Water Project water operations and are outside the scope of this proposed action.

RTC 3.16 (SSHCP and EIS/EIR) – The Draft EIS/EIR discusses the implications of the Zone 40 Memorandum of Understanding (MOU) in Section 2.2.2. Completion of the SSHCP fulfills a commitment of Sacramento County in their Freeport/Fazio Biological Opinion to address the cumulative impacts of development supported by that new water supply. If a project's water use might impact anadromous fish or delta smelt, the project proponent would have to receive separate incidental take coverage for those species. Effects on listed fishes in the Delta, including anadromous fish, of diverting that water

for use in Zone 40, are addressed in other environmental documents and biological opinions on CVP and State Water Project water operations and are outside the scope of this proposed action. Refer also to response to Comment 3.15.

RTC 3.17 (SSHCP and EIS/EIR) – Refer to response to Comment 3.15 regarding impacts on listed fish species, and refer to response to Comment 3.16 regarding the Freeport/Fazio Biological Opinion.

RTC 3.18 (SSHCP and EIS/EIR) – The SSHCP and the Draft EIS/EIR considered the potential future impacts of climate change in the analysis of impacts and the Conservation Strategy. For example, SSHCP Section 11.3 describes how climate change was accounted for in the measurable objectives, and Section 11.4.3 identifies how the Conservation Strategy would be adjusted for climate change changed circumstances. The EIS/EIR presents the effects of climate change on the Planning Area in Section 15.1.2, and the effects of the alternatives on greenhouse gases and climate change throughout Section 15.2. Refer also to response to Comment 3.16.

RTC 3.19 (SSHCP and EIS/EIR) – Future development in the North Service Area (NSA) is planned to take surface water from the Freeport Regional Water Authority (FRWA) intake on the Sacramento River. This water will be diverted at the intake, treated at the Vineyard Surface Water Treatment Plant, and distributed throughout Zone 40. Sacramento County Water Agency has rights to the surface water supply and planned and existing infrastructure to be able to run the conjunctive use program. The 2016 Water Storage Investment Program (WSIP) describes an “NSA Phase A” water line from the Vineyard Surface Water Treatment Plant that connects to the NSA. This line could serve future new development if and when the development occurs up to the unused capacity in the pipeline itself. To serve existing and future planned development, the Sacramento County Water Agency (SCWA) has the capability to deliver surface water in the NSA in place of using the well field termed the “Excelsior Well Field” that is described in the comment. While the well field is still there to provide conjunctive use for the NSA as our surface water contracts and rights are perfected, surface water can be delivered to existing customers in the NSA.

Conjunctive-use reliance on the well field will diminish over time as water rights and contracts are perfected and the well field will no longer serve groundwater to the NSA. Growth in the NSA service area will require another pipeline from the surface water treatment plant. This pipeline will deliver surface water in the NSA.

The SSHCP does not propose to change the water allocations included in the Freeport/Fazio Biological Opinion; therefore, there is no need for new analysis of the effects from that agreement. Refer to response to Comment 3.15 regarding impacts on listed fish species, and refer to response to Comment 3.16 regarding the Freeport/Fazio Biological Opinion. SCWA’s current water situation is described in the 2016 WSIP (<http://www.waterresources.saccounty.net/Zone%2040/WSIP%202016%20Final%20Report%20Website.pdf>), as well as in the 2015 Urban Water Management Plan (<http://www.waterresources.saccounty.net/Documents/2015%20UWMP.pdf#search=uwmp>). Both of these documents describe the implementation of the preferred alternative

of the vineyard surface water treatment plant described in the 2005 Zone 40 Water Supply Master Plan (http://www.waterresources.saccounty.net/Zone%2040/Z40_WSMP.pdf).

RTC 3.20 (SSHCP) – Construction of water pipelines is a Covered Activity and is analyzed in the EIS/EIR. Groundwater wells, water pipelines in the UDA, and new recycled water pipelines outside the UDA are included in all alternatives studied in the EIS/EIR, including the No Action/No Project Alternative. Therefore, the SSHCP is not requiring these actions and this future water infrastructure is not caused by either action alternative.

RTC 3.21 (EIS/EIR) – Covered Activity impacts to groundwater hydrology, as they relate to issuance of the take permits, are analyzed in Sections 7.2.2.1, 7.2.3.1, and 7.2.4.1 of the Draft EIS/EIR. Extensive discussion of the future No Action/No Project baseline condition for groundwater and surface water hydrology in the Planning Area was provided in Section 7.2.2.1 of the Draft EIS/EIR. That future condition takes into account the existing impacts of past and present projects in the Planning Area, which are further considered in the cumulative analysis of the action alternatives in Sections 7.2.3.2 and 7.2.4.2 of the Draft EIS/EIR.

RTC 3.22 (EIS/EIR) – Refer to response to Comment 3.21. The commenter notes wells on Excelsior Road that are being used for longer or more intensely than expected. The Plan Preparers appreciate this information. However, use of groundwater wells in this area is consistent with the Freeport/Fazio Biological Opinion, was part of the No Action/No Project baseline condition for the Draft EIS/EIR as described in Section 7.2.2.1, as well as the cumulative analysis of groundwater use in the Draft EIS/EIR (Section 7.2.3.2).

RTC 3.23 (EIS/EIR) – Refer to response to Comment 3.21.

RTC 3.24 (SSHCP) – The Mather Field Specific Plan is not a Covered Activity. Essentially, the SSHCP treats that area as neither impacted nor preserved. As stated in the SSHCP in Chapter 5 in the footnote on page 5-3, “The Mather Field Specific Plan is still pursuing its own Endangered Species Act (ESA) consultation with the U.S. Fish and Wildlife Service and a Clean Water Act Section 404 permit from the U.S. Army Corps of Engineers; however, the SSHCP Chapter 6 effect analysis treats parcels within the boundary of the Mather Field Specific Plan the same as parcels with existing ESA incidental take authorization and other entitlements.”

RTC 3.25 (EIS/EIR) – The comment largely repeats the justification for the use of the No Action/No Project baseline condition as the CEQA baseline for the action alternatives, which was provided in Section 3.6.1 of the Draft EIS/EIR. The comment also states that the EIS/EIR does not evaluate the impacts of individual projects. The SSHCP EIS/EIR, as with all environmental documents analyzing regional HCPs, is a program-level document. Nonetheless, it does evaluate the impacts of individual Covered Activity project footprints, such as the Capital Southeast Connector, other road projects outside the UDA, and known development projects within the UDA. For other development expected to occur over the permit term, the EIS/EIR made assumptions

regarding the locations, types, and intensities of development based on the adopted general plans of the land use jurisdictions.

RTC 3.26 (EIS/EIR) – The No Action/No Project Alternative describes the effects of a future condition without an HCP, relative to the existing conditions at the time the Notice of Preparation (NOP) was issued. That is, CEQA provides that the environmental setting as it exists when the NOP is issued should “normally” be treated as the baseline for gauging the changes to the environment that will be caused by the project (CEQA Guidelines, Section 151259[a]). However, a lead agency may elect to use a different baseline if there is a reasonable basis for doing so. (*Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* (2013) 57 Cal.App.4th 439, 447). In most NEPA analyses, the action alternatives are compared to those future No Action/No Project conditions so that the effects of the alternatives can be determined. The justification for using the future conditions under the No Action/No Project Alternative as the CEQA baseline is provided in Section 3.6.1 of the Draft EIS/EIR.

RTC 3.27 (EIS/EIR) – Refer to response to Comment 3.26 regarding the CEQA baseline. The comment also questions whether the SSHCP will achieve more or better conservation than would occur under the project-by-project permitting that currently occurs. While it is not possible to forecast how requirements under project-by-project permitting could change over the permit term (e.g., mitigation ratios), the SSHCP Preserve System would include more consistent and rigorous qualification for Preserve properties, consistent management and monitoring across the Preserve System, a single local agency with oversight and decision-making authority, and many other benefits as laid out in Section 1.1.2 of the Draft SSHCP. As noted in the ARP that is included as Appendix I to the EIS/EIR, the SSHCP would also be integrated with an ARP that would support watershed-level conservation of aquatic resources.

RTC 3.28 (SSHCP) – Analyses of impacts to Critical Habitat and recovery plan implementation for each vernal pool species are included in the Draft SSHCP, Chapter 6. Chapter 7 of the Draft SSHCP describes the amount of preservation proposed in each Critical Habitat Unit and Core Recovery Area, as well as the consistency of the SSHCP with the Recovery Plan For Vernal Pool Ecosystems of California and Southern Oregon (USFWS 2005). If appropriate, findings of jeopardy and adverse modification will be part of the USFWS Endangered Species Act consultation and findings that must be completed before a permit for SSHCP can be issued.

RTC 3.29 (SSHCP) – Refer to response to Comment 3.28.

RTC 3.30 (SSHCP) – Covered Species occupancy will be a critical factor used when assessing a potential Preserve parcel for acquisition. The Conservation Strategy also includes specific requirements to preserve known tricolored blackbird (*Agelaius tricolor*) colonies and occupied burrowing owl (*Athene cunicularia*) burrow sites. Refer to Table 7-1 in the SSHCP and the biological goals, measurable objectives, and conservation actions therein and species-specific avoidance and minimization measures in Chapter 5.

RTC 3.31 (SSHCP) – The measurable objectives for each species include preservation of modeled habitat, re-establishment/establishment of habitat, and in many cases, preservation of known occurrences. For example, for tricolored blackbird, objective TB5 requires any project impacting a tricolored blackbird colony to preserve a colony of at least 200 individuals in an SSHCP Preserve. Objective TB7 requires that at least one large colony (>1,500 individuals) be preserved in the SSHCP Preserve System. For burrowing owl, objective BO1 requires that seven occupied western burrowing owl sites be preserved within the SSHCP Preserve System, including at least 200 acres around each occupied burrow site, and with preserved modeled foraging habitat within at least 0.4 mile of the preserved burrow site. Regarding alleged omissions in the mapping, there are limitations to mapping an area as large as the SSHCP Plan Area including limited access to many parcels of land and limited resources available with which to ground truth the entire SSHCP plan area. The SSHCP maps are intended to serve as a general representation of what is actually on the ground. Updates to the map will be made as site-specific surveys are prepared as part of a land use application and acquisition of habitat for conservation. Please refer to Chapter 10, section 10.4.2 of the Draft SSHCP *“Components of the SSHCP Permit Application Package”* for a description of maps that must be prepared for each project.

RTC 3.32 (SSHCP) – The broadness of species habitat modeling will be to the benefit of covered species, because impacts to modeled habitat will require mitigation even if covered species are not detected. Any project proposing to use the SSHCP will need to conduct species surveys and wetland delineations, as appropriate for the property, and the Implementing Entity will compile a biological resources letter report based on the site-specific surveys to document the resources present on the project site. The presence of covered species will also be used to identify and evaluate potential preserves. For example, the presence of vernal pool invertebrates will be one of the criteria used when evaluating potential preserve acquisitions (refer to Conservation Action VPI1.1 in the Draft SSHCP). In addition, a Preserve Documentation Report (PDR) must be prepared for each potential land acquisition. The PDR will include species occurrence information obtained from site surveys conducted by the SSHCP Implementing Entity and will include species occurrence information from database searches. The information contained in the PDR will be used to help decide which parcels will be acquired.

RTC 3.33 (SSHCP) – It is assumed that the comment is referring to five large scale master plans that are within the SSHCP’s Urban Development Area, two of which are already approved and three of which are in the entitlement approval process. Because these projects were seeking land use entitlements while the SSHCP was being developed it was necessary to incorporate these five master plans into the SSHCP planning process as SSHCP Covered Activities, even as they each pursued their own permits from the resource agencies. Each of the five master plans was required to set aside significant on-site preserves, which became the “hard-line” preserves of the SSHCP Conservation Strategy. As development of SSHCP progressed there was opportunity to also apply SSHCP avoidance and minimization measures to the master plans to satisfy the SSHCP’s Conservation Strategy. These “hard line preserves” are

the only preserve areas that can be mapped at this time, but are not the only preserves that SSHCP will create within the UDA.

Where the County or cities were actively working with project applicants that were required to prepare a master plan per County or city General Plan Policy and that Master Plan was within the SSHCP's Plan Area, we along with the wildlife agencies worked with the project applicant to design on-site preserves consistent with the SSHCP's Conservation Strategy. Project applicants required to provide on-site preserves will receive credit for their on-site preserves towards their mitigation obligations. Additional consideration of avoidance of resources on-site will come through the Clean Water Act permitting process for the SSHCP plan area.

For the scenario described in the comment, projects that wish to use SSHCP take coverage for their covered activities will have to conduct specific studies on their site, pay development fees and potentially dedicate land. This process is described in Section 10 of the Draft SSHCP.

RTC 3.34 (SSHCP) – The comment questions whether the SSHCP has adequate funding mechanisms to meet mitigation requirements. A complete funding analysis that demonstrates the feasibility of implementing the Conservation Strategy is provided in Chapter 12 *Economic Analysis and Funding Program*. Please note that the SSHCP does not treat all lands within the UDA as developed. The effects analysis (See Chapter 6, Section 6.4.2) excludes the following lands that are within the UDA: 1) existing preserves; 2) planned SSHCP Preserves; 3) stream and preserve setbacks; 4) proposed projects with existing ESA Incidental Take authorization and other required entitlements; and 5) properties within 8,660 acres of the approximately 9,160 acres of already-subdivided parcels (defined as large lot sizes of 0.5 to 4.5 acres for the purposes of this effect analysis) primarily west of Excelsior Road in the UDA. The comment also requests that the SSHCP not assume properties within the UDA will be developed unless they are proposed for development or are owned by a developer. The SSHCP was designed to be consistent with the general plans and urban service boundaries of Sacramento County, Rancho Cordova, and Galt, and the land uses that were adopted through those extensive public processes. By assuming that the UDA would be largely built out during the permit term, the EIS/EIR also analyzed a “worst case” scenario for most resource areas.

RTC 3.35 (SSHCP) – Chapter 12 *Economic Analysis and Funding Program* provides information on how the plan will be funded, Chapters 9 *Implementation* and 10 *SSHCP Permit Application Process* provide details on how fees are calculated and collected. A detailed explanation of the Jump-Start and Stay-Ahead Program is explained in Chapter 9, Section 9.4.6 *Jump-Start and Stay Ahead Provisions*. A detailed description for how fees are adjusted can be found in Chapter 12, Section 12.4.3.2 *Development Fee Adjustment Program*.

RTC 3.36 (SSHCP) – A detailed description of the Jump-Start and Stay-Ahead Program can be found in Chapter 9, Section 9.4.6 *Jump-Start and Stay Ahead Provisions*. Additional references to this section have been added to Section 7 of the Final SSHCP.

RTC 3.37 (SSHCP) – A detailed explanation of the Conservation Strategy is provided in SSHCP Chapter 7.

RTC 3.38 (SSHCP) – The biological goals are indeed broad by design, and measurable objectives represent the next level with quantifiable conservation targets (see 65 FR 35242). The way the objectives will be implemented is described in the Conservation Actions shown in Table 7-1. Implementation and funding of the HCP is described in Sections 9, 10, and 12 in the Draft SSHCP. Additional references to these sections have been added to Section 7 of the Final SSHCP.

RTC 3.39 (SSHCP) – Linkage Preserves are designed to maintain connectivity between existing preserves and SSHCP Preserves, providing for wildlife movement and, in many cases, hydrological connections between Preserves. Their ultimate size and dimensions (i.e., width and length of the linkage) will depend on several factors, including habitat types in the linkage, the ecological function(s) the linkage is designed to serve (e.g., overland wildlife movement, drainage), and adjacent land uses. The Linkage Preserves will need to be wide enough to support the suite of species expected to use the linkage, including movement habitat for more mobile species and “live-in” habitat for more sedentary species, and to provide adequate setbacks from adjacent land uses and potential edge effects, including invasive species, runoff, pollutants, lighting, and noise. Pursuant to Objective L2, the Linkage Preserves inside the UDA will have minimum widths of approximately 600 feet, except where this minimum width is not possible due existing physical constraints such as adjacent existing land uses or ownership constraints.

RTC 3.40 (SSHCP) – The boundaries of the “hardline” preserves were determined through analysis of the biological resources available on the properties, and were adjusted and refined over several years through discussions between the landowners, the land use authority jurisdictions, the Wildlife Agencies, and other responsible agencies such as USACE. Refer to Response to Comment 3.41 regarding the widths of linkage preserves in the UDA.

RTC 3.41 (SSHCP) – Refer to response to Comment 3.40 regarding the boundaries of the hardline preserves. The comment also requests that hardline preserves be connected by linkages and connected to stream corridors. The SSHCP Conservation Strategy recognizes the value of habitat linkage, and thus all of the hardline preserves will be connected by linkages (Chapter 7, see Objective L2). Connections were made to stream corridors when that was feasible, but based on the covered species for the SSHCP and their limited use of stream corridors that was not a primary consideration in preserve design.

RTC 3.42 (SSHCP) – The setback width for Laguna Creek was determined using different parameters than the setback widths for other creeks. The SSHCP implementing Entity anticipates that species will continue to occur within the Laguna Creek Corridor. Setback widths are typically much larger along creeks when species protection is an objective of the setback. In contrast, the setbacks for Elder and Morrison Creeks have been established for purposes of protecting water quality.

Setbacks for water quality are typically smaller than setbacks that have been established for species protection.

RTC 3.43 (SSHCP) – There are several maps contained within the SSHCP that show the preserve on Mather in relation to “hardline” preserves. Chapter 7, Figure 7-2 Existing Preserves and SSHCP Planned Hardline Preserves is one such map.

RTC 3.44 (SSHCP) – The Conservation Strategy for the SSHCP is summarized in page 7-1 and 7-2 of the Draft SSHCP, and would be accomplished through implementation of the measurable objectives in Table 7-1 of the Draft SSHCP, which includes detailed conservation actions directing how the measurable objectives would be achieved. The bulk of the Conservation Strategy involves assembling a Preserve System, as described in Sections 7.4 and 7.5 of the Draft SSHCP. Development fees would be collected from entities using the SSHCP permits, and those development fees would fund property acquisition and other parts of the Conservation Strategy.

RTC 3.45 (SSHCP) – The comment does not provide any additional specific comments and thus no further responses are feasible.

**LETTER 4 CITY OF ELK GROVE
(SSHCP)**

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September 5, 2017

VIA USPS and EMAIL

Richard Radmacher
Senior Planner
County of Sacramento
827 7th Street, Room 225
Sacramento, CA 95814

RE: Draft South Sacramento Habitat Conservation Plan

Dear Mr. Radmacher,

The City of Elk Grove (City) has reviewed the draft South Sacramento Habitat Conservation Plan (SSHCP). City staff has also had the opportunity to meet with you to discuss our understanding the SSHCP and the City's concerns. The following outlines these concerns and requested changes to the SSHCP that the City believes will improve the Plan and make it more clear for the County, the City, and other parties and agencies to implement if the Plan is adopted. These items are in addition to the comments on the draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR), which are provided under separate cover, with this letter as an attachment.

4.1

1. Applicability to Areas Outside of the Urban Development Area

The SSHCP is very clear on its applicability to Covered Activities within the designated Urban Development Area (UDA), providing a streamlined process for Incidental Take, Section 404 permitting, Section 401 permitting, and 1602 permitting. However, the document could be more direct in stating that proposed activities outside of the UDA, while subject to the standard permitting process, are not precluded by the HCP. The City suggests adding the following discussion as a new Section 1.2.5, along with similar language in an appropriate location in Chapter 9 (Implementation):

1.2.5 Areas Outside the UDA

As discussed, the SSHCP provides a streamlined permitting process for Covered Activities within the Urban Development Area identified in the Plan. This does not preclude activities from occurring outside of the Urban Development Area, provided they obtain the legally required local, State, and Federal permits and approvals otherwise and customarily required, including mitigation for impacts to the environment caused by those activities. In other words, development outside of the Urban Development Area is not provided any direct benefits from this HCP. Any required mitigation should also include a consult with the HCP's Implementing Entity for maximum species benefit, but to the final decision shall be made by the applicable Lead Agency to complete pursuant to their thresholds and regulations.

4.2

The City also suggests that Section 1.2.1 (Geographic Scope of the Plan Area) be updated to read:

The Plan Area is functionally divided into two components: inside and outside of an Urban Development Area (UDA). Inside the UDA is predominately where all proposed urbanization will occur. Covered Activities under this Plan will occur, and therefore, where most incidental take will occur. There will also be some habitat preservation within the UDA. The "inside the UDA" component totals 67,618 acres within the Plan Area. Geographically, the UDA is the portion of the Sacramento County Urban Services Boundary (USB), the incorporated Cities of Rancho Cordova and Galt, and Galt's Sphere of Influence that are also within the Plan Area (see Figure 1-1) as these are the Plan Partners for the SSHCP. The Plan Area component located outside of the UDA totals 250,038 acres. No urban development is covered under

4.3

Mr. Radmacher
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the SSHCP outside of the UDA. A limited amount of incidental take is requested for specific infrastructure projects and for species conservation activities proposed outside of the UDA.

4.3
cont'd

2. Implementation After Annexation

As Sacramento County is aware, there are multiple Sphere of Influence Amendment applications pending before the Sacramento Local Agency Formation Commission (LAFCo) relative to Elk Grove. Some of these are within the HCP's UDA, while others are not. For those that are within the UDA, the City's understanding is that Covered Activities would still benefit from the HCP after annexation.

Chapter 1 implies that an annexing agency would become a Third Party Participating Special Entity, availing themselves of the mitigation benefits of the HCP. However, in the definition of Third Party Participating Special Entities the City of Elk Grove is not specifically listed as a covered entity. However, it is also not under the jurisdiction of a Land Use Authority Permittee which may be the intent for the Third Party Participating Special Entity. The HCP gives examples of school districts, reclamation districts, irrigation or water districts, utilities or other organizations that are not subject to the regulatory authority of a local jurisdiction. The City of Elk Grove technically qualifies under the definition but the definition needs clarification.

4.4

City staff also found a separate but related discussion on this matter in Section 15.13 of Appendix C (Implementing Agreement), which states that when a jurisdiction that is not a Plan Permittee is annexed land within the UDA they would work with the Implementing Entity and the USFWS to become a Plan Permittee. This appears to be a more valid approach than the Third Party Participating Special Entity as it recognizes the City as a land use agency like the County and other cities. Therefore, the City requests that:

- Sections 9.2 and 9.2.1 be updated to reflect the language in Section 15.13 of the Implementing Agreement, identifying that other land use agencies can become Plan Permittees as a result of annexation upon executing of the Implementing Agreement by the annexing agency.
- Chapter 1 and Section 10.2.3 be updated to identify that other agencies may become Plan Permittees as a result of annexation.
- Section 15.13 of the Implementing Agreement needs to be simplified such that the annexing agency shall sign the Implementing Agreement and become a member of the Implementing Entity Joint Powers Authority.

4.5

3. Biological Resources Analysis Contains Errors and Establishes a Bad Precedence

Major sections of the Biological Resources Setting in Chapter 3 are based upon habitat modeling that relies on inaccurate or incomplete species information. For example, the giant garter snake (GGS) habitat map indicates habitat south of Kammerer Road, when prior analysis of this area determined that it is not GGS habitat and the ditches relied upon in the analysis are not connected to known populations. Technical information on this matter was sent to you by our staff on August 17, 2017 and is attached for your reference. The City appreciates that you are working with our technical staff to address these issues.

4.6

The City is concerned that the lack of detailed species studies as the foundation for the habitat models is resulting in overly broad models that site the species in areas where they just do not occur. As a result, it appears that the preservation targets are not biologically defensible. As a conservation plan, the SSHCP could be misunderstood as a definitive resource habitat and could set an improper precedent for projects not covered by the HCP. More should be added to the draft HCP, particularly in Chapter 3, to clarify the intent of this information and that it is only applicable within the SSHCP and is not a resource in determining potential impacts outside the HCP.

4.7

4. Laguna Creek Wildlife Corridor

Section 7.5.1.6 describes a wildlife movement corridor along Laguna Creek that would be extended from PPU 3 to Elk Grove. The City is interested in learning more about this concept and what benefits and impacts there may be from extending the corridor into the City. I invite you to provide City staff with any additional information on this topic, and, thereafter, a meeting with City and County staff may be appropriate to further explore this matter.

4.8

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5. Preserve System Outside the UDA

Based on recent discussion between City and County staff, the City understanding of Section 7.5.2 is that the planned preserve system outside of the UDA is not precisely defined and will instead be determined by the Implementing Agency as mitigation lands are acquired. Given the presence of existing preserves along the Cosumnes River, the City understands that the expansion of preserves from this framework will be the overall objective, within the Biological Goals and Measurable Objectives. Ultimately, the preservation acreages by Preserve category by Preserve Planning Unit (PPU) must be achieved; unless a shifting of acreage between PPUs is specifically approved and within the 15% rule outlined in Section 7.5.2.

The target preserve acreage within each PPU needs to be clarified, specifically identifying the percentage of the total available land (unencumbered by an existing preserve). For example, PPU 6 identifies a target of 9,750 SSHCP preserve acres, which appears to be 14.5% of the total 67,120 acres available. However, the City understands from our meeting on August 16, 2017 and Table 7-84 that for some species, such as sandhill crane, lands that are below sea level are not to be used for mitigation. Therefore, the target preserve acreage may actually be closer to 30% of the total available land. This kind of disclosure would be beneficial.

4.9

Additionally, the City believes that an additional discussion to Chapter 7 relative to non-SSHCP preserves should occur. This discussion should address the intent and objectives of the Implementing Entity in coordinating with others that are acquiring preserves inside the various PPUs for the common benefit of the species. For example, should the City annex lands south of Kammerer Road, the SSHCP would not provide a mitigation process and this project would have to obtain its own permits and mitigation. The City is supportive of a consultation process to ensure that the City and HCP are not competing cross interests.

4.10

6. Plan Amendments

As you are aware, the City's existing General Plan contemplates development south of Kammerer Road and outside of the UDA. The pending General Plan Update will include more details on the City's vision for these areas, as well as outline the City's approach to considering development and annexation applications. Included in this discussion, the City is considering a draft policy/program that, in concept, is as follows:

Identify an advance mitigation program for critical habitat for special-status species known to occur within the Study Areas. A proposed project determined to have a significant impact to habitat for special-status species must implement applicable mitigation measures established in the program, including but not limited to land dedication (which may be located either inside or outside the Study Area) or fee payment.

4.11

Given this, the City is interested in what future opportunities there are to incorporate these study areas into the SSHCP through a future amendment. While the SSHCP cannot provide guarantees that an amendment would occur, the City is interested in understanding the interest in the Plan Permittees and the Permitting Agencies in engaging in this dialogue once the HCP is adopted. In that context, the SSHCP should provide more details on the process for amendment and how amendments are considered in the context of the conservation strategy and preserve system.

The City encourages the County to reevaluate the SSHCP in light of the comments made herein, and to revise the SSHCP accordingly.

Thank you for considering the City's concerns. We are available to answer any questions or discuss these issues in more detail. The City reserves the right to provide further information, comment, and analysis on the SSHCP prior to its approval.

4.12

Sincerely,



Laura S. Gill, City Manager

Attachment: Biological Resource Data

RTC 4.1 (SSHCP) – The comments provided in this letter from the City of Elk Grove are acknowledged and have been carefully considered. Responses to these comments are provided below and changes considered warranted resulting from the comments are referenced in the SSHCP text.

RTC 4.2 (SSHCP) – New language has been inserted in to Section 1.2.1 “*Geographic Scope of the Plan Area*” (page 1-8) in the Final SSHCP to explain that the SSHCP does not preclude non-SSHCP activities from occurring outside of the UDA.

Language was not included regarding how decisions will be made concerning required mitigation outside of the SSHCP as this is beyond the scope of the SSHCP. However information has been added in response to comment 4.5 below on how such areas outside the UDA may eventually be amended in to the plan.

RTC 4.3 (SSHCP) – Section 1.2.1 “*Geographic Scope of the Plan Area*” has been modified in the Final SSHCP to include edits similar to those suggested.

RTC 4.4 (SSHCP) – Language has been added to Section 9.3.1, page 9-13 of the Final SSHCP to make it clear that land use jurisdictions (e.g. City of Elk Grove) that are not local Land Use Authority Permittees can participate in the SSHCP as Participating Special Entities if their projects are otherwise consistent with the requirements set forth in the SSHCP, especially as described in Section 10.4 of the Final SSHCP.

RTC 4.5 (SSHCP) – Unincorporated (i.e., currently County land) within the UDA is covered under the SSHCP, and the SSHCP and EIS/EIR assumed that covered activities would cause take in those areas. If the City of Elk Grove annexes those lands, they could apply to use the SSHCP take coverage as a Participating Special Entity. An area outside the UDA (e.g., areas south of Kammerer Road) is not assumed in the SSHCP or EIS/EIR to be impacted by the SSHCP and the City of Elk Grove would need to seek a major amendment to the SSHCP to become a Plan Permittee in order to get take coverage through the SSHCP permits if they were to annex those lands. Section 15.13 of the Implementing Agreement (Appendix C to the Final SSHCP) has been revised to read: “If an agreement can be reached, that jurisdiction shall become a Plan Permittee after executing an addendum to this Agreement and complying with Section 9.10.3 of the SSHCP.”

RTC 4.6 (SSHCP) – The species models presented in the SSHCP are based on the best scientific information available at the time the models were developed and all species models, including the giant gartersnake model, were vetted with the wildlife agencies and an advisory group made up of local species experts.

In regards to the specific comment concerning the giant gartersnake species model, it must be noted that the species model section of the SSHCP (Chapter 3, Section 3.4) clearly states that the models were developed to identify suitable habitat for the species, and not to indicate current species occupancy. The Biological Opinion (BO) and the Biological Assessment (BA) attached to the BO on the proposed Kammerer Road

Extension Project were offered as evidence that the area south of the current Elk Grove City limits is not suitable habitat.

While both the Kammerer Road Extension Project BO and BA conclude that giant gartersnakes are not likely to occupy the area, both the BO and the BA suggest that the area in question is suitable habitat for giant gartersnake, which is the main purpose of the species model. Therefore we do not see this example as evidence to support the assertion that the SSHCP species models are inaccurate.

RTC 4.7 (SSHCP) – See response to Comment 4.6. The purpose of the species models is to identify suitable habitat, not occupied habitat. Habitat does not have to be occupied to be suitable. The species habitat models were developed as part of the SSHCP Conservation Strategy to help the Plan Preparers quantify impacts to covered species from implementation of Covered Activities, and the models are intended to be used in conjunction with SSHCP implementation. It is outside the purview of the SSHCP to speculate how other parties might view the habitat models outside of the context of SSHCP. Regarding the defensibility of the preservation targets, Chapter 7 of the SSHCP analyzes the effectiveness of the proposed preservation targets and whether they would effectively mitigate for the effects of Covered Activities.

RTC 4.8 (SSHCP) – The Plan Partners welcome interagency collaboration and would be happy to discuss the Laguna Creek Wildlife Corridor with the City of Elk Grove.

RTC 4.9 (SSHCP) – The city’s understanding of SSHCP Section 7.5.2 is correct. The precise location of preserves, other than hardline preserves, is not identified in the SSHCP. This is intentional because only the proponents of hardline preserves have currently committed their lands to the SSHCP Conservation Strategy. Showing lands held by private owners who have not confirmed their intent to enroll in the SSHCP Preserve System would not be appropriate, and similar restrictions on mapping have been followed in other regional HCPs (e.g., Santa Clara HCP). The comment also requests that the SSHCP present the amount of available land in each PPU in terms of the unencumbered land (those lands without an existing preserve, and above sea level). The City is correct that none of the preserves in the SSHCP Preserve System will be below sea level. This was accounted for in the maps of modeled habitat for each species. Tracking the inventory of available lands as directed in the comment is something the Implementing Entity will do during monitoring and reporting of the permitted SSHCP. The Implementing Entity, following the criteria as set forth in the SSHCP, will acquire habitat for the Preserve System. The SSHCP will attempt to build from existing preserves where possible, but is not restricted to only acquiring lands that are adjacent to existing preserves.

RTC 4.10 (SSHCP) – Refer to response to comment 4.11 below regarding the process to be followed if the City wished to use the SSHCP to mitigate impacts from developing south of Kammerer Road. The Plan Preparers agree that coordination between the City and Implementing Entity when acquiring preserve lands will be useful, and look forward to future discussions about how to ensure that coordination occurs. However, those

types of discussions will be on a case-by-case basis and the plan preparers chose not formalize that process in the SSHCP.

RTC 4.11 (SSHCP) – Language has been added to Chapter 9 of the SSHCP to make it clear that land use jurisdictions (e.g. City of Elk Grove) that are not local Land Use Authority Permittees can participate in the SSHCP as Participating Special Entities assuming that their projects are otherwise consistent with the permitting process for covered activities in the SSHCP. Please refer to Section titled “Implementing Entity Responsibility in Reviewing Participating Special Entities Requests for Take Authorization” in Section 9.3.1 of the Final SSHCP.

However, an area outside the UDA (e.g., areas south of Kammerer Road) is not assumed in the SSHCP or EIS/EIR to be impacted and the City of Elk Grove would need to seek a major amendment to the SSHCP to become a Plan Permittee in order to get take coverage through the SSHCP permits if they were to annex those lands. The County welcomes open dialog regarding the City’s potential future participation in the SSHCP and encourages the City to contact the County and the SSHCP Implementing Entity when they are ready to discuss such opportunities. As noted, the SSHCP Plan Permittees cannot provide a guaranteed outcome, but nonetheless welcome the dialog.

RTC 4.12 (SSHCP) – The comment requests that the County evaluate the SSHCP to determine whether or not it is sufficient. The comment also notes the City’s availability to discuss the issues noted in the comment letter in greater detail. The lead agencies have determined that the SSHCP is sufficient, and will not be recirculated.

LETTER 5 **CITY OF ELK GROVE**
(SSHCP AND EIS/EIR)

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September 5, 2017

VIA USPS and EMAIL

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RE: South Sacramento Habitat Conservation Plan Draft EIS/EIR

Dear Ms. Knight and Mr. Radmacher,

The City of Elk Grove (City) has reviewed the draft South Sacramento Habitat Conservation Plan (SSHCP) and accompanying draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR). While the SSHCP may be an important plan for the mitigation of habitat of protected species under State and Federal regulations, the City has many concerns with both the Plan and the accompanying EIS/EIR. The following summarizes our concerns on the environmental analysis, and attached are comments we have provided directly to Sacramento County on the content of the Plan. Our hope is that these concerns can be addressed in a timely and effective manner for the benefit of both the SSHCP and the City.

5.1

1. The Definition of the Project Area should be clarified.

The EIR/EIS makes use of the term "Planning Area" (Section 1.1.1), defined as "the area in which all SSHCP Covered Activities (projects and activities) and all SSHCP habitat conservation actions, projects, and activities would be implemented, and where all associated incidental take of species would occur. ... The Planning Area encompasses approximately 317,655 acres within south Sacramento County, as shown on Figure 1-1, South Sacramento Habitat Conservation Plan Area." However, Figure 1-1, and other figures throughout the EIS/EIR, do not use the term Planning Area, rather referring to the term "SSHCP Plan Area." It appears the two are synonymous. The City recommends that this terminology be clarified throughout both the EIS/EIR and the SSHCP. Any suggestion that the Planning Area is limited to just the Urban Development Area, or some other lesser area, should be clarified and corrected.

5.2

2. The Project Objectives Improperly Seek to Constrain Local Land Use Authority.

Section 1.3.3 of the EIS/EIR identifies objectives for the Project. Specifically, objective 16 states:

Allow an adequate amount of urban development within the currently adopted spheres of influence for Rancho Cordova and Galt, and the currently adopted USB for Sacramento County, to discourage expansion beyond these boundaries and maintain the sound land use planning principles these boundaries encourage (e.g., preventing sprawl outside the USB and leap-frog development; consolidating development

5.3

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to support the efficient provision of utilities and infrastructure; promoting compact mixed use development that supports viable transit and walkable areas; creating communities with a variety of housing types that support different income levels and socioeconomic conditions; and maintaining compliance with air quality laws and regulations that influence or are influenced by land use decisions such as Assembly Bill 32, Senate Bill 375, and the Clean Air Act).

The City objects to inclusion of this objective. As stated in the Plan, the HCP is not a land use plan and cannot be a land use plan. The establishment of this objective appears to contradict this central tenant by “discouraging” and limiting development beyond the boundaries of the member jurisdictions and other local agencies. It is not the HCP’s place to limit growth. Rather, the HCP creates a streamlined process towards mitigating impacts within the HCP’s Urban Development Area (see Draft SSHCP, page 1-6, third paragraph, where it is stated “It should be noted that the SSHCP is not a land use document.”). Asserting this objective makes a statement suited for a land use authority contrary to the authority of an HCP.

5.3
cont'd

For the HCP to reflect future limits of growth, it would need to incorporate additional analysis, such as the City’s 2003 General Plan, which includes opportunities for future development south of Kammerer Road. The City’s pending 2018 General Plan Update will refine this discussion, focusing on the area between Kammerer Road and Eschinger Road, and will include programmatic concepts for future development capacity and the organizing principles for future land use planning. The SSHCP must factor in the City’s General Plan and the forthcoming updated policies. As noted below, the EIS/EIR excludes valuable information from the City’s General Plan, including future growth policies, making the document insufficient.

3. The EIR/EIS Makes Improper Development Assumptions.

Section 1.5 discusses the permit issuance criteria for the applicable resource agencies under an HCP. Section 1.5.1 specifically lists the permit criteria for the U.S. Fish and Wildlife Service, including criteria 7, which states “The USFWS has received assurances that the HCP will be implemented by the applicants.” The EIS/EIR appears to rely on the assumption that all developable lands within the Urban Development Area will be developed within the timeframe of the HCP permit (50-years), providing sufficient revenue to allow for the establishment of the targeted preserve acreage within the various Preserve Planning Units. However, the City is unable to identify any justification within the EIS/EIR that this will occur. Therefore, the EIS/EIR should be updated to include the necessary discussion to disclose what would occur if not all lands within the Urban Development Area were developed and contributed towards the SSHCP financing plan.

5.4

4. The EIS/EIR Ignores the City’s Planning Efforts.

Section 1.6.4 states that “The SSHCP EIS/EIR provides regional scale comprehensive analyses of environmental impacts of all planned urban development within the Planning Area over a 50-year period.” Similar language is also present in Section 1.6.5. These statements are simply not true. Since 2003, the City of Elk Grove’s General Plan has identified future development potential south of Kammerer Road and Grant Line Road. Additionally, the Sacramento Area Council of Governments Blueprint shows some development occurring south of Kammerer Road in a post-2050 condition. The SSHCP ignores these facts and excludes areas south of Kammerer Road from the Urban Development Area. Thus, basing the analysis solely on the Sacramento County General Plan and/or the General Plan of Rancho Cordova or Galt does not provide a complete analysis of the cumulative condition and potentially sets the EIS/EIR up for failure. See additional discussion below.

5.5

5. Clarification of Status of an Entity upon Annexation

It is not clear if an entity becomes a Third Party Participating Special Entity or a Plan Permittee upon annexation. As provided in our comments to Sacramento County (attached), the discussion in both the SSHCP and the EIS/EIR regarding Third Party Participating Special Entities needs to be clarified. Specifically, page 1-39 and 1-40 discuss the concept of Participating Special Entities and how they are not under the jurisdiction of a Land Use Authority Permittee. Given the potential for areas in Preserve Planning Unit 4 to be annexed into the City of Elk Grove, the list of potential Participating Special Entities should be expanded to specifically identify “other land use agencies through approved annexations.” The list that is present now is very limiting even though there is some implication that it was intended to be inclusive. The SSHCP’s ability to successfully meet its goal of conserved property within a given PPU would require a definition of any public agency not currently

5.6

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a Participating Permittee to be included if it becomes the land use authority for a given area and how that inclusion would specifically occur.

5.6
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6. The EIS/EIR Does Not Adequately Analyze a Reasonable Range of Project Alternatives.

A key component of an EIR is a discussion of a reasonable range of project alternatives. (Pub. Res. Code § 21002.1(a) & § 21100(b)(4).) An EIR must “describe a range of reasonable alternatives to the project, which would feasibly attain most of the basic objectives of the project . . . and evaluate the comparative merits of the alternatives.” (14 Cal. Code Regs. § 15126.6.) CEQA requires that one of the alternatives to the proposed project be the “no project” alternative. (14 Cal. Code Regs. § 15126.6(e).)

An adequate alternatives analysis is necessary to foster meaningful public participation. (*Laurel Heights Improvement Ass’n v. Regents of the University of California* (1988) 47 Cal.3d 376, 403 “*Laurel Heights I.*”) As to any project alternatives, “it is the project proponent’s responsibility to provide an adequate discussion of alternatives. That responsibility is not dependent in the first instance on a showing by the public that there are feasible alternatives.” (*Id.* at 405.) A “scant” and abbreviated discussion of alternatives is inadequate. (*Id.*)

The discussion of alternatives is not limited solely to those deemed “feasible” by the project proponents. (*San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th 713, 737.) “Even if alternatives are rejected, an EIR must explain why each suggested alternative either does not satisfy the goals of the proposed project, does not offer substantial environmental advantages or cannot be accomplished.” (*Ibid.*) The fact that the project proponent hopes to adopt a particular alternative, and even perhaps made substantial investments in hopes of a particular alternative, is not determinative. (*Kings County Farm Bureau v. City of Hanford*, *supra*, 221 Cal.App.3d at 736.) “If the agency finds certain alternatives to be infeasible, its analysis must explain in meaningful detail the reasons and facts supporting that conclusion.” (*Marin Municipal Water District v. KG Land California Corporation* (1991) 235 Cal.App.3d 1652, 1664.) A discussion of alternatives which omits relevant, crucial information, “subvert[s] the purposes of CEQA and is legally inadequate.” (*San Joaquin Raptor*, *supra*, 27 Cal.App.4th at 739.)

5.7

The EIS/EIR purports to present three alternatives for detailed analysis. (EIS/EIR at ES-5, §§ 2.2-2.4.) In reality, however, the EIS/EIR only presents one project alternative for analysis. This is because one of the alternatives is the Proposed Project itself, and one of the alternatives is the CEQA-mandated “no project” alternative. The only true alternative is the Reduced Permit Term alternative. Analyzing only one true project alternative violates the CEQA principle of analyzing a “range of reasonable alternatives,” making the EIS/EIR legally deficient.

Section 2.1.3 of the EIS/EIR contains a scant discussion of other potential alternatives, including “Different Planning Area boundary,” “Different types of Covered Activities,” and “Different amounts or frequency of Covered Activities.” Section 2.1.4 purports to describe the screening process for consideration of alternatives, and Section 2.1.5 identifies alternatives considered and not carries forward for detailed analysis. Nowhere, for instance, in Section 2.1.5 is an alternative with a larger Urban Development Area discussed. The introduction to the section discusses that alternatives that did not meet the project objectives were rejected. However, CEQA does not require that all project objectives be achieved for all alternatives. Moreover, the detailed set of 18 project objectives set forth at section 1.3.3, including objective 16 discussed above, improperly constrained the alternatives analysis and had the effect of causing certain otherwise potentially feasible alternatives to be rejected from further consideration. Where, as here, the EIS/EIR provides an “artificially narrow” set of objectives prejudicing meaningful consideration of alternatives, the alternatives analysis is deficient. (*North Coast Rivers Alliance v. Kawamura* (2015) 243 Cal.App.4th 657, 667-670.)

7. The EIS/EIR ignores the City’s General Plan.

Section 3.4 discusses information presented in prior documents that may be incorporated in the EIS/EIR. This section identifies the General Plans and accompanying Environmental Impact Reports for the County of Sacramento and the Cities of Rancho Cordova and Galt, as well as the SACOG Metropolitan Transportation Plan/Sustainable Communities Strategy and the Capital Southeast Connector JPA. However, the section neglects to include the City of Elk Grove General Plan and its EIR, which do address portions of the Planning

5.8

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Area. The City's policies identify future development south of Kammerer Road and these potential actions should have been considered as part of the EIS/EIR.

5.8
cont'd

8. Improper Assumptions are Made Concerning Development Occurring Outside of the Urban Development Area.

Various sections of the EIS/EIR, including 2.2.2, 3.6, and 3.7, discuss assumptions used in the No Project and Project alternatives. Specifically, the EIS/EIR states that under the No Project Alternative 1,900 acres outside of the Urban Development Area would be developed. The basis for this assumption is that under the permit process provided under the No Project there would be development pressures elsewhere in the Planning Area (likely Elk Grove) that extend the footprint of development. However, the assumption ignores the policies of the City's General Plan and pending Sphere of Influence Amendment requests for Elk Grove. A more reasonable and justifiable assumption is that the 1,900 acres described would be in addition to the City's General Plan. Otherwise, the assumption would need to be justified by a market analysis and alternative land use assumptions, which are beyond the scope and authority of an HCP.

5.9

The EIS/EIR also mentions that the pending Sphere of Influence Amendment in Elk Grove is part of the basis for other Reasonably Foreseeable Actions (Section 3.7.2). The list is, however, incomplete as it neglects to include the City's larger policy framework for expansion beyond the pending applications. A more reasonable assumption would be to include all lands from Kammerer Road to Eschinger Road, consistent with the City's 2013 SOI application, which was based upon the 2003 General Plan policies.

9. The EIS/EIR Contains Flawed Methodology for Assessing Impacts.

Section 4.2.1 describes the assumptions used for the cumulative analysis in the EIS/EIR and includes that statement "The study area used in Chapter 4 for the cumulative analysis of each EIS/EIR alternative on land use is the EIS/EIR Planning Area plus lanes within the City of Elk Grove, the City of Elk Grove's SOI, and the community of Rancho Murieta." Because the City's SOI is currently coterminous with the City limits (though amendments are pending before the Local Agency Formation Commission) and based upon other discussions in Chapters 1, 2, and 3, the City must conclude that the reference in this section is to the 2013 SOI application. With that being the case, the Project and the EIS/EIR are flawed in that they do not identify the areas between Kammerer Road and Eschinger Road as part of the Urban Development Area. In order to maintain consistency with the City's General Plan, the documents must be modified to reflect this land use policy direction.

5.10

10. The EIS/EIR Contains an Incomplete Discussion of the Regulatory Framework.

Section 4.1.1 describes the regulatory framework under which the Project is being considered. Section 4.1.1.4 identifies relevant Local Regulations, Policies, and Plans. The agencies listed in this section are limited to the County of Sacramento and the Cities of Rancho Cordova and Galt. Elk Grove is noticeably absent. The City's adopted General Plan includes a General Plan Planning Area that extends beyond the existing City limits to the Cosumnes River. To ignore this policy framework and the potential annexation of lands that are within the Project area into the City is short-sighted and does not provide the appropriate level of disclosure obligated under CEQA. Given that the General Plan is adopted City policy and that the City has previously pursued SOI amendments in this area, it is reasonable to assume that annexations may occur within the timeframe of the HCP permit. The relationship of the Elk Grove General Plan and the SSHCP must be discussed in the EIS/EIR.

5.11

11. The EIR/EIS Should Contain SB-5 and 200-year Floodplain Analysis.

Chapter 7 (Hydrology and Water Quality) should be updated to include an analysis of consistency with State Senate Bill 5 (Machado), looking at the impact of flooding that has a 1-in-200 chance of occurring in any given year (i.e., a 200-year storm event). State law limits the ability of local land use agencies in approving new development within the 200-year floodplain. This legislation could impact the development areas within the Morrison and Laguna Creek corridors (among others), potentially requiring additional impacts to waterways in constraining the 200-year floodplain beyond those analyzed in the Project, or limiting the potential development area. If the development area becomes further constrained this could create pressure for development outside the Urban Development Area within the timeframe of the SSHCP. This goes back to the viability of the range of alternatives considered in the EIS/EIR as potentially being inadequate.

5.12

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12. The EIS/EIR Lacks a Basis for its Conclusions on Transportation Impacts.

Chapter 13 addresses potential transportation impacts of the proposed Project, concluding that the proposed Project would result in reduced impacts when compared to the No Project. This conclusion appears to be based upon the assumed relocation of 1,900 acres of development from the Urban Development Area to areas outside of the Urban Development Area. However, no assumptions are presented on the types of land uses projected to occur in this area. Transportation impacts can only be fully understood in the context of the planned land uses. According to the City's Traffic Engineer, Ryan Chapman, TE, the mix of uses, densities, and distances between destinations can significantly influence the potential impacts on Level of Service and Vehicle Miles Traveled. Because the EIS/EIR lacks this information the conclusions presented are without evidence and are therefore unjustified.

5.13

13. The Greenhouse Gas (GHG) Emissions Impacts Analysis is Deficient.

Similar to the Transportation Impacts, the EIS/EIR provides a very broad discussion of potential GHG impacts and concludes that simply because more land is developed under the Project alternative within the County's Urban Service Boundary than under the No Project Alternative the Project is superior. However, no technical analysis is presented to justify this statement. Because of the interrelationships between land uses and the role they play on transportation system requirements it is possible that, depending upon location, development within the Urban Development Area under the Project has a greater impact on GHG. A technical analysis is required to substantiate these claims.

5.14

Conclusion

The City encourages the lead agencies to reevaluate the sufficiency of the EIS/EIR in light of the comments made herein, to revise the EIS/EIR to correct the identified deficiencies, and, as necessary to recirculate a revised EIS/EIR.

5.15

Thank you for considering the City's concerns. We are available to answer any questions or discuss these issues in more detail. The City reserves the right to provide further information, comment, and analysis on the EIS/EIR prior to the approval of the project.

Sincerely,



Laura S. Gill, City Manager
 City of Elk Grove

Attachments: Comments on the Draft SSHCP, to: Richard Radmacher, Senior Planner, County of Sacramento

RTC 5.1 (EIS/EIR) – The comment contains introductory statements expressing concern about the SSHCP and EIS/EIR. No responses are necessary.

RTC 5.2 (EIS/EIR) – The term Plan Area refers to the SSHCP Plan Area in the Proposed Action Alternative. As described in Chapter 2, Section 2.1, Approach to Developing Alternatives, the lead agencies considered alternatives that might have smaller or different Planning Area boundaries. Therefore, the same term could not be used for some of the other alternatives considered, and could not be used for the No Action/No Project Alternative as there would be no “Plan”; therefore an alternative term “Planning Area” was used to refer to the same area in other alternatives studied in the EIS/EIR. Typically the two terms are intentionally used in different scenarios; for example, if a figure is conveying information about the Proposed Action Alternative, it will identify the “SSHCP Plan Area”; and where a figure is conveying information applicable to one of the other alternatives studied in the EIS/EIR, the term “Planning Area” is used. However, Figures in the Final EIS/EIR have been reviewed and revised as necessary to more consistently use the proper term based on the EIS/EIR alternative described by the Figure. Sentences containing the term “Planning Area” were also reviewed to ensure they did not suggest that the term “Planning Area” is limited to just the UDA.

RTC 5.3 (EIS/EIR) – The referenced objective is intended to reflect the policies and spirit of the land use plans for the local land use authority permittees. One of the key purposes of the SSHCP is to provide incidental take coverage for urban development within an area commonly accepted by the land use authority permittees as the appropriate limit of urban development.

RTC 5.4 (EIS/EIR) – The EIS/EIR analyzes the effects of the Proposed Action and alternatives in compliance with NEPA and CEQA, and is not the document that presents all permit issuance criteria for the USFWS permitting process. The SSHCP funding assurances required to satisfy the permit issuance criteria are provided in Section 12 of the Draft SSHCP. Regarding the development assumptions for full buildout of the UDA, the SSHCP and EIS/EIR do not establish new projections or assumptions about population growth in southern Sacramento County. Assumptions about growth projections underlying these documents are made in general plans developed in accordance with the local land use planning process, which includes public comment and which ultimately are approved by local elected officials. The SSHCP Plan Preparers cannot modify or change the County’s or the City’s land use planning decisions or processes. For example, the Sacramento County General Plan includes an Urban Service Boundary that identifies an area where urban development is anticipated to occur. The SSHCP uses the USB as the basis for its Urban Development Area.

RTC 5.5 (EIS/EIR) – The areas referenced lie outside the current city of Elk Grove limits and Sphere of influence (SOI) of Elk Grove, although they have been the subject of a previous 2013 SOI application to LAFCO, and a current smaller SOI application to LAFCO. While the City currently holds no legal land use jurisdictional authority over these properties (which are currently under the jurisdiction of the County), it is recognized that all or a portion of the area contained in the current SOI application could

become part of the City of Elk Grove depending on the ultimate decision made by LAFCO on the existing application. Despite this uncertainty, and the fact that the City of Elk Grove is not a proposed permittee under the SSHCP, nor is the area south of Kammerer Road within the County's Urban Service Boundary or the SSHCP's Urban Development Area, the Draft EIS/EIR did assume in its analysis of cumulative effects that areas south of Kammerer Road and other portions of Elk Grove's SOI request could be annexed into the City of Elk Grove and developed during the 50-year study period. This is described in Section 3.7.2.1 of the Draft EIS/EIR.

RTC 5.6 (SSHCP and EIS/EIR) – Language has been added to Chapter 9 of the SSHCP to make it clear that land use jurisdictions (e.g. City of Elk Grove) that are not local Land Use Authority Permittees can participate in the SSHCP as Participating Special Entities assuming that their projects are otherwise consistent with the permitting process for covered activities in the SSHCP. As detailed below, unincorporated (i.e., currently County land) within the UDA is covered under the SSHCP, and the SSHCP and EIS/EIR assumed that covered activities would cause take in those areas. If the City of Elk Grove annexes those lands, they could apply to use the SSHCP take coverage as a Participating Special Entity. An area outside the UDA (e.g., areas south of Kammerer Road) is not assumed in the SSHCP or EIS/EIR to be impacted and the City of Elk Grove would need to seek a major amendment to the SSHCP to become a Plan Permittee in order to get take coverage through the SSHCP permits if they were to annex those lands. New text has been added to Section 9.10 explaining how a new Permittee could be added to the SSHCP permits.

RTC 5.7 (EIS/EIR) – As required by both CEQA and NEPA, the Draft EIR/EIS discusses a range of reasonable alternatives in Chapter 2 of the EIR/EIS. (See CEQA Guidelines, Section 15126(a); 40 CFR 1502.14.) The County and the USFWS, as lead agencies, have the discretion to determine how many alternatives constitute a reasonable range. (See *Center for Biological Diversity v. Department of Fish & Wildlife* (2015) 234 Cal.App.4th 214, 256 [“[I]f a reasonable basis for the choices the agency makes is found in the EIR or elsewhere in the record, a reviewing court will defer to the agency's selection of alternatives.” (citations omitted)]; *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 556; 43 CFR 46.420(b) [noting that reasonable alternatives are those that are both technically and economically practical and feasible and meet the stated purposes and needs of the proposed action].) Although an infinite number alternatives and variations could be identified, neither EIRs nor EISs are required to evaluate **all** possible alternatives or “consider an alternative whose effect cannot be reasonably ascertained and whose implementation remote and speculative.” (CEQA Guidelines, Section 15126.6(f)(3); see also 40 CFR 1502.14(a).)

For these reasons, the alternatives analysis in the Draft EIR/EIS focuses on those options that could feasibly be implemented and which, if implemented, would have the potential to reduce or avoid any significant adverse environmental effects associated with implementation of the SSHCP, met most of the basic SSHCP objectives, and are potentially feasible. The selection of alternatives is discussed in Chapter 2, summarized in section 2.1.4 of the Draft EIR/EIS, and more fully analyzed in Appendix E. In addition to considering a No Action/No Project Alternative, the Draft EIR/EIS analyzed the

Proposed Action/Proposed Project Alternative (section 2.3), through which the Permit Applicants (future Plan Permittees) would implement categories of Covered Activities and a Conservation Strategy over a 50-year permit term. In addition, under the Reduced Permit Term Alternative (section 2.4), the Permit Applicants would seek Take coverage for the same Covered Activities but for a shorter 30-year incidental-take permit term.

Contrary to the suggestion in the comment, the three alternatives identified in the Draft EIR/EIS were chosen to foster informed decision-making and public participation, and thus constituted a “reasonable range” within the meaning of CEQA. In addition to analyzing two EIS/EIR Action Alternatives, the Draft EIS/EIR analyzed a No Action/No Project Alternative. The Two Action alternatives were carried forward for detailed analysis in the EIS/EIR because they are practicable, include provisions to reduce impacts, address the existing issues and underlying needs present in the Planning Area, and will achieve the purposes and objectives presented in Section 1.3 of the Draft EIR/EIS.

As analyzed in section 2.3, under Proposed Action/Proposed Project Alternative, the Permit Applicants (future Plan Permittees) would implement categories of Covered Activities and a Conservation Strategy over a 50-year permit term. This was described in the SSHCP document that was prepared by the Permit Applicants and will be included in the ESA and CESA incidental-take permit application packages submitted to the USFWS and CDFW. Under the second Reduced Permit Term Alternative, the Permit Applicants would implement the same categories of HCP Covered Activities as in the proposed SSHCP but over a shorter 30-year incidental-take permit term. The Permit Applicants would implement a similar HCP Conservation Strategy, but this strategy would result in a smaller, less comprehensive preserve system in the Planning Area (relative to the interconnect SSHCP Preserve System described in the Conservation Strategy of the Proposed Action/Proposed Project Alternative). After a thorough analysis of these options, the Draft EIR/EIS concludes that the Proposed Action/Proposed Project is the environmentally preferable alternative under NEPA and the environmentally superior alternative under CEQA. (See Draft EIR/EIS, Section 17.7.)

The Draft EIR/EIS’s alternatives analysis fully complies with CEQA and NEPA. The SSHCP is the culmination of countless revisions and requests from stakeholders and regulators over a multi-decade process. The alternatives carried forward for detailed analysis include a comprehensive Conservation Strategy that endeavors to strike the balance of preservation, avoidance, minimization, and mitigation to reach economically feasible, beneficial outcomes. The NEPA process and identification of alternatives for the SSHCP has been ongoing with the formulation of the SSHCP for over a decade. Several alternatives are described in Section 2.1.3, for example. Many of these alternatives were not carried forward because they were not feasible or did not meet the project objectives. Over time, numerous USFWS-, CDFW-, and USACE-recommended avoidance measures were incorporated into the proposed action, and earlier SSHCP versions (alternatives) were not carried forward in favor of an alternative with less adverse impacts than some of the earlier iterations of the SSHCP. (Draft EIR/EIS, p. 2-14.) For example, over time the currently proposed Stream Setbacks, the protection of micro-watersheds, and different types of utility and road realignments that avoid impacts to species and aquatic resources were added.

The lead agencies screened all potential alternatives following the process outlined in Section 2.1.4. The following sub-sections describe the alternatives considered and not carried forward based on one of the screening criteria outlined previously. These alternatives were organized into two groups: those that were proposed during the multiyear development of the SSHCP, and those that were suggested by commenters during the public scoping of the EIS/EIR (see Section 1.4). Draft EIS/EIR Appendix E presents three tables that provide information regarding the reasons an alternative was not carried forward for detailed study in the EIS/EIR. As this extensive analysis demonstrates, the EIR/EIS fully analyzed a range of reasonable alternatives.

With regard to the Commenter's suggestion in the first sentence of paragraph 3 of section 6 regarding feasible alternatives, a lead agency may exclude from an EIR alternatives that it concludes are not potentially feasible. (See *Save San Francisco Bay Association v San Francisco Bay Conservation & Development Commission* (1992) 10 Cal.App.4th 908, 922 (EIR need not examine alternatives that are so speculative, contrary to law, or economically catastrophic as to exceed realm of feasibility)). In many cases, lead agencies include alternatives in an EIR that, after further evaluation, are determined to be infeasible and not meriting detailed analysis. In such a case, CEQA case law provides that the agency should explain the reason for the agency's determination. (*San Joaquin Raptor/Wildlife Rescue Center v County of Stanislaus* (1994) 27 Cal.App.4th 713, 737; see also *Sierra Club v City of Orange* (2008) 163 Cal.App.4th 523, 545, 547 (upholding EIR that explained why three alternatives were eliminated from detailed consideration in EIR)).

Here, as discussed in Section 2.1.2 of the Draft EIR/EIS and noted above, a conservation plan for southern Sacramento County has been under development in some form for approximately 20 years. During this time, many alternatives that considered different Planning Area boundaries, protection of different natural resources, different Covered Species, different conservation strategies, and other elements have been considered. During the preparation of the Draft EIR/EIS, the lead agencies screened all potential alternatives following the process outlined in Section 2.1.4 and discussed above. Consistent with CEQA, this analysis sets forth why the County decided not to proceed with these alternatives, and fully complies with CEQA's informational requirements. (See Draft EIR/EIS, pp. 2-14 to 2-19.)

An EIR need not consider all potential alternatives to a project. As set forth above, an EIR need only discuss a "reasonable range" of alternatives (CEQA Guidelines, Section 15126.6[a]). With regard to the comment's suggestion of a specific, larger UDA alternative, we presume, as set forth in other comments (see comments 5.2, 5.4, 5.5, 5.7 and 5.9), the comment is referring to lands south of Kammerer Road that are outside the current city limits and Sphere of influence (SOI) of Elk Grove. A larger UDA related to the 2013 LAFCO SOI application by Elk Grove was considered during preparation of the SSHCP when the City of Elk Grove was a plan permittee. CDFW expressed concerns about feasibility of the larger UDA related to potential impact on habitat inventory for Swainson's hawk and the inability of the City of Elk Grove to guarantee that the mitigation from development in that area could be funded since they did not have land use authority. The City of Elk Grove decided to withdraw from the

SSHCP at that time due to these considerations. Thus, the County is the land use jurisdiction that currently governs land use decisions south of Kammerer Road. Because the area south of Kammerer Road is not within the County's Urban Service Boundary it was not included within the SSHCP's Urban Development Area.

Further, creation of a larger USB would require General Plan revision, public comment, and action by the County Board of Supervisors. It isn't feasible for the EIS/EIR to consider a hypothetical future action that is not reasonably foreseeable and that is not something the County can unilaterally propose outside of its planning process.

With the above considerations, the suggestion of an expanded UDA alternative did not meet the feasibility test required to be considered within the reasonable range of alternatives. Further the alternative would not meet the requirement of reducing impacts in comparison to the proposed action, since it would result in greater impacts to high value Swainson's hawk habitat in comparison to the proposed SSHCP.

Finally, consistent with CEQA's informational purpose, the comment is correct that alternatives must be able to implement most basic project objectives, but they do not have to implement all of them. (*Mira Mar Mobile Community v. City of Oceanside* (2004) 119 Cal.App.4th 477. The EIR's analysis should focus on alternatives that can eliminate or reduce significant environmental impacts even if they would impede attainment of project objectives to some degree or be more costly. 14 Cal Code Regs §15126.6(b). The alternatives discussed must, however, be able to attain most of the basic objectives of the project. 14 Cal Code Regs §15126.6(a). There is no requirement that the alternatives included in an EIR satisfy every basic objective of the project. (*California Native Plant Society v City of Santa Cruz* (2009) 177 CA4th 957, 991.) Moreover, a lead agency has broad discretion to formulate project objectives. *California Oak Found. v Regents of University of California* (2010) 188 Cal.App.4th 227, 276 ("CEQA does not restrict an agency's discretion to identify and pursue a particular project designed to meet a particular set of objectives").

An EIR need not, however, present alternatives that are incompatible with the project's fundamental purpose. (See *In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings* (2008) 43 Cal.4th 1143, 1165 [holding that an EIR need not study an alternative that "cannot achieve the project's underlying fundamental purpose"].) Accordingly, an agency may structure the alternatives analysis for an EIR based on a reasonable definition of the project's underlying purpose and need not study alternatives that cannot achieve that fundamental goal. (*Id.* at 1166.) Here, as discussed above and in Section 2.1.1, the EIS/EIR includes action alternatives that satisfy the following three criteria: (1) achieves the stated purposes, needs, and objectives; (2) addresses one or more of the significant issues identified during scoping; avoids or substantially lessens potentially significant impacts; and (3) is feasible, practicable, and reasonable. The EIS/EIR identifies over 18 comprehensive project objectives intended to implement the SSHCP's fundamental purpose of providing for development while conserving the environment. (See Draft EIS/EIR, Section 1.3.3.) That is, in response to receiving a request for authorization of species incidental take that is expected to result from future housing construction, other new urban development, and new supporting

infrastructure within the Planning Area, the USFWS proposes to issue an ITP to the Permit Applicants. Therefore the Project objectives were properly drafted in order to obtain the ITP and are not overly broad.

RTC 5.8 (EIS/EIR) – Refer to response to Comment 5.5.

RTC 5.9 (EIS/EIR) – One of the areas that is identified as potentially receiving a portion of the “displaced development” under the No Action/No Project Alternative is the area south of the existing City of Elk Grove jurisdiction. Whether that area is under County jurisdiction or Elk Grove jurisdiction at the time of development is not relevant to the impact analyses, which look at effects on the ground to the examined resource areas. Regarding the remainder of the City of Elk Grove’s 2013 SOI application, that application was not approved and the City does not have a pending SOI application for those areas. Therefore, the EIS/EIR did not include City annexation of those lands as reasonably foreseeable. Refer also to responses to Comments 5.5 and 5.10.

RTC 5.10 (EIS/EIR) – Refer to response to Comment 5.5.

RTC 5.11 (EIS/EIR) – The regulatory environment includes only those that have regulatory authority or land use planning authority over the Planning Area. Therefore, entities that are adjacent to the Planning Area but outside it, such as the City of Sacramento, the City of Folsom, and the City of Elk Grove are not included in the regulatory environment. The City of Elk Grove’s potential future sphere of influence modifications and other projects are considered appropriately in the cumulative analyses throughout the document.

RTC 5.12 (EIS/EIR) – At the time the Draft EIS/EIR was prepared, the impact assessment criteria provided in Appendix G of the State CEQA Guidelines identified the 100-year flood hazard area as a suitable criteria. The current State CEQA Guidelines retain this 100-year flood hazard criteria. As stated in Section 7.2.1 of the EIS/EIR;

“The significance criteria used to evaluate the significance of each alternative’s impacts on hydrology and water quality are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.), and on typical thresholds used to evaluate hydrology and water quality effects in recent EIRs prepared by the County.”

This approach to identifying significance criteria is used consistently in each impact analysis chapter in the EIS/EIR and is consistent with the requirements of CEQA and NEPA.

The comment describes a potential scenario where lack of a 200-year level of flood protection in some areas could limit future development, and therefore adversely affect implementation of the SSHCP. This scenario requires significant speculation given that multiple jurisdictions and agencies are actively improving flood protection systems to support future planned development, and in some cases, individual project proponents can provide their own flood protection improvements.

RTC 5.13 (EIS/EIR) – The mix of uses can certainly affect transportation options, mode selection, vehicle trips, and vehicle miles traveled. As explained in Section 2.2 of the EIS/EIR, the approximately 1,900 acres of urban development that is estimated to be

displaced outside the UDA would provide housing for projected population growth within the County. The mix of commercial and other land uses that would accompany the residential development are not critical to determine that regional transportation impacts would be greater, with this additional residential development remote from the existing employment centers within the UDA as described in Section 13.2.2.1 of the EIS/EIR. This level of analysis is suitable for a programmatic analysis like the subject EIS/EIR.

RTC 5.14 (EIS/EIR) – As stated in response to Comment 5.13, the mix of land uses can certainly affect transportation options, mode selection, vehicle trips, and vehicle miles traveled (VMT). All of these transportation issues, and in particular VMT, affect mobile source GHG emissions, one of the primary sources of GHG emissions. As explained in Section 2.2 of the EIS/EIR, the approximately 1,900 acres of urban development that is estimated to be displaced outside the UDA would provide housing for projected population growth within the County. The mix of commercial and other land uses that would accompany the residential development are not critical to determine that regional VMT would be greater with this additional development remote from the existing employment centers within the UDA as described in Section 15.2.2 of the EIS/EIR. As stated in Section 15.2.2 for both mobile source construction emissions and mobile source operational emissions;

“Development displaced outside of the USB could result in construction worker commute and vendor haul trips being longer in distance, resulting in higher VMT (and associated GHG mobile-source emissions), relative to what would be expected if urban development was confined to the USB. An increase in regional VMT associated with construction trips would result in increased emissions of GHGs. Construction-related GHG emissions as a result of increased vehicle trips and VMT would contribute further to the already significant, unavoidable impacts to global climate change described in the EIRs referenced above.”

“Similar to what is described above for construction emissions, development displaced outside of the USB could result in resident and employee commute trips being longer in distance, resulting in higher VMT (and associated GHG mobile-source emissions), relative to what would be expected if urban development was confined to the USB. An increase in regional VMT associated with operational trips would result in increased emissions of GHGs. Operation-related GHG emissions as a result of increased vehicle trips and VMT would contribute further to the already significant, unavoidable impacts to global climate change described in the EIRs referenced above.”

This level of analysis is suitable for a programmatic analysis like the subject EIS/EIR.

RTC 5.15 (EIS/EIR) – The comment requests that the lead agencies evaluate the EIS/EIR to determine whether or not it is sufficient, and to recirculate if necessary. The comment also notes the City’s availability to discuss the issues noted in the comment letter in greater detail. The lead agencies have determined that the EIS/EIR is sufficient, and will not be recirculated.

**LETTER 6 DELTA PROTECTION COMMISSION
(EIS/EIR)**

STATE OF CALIFORNIA – NATURAL RESOURCES AGENCY

EDMUND G. BROWN, JR., Governor

DELTA PROTECTION COMMISSION

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September 5, 2017

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Re: Draft Environmental Impact Statement and Environmental
 Impact Report for the South Sacramento Habitat Conservation
 Plan (SCH# 2008062030)

Dear Ms. Biner and Ms. Knight:

Thank you for providing the Delta Protection Commission
 (Commission) the opportunity to review the Draft Environmental
 Impact Statement and Environmental Impact Report for the South
 Sacramento Habitat Conservation Plan (Project EIS/EIR). The Project is
 a regional approach to conserving species and issuing incidental take
 permits under the federal and State Endangered Species Acts while
 implementing new urban development and associated infrastructure
 projects within southern Sacramento County.

The Commission is a state agency charged with ensuring orderly,
 balanced conservation and development of Delta land resources and
 improved flood protection. Proposed local government projects
 within the Primary Zone of the Legal Delta must be consistent with
 the Commission's *Land Use and Resource Management Plan* (LURMP).
 Proposed US Fish and Wildlife Service (USFWS) actions are not subject
 to consistency requirements with the LURMP since the Project is
 sponsored by a federal agency. However, the Commission reviewed
 the project for possible impacts on the resources of the Primary Zone.

6.1

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The Commission is supportive of projects that protect the natural resources of the Delta while preserving agriculture as a critical part of the region's economy. We appreciate the USFWS's and County's efforts to review the Project for compliance with LURMP policies, particularly those related to agriculture, flood protection, natural resources, and recreation. We urge the USFWS and County to prioritize use of existing public lands for habitat and to consider incentives for private landowners to provide habitat where possible.

6.2

The Draft EIR/EIS provides a thorough and mostly accurate description of the Commission and the LURMP. However, there is one instance where there appears to be confusion regarding the overlapping jurisdiction of the Commission and the Delta Stewardship Council. In a section called "Delta Protection Act and the Land Use and Resource Management Plan for the Primary Zone of the Delta", the Draft EIR/EIS states that:

...The Delta Protection Act identifies a Primary Zone of approximately 500,000 acres where a comprehensive resource management plan, the Delta Plan (Delta Stewardship Council 2013), is applied (see the discussion under the heading "Delta Reform Act of 2009 and the Delta Plan" below)... (p. 4-2)

6.3

The Delta Protection Act, originally enacted in 1992, established the Commission and the LURMP as a comprehensive resource management plan for the Primary Zone. The Delta Reform Act of 2009 created the Delta Stewardship Council and required the preparation of the *Delta Plan*, which applies to the Primary Zone as well as the Secondary Zone and Suisun Marsh. The Commission's authority over "development" projects in the Primary Zone (Public Resources Code Section 29723(a)) is based on the Delta Protection Act and is enforced through consistency with the LURMP.

Thank you for the opportunity to provide input. Please contact Blake Roberts, Senior Environmental Planner, at (916) 375-4237 for any questions regarding the comments provided.

Sincerely,

Erik Vink
Executive Director

cc: Don Nottoli, Sacramento County Board of Supervisors

RTC 6.1 (EIS/EIR) –The County appreciates the Commission’s thoughtful comments.

RTC 6.2 (EIS/EIR) – The SSHCP includes mechanisms for preservation of existing public lands and private lands. Incentives for landowners to preserve habitat would be provided through purchase of conservation easements, as explained in Section 9 of the SSHCP.

RTC 6.3 (EIS/EIR) –The text from Section 4.1.1.2 of the Final EIS/EIR has been revised as follows:

The Delta Protection Act, **originally enacted in 1992, established the Delta Protection Commission and designated the Land Use and Resource Management Plan as a comprehensive resource management plan for the approximately 500,000-acre Primary Zone.** identifies a Primary Zone of approximately 500,000 acres where a comprehensive resource management plan, the Delta Plan (Delta Stewardship Council 2013), is applied (see the discussion under the heading “Delta Reform Act of 2009 and the Delta Plan” below).

LETTER 7 DELTA STEWARDSHIP COUNCIL
(SSHCP AND EIS/EIR)



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September 5, 2017

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Via email: smithtodd@saccounty.net

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Skip Thomson
Ken Weinberg
Michael Gatto

Executive Officer
Jessica R. Pearson

RE: Draft Environmental Impact Statement/Environmental Impact Report for the South Sacramento Habitat Conservation Plan, SCH#2008062030

Dear Mr. Smith:

Thank you for the opportunity to review and comment on the Draft Environmental Impact Statement/Environmental Impact Report (Draft EIS/EIR) for the South Sacramento Habitat Conservation Plan (SSHCP). The Delta Stewardship Council (Council) applauds Sacramento County's (County) efforts to improve certainty and efficiencies in environmental permitting and protection of open space, habitat, and agriculture. We support the intent to develop a comprehensive plan to ensure the long-term viability of 28 plant and wildlife species.

7.1

The Council appreciates and recognizes many of the additions made in response to our previous comment letter, dated December 2013. Below we offer additional information on the Delta Plan Consistency Certification process that we hope will be useful. We also highlighted several Delta Plan regulatory policies that are commonly relevant to habitat restoration projects and provided a few recommendations. We anticipate that this work can be a foundation upon which the County prepares a Delta Plan consistency certification. As the SSHCP is implemented over the 50-year permit term, the Council recommends that any covered activities located within the Legal Delta or the Preserve Planning Unit (PPU 6) are consistent with the Delta Plan. These activities should consider the guidance provided below with regard to Consistency Determination.

7.2

"Coequal goals" means the two goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The coequal goals shall be achieved in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place."

– CA Water Code §85054

Todd Smith, Acting Environmental Coordinator
 County of Sacramento
 Office of Planning and Environmental Review
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Comments on the Draft EIS/EIR

The Draft EIS/EIR identifies that SSHCP overlaps with roughly 40,980 acres of the Legal Delta. Although the majority of covered activities will be implemented within the Urban Development Area (UDA), the Draft EIS/EIR also defines two categories of covered activities (Rural Transportation projects and Recycled Water projects) that will be constructed outside the UDA, as well as covered activities related to the management and improvement of species habitats within the proposed Preserve Systems.

7.3

We appreciate that the Draft EIS/EIR (Appendix D) defines mitigation and avoidance measures for covered species and habitat that will be affected by the covered activities identified in the SSHCP. Table 8-8 displays the direct impacts of covered activities for each natural land cover type outside the UDA, totaling 1,438 acres. Section 7.2.3.2 states that outside the UDA, associated infrastructure and transportation improvement projects would directly impact the natural land cover in parts of the Lower Cosumnes River.

The Delta Plan established six habitat restoration areas in the Delta, of which the Cosumnes-Mokelumne Confluence, is located within the SSHCP Plan Area. Delta Plan Policy ER P3 calls for protecting opportunities to restore habitat in these areas. We recommend that the Final EIR analysis include the impact of any urbanization or permanent agricultural easements on the opportunity to restore priority habitat areas within the Delta Plan's Cosumnes-Mokelumne Confluence area. Potential mitigation measures could include elevating facilities so that water can flow underneath to allow for future restoration of habitats depended on tides or periodic flooding, or locating facilities at the edge of the restoration area, rather than in the middle, to improve opportunities for restoring habitat connectivity. For more information, please refer below to the section "Restore Habitat in a Manner Consistent with the Delta Plan."

7.4

We appreciate that the Draft EIS/EIR quantifies the areal extent of the proposed UDAs and discusses any potential impacts to agricultural resources. We recognize that under the Proposed Actions/Proposed Project Alternative that 1,900 acres of urban development would not be "displaced" outside the UDA. However, as discussed in section 4.2.3.1, "both inside and outside of the UDA, other preserves are needed to complete the Preserve System and would be acquired by preserving under-developed or agricultural lands." Additionally, Elk Grove's Sphere of Influence, as part of the UDA, slightly overlaps with the Legal Delta. Please review the Delta Plan land use policies discussed in more detail below in the section "Land Use Conflicts".

7.5

Under 7.2.3.2 of the Draft EIS/EIR, "Outside the UDA, associated infrastructure and transportation improvement projects would directly impact 1,438 acres of natural land cover types, primarily parts of Lower Cosumnes River." The Delta Plan contains three policies that relate to flood protection, encroachment in floodways, and encroachment on floodplains, which should be considered in this analysis. Please refer below to the section "Hydrology" for more detail on these policies.

7.6

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 County of Sacramento
 Office of Planning and Environmental Review
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In addition, while we appreciate that the Delta Reform Act's regulatory framework is added under the *Affected Environmental/Environmental Setting 4.1.1.2 State Regulations and Policies*, we recommend that you include the Delta Plan Policies that reflect the sections below in the forthcoming final EIS/EIR as part of the "Affected Environmental/Environmental Setting" sections for:

- Chapter 6 – Agriculture
- Chapter 7 – Hydrology
- Chapter 8 – Natural Land Cover Habitats, and Associated Plant and Animal Communities
- Chapter 9 – Special Status Species Including HCP Covered Species
- Chapter 10 – Aquatic Resources

7.7

Delta Plan Covered Actions and Consistency Certification

The mission of the Council is to promote the coequal goals of water supply reliability and ecosystem restoration in a manner that protects and enhances the unique values of the Delta as an evolving place (Water Code section 85054). The Council has a legally enforceable management framework for the Delta and Suisun Marsh called the Delta Plan, which applies a common sense approach based on the best available science to achieve the coequal goals. The Council was granted specific regulatory and appellate authority under the Delta Reform Act over certain actions that take place in whole or in part in the Delta or Suisun Marsh. The Council exercises that authority through the development and implementation of the Delta Plan.

According to the Delta Reform Act, state or local agencies approving, funding or carrying out projects, plans, or programs, upon determining their project is a "covered action" subject to regulations of the Delta Plan, must certify consistency of the project with the Delta Plan policies (Water Code section 85225). Based on the plan description, Council staff believes your plan meets the definition of a covered action. Generally, the California Environmental Quality Act (CEQA) lead agency, which in this case would be Sacramento County, would complete the Certification of Consistency.

7.8

Again as projects under the SSHCP are further developed and implemented over the 50-year permit term, future project activities should consider the guidance provided in this document with regard to Consistency Determination. Council staff looks forward to working with, and providing early consultation to, project proponents as these projects are developed. As previously stated, the Council appreciates that the Draft EIS/EIR appears to address many of the policies highlighted from the December 2013 comment letter. To better support your Certification of Consistency, we encourage you to review our recommendations and revisit the following Delta Plan policies before filing:

7.9

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Mitigations Measures: Delta Plan Policy **G P1** (23 Cal. Code Regs. section 5002) requires that actions not exempt from CEQA and subject to Delta Plan regulations must include applicable feasible mitigation measures consistent with those identified in the Delta Plan Program EIR or substitute mitigation measures that are equally or more effective. Mitigation Measures in the Delta Plan's Mitigation and Monitoring Report Program is available at: http://deltacouncil.ca.gov/sites/default/files/documents/files/Agenda%20Item%206a_attach%202.pdf 7.10

Best Available Science and Adaptive Management: Delta Plan Policy **G P1** also states that actions subject to Delta Plan regulations must document use of best available science as relevant to the purpose and nature of the project. The regulatory definition of "best available science" is provided in Appendix 1A of the Delta Plan <http://deltacouncil.ca.gov/sites/default/files/2015/09/Appendix%201A.pdf>. 7.11

Delta Plan Policy **G P1** also requires that ecosystem restoration and water management covered actions include adequate provisions for continued implementation of adaptive management, appropriate to the scope of the action. This requirement is satisfied through A) the development of an adaptive management plan that is consistent with the framework described in Appendix 1B of the Delta Plan <http://deltacouncil.ca.gov/sites/default/files/2015/09/Appendix%201B.pdf> and B) documentation of adequate resources to implement the proposed adaptive management plan. Since the SSHCP will be primarily funded through development fees, then it is expected that funding of monitoring and adaptive management for habitat restoration and creation of projects will be assured. 7.12

We recommend that the County's template for restoration plans require that such projects have an adaptive management strategy consistent with the framework in Appendix 1B of the Delta Plan. This could help to streamline consultation and consistency determination for projects implemented under the SSHCP. 7.13

The Delta Science Program's Adaptive Management Liaisons are available to provide further consultation and guidance to help the County with the appropriate application of best available science and adaptive management. Please contact Darcy Austin (Darcy.Austin@deltacouncil.ca.gov) of the Delta Science Program.

Land Use Conflicts: Policies related to locating new urban development wisely, and respecting local land use when siting water or flood facilities or restoring habitats. Delta Plan Policy **DP P1** (23 Cal. Code Regs. section 5010) states that new residential, commercial, or industrial development is permitted outside the urban boundaries only if it is consistent with the land use designated in the relevant county general plan. It is intended to strengthen existing Delta communities while protecting farmland and open space, providing land for ecosystem restoration needs, and reducing flood risk. Delta Plan Policy **DP P2** (23 Cal Code Regs. 7.14

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section 5011) states that plans for ecosystem restoration must be sited to avoid or reduce conflicts with existing uses when feasible. 7.14 cont'd

Restore Habitat in a Manner Consistent with the Delta Plan: As mentioned above, we recommend that the Final EIR analysis include the impact to these types of habitat within the Delta Plan's Consumnes-Mokelumne Confluence area¹. Delta Plan Policy ER P2 (23 Cal. Code Regs. section 5006) states that habitat restoration must be consistent with Appendix 3 of the Delta Plan regulations and that restoration will occur at appropriate elevations. Appendix 3, which is an excerpt from the 2011 Draft Ecosystem Restoration Program Conservation Strategy, provides a vision for a mosaic of different habitat types within the Delta including open water, subsided lands, floodplains, and upland areas. It also includes a vision for use of Delta agricultural lands to support special-status wildlife species. 7.15
<http://deltacouncil.ca.gov/sites/default/files/2015/09/Appendix%203.pdf>

Further guidance is provided by Delta Plan Recommendation ER R2, which states, for the Consumnes-Mokelumne Confluence, "Allow these unregulated and minimally regulated rivers to flood over their banks during winter and spring frequently and regularly to create seasonal floodplains and riparian habitats that grade into tidal marsh and shallow subtidal habitats." 7.16

Delta Plan Policy ER P3 (23 Cal. Code Regs. section 5007) requires that, within the priority habitat restoration areas (PHRAs) depicted in Appendix 5 of the Delta Plan, significant adverse impacts to the opportunity to restore habitat must be avoided or mitigated. Much of the overlap between the Legal Delta and the SSHCP Plan Area includes the Consumnes-Mokelumne Confluence PHRA. <http://deltacouncil.ca.gov/sites/default/files/2015/09/Appendix%205.pdf> 7.17

Hydrology: As described above, please consider Delta Plan Policy RR P2 (23 Cal. Code Regs. section 5013) which requires flood protection for residential development in rural areas, Policy RR P3 (23 Cal. Code Regs. section 5014) restricts encroachment in floodways, and Policy RR P4 (23 Cal. Code Regs. section 5015) restricts encroachments in floodplains, including the Cosumnes-Mokelumne Confluence². Policy RR P4 states that "no encroachment shall be allowed or constructed unless it can be demonstrated by appropriate analysis that the encroachment will not have a significant impact on floodplain values and functions." 7.18

Invasive Species: Delta Plan Policy ER P5 (23 Cal. Code Regs. section 5009) calls for avoiding introductions and habitat improvements for invasive nonnative species or mitigating these potential impacts in a manner that appropriately protects the ecosystem. Analysis on this matter should address both nonnative wildlife species as well as terrestrial and aquatic weeds. To the maximum extent practicable, design of habitat restoration and creation actions should avoid or minimize effects that would lead to the establishment of nonnative invasive species 7.19

¹ The boundaries of the priority habitat restoration areas are depicted in Appendix 5 of the Delta Plan regulations.

² RR P4 refers to the "Cosumnes River-Mokelumne River Confluence, as defined by the North Delta Flood Control and Ecosystem Restoration Project (McCormack-Williamson), or as modified in the future by the Department of Water Resources or U.S. Army Corps of Engineers."

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populations on site before relying upon mitigation measures. In the event that mitigation is warranted, those mitigation and minimization measure should be equally or more effective with the Delta Plan Mitigation Measures 4-1.

http://deltacouncil.ca.gov/sites/default/files/documents/files/Agenda%20Item%206a_attach%202.pdf.

7.19
 cont'd

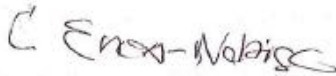
Finally, the level of detail included in the SSHCP certification filing should be consistent with the programmatic nature of the document. As specific projects or proposed activities which fall within whole or part of the Legal Delta are scoped and implemented, they would also seek consistency following the Council's guidelines. A way to better support the process is to include the information needed to support the certification of Delta Plan consistency within the EIS/EIR, as noted above, potentially including a draft certification as an appendix to the Final EIS/EIR.

7.20

Closing Comments

The Council is supportive of the SSHCP and its efforts to promote recovery of listed species and natural landscapes. We would like to work with you to ensure the consistency of the SSHCP with the Delta Plan and we look forward to continued coordination to further our related efforts. We are available to continue discussions about how to ensure that your Plan is consistent with the Delta Plan as you proceed in the next stages of your Plan approval process. I encourage you to contact my staff Ron Melcer (Ronald.Melcer@deltacouncil.ca.gov) or Megan Brooks (Megan.Brooks@deltacouncil.ca.gov) with your questions, comments, or concerns.

Sincerely,



Cassandra Enos-Nobriga
 Deputy Executive Officer
 Delta Stewardship Council

RTC 7.1 (EIS/EIR) – Comment noted. The County appreciates the Council’s thoughtful comments.

RTC 7.2 (EIS/EIR) – Refer to responses to Comments 7.3 through 7.19.

RTC 7.3 (EIS/EIR) – Comment noted. The Draft EIS/EIR does state that Rural Transportation Projects and Recycled Water projects would be constructed outside the UDA. The Rural Transportation Projects are shown in Figure 5-5 of the SSHCP, and Recycled Water projects are shown on Figure 5-6 of the SSHCP. Note that no Recycled Water projects are proposed within the legal Delta.

RTC 7.4 (EIS/EIR) – Comment noted. Although the SSHCP includes the Delta Plan’s Cosumnes-Mokelumne Confluence area, the SSHCP does not cover urban development in that area. Rural Transportation Projects within the legal Delta will be subject to the requirements of the Delta Plan, including the policies noted in Section 4 of the Draft EIS/EIR. Section 7.5.2 of the SSHCP describes the expected SSHCP Preserve System in PPU 6, where a portion of the Cosumnes-Mokelumne Confluence area overlaps with the Planning Area. None of the Preserve System concepts considered by the Plan Permittees have included preservation within the Delta Plan’s Cosumnes-Mokelumne Confluence area. The Preserve design focus for PPU 6 is preserving existing agricultural lands that provide habitat for several of the broad-ranging Covered Species, most notably Swainson’s hawk and greater sandhill crane. Policy ER-P3 has been added to Section 4.1.1.2 of the Draft EIS/EIR as a relevant policy under “Delta Reform Act of 2009 and the Delta Plan”:

ER P3. Protect Opportunities to Restore Habitat

- a. Within the priority habitat restoration areas depicted in Appendix 5 of the Delta Plan, significant adverse impacts to the opportunity to restore habitat as described in section 5006, must be avoided or mitigated.**
- b. Impacts referenced in subsection (a) will be deemed to be avoided or mitigated if the project is designed and implemented so that it will not preclude or otherwise interfere with the ability to restore habitat as described in section 5006.**
- c. Impacts referenced in subsection (a) shall be mitigated to a point where the impacts have no significant effect on the opportunity to restore habitat as described in section 5006. Mitigation shall be determined, in consultation with the California Department of Fish and Wildlife, considering the size of the area impacted by the covered action and the type and value of habitat that could be restored on that area, taking into account existing and proposed restoration plans, landscape attributes, the elevation map shown in Appendix 4, and other relevant information about habitat restoration opportunities of the area.**
- d. For purposes of Water Code section 85057.5(a)(3) and section 5001(j)(1)(E) of this Chapter, this policy covers proposed actions in the priority habitat restoration areas depicted in Appendix 5 of the Delta Plan. It does not cover proposed actions outside those areas.**

RTC 7.5 (EIS/EIR) – The SSHCP would indeed include acquisition of preserves on existing agricultural land or rangeland. The impacts of these preserve acquisitions on agricultural land use, including potential limitations on the types of future agricultural use on those preserves, are analyzed extensively in Section 6 of the Draft EIS/EIR. Regarding Elk Grove’s proposed SOI expansion, the Draft EIS/EIR considered those expansions as part of the cumulative environment. The overlap of the UDA with the Legal Delta is noted in the Draft EIS/EIR in Section 4, Land Use. Refer to response to comment 7.14 regarding other Delta Plan land use policies.

RTC 7.6 (EIS/EIR) – Refer to response to Comment 7.18.

RTC 7.7 (EIS/EIR) – Comment noted. The Delta Plan policies noted in the subsequent comments have been added to Chapters 6, 7, 8, 9, and 10 of the Final EIS/EIR, as noted in responses to Comments 7.11, 7.14, 7.15, 7.16, 7.17, 7.18 and 7.19.

RTC 7.8 (EIS/EIR) – Comment noted. The County has communicated with the Delta Stewardship Council and will provide the necessary documentation for a Certification of Consistency regarding the SSHCP.

RTC 7.9 (EIS/EIR) – Comment noted. Future Covered Activity projects will comply with the Delta Plan, taking into account the guidance provided in this comment letter and the description of the regulatory environment provided in the Final EIS/EIR.

RTC 7.10 (EIS/EIR) – Comment noted. Covered Activity projects located within the Delta Plan area that are not exempt from CEQA will be subject to a Certification of Consistency with the Delta Plan, including an analysis of how implementation of the SSHCP AMMs and Conservation Strategy by the project are equally or more effective. Sections 10.2.1 and 10.2.3 of the Final SSHCP have been revised to state that covered activity projects would be subject to consistency determination with the Delta Plan on a project-level basis.

RTC 7.11 (EIS/EIR) – The Draft SSHCP uses the best available science in assessing impacts of future Covered Activities and the mitigation provided by the Conservation Strategy. For example, as described in Section 3.4 of the Draft SSHCP, the Plan Permittees worked with local species experts and wildlife agency biologists to define and map Covered Species suitable habitat in this Plan Area by using the best available information about the life history and biology of each Covered Species and locations in the Plan Area known to support the species or where the species has been observed. The application of the best available science in the development of the SSHCP is consistent with the requirements of Delta Plan Policy G P1. Delta Plan Policy G P1 has been added to Section 4.1.1.2 of the Final EIS/EIR as a relevant policy under “Delta Reform Act of 2009 and the Delta Plan”:

Delta Plan Policy G P1. Delta Plan Policy G P1 requires that actions not exempt from CEQA and subject to Delta Plan regulations must include applicable feasible mitigation measures consistent with those identified in the Delta Plan EIR or substitute mitigation measures that are equally or

more effective. Delta Plan Policy G P1 also states that actions subject to Delta Plan regulations must document use of the best available science as relevant to the purpose and nature of the project. Finally, Delta Plan Policy G P1 requires that ecosystem restoration and water management covered actions include adequate provisions for continued implementation of adaptive management, appropriate to the scope of the action. This requirement is satisfied through A) the development of an adaptive management plan that is consistent with the framework described in Appendix 1B of the Delta Plan, and B) documentation of adequate resources to implement the proposed adaptive management plan.

RTC 7.12 (EIS/EIR) – The Proposed Action Alternative (SSHCP) requires adaptive management through implementation of the SSHCP Preserve System Monitoring and Management Program, as described in Section 8.3.4 of the Draft SSHCP. This adaptive management approach is consistent with the requirements of Delta Plan Policy G P1. The funding plan and assurances for implementation of the SSHCP, including adaptive management, were described in Section 12.3.3 of the Draft SSHCP.

RTC 7.13 (SSHCP and EIS/EIR) – Comment noted. The Plan Preparers have met with the Delta Stewardship Council during preparation of the SSHCP and were aware of the referenced Delta Plan adaptive management framework. The SSHCP Preserve System Monitoring and Management Program (described in Chapter 8 of the SSHCP) would be consistent and complimentary.

RTC 7.14 (EIS/EIR) – The Proposed Action Alternative (SSHCP) is intended to facilitate location of new urban development in accordance with local land use authority planning. Delta Plan Policies DP P1 and DP P2 have been added to Section 4.1.1.2 of the Draft EIS/EIR as relevant policies under “Delta Reform Act of 2009 and the Delta Plan”:

Delta Plan Policies DP P1 and DP P2. Delta Plan Policy DP P1 states that new residential, commercial or industrial development is permitted outside the urban boundaries only if it is consistent with the land use designated in the relevant county general plan. It is intended to strengthen existing Delta communities while protecting farmland and open space, providing land for ecosystem restoration needs, and reducing flood risk. Delta Plan Policy DP P2 states that plans for ecosystem restoration must be sited to avoid or reduce conflicts with existing uses when feasible.

RTC 7.15 (SSHCP and EIS/EIR) – Comment noted. The SSHCP Conservation Strategy in the EIS/EIR Proposed Action Alternative does not envision habitat restoration projects within the Cosumnes-Mokelumne Confluence Area because the lands within that area are not consistent with the Conservation Actions that guide habitat establishment/ reestablishment in the SSHCP (refer to Table 7-1 in the Final SSHCP). However, the Implementing Entity will ensure that if habitat re-establishment/ establishment projects do occur within that area, they will consistent with the Delta Plan regulations. Sections 10.2.1 and 10.2.3 of the Final SSHCP have been revised to state that covered activity projects would be subject to consistency determination with the

Delta Plan on a project-level basis. Delta Plan Policy ER P2 been added to Section 4.1.1.2 of the Final EIS/EIR as a relevant policy under “Delta Reform Act of 2009 and the Delta Plan”:

Delta Plan Policy ER P2. Delta Plan Policy ER P2 states that habitat restoration must be consistent with Appendix 3 of the Delta Plan regulations and that restoration will occur at appropriate elevations.

RTC 7.16 (EIS/EIR) – Delta Plan Policy ER R2 has been added to Section 4.1.1.2 of the Draft EIS/EIR as a relevant policy under “Delta Reform Act of 2009 and the Delta Plan”:

Delta Plan Policy ER R2. This policy states, for the Cosumnes-Mokelumne Confluence: “Allow these unregulated and minimally regulated rivers to flood over their banks during winter and spring frequently and regularly to create seasonal floodplains and riparian habitats that grade into tidal marsh and shallow subtidal habitats.”

RTC 7.17 (EIS/EIR) – Delta Plan Policy ER P3 has been added to Section 4.1.1.2 of the Draft EIS/EIR as a relevant policy under “Delta Reform Act of 2009 and the Delta Plan”:

Delta Plan Policy ER P3. This policy requires that, within the priority habitat restoration areas depicted in Appendix 5 of the Delta Plan, significant adverse impacts to the opportunity to restore habitat must be avoided or mitigated. Much of the overlap between the Legal Delta and the SSHCP Plan Area includes the Cosumnes-Mokelumne Confluence PHRA.

RTC 7.18 (EIS/EIR) – Delta Plan Policies RR P2, RR P3, and RR P4 have been added to Section 4.1.1.2 of the Final EIS/EIR as relevant policies under “Delta Reform Act of 2009 and the Delta Plan”:

Delta Plan Policies RR P2, RR P3, and RR P4. Policy RR P2 requires flood protection for residential development in rural areas. Policy RR P3 restricts encroachment in floodways. Policy RR P4 restricts encroachment in floodplains, including the Cosumnes-Mokelumne Confluence. Policy RR P4 specifically states that “no encroachment shall be allowed or constructed unless it can be demonstrated by appropriate analysis that the encroachment will not have a significant impact on floodplain values and functions.”

RTC 7.19 (EIS/EIR) – Preserve Management Plans under the SSHCP, as described in Chapter 8 of the Final SSHCP, would include specific prescriptions to avoid introduction of non-native species and remove those that are already present. Delta Plan Policy ER P5 has been added to Section 4.1.1.2 of the Final EIS/EIR as a relevant policy under “Delta Reform Act of 2009 and the Delta Plan”:

Delta Plan Policy ER P5. Policy ER P5 calls for avoiding introductions and habitat improvements for invasive nonnative species or mitigating these potential impacts in a manner that appropriately protects the ecosystem.

Analysis on this matter should address both nonnative wildlife species as well as terrestrial and aquatic weeds. To the maximum extent practicable, design of habitat restoration and creation actions should avoid or minimize effects that would lead to the establishment of nonnative invasive species populations on site before relying on mitigation measures. In the event that mitigation is warranted, those mitigation and minimization measures should be equally or more effective than the Delta Plan mitigation measure 4-1

RTC 7.20 (EIS/EIR) –The Plan Permittees have not included a draft certification as an appendix to the Final EIS/EIR. However, during SSHCP preparation the requirements of the Delta Plan were taken into consideration, and EIS/EIR Proposed Alternative (SSHCP) is generally consistent with the Delta Plan. Therefore, for those few SSHCP Covered Activities that would occur with the Legal Delta, consistency should not require substantial additional effort beyond that specified in the SSHCP Conservation Strategy.

**LETTER 8 EARL SEABERG
(SSHCP)**



Comment Card

Thank you for your interest in the Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the proposed South Sacramento Habitat Conservation Plan. The space below may be used to provide comments on the Draft EIS/EIR. Please focus your review on the sufficiency of the document regarding the identification of environmental impacts and methods to avoid or mitigate those impacts.

WETLAND EXCHANGE REMOVES HABITAT | SPECIES FROM
LOCAL NEIGHBORHOODS WHEN IN-FILL PROJECTS OCCUR. THIS
LOCAL
REDUCES ~~FOR~~ BIO-DIVERSITY.

8.1

WOULD YOU LIKE TO BE ADDED TO THE SSHCP MAILING LIST? ☒ Yes ☐ No

If so, please provide your contact information.

Name: EARL SEABERG

Title and Organization/Business (if applicable): _____

Email address: ESEABERG75@GMAIL.COM

Mailing address: 7108 POLO CROSSE AVE., SACRAMENTO CA 95829

Phone: _____

Please submit your comments to a project representative or fold this form in half, seal with tape, and mail to: County of Sacramento, Office of Planning and Environmental Review, ATTN: Environmental Coordinator, 827 7th Street, Room 225, Sacramento, CA 95814

RTC 8.1 (SSHCP) –The SSHCP would allow planned urban development in the UDA and infrastructure projects outside the UDA to proceed, while preserving in perpetuity key habitats in the UDA and extensive areas outside the UDA. This balance was identified by the plan preparers as the most effective way to conserve the covered species while allowing the development planned in the General Plans of Sacramento County, Rancho Cordova, and Galt to proceed. Some take of wetlands will occur within the SSHCP's UDA and some of this take will occur as a result of infill projects. However, the SSHCP Conservation Strategy is designed to maintain species and habitat biodiversity. See Chapter 7 of the SSHCP.

LETTER 9 **ENVIRONMENTAL COUNCIL OF SACRAMENTO,
HABITAT 2020, THE SIERRA CLUB, THE INSTITUTE
FOR ECOLOGICAL HEALTH, AND SAVE OUR
SANDHILL CRANES
(SSHCP AND EIS/EIR)**



September 5, 2017

Attention: Rich Radmacher, Senior Planner
Sacramento County Planning Department
827 7th Street, Sacramento, CA 95814

Delivered via email to: radmacherr@saccounty.net

Comments on the public draft of the South Sacramento Habitat Conservation Plan

These comments are presented on behalf of the Environmental Council of Sacramento (ECOS), Habitat 2020, the Sierra Club, the Institute for Ecological Health, and Save Our Sandhill Cranes.

ECOS' mission is to achieve regional and community sustainability and a healthy environment for existing and future residents. Its membership organizations include: 350 Sacramento, Breathe California of Sacramento-Emigrant Trails, Friends of Stone Lakes National Wildlife Refuge, International Dark-Sky Association, Preservation Sacramento (formerly known as Sacramento Old City Association), Resources for Independent Living, Inc. (RIL), Sacramento Audubon Society, Sacramento Housing Alliance (SHA), Sacramento Natural Foods Co-op, Sacramento Valley Chapter of the California Native Plant Society, Sacramento Vegetarian Society, Save Our Sandhill Cranes (SOS Cranes), Save the American River Association (SARA), SEIU Local 1000 (Environmental Committee), Sierra Club Sacramento Group, The Green Democratic Club of Sacramento, and the Wellstone Progressive Democrats of Sacramento.

Habitat 2020 (H2020) is a coalition of environmental organizations collaborating on common issues in and affecting the Sacramento region. Members of Habitat 2020 include the Sacramento Audubon Society, California Native Plant Society, Friends of the Swainson's Hawk, Save the American River Association, Save Our Sandhill Cranes, Sierra Club Sacramento Group, Friends of Stone Lakes National Wildlife Refuge and the Sacramento Area Creeks Council.

The Institute for Ecological Health promotes the conservation of rural landscapes, regional conservation plans, Smart Growth, an end to urban-suburban sprawl, and a Land Ethic for the 21st Century.

1

The Sierra Club is arguably the preeminent grassroots environmental group in the United States. Its mission is *to explore, enjoy, and protect the wild places of the earth; to practice and promote the responsible use of the earth's ecosystems and resources; to educate and enlist humanity to protect and restore the quality of the natural and human environment; and to use all lawful means to carry out these objectives.*

Save Our Sandhill Cranes (SOS Cranes) is a non-profit organization dedicated to maintaining open-space habitat and the conservation of the California Central Valley's Sandhill Crane populations through education, outreach, and community activism.

Members of ECOS, Habitat 2020, the Institute for Ecological Health, Save Our Sandhill Cranes, and the Sierra Club have participated as stakeholders in the preparation of the SSHCP for many years, some since its inception over two decades ago. This included years of work by the Biological Subcommittee developing major components of the HCP. They were also consistent participants in the Regulatory Agency Working Group meetings during the final years of Plan preparation. These comments on the SSHCP, and all of its appendices, reflect those long years of involvement and participation in the preparation of this HCP. We are grateful to have been included in the process of preparation and for the willingness of the Plan preparers and the regulatory agencies to hear out our concerns and suggestions along the path of Plan preparation. Many of those concerns and suggestions were addressed and are clearly evident within this draft of the Plan. These comments are intended to further strengthen the Plan. And, this letter endorses the comments by the Friends of the Swainson's Hawk.

9.1

All comments pertain to the published draft of the SSHCP, and its appendices, and only share a nexus with the DEIR/S analysis where the DEIR/S might need to be adjusted to accommodate changes in the SSHCP. Efforts have been made to provide accurate pagination citations to aid in locating and addressing the comments. Given the structure of the document, where information is presented with different focuses (e.g. habitat and cover type working down to species specific.), and is also imbedded within multiple different inter related levels of goals, objectives and actions that often overlap (e.g. that pertain to and address impacts to different habitat resources and that are recycled and added to for addressing species impact), efforts were not made to locate every place where a comment or recommendation might pertain. And, the inherent difficulty in working with such an interconnected document is acknowledged.

9.2

The comments included in this letter are not necessarily presented in the order of importance or priority, and they fall into a couple of general categories: large overarching concerns that are not particularly imbedded in one aspect of the Plan or its corresponding environmental documentation (these concerns do not necessarily have explicit pagination locations), and more specific concerns related to language or the lack of language in the Plan. In some instances these categories overlap.

9.3

2

Efforts were made to house comments within the context of a particular chapter of the Plan where possible and appropriate. Recommendations for changing or adding language will be highlighted by the use of a bold sequentially ordered number in blue, followed by a blue asterisk (*), to clearly identify them.

9.3
cont'd

THE VERNAL POOL COMPROMISE THAT IS THE SSHCP

And a brief little history lesson

At its very root, the SSHCP is a compromise for vernal pools. On the one hand there is the current strategy of trying to milk the maximum project-by-project mitigation out of projects that will take vernal pool resources inside the already constrained landscape inside the UDA. On the other, would be the effort to try and protect entire extant vernal pool landscapes outside the UDA while it is still possible, and before those resources have to contend with the constraints already squeezing those inside the UDA. The SSHCP is constructed on the latter being the better approach, and this was not an arbitrary decision.

When Plan preparation completely stalled out five to six years ago, very frank discussions were held about this compromise, and about which approach made the most sense for the long-term sustainability of vernal pool resources in our region. To no small degree, the environmentalists involved in these discussions helped push the point that the opportunity to save a large intact vernal pool landscape outside the UDA was too important an opportunity to pass up. A compromise was reached whereby additional vernal pools would be saved, beyond those already agreed upon inside the UDA, in hard line and flexible preserves. As well, it was recognized that there has already been some significant degradation outside the UDA of the very vernal pool resources that the Plan was hoping to save in this compromise. It was fairly clear that if the current rate of degradation continued, it might come to pass that there would not be sufficient or adequate vernal pool resources left to have made the compromise worthwhile. And from this emerged the idea of the grading ordinance, which was supposed to dramatically limit the chances that significantly more resources would be destroyed outside the UDA because, for new ground disturbances (basically non-ongoing farming disturbances), it would be necessary to get a grading permit from the County of Sacramento.

9.4

Politics being what they are, the grading ordinance morphed into a wetlands protection ordinance, which is supposed to do three new things: 1.) It requires the County to take a more active role in protecting wetland resources; 2.) It requires landowners to mitigate for any intentional or accidental destruction of wetland resources; 3.) It requires a permit for any disturbance to wetlands or their micro watershed. The ordinance is better than nothing and it is good that the County is taking a larger role in wetlands protection, but the USACE is already responsible for dealing with illegal destruction of wetland resources, and it is not immediately obvious if having the County involved in enforcement will save additional resources. The hope would be that the requirement of a wetlands disturbance permit would

9.5

stop the destruction around vernal pools from deep ripping for vineyards, or other conversions of grasslands to agriculture. As well, it is great that the ordinance spells out that any destruction will have to be mitigated, which is so costly that it should be a decent deterrent. But, again, this is not actually that different from what the eventual outcome would be with enforcement by USFWS or USACE. And, mitigation for those lost resources would further deplete the remaining vernal pool inventory available for mitigating the impacts of covered activities inside the UDA. So, there can be no real expectation that things will be any different than they currently are in terms of ILLEGAL destruction of wetlands resources, and those that want to pursue the legal destruction of wetlands will still have a process available to do so, albeit a very expensive process.

9.5
cont'd

Whereas it is good that the County will be taking on greater responsibility, there is still the problem of whether or not the vernal pool resources are still going to be there when they are needed for mitigation, and for building the vernal pool preserves outside the UDA. This contention was clearly presented to the Plan preparers and to their credit they came up with the intelligent approach of trying to tie up enough of the vernal pool landscape outside of the UDA before implementation of the Plan begins, using temporary conservation easements tied to options agreements, with the hope that this would result in the problem largely receding. But, this would be contingent on robust language in the option agreement/s, such that the option would still be actionable far enough into the future that those vernal pool resources would still be available for mitigation when needed, rather than having lapsed and not much to show for the effort remaining. 1* The option/s language will be critical to the success of the Plan, and it should undergo an intensive and extensive legal review by the permitting agencies and other interested parties to verify that it is adequate to ensure the success of the Plan.

9.6

The Agricultural-Residential issue

Agricultural-residential development outside the UDA is not a covered activity in the Plan. But obviously the entitlement of this type of development has a direct effect on the inventory for the Plan, and potentially on the creation of the Preserves if entitlements are given within a projected Preserve site. The County will be a permit holder for the Incidental Take Permit, which means they have a vested interest in maintaining inventory and not disrupting Preserve creation. But that does not necessarily mean that success of the Plan will be given priority over allowing new entitlements for new Agricultural-Residential or other development. 2* It would be appropriate, as part of rolling the plan out and making the various changes to the general plans of the ITP permit holders, to add language to the Sacramento County General Plan that addresses this concern - "SSHCP inventory concerns and needs, and preserve creation priorities, will take precedence over new entitlement applications for activities not covered by the SSHCP outside the UDA." It would be a perversion if uncovered activities ended up with priority over covered activities and their mandated mitigations.

9.7

Effects Assessment and Level of Take (Chapter 6)**Overarching Concerns****Effect of pesticide use on agricultural preserve lands**

Consideration was given to the impact of direct application of pesticides on certain specific covered species, but the focus was on timing of application rather than the nature of the pesticides used. As well, sufficient consideration was not given to the ongoing and long term impact of pesticides on prey insects for covered species. Consistent application of pesticides has the undisputed effect of diminishing insect populations in the area of treatment, and if we are relying on agricultural preserves for the sustenance of some of the covered species that routinely consume insects, this is an obvious problem.

9.8

Using label requirements for application of pesticides would not take into account growing evidence of a problem related to a particular pesticide, such as is the current case with neonicotinoids. ^{3*} If preserve management cannot be sufficiently responsive to indications of a potential problem with a specific pesticide being used on an agricultural preserve, then we risk the failure of our agricultural preserves because they might not be able to provide viable functioning habitat for covered species in an increasingly constrained landscape. The game is lost if we cannot rely on the agricultural preserves to provide fully functioning habitat.

9.9

^{4*} Similarly, the effects assessment must consider the ongoing and cumulative impact of pesticide use on the prey insects of the covered species within the agricultural preserves since the vast majority of agricultural preserves will be acquired with conservation easements, which will limit the ability to do more intensive management and directly address the pesticide issue. Looking at the effects of direct pesticide application on covered species, and avoiding that direct application by timing of application, does not address the ongoing and long term impact on the natural insect community that some of the covered species rely on for sustenance.

9.10

A review of the agricultural preserve easement language indicates only language pertaining to timing of application. We fully acknowledge the need to have language in the easements that is flexible enough to allow agriculture to be sustainable on the preserves. But, we also need the flexibility to quickly address potential problems, and not have to wait years before scientific verification proves out an actual problem after real damage was allowed to happen. This somewhat delicate balance needs to be struck if we are going to be able to rely on our agricultural preserves in perpetuity.

9.11

5* As well, measure Road-3 needs to have the full suite of vertebrate covered species, that rely on insects for part of their diet added to the covered species list there (Loggerhead Shrike, White Tailed Kite, Tricolored Blackbird, Greater Sandhill Crane, Western Burrowing Owl and Western Red Bat...).	9.12
6*It might also be useful to avoid use of the word "pesticide" altogether in the Effects chapter in preference to the more specific terms of "insecticide" and "herbicide." This would help to refine what the relevant effects would be for specific covered species.	9.13
Lighting	
Consideration was given to the effect of light on certain covered species, but the consideration and analyses did not extend to the insect prey of those species. Night lighting has been well documented to attract insects. Both construction lighting and urban lighting in developments have the potential to lure insects to them, and in many cases this will result in luring insects off of the preserves. 7* Some consideration and measures or actions need to be provided to avoid disruption of insect prey species on the preserves, and the resultant impact to the covered species that rely upon those prey insects.	9.14
General comment on table numbering	
8* Where are table 6-94 and 6-95? Would it not be better to have sequential numbering without numerical gaps?	9.15
<u>More Specific Concerns</u>	
Night Lighting and Covered Beetle Species	
Table 6-2, (Covered Species Vulnerability to Environmental Stressors, page 6-28), indicates that the Ricksecker's Water Scavenger Beetle and the Valley Elderberry Longhorn beetle are both susceptible to the temporary environmental stress of construction lighting, and the permanent environmental stress of lighting. But for EDGE-8, Table 6-3 (Summary of AMMs that Minimize Effects of Environmental Stressors on Covered Species Modeled Habitats and Individuals, page 6-35), neither of the two covered beetle species are mentioned in the list of covered species affected - only the vertebrates are mentioned. The same holds true for construction lighting in BMP-6 on page 6-37 where again only vertebrate species are considered. We were able to find no scientific literature that indicated that the Ricksecker's Water Scavenger Beetle and the Valley Elderberry Longhorn Beetle are not attracted to night lighting. As well, the insect prey of the Ricksecker's Water Scavenger Beetle would presumably be attracted to night lighting and potentially lured off of the preserves.	9.16

In Table 6-51 (Permanent Indirect Effects on Ricksecker's Water Scavenger Beetle, page 6-205), lighting is presented as having no effect on this species and therefore requires no reduction of an effect despite being listed in Table 6-2 as being a stressor for this species. The same is true for the Valley Elderberry Longhorn Beetle in Table 6-54 (Permanent Indirect Effects on Valley Elderberry Longhorn Beetle, page 6-13), despite also being listed in table 6-2 as an environmental stressor for this species.

9.17

9* The two covered beetle species will need to be added to the list of species targeted in EDGE-8, and 10* tables 6-51 and 6-54 need to be updated to reflect lighting effects. 11* And, LIDs should be considered that address the fact that certain lighting frequencies are very powerful attractants for insects, whereas others are not. 12* And, for the Ricksecker's Water Scavenger Beetle, lighting will need to be considered in the context of wildlife community alterations, and the impact of insect prey for this species being lured off of the preserves by night lighting. This will need to be analyzed and mitigated with new conservation measures and actions.

9.18

9.19

9.20

9.21

Western Burrowing Owl

13* There was no discussion or AMMS offered to deal with rodenticide applications on ground squirrel colonies.

9.22

Rodenticides

14* Language is needed to prohibit use of rodenticides on any preserve. This is an important AMM for all of the raptors, the owl, as well as the American badger. And, certain rodenticides are fatal to raptors, which may eat a rodent made sick by consumption of rodenticide. D-Con is one such rodenticide. There are probably others. We have additional concerns that persons applying pesticides and rodenticides often ignore or do not understand the instructions on the product container regarding avoidance of poisoning non-target critters.

9.23

9.24

Loggerhead Shrike

Lighting and Pesticide Concerns

Table 6-92 (Permanent indirect Effects on Loggerhead Shrike 9, page 6-49) discusses potential indirect lighting effects on the shrike, but no mention or consideration is given to the effects of lighting on the insects that they consume. See earlier general discussion on this concern. Table 6-93 (Temporary Effects to Loggerhead Shrike) also does not consider the impact of construction lighting on insect prey species. 15* These will need to be added to table 6-3 and 16* specific AMMs presented, such as LIDs restricting light frequencies that attract insects.

9.25

9.26

<p>In table 6-3 (Summary of AMMs that Minimize Effects of Environmental Stressors on Covered Species Modeled Habitats and Individuals, page 6-49), measure TCB-5 (Timing of Pesticide Uses and Harvest Timing on Agricultural Preserves) considers only the effect of pesticides being applied directly onto covered species or its prey insects during the breeding season, and not the overall and long term effects of pesticides on the insect prey base that covered species rely upon in the agricultural preserves. In table 6-92 (Permanent Indirect Effects on Loggerhead Shrike, page 6-351) for the environmental stressor of "Pesticides and Fertilizers," the discussion of "Potential Indirect Effect on Species" states that: "Adverse effects on Loggerhead Shrikes, their prey ... from insecticides/pesticides ... will be avoided through the implementation of AMMS." The only AMMs that we were able to locate in Table 6-3 that mention pesticides are ROAD-3 (page 6-36) and TCB-5 (page 6-49), and neither of these AMMs address anything beyond the timing of application of pesticide. As such, the current draft of the SSHCP does not present measures to avoid or minimize the adverse effects associated with pesticide use on Loggerhead Shrike insect prey. 17* A more robust consideration of this issue will need to be added to table 6-3 with specific AMMs to address this issue.</p>	<p>9.27</p> <p>9.28</p>
<p>Tricolored Blackbird</p>	
<p>Lighting and Pesticide Concerns</p>	
<p>The concerns just mentioned for Loggerhead Shrike are identical for the Tricolored Blackbird. As mentioned, TCB-5 (page 6-49) only addresses timing and 18* this will need to be expanded to address longer term effects on prey species and 19* additional AMMs will need to be added to this table.</p>	<p>9.29</p>
<p>Table 6-99 (Permanent Indirect Effects on Tricolored Blackbird, page 3-373) will need to consider effects of lighting on insect prey, and for pesticides (page 3-376). 20* A more robust consideration of this issue will need to be added to table 6-3 with 21* specific AMMs to address this issue as it pertains to effects on insect prey species.</p>	<p>9.30</p>
<p>Greater Sandhill Crane</p>	
<p>The pesticides concerns mentioned for the two passerine species are also relevant for the crane. Table 6-96 (Permanent Indirect Effects on Greater Sandhill Crane, (page 6-364) also mentions relying upon AMMs to deal with pesticides that are not in evidence in the SSHCP beyond timing of application. 22* This will need to be corrected.</p>	<p>9.31</p>
<p>Western Red Bat</p>	
<p>23* For this species there are the same issues again with both lighting and pesticides.</p>	<p>9.32</p>

American Badger

24* There were no suggested AMMs to deal with rodenticides, which are commonly applied to ground squirrel colonies.

9.33

Conservation Strategy (chapter 7)**Overarching Concerns**

Very little regarding specific conservation actions for some species

9.34

It is understood that a major pillar of the conservation strategy for many of the covered species in the SSHCP is to conserve the habitats that they use in order to make up for the habitats that will be taken for urbanization or other projects, which is basically the way most mitigations for CESA and FESA would proceed on a project-by-project basis. The regional approach to Preserve Design in the SSHCP is a significant improvement over project-by-project approaches, though. Given the regional paradigm of the SSHCP, it is also a real opportunity to perform conservation actions that directly benefit individual species. But for many of the covered species presented in Chapter 7, it looks more like the general habitat biological goals and objectives were shoehorned into the species specific biological goals and measurable objectives, whether or not they were exactly relevant, with very little additional added conservation actions that are specific to conserving individual covered species. 25* It would be worthwhile to carefully review the species' specific tables and ensure that all of the habitat goals referred to there are fully relevant, and, where appropriate, 26* add species specific actions to benefit individual species - an example of this might be adding specific perch construction or planting requirements for Loggerhead Shrike as part of Goal 4 (page 7-274).

9.35

Sea level rise and land acquisition priorities in PPU 6

For the southwestern part of the Plan area, PPU 6, we have concerns about the long-term viability of a large percentage of this area because of global climate change and sea level rise. Attached as addenda 1 thru 3 are some draft mapping models that the Nature Conservancy worked on as part of their participation in the Greater Sandhill Crane Technical Advisory Committee (Crane TAC) and the work that committee is doing to craft a conservation strategy for the Sandhill Crane, starting in the geography of the Delta and its immediate surroundings. The Crane TAC is a coalition of state and federal wildlife regulatory agency folks, preserve and refuge managers, crane biologists, environmentalists, and wildlife ecologists. The Crane TAC aims to foster the collaborative long-term conservation and recovery of Greater Sandhill Cranes by: identifying and recommending monitoring and research; providing guidance on habitat protection, restoration, and management; and promoting outreach and education. One priority of the Crane TAC is to develop a Delta region conservation strategy for the Greater Sandhill Crane. The conservation strategy will present recommended actions for private and public landowners to improve

9.36

Greater Sandhill Crane habitat in the Delta region. The methods and recommendations described in the strategy will be incorporated into a statewide conservation strategy for Greater Sandhill Crane and ultimately provide a template for developing a Greater Sandhill Crane recovery plan.

9.36
cont'd

The draft mapping models in the first three addenda attempt to present: current crane usage areas, the areas likely to be impacted by very moderate sea level rise, and the resultant change in areas that should be considered for conservation considering both current usage and threat to low lying areas. The draft models were not adjusted for population density, and incorporating this will likely shift some of the lowland priorities, but it should have no effect on priority of upland areas since these were elevated in priority because of their relative safety in terms of sea level rise and their current proximity to active roost sites.

The concern, illustrated by the attached maps, is that over the 50 year permit period there will likely be a marked rise in sea level in at least PPU 6 of the Plan Area. Global Climate Change is considered in Chapter 11 and we will discuss this also in our review of that chapter. But, for the purposes of Chapter 7's conservation strategy, we feel that it is important to highlight this issue. As well, we have concerns that the 1000 acres of upland (outside of the floodplain) habitat acquisitions for the Greater Sandhill Crane may not be adequate given the severity of the potential loss of already conserved habitat for this species in the lowland areas of the North Delta most susceptible to sea level rise. We are heartened by the fact that the specific language for the upland habitat for the crane states that a MINIMUM of 1000 acres will be acquired, but 27* we also feel that some additional verbiage should be included to indicate that: "the effects of sea level rise on low lying areas of PPU 6 may necessitate a shift over time to greater conservation and acquisition focus on the areas elevated outside of the floodplain." These lands will be significantly more expensive because of the speculative price pressure of potential urbanization, but given the potential prognosis for the long-term viability of lowland conservation areas in the North Delta, they may be the only areas that provide suitable habitat in perpetuity.

9.37

Outdated Species Accounts

Because of the extraordinary amount of time that it took to complete the SSHCP, over two decades, the species accounts, that were current when they were written, have become out of date and there were insufficient funds to update them for this public draft. This is an issue that will be discussed further later on in this comment letter. What is germane to the discussion of Chapter 7 is that the species accounts would typically feed into the Conservation Strategy by providing the important natural history basis for individual species that the conservation strategy is then built off of. We note that, though the species accounts were not updated, the Conservation Strategy has taken advantage of up to date scientific literature and species occurrence data in the construction of the strategy. We looked for occurrences where the strategy suffered from outdated resources and have

9.38

attempted to point those out. There may well be more occurrences that were missed.	9.38 cont'd
Need to update references	
28* Several very important and useful references have become recently available that would be valuable for this Plan and for the Conservation Strategy. A far from exhaustive list would include: The new HCP handbook (Dec. 2016), the revised draft giant garter snake recovery plan, Final California Tiger Salamander recovery plan for central portion of range June 2017), and “Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (May 2017). It will be important to have the advantage of these resources and others.	9.39
A general comment about organization	
29* It might make sense to present the species using current phylogenetic ordering (like in any modern field guide). When searching for Tricolored Blackbirds, one would not expect to see Greater Sandhill Cranes inserted in between the two passerine species (Loggerhead Shrike and Tricolored Blackbird).	9.40
<u>More specific concerns</u>	
Preserve Management Plans HAB1.1	
In preparing the preserve management plan (page 7-26 Action HAB 1-1, 8-149 etc.) for a conservation easement, 30* it is essential to work closely with the landowner. The benefits from working closely with the owner include access to the landowner's knowledge of the property, as well as their possible ideas for helping species. Also it will build trust in the broader agricultural and ranching community and will hopefully result in more landowners being willing to sell easements.	9.41
On page 7-27 in Table 7-1, for Conservation Action HAB 7-1, 31* the vegetation measurement prescribed for Flexible Preserves should be for all non-agricultural preserves, and not just Flexible Preserves. This measurement used consistently across all non-agricultural preserves would provide essential knowledge for preserve management.	9.42
Greater Sandhill Crane	
GS3.1 included in Table 7-1 (Biological Goals, Measurable Objectives, and Conservation Actions, page 7-46) lists the following as a conservation action for the Greater Sandhill Crane: “Replacement of unmodeled agricultural uses such as orchards and vineyards with habitats supporting high prey density (e.g. vole), including grassland, suitable Croplands...” We assume that the reference to voles resulted from an erroneous cutting and pasting from conservation actions from one of the raptor species (Northern Harrier, Swainson's hawk, or White Tailed Kite...).	9.43

<p>Voies are hardly a staple for the Greater Sandhill Crane and 32* it would be far more appropriate to focus on replacing orchards and vineyards with “high value foraging habitat” such as corn or rice.</p>	9.44
<p>This brings up a concern about how “high value foraging habitat” for the Greater Sandhill Crane is defined. For GS5.1 in Table 7.1 (page 7-47), alfalfa is offered as a crop preferred by Greater Sandhill Crane. Presumably this preference attribute was taken from the Appendix B species account for Greater Sandhill Crane (Appendix B 539 -540).</p> <p>Ivey (pers. Comm.) rated agricultural crops in the Plan Area in order of Importance. Rice and corn were rated the highest, followed by winter wheat and irrigated pasture. Alfalfa was the next highest rated crop, followed by hay, dryland pasture and row crops.</p> <p>This ranking of alfalfa is somewhat outdated. Ivey, Herzinger, and Hardt prepared a report for the Nature Conservancy in 2014 titled: “Conservation Priorities and Best Management practices for wintering Sandhill Cranes in the Central Valley of California.” It is included as addendum 4 to this comment letter. On page 40 to 41 of the report it states:</p> <p>Greater rarely used alfalfa in the Delta, in contrast to Lessers, which often favored alfalfa through the winter season (Ivey 2015). Similarly, Greater avoided alfalfa in the Sacramento Valley studies (Littlefield 2002, Shaskey 2012). Although alfalfa appears important to Lessers, this crop should not be considered a major food source for Greater in a conservation-planning context. However, alfalfa should be encouraged in crane landscapes in the San Joaquin Valley, where Lessers dominate the crane flocks.</p> <p>We are concerned that, if alfalfa is considered in the Plan as a “high value foraging habitat” for the Greater Sandhill Crane, it will be all too easy to fold conservation action GS5.1 (page 7-47) of maintaining food plots for the crane into alfalfa cover type preservation requirements for the Swainson’s hawk. 33* GS5.1 should be changed to state that: “Crops should be corn or rice preferentially, and potentially wheat or other suitable crop types depending on the current crop mosaic in the Plan area.”</p> <p>The last sentence of GS5.1 (SSHCP 7-47) states that: “Crops must not be harvested or removed until March.” 34* It would be useful to include some verbiage that crops like corn should be knocked over at a height, and as early as possible in the season, to maximize the benefit and to give access to cranes, while still impeding geese from exploiting the resource.</p> <p>For GS6.1 of Table 7-1(SSHCP page 7-47), the fourth bullet point, listed as a criteria to be considered (and we appreciate that this is a criteria to be considered rather than a requirement, and that it is only one of a list to be considered) for selecting Preserve sites for high value foraging habitat outside of the 100 year floodplain,</p>	9.45
	9.46
	9.47

includes sites “recorded as supporting greater sandhill crane foraging during previous flood events.” We understand the intent of this criteria, but we have three concerns about it. The first concern is that records for crane usage are very limited during flood events and therefore do not necessarily capture where they are foraging during such stochastic events. Secondly, the vast majority of the lands above the floodplain in question are privately held, and it has only been possible to determine if cranes are present in a given area from roadside observations, which would limit the ability to accurately determine if cranes are using a particular parcel. Thirdly, cranes are only likely to use habitat and crop types that are consistent with their natural history regardless of flooding. Parcels that have been planted in crop types that are not suitable for cranes are not going to get usage, and therefore might not be considered even though they would be used for foraging if a more appropriate crop were present.

The easiest answer to these concerns is that the fourth bulleted criteria is only one of six that will be considered, and it is not a strict requirement. And there still remains the difficult assessment of which criteria carry the most weight when making a selection. And arguably, the most important criteria besides, actually being outside of the floodplain, is that it is located within 2 miles of a roost site. But, given the very real likelihood of sea level rise, which is presented in chapter 11, many of the current crane roost sites might not function in perpetuity. If they fail due to sea level rise, presumably a new site will be selected nearby that exhibits the attributes they require for a roost site. This will have the outcome of permanently shifting the Plan area crane population to higher ground which means they would have the options of routinely foraging to the north below the city of Elk Grove, and to the east, continuing past the city of Galt. And this is the real crux of the problem with the fourth bulleted criteria point: how do we address sea level rise using crane natural history and their current usage of the landscape as a guide?

9.47
cont'd

Given that Greater Sandhill Cranes forage within two miles of their roost sites, and that they exhibit extremely high fidelity for their roost sites, immediate individual population range usage adjustments within the Plan area due to roosting loss from sea level rise should be considered in 2-mile increments. What is the nearest suitable viable roost site within two miles and what are its corresponding foraging grounds? If the goal is to shift cranes to habitats they can use in perpetuity as a response to rising sea levels, it would make sense to look at geographic pathways to do that in two-mile increments. The third map attached as an addendum to this comment letter attempts to do that as it highlights upland forage areas within the Plan area that are north as well as east of the current population strongholds for cranes in the north Delta.

It is important to note that the map presents the paradox of the current crane conservation landscape. The historically most important conservation targets for cranes, appropriate habitats within 2 miles of high usage roost sites, are the very same targets that will potentially get the crane into trouble, as sea levels rise, because of their elevations. The map suggests that a balanced approach is

potentially going to be the most appropriate going forward, where efforts continue to be made to preserve habitats that become available within that two mile radius of high usage roost sites, while simultaneously focusing on what it will take to secure permanent long term habitat for the crane outside of the north Delta. The 1000 acres action item outside of the floodplain called for in this Plan is something that can begin to address that shift in conservation priorities for the crane. As such, it is important to provide appropriate guidance in this Plan as to how to make that shift.

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cont'd

The Sandhill Crane TAC, that has already been discussed in the context of overarching concerns for this chapter (and it is important to remember that USFWS and CDFW are on this committee), would be an appropriate committee to help the implementers of the SSHCP to formulate and refine a response to the sea level rise issue that can make the most effective and beneficial use of the required MINIMUM 1000 acres of conservation required for the crane outside of the floodplain. ^{35*} As such, we recommend that an additional bullet point be added that reads: "Coordinate with relevant conservation entities, and the wildlife agencies, to determine the most effective acquisitions to deal with potential geographic shifts for the Greater Sandhill Crane population within the SSHCP Plan area in anticipation of, and as a result of, sea level rise."

9.48

A couple of small corrections in the treatment of Greater Sandhill Cranes in section 7.6.2.26 (starting on SSHCP page 7-277): ^{36*} tenth line from the top on page 7-283 – cranes do not nest in the Plan area and this should be changed to "roosting and foraging;" ^{37*} last paragraph discussion of re-establishment and/or establishment (page 7-282) should focus more upon the importance of waste grain than that of invertebrates since those waste grains make up the majority of the food consumed by cranes in the Plan area – invertebrates should be mentioned, but not to the exclusion of waste grains.

9.49

Tricolored Blackbird

For this species in particular we have the concerns already expressed about pesticide use that can have deleterious effects on their prey insects. Reading all of the conservation actions, and knowing that there are, as of now, insufficient AMMS to deal with this issue, it was difficult to see success as an outcome. ^{38*} More robust insecticide AMMs need to be established for the agricultural preserves if this species is to persist in the Plan area.

9.50

The conservation action TB5.1 in Table 7-1 (Biological Goals, Measurable Objectives, and Conservation Actions, page 7-51) states "Protect at least one extant unprotected occurrence of a nesting colony prior to the take of one nesting colony of tricolored blackbird." The first listed criteria for selecting the extant unprotected nesting colony is that it has supported a minimum of 200 individual tricolored blackbirds during one or both of the surveys for the two years preceding the project application. Having a 200-bird minimum is not a bad thing, but as written, a colony of tens of thousands of blackbirds could be taken and then replaced with a colony of

9.51

300 birds. ^{39*} This criteria should be reworded to require that the protected colony contain a minimum of 200 individual blackbirds, and contain at least an equivalent number of blackbirds as in the colony taken. If this or an equivalent change is not made, abuses of this conservation action will be possible. Similar corrections need to be made to TB5 in Table 7-787 (page 7-288) and the first paragraph of page 7-291.	9.51 cont'd
In the latest statewide survey for which data is available, there were over 22,000 tricolored blackbirds breeding in Sacramento County, most of which were in the SSHCP Plan area. As a result, ^{40*} we need a sufficiently robust conservation strategy, and no large colonies should be taken until we have substantial conservation of large colonies within the preserve system.	9.52
For Objective TB6 of Table 7-87 (Biological Goals and Measurable Objectives Applicable to Tricolored Blackbird) ^{41*} an experimental study of the effects of pesticides on Tricolored Blackbirds should not be a prerequisite before more stringent requirements for pesticide use on agricultural preserves. For insecticides in particular, it does not take an experiment to conclude that eradication of the main prey of the blackbird will have severe negative effects. Dr. Meese at UC Davis has been sounding the alarm bells for some time about the severity of the insecticide problem for the Tricolored Blackbird. Experiments to determine insecticides that do not have such negative consequences on the blackbird would be merited, but this would take a very long time to establish conclusively and should not predetermine or put off insecticide policies for the agricultural preserves.	9.53
Loggerhead Shrike	
On page 7-276 it is stated that: "if large trees are planted in hedgerows, they can provide Loggerhead Shrike perches and potentially nesting habitat." ^{42*} The reference to perching and nesting habitat in large trees should be removed because Shrikes use shrubs and small trees for nesting (nests 2 ½ to 4 feet above ground), including thorny shrubs, and they use low perches, including fence posts, for hunting.	9.54
^{43*} Specific conservation actions should be included for the Loggerhead Shrike, like providing artificial or natural perches. Hoping that the required 10,000 linear feet of hedgerows will resolve or help the problem is quite different than targeted specific actions. The same is true for Loggerhead Shrike nesting habitat.	9.55
Swainson's Hawk	
There is no mention of the standing CDFW requirement that Swainson's Hawk mitigation acquisitions are supposed to be above sea level. ^{44*} This requirement should be added to the relevant conservation objectives and their associated conservation actions such as SH1 (page 7-39), SH2, SH3 (page 7-40), and SH6 (page 7-41).	9.56

For the 2000 acres of cropland to be preserved in fee title, according to conservation objective SH2 in Table 7-1 (Measurable objectives and Conservation Actions), it is unclear how this interacts with the 200 acres of intensively managed crops required for Greater Sandhill Cranes. Was an assumption made that the alfalfa requirement for Swainson's Hawk (a minimum of 50% of the 2000 acres) would satisfy the crane objective (200 acres of feeding plots) based on an outdated species account that incorrectly identified alfalfa as a suitable crop type for crane foraging? If this was the case, it may be necessary to look at the non alfalfa plantings in that 2000 acres and determine if it is possible to site at least 200 acres of them for the co-benefit of the crane and the Swainson's Hawk, keeping in mind that the ideal crop for the crane (corn and rice) is not the ideal crop for the Swainson's hawk, and vice versa; and keeping in mind that they need to be within acceptable distances for roosting cranes as well as nesting Swainson's hawks. The somewhat disjointed way that the various acreages are presented in Chapter 7 makes it difficult to determine how much of one species' conservation can be satisfied simultaneous to that of another species who relies upon the same habitat.

9.57

It is the contention of some of the long-term stakeholders in the Plan preparation that originally it was going to be 2000 of intensive management acres for Swainson's Hawk and then an additional 200 acres of food plots for the crane. ^{45*} The final SSHCP should include these separate 2000 and 200 acres, with their very different functions.

9.58

White Tailed Kite

In the discussion in 7.6.2.21, starting on page 255 of the SSHCP, there is mention of benefits that would accrue to the species through planting of trees in agricultural settings, as well as the benefit of hedgerows. On page 7-260 it states:

9.59

Similarly, planting trees in agricultural settings should increase the number of suitable nest and perching sites near foraging habitats, and plant hedgerows should increase habitat for prey species and prey availability. Additionally, if large trees are planted in hedgerows, they will provide white tailed kite nesting habitat in addition to increased prey habitat values.

There seems to be no mention of these underlying biological objectives or goals in table 7-76 (Biological Goals and Measurable Objectives Applicable to White Tailed Kite, page 7-258). ^{46*} Measurable objectives should have been included on page 7-258 in Goal 4 (Maintain or improve value of natural land covers (including Cropland and Irrigated Pasture-Grassland) that are preserved in the Plan Area). At a minimum AG3 should have been added which contains the 10,000 linear feet of hedgerow requirement. And, ^{47*} a new related biological goal should be added for the planting of a specific number of trees in agricultural settings. Surely, "if" large trees are planted in hedgerows they will provide the aforementioned benefit. But, "if" they are not planted then no benefit will accrue. ^{48*} Measureable objectives are needed here for tree planting to benefit White Tailed Kites, and they should be

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included in Table 7-76 on page 7-258. This is another example of where species' specific measures are lacking. 9.60
cont'd

Burrowing Owl

Burrowing Owl conservation has been a difficult effort to get on top of for the HCPs already in implementation phase in Northern California. As a general note, 49* where Burrowing Owl persist within the UDA, irrespective of whether or not they happen to be in Preserves, efforts need to be made to conserve those occurrences - see attached for addendum 5 which is a PowerPoint that discusses the need to also focus conservation for Burrowing Owls within HCP Plan areas on where they currently persist, which can often be in very unexpected urban settings, rather than where they "should" persist (i.e. expensive preserves featuring enticements for them). 9.61

For BO 2.1 in Table 7-1 on page 7-44, 50* we recommend that an additional conservation action be added to the last bullet point ("Enhance foraging habitat quality through") - namely: "Create rock piles near nest burrows." 9.62

Miscellaneous

For VPP 1.1, on page 7-28, 51* protecting 6 occurrences of Ahart's Dwarf Rush may require establishing new occurrences. 9.63

On page 7-43, we wonder if NH1 and NH2 should be merged? 9.64

For table 712 on page 7-103, 52* This looks like a John Diddes analysis table, and he must get proper credit if that is the case. 9.65

Monitoring and Management Programs (Chapter 8)

Monitoring for "how the species is doing"

Beyond the annual plants and invertebrate status and trends monitoring, there is not much "how is the species doing?" monitoring for the rest of the species (page 8-106). 53* The Plan will need this information for nearly all of the species to ensure that Conservation actions and Preserve Management Actions are working. In some cases it will be possible to tie into larger monitoring efforts such as the statewide Tricolored Blackbird surveys or the extensive Swainson's Hawk nest surveys for Sacramento county area. 9.66

Pesticides/Insecticides

Consistent with earlier comments regarding pesticide/insecticide use on agricultural preserves, we believe that the reliance on timing of pesticide use, as is presented in TCB-5 (page 8-80), is not adequate to address the effect on insect prey 9.67

species. 54* A far more robust AMM is needed, as has been mentioned, and 55* a more thorough assessment will then also be needed to ensure that the agricultural preserves have sufficient insect prey species to support covered species (such as Tricolored Blackbird, Loggerhead Shrike, Greater Sandhill Crane, and Western Red Bat...).	9.68
Miscellaneous	
For GSC-3 (page 8-81), 56* for the assessment of the crane roost buffer it is unclear why nesting would be mentioned given that cranes don't nest in the Plan area. What needs to be assessed is compliance with the establishment of a .5-mile roosting setback.	9.69
For Section 8.4: "Data Management and Reporting," 57* it would be useful to include information, or a process, or a contact, for getting access to the data repository for scientific and other uses.	9.70
For section 8.4.1: "Annual Reports," 58* it would also be important to include the available inventory (in acres) remaining for each cover type/habitat type in the Plan Area. This is important because the Plan implementers need to track how much potential inventory is still available for their mitigation purposes, as well as to understand what other land use activities not covered by the SSHCP may do to that inventory. The same holds true for those who might make discretionary entitlement decisions for uncovered activities in the Plan area.	9.71
For Table 8-4, starting with page 8-126, there are several rows, in the column headed "when and how often," where "5 years for surveys including staff observation in annual reports" appears. What does "5 years for surveys mean," every five years or something else?	9.72
Implementation (Chapter 9)	
Governing structure and responsibilities	
For the second paragraph of "Implementing Entity Responsibilities in Reviewing Third Party Requests for Take Authorization" (page 9-12), 59* it would be prudent to also include inventory as one of the things that the Implementing Entity tracks and provides to Plan Permittees and Land Use Authority Permittees as they process third party applications for take.	9.73
For section 9.3.4 (Technical Advisory Committee/Interagency Review Team, page 9-18), we recommend adding another responsibility for the TAC/IRT, which would be: 60* "review relevant new scientific studies and reports for applicability in Preserve management." It will be important for successful management of the preserves, including adaptive management, to be able to refer to and learn from new developments and studies that are relevant to the covered species and the conservation actions being implemented on the preserves, as well as for priority	9.74

considerations for new property acquisitions.	9.74 cont'd
On the same page (9-18), after the bullets detailing the responsibilities and duties of the TAC/IRT, it states:	
As discussed previously in section 9.3.1, the JPA Board or Implementation Committee is ultimately responsible for approving the aforementioned plans and actions, and the Permitting Agencies will have approval authority over those plans and actions with the exception of property transactions for satisfying the Conservation Strategy.	
As near as we can make out, no other entity has the ability to veto a property transaction that the Implementing Entity plans to approve. The wildlife agencies (also referred to as Permitting Agencies) have the ability to review "SSHCP land easement acquisitions, land dedications, and acquisition of mitigation or conservation bank credits" (page 9-14, last bullet point of section 9.3.2). But here there is no mention of approval, just review. The TAC/IRT also is tasked with "reviewing SSHCP property transactions for satisfying the Conservation Strategy such as land or easement acquisitions..." (Page 9-18, third bullet point in section 9.3.4).	9.75
We are very concerned about the absence of any balance of power when it comes to approval of acquisitions. We had originally pushed for a completely autonomous Conservancy structure that implemented the Plan to avoid any political interference. As presented we have the opposite, politicians in charge of the implementation of the Plan. We understand the argument that since the Permit Holders are on the line for the implementation of the Plan they need to have ultimate say over Plan implementation. Interestingly, one of the elements that underlies that argument is that the Permit Holders would not necessarily trust a third party conservancy to carry out implementation correctly and they would be liable, and therefore they want that responsibility themselves. Similarly, we do not necessarily trust that the JPA will carry out the implementation of the Plan in a politics free environment and that they will never approve an acquisition for political rather than biological and conservation reasons.	9.76
The only way that conflicts of interest and political maneuvering can be addressed is if there is a robust system of checks and balances within the governing structure. 61* Either, preferably both, the Permitting Agencies (USFWS, CDFW, USACE...) and/or the TAC/IRT needs to have approval authority of acquisitions, and any other property transactions. If only one were given this oversight, it would likely make the most sense to rely upon the TAC/IRT for this since the Permitting Agencies sit on that committee/team. Without this balance of power, and built in checks and balances, the Plan will risk potential political abuse over the next 50 years – such as sub standard habitat being passed off as high quality as a political favor to a particularly generous constituent. We consider this issue to be of the UTMOST importance, and absent an effort to address the concern in the governing structure,	9.77

it will be difficult for us to support the Plan.	9.77 cont'd	
It is very important that stakeholder representatives be on the TAC – their active involvement will be essential to the long term success of the HCP- and we appreciate that they have been included.	9.78	
Acquisitions		
On page 9-23: "Reselling Acquired Lands after Establishing Conservation Easements" is predicated on the Conservation Strategy working effectively with only 15% of Preserve lands outside the UDA being held in fee title. The fee title lands would allow for more intensive management, and more of this might be necessary depending on conditions within the Plan area. Maintaining as much land as possible in agriculture and ranching is important to the success of conservation efforts in the Plan area because a sustainable agricultural and ranching economy helps preserve the important agricultural component in the habitat mosaic of the Plan area, and most of that component will be outside of the confines of the SSHCP conservation strategy. But as important as agriculture and ranching are, it is important to use language in the Plan that allows the flexibility to adjust the ratio of fee title and conservation easement if it is deemed necessary for the conservation of the covered species. 62* The 15% should be considered an important goal, but a goal that is not subservient to successfully implementing the Conservation Strategy. If adaptive management and changes in conditions on the ground in the SSHCP require more intensive management, the Plan should not be limited by prescriptive language that precludes it from adjusting the ratio.	9.79	
Early Enrollment Program		
For section 9.4.5 63* it would be prudent to discuss how priority of acquisition will proceed for those enrolled. The early enrollment program is a very clever and effective way to get landowners to participate early in the life of the Plan, and it will help to conceptually build the Preserves on the landscape before there is adequate money to buy the needed parcels. In order for the enrollees to have a reasonable experience, and not lose heart while they wait for their property to be paid for, it is imperative that a very clear and a very fair and transparent process is laid out for how and when enrolled properties will be paid for. For the purposes of the success of the Plan, it will be very important to prioritize individual properties within the context of the overall Conservation Strategy to maximize the conservation benefit that will accrue to the Plan. But, for the enrollees, it is important that, whatever that prioritization scheme ends up being, it is enforced consistently and without bias or prejudice. The only way that it will be clear to enrollees, if that is actually the case, is if the process is transparently laid out at the time of enrollment.	9.80	
Gifts of Land		
Section 9.4.7: "Gifts of Land" 64* does not explicate if a gift of land that fits into the SSHCP Conservation Strategy and Preserve creation strategy could be accepted and	9.81	

then used for mitigation for a third party application. Also, 65* there is no discussion or explanation of how or if there would be the same level of monitoring, operation and management activities as found on preserves in the SSHCP, 66* or how long term management would be paid for. 67* It would be very important to consider any gift of land in the context of Appendix J (Additional Voluntary Conservation) and make sure that any gift of land did not satisfy the goals found there before it was denied. As well, land that did not come with an endowment could conceivably get a grant to cover that cost through Appendix J efforts.

9.81
cont'd

Preserve Setbacks

The Plan dispatches with any requirement for preserves outside of the UDA to consider setbacks because it states that those preserves currently exist in an open space context and don't need them, which is true for now. It seems to be a missed opportunity, though, not to consider the potential impacts of agricultural residential projects that could easily crop up immediately adjacent to a preserve. 68* Would it not be prudent to include some language detailing what an acceptable buffer/setback would be for the preserves outside the UDA? As well, 69* language in the General Plan would also be appropriate for delineating such buffers/setbacks for preserves within the county. The language needs to require a restriction for county approval of AG RES to include 200 foot no human activity buffer next to any preserve lands.

9.82

Setbacks that are outside the preserves per-se will be owned and managed by various entities, including home-owners associations. In order to ensure that the setbacks are properly managed according to the HCP requirements, 70* there also need to be conservation easements that restrict usage of setbacks and require necessary management measures. The HCP implementing entity must have enforcement power over the setbacks to ensure proper management.

9.83

What is not a problem today can be solved much more easily than when it is a problem tomorrow.

9.84

Data Repository Development and Maintenance

For section 9.8 (Data Repository Development and Maintenance, page 9-40) 71* it would be good to refer to our comment for Section 8.4 (Data Management and Reporting) which suggested that it would be useful to include information, or a process, or a contact, for getting access to the data repository for scientific and other uses. A huge amount of expense will go into collecting the data within the repository and it would be appropriate and beneficial to allow that data to be made available for scientific study, conservation management, and other purposes.

9.85

Future Land Use Planning Changes

Section 9.10.4 (Future Land Use Planning Changes, page 9-47) states: “changes in land use designations or regulations do not trigger preparation of a minor modification or an amendment to the SSHCP, if the changes would not directly or indirectly effect completion of the SSHCP Conservation Strategy.” This section instills confusion rather than clarity and relies on the interpretation of “directly or indirectly.” A definite result of future land use planning changes will be the loss of inventory for the SSHCP. ^{72*} This section should explain at what point the loss of inventory becomes a problem for the SSHCP. At a minimum, this section should provide a minimum feasibility for acquisition bar for understanding “directly or indirectly.” As an example: “If the land use policy changes will result in the loss of inventory such that the feasibility of acquisition, for the SSHCP for the lands it needs in the same PPU as the proposed land use planning changes, is higher than 15%, then a modification or amendment will be required.” The issue of feasibility for acquisition has already been a contentious one in the SSHCP plan area for attempted changes in land use planning.

9.86

Implementation Schedule and Deadlines

For section 9.11, (Implementation Schedule and Deadlines, page 9-48) and Table 9-3 (Schedule for Major Implementation Tasks, page 9-49), ^{73*} it would be appropriate to add “Update Species Accounts” to the tasks, and to do so in the “prior permit” time period if money can be secured. Those accounts will be very important for providing the important natural history background for the species covered in the Plan and will aid in many of the Conservation actions required.

9.87

Changed and Unchanged Circumstances – Assurances (Chapter 11)

Public Notification of Land Acquisitions

For 11.1.6 (Public Notification of Land Acquisitions), it is quite confusing to read about the private nature of negotiations, between landowners and the SSHCP Implementing Entity etc., and find absolutely nothing about public notification in this section. It is appropriate for such negotiations to be private and it is heartening to see that “the Technical Advisory Committee must approve the transaction (see Chapter 9, Section 9.3.4)” despite the fact the section referred to only stipulates that the TAC/IRT would be reviewing the transaction. This approval language should be kept, and Chapter 9, section 9.3.4 should be changed to reflect that the TAC/IRT will also be tasked with approving the transaction, as suggested in an earlier comment on that section. And, given the title of 11.1.6 ^{74*} there should be discussion about the public notification of land acquisitions. The maximum amount of transparency is obviously appropriate after the transactions have been approved, and the more information available to the public, the better for the Plan as it will have yet another level and layer of scrutiny and watchdogging.

9.88

Projected Climate Change Impacts in California

In section 11.3.1 the changed circumstance assumed for sea level rise is 12 to 18 inches by 2050, and 21 to 55 inches by 2100 in the SSHCP Plan area. As mentioned in earlier comments, this sea level rise will be most problematic for PPU6. And as also mentioned previously, the MINIMUM of 1000 acres of upland forage (foraging grounds outside of the 100 year floodplain) in and near PPU6 is a good start in addressing the need for Sandhill Cranes and other species to shift their populations to higher ground. Given the severity of the anticipated sea level rise, and the fact that much of the Delta is at or below sea level, it will be important to consider the need to secure enough suitable habitat above the higher sea level elevation that will be established as the ocean rises, and not rely completely on the Delta's existing levees which are aging and likely far too extensive to replace. There is no need to adjust the PPU specific acquisition targets to contend with sea level rise, but 75* there will likely need to be a shift over the Plan's 50-year implementation period towards prioritizing less vulnerable areas for acquisition. It would also seem reasonable to expect some species in the broader Delta ecosystem, including huge amounts of territory outside the Plan area, to abandon areas that become permanently inundated as a result of sea level rise, and that at least a portion of those species and individuals may well have to squeeze into the remaining upland areas of PPU 6 and other nearby PPUs.

9.89

In Table 11-1: Evaluation and Ranking of Covered Species Sensitivity to Climate Change (page 11-19) it is hard to rectify the sensitivity ranking for Greater Sandhill Crane sensitivity determinations with their natural history. The Greater Sandhill crane is extremely philopatric to its roost and foraging sites when it winters in the SSHCP Plan area, and this is exactly why conservation priorities for the crane are within 2 miles of their roost sites in the Conservation Strategy of this Plan. The table correctly ranks the crane's sensitivity to habitat specialization/habitat changes as high. Physiological tolerance is ranked as unknown, and for dispersal activity, and changes in food availability; it is given a low sensitivity. This is surprising because the sea level rise numbers presented have the ability to wipe out the vast majority of the existing preserved lands for the crane – refer to the map in addendum number 2 for a depiction of this. This means that an extremely philopatric species will potentially be uprooted and the closest available upland forage areas (and Greater Sandhill Cranes definitely prefer areas that they are familiar with, e.g. within two miles of their roost sites), of which the Plan is preserving 1000 acres, also just happen to be some of the most desired for urbanization in the region, which means agricultural production may well be quite constrained. So, despite the omnivorous nature of the crane, food could be a very serious problem if the abundant waste grains they have become accustomed to are largely gone in the Plan area.

9.90

We would argue that the overall sensitivity ranking for the Greater Sandhill Crane to sea level rise is extremely high. And given that the other manifestations of climate change will present additional difficulties on top of sea level rise, overall sensitivity

9.91

would increase even further. 76* As such the overall sensitivity should be changed to “high.” Dealing with where Greater Sandhill Cranes are going to persist in the Plan area is likely going to be one of the big implementation challenges of the SSHCP. 9.91 cont'd

Economic Analysis and Funding Program

The Home Price Index (HPI) that will be used to adjust inflation annually for the acquisition category of fees (page 12-20, Automatic Adjustment of Development Fees to Account for Inflation) is not going to be the best benchmark to adjust inflation in land prices. During the huge market downturn that hit the real estate markets particularly hard last decade, raw land prices were not tracking anywhere near that of the plummeting residential market. 9.92

A general comment for both the annual adjustment of acquisition fees, and the periodic audit and adjustment, is that at any given point in the Plan there would be better information available on the ground as a result of the recent land appraisals and purchases than would ever be available using what becomes a quickly irrelevant reliance on an annual adjustment or even potentially older periodic adjustment. It does not make a lot of sense to rely solely on these predetermined adjustment timeframes when the market can fluctuate dramatically in between those timeframes. This Plan has a very robust Get Ahead Stay Ahead (GASA) component such that at no point in the implementation process should there be any mystery as to what the land acquisition costs actually are because that land is already available in the Plan as part of GASA, or it is in the early enrollment program, or it is being dedicated. In all of these cases the cost of the land either is (enrollment) or was (GASA) the cost of the land, and that value will or should be verified through an appraisal. 77* It would seem a whole lot more efficient to go with what is known, than to make a guess and then adjust that guess every year automatically based on a loosely associated market indicator, and then conduct an audit every three or five years to concretize a market picture at the time of the audit. 9.93

Appendices

Appendix B, species accounts.

As has already been suggested, the species accounts are woefully outdated and desperately need to be updated. 78* The accounts should be updated as soon as money, allows, ideally prior to permit issuance, and they should particularly focus on new knowledge about species ecology that is pertinent to management, as well as new management ideas and new knowledge of species occurrences. 79* The species accounts should be updated periodically during the 50 year permit period. 9.94

80* Specific biologists, such as John Diddes, developed the existing accounts in this appendix and it is essential that they receive credit. 9.95

This 588-page document needs a navigation system for individual species. The present system (pops up along left hand margin) is individual pages and of no use. 9.96

Appendix D1

Some thought should be given as to whether subordinating a mortgage or other interest to the Conservation Easement is adequate protection. There seems to be presupposition that lenders, whether institutional or personal, are going to act rationally, and that is potentially a mistake given the extraordinarily irrational things that lenders have done in recent history (things that dragged down the entire global economy). 81* As such it might be worth considering, at least for the initial purchase, that proceeds from the easement sale be used first and foremost by the seller to pay down any liens such that the total debt on the property is not greater than the residual value of the property after the easement is recorded. This could easily be done during, and be a requirement of, escrow. 9.97

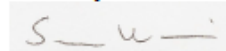
Appendix J

This is a very important addition to the overall conservation effort embodied in the SSHCP. What is not clear is if changes to the voluntary conservation actions and targets laid out in this appendix would need to go through the same "modification" or "amendment" process as those for the mandatory conservation actions. Ideally, increases to the voluntary targets as a result of successful implementation of the voluntary goals would be embraced as beneficial to the overall success of the SSHCP and would require no "process" beyond review by the TAC/IRT. Would the JPA be able to veto changes in the voluntary conservation? Some guidance here would be appropriate. 9.98

CONCLUSION

Thank you for the opportunity to share these comments and concerns and we look forward to working with you to address them in the language of the SSHCP, and to help make this important Plan a conservation success for our region. 9.99

Sincerely,



Sean Wirth, Conservation Chair, Mother Lode Chapter, Sierra Club



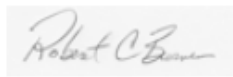
Brandon Rose, president, Environmental Council of Sacramento



John Hopkins, president Institute for Ecological Health



Mike Savino, president, Save Our Sandhill Cranes



Rob Burness, co-chair Habitat 2020

RTC 9.1 (SSHCP) – The plan preparers recognize the contributions of the commenters to the development of the SSHCP. We appreciate your further comments. Please refer to responses to specific comments below.

RTC 9.2 (SSHCP and EIS/EIR) – The SSHCP and EIS/EIR have been revised as appropriate in response to the comments provided in the letter. Please refer to responses to specific comments below.

RTC 9.3 (SSHCP and EIS/EIR) – Responses to comments assign the same importance to comments regardless of their position in the comment letter. We appreciate the effort to organize comments.

RTC 9.4 (SSHCP) – The comment provides the commenters view on the history of the SSHCP and discussions surrounding the “grading ordinance.”

RTC 9.5 (SSHCP) – The comment describes the proposed wetlands protection ordinance and expresses concern that the new ordinance will not stop illegal removal of vernal pools.

RTC 9.6 (SSHCP) – The Plan Partners acknowledge the importance of option agreements or similar legal instruments in achieving the biological goals and measurable objectives of the SSHCP. The Plan Partners have been actively engaged in securing conservation easements with willing sellers prior to plan adoption. The partners are also employing legal instruments similar to option agreements such as successive Purchase and Sale Agreements to secure commitments from willing sellers for potential purchase of additional conservation easements in the future. Such instruments are undergoing thorough legal review, and are designed to provide commitments that important resources are protected while giving the SSHCP Implementing Entity enough time to generate fees with which to acquire these resources. The goal of this process is to allow funding to become available to complete the purchase before the agreements lapse.

RTC 9.7 (SSHCP) – Comment noted. The County and other permittees will take into account the SSHCP and its Conservation Strategy in their future land use planning efforts and will require SSHCP consistency for development. However, the County does not intend to modify the General Plan out of cycle.

RTC 9.8 (SSHCP) – Section 5.2.7 of the Draft SSHCP states that pesticides are to be used for purposes of land management only:

“Pesticide use for SSHCP Preserve management is covered under the CESA Incidental Take Permit, but not the ESA Incidental Take Permit. Pesticide use is allowed only when necessary to achieve the SSHCP Biological Goals and Measurable Objectives (e.g., exotic plant or exotic animal control). When necessary, pesticide use is allowed within SSHCP Preserves, within Preserve Setbacks, and within road ROWs that border SSHCP Preserves. As discussed in Chapter 8, Preserve Management Plans will be prepared for each SSHCP Preserve. Each Preserve Management Plan will identify processes to identify,

document, evaluate, and then control invasive and other exotic target species by combining biological, cultural, physical, and chemical tools in a way that will minimize environmental risks. Pesticide use as part of a Preserve management strategy is not expected to adversely affect Covered Species over the Permit Term because pesticide use will be limited, and pesticide use will strictly comply with the pesticide label and all other applicable federal, state, and local laws pertaining to the use, safety, storage, disposal, and reporting of pesticides.”

SSHCP Section 8.3 describes the monitoring and management requirements of the SSHCP, including adaptive management feedback loops for achieving the Biological Goals and Measurable Objectives of the SSHCP. Based on the adaptive management feedback loops of monitoring and management, when pesticide use for purposes of land management is allowed by an individual Preserve Management Plan, the activity will be monitored and will be adaptively modified on a preserve-by-preserve basis. We welcome the involvement of the TAC in developing an effective way to track the effects of the minimal pesticide use that may occur on certain SSHCP preserves, and to ensure that this pesticide use does not further contribute to the ongoing cumulative impacts of Plan Area pesticide use on the insect prey base, which you discussed in your comments.

RTC 9.9 (SSHCP) – See the response to Comment 9.8.

RTC 9.10 (SSHCP) – See the response to Comment 9.8.

RTC 9.11 (SSHCP) – Also see the response to Comment 9.8.

RTC 9.12 (SSHCP) – Measure ROAD-3 provides examples of where road signs might be posted to provide a warning to applicators of pesticides that they are near sensitive habitat for covered plant or other covered species occurrences that could be impacted by pesticide use. AMM ROAD-3 has been revised in Final SSHCP Section 5.4.1 to include reference to areas that provide habitat for vertebrates that rely on insects for part of their diet.

RTC 9.13 (SSHCP) – The term pesticide includes the more specific terms insecticide and herbicide. It has been retained in the Final SSHCP because the specific meaning is clear based on the context.

RTC 9.14 (SSHCP) – Lighting from new development is noted as an indirect effect to many covered species in the effects analysis of Section 6 in the Draft SSHCP (e.g., Table 6-63 for western spadefoot). For measures that would reduce the effects of lighting from new development in the UDA, see Section 5.4.1 of the Draft SSHCP; urban lighting is addressed by AMM EDGE-8:

“EDGE-8 (Outdoor Lighting): All outdoor lighting in Urban Development Covered Activity projects will be designed to minimize light pollution into existing and planned Preserves, except where a Land Use Authority Permittee determines lighting is necessary for public safety or security. Minimization measures may include light fixture placement (e.g., as low to the ground as possible), lamp designs (e.g.,

shielding, low glare, or no lighting), directing light away from Preserves, or other means to avoid or minimize light pollution. The Third-Party Project Proponent will use the best information available at the time of project design to minimize effects of light pollution on target SSHCP Covered Species (e.g., western spadefoot (*Spea hammondi*) and Ricksecker's water scavenger beetle (*Hydrochara rickseckeri*))."

The Draft SSHCP assumed that EDGE-8 would be effective at reducing lighting effects to an acceptable level, considering the width of UDA preserve setbacks, but would not eliminate all lighting effects on covered species in the UDA, including insect prey of covered species. Also, most of the SSHCP preserve acres will be in rural areas of Sacramento County, so few of the SSHCP preserves would be impacted by artificial lighting from UDA development. Temporary effects of construction lighting, including effect on insect prey of covered species, are addressed by AMM BMP-6 in the Draft SSHCP:

"BMP-6 (Construction Lighting): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will direct all temporary construction lighting (e.g., lighting used for security or nighttime equipment maintenance) away from adjacent natural habitats, and particularly Riparian and Wetland habitats and wildlife movement areas."

RTC 9.15 (SSHCP) – Tables 6-94 and 6-95 are provided on pages 6-358 and 6-359 respectively in the Draft SSHCP, and are in sequential order.

RTC 9.16 (SSHCP) – The list of covered species in Table 6-3, for Conditions EDGE-8 and BMP-6 has been amended in the Final SSHCP to include Ricksecker's water scavenger beetle and valley elderberry longhorn beetle. Refer also to response to Comment 9.14 regarding effects on insect prey of covered species.

RTC 9.17 (SSHCP) – Tables 6-51, 6-52, 6-54 and 6-55 have been updated in the Final SSHCP to reflect that lighting could cause mortality to Ricksecker's water scavenger beetle and valley elderberry longhorn beetle as a result of exhaustion, attraction of predators, or disruption of biological cycles.

RTC 9.18 (SSHCP) – Valley elderberry longhorn beetle has been added to the list of species identified in EDGE-8 in the Final SSHCP. Ricksecker's water scavenger beetle was already listed in EDGE-8.

RTC 9.19 (SSHCP) – See response to Comment 9.17.

RTC 9.20 (SSHCP) – See response to Comment 9.15.

RTC 9.21 (SSHCP) – See responses to Comments 9.14 and 9.17.

RTC 9.22 (SSHCP) – Refer to response to Comment 9.23 regarding usage of rodenticides in general. Text has been added to Final SSHCP Table 6-89 regarding effects of rodenticides on western burrowing owl, and how those impact might be avoided or minimized.

RTC 9.23 (SSHCP) – The comment requests that the SSHCP prohibit all use of rodenticides on SSHCP preserves, due to their adverse secondary effects on Swainson’s hawk and other raptors. Section 5.2.8 of the Draft SSHCP describes pesticide use as a Covered Activity is to be used for purposes of land management only:

“Pesticide use is allowed in Preserves only to achieve the SSHCP Biological Goals and Measurable Objectives (e.g., exotic plant or exotic animal control). Preserve Management Plans (see Chapter 8) will prescribe an integrated pesticide use process as a Preserve management tool, modeled after the California Department of Fish and Wildlife’s pesticide use approval process (CDFW Forms 679 and 680). At a minimum, this will include compliance with pesticide label instructions and state and local laws. Use must also comply with existing injunctions related to the use of pesticides.”

If the Implementing Entity determines that rodenticide use is necessary and appropriate on a preserve parcel, the rodenticide use will be included in the parcel’s proposed Preserve Management Plan. As discussed in Section 9.3.4 of the SSHCP, each Preserve Management Plan is subject to review and approval by the TAC, which would include members from the environmental community and wildlife agencies. In general, the Plan Preparers expect that usage of rodenticides will not be warranted or allowed on SSHCP preserves. However, in order to maintain a pool of willing sellers of conservation easements on Plan Area agricultural lands, the Plan Preparers could not completely prohibit their use within all of the SSHCP Preserve System. If the TAC does approve an individual Preserve Management Plan that allows use of rodenticides, that usage would be subject to limitations described in the PMP on timing and area of application, amounts to be used, and acceptable rodenticides. If appropriate, those restrictions could be incorporated into the conservation easement.

RTC 9.24 (SSHCP) – See the response to Comment 9.23.

RTC 9.25 (SSHCP) – Text has been added to Table 6-92 noting that lighting could attract insects upon which the loggerhead shrike preys. See response to Comment 9.14. Within Section 5.4.1 of the SSHCP, urban lighting is addressed by EDGE-8:

“EDGE-8 (Outdoor Lighting): All outdoor lighting in Urban Development Covered Activity projects will be designed to minimize light pollution into existing and planned Preserves, except where a Land Use Authority Permittee determines lighting is necessary for public safety or security. Minimization measures may include light fixture placement (e.g., as low to the ground as possible), lamp designs (e.g., shielding, low glare, or no lighting), directing light away from Preserves, or other means to avoid or minimize light pollution. The Third-Party Project Proponent will use the best information available at the time of project design to minimize effects of light pollution on target SSHCP Covered Species (e.g., western spadefoot (*Spea hammondi*) and Ricksecker’s water scavenger beetle (*Hydrochara rickseckeri*)).”

And construction lighting is addressed by BMP-6 in the SSHCP:

“BMP-6 (Construction Lighting): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will direct all temporary construction lighting (e.g., lighting used for security or nighttime equipment maintenance) away from adjacent natural habitats, and particularly Riparian and Wetland habitats and wildlife movement areas.”

Refer also to response to Comment 9.14 regarding effects on insect prey of Covered Species.

RTC 9.26 (SSHCP) – Text has been added to Table 6-93 noting that lighting could attract insects upon which the loggerhead shrike preys. Table 6-93 of the Draft SSHCP includes BMP-6 for lighting. Refer also to response to Comment 9.14 regarding effects on insect prey of covered species.

RTC 9.27 (SSHCP) – See the response to Comments 9.8 and 9.28.

RTC 9.28 (SSHCP) – The comment requests changes to Table 6-3, which lists the SSHCP AMMs and the environmental stressors that would be reduced by each of the AMMs. The specific request is for new AMMs that would reduce impacts of pesticide use on insect prey for loggerhead shrike. Refer to response to Comment 9.63 regarding use of pesticides on Preserves, and how they might be controlled during SSHCP implementation. The text in Final SSHCP Table 6-92 regarding potential indirect effects on loggerhead shrike have been revised to state that the AMMs would minimize, rather than avoid those impacts.

RTC 9.29 (SSHCP) – See the response to Comment 9.30.

RTC 9.30 (SSHCP) – Text has been added to Final SSHCP Table 6-99 noting that lighting could attract insects upon which the tricolored blackbird preys. The text in Table 6-99 regarding potential indirect effects on tricolored blackbird from pesticides have been revised to state that the AMMs would minimize, rather than avoid those impacts.

RTC 9.31 (SSHCP) – See the response to Comment 9.68.

RTC 9.32 (SSHCP) – Text has been added to Final SSHCP Table 6-105 noting that lighting could attract insects upon which the western red bat preys. The text in Final SSHCP Table 6-105 regarding potential indirect effects on western red bat from pesticides have been revised to state that the AMMs would minimize, rather than avoid those impacts. See also response to Comments 9.68 below.

RTC 9.33 (SSHCP) – See the response to Comment 9.23.

RTC 9.34 (SSHCP) – See the response to Comment 9.35.

RTC 9.35 (SSHCP) – As described in Section 7.6 of the Draft SSHCP, the SSHCP will benefit each of the Covered Species by maintaining their current distribution in the Plan

Area, by maintaining or re-establishing their historical distribution in the Plan Area, and by providing for the re-establishment and establishment of additional habitat for these species in the Plan Area. Moreover, the SSHCP Preserves will maintain connectivity between existing occurrences and suitable existing habitat. Implementation of the SSHCP will benefit each of these Covered Species. Regarding the specific example of adding perches or specific plantings for loggerhead shrike, the Plan Preparers believe this should be included as part of an adaptive management program developed during the first 6 to 18 months of the SSHCP permit, but do not need to be included as measurable objectives because they are not necessary for species habitat.

RTC 9.36 (SSHCP) – Comment noted, and thank you for providing the attached materials. Please refer to responses to comments below that relate to the Crane TAC’s draft mapping models.

RTC 9.37 (SSHCP) – Comment noted. However, the circumstance that is described in the comment is considered an “Unforeseen Circumstance” in the SSHCP. As stated in Section 11.4.3.1: “If sea level rise and flooding exceeds SSHCP projections such that preserved lands acquired for benefit of greater sandhill crane can no longer provide suitable roosting habitat for greater sandhill cranes, that sea-level rise or flooding would constitute an unforeseen circumstance.” The sea level rise projections and other climate change-related projections were those currently in use by the state of California at the time of SSHCP preparation, as described in Section 11.3.1 of the Draft SSHCP. Exceedance of these projections, such as that described in the comment, was reasonably considered to be an “Unforeseen Circumstance” in the SSHCP.

RTC 9.38 (SSHCP) – Section 3.4 of the Draft SSHCP describes the process of developing habitat models for all 28 Covered Species. The purpose of the models is to define and map suitable habitat for each Covered Species in the Plan Area. The Plan Permittees, wildlife agency biologists and local species experts used the best available information to define and map Covered Species suitable habitat.

Updating the Species Accounts is not necessary to achieve the Conservation Goals and Objectives of the SSHCP. The information in the Species Accounts provides useful and detailed background for the Conservation Strategy, but was not relied upon in isolation when preparing the Conservation Strategy. In addition to the Species Accounts in Appendix B, the species models and the Conservation Strategy took into account the best available information available during SSHCP preparation related to: “species’ needs for breeding, feeding, and sheltering at each life history stage; information from Plan Area species-surveys; documented species-occurrences within the Plan Area; and information on species range, including soil type associations and elevation limits.”

RTC 9.39 (SSHCP) – The documents referenced in the comment were published after the Notice of Preparation as issued and the SSHCP was drafted. The USFWS 2016 HCP Handbook is a guidance document for the USFWS and the SSHCP is the applicant’s document. The USFWS will consider the other documents and recovery plans mentioned prior to making their decision on the issuance of the ITP.

RTC 9.40 (SSHCP) – The species are presented alphabetically by common name within their taxonomic groups. We do not believe it would be worth the cost to reorganize the contents of the HCP by phylogenetic ordering.

RTC 9.41 (SSHCP) – Table 8-1 in Section 8.2.1 of the Draft SSHCP describes how Objective HAB3 will be implemented. Objective HAB3: “Record management history for Preserve parcels as they are obtained. Consider management history when developing initial preserve management approach.”

Section 8.3.1 of the Draft SSHCP describes the process for preparation of a PMP for each Preserve. Each initial PMP must document the management history for each parcel (via records, interviews of ranch managers or landowners, etc.).

RTC 9.42 (SSHCP) – For Conservation Action HAB7.1, text has been revised in the Final SSHCP to require that vegetation biomass be measured for all non-agricultural preserves.

RTC 9.43 (SSHCP) – For Conservation Action GS3.1, text has been revised as suggested in the Final SSHCP. “Invertebrates” has been inserted in place of “voles”.

RTC 9.44 (SSHCP) – Refer to response to Comment 9.43.

RTC 9.45 (SSHCP) – For Conservation Action GS5.1, text has been revised in the Final SSHCP to indicate a preference for corn and rice.

RTC 9.46 (SSHCP) – For Conservation Action GS5.1, text in the Final SSHCP has been revised as suggested.

RTC 9.47 (SSHCP) – Balancing the importance of the various Conservation Actions during selection of parcels for acquisition, or re-establishment/establishment sites, will be one of the most important roles of the TAC. We appreciate the expertise of the commenters and hope that they will continue to be closely involved with the Implementing Entity throughout implementation of the SSHCP.

RTC 9.48 (SSHCP) – Refer to response to Comments 9.37 and 9.47.

RTC 9.49 (SSHCP) – Section 9.3.4 of the Draft SSHCP describes the membership, formation and responsibilities of the SSHCP TAC. As the comment points out, USFWS and CDFW staff will be members of the SSHCP TAC. In addition, “Other entities with expertise in any of the topics to be discussed by the TAC, including representatives of the building industry, the agricultural community, the scientific community, and the environmental community, may also be invited to participate in TAC meetings.” The Sandhill Crane TAC is encouraged to reach out to the SSHCP TAC upon formation to express their interest in participating. The requested text has been regarding accounting for sea level rise in preserve acquisitions for greater sandhill crane has been added to the conservation actions for measurable objectives GS1, GS2, GS5, and GS6 in the Final SSHCP.

RTC 9.50 (SSHCP) – Text in Section 7.6.2.25 of the Final SSHCP has been revised to change nesting to roosting and foraging. The importance of managing the re-established/established habitat to allow access to waste grains has also been noted in Section 7.6.2.25 of the Final SSHCP.

RTC 9.51 (SSHCP) – See the response to Comment 9.68.

RTC 9.52 (SSHCP) – Colony sizes vary widely in Sacramento County from year-to-year. Although the example of 10,000 birds provided in the comment was a hypothetical case, note that none of the 16 colonies detected as occupied in Sacramento County in 2017 exceeded 4,000 individuals (Meese 2017). The tricolored blackbird survey does tend to underrepresent Sacramento Valley populations because it is taken early in the breeding season (and misses re-nesting attempts which are more common Sacramento County). However, the survey results will often demonstrate that a colony has 1,000+ individuals one year, then just a few hundred, then none, then back to hundreds. For example, the site at Bradshaw Christian had 1 bird observed in 2011, then 12,000 in 2014, then none in 2017. This extreme variability means that it is very difficult to confidently identify “large” colonies. However, setting a minimum threshold of 200 individuals would ensure that the sites that only hosted transient, unsuccessful nesting attempts would be unlikely to be considered appropriate for preservation. In addition, the Conservation Strategy would require that colonies be preserves where foraging habitat would remain available, which is critical for this species. Colonies generally have multiple nesting habitat sites available in any given year, and will select the site with the least ongoing disturbance and best access to foraging habitat with large insects available. Preserving colonies without preserving their foraging habitat will likely lead to the nesting habitat being abandoned. The Conservation Strategy will also be re-establishing/establishing both aquatic and upland nesting habitat on Preserves (biological objective TB8), with an emphasis on doing so near high-quality foraging habitat. The Plan Preparers believe that the Conservation Strategy for tricolored blackbird will be effective as presented in the Draft SSHCP, and have therefore not made the requested changes to the Final SSHCP.

RTC 9.53 (SSHCP) – The comment states that no large colonies should be taken by covered activities until several large colonies are preserved in the Preserve System. It is highly likely that early enrollment and the jump start provision of the Conservation Strategy will result in additional preservation of existing colonies in the Preserve System before colonies are impacted. . Also note the response to Comment 9.52.

RTC 9.54 (SSHCP) – See the responses to Comments 9.25 through 9.28 and 9.68.

RTC 9.55 (SSHCP) – Section 7.6.2.24 has been revised in the Final SSHCP to remove the word “large” referenced in the comment.

RTC 9.56 (SSHCP) – Section 7.6.2.24 in the Draft SSHCP addresses the creation and preservation of nesting and foraging habitat through Conservation Objectives LS1 through LS5. Regarding the specific example of adding perches or specific plantings for loggerhead shrike, the Plan Preparers believe this should be included as part of an

adaptive management program developed during the first 6 to 18 months of the SSHCP permit, but does not need to be included as a measurable objective. Measurable objectives consist of broader targets for habitat preservation or establishment, rather than requiring that specific features be present.

RTC 9.57 (SSHCP) – Language has been added to table 7-1, under (Objective L1 conservation actions) in the Final SSHCP to state that “Acquisitions of land below sea level are prohibited”. Language has also been added to Section 9.4.2 *Process for Acquisition of Preserve Land* to state that land below sea level will not be considered for acquisition.

RTC 9.58 (SSHCP) – The 2,000 acres of cropland to be preserved in accordance with Conservation Objective SH2 is in addition to the 200 acres to be managed for greater sandhill cranes.

RTC 9.59 (SSHCP) – Measurable objective SH2 in the Draft SSHCP includes 2,000 acres of intensively managed high-value habitat for Swainson’s hawk. Measurable objective GS5 includes 200 acres of food plots, which would be a subset of the 2,000 acres preserved under measurable objective AG2, not those under objective SH2.

RTC 9.60 (SSHCP) – Conservation Objectives AG2 and AG3 have been added to Table 7-76 in the Final SSHCP.

RTC 9.61 (SSHCP) – Conservation Objective AG3 requires the planting of 10,000 linear feet of hedgerows. This is not an optional activity but a required objective.

“**Objective AG3.** Maintain or increase raptor prey availability and improve raptor foraging habitat by strategically planting 10,000 linear feet of shrub or other substrate that provides cover and refugia for fossorial mammals and other prey species.”

This existing objective has been added to the list of objectives in Table 7-76 of the Final SSHCP. Regarding planting of trees in hedgerows, that will be at the discretion of the TAC based on the conservation measures associated with AG3. Conservation measure AG3.1 states “Acceptable hedgerow plants include native trees, shrubs, and grasses as approved by the TAC.”

RTC 9.62 (SSHCP) – Burrowing owl occurrences will be conserved in accordance with the Biological Goals and Objectives described in Chapter 7 of the Draft SSHCP as part of a larger preserved landscape. Additional burrowing owl occurrences may be avoided in the UDA (i.e., not impacted by development) by individual projects, but these will not be incorporated into the SSHCP Preserve System.

RTC 9.63 (SSHCP) – This text has been added to Conservation Action BO2.1 in the Final SSHCP.

RTC 9.64 (SSHCP) – The comment notes that there may not be six known occurrences of Ahart’s dwarf rush present in the Plan Area to be preserved, and that implementation of Objective VPP1 may require establishment of at least one new occurrence.

RTC 9.65 (SSHCP) – Conservation Objective NH1 in the Draft SSHCP identifies a conservation goal of 1,245 acres of modeled foraging habitat for northern harrier. Conservation Objective NH2 identifies a conservation goal of 30,048 acres of modeled nesting/foraging habitat for northern harrier. Modeled foraging habitat for northern harrier is different than modeled nesting/foraging habitat. Therefore these conservation goals remain identified in two Conservation Objectives (NH1 and NH2) in the Final SSHCP.

RTC 9.66 (SSHCP) – John Dittes and Josephine Guardino are responsible for developing the unique and creative method of classifying vernal pools within the SSHCP Plan Area using a vernal pool acre/density index. Credit for this innovative approach is given on page 7-9. While Table 7-12 was created using information derived from the methodology that John and Josephine developed, the table is not from their work.

RTC 9.67 (SSHCP) – The monitoring is tied to the Conservation Goals and Objectives, which focus more on preservation, management and monitoring of modeled habitat. The SSHCP will benefit each of the Covered Species by maintaining their current distribution in the Plan Area, by maintaining or re-establishing their historical distribution in the Plan Area, and by providing for the re-establishment and establishment of additional habitat for these species in the Plan Area. Moreover, the SSHCP Preserves will maintain connectivity between existing occurrences and suitable existing habitat. Implementation of the SSHCP will benefit each of these Covered Species.

RTC 9.68 (SSHCP) – The comment requests additional restrictions on pesticide used on SSHCP preserves, and that insect prey populations be monitored to ensure that preserved foraging habitat remains suitable for covered species such as tricolored blackbird, loggerhead shrike, greater sandhill crane, and western red bat. Section 5.2.8 of the Draft SSHCP describes pesticide use as a Covered Activity is to be used for purposes of land management only:

“Pesticide use is allowed in Preserves only to achieve the SSHCP Biological Goals and Measurable Objectives (e.g., exotic plant or exotic animal control). Preserve Management Plans (see Chapter 8) will prescribe an integrated pesticide use process as a Preserve management tool, modeled after the California Department of Fish and Wildlife’s pesticide use approval process (CDFW Forms 679 and 680). At a minimum, this will include compliance with pesticide label instructions and state and local laws. Use must also comply with existing injunctions related to the use of pesticides.”

If the Implementing Entity determines that pesticide use is appropriate on a preserve parcel, it will include that allowance within a proposed Preserve Management Plan. The Preserve Management Plan is subject to review and approval by the TAC, which would include members from the environmental community and wildlife agencies. The Implementing Entity expects that usage of pesticides will not be warranted or allowed on most SSHCP preserves. However, in order to maintain a pool of willing sellers of conservation easements on agricultural lands, the Plan Preparers could not completely prohibit their use within the SSHCP Preserve System. If the TAC does approve a Preserve Management Plan that includes use of pesticides, that usage would be subject to limitations in the PMP on timing

and area of application, amounts to be used, and acceptable pesticides. If appropriate, those restrictions could be incorporated into the conservation easement. This clarification has been added to Section 5.3 of the Final SSHCP.

RTC 9.69 (SSHCP) – Table 8-2 has been revised in the Final SSHCP to change nest to roost for GSC-3.

RTC 9.70 (SSHCP) – Section 9.8 of the Draft SSHCP states that “the data repository will allow for future expansion and integration with an external database (e.g., linkage to agency or other GIS map libraries).” Thus, outside users may contact the Implementing Entity with data requests. This clarification has been added to Section 9.8 of the Final SSHCP.

RTC 9.71 (SSHCP) – The comment requests that the Implementing Entity track the available inventory of SSHCP land covers remaining in the Plan Area. Many of the objectives in Table 8-1 of the Draft SSHCP require monitoring of inventory on an ongoing and annual basis (e.g., Objective AG2, Objective VPI1). New text is provided in the Final SSHCP (Sections 8.2.1 and 9.8) clarifying that the SSHCP monitoring program will track the inventory of each SSHCP land cover type remaining in the Plan Area, and that the data repository will make that data available.

RTC 9.72 (SSHCP) – Five years for surveys means surveys will be conducted every 5 years.

RTC 9.73 (SSHCP) – See response to Comment 9.71.

RTC 9.74 (SSHCP) – This text has been added to Section 9.3.4.

RTC 9.75 (SSHCP) – If the TAC/IRT does not approve the plans and actions, the individual property cannot be acquired and incorporated into the Preserve System. This is reflected in the TAC responsibilities described in the Draft HCP in Section 9.3.4.

RTC 9.76 (SSHCP) – See response to Comment 9.75.

RTC 9.77 (SSHCP) – See response to Comment 9.75. The TAC/IRT will have approval authority over preserve property acquisitions. The wildlife agencies will be a part of the TAC/IRT and will exercise their authority through those entities. This will provide a powerful “check and balance” to ensure that preserve acquisitions are driven by the Conservation Strategy and not by political or other considerations that do not benefit the covered species.

RTC 9.78 (SSHCP) – Comment noted. The Plan Preparers recognize the importance of stakeholder representation and authority on the TAC. This structure is described in SSHCP Section 9.3.4 and is critical for the success of the SSHCP.

RTC 9.79 (SSHCP) – Comment noted. The text on page 9-23 of the Draft SSHCP allows for flexibility with respect to the 15%, and applies to lands outside the UDA. The percent held in fee title could be higher than 15% in the UDA. If there is a future need to

provide more species management, the TAC would have to consider, with full participation from the agricultural community, whether an increase in fee title ownership is appropriate.

RTC 9.80 (SSHCP) – New text has been added to Section 9.4.5 of the Final SSHCP clarifying how early enrollment properties will be prioritized for acquisition by the Implementing Entity.

RTC 9.81 (SSHCP) – Language has been added in Section 9.4.7 of the Final SSHCP to clarify that gifted land can be incorporated in the Preserve System consistent with the SSHCP Conservation Strategy and can be used to meet Conservation Strategy requirements. Gifted lands cannot, however be used to offset the mitigation needs of a project applicant. Language has also been added to clarify that gifted lands must be monitored and managed consistent with the SSHCP’s monitoring and management protocols and guidelines, and that funding for a long-term endowment must be identified prior to accepting gifted lands. Language has also been added in Section 9.4.7 of the Final SSHCP suggesting that gifted land could be considered in the context of Appendix J, but that the Implementing Entity must identify a funding source for long-term management and monitoring of gifted lands prior to accepting them.

RTC 9.82 (SSHCP) – The comment requests that the SSHCP include a 200-foot setback between existing SSHCP preserves and new AG/RES development outside the UDA. AG/RES development is not a SSHCP Covered Activity, so the HCP has no mechanisms to require setbacks within those projects. Preserves outside the UDA would be primarily acquired through conservation easements, and that conservation easement cannot extend onto adjacent properties. When a conservation easement is acquired and no development is existing or planned nearby, there is no mechanism that would allow the Implementing Entity to establish a 200-foot setback or any other sized setback. There is a process for the TAC to determine whether an internal buffer area should be established in a preserve outside the UDA, depending on adjacent land uses and other considerations.

RTC 9.83 (SSHCP) – Chapter 9, page 9-34, provides language that requires that a Preserve Setback easement and management plan be recorded for each preserve setback inside the UDA. The language also specifies that the easement give the SSHCP Implementing Entity the ability to enforce restrictions within the UDA Preserve Setbacks. Regarding the request for setbacks between new AG/RES projects and existing SSHCP preserves outside the UDA, refer to response to Comment 9.82.

RTC 9.84 (SSHCP) – Comment noted.

RTC 9.85 (SSHCP) – See response to Comment 9.70. Section 9.8 of the Final SSHCP has been revised to clarify that outside entities such as scientists or conservation groups will be able to request monitoring data from the Implementing Entity. As discussed in Section 9.8 of the Final SSHCP, the Implementing Entity expects to develop a simple form that can be completed for each request and sent electronically to

the Implementing Entity. Depending on the request, access could be granted to the data repository or data from a specific time period could be provided.

RTC 9.86 (SSHCP) – The terms “directly” and “indirectly” have been removed from the text in Section 9.10.4. Language has been inserted in Section 9.10.3.4 of the Final SSHCP to clarify that the SSHCP TAC will be responsible for deciding when changes in land use designations or regulations would result in impacts to SSHCP Covered Species modeled habitat or when changes would affect completion of the SSHCP Conservation Strategy. Also see response to Comment 9.71 regarding Plan Area land cover inventories.

RTC 9.87 (SSHCP) – Section 3.4 of the Draft SSHCP describes the process of developing habitat models for all 28 Covered Species. The purpose of the models is to define and map suitable habitat for each Covered Species in the Plan Area. The Plan Permittees, wildlife agency biologists and local species experts used the best available information to define and map Covered Species suitable habitat.

Updating the Species Accounts is not necessary to achieve the Conservation Goals and Objectives of the SSHCP. The information in the Species Accounts provides useful and detailed background for the Conservation Strategy, but was not relied upon in isolation when preparing the Conservation Strategy. In addition to the Species Accounts in Appendix B, the species models took into account the best available information related to: “species’ needs for breeding, feeding, and sheltering at each life history stage; information from Plan Area species-surveys; documented species-occurrences within the Plan Area; and information on species range, including soil type associations and elevation limits.”

RTC 9.88 (SSHCP) – Language has been added to Section 11.1.6 of the Final SSHCP that clarifies the notification process. In addition language has been added to Section 9.3.4 in the Final SSHCP that clarifies the SSHCP TAC’s role for approving land acquisitions. Also see response to Comment 9.75.

RTC 9.89 (SSHCP) – Comment noted. SSHCP priorities for preserve acquisition will be determined through the TAC. That process will allow the Implementing Entity to incorporate the best available information about flood sensitivity of potential preserve acquisitions. If Preserve locations are no longer providing suitable upland forage for greater sandhill cranes, new preserve lands will need to be acquired so that the measurable objective can be achieved.

RTC 9.90 (SSHCP) – The sensitivity ratings for dispersal ability and changes in food availability for greater sandhill crane have been updated to be consistent with the natural history information presented in the comment. As a result, the overall sensitivity rating for the species has been increased to “High”. Refer to Table 11-1 in the Final SSHCP. As noted in the comment, the Conservation Strategy already accounted for these factors, so the changes in the table did not result in any changes to Conservation Strategy.

RTC 9.91 (SSHCP) – Refer to response to Comment 9.90.

RTC 9.92 (SSHCP) – The HPI index was selected as an inflation index because it was “a well-regarded public data source with relevant geographic coverage.” (SSHCP p. 12-20) The SSHCP also includes a comprehensive development fee audit every three years during the first 15 years of SSHCP implementation, and following completion of each of those audits the development fees can be adjusted to reflect refined cost estimates. Therefore, it is not necessary to assemble a separate private inflation index for the Plan Area.

RTC 9.93 (SSHCP) – Refer to response to Comment 9.92.

RTC 9.94 (SSHCP) – Section 3.4 of the Draft SSHCP describes the process of developing habitat models for all 28 Covered Species. The purpose of the models is to define and map suitable habitat for each Covered Species in the Plan Area. The Plan Permittees, wildlife agency biologists and local species experts used the best available information to define and map Covered Species suitable habitat.

Updating the Species Accounts is not necessary to achieve the Conservation Goals and Objectives of the SSHCP. The information in the Species Accounts provides useful and detailed background for the Conservation Strategy, but was not relied upon in isolation when preparing the Conservation Strategy. In addition to the Species Accounts in Appendix B, the species models used the best available scientific information related to: species’ needs for breeding, feeding, and sheltering at each life history stage; information from Plan Area species-surveys; documented species-occurrences within the Plan Area; information on species range, including soil type associations and elevation limits, and the expertise of the wildlife agencies.

RTC 9.95 (SSHCP) – The authors of the species accounts are credited in a new introduction leading into Appendix B of the Final SSHCP. Thank you for bringing this oversight to our attention.

RTC 9.96 (SSHCP) – The species are presented alphabetically by common name within their taxonomic groups. The PDF for Appendix B has been revised to be navigable by species, as suggested.

RTC 9.97 (SSHCP) – Comment noted. However, the suggestion provided in the comment would be onerous for landowners, and the Plan Permittees have determined that it would limit the pool of willing sellers to an unacceptable level.

RTC 9.98 (SSHCP) – The voluntary additional conservation laid out in preliminary form in SSHCP Appendix J would not be a condition of the Incidental Take Permit conditions or the SSHCP. Voluntary additional conservation will be adopted separately by the Plan Permittees, and as such will not be bound by the same requirements for modification and amendment as the HCP and ITPs.

RTC 9.99 (SSHCP) – Thank you for your cooperation in development of the SSHCP.

LETTER 10 EUGENE ROSE
(SSHCP)



Comment Card

Thank you for your interest in the Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the proposed South Sacramento Habitat Conservation Plan. The space below may be used to provide comments on the Draft EIS/EIR. Please focus your review on the sufficiency of the document regarding the identification of environmental impacts and methods to avoid or mitigate those impacts.

Would be great if there was a Conservation Interpretive Center. A perfect site would be the undeveloped "Nature Area" at C.W. Dillard Elementary School.

A partnership with the Elk Grove Unified School District would be beneficial to Conservation/Habitat Agencies, the Region as well as an educational component to the Community and School Districts. The site located at C.W. Dillard Elementary School is a little under 10 Acres and has been neglected over recent years. I suggest to Sheriff's work detail could be part of development of Trails and such.

10.1

WOULD YOU LIKE TO BE ADDED TO THE SSHCP MAILING LIST? ☐ Yes ☐ No

If so, please provide your contact information.

Name: Eugene Rose

Title and Organization/Business (if applicable): Wilton Resident

Email address: rosaranch@frontier.net

Mailing address: 12217 Keating Rd Wilton, California 95693

Phone: (916) 687-6349

Please submit your comments to a project representative
Office of Planning and Environmental Review, ATTN: En

alf, seal with tape, and mail to: County of Sacramento,
or, 827 7th Street, Room 225, Sacramento, CA 95814

RTC 10.1 (SSHCP) – Thank you for the suggestion. The Implementing Entity will retain this information for use in future planning.

**LETTER 11 FRIENDS OF SWAINSON'S HAWK
(SSHCP AND EIS/EIR)**



www.swainsonshawk.org 8867 Bluff Lane, Fair Oaks, CA 95628 swainsonshawk@sbcglobal.net 916-769-2857

September 5, 2017

Attention: Rich Radmacher, Senior Planner
 Sacramento County Planning Department
 827 7th Street, Sacramento, CA 95814
 Delivered via email to: radmacherr@saccounty.net

Comments, public draft of the South Sacramento Habitat Conservation Plan and EIS/EIR

Friends of the Swainson's Hawk is a citizen advocacy group for this state listed species, and we support habitat conservation planning as a preferred method for mitigating the impacts of development on multiple species. We have been engaged in habitat conservation planning and evaluation of mitigation for impacts of development on California's Swainson's Hawk population since 1995. We fully endorse the letter submitted by Habitat 2020 and partners on this plan. We have additional comments below.

FOSH prepared "Swainson's Hawk Mitigation Evaluation Project Phase 1 Executive Report – South Sacramento County and Elk Grove, California," (2010) and "A Review of the City of Rancho Cordova Swainson's Hawk CEQA Mitigation Program," (2011) both studies by Melinda Bradbury, to evaluate and present recommendations regarding the mitigation programs in South County for impacts to the Swainson's Hawk. These evaluations help set the context of current project by project mitigation efforts and also identify some problems in implementation that hopefully will be corrected with the adoption of the proposed South Sacramento County HCP. It is essential that the HCP avoid the problems identified in these studies, specifically,

11.1

- Not all mitigation properties meet the criteria of the program;
- Not all projects required to mitigate do mitigate;
- Not all requirements are enforceable;
- Not all funding is guaranteed.

In particular, the guarantees and quality standards in the HCP program must be enforceable and the enforcement path should be clear and unambiguous.

1. SSHCP Approval of Mitigation Properties Lacks Fundamental Biological Integrity; No Enforcement Mechanism for Biological Criteria for Mitigation Land Acquisition; Assure CDFW Role.

At present, the California Department of Fish and Wildlife (formerly CDFG) plays an important role in the approval of mitigation lands under the County ordinance (Sacramento County Code Chapter 16.130 SWAINSON'S HAWK IMPACT MITIGATION FEES). Specifically,

11.2

“... the Board of Supervisors deems it necessary to restrict the scope of possible mitigation sites to parcels that are located within the geographical foraging area of the Swainson’s Hawk in the unincorporated County outside the Urban Services Boundary, and that are owned and/or managed by a conservation organization at locations that are acceptable to DFG.” And

“ii. The land to be preserved shall be deemed suitable Swainson’s Hawk foraging habitat by DFG and the County, which shall make all reasonable efforts to either accept or reject the proposed land as suitable within fifteen (15) business days. However, failure to act within such time shall not be deemed as acceptance or rejection of the proposed land. For each request for approval by the County and DFG, there must be an approved rezone or development project and corresponding MMRP identified for which the proposed mitigation site is to be used.

iii. The project applicant shall transfer said easement(s) or title to the County, DFG and a third party conservation organization as acceptable to the County and DFG. The County may, at its discretion, waive the requirement for a third party conservation organization to be party to the easement or fee title. Such third party conservation organizations shall be characterized by non-profit 501(c)(3) status with the Internal Revenue Service and be acceptable to both the County and DFG.”

11.2 cont'd

Under the SSHCP, the wildlife agencies are not given the authority to approve or disapprove mitigation land acquisitions. They will not be able to enforce the biological criteria for land acquisition in the implementation of the plan. This is a very big mistake and inconsistent with both past practice in the County and in the Natomas Basin HCP. We cannot support a plan that does not rely on acquisition approval by the wildlife agencies as a core implementation principle.

We also believe that all acquisitions should include a conservation easement to CDFW to ensure continuity of preservation in the event that the HCP governance fails.

11.3

2. Consistency of SSHCP with USFWS 2016 HCP Handbook and CDFW 2016 Swainson’s Hawk Status Report

a) There should be a finding of consistency of the document with the USFWS 2016 HCP Handbook. We are surprised to find that this is not part of the EIR/EIS review of relevant policy documents.

11.4

b) The species account for Swainson’s Hawk is seriously out of date. In 2016 the CDFW and Fish and Wildlife Commission adopted a new status report for Swainson’s Hawk. This report provides a firm basis for an up to date Swainson’s Hawk species account for the SSHCP. We are attaching this report to our comment letter and recommend that it be included in the HCP and that the policies in the HCP be consistent with this status report. We have pointed out some inconsistencies below.

3. Effects Analysis and Biological Effectiveness Monitoring Lack Fundamental Scientific Soundness and Guarantees. (Effects Analysis, Chapter 6 and Monitoring, Chapter 8)

a) The HCP does not establish a baseline for the Swainson’s Hawk breeding population for the monitoring program, nor does it establish an adequate monitoring program. Appendix G-3 Species Account, Swainson’s Hawk is both out of date and fails to appropriately utilize the data available to estimate the nesting sites inside and outside the UDA.

11.5

We do disagree with the Species Account – Appendix B of SSCHCP 22.4.3, which says “. . . it is not possible to estimate the number of nesting Swainson’s hawk pairs is in the Plan Area based on the available data. Therefore, population trends for the area cannot be assessed at this time.”

While the HCP claims it cannot estimate nesting population, numerous nesting studies have been conducted and are included in the HCP graphic of SWHA occurrences. Clearly the nesting population can be estimated and a baseline established for the monitoring program. We believe this is required for a scientifically sound implementation and enforcement program for the HCP.

“Monitoring distribution and abundance of nesting Swainson’s hawks in the Sacramento Valley and Sacramento River Delta, California” (Dan L. Gifford, Paul S. Hofmann, Adrienne A. Truex, and David H. Wright* California Department of Fish and Game, North Central Region, 1701 Nimbus Road, Suite A, Rancho Cordova, CA 95670) identified 707 active nesting sites in the core territory bounded by Chico and Tracy, including Sacramento, San Joaquin, Yolo and Solano Counties and demonstrated that nesting sites are clustered. These sites were added to the California Natural Diversity Database. The authors noted that “Subsequent surveys (Estep 2007a, b, 2008, 2009; Anderson et al. 2007) have established the Central Valley’s significance to the species and established its importance to the conservation of Swainson’s hawk in California.” (p. 8) Sites identified in those surveys are also in the database used in preparation of the SSCHCP. While the CNDDB contains duplicate nesting sites (known as alternative nesting sites for a pair), multiple sites for one pair can be identified by the close proximity of the alternative nest sites. The preparers of the HCP have the duty to make a good faith estimate of the baseline of nesting pairs in the study area.

11.6

The HCP also does not establish a monitoring program, deferring this important implementation element to future decisions by the governing body of the HCP. We support an annual monitoring program, such as that conducted by the Natomas Basin Conservancy, to be able to separate short term from long term trends.

CDFW found that:

“Raptors may experience year-to-year changes or fluctuations in their population numbers due to a variety of factors including changes in prey abundance, habitat, and weather. In order to detect long-term changes over time (i.e. trends) in California’s Swainson’s Hawk population, it is necessary to collect data over a sufficient number of years to span any short-term population fluctuations or cycles (Hatfield et al. 1996; Newton 1998; Lewis and Gould 2000).” (p. 18, Status Report, 2016)

11.7

b) We object to the estimate of take based on high value habitat only when many nest sites inside the USB are not located in high quality habitat and will ultimately fail because of urbanization and the loss of adequate foraging habitat. (Section 6.4.2.1 Page 6-58) The HCP is intended to mitigate for impacts on species and to support sustaining threatened species in the wild. The HCP should be clear about the expected loss of nesting habitat inside the UPA, including within the City of Elk Grove which is not part of the HCP but is part of the nesting and foraging habitat of the South Sacramento population of Swainson’s Hawks.

11.8

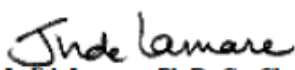
c) The HCP is deficient in its estimate of take of Swainson’s Hawk nesting sites, nesting habitat and in its mitigation for loss of nesting habitat. After 50 years, what is the expected breeding population, number of active nest sites, and fledglings expected in the Plan area?


11.9

While the HCP states that most nesting habitat is in riparian areas, clearly from Figure 3-25, most nesting sites are not in riparian areas. CDFW 2016 Status Report states that “Swainson's Hawks often nest peripheral to riparian systems. They will also use lone trees in agricultural fields or pastures and roadside trees when available and adjacent to suitable foraging habitat.” The data available to preparers contains nesting site locations so that a more definitive statement could be made about nesting habitat in South Sacramento County.	11.10
The HCP ignores the loss of nesting habitat due to road maintenance and expansion. For example, on Page 6-301, the HCP seems to ignore the fact that nesting trees are often along roadways and maintenance and expansion of rural roadways will have significant unrecognized impact on nest sites and nesting habitat. It fails to identify existing roadside nest sites and the expected loss of these sites.	11.11
The HCP mitigation program does not provide for mitigation of loss of nesting habitat along roadsides. Relying solely on preservation of riparian areas will not sustain the nesting habitat in the Plan area.	11.12
3. The HCP presents ambiguous representations of high quality habitat and fails to exclude land below sea level from eligible mitigation lands. We have pointed out previously to staff that graphics representing high quality habitat for Swainson's Hawk could be misinterpreted and requested more definitive graphics in the final plan. Likewise, we failed to find a specific prohibition of land below sea level for mitigation for upland species, a prohibition that has long been the practice by CDFW in approving mitigation parcels.	11.13
Upland mitigation lands should not only not be located below sea level, they should be distant from anticipated sea level rise to ensure permanent availability as quality foraging habitat. Why is not all Swainson's Hawk foraging habitat preservation required to be above the 100 year floodplain?	11.14
4. EIR/EIS does not address direct and cumulative impacts adequately.	11.15
a. Four counties account for 70-80 percent of the Central Valley population of the Swainson's Hawk (CDFW, Status Report, 2016, p. 17): Sacramento, Yolo, San Joaquin and Solano. The cumulative impact of this HCP and other conservation plans and mitigation programs in that range should be addressed in the environmental review document.	11.16
b. EIS 9-21 addresses the issue of conflict with other HCPs. It does not address compatibility with the City of Elk Grove Swainson's Hawk Mitigation Program. The two programs have the same receiving area for mitigation land. Nor were we able to find the discussion of the cumulative impacts of the two mitigation programs on the ability of each to meet its required mitigation objectives. The SSHCP does not include data on the Swainson's Hawk population in the approved development area of the City of Elk Grove and the required Swainson's Hawk mitigation land that will be preserved to mitigate for this development by the City of Elk Grove. Therefore there is no opportunity to assess whether the feasibility of acquisition for both programs jointly.	11.17
c. 8.1.2.5 Wildlife Nursery Sites (Page 8-35) does not acknowledge the key role of Swainson's Hawk nesting in SSHCP planning area for the survival of the species in California.	11.18

d. What assurances are there that the South Sacramento County Swainson's Hawk breeding population can be sustained with less than 10,000 acres of preserved agricultural land?	11.19
5. The HCP lacks some fundamental guarantees for the quality of the mitigation program.	11.20
a. All HCP conservation easements should be approved by California Department of Fish and Wildlife to assure consistency with the Department's guidance and current practice for mitigating impacts on listed species.	11.21
b. Conservation easements should prohibit the use of rodenticides on mitigation properties. Application of anticoagulant rodenticide (AR) is a known threat to raptors due to ingestion of poisoned prey. Numerous field monitoring studies on raptor species indicate lethal and sublethal impacts of AR exposure (Stone et al. 2003, Murray 2011, Thomas et al. 2011, Christensen et al. 2012). Pesticide use throughout the Swainson's Hawk's range, specifically targeting ground squirrels, may also impact Swainson's Hawks and cause secondary poisoning. (CDFW Status Review of Swainson's Hawk in California, April 11, 2016, pp. 12-13)	11.22
c. Mitigation lands should not be located near wind energy facilities if they preserve foraging or nesting habitat for raptors. See CDFW Status Review of Swainson's Hawk in California, 2016, p. 12. The permittees should also agree not to approve wind energy facilities next to preserves where foraging or nesting of raptors is expected.	11.23
d. There needs to be required buffers to protect mitigation lands from negative impacts of neighboring residential development (AG/RES development). If mitigation lands are located adjacent to AG/RES, the HCP should require a 200 foot offset of the mitigation property from the residential property to be included in the easement. While normal agricultural operations are expected in neighboring properties, County approval of residential uses next to preserve areas will downgrade their mitigation value to the species being protected. There needs to be a provision in the Implementation Agreement that no permittee will allow residential development outside the UPA without providing a 200 foot buffer easement to protect adjacent properties from impacts on wildlife of residential uses.	11.24
Please keep us informed regarding review of our comments, future public review of the proposed HCP and EIS/EIR, and public hearings. We prefer to receive email notification of public review documents and hearings at swainsonshawk@sbcglobal.net.	11.25

Thank you for this opportunity to comment.


Judith Lamare, Ph.D. Co-Chair,


James P. Pachl, Co-Chair

C: Tina Bartlett, Tanya Sheya, CDFW

Attached: CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE WILDLIFE AND FISHERIES DIVISION NONGAME WILDLIFE PROGRAM 1812 Ninth Street Sacramento, California 95814, “Status Review: SWAINSON’S HAWK (*Buteo swainsoni*) IN CALIFORNIA” FIVE-YEAR STATUS REPORT Reported to: California Fish and Game Commission

Other References:

Jim Estep, Estep Environmental Consulting, Distribution, Abundance, and Habitat Associations of Swainson’s Hawk (2007) (results of 2006 census level surveys in South Sacramento County) and The Distribution, Abundance, and Habitat Associations of the Swainson’s Hawk (*Buteo swainsoni*) in the City of Elk Grove, California (2009) (results of census level surveys within City limits in 2008); Monitoring Swainson’s Hawk (*Buteo swainsoni*) Nesting Activity in South Sacramento County Results of 2008 Surveys (follow up survey of 2006 study by Jim Estep).

Todd Gardner, 2005 and 2009 Nesting Survey Sites.

RTC 11.1 (SSHCP) – The comment notes several factors that could affect the effectiveness of the SSHCP Conservation Strategy in mitigating covered activity impacts to Swainson’s hawk. Section 9.3 of the Final SSHCP identifies all of the participants involved in implementation of the SSHCP, and provides an overview of each participant’s responsibilities and duties. The Implementing Entity is responsible for ensuring that preserves containing habitat for Swainson’s hawk and other covered species meet the criteria of the program, that each covered activity’s impacts on Swainson’s hawk and other covered species will be mitigated in accordance with the requirements of the SSHCP, that all requirements are enforced, and that funding requirements for conservation of Swainson’s hawk and the other covered species are met through the fee program. The Implementing Entity would prepare annual reports for the Wildlife Agencies demonstrating how each of these critical factors are being met. In the event that any of these factors are not being met, the Implementing Entity would involve the TAC, including members of the environmental community, in determining how the issues can be resolved.

RTC 11.2 (SSHCP) – The comment notes that the Draft SSHCP was unclear about the role of the Wildlife Agencies in approving property acquisitions for the SSHCP Preserve System. Section 9.3.4 of the Final SSHCP has been revised to make it clear that the TAC, which in addition to members of the environmental community would also include all Permitting Agencies (e.g., U.S. Fish and Wildlife Service and California Department of Fish and Wildlife), have approval authority over preserve acquisitions.

RTC 11.3 (SSHCP) – The comment requests that CDFW hold a conservation easement on all SSHCP preserves. Section 9.4.3 of the Final SSHCP contains language that states the following “The Implementing Entity will hold in perpetuity all conservation easements it purchases or accepts from a landowner. In addition, all conservation easements will have a third-party enforcement beneficiary (CDFW and/or USFWS).” This provides a superior alternative to CDFW holding the conservation easement since it allows both Wildlife Agencies to enforce the conservation easement. If the Implementing Entity were to fail, the conservation easements would be transferred to the successor agency.

RTC 11.4 (SSHCP and EIS/EIR) – The comment suggests that the SSHCP and EIS/EIR should account for consistency with the NOAA and USFWS December 2016 HCP Handbook. The NOAA and USFWS December 2016 HCP Handbook and CDFW 2016 Swainson’s Hawk Status Report were published after the Draft SSHCP and Draft EIS/EIR was completed. As part of their permit decision process, the USFWS will review the Final SSHCP in detail to assure that it contains all necessary HCP content, and that it meets each of the ESA Section 10 permit issuance criteria, as described in the 2016 HCP Handbook.

The comment also states that the habitat models for Swainson’s hawk is out of date and should be checked for consistency with the CDFW 2016 Swainson’s Hawk Status Report. That report was published after the Draft SSHCP and Draft EIS/EIR was completed. Section 3.4 of the SSHCP describes the process of developing habitat models for all 28 Covered Species. The purpose of the models is to define and map

potential habitat for each Covered Species in the Plan Area. The Plan Permittees, wildlife agency biologists and local species experts used the best available information to define and map Covered Species potential habitat, including Swainson's hawk nesting information provided by the commenter. In addition to the Species Accounts in Appendix B, the species models took into account the best available information related to: species' needs for breeding, feeding, and sheltering at each life history stage; information from Plan Area species-surveys; documented species-occurrences within the Plan Area; information on species range, including soil type associations and elevation limits, and the expertise of CDFW staff. This information included information relating to the Swainson's hawk. Examples of this information include newer data received from Jim Estep regarding locations of Swainson's hawk nest trees, expert input from Todd Gardner of CDFW regarding both the habitat requirements and recommended conservation measures for Swainson's hawk. Nonetheless, as new information becomes available regarding the needs of Swainson's hawk and the effectiveness of the proposed Conservation Strategy, monitoring results will be used to adaptively manage the preserves for maximum benefit to the species. In summary, the species models and species accounts were adequately up-to-date to serve their purpose in the SSHCP, and implementation of the SSHCP will adequately account for new information as it becomes available.

RTC 11.5 (SSHCP) – The comment states that the SSHCP does not establish a baseline for the Swainson's hawk breeding population. Although useful baseline data is available for Swainson's hawk and would be incorporated into the SSHCP Preserve Management and Monitoring programs, many covered species have scant data available on their population sizes or distributions within the Plan Area. Therefore, as described in Section 8.3.3.2.1 of the Draft SSHCP, the first 10 years of SSHCP implementation would include intensive surveys within the Preserve System to establish a solid record of baseline conditions for each covered species in the Preserve System. As new properties are acquired, surveys would be conducted to establish baseline conditions for covered species on those properties. Regarding the age of the information in the species accounts, please refer to response to Comment 11.4.

RTC 11.6 (SSHCP) – The comment requests that the SSHCP include a baseline for nesting Swainson's hawk pairs in the Plan Area. Such a baseline would be necessary if the SSHCP monitoring program proposed to directly monitor the nesting population. However, the SSHCP monitoring program does not include directly monitoring the nesting population, as this can vary from year to year. Rather, the SSHCP incorporates goals and objectives that focus on preserving Swainson's hawk breeding and foraging habitat in an integrated regional manner, consistent with the SSHCP Mission Statement (Section 1.1.1). Therefore, the SSHCP does not include a baseline for nesting Swainson's hawk pairs.

Table 8-1 in Section 8.2.1 of the Final SSHCP provides a framework for compliance monitoring for the Covered Species, including Swainson's hawk. The table outlines the monitoring activities that will assess compliance with and progress towards the measurable conservation objectives for Swainson's hawk. The measurable objectives for Swainson's hawk are focused on preserving, managing, and monitoring sufficient

breeding and foraging habitat for the species (see Chapter 7 of the Final SSHCP for more information on the SSHCP biological goals and objectives for Swainson's Hawk).

With respect to the Swainson's hawk Species Account, see the response to Comment 11.4. The Species Accounts were one of many sources used to develop species habitat models.

RTC 11.7 (SSHCP) – The comment states concern about the lack of a comprehensive monitoring and management plan in the Draft SSHCP. As stated in Section 8.1 of the Draft SSHCP, Chapter 8 describes the framework for the SSHCP Compliance and AMM Monitoring Program and the SSHCP Preserve System Monitoring and Management Program. The chapter outlines “the monitoring and management protocols and standards that the Implementing Entity will use to prepare Individual Preserve Management Plans (PMPs) and SSHCP Annual Reports.” The SSHCP Implementing Entity, Plan Permittees, the Permitting Agencies, and the future SSHCP Technical Advisory Committee (TAC) will provide input on the development of the SSHCP Compliance and AMM Monitoring Program and the SSHCP Preserve System Monitoring and Management Program. As stated in Section 9.11, the Implementing Entity will finalize these two Programs in the first 18 months after permit issuance. These programs, procedures and plans will be developed in full coordination with the TAC and will undergo public disclosure and adoption by the Implementation Committee. All meetings of the Implementation Committee will be called, noticed, held and conducted in compliance with the provisions of the Ralph M. Brown Act, Government Code section 54950 et seq. Individual Preserve Management Plans based on these programs will also be developed in coordination with the TAC. The intent is to maintain SSHCP Compliance and AMM Monitoring Program and the SSHCP Preserve System Monitoring and Management Program as “living” documents, to be periodically reviewed and updated to reflect the most current scientific and agency consensus. Certainly components of both monitoring programs will be conducted on an annual basis as well as on both shorter and longer timeframes, depending on the nature of the monitoring.

RTC 11.8 (SSHCP) – The comment objects to only considering impacts to Swainson's hawk nesting trees within high-value habitat. The SSHCP does not do this. Rather the goal of the SSHCP is to emphasize preservation of high-value habitat and to minimize impacts to high-value habitat. Impacts to Swainson's hawk are analyzed and would be mitigated regardless of whether the impact occurred in high-value habitat or other modeled Swainson's hawk habitat. The referenced text in Section 6.4.2.1 of the Draft SSHCP discusses how high-value habitat was determined, but does not state that impacts to high-value habitat are the only ones considered. For example, refer to Table 6-78 and Table 6-79 in the Draft SSHCP. Table 6-78 shows impacts to all Swainson's hawk modeled habitat, while Table 6-79 shows impacts to only the high-value Swainson's hawk modeled habitat (a subset of the impacts shown in Table 6-78).

The comment also requests that the SSHCP include discussions of potential take of Swainson's hawk nest trees outside the Plan Area. The SSHCP evaluates the impacts of the Covered Activities. These Covered Activities do not extend in the City of Elk Grove. Section 9.2.3.11 of the Draft EIS/EIR does address cumulative impacts to

Swainson's hawk, and the scope of the cumulative analysis includes habitat within the City of Elk Grove.

RTC 11.9 (SSHCP) – Regarding the adequacy of the SSHCP impact analysis and mitigation, the impacts analysis in Section 6.6.20 of the Draft SSHCP describes impacts to 373 acres of nesting habitat, as well as individual nest sites. Section 7.6.2.20 describes biological objectives SH3, SH4, and SH5 for the conservation of 746 acres of modeled nesting habitat, 373 acres of modeled riparian nesting habitat, and a replacement ratio of 10:1 for nesting trees removed within the UDA.

The comment also requests that the SSHCP estimate the effects of the Conservation Strategy on Swainson's hawk at the end of the 50-year permit term. See the responses to Comments 11.6 and 11.7 regarding monitoring. 1

RTC 11.10 (SSHCP) – The comment requests that the SSHCP broaden its description of nesting habitat for Swainson's hawk to include isolated trees in agricultural landscapes, as well as roadside trees. Section 3.4.5, page 3-107 of the Draft SSHCP does state: "Swainson's hawk's nests are also found well away from waterways in lone trees in fields and pastures, in trees along roadside edges, in small groves, around farm buildings, and in some urban areas. Nest trees can also be found in proximity to farm buildings (Bloom 1980; Swolgaard 2004), often in large, well-established, exotic tree species or relict natives." The comment also states that Figure 3-25 demonstrates that most nesting trees in the Plan Area are not in riparian areas. However, at the scale of Figure 3-25, it is not possible to draw the conclusion that most nesting sites are associated within riparian areas.

As shown in Figure 3-25 the density of nesting locations within the UDA is much lower than the density of nesting locations outside the UDA. In addition, the HCP takes into account the loss of individual trees with Species Objective SH5, which requires a replacement ratio of 10:1 for each nesting trees removed within the UDA. The analysis of the Conservation Strategy determined that the overall strategy for Swainson's hawk, including this replacement ratio, coupled with the minimal removal of roadside and other trees associated with covered activities outside the UDA, should ensure that Swainson's hawk maintains its general distribution and population within the Plan Area.

RTC 11.11 (SSHCP) – The SSHCP is a regional habitat conservation plan, and cannot feasibly map and quantify individual trees within the Plan Area. However, at the time of individual Covered Activity project development and/or road maintenance and expansion within the UDA, the loss of individual trees is addressed by Objective SH5, which requires a replacement ratio of 10:1 for nesting trees removed within the UDA (see Table 7-1 of the Final SSHCP).

Outside the UDA, the loss of nesting trees would only be associated with road maintenance and expansion covered activities. The SSHCP Conservation Strategy will preserve large expanses of valley grassland and agricultural landscapes outside the UDA, many of which would contain existing or suitable Swainson's hawk nest trees. Therefore, although quantifying preservation of a certain number of nest trees outside

the UDA is not a stated SSHCP measurable objective for the Swainson's hawk conservation strategy, many nest trees outside the UDA will be preserved through the SSHCP Conservation Strategy. The Final SSHCP has been revised in Section 7.6.2.20 to better explain how the SSHCP Conservation Strategy will mitigate impacts to Swainson's hawk nesting habitat to the maximum extent practicable. Occupied Swainson's hawk nesting trees within the Plan Area, including outside the UDA, would be avoided through implementation of AMMs that include survey and setback requirements for nesting trees adjacent to development and road Covered Activities: SWHA-1 (Swainson's Hawk Surveys), SWHA-2 (Swainson's Hawk Pre-Construction Surveys), SWHA-3 (Swainson's Hawk Nest Buffer), and SWHA-4 (Swainson's Hawk Nest Buffer Monitoring). These AMMs are described in Section 5.4.2, pages 5-104 to 5-105 of the Final SSHCP. The setback requirements in SWHA-3 and SWHA-4 will generally avoid potential adverse edge effects from development by minimizing the contact zone between construction activities and habitat used for nesting and foraging by Swainson's hawk.

RTC 11.12 (SSHCP) – The comment notes that the SSHCP does not require planting of new trees for each Swainson's hawk nest tree removed by roadway Covered Activities outside the UDA. See responses to Comments 11.11 and 11.2. The SSHCP Conservation Strategy will preserve large expanses of intact valley grassland and high quality agricultural landscapes outside the UDA, many of which contain existing and suitable Swainson's hawk nest trees. Although the number of nest trees to be preserved outside the UDA is not included as a SSHCP measurable objective, many nest trees outside the UDA will be preserved by the SSHCP Conservation Strategy. The Final SSHCP has been revised to include this discussion in Section 7.6.2.20.

The SSHCP also provides mitigation at a ratio of 10:1 for the loss of any nesting trees within the UDA, including nesting trees along roadways. This mitigation ratio is set at a high level to offset the impacts of temporal loss, because the new trees will require several years to reach a size to be suitable as Swainson's hawk nest trees. The replacement trees would be planted outside the UDA, so that nest tree availability would be increased within preserved foraging habitat.

RTC 11.13 (SSHCP) – The comment states that it is difficult to identify high-quality habitat for Swainson's hawk in SSHCP figures. At the regional scale of the SSHCP, it is neither feasible nor necessary to show highly detailed versions of these figures. Individual covered activity applications and parcels proposed for acquisition will be subject to detailed surveys and analysis, and it is during those times that high-quality habitat would be definitively identified.

The comment also notes difficulty in locating language prohibiting preserve acquisitions that are below sea level. Language has been added to Final SSHCP Table 7-1, under (Objective L1 conservation actions) to state that "Acquisitions of land below sea level are prohibited." Because Objective L1 applies to all preserve acquisitions, this clarifies the requirements. Language has also been added to Final SSHCP Section 9.4.2 *Process for Acquisition of Preserve Land* to state that land below sea level will not be considered for acquisition.

RTC 11.14 (SSHCP) – The comment requests that all preserve land for Swainson’s hawk be located above the 100-year floodplain. The SSHCP Implementing Entity will pursue land acquisitions that would persist as foraging habitat. When potential land acquisitions are identified, they will be vetted by the SSHCP Technical Advisory Committee. This Committee will take the long-term viability of property into consideration prior to acquisition. Areas that are within the 100-year floodplain provide valuable foraging habitat for Swainson’s hawk. Swainson’s hawks generally use the Plan Area from March to September when risk of flooding is low to non-existent. In addition, requiring all Swainson’s hawk foraging habitat to be above the 100-year floodplain would severely constrain the Preserve System and would reduce habitat heterogeneity.

RTC 11.15 (EIS/EIR) – Detailed responses to this comment are provided in response to Comments 11.16 through 11.19.

RTC 11.16 (EIS/EIR) – The comment requests that the EIS/EIR analyze the cumulative effects of the SSHCP and other conservation plans and mitigation plans on Swainson’s hawk in Sacramento, Yolo, San Joaquin, and Solano counties. As indicated in Draft EIS/EIR Section 1.1.1, *Geographic Scope of the EIS/EIR Planning Area*, the term “Planning Area” is used in the EIS/EIR and indicates the geographic area for which the EIS/EIR provides analysis. In other words, the evaluation of direct, indirect, and cumulative effects of the alternatives considered in the EIS/EIR focusses on the defined Planning Area as shown in Figure 1-1 and described in Section 1.1.1. The list of reasonably foreseeable other actions provided in Section 3.7, *Cumulative Effects Analysis in Resource Chapters 4 Through 16*, maintains this approach and includes projects and actions either within the Planning Area, or surrounded or almost surrounded by the Planning Area (Rancho Murieta and City of Elk Grove). A lead agency is given discretion under NEPA and CEQA to define the geographic limits of the cumulative impact analysis. A lead agency does not need to always consider every potential future action that might in some way contribute to a cumulative effect. For example, for the cumulative effect of climate change, an EIS/EIR need list every global project or action that may emit greenhouse gases. Rather, CEQA provides that an agency has discretion to apply its expertise in selecting an appropriate assessment area. (See *City of Long Beach v. Los Angeles Unified School District* (2009) 176 Cal.App.4th 889.) That is, CEQA states that an EIR should provide an explanation supported by evidence for the geographic area used in the analysis. (See State CEQA Guidelines, § 15130(b)(3).) An analysis of cumulative impacts under NEPA is similar, in that the decision and extent and effect of cumulative effects “and particularly identification of the geographic area within which they may occur, is a task assigned to the special competency of the appropriate agencies.” (See *Kleppe v. Sierra Club* (1976) 427 U.S. 390; *Selkirk Conservation Alliance v. Forsgren* (9th Cir. 2003) 336 F.3d 944.) Here, the Planning Area provides a sufficient geographic area to identify and disclose cumulative impacts and conduct the cumulative impact analysis at a level of detail sufficient for the lead agencies to use as a reasonable basis for decision making in selecting between the alternatives. With this established geographic limit for the reasonably foreseeable other actions, actions in surrounding counties, including other conservation plans and mitigation programs, are appropriately not considered in the cumulative impact analysis in the EIS/EIR.

RTC 11.17 (EIS/EIR) – The comment considers a scenario where the SSHCP and City of Elk Grove Swainson’s Hawk Mitigation Program (Elk Grove Program) might “compete” for Swainson’s hawk mitigation lands in the Planning Area. Multiple entities seeking mitigation or conservation lands in the same area is a common occurrence. Under existing conditions, these entities include various local jurisdictions, project proponents, and conservation organizations that seek and establish mitigation and conservation programs in the Planning Area. This would continue under the No Action/No Project Alternative. Under the No Action/No Project Alternative, the Elk Grove Program would continue to “compete” with the various entities for conservation/mitigation lands. If the available supply of conservation/mitigation lands declines under the No Action/No Project, there are various market responses that may occur, for example; supply and demand principles may result in the price for conservation/mitigation lands going up, resulting in more willing sellers and an increase in supply; some entities seeking conservation/mitigation lands (e.g., mitigation banks, conservation organizations) may expand their search area to locations with more available land; or development and other actions that result in the need for mitigation lands may be limited. Given the multiple possible market responses to “competition” for mitigation lands, it would require significant speculation to attempt to project, with any specificity, the future results of the Elk Grove Program competing with the various other conservation/mitigation programs for Swainson’s hawk conservation/mitigation lands under the No Action/No Project Alternative. It would also be very speculative for the No Action/No Project to attempt to determine whether any entities’ conservation actions would result in acquisition of conservation/mitigation lands becoming infeasible for another entity.

RTC 11.18 (EIS/EIR) – The comment requests that Section 8.1.2.5 of the Final EIS/EIR acknowledge the importance of the Plan Area for Swainson’s hawk nesting and survival. However, the referenced section is focused on species that are colonial nesters, which does not apply to Swainson’s hawk.

RTC 11.19 (SSHCP) – The comment questions whether the SSHCP can assure a sustained population of Swainson’s hawk in southern Sacramento County with the level of proposed preservation of agricultural lands (approximately 10,000 acres). The Swainson’s hawk habitat preserved under the SSHCP would be in addition to the several thousands of acres of habitat already preserved, as well as the substantial areas of habitat that are expected to remain in agricultural production. Note that the SSHCP does not cover urban development outside the UDA, so even though much of the agricultural land would not be SSHCP preserve, that does not mean it would be developed. The conservation analysis in Section 7.6.2.20 of the Draft SSHCP concludes that Swainson’s hawk populations would remain sustainable and that the species distribution in the Plan Area would be maintained.

RTC 11.20 (SSHCP) – Please refer to response to Comment 11.7.

RTC 11.21 (SSHCP) – The comment states that all conservation easements should be approved by CDFW. Template SSHCP conservation easements are provided in SSHCP Appendix D. These easements have been approved by the USFWS and

CDFW. SSHCP Section 9.4.3 Conservation Easements provides that “Reasonable variations from the template may be allowed to address site-specific constraints. CDFW and USFWS, along with the Implementing Entity, must review and approve any modifications to the template easement.”

RTC 11.22 (SSHCP) – The comment requests that the SSHCP prohibit all use of rodenticides on SSHCP preserves, due to their adverse secondary effects on Swainson’s hawk and other raptors. Section 5.2.8 of the Draft SSHCP describes pesticide use as a Covered Activity that is to be used for purposes of land management only:

“Pesticide use is allowed in Preserves only to achieve the SSHCP Biological Goals and Measurable Objectives (e.g., exotic plant or exotic animal control). Preserve Management Plans (see Chapter 8) will prescribe an integrated pesticide use process as a Preserve management tool, modeled after the California Department of Fish and Wildlife’s pesticide use approval process (CDFW Forms 679 and 680). At a minimum, this will include compliance with pesticide label instructions and state and local laws. Use must also comply with existing injunctions related to the use of pesticides.”

If the Implementing Entity determines that rodenticide use is necessary and appropriate on a preserve parcel, the rodenticide use will be included in the parcel’s proposed Preserve Management Plan. As discussed in Section 9.3.4 of the SSHCP, each Preserve Management Plan is subject to review and approval by the TAC, which would include members from the environmental community and wildlife agencies. In general, the Plan Preparers expect that usage of rodenticides will not be warranted or allowed on SSHCP preserves. However, in order to maintain a pool of willing sellers of conservation easements on Plan Area agricultural lands, the Plan Preparers could not completely prohibit their use within all of the SSHCP Preserve System. If the TAC does approve an individual Preserve Management Plan that allows use of rodenticides, that usage would be subject to limitations described in the PMP on timing and area of application, amounts to be used, and acceptable rodenticides. If appropriate, those restrictions could be incorporated into the conservation easement.

RTC 11.23 (SSHCP) – The comment requests that the SSHCP prohibit establishment of Swainson’s hawk mitigation areas adjacent to existing wind energy facilities. This has been added to Table 7-1 in the Final SSHCP as one of the conservation actions associated with measurable objectives SH1, SH3, and SH6. Note also that SSHCP Section 5.3 specifies that wind energy facilities are not Covered Activities under the SSHCP; however, the SSHCP cannot impose requirements on the plan permittees regarding non-covered activity projects. The CEQA document for a future wind energy project would be required to analyze project impacts on existing SSHCP preserves when the CEQA document is prepared.

RTC 11.24 (SSHCP) – The comment requests that a 200-foot buffer be required between preserves outside the UDA and any agricultural/residential development. Please see response to Comments 9.77 and 9.78.

RTC 11.25 (SSHCP) – The comment requests that FOSH be kept updated regarding review of the comments and future public review of the HCP, EIS/EIR, and public hearings. An email address for correspondence is also provided. These preferences have been noted. The Plan Preparers and Wildlife Agencies also thank FOSH for their engagement and careful review of the SSHCP over many years.

LETTER 12 INSTITUTE FOR ECOLOGICAL HEALTH
(CWA PERMIT STRATEGY)



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**Re: Public Notice SPK-1995-00386. Proposed Section 404 Clean Water Act
Permit Strategy Aligned with the South Sacramento Habitat Conservation
Plan, Sacramento County, CA**

Dear Mary Pakenham-Walsh:

Thank you for providing the various materials and an opportunity to comment.

Thank you also for the Corps' ongoing commitment to permit alignment and streamlining with respect to the South Sacramento HCP and all the work that the Corps has done over many years to make this outcome possible.

Overall these are excellent permitting approaches which we support strongly.

One suggestion for The Letters of Permission Submittal Material Criteria (page 2)

Please add a requirement that the project complies with any applicable terms and conditions contained in the SSHCP. This is more comprehensive than "ratios specified in the *Compensatory Mitigation Standards* specified in the local ARP ordinance" and mirrors the requirement in the PGP document (terms of authorization, item 3). 12.1

Sincerely

John Hopkins
President.

Land, People, and Nature — New Solutions for a New Century

RTC 12.1 (CWA Permit Strategy) – The comment regarding support for the proposed approach to CWA 404 permitting is noted.

The comment regarding a suggestion for adding a qualification criterion to the LOP procedure (pg. 2 of draft LOP procedure) "...that the project complies with any applicable terms and conditions in the SSHCP..." is noted. However, the prior section of the LOP procedure, "Proposed Categories of Activities," states that activities authorized under a LOP must comply with the SSHCP's terms and conditions, including implementation of "...applicable and appropriate avoidance and minimization measures contained in Chapter 5 of the SSHCP, and other applicable terms and conditions as contained in the SSHCP." Therefore, modifications to the qualification criteria section of the LOP procedure are not required.

**LETTER 13 LAW OFFICES OF GREGORY D. THATCH, REPRESENTING
CORDOVA HILLS LLC
(SSHCP)**

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August 30, 2017

VIA ELECTRONIC MAIL ONLY

County of Sacramento,
Environmental Coordinator
827 7th Street, Room 225
Sacramento, CA 95814
Email:SSHCP@saccounty.net

RE: South Sacramento Habitat Conservation Plan

Dear Coordinator:

This office represents Cordova Hills, LLC (“Cordova Hills”). Consistent with the June 2, 2017 Notice of Availability of the Proposed Habitat Conservation Plan for South Sacramento, County, California (“SSHCP”), we submit the following limited comments. Our comments are set forth in the order in which the matters appear within the text of the SSHCP.

CHAPTER 8 – SSHCP MONITORING AND MANAGEMENT PROGRAMS

Habitat Re-Establishment/Establishment Plans (p. 8-151)

This limited section of the SSHCP acknowledges that a stand-alone Habitat Re-Establishment/Establishment Plan will be developed and “will be consistent with the requirements of the ARP (Appendix J).” The reference to Appendix J is in error and confusing. The ARP (Aquatic Resources Plan) is actually Appendix I (not Appendix J) to the Draft EIS/Draft EIR – it is not an appendix of the SSHCP. We also noticed that Table 8-4 (p. 8-110, *et seq.*) includes several references to the ARP as Appendix J). In all cases, we believe the reference should be to “Appendix I of the Draft EIS/EIR.” We also suggest that a detailed review of all references to appendices, figures and tables be made to confirm that any changes in numbering of these matters is properly reflected.

13.1

13.2

CHAPTER 12 – ECONOMICS ANALYSIS AND FUNDING PROGRAM

Table 12-3: Habitat Re-establishment/Establishment Costs (p. 12-8)

This table reflects the estimated success rates for various forms of re-establishment and establishment of land-cover types. Cordova Hills is especially concerned that the 65% success rate estimate for vernal pools is artificially low, which results in higher fees than would otherwise be

13.3

Environmental Coordinator
August 30, 2017
Page 2

required. While we acknowledge that this rate appears to be based upon John Zanzi’s experience over thirty years (see fn. 5 on p. 12-8), there is no actual explanation of what the 65% number is based on. If this success rate is based on an average success rate of projects over the last thirty years, it will vastly understate the success rates of more recent efforts. Re-establishment and establishment of vernal pools has become much more successful over the last ten years, due to advances in technology and understanding of the science behind vernal pool success. Experts with whom we have consulted place the success rate for the re-established and established vernal pools in more recent times at well above 65%. Cordova Hills recommends that the success rate estimates for vernal pool re-establishment/establishment be carefully reviewed to assure accuracy and, thereby, better reflect per-acre costs as set forth in Table 12.3.

13.3
cont'd

Related to this issue is the corresponding text in the paragraph immediately preceding Table 12-3. The text includes the following incomplete sentence when referencing Table 12-3:

“In particular, re-established/established vernal pool habitat projects (see Table 12-3 for assumed success rates).”

13.4

This incomplete textual reference should be corrected so that the reader might better understand the reference and the relationship between the textual discussion and the ensuing Table 12-3.

Table 12-5: Development Fees Used in the SSHCP Economic Model (p. 12-19)

This table identifies the Preservation Fee and Re-Establishment/Establishment Fee related to each land cover type, but neglects to identify the various components that make up this fee, including land acquisition, endowment, monitoring, changed circumstances, agricultural enhancement and SSHCP plan development. Without this information, it is not possible for applicants to estimate how much they may owe when they are conveying already purchased land that has been re-established/established, endowed, and already monitored. This additional information should be contained in Table 12-5 or, perhaps, in a separate table breaking down the components of Table 12.5.

13.5

12.4.3.1: Land Dedication in Lieu of Development Fees (p. 12-19)

The missing information from Table 12-5 (see previous comment) is compounded by the limited text in this Section, which immediately follows Table 12-5 and fails, again, to identify how land dedication will impact the amount of the fee owed. While this section does state that “development fees will be adjusted by excluding some portion of the land acquisition component of the development fee,” it does not quantify the amount of this adjustment. Moreover, there is no explanation of why only “some portion of the land acquisition component” will be adjusted. It appears that, with no land acquisition necessary with respect to land that is dedicated, there should be no land acquisition component left to pay.

13.6

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 Page 3

APPENDIX K: Project-Specific Avoidance and Minimization Measures (p. K-3)

SSHCP Appendix K discusses project specific Avoidance and Minimization Measures for five separate Master Plans/Specific Plans, one of which is Cordova Hills. The Cordova Hills discussion is taken from Appendix A of the Cordova Hills biological opinion. While the biological opinion confirms that any discrepancy between Appendix A of that opinion and the SSHCP will be controlled by Appendix A (thus superseding any conflicting language in Appendix K of the SSHCP), a simple correction of a minor error in Appendix K of the SSHCP would render both appendices consistent. On Page K-3, there is a minor error in the last sentence of **BAT-1 (Winter Hibernaculum Surveys)**. The sentence should be revised to read as follows (new text in *italics*; deleted text in ~~strikeout~~):

13.7

“No further surveys for ~~tri-colored blackbirds~~ *bat hibernaculum* are required.”

On behalf of Cordova Hills, we thank you for the opportunity to comment on the SSHCP and look forward to continuing dialogue as this project moves toward consideration and approval by the various agencies involved.

Very truly yours,


 Gregory D. Thatch

GDT:ll
 T6542

cc: Ron Alvarado, Cordova Hills, LLC
 Mark Hanson, Cordova Hills, LLC
 Ben Watson, Madrone Ecological Consulting

RTC 13.1 (SSHCP) – The proposed corrections have been made to Final SSHCP Chapter 8.

RTC 13.2 (SSHCP) – The Final SSHCP document has been reviewed to ensure that all references to appendices, figures, and tables are correct.

RTC 13.3 (SSHCP) – The SSHCP preparers reviewed a range of literature (e.g., Schlatter et al. 2016¹) and discussed with other area experts before settling on the 65% value for the success rate of vernal pool re-establishment/establishment. While we recognize that some recent efforts may appear to be performing well, we have noticed a lack of consistent performance standards across vernal pool re-establishment/establishment projects that make it difficult to assess whether the projects have truly been “successful” by the standards of the SSHCP. Therefore, we have retained the likely conservative 65% success rate listed in the SSHCP, which has been vetted by the Wildlife Agencies and USACE. However, if experience during implementation of the SSHCP or from other area projects suggests that this rate is too low, the re-establishment/establishment fee could be adjusted following one of the fee audits, which would be conducted every three years during the first 15 years of the SSHCP and less frequently thereafter.

RTC 13.4 (SSHCP) – The sentence has been completed in the Final SSHCP to read as follows: “In particular, re-established/established vernal pool habitat projects have historically been challenging relative to other wetland projects (see Table 12-3 for assumed success rates).²

RTC 13.5 (SSHCP) – Additional detail has been provided in Table 12-5 of the Final SSHCP clarifying which portion of the fee relates to land acquisition (for preserve establishment) or re-establishment/establishment (for habitat re-establishment/establishment projects) versus what portion of the fee is for other expenses. Further detailed breakdowns are also provided in the revised Appendix I to the SSHCP.

RTC 13.6 (SSHCP) – New text in Section 12.4.3.1 of the Final SSHCP explains how the mitigation fee will be adjusted to reflect land dedication by a project proponent.

RTC 13.7 (SSHCP) – The proposed corrections to Appendix K have been made in the Final SSHCP.

¹ Schlatter, K.J., A. M Faist, and S.K. Collinge. 2016. Using performance standards to guide vernal pool restoration and adaptive management. *Restoration Ecology* Vol. 24, No. 2., pp. 145-152.

LETTER 14 MICHAEL MAHON
(SSHCP)

Michael D. Mahon Comment
on South Sacramento Habitat Conservation Plan

The South Sacramento Habitat Conservation Plan (HCP) calls for a joint powers authority (JPA) to administer a complex, expensive 50-year monitoring and habitat management plan for the benefit of the people of Sacramento County. It also claims the alleged benefits of simplifying the application process with federal agencies for incidental take permits under the ESA and NEPA, speeding up development. The proponents claim it is a novel structure, among the first of its kind in the country. It is fundamentally flawed for several reasons.

14.1

First, **it is an unconstitutional tax**. The HCP sets about creating an extraordinary, expensive, perpetual wildlife preserve and bureaucratic complex, theoretically at the expense of only those who choose to develop parcels in the area and the subsequent owners of that property. If potential developers are to be required to set aside land for habitat, the purchase and dedication of that land should be separate from the extraordinary scheme in the HCP, conducting periodic studies, and preparing bureaucratic reports in perpetuity. **The HCP sets out uncommon and unreasonable burdens for a longer time period compared to other mitigation plans, which have common and reasonable burdens for less time.** It is also highly speculative what the values associated with property, especially mitigation property, will be in the future, and it is *per se* not reasonable to make assumptions of land value on a 50+ year time horizon, so any plan based upon such assumptions is also *per se* not reasonable.

14.2

14.3

14.4

The present funding mechanism for the South Sacramento Habitat Conservation Plan agency constitutes a tax, not merely a development fee *per se*, as it funds items which go beyond that which are normally considered related to development. The recent 6-1 California Supreme Court case, *Jacks v. City of Santa Barbara*, 3 Cal. 5th 248; 2017 Cal. LEXIS 4769, is highly instructive on which local charges are to be considered taxes. Since 2010 and Proposition 26, the California Constitution has been amended to provide the definition of a tax: “‘tax’ means any levy, charge, or exaction of any kind imposed by a local government” (Cal. Const., art. XIII C, § 1, subd. (e)), except (1) a charge imposed for a specific benefit or privilege received only by those charged, **which does not exceed its reasonable cost**, (2) a charge for a specific government service or product provided directly to the payor and not provided to those not charged, **which does not exceed its reasonable cost**, (3) charges for **reasonable regulatory costs** related to the issuance of licenses, permits, investigations, inspections, and audits, and the enforcement of

14.5

14.6

agricultural marketing orders, ... (6) **charges imposed as a condition of developing property**, and (7) property-related assessments and fees as allowed under article XIII D. **The local government bears the burden of establishing the exceptions.** (Cal. Const., art. XIII C, § 1, subd. (e), emphasis added.)

14.6 cont'd

Jacks follows and affirms the reasoning of *Sinclair Paint*, 15 Cal.4th 866. “Although [Sinclair Paint], focused on restrictions imposed by Proposition 13, its analysis of the characteristics of fees that may be imposed without voter approval remains sound...

According to Proposition 218's findings and declarations, “Proposition 13 was intended to provide effective tax relief and to require voter approval of tax increases. However, local governments have subjected taxpayers to excessive tax, assessment, fee and charge increases that ... frustrate the purposes of voter approval for tax increases” (Prop. 218, § 2, reprinted at Historical Notes, 2B West's Ann. Cal. Const. (2013) foll. art. XIII C, § 1, p. 363, italics added [in *Jacks*].) As relevant here, this finding reflects a concern with excessive fees, not fees in general.” *Jacks* continues, citing the Historical Notes of Proposition 26, **“to ensure the effectiveness of these constitutional limitations, [Proposition 26] defines a ‘tax’ ... so that neither the Legislature nor local governments can circumvent these restrictions on increasing taxes by simply defining new or expanded taxes as ‘fees.’”**

14.7

The Court in *Jacks* summarized three categories of charges that are fees rather than taxes, and therefore are not subject to the voter approval requirements of Proposition 13: first, special assessments may be imposed “in amounts reasonably reflecting the value of the benefits conferred by improvements.” (*Sinclair Paint*, at p. 874); second, development fees, which are charged for building permits and other privileges, are not considered taxes **“if the amount of the fees bears a reasonable relation to the development's probable costs to the community and benefits to the developer.”** (*Sinclair*, at p. 875, emphasis added.) The Court echoes the Constitution and applies the standard of reasonable relationship to development fees, just as is provided for special benefits, government products, and various investigations charged by the local governments. The Court continues, citing to the historical record of Proposition 218 which provides that **“[Proposition 218] shall be liberally construed to effectuate its purposes of limiting local government revenue and enhancing taxpayer consent,”** and later concludes, **“To the extent fees exceed a reasonable amount in relation to the benefits or costs underlying their imposition, they are taxes.”** *Jacks* at p. 268, citing *Sinclair Paint*, at p. 881.

14.8

My position, simplified, is that a significant portion of the fees charged under the HCP are beyond the reasonable amount chargeable as development fees, and are therefore to be considered taxes. *Sinclair* at p. 875 cites a string of cases concerning development fees. None of these involves a permanent, comprehensive environmental preserve and permanent bureaucracy the likes of which is detailed in the HCP. The present HCP goes too far. **As its proponents maintain, it is a novel approach**, without significant precedent, and in my view it is **therefore ripe for constitutional scrutiny**. Specifically, the perpetual cycles of measurement and verification, with unlimited potential for expansion in scope, are not reasonable.

14.9

Second among its fundamental flaws, **the Plan provides funding for activities outside the 50-year Permit Term**. To the extent it does so, some \$62 million or more for the non-plan years, at least, can only be seen as a tax. Section 12.3.7 of the HCP provides, “The development fees include a contribution to a non-wasting endowment designed to generate sufficient interest to cover the ongoing annual costs beyond the 50-year Permit Term.” In other words, **the Plan wants to fund similar activities outside the permit term, but will charge during the permit term** to fund those activities indefinitely, and it is unclear how that is reasonably related to the permitting activity; *ergo* it is a tax.

14.10

Third, the HCP protects more species than are currently listed by the federal and state endangered species acts (ESAs). **Of the 28 species chosen as “Covered Species,” three-fifths are not threatened or endangered on either the federal or state ESA**. In a very straightforward way, three fifths of the HCP is not for purposes beyond what has been agreed nationally and statewide to be reasonable, i.e., protection of listed species under the federal and state endangered species acts. In various presentations, **proponents of the HCP have stressed they have narrowed the list of species from initial wish lists of more than 100 species down to 28, but the fact remains the list is still 255% as large as it would be had the list been kept to the ordinary, reasonable boundaries of the ESAs**. Any margin of expense beyond protecting listed species would be an unconstitutional tax, and the burden should be on the proponents to delineate how much expense is required for protecting the listed endangered and threatened species only versus the gamut of “Covered Species.”

14.11

It is also unclear from the published materials what the economic effect of mitigating for particular species that may be on particular parcels would be versus the aggregating plan, covering all 28 species. It is unclear why a developer of parcels that may have, for example, only one species should pay to protect 28 species, 17 of which are not listed,

14.12

and also to endow a permanent bureaucracy theoretically protecting all 28. It is unclear what the marginal cost or benefit would be for protecting 27 additional species when that developer could otherwise mitigate simply with the dedication of a similar one-species parcel and no permanent bureaucracy. **Why, theoretically obligated to shield one species under current regulation, is a developer required to purchase the panoply for all 28 species?**

14.12 cont'd

It is unclear why future developers of parcels, thirty years down the line, let us imagine, with one protected species, in a very different part of the county should inherit the bills linked to a vast and extensive preserve, decades of M&V reports, new plans, updates, a half dozen or so full-time JPA executives, dozens of expensive scientific contractors, etc. Why do developers and speculators in Rancho Cordova and the land immediately around highly sensitive, multi-species habitat who want to develop or to collect a windfall right now benefit, and others not situated in the current, immediate wave of development suffer unknown burdens under a new bureaucracy when they might otherwise have been able to mitigate inexpensively?

14.13

In summary of the first three reasons why the HCP is an unconstitutional tax: the Plan is too large in scope of work; the Plan covers too much time; the Plan covers too many species. Each is a fatal, unconstitutional flaw, and since each is vital to the Plan, the Plan cannot be saved by amendment. However, the list of objections continues, several of which are also likely fatal to the Plan:

14.14

Fourth, the **50-year term is outside the authority provided by Government Code §50060.5(a)** “a local agency may, by ordinance or by resolution adopted after notice and hearing, establish a district to provide for the improvement or maintenance of natural habitat. The local agency may perform those functions or contract with the state, another local agency, or a special district to perform those functions. ***If a local agency establishes a district, it may provide for the levy of assessments for not more than 30 years*** to pay the cost and incidental expenses of implementing a long-term natural habitat maintenance plan approved by the Department of Fish and Game pursuant to Section 2901 of the Fish and Game Code.” (Emphasis added.) If there is other authority for the SSHCP and its 50-year fee authority, I would be interested in specifics. However, this JPA looks like a §50060 *et seq.* entity, walks like one, quacks like one... **If there is some other theory of the JPA, it is an artificial taxonomy to be disregarded** by the Court, whereas the real purpose of the JPA is to establish a habitat maintenance district contemplated and restrained by the cited Government Code.

14.15

Fifth, **any unconstitutional tax threatened by the County of Sacramento, and particularly the HCP as proposed, has takings implications under the United States Constitution's 5th Amendment jurisprudence, especially *Dolan v. City of Tigard*, 512 US 374 (1994), and *Nollan v. California Coastal Commission*, 483 U.S. 825 (1987).** The clear line of cases establishes the principal that any unfair burden placed upon taxpayers or applicants for a permit can cross the line into a federally unconstitutional taking, apart from a California unconstitutional tax.

14.16

Sixth, **insufficient detail of the financial planning and development assumptions, on a year-by-year basis, have been provided to the public.** It imposes long-term financial and development consequences without allowing careful review of the details. Despite being over 1400 pages long, the document is heavy on the biology and conservation measures and light on the financial implications. As development encroaches, the viability of certain uses changes over time, as do values, and the highest and best use of parcels. **The nexus study, referenced in the primary materials, has not been made available.**

14.17

Seventh, it appears that a great portion of **mitigation land** in the Urban Services Boundary, based on critical habitat, **is in Rancho Cordova and/or the immediate vicinity** (with the largest actual portion in the southern extreme portion of the county, not at all in the path of development), and it is **unclear why property in other areas should be burdened** by the enormous scheme contemplated in the HCP. Why not just limit the HCP to Rancho Cordova and the large preserve area there, plus the giant area outside the path of growth in the southern extreme part of the county? If there is a locus of costs and benefits, it should be right there in Rancho Cordova, not the whole South County.

14.18

Eighth, **the plan does not provide protection against incidental take for agricultural activities in the non-developed / agricultural area.** A handful of **powerful developers and land speculators are getting incidental take permits, essentially being excused** from real harm to endangered species, but farmers—engaged in activities which have been carried out on their lands for upwards of 150 years, and which clearly benefit some protected species, such as the Swainson's hawk—**farmers are still subject to incredible fines and penalties which only stand to increase in likelihood because of the developers' use of lands and the subsequent concentration of remaining habitat.** **The public has a right to know all of the past and present negotiations with the developers and land speculators which has been conducted by the plan proponents,** especially Rancho Cordova and the County of Sacramento, including exactly how much these few

14.19

insiders stand to profit from their developments and especially the mitigation land sale windfall.

14.19 cont'd

Ninth, it is unclear why Elk Grove, Folsom, and Rancho Murieta are not included. **Elk Grove is as populous today as Sacramento was in 1960, and its continued growth is at least as relevant to most of the South County as anything in Rancho Cordova. The community deserves a clearly stated reason for Elk Grove's non-inclusion and the anticipated effects,** published directly alongside the Plan documents, from both the HCP proponents as well as the City of Elk Grove. The same could be said for Folsom, Rancho Murieta, and even the City of Sacramento.

14.20

Finally, it is unclear the benefit of trying to adopt the plan and actually creating a new government entity will benefit the citizens more than the county and cities themselves proceeding without the new JPA and without the perpetual funding mechanism. **The HCP will potentially burden at least three generations of owners of agricultural land in the future, but it appears geared to benefit primarily others, namely those who are set to develop right now, the permanent bureaucracy, and the critter constituency that would like an extraordinary, local expansion to the federal and state ESAs to include 17 non-endangered, non-threatened species.**

14.21

Michael D. Mahon
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(916) 539-1226; mdmahon@mdmahon.com

RTC 14.1 (SSHCP) – This comment is introductory in nature and contains the commenter’s characterization of the South Sacramento Habitat Conservation Plan (the “Plan” or “SSHCP”). The plan preparers do not believe the SSHCP or its structure are “fundamentally flawed.” Without any additional detail supporting this claim, no further response is feasible.

RTC 14.2 (SSHCP) – The Development Impact Fees (the “Fees”) required under the Plan fall under an exemption to the definition of a “tax” under Article XIII C, section 1(e)(6) of the California Constitution, which exempts fees “imposed as a condition of property development.” While such Fees must still comply with the Mitigation Fee Act, set forth in Government Code Section 66000 et seq., Sacramento County (the “County”) has provided evidence through the nexus study (“Study”) demonstrating that each condition required for imposition of mitigation fees or development impact fees under the Mitigation Fee Act has been met.

RTC 14.3 (SSHCP) – The Plan Preparers reviewed regional habitat conservation plans (incorrectly termed mitigation plans in the comment) within the state of California and found that a 50-year permit term is not uncommon. For instance, habitat conservation plans currently being prepared in Yolo and Placer County are also seeking a 50-year permit term. Approved plans in Santa Clara County and San Joaquin County, as well as the Natomas Basin Habitat Conservation Plan and the North County Multiple Habitat Conservation Program in San Diego County, were granted 50-year permits. Moreover, the Western Riverside County Multiple Species Habitat Conservation Plan and Coachella Valley Multiple Species Habitat Conservation Plan were both granted a 75-year permit term.

RTC 14.4 (SSHCP) – In addition to completing an economic analysis of Plan implementation (see Chapter 12 of the Draft SSHCP), the County commissioned a fee nexus study (Study) analyzing the proposed Fees. As explained in more detail in the Study, the Fees would be adopted in accordance with the SSHCP, which is a habitat conservation plan that is “specifically adopted to ensure that new development mitigates for its impacts under the federal Endangered Species Act, the California Endangered Species Act, the Clean Water Act, and other associated environmental regulations.” The nature of the development in question will necessarily affect the environment upon which it is constructed, and the Study provides for this connection as well as an allocation of costs based on expected impact.

The Study also describes the method that would be used to allocate Fees to various covered activities. Because the cost to preserve or re-establish/establish land covers vary, the schedule provides different Fees based on where the development is located (e.g., land covers present, wetland types present). The Fees are calculated on a per-acre basis, to ensure that the total Fees are proportional to the impact of the individual development project. Thus, the Fees are structured to ensure that no developer pays more than their development’s specific impact, taking into account the land cover and size of development.

The Study further provides details on compliance with the specific findings that are required under the Mitigation Fee Act. As a result of allowing for development on the property subject to the Plan, the County is required to ensure that adequate funding for the Plan will be provided. (16 U.S.C. 1539(a)(2)(B)(iii).) The funding will be used to provide for conservation actions required to be undertaken by Plan participants, and to fund mitigation actions identified under the Plan, including habitat acquisition, habitat re-establishment/establishment, habitat management and monitoring, and program administration costs.

The fees are necessary because in order to obtain an incidental take permit under the ESA, the applicant must demonstrate that it will ensure adequate funding for implementation of the program. One of the ways to ensure funding is to apply fees to development that will affect the species covered under the Plan.

Moreover, Chapter 12 of the Draft SSHCP includes a detailed economic analysis of SSHCP implementation. The SSHCP economic analysis and associated cost estimates were based on the best information available. Information used in the cost analysis includes, but is not limited to, the estimated acres of impact of future Covered Activities (Chapter 6), estimated costs of the HCP habitat preservation and implementing re-establishment/establishment requirements, costs of land by location of the proposed SSHCP Preserve System (Chapter 7), estimated costs of anticipated Preserve System management and monitoring activities (Chapter 8), the staffing and overhead costs of the proposed HCP implementation structure (Chapter 9), and estimated costs of addressing any future changed circumstances (Chapter 11).

The SSHCP cost analysis relies on a detailed financial spreadsheet model (see Appendix I of the Draft SSHCP) to track costs and funding requirements associated with SSHCP implementation. The model assesses SSHCP conservation requirements and generates a set of cost estimates, organized by SSHCP land cover type categories. The cost analysis relies on many data sources. Key steps taken were as follows:

1. The analysis of SSHCP costs considered a hypothetical “Preferred SSHCP Preserve System” that indicated the approximate location and SSHCP land cover type that could be acquired by the SSHCP.
2. A land valuation exercise identified estimated per-acre land costs based on the land’s location within the Plan Area, and the SSHCP land cover type anticipated for acquisition.
3. A review of cost assumptions for habitat re-establishment/establishment, management, monitoring, and other costs yielded additional cost estimates by SSHCP land cover type.
4. Costs were aggregated to identify the total funding needed for implementation of the SSHCP Preserve System.
5. Development fees were derived by determining the total cost of mitigation per acre impacted by Covered Activities for each SSHCP land cover type.

Generally, estimates were informed by literature reviews, independent research, and input from land managers experienced with habitat preservation and re-establishment/establishment in Northern California, as well as a review of cost models in similar “regional” habitat conservation plans that have already been permitted by the U.S. Fish and Wildlife Service (See Draft Plan, p. 12-2.) The values presented in the analysis represented the best available cost estimates based on the information currently available. (See Draft Plan, p. 12-2.) Shortly after Plan implementation begins and actual cost data is available, the Implementing Entity proposes to compare the cost assumptions made in this economic analysis with the cost of implementing the SSHCP. (Id.) If actual costs of Plan implementation are inconsistent with the economic analysis, development fees will be adjusted to bring the development fees in line with the observed cost of implementing the SSHCP. (Id.) The development fees will be reviewed on a regular and ongoing basis, and updated if necessary to reflect actual implementation costs. Refer also to response to Comment 9.87.

RTC 14.5 (SSHCP) – The Fee is not a tax. In 2010, largely as a response to the holding in *Sinclair Paint Co. v. State Bd. Of Equalization* (1997) 15 Cal.4th 866, which is discussed further below in Comment 5.7, Proposition 26 was adopted by the voters. Among other things, Proposition 26 provided clarity to the definition of a “tax” under the State Constitution by adding subdivision (e) to Article XIII C, section 1. Specifically, Proposition 26 states that any fee, exaction, charge, or otherwise, imposed by a local government, is a “tax” requiring voter approval, unless such levy meets one of seven specifically enumerated exemptions. The exemption that relates to the SSHCP is subsection 6:

(6) A charge imposed as a condition of property development.

RTC 14.6 (SSHCP) – The referenced decision is not relevant to the issue of development impact fees. The comment cites to the Supreme Court’s decision in *Jacks v. City of Santa Barbara* (2017) 3 Cal.5th 248. *Jacks* addresses whether charges imposed for entrance to or use of local government property are exempt from the definition of a “tax” under Cal. Const. art. XIII C, sec. 1(e)(4). *Jacks* does not provide any meaningful discussion of development impact fees exempt under Cal. Const. art. XIII C, sec. 1(e)(6) and thus is not applicable here.

RTC 14.7 (SSHCP) – See response to Comment 14.6. Moreover, Articles XIII C and XIII D were added to the California Constitution pursuant to Proposition 218, and reinforce the requirement that general and special taxes require voter approval (as well as providing special requirements for property related fees, charges and assessments). What was missing from this legislation, however, was the definition of what constitutes a “tax.” This became a significant issue in *Sinclair Paint Co. v. State Bd. Of Equalization* (1997) 15 Cal.4th 866, upon which the Comment heavily relies. As the comment correctly states, the types of fees and charges that are generally exempt from classification as a “tax” include development impact fees “if the amount of the fees bears a reasonable relation to the development’s probable costs to the community and benefits to the developer.” (Id. at 874.)

In *Sinclair Paint*, Sinclair Paint Company argued that a fee imposed pursuant to the Childhood Lead Poisoning Prevention Act of 1991 for services relating to children suffering from lead poisoning, was a “tax” because the revenues do not reimburse the state for special benefits conferred on manufacturers of lead-based products, nor compensate it for government privileges or services to those manufacturers. The Supreme Court rejected Sinclair Paint’s argument, holding instead that the challenged fee fell within a “third recognized category” of fee that did not depend on government conferred benefits or privileges: a regulatory fee. A regulatory fee requires the fee payer to bear a fair share of the cost of mitigating the adverse effects their products created in the community. (Id. at 875-76.) As a result, the comment’s discussion of Sinclair Paint is not relevant to the imposition of the Fees.

RTC 14.8 (SSHCP) – See responses to Comments 14.6 and 14.7.

RTC 14.9 (SSHCP) – See responses to Comments 14.6 and 14.7. Moreover, the imposition of mitigation fees is not a novel approach. With the passage of Proposition 13, the limits on general revenues for new infrastructure have resulted in new development being held responsible for its share of public improvements, and both the use and levels of impact fees have grown substantially.

The comment references several cases that are referenced on page 875 of the *Sinclair Paint Co. v. State Bd. Of Equalization* (1997) 15 Cal.4th 866 decision. As the Sinclair court noted, each of these cases stands for the proposition that “development fees exacted in return for . . . government privileges are not special taxes if the amount of the fees bears a reasonable relation to the development’s probable costs to the community and benefits to the developer.” (*Sinclair*, supra, 15 Cal.4th at 875 [citing *Shapell Industries, Inc. v. Governing Board* 1991) 1 Cal.App.4th 218; *Bixel Associates v. City of Los Angeles* (1989) 216 Cal.App.3d 1208; *California Building Industry Association v. Governing Bd. of the Newhall School District of Los Angeles* (1988) 206 Cal.App.3d 212; *Russ Building Partnership v. City & County of San Francisco* (1987) 199 Cal.App.3d 1496; *Beaumont Investors v. Beaumont-Cherry Valley Water District* (1985) 165 Cal.App.3d 227; *Mills v. County of Trinity* (1980) 108 Cal.App.3d 656; *Ehrlich v. City of Culver City* (1996) 12 Cal.4th 854, 898.) As these cases illustrate, and as demonstrated here through the Study and as discussed further in detail in response to Comment 14.4, the development impact fee fully complies with the Mitigation Fee Act and long-accepted means of mitigating for the impacts of proposed projects.

RTC 14.10 (SSHCP) – The SSHCP entails much more than the Permit. The Permit is granted to provide Endangered Species Act compliance for projects on lands within the Plan Area. However, the purpose of the SSHCP is to mitigate the impacts on Covered Species. In order to accomplish this goal, funds acquired through the Fee will be used to fund an endowment to ensure that conserved lands continue to provide the habitat and ecological processes necessary to support Covered Species in perpetuity, and that the funds collected are sufficient for such purposes. Importantly, as stated, mitigation is only necessary because of the Covered Activities occurring within the Plan Area, and those Covered Activity proponents are thus required under the Plan to pay their proportional share to mitigate such impacts. Nothing about ensuring that the impacts of

Covered Activities are mitigated in the future would otherwise render legally adopted mitigation fees as “taxes.”

RTC 14.11 (SSHCP) – The comment questions why the SSHCP includes as covered species several species that are not listed under the ESA. Permit applicants can choose to include unlisted species in an HCP. For the SSHCP, the Plan Permittees wished to develop a robust conservation plan that provides benefits to the key species, habitats, and landscapes that will be permanently impacted by planned development in the Plan Area. Under Section 10 of the ESA, there are also important advantages to including currently unlisted species. For example, the Plan Permittees will be entitled to “No Surprises” protection; should one of those currently unlisted species become listed in the future, no additional mitigation requirements would be imposed during the permit term. The unlisted species covered by the SSHCP are also typically the subject of local or state requirements for mitigation under CEQA for other local policies, and the robust mitigation provided by the SSHCP can satisfy these requirements without the need for additional mitigation. The SSHCP can address threats to unlisted species before a listing is needed and the other provisions of the ESA take effect. Additionally, some species have overlapping habitat needs and thus can benefit from “economies of scale” provided by an HCP, without increasing an applicant’s mitigation obligations. Regarding the comment’s statement that the SSHCP development fees are an “unconstitutional tax”, please refer to responses to Comments 14.2 to 14.10.

RTC 14.12 (SSHCP) – The impacts that the SSHCP are mitigating are regional in nature. For that reason, habitat conservation planning requires a regional solution, with a regional fee, rather than an individual project-by-project permitting solution. The concept of purchasing small, unattached piecemeal properties located throughout the participating agencies’ jurisdictions in order to provide habitat located near to each and every development project would not be conducive to the survival of most endangered species. As documented in the SSHCP, it is a basic principal of conservation biology that large habitat blocks be conserved and that these blocks and other Conservation Area areas must be contiguous and connected. (See Draft SSHCP, Chapter 7.) Habitat fragmentation reduces in size and isolates areas of habitat for species. As habitats become increasingly isolated, species migration, immigration, and dispersal become less common or impossible, thereby limiting or preventing opportunities for populations to exchange individuals and genetic information, escape inhospitable habitats, and recolonize areas. Ultimately, these effects can result in disappearance of the species in the fragmented habitat patches. Habitat fragmentation can also alter natural ecosystem functions such as pollination as well as how habitat recovers from fires, flooding, or other stochastic environmental events (e.g., pest outbreaks) that species have adapted to over their evolutionary history. The SSHCP Conservation Strategy minimizes habitat fragmentation by focusing on the establishment of large Preserves, on a region-wide basis by linking existing preserves and SSHCP Preserves together to allow wildlife movement. Only by accruing financial resources such as impact fees on a regional-wide basis and utilizing these monies to purchase those critical sites throughout the region that are best suited (or most appropriately priced) for habitat purposes can the region's endangered species be best protected with the limited funding sources available.

The provisions of the SSHCP will provide mitigation for future impacts of planned urban, rural, and regional infrastructure development on the species identified in the SSHCP. (See Draft SSHCP, 9.2.1.) The SSHCP will allow participating jurisdictions to "take" the plant and animal species identified in the SSHCP through the agencies' local land use planning and development review processes. These take authorizations would be granted in recognition of the mitigating effects of the coordinated conservation system planned by the SSHCP.

RTC 14.13 (SSHCP) – It is the County's view that the key benefit to future development within the boundary of the Plan is the availability of assurances to SSHCP participants about the level of mitigation that will be expected over the life of the Plan. In other words, the HCP permittees are provided with long-term assurances, through the No Surprises Rule, that the terms of the SSHCP will be adhered to and that no further mitigation requirements will be imposed.

Regarding comments about the cost of the plan, please refer to Chapter 12 of the SSHCP and Appendix E which provide detailed analysis of the costs and fee structure.

RTC 14.14 (SSHCP) – See responses to Comments 14.2 through 14.13.

RTC 14.15 (SSHCP) – California Government Code section 50060.5 provides limitations specifically applicable to special benefit assessment districts, empowered with the authority to levy assessments on real property for the special benefit conferred. This authority relates to special benefits associated with improvement or maintenance of natural habitat. Such assessments would be subject to the limitations under Article XIII D, section 4 of the California Constitution governing assessments, and would be levied on an ongoing basis to pay for ongoing improvements.

However, the Fees are not being charged as a part of the formation of such a District, nor is such a District being proposed. There is no assessment being proposed on property owners of land subject to the SSHCP, and the SSHCP does not call for an ongoing special benefit assessment to be charged. As such, this Article of the Government Code, including the 30 year time limitation for the levy of assessments, has no applicability to the Plan or the Fees, which are one-time charges levied as a condition to develop property on land subject to the SSHCP.

RTC 14.16 (SSHCP) – Through the Study, the County has provided evidence demonstrating that the requirements under *Dolan v. City of Tigard* (1994) 512 U.S. 374, and *Nollan v. California Coastal Commission* (1987) 483 U.S. 825, have been met. The Mitigation Fee Act was enacted in large part as a response to *Nollan*, and requires various findings to demonstrate a nexus between the mitigation fee and the impact of the particular development, as well as proportionality of the mitigation fee to the impact. As explained in detail above, the County has provided evidence demonstrating that both of these nexuses have been met. No taking occurs where the Fees are related both in nature and extend to the impact of the proposed development. (*Dolan*, 512 U.S. at 390.)

RTC 14.17 (SSHCP) – As explained in response to Comment 14.4, the County commissioned a Study analyzing the Fees and the SSHCP. An analysis of the economic impacts associated with the Plan can be found in Chapter 12 of the Draft SSHCP as well.

RTC 14.18 (SSHCP) – The SSHCP was prepared by five local agencies, including the County, City of Galt, City of Rancho Cordova, Sacramento County Water Agency, and the Southeast Connector Joint Powers Authority. These five local agencies, plus the future SSHCP Implementing Entity (to be named the South Sacramento Conservation Agency), are collectively applying for Incidental Take Permits and are referred to in the Plan as “Plan Permittees”. It is these entities that worked collectively to establish the boundaries of the Plan, and it is these entities that want the protections it would provide. The growth and development that is anticipated by the SSHCP is governed not by the SSHCP itself, but by the General Plans of the Sacramento County, Rancho Cordova, and Galt. The growth pattern described in the comment, with most development occurring within the UDA, is the pattern that was planned for in those General Plans. For certain resources that are not found outside the UDA, such as rare plants and vernal pool tadpole shrimp habitat, preserves must be established within the UDA. In general, however, establishing preserves outside the UDA will ensure that the General Plans can be effectively implemented by the land use authority permittees.

RTC 14.19 (SSHCP) – As provided for in Section 5.2.7 of the Draft SSHCP, certain agricultural activities, such as tilling fields, harvesting crops, and grazing are covered activities when they are consistent with provisions of an SSHCP Conservation Easement (see Section 9.4.3 of the Draft SSHCP) and are consistent with an SSHCP Preserve Management Plan (see Chapter 8). Incidental take coverage for agricultural practices on public or private land inside or outside the UDA, if needed, may require an amendment to the SSHCP and its permits, or require individually and independently acquired Incidental Take Permits. (Draft SSHCP, Section 5.3.) Specifically, all agricultural practices on public or private land inside or outside the UDA are not covered by the SSHCP permits unless such actions (1) occur on an SSHCP Preserve and are an SSHCP Covered Activity (as described in Section 5.2.7, SSHCP Preserve System Covered Activities), or (2) occur on a property under an SSHCP Conservation Easement and are an SSHCP Covered Activity described in Section 5.2.7. (Draft SSHCP, Section 5.3.)

The County provides information to the public regarding property negotiations with landowners when an agreement is ready for action by the Board of Supervisors. Negotiations may include a non-disclosure agreement that prohibits the County from making certain information public until a negotiated agreement is scheduled to be presented to the Board of Supervisors in a public hearing. The terms of any negotiated agreement will be made available to the public prior to the County Board of Supervisors approval of agreements to purchase property or easements. These procedures for publishing agendas and providing public notice of Board hearings provides interested parties time to review and comment on the proposed agreement.

RTC 14.20 (SSHCP) – As discussed in Response 14.18, the SSHCP was developed and prepared by five local agencies. These agencies, plus the future SSHCP Implementing Entity, make up the proposed “Plan Permittees.” These are also the agencies that have voluntarily agreed to participate in the Plan if and when it is approved. The City of Elk Grove was formerly included as a Plan Permittee but elected to leave the SSHCP. The cities of Folsom and Sacramento were not considered as Plan Permittees because their City boundaries are either largely built out or do not have the need for the ESA and CESA permitting provided by the SSHCP. The community of Rancho Murieta would also not have need of the permits associated with the SSHCP and the County determined it did not make sense to include it in the Plan Area.

RTC 14.21 (SSHCP) – This comment contains the commenter’s characterization of the regulatory composition of the Plan, as well as underlying policy recommendations related to the Plan, to which no response is required. (See responses to Comments 14.11, 14.12, 14.13, 14.18, and 14.19.)

**LETTER 15 PACIFIC LEGAL FOUNDATION
(SSHCP)**



PACIFIC LEGAL FOUNDATION

September 5, 2017

County of Sacramento
Office of Planning and Environmental Review
Attention: Environmental Coordinator
827 7th Street, Room 225
Sacramento, CA 95814

Via Email: sshcp@saccounty.net

Jan C. Knight
Deputy Field Supervisor
Sacramento Fish & Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, CA 95825

Re: Comments on South Sacramento Habitat Conservation Plan

To Whom It May Concern:

Pacific Legal Foundation submits the following comments on the proposed South Sacramento Habitat Conservation Plan (HCP), for the Plan Proponents' consideration in determining if and how to proceed. Pacific Legal Foundation is a national non-profit public interest law firm, providing pro bono representation in state and federal courts to property owners and others whose constitutional and other rights are impaired by government action. Based on our review of the Plan and readily available related documents, we are pleased to provide the following comments. These comments primarily focus on federal Endangered Species Act issues and related constitutional limits.

The Plan imposes development fees, and appears to impose land use restrictions on at least some ongoing activities, in order to prevent possible take of species that are federally listed only as threatened, *i.e.* Vernal Pool Fairy Shrimp, Valley Elderberry Longhorn Beetle, California Tiger Salamander, Giant Garter Snake, and Slender Orcutt Grass. The Endangered Species Act only applies the take prohibition categorically to species listed as endangered. 16 U.S.C. § 1538(a)(1)(B). The Act allows the Service to apply the take prohibition to threatened species only on a case by case basis. 16 U.S.C. § 1538(a)(1)(G). The Service illegally extended the take prohibition to all threatened species by regulation. 50 C.F.R. § 17.31(a). The Plan therefore illegally imposes development fees and land use restrictions to address take concerns that are improper under the ESA. *See generally*, Jonathan Wood, *Take It to the Limit: The Illegal Regulation Prohibiting the Take of Any Threatened Species under the Endangered Species Act*, 33 Pace Env'tl. L. Rev. 23 (2015).

15.1

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The Plan imposes conditions and restrictions for the protection of Valley Elderberry Longhorn Beetle and its designated habitat. That species was proposed for delisting as the result of a Service status review concluding that ESA protection was no longer warranted. 77 Fed. Reg. 60238 (Oct. 2, 2012). The Service withdrew its proposed rule to delist the Beetle based on concerns that the information on which the status review was based was stale, and lack of funds to update that information. 79 Fed. Reg. 55874 (Sept. 17, 2014). Rather than dedicating development fees to protection of habitat for a species that still likely warrants delisting, the Plan should dedicate funding to completing the necessary update to the Service's available information, with a view to allowing the Service to delist the species. 15.2

The Plan works through the acquisition of conservation easements on existing farmlands in the Plan area, some of which are within existing designated critical habitat for some of the federally listed species covered by the plan. The Act imposes only a prohibition against removal of listed endangered plant species from areas under federal jurisdiction. Some have claimed in previous litigation that areas protected by the Clean Water Act are within the Endangered Species Act's term "areas under Federal jurisdiction." 16 U.S.C. § 1538(a)(2)(B). The Plan Proponents and the Service should disclose the Service's position on whether conservation easements acquired to provide incidental take protection under the Act are "under Federal jurisdiction" for purposes of whether the removal prohibition for endangered plants will then apply to farms whose owners sell conservation easements. 15.3

The Plan does not appear to permit any incidental take from ongoing farming and other activities, and appears to provide no explanation for this omission. Subsequent iterations of the draft should address this oversight and consideration should be given for providing such protection. This is especially true given that the basic mechanism of the plan is to use development fees to buy conservation easements that will lock in current land uses and operations, seemingly without Incidental Take Protection for most if not all of those land uses. 15.4

The Plan does not appear to yield any benefits for property owners whose land is currently designated as critical habitat. Have the plan proponents addressed this issue with the Service, and if not, then why not? What is the benefit of the Plan to anyone not seeking a development permit or engaging in a covered project if the Plan will not result in meaningful reform of existing critical habitat? 15.5

The Plan documents appear to state that projects which require discretionary approvals from the County or the Cities of Galt and Rancho Cordova, are not necessarily provided incidental take permission as the result of the Plan. The Plan Proponents should explain why this is so, and what the benefit of the Plan actually is to anyone within the Plan area other than the proponents of those projects specifically listed as covered actions under the Plan. If the Service is not even bound to the illusory "no surprises" commitment of an HCP as to these project proponents, then there seems 15.6

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to be little if any value to the Plan for anyone but the proponents of the specifically listed public projects.	15.6 cont'd
Have the Plan Proponents advised the public or covered project proponents that the Ninth Circuit has held the “no surprises assurances” of an HCP to be non-binding on the Service? <i>See Bear Valley Mut. Water Co. v. Jewell</i> , 790 F.3d 977 (9th Cir. 2015). If the no surprises assurance is the primary benefit of the Plan, how will the Proponents ensure that Service keeps its end of the commitment? Conversely, have the Plan Proponents considered or discussed with the Service any changed circumstances provisions for the Plan that would relieve either the Plan Proponents or individual project proponents of the Plan’s obligations if the Service exercises its current legal authority to impose new requirements in excess of the Plan? Will project proponents have any recourse against the Plan Proponents if the Service does not honor the Plan?	15.7
The Plan appears to impose a suite of potential land use restrictions (<i>i.e.</i> for protection of streams and other environmental resources outside of the Plan’s proposed Preserve system) that may be imposed on existing, conforming, and vested land uses, in potential violation of the Due Process Clause of the United States Constitution. Under the Fifth Amendment’s Due Process Clause, vested conforming land uses cannot be restricted without compliance with the land owners’ right to fair notice and an adjudicatory hearing. Interference with existing conforming uses may also result in the obligation to pay just compensation under the same Amendment’s Takings Clause.	15.8
The Plan imposes development fees without clearly disclosing the relationship between the fees and those species for whose habitat the fees will be spent. While the Nexus Study (not locatable on the website) referenced in the economic analysis may address this issue, the available plan documents do not appear to make any detailed allocation of fees based on which species any given project would impact. Thus, it appears that a general per acre fee is being imposed, which is then used to acquire habitat protections for more than 2 dozen species, regardless of which species (or their habitat) is actually impacted by the project on which the uniform fee is charged. For example, if a project has elderberry beetle impacts but no vernal pool species impacts, is the project still charged the full development fee? If this is the case, then at least some portion of the fee lacks an essential nexus with the project, and violates <i>Nollan v. Cal. Coastal Comm’n</i> , 483 U.S. 825 (1987). Further, the development fee also appears to violate <i>Dolan v. City of Tigard</i> ’s requirement of an individualized (<i>i.e.</i> , project by project) assessment of whether the fee is roughly proportional to the project’s impacts. 512 U.S. 374 (1994). The Plan proponents should also recall that they will bear the burden in court of demonstrating both the essential nexus and rough proportionality required by <i>Nollan</i> and <i>Dolan</i> .	15.9

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Thank you for the opportunity to submit these comments. If you have any questions, please feel free to contact Anthony L. Francois at Pacific Legal Foundation, at TFrancois@pacificlegal.org or (916) 419-7111.

Sincerely,

A handwritten signature in black ink, appearing to read 'A. Francois'.

ANTHONY L. FRANCOIS

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RTC 15.1 (SSHCP) – The Plan is a streamlined process for complying not only with the federal ESA, but also CESA, CEQA, and NEPA. As the EIS/EIR describes, the SSHCP has been designed to complement and help implement the goals and policies of, among other local regulatory structures, the Sacramento County General Plan (Draft EIS/EIR, page 4-45). The Joint Powers Authority (JPA) formed in connection with the Plan is part of a cooperative organizational structure for implementing the SSHCP. As analyzed in the EIS/EIR, the Plan does not limit member agencies' land use authority. Land use decisions are made through the local planning processes of the Land Use Authority Permittees. The JPA will not have the authority to prevent a Permittee from approving a discretionary project. The JPA will provide the primary policy direction for implementing the SSHCP, for public participation in the decision-making process, and staff assistance to help Permittees with Plan compliance. As a result, implementation of the Plan will have no impact upon existing, conforming, or vested land uses.

Moreover, as explained in response to Comment 5.12, by its very nature, habitat conservation planning usually requires a regional solution. Only by accruing financial resources, such as impact fees on a regional-wide basis and utilizing these monies to purchase those critical sites throughout the region that are best suited (or most appropriately priced) for habitat purposes can the region's endangered species be best protected with the limited funding sources available.

Additionally, for the reasons set forth in responses to Comments 5.2 through 5.10, the fees associated with implementing the SSHCP do not amount to an unconstitutional tax.

Please also see response to Comment 15.2.

RTC 15.2 (SSHCP) – The comment notes that VELB was proposed for delisting. However, it is not appropriate to address the listing/delisting process under 16 U.S.C. 1533 within the scope of the SSHCP and its supporting documents. As noted in the USFWS and NOAA Fisheries' *Habitat Conservation Planning and Incidental Take Permit Processing Handbook*, "The Service requires applicants to include as HCP covered species all ESA-listed wildlife species for which incidental take is reasonably certain to occur, unless take is addressed through a separate ESA mechanism (e.g., section 7 consultation with another Federal agency, separate incidental take permit, etc.), or to explain or demonstrate in the HCP why take is not anticipated or will be avoided during implementation of covered activities (e.g., inclusion of measures that will avoid potential for take)" (USFWS and NOAA Fisheries 2016, page 7-2).

There are also important advantages to implementing the provisions of Section 10 of the ESA in a manner that encourages the development of plans that benefit a variety of species, including both listed and other rare and vulnerable unlisted species within a selected habitat area. As explained in the USFWS and NOAA Fisheries' *Habitat Conservation Planning and Incidental Take Permit Processing Handbook*, multispecies planning can increase the biological value of HCPs by providing early, proactive consideration of the needs of both listed and unlisted species (USFWS and NOAA Fisheries 2016, page 1-2). HCPs are often used to address threats to many species

before a listing is needed and the other provisions of the ESA take effect (USFWS and NOAA Fisheries 2016).

RTC 15.3 (SSHCP) – The commenter is correct that all lands acquired for the SSHCP Preserve System will require the recordation of a conservation easement, even lands that are held in fee title by the Implementing Entity (Draft SSHCP, Section 9.4.3). Within the UDA, most of the SSHCP Preserve System is expected to be held in fee title by the Implementing Entity. Outside the UDA, the Implementing Entity intends to minimize the amount of fee title acquisition for the SSHCP Preserve System. Therefore, most of the SSHCP Preserve System outside the UDA will be in the form of conservation easements where the land is not owned by the Implementing Entity.

Importantly, the terms of the easements and prices paid for easements will vary depending on the purpose of the easement and the degree to which the easement restricts land uses (Draft SSHCP, Section 9.4.3). The Implementing Entity, as opposed to the USFWS, will hold in perpetuity all conservation easements it purchases or accepts from a landowner. In addition, all conservation easements will have a third-party enforcement beneficiary (CDFW and/or USFWS). Conservation easements will contain provisions that allow the Implementing Entity to manage the encumbered property if it becomes necessary, such as if a property is abandoned by the owner.

With regard to 16 U.S.C. 1538 a (2)(B), USFWS' current policy is explained in the USFWS and NOAA Fisheries' *Habitat Conservation Planning and Incidental Take Permit Processing Handbook*, which states the ESA "prohibits damage or destruction of plants listed as endangered on Federal property or on non-Federal lands when doing so in knowing violation of any State law or regulation, or in the course of any violation of State criminal trespass law" (USFWS and NOAA Fisheries 2016, page 1-8).

RTC 15.4 (SSHCP) – See response to Comment 14.19.

RTC 15.5 (SSHCP) – The SSHCP provides a process under which the Permittees and third parties receiving incidental take authorization can fully comply with the federal ESA requirements for species covered in the Plan. The ITP itself does not address designated Critical Habitat. Designated Critical Habitat is addressed through the federal action of issuing the ITP by the intra-service Section 7 consultation. Prior to issuance of the ITP, the USFWS will conduct an intra-service Section 7 consultation to determine how the SSHCP will affect the designated Critical Habitat in the Plan Area. To issue an ITP, the USFWS must ensure that SSHCP proposed activities would not destroy or adversely modify species' designated Critical Habitat (range-wide), meaning that the designated Critical Habitat would no longer remain functional to service its intended recovery role. (Draft SSHCP, p. 6-3.) It is possible for the USFWS to permit an HCP that authorizes land use or development activities within an area designated as Critical Habitat, provided the HCP proposed activities will not appreciably diminish the capability of the designated Critical Habitat to fulfill its intended role in the recovery of listed species.

This comment also contains the commenter’s opinions as to why the Plan may not be beneficial. The Plan will benefit any party that seeks take authorization. The key benefit to future development within the boundary of the Plan, including in areas already designated as Critical Habitat, is the availability of assurances to SSHCP participants about the level of mitigation that will be expected over the life of the Plan. In other words, the SSHCP permittees are provided with long-term assurances, through the No Surprises Rule, that the terms of the Plan will be adhered to and that no further mitigation requirements will be imposed.

RTC 15.6 (SSHCP) – The commenter is incorrect (see Draft SSHCP Section 9.2.1). The three Land Use Authority Permittees are the County of Sacramento, City of Galt, and City of Rancho Cordova. Upon issuance of the SSHCP and Section 2081 permit by the Wildlife Permitting Agencies, the Plan Permittees will be issued federal ESA and CESA permits for incidental take of Covered Species (Draft SSHCP Section 9.2.1). The benefit of such an approach is that these entities are able to retain their land use authority, while also ensuring that the Plan is appropriately implemented.

For Covered Activities conducted by a Land Use Authority Permittee, the Land Use Authority Permittee will be responsible for ensuring that the Covered Activity conforms to the requirements of the SSHCP and the ITPs, following the process for using take authorization, as described in SSHCP Chapter 10, SSHCP Permit Application Process.

The Land Use Authority Permittee will be responsible for determining when a Covered Activity that occurs within its jurisdiction, including one of its own projects, is eligible to use the SSHCP. If the Land Use Authority Permittee determines that a Covered Activity is eligible to use the SSHCP, the Land Use Authority Permittee can extend incidental take coverage provided by the Plan’s ESA and CESA ITPs to the Covered Activity within its jurisdiction.

RTC 15.7 (SSHCP) – This comment contains the commenter’s characterization of the Ninth Circuit Court of Appeals’ decision in *Bear Valley Mutual Water Company v. Jewel* (9th Cir. 2015) 790 F.3d 977. As explained by the court in that opinion, “[t]he ‘No Surprises Rule’ provides that once a permit has been issued pursuant to a habitat conservation plan, and assuming that the terms of the underlying plan are being implemented, the permittee ‘may remain secure regarding the agreed upon cost of conservation and mitigation.’ [Citations omitted]. In other words, the [USFWS] may not require permittees to pay for additional conservation and mitigation measures absent ‘unforeseen circumstances.’” (Id. at 992 [citations omitted].) The court did not hold that the No Surprises Rule was not binding on the USFWS, as the critical habitat designation at issue in that case did not contain additional measures beyond those covered by the relevant HCP. Thus, the County respectfully disagrees with the commenter’s characterization of the Ninth Circuit’s decision.

RTC 15.8 (SSHCP) – As stated in response to comment 15.1, the HCP does not subject existing land owners to new regulatory restrictions. The Plan is a streamlined process for complying with the mandates of ESA, CESA, CEQA, and NEPA. As the

EIR/EIS describes, the SSHCP has been designed to complement and help implement the goals and policies of, among other local regulatory structures, the Sacramento County General Plan. (Draft EIS/EIR page 4-45.) As a result, implementation of the plan will have no impact upon existing, conforming, or vested land uses.

RTC 15.9 (SSHCP) – The County has provided ample evidence demonstrating that the requirements under *Dolan v. City of Tigard* (1994) 512 U.S. 374, and *Nollan v. California Coastal Commission* (1987) 483 U.S. 825, have been met. The Mitigation Fee Act was enacted in large part as a response to *Nollan*, and requires various findings to demonstrate a nexus between the mitigation fee and the impact of the particular development, as well as proportionality of the mitigation fee to the impact. As explained in detail in response to Comments 14.2 through 14.4, the County has provided evidence demonstrating that both of these nexuses have been met. No taking occurs where the fees are related both in nature and extend to the impact of the proposed development (*Dolan*, 512 U.S. at 390).

**LETTER 16 SACRAMENTO REGIONAL COUNTY SANITATION
DISTRICT (REGIONAL SAN)
(SSHCP AND EIS/EIR)**

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Marianne Biner, Senior Planner
 County of Sacramento
 Office of Planning and Environmental Review
 827 7th Street, Room 225
 Sacramento, CA 95814

Subject: Draft Environmental Impact Statement and Draft Environmental
 Impact Report for the South Sacramento Habitat Conservation Plan

Dear Ms. Biner:

Sacramento Regional County Sanitation District (Regional San) has the
 following comments regarding the subject document:

- Fig 1-2: Regional San has preserved 205 acres in the southwest portion of the Bufferlands through a conservation easement with Sac Valley Conservancy. 16.1
- Figures 2-1, 2-2, and 2-3: Label the portion of PPU-4 east of Grant Line Road. 16.2
- 2.3.5 Page 2-120, PPU 4: The majority of PPU 4 is comprised of the Regional San property including the Bufferlands surrounding the Sacramento Regional Wastewater Treatment Plant (SRWTP). Fig 2-2 and the textual description envisions PPU 4 including approximately 530 acres of preserves consisting primarily of Valley Grasslands. Regional San desires to utilize its Bufferlands to participate in the SSHCP and has currently identified 59 acres of riparian forest habitat and 25 acres of non-vernal pool wetland to support the SSHCP Jumpstart program. Regional San has further identified a variety of habitat types on the Bufferlands that are not currently protected in perpetuity. Regional San believes that this acreage could be used as preserve for the SSHCP, but must not allow this use to impact the operations and maintenance of the SRWTP. A conservation easement on District property should not preclude the District's ability to temporarily disturb the subject property with maintenance and construction activity (i.e. underground utility maintenance, repair, and installation) that does not permanently alter the habitat protected by the easement. Minor permanent impacts (i.e. manholes, blow off valves, utility poles, etc.) should also be permissible in the conservation easement area so long as the impact does not significantly alter the protected habitat. To ensure compatibility with Plant operations, any future encumbrance of Regional San property for the SSHCP will be subject to approval by the Regional San Board of Directors. 16.3
16.4

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- 2.4.5: The preserved acreage in PPU 4 depicted in Figure 2-3 does not match the text description of PPU 4 on page 2-138 (747 acres versus 530 acres). The HCP identified PPU 4 to be comprised of 445 acres of valley grassland, 34 acres of wetland waters, 6 acres of non-wetland waters, and 42 acres of riparian (527 total acres). If the acreage is increased under this alternative, please explain the rationale.

16.5
- 3.7.1.4: Define Sacramento Regional County Sanitation District as Regional San. The listed acreage for the Bufferlands of 2,650 has been cited in many planning documents but is not consistent with Regional San’s current key statistics which describes the Bufferlands as 2,150 acres.

16.6
- 3.7.2.7: The assumption that the Stone Lakes National Wildlife Refuge (SLNWR) will have preserved its entire 18,000 acre project boundary area within 50 years should be checked with the refuge and appropriately cited.

16.7
- Fig. 6-2: While at one time enrolled in the Williamson Act, the parcels in the southern portion of the Regional San Bufferlands have been removed from the Williamson Act. The effort to remove these parcels occurred in 2016.

16.8
- 7.1.2.1: The Regional San South County Ag Recycled Water Project will have a significant effect on ground water in the Central Basin and warrants discussion within Ground Water Hydrology section.

16.9
- 7.1.2.3: Change “Beech Lake” to “Beach Lake”.

16.10
- 8.1.1: The NCCP is directed by the California Department of Fish and Wildlife.

16.11
- 8.1.2.4: Change “Sacramento Regional Sanitation District Buffer Lands” to “Regional San Bufferlands”.

16.12
- 8.1.2.5: Change “Nicholas” to “Nicolaus”.

16.13
- Table 12.1: SLNWR is listed as 18,000 of existing preserve. The footnote should more accurately qualify this as acreage within the project boundary. Chapter 3 denotes 6,420 acres of land within the refuge as currently preserved.

16.14
- 12.1.1: This section does not present any regulatory information related to the provision of recycled water. Construction, operation, and maintenance of recycled water infrastructure is a covered activity in the SSHCP document and should be covered in the EIS/EIR.

16.15
- 12.1.1.4, page 12-6: A portion of the information in this section is outdated and should be revised to reflect the following:

 - The Sacramento Regional Wastewater Treatment Plant Master Plan 2020 has been superseded by the Regional San EchoWater Project. As a result of permit requirements adopted by the Central Valley Regional Water Quality Control Board (CVRWQCB) in 2010, as amended by orders of the CVRWQCB and the State Water Resources Control Board (SWRCB) in 2011, 2012, 2013, and 2014, the District is required to reduce total nitrogen and ammonia levels in its effluent substantially below existing concentrations. Biological nutrient removal (BNR) is under construction to meet ammonia and nitrate effluent limitations. The District is also required to install tertiary filtration treatment for pathogen removal. Full compliance with the adopted and amended permit is required by

16.16

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Page 3

May 2021 for ammonia and nitrate removal and May 2023 for filtration-related requirements.

16.16 cont'd

- The Interceptor System Master Plan 2000 has been superseded by the Regional San Interceptor Sequencing Study (ISS). The Interceptor Sequencing Study (ISS) was prepared to determine Regional San's long term needs to provide sanitary sewer service to a growing Sacramento region. The ISS evaluated proposed interceptor facilities identified in Regional San's previous planning document, the SRCSD Interceptor System Master Plan 2000, to determine if there were other alternatives including delaying, realigning, or eliminating proposed interceptors. The ISS performed the following six tasks; 1) re-evaluated planning area growth predictions, 2) identified alternative flow generation criteria based on projected population densities and anticipated future flow per household, 3) developed additional modeling capabilities to evaluate conservative and realistic flow conditions, 4) prepared multiple interceptor sewer service alternatives, 5) evaluated recycled water alternatives including satellite treatment and scalping facilities, 6) prepared a cost analysis for the top interceptor alternatives.

16.17

The ISS provides a high level evaluation of interceptor alternatives and identifies interceptor alignment corridors as well as anticipated capacity needs and interceptor pipe sizes. Proposed projects will be further evaluated through the District's asset management program and must be approved by the Project Authorization Committee before requesting approval from the Regional San Board of Directors to begin environmental review and project implementation. The Regional San Board of Directors adopted the ISS in February 2013. The ISS is located on the Regional San website at <http://www.regionalsan.com/ISS>.

- 12.1.2.3: Regional San currently owns and operates a 5-mgd Water Reclamation Facility (WRF) that has been producing Title 22 tertiary recycled since 2003. The WRF is located within the SRWTP property in Elk Grove. Regional San uses a portion of the recycled water at the SRWTP and the rest is wholesaled to the Sacramento County Water Agency (SCWA). SCWA retails the recycled water, primarily for landscape irrigation use, to select customers in the City of Elk Grove. Regional San is not a water purveyor and any potential use of recycled water in the project area must be coordinated between the key stakeholders, e.g. land use jurisdictions, water purveyors, users, and the recycled water producers.
- 12.1.2.4, page 12-18: Information in this section is outdated and should be revised to reflect the following:

16.18

- The Sacramento Regional Wastewater Treatment Plant Master Plan 2020 has been superseded by the Regional San EchoWater Project. The SRWTP provides secondary treatment using an activated sludge process. The design of the SRWTP and interceptor system was balanced to have SRWTP facilities accommodate some of the wet weather flows while minimizing idle SRWTP facilities during dry weather. Regional San designed the SRWTP to accommodate some wet weather flows with the storage basins and interceptors designed to accommodate the remaining wet weather flows.

16.19

The Central Valley Regional Water Quality Control Board (Water Board) issued an NPDES Discharge Permit to Regional San in December 2010. In adopting the new Discharge Permit, the Water Board required Regional San to meet significantly more

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- | | |
|---|-------------------------|
| <p>restrictive treatment levels over its current levels. Regional San began the necessary activities, studies, and projects to meet the permit conditions in August of 2014. Regional San must complete construction of the new treatment facilities to achieve the permit and settlement requirements by May 2021 for ammonia and nitrate and May 2023 to meet these pathogen requirements.</p> | <p>16.19
cont'd</p> |
| <p>○ The SASD Sewerage Facilities Expansion Master Plan and 2008 SASD Sewerage Facilities Expansion Master Plan Update have been superseded by the 2010 SASD System Capacity Plan Update. Please remove any references to the superseded master plans.</p> | <p>16.20</p> |
| <p>• <u>12.2.2.2, page 12-34, 3rd bullet:</u> Regional San was in litigation with the CVRWQCB and the SWRCB over aspects of the NPDES permit that result in the need for tertiary filters. On August 8, 2014, CVRWQCB adopted an order that modified the permit filtration-related requirements and the litigation was dismissed and resolved. The permitted capacity of the SRWTP was not required to be increased and remains at 181 mgd.</p> | <p>16.21</p> |
| <p>• <u>12.2.3.2:</u> The Proposed Action/Proposed Project Alternative Covered Activities also include construction, maintenance, and operation of recycled water activities.</p> | <p>16.22</p> |
| <p>• <u>12.2.3.2, 3rd paragraph:</u> Reference to 2020 SRWTP Master Plan should be removed. The Regional San ISS and EchoWater Project would guide the extension of new wastewater facilities. The SCWA Water Supply Master Plans would guide new water facilities.</p> | <p>16.23</p> |
| <p>• <u>12.2.4.2, 2nd paragraph:</u> Reference to 2020 SRWTP Master Plan should be removed. The Regional San ISS and EchoWater Project would guide the extension of new wastewater facilities. The SCWA Water Supply Master Plans would guide new water facilities.</p> | <p>16.24</p> |

If you have any questions or require additional information, please contact me at (916) 876-6053 or norriss@sacsewer.com.

Sincerely,



Stephen Norris
Senior Civil Engineer

RTC 16.1 (EIS/EIR) – Comment noted. However, because the referenced conservation easement was not recorded until 2016, it is not part of the baseline used for analysis in the EIS/EIR. That baseline was set at issuance of the Notice of Preparation for the EIS/EIR in 2014. Nonetheless, a note has been added to Figure 1-2 that references the 205 acres of additional existing preservation in PPU 4.

RTC 16.2 (EIS/EIR) – Figures 2-1, 2-2, and 2-3 have been revised to show that the small areas east of Grant Line Road are part of PPU 4.

RTC 16.3 (EIS/EIR) – Comment noted. The Implementing Entity will ensure that the referenced property is considered for early enrollment in the Preserve System, provided it meets the necessary criteria.

RTC 16.4 – (SSHCP and EIS/EIR) – It is possible that all or a portion of the referenced property could be enrolled as preserve in the SSHCP Preserve System. However, the activities described in the comment are not covered activities in preserves. Therefore, if the property is enrolled in the future Preserve System the boundaries may exclude the locations that Regional San needs to disturb for maintenance and construction. Each Conservation Easement would be negotiated independently and may include conditions or allowances that would not be in place on another preserve property.

RTC 16.5 (EIS/EIR) – The acreage shown on Figure 2-3 in the Draft EIS/EIR was in error. The value for PPU 4 has been corrected to 520 acres in the Final EIS/EIR, consistent with the text description of PPU 4 preserves in the Draft EIS/EIR.

RTC 16.6 (EIS/EIR) – The referenced text in Section 3.7.1.4 has been edited as shown below in the Final EIS/EIR:

In addition, the ~~2,650~~**2,150** acres of preserved lands at the ~~Sacramento Regional County Sanitation District~~ **Regional San** Bufferlands, located in the western part of the UDA, have “termed” conservation easements, meaning those acres are currently preserved, but might not be preserved in perpetuity.

RTC 16.7 (EIS/EIR) – Comment noted. The EIS/EIR preparers were unable to get confirmation from Stone Lakes NWR on the feasibility of acquiring the remaining acreage to complete the approved NWR boundaries. Therefore, Section 3.7.2.7 of the Draft EIS/EIR assumed that Stone Lakes NWR would enroll properties at the same rate that it has since its creation. Since the adoption of the approximately 18,000-acre refuge boundary in 1992, Stone Lakes NWR has enrolled 6,550 acres. That amounts to an average rate of acquisition of 262 acres per year. Extending that same rate of acquisition over the proposed 50-year permit term of the SSHCP, Stone Lakes NWR would acquire an additional 13,100 acres. That amount would more than complete the approximately 18,000-acre approved refuge boundary. These assumptions have been added to the text in Section 3.7.2.7 with the following text:

The Draft EIS/EIR assumes that Stone Lakes NWR would enroll properties at the same rate that it has since its creation. Since the adoption of the approximately 18,000-acre refuge boundary in 1992, Stone Lakes NWR has

enrolled 6,550 acres. That amounts to an average rate of acquisition of 262 acres per year. Extending that same rate of acquisition over the proposed 50-year permit term of the SSHCP, Stone Lakes NWR would acquire an additional 13,100 acres. That amount would more than complete the approximately 18,000-acre approved refuge boundary.

RTC 16.8 (EIS/EIR) – Comment noted. However, the existing conditions evaluated in the EIS/EIR were based on the date of the NOP issuance, which was 2014. Nonetheless, the removal of the subject parcels from Williamson Act contract has been noted and would be included in the SSHCP data repository.

RTC 16.9 (EIS/EIR) – Construction, operation, and maintenance of recycled water pipelines is an SSHCP Covered Activity. The adverse and beneficial effects of the South County Ag Program were analyzed in the Draft EIS/EIR for the EIS/EIR action alternatives that are described in EIS/EIR Chapter 2 (as well as in the No Action Alternative).

As described in the No Action Alternative in EIS/EIR Chapter 2, the South County Ag Program would have a beneficial effect on groundwater relative to the existing conditions. We commend Regional San for taking action to improve groundwater conditions in South Sacramento County, and therefore, much of the SSHCP Plan Area. The analysis in Section 7.2.2.1 of the Final EIS/EIR has been revised to include the potential beneficial effects of the South County Ag Program to groundwater supplies.

RTC 16.10 (EIS/EIR) – The requested correction has been made in Section 7.1.2.3 of the Final EIS/EIR:

The north (largest) UDA portion of the Planning Area is primarily located within the Morrison Creek Watershed, which drains west through the City Elk Grove to ~~Beech~~ **Beach** Lake and the Sacramento River.

RTC 16.11 (EIS/EIR) – The requested correction has been made in Section 8.1.1 of the Final EIS/EIR:

The Natural Communities Conservation Planning (NCCP) Act was established by the California Legislature, is directed by the Department of Fish and ~~Game~~ **Wildlife**, and is being implemented by the state, and public and private partnerships to protect habitat in California.

RTC 16.12 (EIS/EIR) – The requested correction has been made in Section 8.1.2.4 of the Final EIS/EIR:

Within the Planning Area, the existing wetland and riparian natural land covers on the Stone Lakes National Wildlife Refuge, the existing Cosumnes River Preserve, and the ~~Sacramento Regional Sanitation District Buffer Lands~~ **Regional San Bufferlands** provide foraging and sheltering habitats for migratory water birds using the Pacific Flyway.

RTC 16.13 (EIS/EIR) – The requested correction has been made in Section 8.1.2.4 of the Final EIS/EIR:

Known locations of nest and nursery sites from the California Natural Diversity Database (CNDDDB) (CDFW 2014b) within the Planning Area consist of: two bank swallow cavity congregations found on the bank of the Cosumnes River near Rancho Murieta; three black-crowned night heron rookeries (at Fishhead Lake and ~~Nicholas~~ **Nicolaus** Pond within the UDA, and along a tributary of Badger Creek outside the UDA); three double-crested cormorant (*Phalacrocorax auritus*) rookeries (one at Stone Lake, and two in the UDA along lower Morrison Creek and at Black Crown Lake); and, four great blue heron (*Ardea herodias*) and great egret (*Ardea alba*) rookeries (North Stone Lake, along the North Fork of Badger Creek, along lower Morrison Creek in the UDA, and along the Cosumnes River near Rancho Murieta).

RTC 16.14 (EIS/EIR) – A new table note has been added to Final EIS/EIR Table 12-1 that reads as follows:

^c Stone Lakes NWR has an approved boundary of approximately 18,000 acres within the planning area. At the time of EIS/EIR preparation, approximately 6,420 acres within that boundary have been acquired for the NWR.

In addition, table note references have been added to “Stone Lakes National Wildlife Refuge” in Final EIS/EIR Table 12-1.

RTC 16.15 (EIS/EIR) – The comment is correct that construction, operation, and maintenance of recycled water pipelines is an SSHCP Covered Activity and was analyzed in the Draft EIS/EIR. Information regarding regulation of recycled water has been added to Section 12.1.1.3 of the Final EIS/EIR:

California Department of Public Health. Recycled water regulations are administered by both San Francisco Bay RWQCB and the California Department of Public Health (CDPH). The regulations governing recycled water are found in a combination of sources, including the Health and Safety Code, Water Code, and Titles 22 and 17 of the California Code of Regulations (CCR). Issues related to the treatment and distribution of recycled water are generally under the permitting authority of RWQCB, while issues related to use and quality of recycled water are the responsibility of CDPH.

Title 22 of the CCR, Division 4, Environmental Health, Chapters 1 through 3 outline California’s health laws related to recycled water. The intent of these regulations is to ensure protection of public health associated with the use of recycled water. The regulations establish acceptable levels of constituents in recycled water for a range of uses and assurance of reliability in the production of recycled water. The SWRCB has jurisdiction over the distribution of recycled wastewater and the enforcement of Title 22

regulations. Chapter 3, Article 3 of Title 22 indicates that disinfected tertiary recycled water can be used for surface irrigation of food crops (including edible root crops, where the recycled water comes into contact with the edible portion of the crop), parks and playgrounds, school yards, residential landscaping, and unrestricted-access golf courses. Orchards and vineyards where the recycled water does not come into contact with the edible portion of the crop must be treated at least to undisinfected secondary level for surface irrigation (CCR Section 60304).

RTC 16.16 (EIS/EIR) – The referenced text in Section 12.1.1.4 of the Draft EIS/EIR has been updated in the Final EIS/EIR as follows:

~~**Sacramento Regional Wastewater Treatment Plant Master Plan 2020.** The *Sacramento Regional Wastewater Treatment Plant Master Plan 2020* (2020 SRWTP Master Plan; Regional San 2008) identifies wastewater treatment facility needs for a 20-year planning period through the year 2020. The 2020 SRWTP Master Plan provides a phased program of recommended facilities to accommodate planned growth while at the same time maintaining treatment reliability, meeting future regulatory requirements, and optimizing costs. To meet this goal, the 2020 SRWTP Master Plan integrates overall strategies for wastewater treatment, effluent management, and biosolids disposal into an effective wastewater treatment management program. The 2020 SRWTP Master Plan proposes that treatment facility expansion occur in stages or phases as the sewage generated by the population increases (Regional San 2008).~~

Sacramento Regional County Sanitation District EchoWater Project. As a result of permit requirements adopted by the Central Valley RWQCB in 2010, as amended by orders of the Central Valley RWQCB and the SWRCB in 2011, 2012, 2013, and 2014, Sacramento Regional County Sanitation District (Regional San) is required to reduce total nitrogen and ammonia levels in its effluent substantially below existing concentrations. Biological nutrient removal is in progress to meet ammonia and nitrate effluent limitations. Regional San is also required to install tertiary filtration treatment for pathogen removal. Full compliance with the adopted and amended permit is required by May 2021 for ammonia and nitrate removal and May 2023 for filtration-related requirements.

RTC 16.17 (EIS/EIR) – The referenced text in Section 12.1.1.4 of the Draft EIS/EIR has been updated in the Final EIS/EIR as follows:

~~**Interceptor System Master Plan 2000.** The *Interceptor System Master Plan 2000* (Interceptor System Master Plan; Regional San 2000) identifies existing and future capacity needs in the regional interceptor system and provide a strategic approach to plan for near-term and long-term improvements needed for the regional wastewater conveyance system. The Interceptor System Master Plan updates and refines regional conveyance facilities, service area, growth projections, and the existing system's response to rainfall; provides dynamic modeling; estimates the~~

cost of facilities; identifies right-of-way acquisition needs; and identifies near- and long-term improvements required for regional wastewater conveyance. The Interceptor System Master Plan uses land use and population projections based on the Sacramento Area Council of Governments Blueprint criteria and the land use plans of the member jurisdictions. The Interceptor System Master Plan also provides wastewater flow estimates, information on hydraulic modeling, and interceptor design criteria, and identifies conveyance systems and policies to accommodate planned growth (Regional San 2000).

Regional San Interceptor Sequencing Study (ISS). The Interceptor Sequencing Study (ISS) was prepared to determine Regional San's long term needs to provide sanitary sewer service to a growing Sacramento region. The ISS evaluated proposed interceptor facilities identified in Regional San's previous planning document, the SRCSD Interceptor System Master Plan 2000, to determine if there were other alternatives including delaying, realigning, or eliminating proposed interceptors. The ISS performed the following six tasks; 1) re-evaluated planning area growth predictions, 2) identified alternative flow generation criteria based on projected population densities and anticipated future flow per household, 3) developed additional modeling capabilities to evaluate conservative and realistic flow conditions, 4) prepared multiple interceptor sewer service alternatives, 5) evaluated recycled water alternatives including satellite treatment and scalping facilities, 6) prepared a cost analysis for the top interceptor alternatives.

The ISS provides a high level evaluation of interceptor alternatives and identifies interceptor alignment corridors as well as anticipated capacity needs and interceptor pipe sizes. Proposed projects will be further evaluated through the District's asset management program and must be approved by the Project Authorization Committee before requesting approval from the Regional San Board of Directors to begin environmental review and project implementation. The Regional San Board of Directors adopted the ISS in February 2013.

RTC 16.18 (EIS/EIR) – The following text has been added to Section 12.1.2.3 of the Final EIS/EIR:

Regional San currently owns and operates a 5 mgd Water Reclamation Facility (WRF) that has been producing Title 22 tertiary recycled since 2003. The WRF is located within the SRWTP property in Elk Grove. Regional San uses a portion of the recycled water at the SRWTP and the rest is wholesaled to the Sacramento County Water Agency (SCWA). SCWA retails the recycled water, primarily for landscape irrigation use, to select customers in the City of Elk Grove outside the Planning Area. Regional San is not a water purveyor and any potential use of recycled water in the project area must be coordinated between the key stakeholders, e.g. land use jurisdictions, water purveyors, users, and the recycled water producers.

RTC 16.19 (EIS/EIR) – The referenced text in Section 12.1.2.4 of the Draft EIS/EIR has been updated in the Final EIS/EIR as follows:

Regional San operates the SRWTP. The SRWTP provides secondary treatment using an activated sludge process. The design of the SRWTP and interceptor system was balanced to have SRWTP facilities accommodate some of the wet weather flows while minimizing idle SRWTP facilities during dry weather. Regional San designed the SRWTP to accommodate some wet weather flows with the storage basins and interceptors designed to accommodate the remaining wet weather flows. The SRWTP is located in the westernmost portion of the Planning Area, just south of the community of Freeport.

The Central Valley Regional Water Quality Control Board RWQCB issued an NPDES Discharge Permit to Regional San in December 2010. In adopting the new Discharge Permit, the RWQCB required Regional San to meet significantly more restrictive treatment levels over its current levels. Regional San began the necessary activities, studies, and projects to meet the permit conditions in August of 2014. Regional San must complete construction of the new treatment facilities to achieve the permit and settlement requirements by May 2021 for ammonia and nitrate and May 2023 to meet these pathogen requirements.

~~The SRWTP is a high-purity oxygen-activated sludge facility; it is permitted to treat an average dry weather flow of 181 million gallons per day (mgd) and a daily peak wet weather flow of 392 mgd (Sacramento County 2010). The majority of the treated wastewater is dechlorinated and discharged into the Sacramento River. The SRWTP is located in the westernmost portion of the Planning Area, just south of the community of Freeport. The main SASD collection system includes over 2,800 miles of sewer pipelines ranging in size from 4 to 75 inches in diameter. Regional San interceptors are a large system of pipes up to 10 feet in diameter, which carry wastewater directly to the SRWTP (Sacramento County 2010).~~

~~Regional San adopted the 2020 SRWTP Master Plan to identify wastewater treatment and facility needs. The Master Plan identifies treatment facilities, conveyance, and storage facilities necessary to serve anticipated population growth within the Sacramento metropolitan area and meet regulatory requirements related to discharge quality (Regional San 2008). Regional San has also adopted the Interceptor Master Plan 2000, which specifies regional conveyance facility improvements (Regional San 2000) that were further investigated in the Regional San Interceptor Sequencing Study (ISS) adopted in 2013.~~

RTC 16.20 (EIS/EIR) – The referenced text in Section 12.1.2.4 of the Draft EIS/EIR has been updated in the Final EIS/EIR as follows:

~~In October 2008, SASD adopted the Sewerage Facilities Expansion Master Plan Update (SASD 2008), which operates as a companion document to the SASD's Sewerage Facilities Expansion Master Plan (SASD 2004). The 2010 SASD System Capacity Plan Update (SASD 2010) also contains improvements are~~

~~proposed in these documents~~ to meet the demand of development anticipated within the USB (Sacramento County 2011).

RTC 16.21 (EIS/EIR) – The referenced text in Section 12.2.2.2 of the Draft EIS/EIR has been updated in the Final EIS/EIR as follows:

- The increase in demand for sewer treatment would result in significant unavoidable impacts because flows would exceed permitted capacity even with policy compliance (Sacramento County 2010, pp. 5-12 to 5-22). **At this time there are no plans to expand the capacity of Regional San facilities beyond the existing permitted capacity, so this impact would remain significant and unavoidable.** However, this finding was based on pending litigation at the time of the Sacramento General Plan EIR that brought into question the ability of Regional San to expand its wastewater treatment capacity. That litigation was resolved and Regional San is now in the process of constructing a tertiary treatment facility that will expand their permitted capacity to accommodate projected development in the Planning Area. With this new information, the lead agencies expect that the previously identified significant unavoidable impact to sewer treatment would be revised to less than significant.

RTC 16.22 (EIS/EIR) – The referenced text in Section 12.2.3.2 of the Draft EIS/EIR has been revised in the Final EIS/EIR as follows:

The Proposed Action/Proposed Project Alternative Covered Activities include the urban development that are anticipated under the No Action/No Project Alternative, including the construction, maintenance, and operation of water supply, **recycled water**, and wastewater facilities.

RTC 16.23 (EIS/EIR) – The referenced text in Section 12.2.3.2 of the Draft EIS/EIR has been revised in the Final EIS/EIR as follows:

New water or wastewater facilities could be expanded or extended **within the MCRA under the Proposed Action/Proposed Project Alternative** as envisioned by the 2020 SRWTP Master Plan (Regional San 2008) **Regional San ISS and EchoWater Project**. **New water facilities could be expanded or extended as envisioned in the SCWA Water Supply Master Plans.** ~~within the MCRA for the Proposed Action/Proposed Project.~~

RTC 16.24 (EIS/EIR) – The referenced text in Section 12.2.4.2 of the Draft EIS/EIR has been revised in the Final EIS/EIR as follows:

New water or wastewater facilities could be expanded or extended **within the MCRA under the Reduced Permit Term Alternative** as envisioned by the SRWTP Master Plan 2020 (Regional San 2008) **Regional San ISS and EchoWater Project** ~~within the MCRA and would not be adversely affected by the establishment of preserves under the Reduced Permit Term Alternative.~~ **New water facilities could be expanded or extended as envisioned by the SCWA Water Supply Master Plans.**

**LETTER 17 SACRAMENTO COUNTY AGRICULTURAL COMMISSIONER
(EIS/EIR)**

**Agricultural Commissioner/
Director of Weights & Measures**
Juli D. Jensen, Agricultural Commissioner



County Executive
Nav Gill

Assistant County Executive
Nancy Newton

County of Sacramento

August 31, 2017

Jan C. Knight
Deputy Field Supervisor
US Fish and Wildlife Service
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County of Sacramento
Office of Planning and Environmental Review
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RE: Comments on the South Sacramento Habitat Conservation Plan Draft Environmental Impact Statement/
Draft Environmental Impact Report

Dear Ms. Knight and Ms. Moffitt,

The following comment letter is based upon the information contained in the South Sacramento Habitat Conservation Plan (SSHCP) Draft Environmental Impact Statement (DEIS)/Environmental Impact Report (DEIR), dated March 2017. Most of the content in this letter will be referring to Chapter 6 – Agriculture, of the SSHCP DEIS/DEIR, which contains information regarding existing agricultural protections, conditions and potential impacts to agricultural resources and activities within the SSHCP Planning Area. Items mentioned below are areas of the DEIS/DEIR that may need more clarification and/or analysis for a more comprehensive and transparent environmental document.

The California Right to Farm Act (Civil Code Section 3482.5) is an existing agricultural protection.

One of the County's existing protective measures for agriculture is the Sacramento County Code Chapter 14.05, the Right to Farm Ordinance, as described in Chapter 6 [page 6-7]. The DEIS/DEIR fails to mention California's agricultural protection act, California Civil Code Section 3482.5, "The Right to Farm Act". Similar to the County's Code, Civil Code Section 3482.5(a)(1) helps protect agricultural operations, activities, facilities, etc. from nuisance complaints. Unlike the County Code, Civil Code Section 3482.6 (a) has a broader sweep of protections with the intention of shielding agricultural processing activities, operations, and facilities, such as the processing of dairy products, the production of wine, the processing of meat and egg products, the drying of fruits and grains, the packing and cooling of fruits and vegetables, and the processing for wholesale or retail markets of agricultural products. Sacramento has many of these processing facilities and operations among its agricultural resource lands. The State Right to Farm Act prevails over contrary provisions of any city or county ordinance (Civil Code in Sections 3482.5(d) and 3482.6(d)). This act warrants mentioning in the DEIS/DEIR as an existing agricultural protection.

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The SSHCP Preserve System should be analyzed further, in lieu of existing land conservation policies and existing land conservation programs.

The DEIS/DEIR mentions Rancho Cordova's General Plan Policy LU.1.10 as an existing agricultural protection policy. It states, "The City shall ensure that the following standards are met regarding agricultural conservation easement content: provisions of an accurate legal document that prohibits any activity that substantially impairs or diminishes the agricultural productivity of the land..." How is this policy affected by the Proposed Action/Proposed Project Alternative? The DEIS/DEIR states that approximately 9,642 acres of Cropland and Irrigated Pasture-Grassland would be conserved as part of the SSHCP Preserve System. These conservation easements would limit the types of crops that could be grown, when crops could be harvested, and specific farming activities based on the specific habitat being preserved. On grazing lands, a Preserve Management Plan would determine the specificity of the grazing operation and may limit or restrict historical grazing activities. Some of these restrictions could be in direct conflict with Rancho Cordova's GP Policy LU.1.10 and depending on the agricultural operation, historical use of the land, and other factors, the SSHCP Preserve System could have beneficial impacts to agriculture, no impact to agriculture, or negative impacts to agriculture. The DEIS/DEIR states that the establishment of preserves would not prevent farmers/ranchers from using their agricultural land for agricultural purposes and therefore would have a *Minor Beneficial* effect to agriculture resources and activities. Other existing land trust programs and the County's Williamson Act Contract program (supported by Sacramento County General Plan Policy AG-25) currently function as conservation programs and help protect agricultural lands from development pressures. The DEIS/DEIR does not contemplate possible restrictions on agricultural land as a negative impact and should conduct further analysis of this scenario. Sacramento County General Plan Policy AG-14 states, "The County shall initiate intergovernmental agreements with state and federal wildlife management authorities in order to mitigate loss of Prime, Statewide Importance, Unique, and Local Importance farmlands or land with intensive agricultural investment due to natural habitat conversion." If the SSHCP Preserve System converts these important agricultural lands to native habitat, has the DEIS/DEIR contemplated a mitigation measure according to GP Policy AG-14?

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Current, existing FMMP data should be used in the DEIS/DEIR analysis.

Chapter 6, Section 6.1.2.1 refers to important farmland data from the California Department of Conservation, dated 2014 and refers to it as "current". The analysis should be using 2016 FMMP data, as it is the most current data available.

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The DEIS/DEIR uses the entire SACOG area to determine project impacts to agricultural land. The only agricultural land that will be impacted by the SSHCP project will be those lands within Sacramento County.

Section 6.2.1 explains the methodology used in determining the Project impacts to agriculture. Although the SSHCP encompasses a well-defined area and the area to be used as mitigation for development within the Urban Development Area (UDA) is well defined, the agricultural area being assessed for agricultural impacts includes the entire SACOG region (the counties of Sacramento, Placer, El Dorado, Sutter, Yolo, and Yuba). According to the SSHCP, agricultural lands outside of the SSHCP area, will not be targeted for mitigation purposes. Only those lands, the majority of which are agricultural lands in the southern portion of Sacramento County, will be considered for preservation/conservation easement purposes. By including the entire SACOG region for impact considerations, the impacts to agricultural lands within the SSHCP area will be diluted.

17.5

A more comprehensive analysis of existing Williamson Act contracted lands would enhance the accuracy of the DEIS/DEIR.

One of the Significant Thresholds identified by the DEIS/DEIR, used to evaluate an impact to agriculture, is whether the activity would conflict with an existing Williamson Act Contract [page 6-14]. The DEIS/DEIR states that many of the areas protected under conservation easement or in fee-title preserves would be under a Williamson Act Contract. The DEIS/DEIR needs to conduct further analysis on existing Williamson Act contracted lands. There may be a few contracts that allow open space uses, but the majority of the contracts may state that open space, as defined in California Government Code Section 51201(o) is not a compatible use. Whether or not a Williamson Act Contract would allow open space uses would be relevant information for this analysis, as the SSHCP depends on the use of these lands for mitigation of development within the UDA.

17.6

Avoidance and Minimization Measure (AMM) EDGE-1 may have a negative impact on agricultural lands.

Agricultural lands encumbered by Williamson Act Contracts with intensive agricultural activities may be affected by neighboring preserves by Avoidance and Minimization Measure (AMM) EDGE-1, which would prioritize compatible adjacent uses next to SSHCP Preserves, such as parks, nature trails, roads, or other uses. The DEIS/DEIR states that these uses would not convert or introduce incompatible land uses or conflict with existing Williamson Act contracted land [page 6-23]. This may or may not be the case and would depend on the Williamson Act Contract and the use of the land. The DEIS/DEIR assumes that nature trails, parks, roads, etc. are compatible uses adjacent to agricultural lands, but agricultural activities can be negatively affected by adjacent or nearby parks, nature trails, roads, etc. These uses can limit the use of the agricultural land by restricting normal farming practices, such as the application of pesticides. Sacramento County General Plan Policy AG-23 further supports this concept, "The County seeks to minimize agricultural/trail-user conflicts by recommending and seeking buffer zones between trails and nearby agricultural land..."

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The DEIS/DEIR needs a more comprehensive analysis in regards to the impacts of the SSHCP on Sacramento County's agricultural lands.

Lastly, the DEIS/DEIR concludes that the Proposed Action/Proposed Project Alternative would result in *Minor Beneficial* effects to agriculture when compared to the impacts that would occur under the No Action/No Project Alternative baseline condition. The DEIS/DEIR, bases this statement on a couple of conclusions; one is the implementation of AMM EDGE-1, which, as discussed above could have a negative effect on agricultural operations. It also bases this analysis on a conclusion that the Proposed Action/Proposed Project Alternative would prevent 1,900 acres of agricultural land from being plowed under by new urban development outside of the UDA. How does the SSHCP prevent jurisdictions like the Cities of Elk Grove and Galt from expanding their Sphere of Influence? Does the SSHCP prevent private developers from proposing development outside of the UDA? To make the statement that these two items would result in beneficial effects to agriculture is misleading. It is the opinion of the Agricultural Commissioner's Office that the DEIS/DEIR discussion needs to be more encompassing of all scenarios. Under varying circumstances the SSHCP could have positive effects on agriculture, as it could offer another tool for preserving agricultural lands in perpetuity, especially grazing lands; the SSHCP could have no effect on agriculture, if the Plan's Preserves conserved existing natural habitat in areas buffered from intensive agricultural operations; and the SSHCP could have negative effects on agriculture, by significantly limiting a farmer's ability to make decisions or act in a timely fashion, in regards to their agricultural operation. The Agricultural Commissioner's Office respectfully requests that further, in-depth analysis occurs regarding the environmental impacts of the SSHCP on Sacramento County's agricultural lands, existing agricultural operations and future agricultural opportunities.

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The Agricultural Commissioner's Office thanks you for the opportunity to comment and is available to assist, in any capacity, with further development of the SSHCP.

Respectfully Submitted,

A handwritten signature in blue ink, appearing to read "Chris J. Flores".

Chris J. Flores
Chief Deputy Agricultural Commissioner

And

A handwritten signature in blue ink, appearing to read "Juli D. Jensen".

Juli D. Jensen
Agricultural Commissioner

Cc: Sacramento County Farm Bureau

RTC 17.1 (EIS/EIR) – The California Right to Farm Act (California Civil Code 3482.5) has been added to the Final EIS/EIR in Section 6.1.1.2.

The following text has been inserted in Final EIS/EIR Section 6.1.1.2 to address Comment 17.1.

California Right to Farm Act

The “Right to Farm Act” (California Civil Code Sections 3482.5, 3482.6, 3483, and 3484 collectively) is a statewide agricultural protection act. Similar to Sacramento County Code Chapter 14.05 (the Right to Farm Ordinance, discussed below), the Right to Farm Act helps protect agricultural operations, activities, facilities, etc. from nuisance complaints. Unlike the County Code, the Right to Farm Act has a broader sweep of protections with the intention of shielding agricultural processing activities, operations, and facilities, such as the processing of dairy products, the production of wine, the processing of meat and egg products, the drying of fruits and grains, the packing and cooling of fruits and vegetables, and the processing for wholesale and retail markets of agricultural products. The Planning Area has many of these processing facilities and operations. The Right to Farm Act prevails over contrary provisions of any city or county ordinance.

RTC 17.2 (EIS/EIR) – Comment noted. However, the spirit of Rancho Cordova General Plan Policy LU.1.10 was to ensure that agricultural lands with conservation easements would remain agriculturally productive. As described in the Rancho Cordova General Plan EIR Section 4.2, very little of Rancho Cordova is underlain by soils of high value for row crops or other intensive agriculture. Most of the agricultural activity in Rancho Cordova consists of dry crop farming or grazing. Management of SSHCP agricultural preserves would ensure that agricultural lands could remain in production, while pursuing parallel goals of maximizing habitat value within the constraints of the agricultural operations allowable under the easement. Preserve management plans would be developed with landowners and would be periodically reviewed, which could provide landowners the opportunity to adaptively manage land management activities. The conservation easement for agricultural lands will also make farmers eligible for monetary payments for the purpose of agricultural enhancement (Draft SSHCP, page 9-23, “Agricultural Enhancements on Easements”). Therefore, we do not believe the conservation easements proposed by the SSHCP would “substantially impair or diminish the agricultural productivity of the land...”. For grazed grasslands, the SSHCP recognizes that responsible grazing practices, as used by most ranchers in the Plan Area, provide benefits to the covered species and should be allowed to continue on SSHCP Preserves. As part of Preserve establishment, the SSHCP Implementing Entity will collect information from ranchers on the historic and existing grazing practices on the land, and will ensure that beneficial grazing will continue on the subject property in perpetuity.

RTC 17.3 (EIS/EIR) – The SSHCP does not propose conversion of important agricultural lands to native habitat. As stated on page 6-24 of the Draft EIS/EIR, a small

amount of Cropland or Irrigated Pasture-Grassland may be converted to an aquatic resource land cover type from the re-establishment or establishment of Riparian Woodland, Vernal Pools, or Seasonal Wetlands under the Proposed Action/Proposed Project Alternative. Although these changes in land cover type are not considered agricultural conversion under the Sacramento County, Galt, or Rancho Cordova General Plans, under the Proposed Action/Proposed Project Alternative, the change in land cover would be mitigated as a loss of species habitat. Conservation easements would be placed on agricultural land cover types to ensure that agricultural production continues on the subject properties, consistent with the biological goals and objectives of the HCP (Table 7-1 in the SSHCP). As stated on page 6-23 of the Draft EIS/EIR, each Williamson Act contract is unique, and some may restrict the possible terms allowed for a conservation easement. If a conservation easement were proposed for land that is in a Williamson Act contract, the future Permittees would review the specifics of the Williamson Act contract to ensure that the establishment of a conservation easement is allowable.

RTC 17.4 (EIS/EIR) – At the time that section of the document was prepared, the 2014 FMMP data was the most current available. Since that analysis was completed, the 2016 FMMP data became available. While CEQA states that the existing conditions described in the EIR reflect the conditions at the time of NOP issuance (Title 14 California Code of Regulations, Chapter 3, Article 9, Section 15125(a)), the EIR preparers have nonetheless reviewed the 2016 FMMP dataset and found that the changes in agricultural uses within the planning area from the 2014 FMMP dataset are not substantial, and would not result in changes in the analysis or conclusions.

RTC 17.5 (EIS/EIR) – The study area of the SACOG six-county region described in Section 6.1.2.1 of the Draft EIS/EIR was only used to establish the cumulative conditions. The analysis of each alternative’s impacts on agriculture in Sections 6.2.2.1, 6.2.3.1, and 6.2.4.1 describes only the impacts to agriculture within the planning area. The text in Section 6.2.1 of the Final EIS/EIR has been corrected to make that clear. The text changes are shown below:

~~It is appropriate to consider impacts to certain environmental resources within the context of other impacts occurring in the surrounding landscape, community, or region (see Section 3.6.2, Geographic Study Area of Resource Topics Analyzed in Chapters 4 through 16).~~ **The study area used to analyze direct and indirect effects of the alternatives on agriculture is the Planning Area.** The lead agencies determined that an appropriate geographic scale for evaluating the **cumulative** impacts of each EIS/EIR alternative on agriculture lands and activities should include all agricultural resources and activities within the Sacramento Area Council of Government’s six-county region (SACOG 2016), which includes all of Sacramento, Placer, El Dorado, Sutter, Yolo, and Yuba Counties.

RTC 17.6 (EIS/EIR) – The Draft EIS/EIR bases its conclusion of Minor Beneficial effect on the following: “Some of the land included within the Preserve System may include Important Farmland or land currently enrolled in a Williamson Act contract; however, establishment of preserves would not convert Important Farmland to developed uses or

prevent farmers/ranchers from using their agricultural land for agricultural purposes.” (page 6-23). The operating agricultural preserves would not be maintained as “open space” as defined by California Government Code 51201(o)³, because the SSHCP would not seek to “preserve its natural characteristics, beauty, or openness” but rather would keep the lands in active agricultural production. Further, as stated in Section 6.1.2.3 of the Draft EIS/EIR, “approximately 139,890 acres within the Planning Area is currently under active Williamson Act contracts (CDOC 2016). Approximately 10,400 acres of these active contracts is identified for nonrenewal.” The SSHCP would provide an additional incentive for active contracts to be renewed, because the lands would be able to draw benefits from both the Williamson Act contract and the SSHCP conservation easement.

RTC 17.7 (EIS/EIR) – As stated on page 5-68 of the SSHCP, the AMMs of Condition 2, include AMM EDGE-1 referred to in the comment, would only apply to UDA Covered Activities that border existing preserves or planned preserves. Because the SSHCP would not seek conservation easements on agricultural lands in the UDA, this AMM would not affect agricultural operations in the Planning Area. References to AMM EDGE-1 in Chapter 6 have been removed from the Final EIS/EIR.

RTC 17.8 (EIS/EIR) – Refer to response to Comment 17.7. References to AMM EDGE-1 in Chapter 6 have been removed from the Final EIS/EIR.

RTC 17.9 (EIS/EIR) – The SSHCP does not prevent urban development outside the UDA, as it is not a land use plan and has no such authority. However, urban development project proponents outside the UDA would not be able to use the coverage provided under the SSHCP Incidental Take Permits, nor any of its expedited permitting processes for impacts to waters or aquatic resources. This would be true for private developers, for non-permittees like the City of Elk Grove, or even for permittees like the City of Galt. However, the SSHCP EIS/EIR does predict that by allowing greater density of development within the UDA, the SSHCP would reduce the likelihood that urban development would occur outside the UDA. The EIS/EIR assumes that the planning area would accommodate the same amount of urban development under any of the alternatives, so the variable would be where that development would occur.

RTC 17.10 (EIS/EIR) – Please refer to the responses to comment 17.7 and comment 17.9. These explain much of the basis for the EIS/EIR’s conclusion that impacts to agricultural operations outside the UDA would be reduced as compared to the No Action/No Project Alternative. The EIS/EIR acknowledges the uncertainty inherent in its long-term analysis (Section 3.6.4 in the Draft EIS/EIR) but makes a good-faith effort to describe future conditions in the planning area based on adopted general plans and policy direction from planning area jurisdictions. With regard to the effects of the

³ “Open-space use” is the use or maintenance of land in a manner that preserves its natural characteristics, beauty, or openness for the benefit and enjoyment of the public, to provide habitat for wildlife...” (California Government Code 51201(o))

conservation easements on agricultural landowners, it would be entirely up to each farmer/landowner to choose to sell a conservation easement on their property to the Implementing Entity. If the farmer/landowner believes that they would be better served by not doing so, the SSHCP does not contain any instruments that would enable a permittee to force them to place a conservation easement on their land. Therefore, the Plan Preparers do not believe that additional analysis of HCP impacts to Sacramento County's agricultural lands, operations or opportunities is required.

LETTER 18 SACRAMENTO COUNTY FARM BUREAU
(SSHCP AND EIS/EIR)



SACRAMENTO COUNTY FARM BUREAU

PUTTING THE FOOD ON YOUR FORK SINCE 1917

September 1, 2017

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Deputy Field Supervisor
U.S. Fish and Wildlife Service
Sacramento Field Office
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Sacramento, CA 95825

Marianne Biner
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County of Sacramento
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RE: Comments on the Draft Environmental Impact Statement (DEIS) and Environmental Impact Report (DEIR) for the South Sacramento Habitat Conservation Plan (SSHCP).

Dear Ms. Knight and Ms. Biner;

On behalf of the Board of Directors of the Sacramento County Farm Bureau (Farm Bureau), we are providing the following comments to the Draft SSHCP EIR/EIS. Farm Bureau has been engaged in the development of the SSHCP for over 10 years and has provided numerous comments and many hours of stakeholder involvement during those years.

Farm Bureau is a non-governmental, non-profit grassroots organization with a purpose of protecting and promoting Sacramento County agriculture and the farmers and ranchers who steward and contribute nearly \$470 million in farm gate sales to a larger food and agriculture economy. Sacramento County contributes to a region in which is noted as America's Farm to Fork Capital. This regional distinction is well deserved as the Region has the climate and soils that are only found in a few other places in the world. To have a viable and productive working landscape, farmers and ranchers must have the flexibility to manage their farming operations for market conditions, weather, soil, water availability, regulations, etc. When a farmer sees a diminution in his ability to operate for optimal food and fiber production, then the farming business model is compromised leading to reduced economic returns. Habitat conservation programs can adversely impact agricultural productivity by limiting the farmer's ability to make decisions and respond to changing conditions over time.

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The SSHCP provides very little benefit or assurances to agriculture and places a disproportionate burden of habitat mitigation on working agricultural lands, that in many cases already provide significant habitat, species conservation, and watershed benefits. The SSHCP DEIR/DEIS fails to acknowledge and

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responsibly address the SSHCP's far-reaching negative impact on agriculture in the larger, long-term context of the County's urbanizing landscape for the following reasons: 18.2 cont'd

The DEIR/DEIS uses three criteria to evaluate agricultural impacts for the Significance Thresholds [Page 6-14]—yet none of these criteria address the most devastating impact on agriculture with respect to conservation easements and in-fee-title agricultural land acquisition. The Proposed Action/Proposed Project Alternative suggests establishment of preserves would not convert Important Farmland to developed uses or prevent farmers/ranchers from using their agricultural land for agricultural purposes [page 6-23]. However, the objectives of the SSHCP, as enforced through the Agriculture Conservation Easement, places responsibility to identify, preserve, protect, enhance, monitor and restore in perpetuity the Conservation Values of the Property entirely on the farmer/rancher. Under the SSHCP, the farmer/rancher would be prohibited from converting any annual crop not historically planted on the property or approved in writing. In addition, various crops and agricultural activities—including feedlots, orchard, vineyards, artichokes, asparagus, sod, rice, safflower, or cotton—are specifically prohibited. The Conservation Easement would also limit the farmer's ability to use biocides that have not been 'historically used.' The Conservation Easement would identify the timing for harvest, crop rotations, and other measures to benefit the targeted species. It is also unclear if routine and ongoing agricultural practices are allowed under the SSHCP. For example, routine agricultural activities whose status is thrown into limbo by the Conservation Easement include, without limitation, discing, chiseling, ripping, landplaning, laser leveling, harrowing, spraying, planting, seeding, etc. 18.3 18.4 18.5 18.6

The DEIR/DEIS suggests that there is no Impact on agriculture as the Proposed Action/Proposed Project Alternative would not prevent farmers/ranchers from using their agriculture land for agriculture purposes. Farm Bureau strongly disagrees in light of all of the many significant, restrictions associated with the Conservation Easement as described. While a narrow view of the SSHCP when compared to the No Action/No Project Alternative might conclude that there is some minor benefit to agriculture, as the plan might in theory limit some of the conversion of agriculture land to urban development. However, Farm Bureau submits that any supposed "minor benefit" of the SSHCP when compared to the No Action Alternative is far outweighed, in a negative sense, by the overall loss of agricultural use, operational flexibility, crop choice, and long-term economic viability. 18.7

Policy AG-5 in the Sacramento County General Plan was established to mitigate for the impacts to farmland. However, as interpreted in the SSHCP, the objective of that policy is taken to mean mitigation for habitat impacts that just happens to have some incidental agricultural use as farmland/cropland. This does not satisfy Policy AG-5 and development activities that impact farmland should be mitigated for solely in relation to the loss of farmland. Moreover, such application of Policy AG-5 fails to fulfill the spirit of Policy AG-5 in terms of land quality and productivity, as SSHCP reserve lands will, by definition, be more constrained and less economically productivity lands when compared to conventional farmland. Similarly, Farm Bureau renews its objection to the SSHCP proposed allowance of out-of-County mitigation. Specifically, to address project impacts in reasonable proximity to the environmental where they occur, and to maintain proper controls on proposed in-county development, farmland those impacts must be mitigated for within the County boundary. Biological mitigation must not be out-sourced to outside areas as a way to reduce market costs of land acquisition and protection, while artificially clearing the way for unbridled in-county farmland conversion and habitat degradation. 18.8 18.9

Because the SSHCP would not shift or displace contemplated development to areas outside the UDA, such as south of the Elk Grove SOI, the DEIR/DEIS concludes the SSHCP's effect on agriculture will be a minor beneficial cumulative effect. However, this conclusion ignores the fact the City of Elk Grove has withdrawn from the SSHCP, while the City's General Plan update independently identifies several, 18.10

extensive areas of consideration for future development outside of their SOI and outside of the County UDA. The DEIR/DEIS therefore overstates and mischaracterizes this supposed benefit of reduced urban development outside of the UDA, south of Elk Grove as proven by the City of Elk Grove's General Plan update. Left unaddressed, this omission constitutes a major flaw in the SSHCP, legally, biologically and in terms of actual plan implementation.

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The 50-year permit exceeds the County's General Plan Update 2030 by 20 years. As a result, the SSHCP becomes a *de facto* land use planning document by prejudging covered projects that have not been publicly vetted through the county's normal land use planning process. This improperly short-circuits the transparency, oversight, accountability, deliberative process that this process normally provides. Instead, the SSHCP should limit its term to the known planning horizon with potential option revisit as that planning horizon moves gradually into the future.

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Turning to the EIR/S, Farm Bureau was very disappointed to discover that the SSHCP's Alternative Screening process looked only at the pros and cons from a biological/species conservation standpoint without in any way considering other impacts, including agriculture.

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Moreover, the DEIR/DEIS fails to disclose and analyze the true impact of the SSHCP on agriculture under the No Project, Proposed Action/Proposed Project Alternative, or Reduced Permit Term Alternatives. Instead, the whole brunt and burden of the responsibility to recover species is placed on the rural, working landscapes already significantly impaired by regulatory stresses, market volatility and the high cost of doing business. The SSHCP is a vehicle that allows developers to have a streamlined and cost effective process to advance development projects while at the same time places 100% of the habitat responsibility on farmers and ranchers. All of this makes the SSHCP an extremely unattractive proposition for the County's once thriving, but now greatly challenged remaining agriculture industry. Instead of the SSHCP, Farm Bureau recommends pursuing on slow-growth compact pattern of development, with full and transparent public engagement, within the context of the County's and Cities traditional land use planning and permitting authorities. In contrast to the SSHCP, which is in fact a fast-track approval for unbridled development in the guise of a species protection plan, such a go-it-slow traditional elected official- and stakeholder-driven approach would *actually* protect and preserve the South County's remaining natural habitats and open space lands, within the rural and agricultural landscape within which they exist. If species protection is the actual goal, Farm Bureau believes this and not the SSHCP is the responsible and effective approach.

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Thank you for the opportunity comment on the SSHCP EIR/S. While we object to the SSHCP as a effective vehicle and long-term vision for our County, Farm Bureau looks forward to continuing opportunities to engage in the County's process.

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Sincerely,



Virginia Hemly Chhabra
President



Bill Bird
Executive Director

cc. Sacramento County Supervisor, Don Nottoli
Sacramento County Ag Commissioner, Juli Jensen

RTC 18.1 (SSHCP) – The SSHCP provides assurances that land will only be acquired by the Implementing Entity for the SSHCP Preserve System from willing sellers. In addition the Implementing Entity will not use condemnation or eminent domain to acquire property. Should farmers or ranchers determine that selling an easement to the SSHCP Implementing Entity is not in their best interest then they will not be required to do so.

The SSHCP Plan preparers do not agree that conservation easements are so restrictive that they will adversely impact agricultural operations. It is estimated that there is over 60,000 acres of land already protected under conservation easements within the SSHCP Plan Area, much of which is active agricultural land including grazing and farming.

Management of SSHCP agricultural preserves would ensure that agricultural lands remain in production, while pursuing parallel goals of maximizing habitat value within the constraints of the agricultural operations allowable under the easement. Preserve management plans would be developed with landowners and would be periodically reviewed, which could provide landowners the opportunity to adaptively manage land management activities. The conservation easement for agricultural lands will also make farmers eligible for monetary payments for the purpose of agricultural enhancement (Draft SSHCP, page 9-23, “Agricultural Enhancements on Easements,” and page 12-13 “Agricultural Enhancement Funding”). For grazed grasslands, the SSHCP recognizes that responsible grazing practices, as used by most ranchers in the Plan Area, provide benefits to the covered species and should be allowed to continue on SSHCP Preserves. As part of Preserve establishment, the SSHCP Implementing Entity will collect information from ranchers on the historic and existing grazing practices on the land, and will ensure that beneficial grazing will continue on the subject property in perpetuity.

RTC 18.2 (SSHCP) – Agricultural lands are a vital component of the SSHCP Conservation Strategy because working agricultural lands do provide valuable habitat for many species as well watershed benefits, as your comment states. Refer to Final SSHCP Section 11.1, *Assurances for Private Landowners*. The SSHCP would not have negative impacts on agriculture in Sacramento County for the reasons discussed in the response to Comment 18.1, as well as responses to comments 18.3 through 18.15 below.

RTC 18.3 (EIS/EIR) – The significance criteria used in the Draft EIS/EIR are the same as those used in other County CEQA documents, and are derived from State guidance (CEQA Guidelines, Appendix G).

RTC 18.4 (SSHCP) – The statement made that the SSHCP “places responsibility to identity (sic), preserve, protect, enhance, monitor and restore in perpetuity the Conservation Values of the Property entirely on the farmer/rancher” is not correct. As stated in SSHCP Section 9.4.3 and in the sample Conservation Easement on Agricultural Lands (Appendix D2 of the Final SSHCP), the grantor of a conservation easement will be responsible for managing the land in accordance with the conservation easement, but assessment, enhancement, or monitoring will be the responsibility of the grantee. In the case of conservation easements for agricultural lands, the management of the property will consist of continuing to conduct agricultural activities on the property that are consistent with the requirements of the easement.

RTC 18.5 (SSHCP) – The comment is correct that in agreeing to sell a conservation easement on their property, an agricultural landowner may agree to continue historic practices or use practices that are approved in advance by the Implementing Entity. The alternative approved practices can be either those listed in the conservation easement document, or those approved on a case-by-case basis. If an agricultural landowner does not wish to be bound by these restrictions, they are under no obligation to sell a conservation easement on their property. The SSHCP does not include any means by which a permittee could force them to place a conservation easement on their land, and cannot use eminent domain (Final SSHCP Sections 11.1.1 and 11.1.3).

RTC 18.6 (SSHCP) – The comment is correct that in exchange for payment for the Conservation Easement, an agricultural landowner must agree to certain restrictions on the activities that will occur on that property. These few restrictions have been carefully selected because they are those known to significantly impact the habitat value of agricultural lands, the preservation of which is the purpose of the Conservation Easement. The intent of a Conservation Easement would be that most routine historical agricultural activities could continue on the parcel, because those parcels selected for easements would be those that have good habitat value because they have not been extensively subjected to the restricted practices in the past. Nonetheless, it is possible that the Conservation Easement could disallow some activities that have previously occurred on the property. As stated in response to Comment 18.5, selling a Conservation Easement is entirely voluntary and if a landowner does not wish to be subject to these restrictions, they are under no obligation to be.

RTC 18.7 (SSHCP) – The comment is correct that agricultural landowners who choose to sell a Conservation Easement on their property may have less operational flexibility and crop choice than those who do not. The amount paid to the agricultural landowner for the Conservation Easement is intended to offset this, and to allow these continuing agricultural activities to remain economically viable over the long-term. As stated in response to Comment 18.5, selling a Conservation Easement is entirely voluntary and if a landowner does not wish to be subject to these restrictions, they are under no obligation to be.

RTC 18.8 (SSHCP and EIS/EIR) – General Plan Policy AG-5 makes no mention of the specific agricultural activities occurring on preserved or impacted farmlands, and relies strictly on their classification as prime, statewide importance, unique, local importance, and grazing. Policy AG-5 reads as follows:

“Projects resulting in the conversion of more than fifty (50) acres of farmland shall be mitigated within Sacramento County, except as specified in the paragraph below, based on a 1:1 ratio, for the loss of the following farmland categories through the specific planning process or individual project entitlement requests to provide in-kind or similar resource value protection (such as easements for agricultural purposes):

- Prime, statewide importance, unique, local importance, and grazing farmlands located outside the USB;

- Prime, statewide importance, unique, and local importance farmlands located inside the USB.

The Board of Supervisors retains the authority to override impacts to Unique, Local, and Grazing farmlands, but not with respect to Prime and Statewide farmlands.

However, if that land is also required to provide mitigation pursuant to a Sacramento County endorsed or approved Habitat Conservation Plan (HCP), then the Board of Supervisors may consider the mitigation land provided in accordance with the HCP as meeting the requirements of this section including land outside of Sacramento County⁴.

Note: This policy is not tied to any maps contained in the Agricultural Element. Instead, the most current Important Farmland map from the Department of Conservation should be used to calculate mitigation.”

As provided for in Policy AG-5 the stacking of agriculture and conservation easements is permissible. In addition, the SSHCP requires that impacts to farmland be mitigated by protecting farmland at a 1:1 ratio. We believe that this does comply with Policy AG-5.

RTC 18.9 (SSHCP) – Sacramento County General Plan Policy AG-5 does allow for farmland mitigation outside the County when it is part of a County-adopted HCP. However, the comment incorrectly states that the SSHCP proposes out-of-County mitigation. As stated in Section 1.2.1 of the Final SSHCP, the SSHCP Plan Area is limited to the south part of Sacramento County. Preservation of agricultural lands outside the SSHCP Plan Area would not meet the requirements of the SSHCP, and is neither proposed nor expected to occur under the SSHCP. All SSHCP mitigation and conservation actions must occur inside the SSHCP Plan Area.

RTC 18.10 (EIS/EIR) – The Draft EIS/EIR does consider development in proposed Elk Grove SOI expansions totaling 1,710 acres in its analysis of cumulative effects, as described in Section 3.7.2.1. The Draft EIS/EIR also analyzes, as part of the No Action/No Project Alternative, development within County jurisdiction outside the UDA just south of Elk Grove. That development would be in addition to the City of Elk Grove’s SOI development and is assumed to occur in response to the No Action/No Project Alternative’s increased difficulty in permitting development in the Mather Core Recovery Area. Therefore, it is incorrect to state that the EIS/EIR ignores the effects of development south of the City of Elk Grove. The benefits to agriculture identified in the EIS/EIR analysis of the Proposed Action/Proposed Project are the reduced likelihood of scattered development in predominantly agricultural areas, outside the UDA.

RTC 18.11 (SSHCP and EIS/EIR) – The full justification for the proposed 50-year ITP permit terms is provided in Section 1.2.3 of the SSHCP, and repeated in the description of

⁴ Note that the SSHCP permit will not accommodate mitigation land outside the Plan Area (e.g., outside Sacramento County) without amendment and additional environmental review.

the Proposed Action/Proposed Project Alternative in Section 2.3.2 of the EIS/EIR. However, Section 2.4.2 of the Draft EIS/EIR also analyzes the effects of an HCP with a 30-year permit term, the Reduced Permit Term Alternative.

The SSHCP would not supersede or replace the general plan planning process, nor provide the local land use entitlements required to construct or implement the covered activities. Therefore, it is incorrect to state that the SSHCP becomes the de facto land use planning document for the Plan Area. Refer also to response to Comment 3.6.

RTC 18.12 (EIS/EIR) – The alternatives screening process examined the ability of each potential alternative to meet the direction of the Purpose and Need Statement and the Project Objectives listed in EIS/EIR Sections 1.3.1 and 1.3.3. These specifically state that alternatives should “maintain the existing richness of agricultural lands”, and should “protect the long-term viability of ranching and farming operation in the Planning Area”. Draft EIS/EIR Appendix E).

RTC 18.13 (EIS/EIR) – The Draft EIS/EIR analyzes impacts on agriculture in a manner consistent with CEQA, using the significance criteria suggested in the CEQA guidelines and commonly used by Sacramento County. Please refer to responses to comments 18.1, 18.4, 18.5, 18.6, 18.7, and 18.10 for responses to the comments on the Draft EIS/EIR analysis of agricultural resources.

RTC 18.14 (SSHCP) – While it is acknowledged that much of the SSHCP Conservation Strategy would take place on working grazing lands and working farmlands, these would only be with willing sellers of conservation easements. Establishment of SSHCP conservation easements will focus on maintaining the viability of the existing ranching and farming activities while conserving the habitat value of the property’s working landscape. The SSHCP provides a mechanism by which farmers and ranchers can be financially compensated for continuing the existing agricultural practices that are maintaining habitat for covered species. As stated in response to Comment 18.5, selling a Conservation Easement to the SSHCP is entirely voluntary and if a landowner does not wish to be part of the SSHCP, they are under no obligation to be. As discussed in response to Comment 18.1, a SSHCP conservation easement on working agricultural lands will also make farmers eligible for monetary payments for the purpose of agricultural enhancement on their properties. Examples of what the payments can be used for include the installation of repair of wells, fences, barns, drainage/irrigation system; demolition of structures, and clearing of land that does not impact wetland or riparian habitats.

RTC 18.15 (SSHCP/EIS-EIR) – The Draft EIS/EIR estimated the future land development without the SSHCP (the No Action/No Project Alternative), and compared it to expected land development with the SSHCP in place (Proposed Action/Proposed Project). The SSHCP would result in a pattern of development and habitat preservation that would cause fewer and less significant impacts than maintaining the status quo. Please also note the following:

- The SSHCP will not increase the acres of development in the County— the same acres of development will be projected to occur even if the SSHCP is not approved and implemented (i.e. the No Action/No Project condition).

- The SSHCP does not have the ability to affect or change the existing County and City policies on slow-growth, or change existing County and City policies on compact pattern of development.
- The SSHCP would not change existing CEQA and local requirements to have a full and transparent public engagement prior to County or City decisions on individual future land development projects—the existing public engagement processes will still happen under the SSHCP.
- The development of the proposed SSHCP was entirely driven by stakeholders that own land, work, and live in the Plan Area. The entities representing every Plan Area stakeholder and all relevant regulatory agencies negotiated the proposed SSHCP over approximately 15 years to reach this effective and responsible approach to conservation in south Sacramento County.
- The SSHCP will protect and preserve much of south Sacramento County's remaining natural habitat and open space lands and protect and preserve the rural working agricultural landscapes within which they exist.

RTC 18.16 (SSHCP) – Thank you for your comment. The SSHCP Plan Partners welcome the Farm Bureau's continued participation in the SSHCP process.

**LETTER 19 SACRAMENTO METROPOLITAN AIR QUALITY
MANAGEMENT DISTRICT**



August 18, 2017

SENT VIA EMAIL

Todd Smith, Acting Environmental Coordinator
Office of Planning and Environmental Review
County of Sacramento
827 7th Street, Room 225
Sacramento, CA 95814

Jan C. Knight, Deputy Field Supervisor
Sacramento Fish & Wildlife Office Programs
Sacramento Fish & Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, CA 95825

**RE: Draft Environmental Impact Statement/Environmental Impact Report for the South
Sacramento Habitat Conservation Plan**

Dear Mr. Smith and Ms. Knight:

Thank you for providing an opportunity for the Sacramento Metropolitan Air Quality Management District (SMAQMD) to review and comment on the Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the South Sacramento Habitat Conservation Plan (SSHCP). We review and provide comments through the lead agency planning, environmental and entitlement processes with the goal of reducing adverse air quality impacts and ensuring compliance with the California Environmental Quality Act (CEQA). We offer the following comments to ensure air quality impacts are adequately analyzed, disclosed and mitigated.

1. Consistency with Existing Plans

The SMAQMD appreciates the work done by the SSHCP staff on the Draft EIS/EIR to evaluate the SSHCP with existing plans, especially those that reduce criteria air pollutants and greenhouse gases (GHG).

19.1

2. Short-term Construction Emissions of Criteria Air Pollutants and Precursors

Based on the modeling conducted, short-term construction related emissions are not expected to exceed the SMAQMD thresholds of significance for criteria pollutants and ozone precursors for any of the three alternatives that were analyzed. SMAQMD appreciates the discussion in the Draft EIS/EIR regarding best management practices for reducing PM₁₀ and PM_{2.5} emissions and SMAQMD rules, even for projects not subject to CEQA review.

19.2

3. Greenhouse Gases and Vehicle Miles Traveled

Vehicle miles traveled (VMT) is directly linked to both GHG emissions and criteria air pollution. Reducing VMT is an important component toward meeting clean air and greenhouse gas reduction goals. SMAQMD commends SSHCP staff on analyzing the potential impacts of future urban development being shifted to areas of undeveloped land outside the urban services boundary, which could result in longer commuter trips and higher VMT. Based on the modeling conducted, construction and operational emissions of GHG are not expected to exceed the SMAQMD thresholds of significance for the creation and maintenance of mitigation preserves for any of the three alternatives.

19.3

Thank you for your consideration of these comments. If you have any questions, please contact me at 916-874-6267 or JChan@airquality.org.

Regards,

Joanne Chan
Air Quality Planner/Analyst

c: Paul Philley, AICP, Program Supervisor – CEQA & Land Use Planning Section, SMAQMD
Karen Huss, Air Quality Planner/Analyst, SMAQMD

777 12th Street, 3rd Floor ■ Sacramento, CA 95814-1908
916/874-4800 ■ 916/874-4899 fax
www.airquality.org

RTC 19.1 (EIS/EIR) – The comment expresses appreciation for the Draft EIS/EIR evaluating the SSHCP in the context of existing plans, particularly those that reduce criteria air pollutants and greenhouse gases (GHGs).

RTC 19.2 (EIS/EIR) – The comment is correct in its description of short-term construction related emissions impacts. The comment expresses appreciation for the inclusion of emission reduction rules and best management practices (BMPs) in the EIS/EIR.

RTC 19.3 (EIS/EIR) – The comment is correct in its description of the GHG emissions analysis in the EIS/EIR. The comment expresses appreciation for the evaluation of urban development location and VMT provided in the EIS/EIR.

LETTER 20 SACRAMENTO METROPOLITAN UTILITY DISTRICT
(SMUD)
(SSHCP)

**Sent Via E-Mail**

September 6, 2017

Environmental Coordinator
 Sacramento County
 827 7th Street, Room 225
 Sacramento, CA 95814
SSHCP@sacounty.net

Subject: South Sacramento Habitat Conservation Plan Draft Environmental Impact
 Statement/ Environmental Impact Report
 (Control No: 2003-0637/ Clearinghouse No. 2008062030)

To Whom It May Concern:

The Sacramento Municipal Utility District (SMUD) appreciates the opportunity to provide comments on the South Sacramento Habitat Conservation Plan (Project) Draft Environmental Impact Statement/ Environmental Impact Report (DEIS/EIR). SMUD is the primary energy provider for Sacramento County and the proposed Project area. SMUD's vision is to empower our customers with solutions and options that increase energy efficiency, protect the environment, reduce global warming, and lower the cost to serve our region. As a Responsible Agency, SMUD aims to ensure that the proposed Project limits the potential for significant environmental effects on SMUD facilities, employees, and customers.

It is our desire that the Project DEIS/EIR will acknowledge any Project impacts related to the following:

- Overhead and or underground transmission and distribution line easements. Please view the following links on smud.org for more information regarding transmission encroachment:
 - <https://www.smud.org/en/business/customer-service/support-and-services/design-construction-services.htm>
 - <https://www.smud.org/en/do-business-with-smud/real-estate-services/transmission-right-of-way.htm>
- Utility line routing

20.1

SMUD has existing overhead/underground facilities on or adjacent to the Project Planning Area. Based on our review of the DEIS/EIR and our understanding of the proposed Project, SMUD encourages the County to consider the following:

1. SMUD is also preparing a habitat conservation plan, the permit area for which overlaps with the Project Planning Area. It doesn't appear that the two HCPs will conflict with each other though the plans have similar Covered Activities, as it

20.2

SMUD CSC | 4301 S Street | P.O. Box 15830 | Sacramento, CA 95852-0830 | 1.888.742.7683 | smud.org

relates to utility infrastructure. SMUD may explore opportunities to participate in the South Sac HCP as a Participating Special Entity, as appropriate.	20.2 cont'd
2. As it relates to rural transportation projects and covered activities, SMUD asks that the permitting agencies consider any impacts associated with relocating SMUD facilities to accommodate the project, as part of the project.	20.3
3. Additionally, as it relates to preserve development, SMUD may have existing infrastructure within or along the preserve areas. SMUD has a requirement to maintain its facilities and would need to continue to access these areas and maintain its facilities in accordance with our easements. Any new conservation easements placed on preserve areas will need to accommodate SMUD's easements.	20.4
SMUD would like to be involved with discussing the above areas of interest as well as discussing any other potential issues. We aim to be partners in the efficient and sustainable delivery of the proposed Project. Please ensure that the information included in this response is conveyed to the Project planners and the appropriate Project proponents.	20.5

Environmental leadership is a core value of SMUD and we look forward to collaborating with you on this Project. Again, we appreciate the opportunity to provide input on this DEIS/EIR. If you have any questions regarding this letter, please contact Emily Bacchini at emily.bacchini@smud.org or (916)732-6334.

Sincerely,

Angela C. McIntire
Regional & Local Government Affairs
Sacramento Municipal Utility District
6301 S Street, Mail Stop A313
Sacramento, CA 95817
angela.mcintire@smud.org

Cc: Emily Bacchini, SMUD

RTC 20.1 (SSHCP) – Each individual project that uses permit coverage under the SSHCP will need to ensure that they analyze and appropriately mitigate any impacts to utility line easements or utility line routing. Refer to response to Comment 20.4 regarding utility line easements and routing on SSHCP preserves.

RTC 20.2 (SSHCP) – We agree that there appears to be no conflict between the HCP that SMUD is developing and the SSHCP. The SSHCP Plan Partners welcomes SMUD to participate in the SSHCP as a Participating Special Entity.

RTC 20.3 (SSHCP) – Chapter 5 of the Final SSHCP has been revised to clarify that utility relocation associated with road projects is a covered activity. Any utility relocations would be in the right-of-way outside Preserves, so this would be a Covered Activity only outside Preserves.

RTC 20.4 (SSHCP) – Chapter 5 of the Draft SSHCP identifies maintenance of existing infrastructure on SSHCP preserves as a SSHCP Covered Activity. Section 5.2.7 of the SSHCP includes the following language: "Repair and maintenance of existing utility facilities within planned SSHCP Preserves, including electrical, natural gas, water, wastewater, and cell tower facilities, are SSHCP Covered Activities, when implemented consistent with the utility's existing ROW easements." This language would apply to SMUD easements, and demonstrate that SMUD activities in Preserves would be not only accommodated but could be SSHCP Covered Activities if SMUD desires.

RTC 20.5 (SSHCP) – This comment letter has been provided to all SSHCP Plan Partners. In addition, the comment letters and responses are published in the Final EIS/EIR so that they can be reviewed by the general public and all stakeholder groups. The County looks forward to working with SMUD in the future to ensure the compatibility of resource protection and provision of energy service to the region.

**LETTER 21 TAYLOR & WILEY, REPRESENTING TSAKOPOULOS
INVESTMENTS
(SSHCP AND CWA PERMIT STRATEGY)**

JOHN M. TAYLOR
JAMES B. WILEY
JESSE J. YANG
KATE A. WHEATLEY
MATTHEW S. KEASLING

TAYLOR & WILEY

A PROFESSIONAL CORPORATION
ATTORNEYS

500 CAPITOL MALL, SUITE 1150
SACRAMENTO, CALIFORNIA 95814

TELEPHONE: (916) 929-5545
TELEFAX: (916) 514-8942

Via E-Mail and U.S. Mail

September 5, 2017

County of Sacramento
Office of Planning and Environmental Review
Attn: Environmental Coordinator
827 7th Street, Room 225
Sacramento, CA 95814
sshcp@saccounty.net

**Re: Comments on Draft South Sacramento Habitat Conservation Plan and
Environmental Impact Report/Environmental Impact Statement**

To whom it may concern:

On behalf of Tsakopoulos Investments, we commend Sacramento County and its partners for their work developing the Draft South Sacramento Habitat Conservation Plan (Plan). We believe that the Plan offers a streamlined approach to permitting which has the potential to result in more expeditious permit decisions and better assurances for the regulated community, while protecting the highest quality habitat in an ecologically beneficial manner.

We offer one comment for the record based upon our review of the Draft Plan. From the perspective of the development community, an essential component of the SSHCP is the associated Section 404 Clean Water Act Permit Strategy (404 Strategy) drafted by the U.S. Army Corps of Engineers (Corps). The 404 Strategy would include an abbreviated process for issuing standard Section 404 permits (SPs) for activities which may have a “significant impact on the human environment and require the preparation of an EIS under NEPA.” However, neither the SSHCP nor the 404 Strategy—as those documents are currently drafted—provides detail about the anticipated requirements for projects utilizing the SP. It is our understanding, based upon conversations with the County and the Corps, that the 404 Strategy will require that any projects utilizing the SP be designed consistent with the SSHCP Conservation Strategy, including the dedication of “hard line” preserves, and that, if this occurs, no substantial additional on-site avoidance/preserve dedication will be required of these projects. Based upon this understanding, we are supportive of the Plan and 404 Strategy.

21.1

Very truly yours,

Kate A. Wheatley

cc: Angelo G. Tsakopoulos

RTC 21.1 (SSHCP and CWA Permit Strategy) – Please see the response to Comment 1.2. In addition the fundamental processing requirements of SPs would follow the USACE's regulations (primarily found in 33 CFR Part 325), inclusive of the content requirements for a complete application, public noticing, and additional content and procedural elements of permit evaluation. Distinguishing aspects of the SSHCP-aligned abbreviated SP process are provided in the form of the USACE's most informed-to-date outlook (see Appendix C), and formalized commitments to the process outlook would be provided in the USACE's ROD for the SSHCP EIS. The ROD, for example, would formally document the USACE's outlook provided in Appendix C with regard to requiring only on-site alternatives analysis of project alternatives as part of the abbreviated SP process.

In response to the question regarding on-site avoidance/preserve dedication for projects evaluated under the abbreviated SP process designed consistent with the SSHCP's Conservation Strategy, the CWA 404 permit strategy assumes all projects authorized under CWA 404 in alignment with the SSHCP would need to be designed consistent with the SSHCP's Conservation Strategy, and in this context the USACE would not require substantial additional on-site avoidance/preserve dedication. The hard line preserve requirements are consistent with the SSHCP Conservation Strategy's requirements. The CWA 404 abbreviated SP process looks to the SSHCP's requirements to help support justification of key CWA 404 compliance elements such as avoidance and minimization of impacts to aquatic resources at a plan-wide level, consistent with the US EPA's Section 404(b)(1) Guidelines in a regional conservation planning framework. In the case of the hard line preserves, the preserves are a key requirement of the SSHCP Conservation Strategy, and are also consistent with the requirements of other regulatory agencies (including the USACE) involved with the SSHCP and project-level reviews for the projects associated with the hard line preserves. For proposed hard line preserves and other types of SSHCP preserves, the USACE may request minor adjustments in preserve and/or setback (e.g., stream setbacks as required by the SSHCP and ARP) boundaries in support of project-level compliance with the Section 404(b)(1) Guidelines. For example, a stream setback of 25 ft. may encompass all but a 5-foot-wide swath of adjacent wetland to the subject stream. The USACE envisions in this type of situation the potential to request a slightly wider setback (at least where the adjacent wetland occurs), consistent with the avoidance and minimization guidance contained in the Section 404(b)(1) Guidelines. Due to site- and project-specific considerations in applying the Section 404(b)(1) Guidelines, this example is provided not as a decision rule, but as just an example of a type of minor adjustment that may be sought in association with project evaluations under the abbreviated SP process.

Clarification regarding analysis of on-site project alternatives required to comply with the provisions of EPA's Section 404(b)(1) Guidelines has been added to the updated CWA 404 permit strategy (Final EIS/EIR Appendix C). The on-site alternatives analysis must support a project-specific determination of the Least Environmentally Damaging Practicable Alternative (LEDPA) to support compliance with the Section 404(b)(1) Guidelines at the project-specific level. As described in Appendix C, the USACE's abbreviated SP permit decisions would be tiering from the SSHCP EIS, inclusive of recognition of plan-level avoidance, minimization, and mitigation.

**LETTER 22 TAYLOR & WILEY, REPRESENTING TSAKOPOULOUS
INVESTMENTS
(CWA PERMIT STRATEGY)**

From: [Kate Wheatley](#)
To: [Pakenham-Walsh, Mary R CIV USARMY CESPK \(US\)](#)
Cc: agtesq@tsakvest.com
Subject: [Non-DoD Source] Comments on Public Notice SPK-1995-00386: Proposed Section 404 Clean Water Act Permit Strategy Aligned with SSHCP
Date: Friday, June 30, 2017 7:19:16 PM

Dear Ms. Pakenham-Walsh:

Thank you for the opportunity to comment on the Proposed Section 404 Clean Water Act Permit Strategy Aligned with the South Sacramento Habitat Conservation Plan (Proposed Permit Strategy), posted June 2, 2017. On behalf of Tsakopoulos Investments, we commend the Sacramento District for its work developing a more streamlined approach to permitting under the Clean Water Act. This Proposed Permit Strategy, coupled with the South Sacramento HCP (SSHCP), has the potential to result in more expeditious permit decisions and better assurances for the regulated community, while better protecting the highest quality aquatic resources in an ecologically beneficial manner.

We offer one comment for the Corps' consideration: the Proposed Permit Strategy mentions an abbreviated process for issuing standard permits (SPs) for activities which may have a "significant impact on the human environment and require the preparation of an EIS under NEPA." However, unlike the programmatic general permit (PGP) and letter of permission (LOP) that are also described in the Proposed Permit Strategy, no details are provided about the anticipated process and requirements for this SP (e.g., how will the Corps decide which projects qualify for use of an LOP, as opposed to a SP? What type of alternatives analysis will be required for projects utilizing this SP?) The Proposed Permit Strategy indicates that the final EIS for the SSHCP will include more details on process and timelines for the SP abbreviated process, but this does not allow interested parties a meaningful opportunity to provide input about the Strategy as it pertains to these SPs. The Corps should provide these details now so that members of the public can review and provide comments for the Corps' consideration prior to the Corps' adoption of its Record of Decision and implementation of the Proposed Permit Strategy.

22.1

Thank you, again, for the opportunity to comment on the Proposed Permit Strategy. Please feel free to contact me with any questions.

Kate Wheatley

Kate A. Wheatley

TAYLOR & WILEY

500 Capitol Mall, Suite 1150

Sacramento, CA 95814

916.929.5545

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RTC 22.1 (CWA Permit Strategy) – With regard to the question concerning level of detail provided for the proposed abbreviated SP process, including distinguishing criteria for LOPs vs. abbreviated SP permits, and anticipated requirements associated with conducting alternatives analyses, please see response to comments 1.2 and 21.1. The CWA 404 Permit Strategy (Appendix C to the Draft EIS/EIR) discloses as much detail and certainty on specifications, processes and timing goals for the various permit types as is known to the USACE, prior to finalizing the permit strategy in response to public input on the EIS and referral to the SSHCP Plan Partners’ final draft ARP and ARP ordinance.

LETTER 23 U.S. ARMY CORP OF ENGINEERS
(EIS/EIR)



DEPARTMENT OF THE ARMY
 U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
 1325 J STREET
 SACRAMENTO CA 95814-2922

August 30, 2017

Regulatory Division (SPK-1995-00386)

Ms. Jan C. Knight
 Deputy Field Supervisor
 Sacramento Fish and Wildlife Office
 2800 Cottage Way, Room W-2605
 Sacramento, CA 95825

Dear Ms. Knight:

We have reviewed the U.S. Fish and Wildlife Service (USFWS) Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the proposed South Sacramento Habitat Conservation Plan (SSHCP). The Corps has jurisdiction within the proposed range of alternatives under the authority of Section 404 of the Clean Water Act (CWA 404) for the discharge of dredged or fill material into waters of the United States. Per 40 CFR 1501.6, the Corps is a cooperating agency on the EIS under the National Environmental Policy Act (NEPA), and, as described in the Draft EIS document, has provided consistent and substantive input on the Draft EIS and associated documents assessed by the Draft EIS (e.g., draft SSHCP).

Although our office was able to review prior administrative draft version of the Draft EIS, our review of the public Draft EIS identified the opportunity to clarify a limited number of key procedural and/or regulation- or guidance-based portions of the document. These clarification opportunities are primarily related to new and/or revised text (since the time of our last administrative draft review of a subject chapter) in areas of the document that describe complex existing and/or proposed CWA 404-related matters. The clarifications identified below are substantive in nature, and we believe changes to the Draft EIS and/or a response to these comments should be included in the Final EIS. Additional, minor clarifications will be provided by submittal of edits under our role as a cooperating agency, by the end of September. Thank you for the opportunity to provide the following comments on the Draft EIS.

Chapter 1:

1. Section 1.6.5 (pg. 1-42, first full paragraph): In our most recent administrative draft review of Chapter 1, we recommended deletion of three paragraphs, within which the subject of this comment occurs. We noted in our review that the passage had been previously commented on in a prior draft review and remained inaccurate. Therefore, we request the following clarification be added, and are available to work with the USFWS to address any questions in this regard.

23.1

-2-

As described in Appendix C to the DEIS, proposed projects reviewed under our draft standard permit (SP) abbreviated process are anticipated to be those that have potentially significant impacts and require the preparation of an EIS, rather than an environmental assessments (as currently stated in the subject text of the Draft EIS). Prior to finalization of the CWA 404 permit strategy, it would be pre-decisional for us to determine whether certain SP applications would not require the preparation of an EIS, however it is anticipated that the majority of SP applications for SSHCP covered projects would require an EIS. Lastly, we retain discretion to determine the appropriate level of NEPA analysis (environmental assessment, or EIS) based on a case-by-case review, consistent with NEPA regulations (40 CFR 1500) and our NEPA implementing regulations (33 CFR 230 and 33 CFR Part 325, Appendix B). As accurately described in the subject paragraph, key efficiencies would be operative since the Corps would be able to refer to programmatic-level approaches to compliance with NEPA, the 404(b)(1) Guidelines, and the Corps' public interest review requirements within the SSHCP EIS, and determinations related to these documented in our (future) Record of Decision for the EIS.

23.1 cont'd

Therefore, please revise the subject paragraph to read: *"NEPA requirements for future Covered Activity projects requiring permits under the SP abbreviated process would realize greater efficiencies. For future Covered Activity urban development projects proposing potentially significant effects on the human environment, for which the Corps determines requires preparation of an EIS, the SP abbreviated process would be reduced in terms of process, information requirements, and timing. Please refer to Appendix C for additional description of the SP abbreviated process."*

Chapter 2:

2. Section 2.1.1 (pg. 2-2, last paragraph): Some activities that result in a discharge of dredged and/or fill material into waters of the U.S. are exempt under CWA 404(f). Therefore, we request the paragraph be revised to state: "Activities that would result in the discharge of dredged or fill material into wetlands and other waters of the United States *may* require authorization..."

23.2

3. Section 2.1.1 (pg. 2-3, second full paragraph): Please add a new sentence after the first sentence ending in "...where applicable" to align with the information in Chapter 1 of the Draft EIS (Section 1.5.4, second paragraph of pg. 1-29) regarding the Corps' intention to review additional information outside the purview of NEPA to support a determination of compliance with the Section 404(b)(1) Guidelines in our future Record of Decision for the EIS, as follows: "However, on a case-by-case basis, additional information may be necessary. For this project, as part of its compliance documentation with EPA's 404(b)(1) Guidelines, the USACE will also consider additional information outside the purview of the NEPA process." While our NEPA implementing regulations guide that the alternatives analysis in an EIS should be thorough enough to support the Corps' compliance determinations with the 404(b)(1) Guidelines, case-by-case determinations still apply. We notified the lead agency and SSHCP plan proponents of the need for additional supporting information for a compliance determination with the 404(b)(1) Guidelines in discussions and electronic mail in early 2016, and feel it is important to clearly and consistently disclose this outlook in the NEPA document.

23.3

-3-

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|---|------|
| <p>4. Section 2.1.4 (pg. 2-12, last paragraph): Please refer to Comment #3, above, and add the same sentence after the existing sentence ending in "...where applicable."</p> | 23.4 |
| <p>5. Section 2.2.2 (pg. 2-31, second full paragraph): Please edit for accuracy the last sentence to read "...a minimum one-to-one acreage or one-to-one linear foot ratio (i.e., a 1:1 mitigation ratio) required by the 2008 Compensatory Mitigation Rule would be assumed to be required." It is pre-decisional to indicate that a specific mitigation ratio "would be used."</p> | 23.5 |
| <p>6. Section 2.2.2 (pg. 2-31, third/last full paragraph [and general comment]): We recommended in prior administrative draft reviews that several compensatory mitigation-related areas of text use rule citations for increased clarity. We formally request that specific areas of the Federal Mitigation Rule (33 CFR Part 332; "rule") referred to in the Draft EIS text be cited. In the subject paragraph, we recommend the final sentence starting with "The 2008 Mitigation..." cite the applicable part of the rule (33 CFR Part 332.3(b)), and condense the compensatory mitigation options into the three general types described in the rule (mitigation bank credits, in-lieu fee program credits and permittee-responsible mitigation). Lastly, we request that the following portion of sentence in the same paragraph be deleted, as it is inaccurate due to the rule's requirements (e.g., financial assurance provisions) for any type of proposed compensatory mitigation project: "and they provide financial planning and scientific expertise (which is often not practical for permittee-responsible mitigation projects)..."</p> | 23.6 |
| <p>7. Section 2.3.1 (pg. 2-43, second full paragraph): This paragraph indicates that the SSHCP would eliminate the need for project-level Section 7 Endangered Species Act consultations. Prior to the Corps' request of, and the USFWS's (future envisioned) programmatic biological opinion (BO) associated with the Corps' CWA 404 permit strategy, notification requirements are as of yet unknown. As a federal action agency, the Corps is obligated to initiate consultation under Section 7 of the ESA, unless an ESA instrument (e.g., programmatic BO) explicitly negates the requirement to do so for proposed CWA 404 actions under the authority of the subject instrument. We request a clarification be made in the Final EIS of notification/non-notification options in alignment with the USFWS's anticipated outlook for the programmatic BO.</p> | 23.7 |
| <p>8. Section 2.3.1 (pg. 2-43, third full paragraph): This paragraph as currently written is inaccurate in terms of saying the SSHCP's Conservation Strategy would "address cumulative impacts to vernal pool wetlands within the Mather Core Recovery Area (MCRA)." The Corps is available to work with the USFWS to modify the existing wording in this paragraph to ensure accuracy. The wording needs to be amended to focus on the SSHCP's envisioned ability to address the ROD's vernal pool mitigation-related requirements in a distinct yet adequate manner than the existing regulatory environment.</p> | 23.8 |
| <p>9. Section 2.3.1 (pg. 2-44, first full paragraph): Please see Comment #7, above, in regard to future envisioned Section 7 ESA consultation requirements.</p> | 23.9 |

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| <p>10. Section 2.3.1 (pg. 2-44, third full paragraph): There are a few inaccurate statements in the paragraph as currently written. We request the text be modified to read as follows, deleting a few inaccurate passages: "...watershed scale. Under the Proposed Action/Proposed Project Alternative, implementation of the SSHCP Conservation Strategy and the Aquatic Resource Program's (ARP's) mitigation approach (avoidance, minimization and compensation) would be assumed to assure CWA 404 mitigation (avoidance, minimization and compensation) is considered from a watershed-based perspective. The above-mentioned provisions, combined with a proposed in-lieu fee program (ILF); as discussed further below), would also systematically prioritize..."</p> | 23.10 |
| <p>11. Section 2.4.1 (pg. 2-126, sixth paragraph): Please see Comment #7, above, in regard to future envisioned Section 7 ESA consultation requirements.</p> | 23.11 |
| <p>12. Section 2.4.1 (pg. 2-127, second full paragraph): Please see Comment #7, above, in regard to future envisioned Section 7 ESA consultation requirements. Recommend addressing wording as per Comment #7, with option to add "...and consultation, if required under the terms of a programmatic BO, would be highly streamlined" within the second sentence of the paragraph after "...would be in compliance with the ESA..."</p> | 23.12 |
| <p>13. Section 2.4.1 (pg. 2-127, fourth full paragraph): There are two inaccurate statements in this paragraph regarding individual project impact and/or mitigation assessment, and the role of the proposed ILF should be identified alongside the SSHCP and ARP at the beginning of the paragraph. Please delete "...evaluate individual project impacts, and..." and replace "...to determine if individual projects are adequately mitigation for aquatic resource impacts..." with "to plan for and manage/monitor appropriate compensatory mitigation for aquatic resource impacts..."</p> | 23.13 |
| <p><u>Chapter 10:</u></p> | |
| <p>14. Section 10.1.1 (pg. 10-2, third paragraph): To obtain accuracy please add the words "may be" instead of "is" in the third line of the paragraph reading "compensatory mitigation [may be] required..." Compensatory mitigation requirements are assessed on a case-by-case basis in accordance with CWA 404 regulations and implementation guidance.</p> | 23.14 |
| <p>15. Section 10.1.1 (pg. 10-3, starting with first full paragraph): To obtain accuracy please delete the beginning of the first sentence ("In addition to setting minimum compensatory mitigation amounts..."). Similar to the request provided in Comment #6, please ensure accuracy of the three mitigation type definitions with wording in the 2008 Federal Mitigation Rule, such that there is reduced risk of paraphrasing a regulatory definition, and add the applicable citations from the "definitions" section of the rule (33 CFR Part 332.2). For example, the rule's definitions do not contain the term "CWA Permittee-Responsible Mitigation," but rather "permittee-responsible mitigation." Lastly, in the last paragraph on pg. 10-3, please see Comment #6 regarding the three main types of compensatory mitigation and a related rule citation. In past reviews, we have recommended using language and citations that are as close as possible to that contained in the rule itself. We reiterate this recommendation in this letter.</p> | 23.15 |

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| <p>16. Section 10.1.2 (pg. 10-13, first paragraph): Please delete the phrase "...be isolated features that..." in the sentence reading "Seasonal Wetlands in the Planning Area..." There are CWA 404 jurisdictional authority implications associated with the word "isolated" that could be misconstrued from usage of the word in the context of an ecological type of description.</p> | <p>23.16</p> |
| <p>17. Section 10.1.2 (pg. 10-14, first paragraph, second line from top of page): Please add the phrase "may flow into" after the word "ultimately." Similar to Comment #16, this not only provides flexibility for various ecological/hydrological scenarios that exist on the ground, but avoids making a rigid statement regarding hydrologic connectivity of vernal pools to downstream waters. Hydrological connectivity is assessed on a case-by-case basis, and similar to Comment #16, has implications for CWA 404 jurisdictional authority.</p> | <p>23.17</p> |
| <p>18. Section 10.1.2 (pg. 10-23, first paragraph): This paragraph was newly added since our most recent review of the administrative draft Chapter 10 (and draft ARP, which the paragraph refers to). The text discusses that that ARP contains approximately 232 acres fewer aquatic resources than the SSHCP, due to three factors. The first two factors are mechanistic (e.g., digital mapping techniques, rounding). The third factor described is "[S]ome of the acreage of riparian land cover types reported in the SSHCP are considered non-jurisdictional as they are mitigation sites comprised of created or restored riparian habitat. Non-jurisdictional resources are not discussed in the ARP." Please note we will review the draft ARP as contained in the Draft EIS and provide comments to the SSHCP Plan Partners. The ARP's project-level implementation relies upon case-by-case verification of the amount, type, and boundary of aquatic resources and/or completion of a jurisdictional determination by our office when covered projects are proposed under the SSHCP. Without a case-specific determination by our office, we believe it is inappropriate to eliminate over 200 acres of potential aquatic resources from the ARP.</p> | <p>23.18</p> |
| <p>19. Section 10.2.2.1 (pg. 10-38, second-to-last paragraph): The EIS uses the term "aquatic resources" for the most part, to describe three types of resources (wetlands, streams, riparian). In this paragraph regarding the Sacramento County General Plan Update Final Environmental Impact Report (EIR), a determination of less than significant impacts to "wetland and riparian resources" as made in the Final EIR is described. It is unclear whether the Final EIR addressed streams. We recommend, if the Final EIR does address streams, the Final EIS is updated to include this information, and if the Final EIR does not address streams, the Final EIS assess the effects of the proposed action and other alternatives on streams, and determine the significance of those effects.</p> | <p>23.19</p> |
| <p>20. Section 10.2.2.1 (pg. 10-42, first paragraph): The paragraph discusses appropriate compensatory mitigation ratios for CWA 404, which previously in the document have been described as a minimum of 1:1. The No Action/No Project Alternative is described as compliant with the 2008 Federal Mitigation Rule. However, Table 10-4 indicates there would be 1,607 acres of loss of aquatic resources under this alternative, and Table 10-6 indicates there would be 1,424 acres of aquatic resources re-established or established. Including, for instance, 821 acres of wetland waters lost, yet only 691 acres of this same cover type "gained" (Tables 10-4 and 10-6, respectively). Please clarify how the</p> | <p>23.20</p> |

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No Action/No Project Alternative would meet minimum compensatory mitigation ratio requirements (i.e., 1:1 ratio, unless there is a functional/condition assessment).

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| <p>21. Section 10.2.2.2 (pgs. 10-44 to 10-45): There was a substantial editing of this section (Cumulative Analysis of the No Action/No Project) since our most recent review of the administrative draft Chapter 10. The Draft EIS identifies that impacts to wetlands within the SSHCP have been and are significant. However, the Draft EIS identifies that for the No Action and Proposed Action, past, present, and reasonably foreseeable future actions would not contribute to these significant effects. However, insufficient rationale has been provided for this determination. We recommend the Final EIS provide specific rationale regarding the cumulative effects of past, present, and reasonably foreseeable future actions on wetlands, taking into account any mitigation measures included as part of the No Action or Proposed Action, or added as mitigation measures of the EIS.</p> | 23.21 |
| <p>22. Section 10.2.3.1 (pg. 10-51, first paragraph): We note the preservation of non-wetland types of waters of the U.S. for the No Action/No Project Alternative has been substantially reduced since our previous review of the EIS, including the expectation stated in this paragraph that there would be no preservation of riparian land cover under the No Action/No Project Alternative. We request that the Final EIS clarify assumptions supporting this expectation.</p> | 23.22 |
| <p>23. Section 10.2.3.1 (pg. 10-52, bottom paragraph): Please see Comment #20 in regard to the statement made in this paragraph on the 1:1 compensatory mitigation ratio question for the No Action/No Project Alternative. Also, it may be recommended to add the phrase “at least” before “...one acre of establishment/re-establishment” in the paragraph, since the Proposed Action/Proposed Project’s mitigation acreage is higher than the loss acreage (1,740 vs. 1,613 acres, respectively).</p> | 23.23 |
| <p>24. Section 10.2.3.2 (pg. 10-55, first paragraph): The cumulative effects discussion cites the No Action/No Project Alternative vs. the Proposed Action/Proposed Project Alternative in the header. Similar to Comment #21, the basis for the cumulative effects determination on pg. 10-45 is not fully clear from the rationale provided.</p> | 23.24 |
| <p>25. Section 10.2.4 (pg. 10-57, second full paragraph): The Reduced Permit Term Alternative is indicated to impact 1,097 acres of aquatic resources, citing Table 10-10; however, the total impact in Table 10-10 is 1,728 acres, which appears inconsistent. Also, the estimate for 758 acres of additional aquatic resources lost in the “remaining 20 years” of the 50-year EIS study period would be helpful to display in tabular form in the Final EIS, so that it can be better understood which types of aquatic resources may be impacted at what “rates” (e.g., by year 30, and in years 31-50).</p> | 23.25 |
| <p>26. Section 10.2.4 (pgs. 10-63 to 10-64). Please see Comment #24; this comment is repeated for the Reduced Permit Term Alternative.</p> | 23.26 |

We take our role as a cooperating agency on the SSHCP EIS very seriously, and appreciate the opportunity to provide the above comments. As specified in the comments, the requested clarifications in the EIS will result in a Final EIS that more accurately

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describes the regulatory framework (and certain more specific mechanisms within) that the Corps would be operating under, for all three alternatives considered in the EIS. We would be glad to assist with any remaining questions as regards existing and/or proposed CWA 404 regulatory frameworks in relation to the SSHCP.

If you have any questions or wish to arrange to meet and discuss these comments, please contact Mary Pakenham-Walsh at 1325 J Street, Room 1350, Sacramento, California 95814, by email at Mary.R.Pakenham-Walsh@usace.army.mil, or telephone at (916) 557-7718. Please refer to identification number SPK-1995-00386 in any correspondence concerning this project. For more information regarding our program, please visit our website at www.spk.usace.army.mil/Missions/Regulatory.aspx.

Sincerely,



Michael S. Jewell
Chief, Regulatory Division

cc:

Mr. Richard Radmacher, Senior Planner, Sacramento County Department of Water Resources, RadmacherR@saccounty.net

Mr. Joseph Morgan, U.S. Environmental Protection Agency, Region 9, morgan.joseph@epamail.epa.gov

Mr. Jason Gerdes, U.S. Environmental Protection Agency, Region 9, Gerdes.Jason@epamail.epa.gov

RTC 23.1 (EIS/EIR) – The edit has been made as requested in the comment. The referenced paragraph in Section 1.6.5 of the Final EIS/EIR now reads as shown below:

NEPA requirements for future Covered Activity projects requiring permits under the abbreviated SP process **would realize greater efficiencies.** ~~may be satisfied with a smaller Environmental Assessment level of review, rather than the EIS-level of review that is typical under the current project-by-project CWA permit process. Even f~~For future Covered Activity urban development projects proposing potentially significant effects on the human environment, **for which the Corps determines requires** and requiring the preparation of an EIS, the proposed SP **abbreviated** process would be **reduced in terms of process, information requirements, and timing. Please refer to Appendix C for additional description of the SP abbreviated process.** ~~greatly abbreviated by relying on the regional, programmatic, and comprehensive analysis in the EIS/EIR.~~

Similar text discussing the USACE's proposed Permit Strategy in Sections 1.5.4, 1.6.1, and Chapter 2 of the Final EIS/EIR was also edited in response to this comment.

RTC 23.2 (EIS/EIR) – The edit has been made as requested in the comment. The referenced paragraph in Section 2.1.1 of the Final EIS/EIR now reads as shown below:

Consideration of alternatives is also required under the Section 404 of the Clean Water Act (CWA 404). Activities that would result in the discharge of dredged or fill material into wetlands and other waters of the United States **may** require authorization...

RTC 23.3 (EIS/EIR) – The edit has been made as requested in the comment. The referenced paragraph in Section 2.1.1 of the Final EIS/EIR now reads as shown below:

Per the USACE's NEPA implementing regulations (33 CFR 325, Appendix B(9)(b)(5)), the alternatives analysis conducted in an EIS should be thorough enough to use for both the public interest review and the Section 404(b)(1) guidelines, where applicable; **however, on a case-by-case basis, additional information may be necessary. As discussed in Section 1.5.4, as part of its compliance documentation with EPA's 404(b)(1) Guidelines, the USACE will also consider additional information outside the purview of the NEPA process for this project.** Under the USACE public interest review, for activities in which there are unresolved conflicts as to resource use, USACE must evaluate the practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed structure or work (33 CFR 320.4(a)(2)(ii)). As explained in Section 2.1.1, under the Section 404(b)(1) Guidelines, USACE must evaluate the practicability of alternatives in light of the overall project purpose (40 CFR 230.10(a)).

RTC 23.4 (EIS/EIR) – The edit has been made as requested in the comment. The referenced paragraph in Section 2.1.4 of the Final EIS/EIR now reads as shown below:

In addition to the previously described CEQA and NEPA considerations, alternatives to adverse effects on the aquatic ecosystem must be evaluated by USACE pursuant with the requirements of the Section 404(b)(1) Guidelines. The alternatives analysis conducted in an EIS should be thorough enough to use for both the public interest review and the Section 404(b)(1) guidelines, where applicable; **however, on a case-by-case basis, additional information may be necessary. As discussed in Section 1.5.4, as part of its compliance documentation with EPA’s 404(b)(1) Guidelines, the USACE will also consider additional information outside the purview of the NEPA process for this project.**

RTC 23.5 (EIS/EIR) – The edit has been made as requested in the comment. The referenced text in Section 2.2.2 of the Final EIS/EIR now reads as shown below:

In cases where functional or condition assessments or other suitable metrics are not used to determine loss of functions and services, a minimum one-to-one acreage or one-to-one linear foot compensation ratio (i.e., a 1:1 mitigation ratio) required by the 2008 Compensatory Mitigation Rule would be **assumed to be required** used.

RTC 23.6 (EIS/EIR) – The edit has been made as requested in the comment. The edits also reflect input provided on similar text in Comment 23.15. The referenced paragraph in Section 2.2.2 now reads as shown below. Instances of similar text elsewhere in the Final EIS/EIR have been edited in a similar manner.

~~In addition to setting minimum compensatory mitigation amounts, t~~The 2008 Mitigation Rule establishes equivalent standards for types of compensatory mitigation projects **(33 CFR Part 332.2(b))**. The three **general option**~~types of~~ **for** compensatory mitigation projects are: use of mitigation banks **credits**, use of in-lieu fee programs **credits**, **and** or permittee-responsible mitigation projects. Use of mitigation banks **credits** and use of in-lieu fee programs **credits** are the preferred forms of CWA 404 compensatory mitigation under the 2008 Mitigation Rule, as they usually involve consolidating compensatory mitigation projects in ecologically appropriate locations using a watershed approach, they consolidate resources, ~~and they provide financial planning and scientific expertise (which often is not practical for permittee-responsible mitigation projects),~~ they reduce temporal losses of functions, and they reduce uncertainty over mitigation project success. The 2008 Mitigation Rule would continue to require the USACE to consider compensatory mitigation options in the following order: 1) credits from a mitigation bank; 2) credits from an in-lieu fee program; 3) permittee-responsible mitigation under a watershed approach; 4) permittee-responsible mitigation through on-site and in-kind mitigation and; 5) permittee-responsible mitigation through off-site and/or out of kind mitigation.

RTC 23.7 (EIS/EIR) – The text referenced in the comment has been edited in Section 2.3.1 of the Final EIS/EIR as shown below:

The SSHCP would provide real streamlining for project proponents by significantly reducing timeline for obtaining local approvals and entitlements, ESA and CESA authorizations, and CWA 404 authorizations. **It is also anticipated project level consultation with CDFW under CESA would be reduced or eliminated for Covered Species and Covered Activities.**

Text was also added to Section 1.5.4 of the Final EIS/EIR as shown below:

As the final EIS/EIR was prepared, the USFWS continued to coordinate with USACE to discuss the most efficient approach to achieving ESA section 7 compliance for the Corps' section 404 CWA permit strategy for future SSHCP covered activities. This approach will be described and documented prior to the Service's completion of the Record of Decision and issuance of the SSHCP ITP. The intent of USFWS is to provide the Corps with one biological opinion that will reflect compliance with ESA section 7(a)(2) for section 404 CWA permitting of SSHCP Covered Activities, and preclude the need for project level consultations on individual SSHCP covered activities.

RTC 23.8 (EIS/EIR) – Discussion of the Sunridge ROD in the referenced paragraph was misplaced under the section heading Project ESA and CESA Compliance. The paragraph in Section 2.3.1 of the Final EIS/EIR was edited as shown below to focus on ESA rather than CWA compliance.

The Reduced Permit Term Alternative's **SSHCP** Conservation Strategy would address cumulative impacts to vernal pools **species** within the MCRA. ~~Cumulative impacts within the MCRA as defined in the Sunridge ROD (see Section 2.2.2) would be addressed through implementation of the SSHCP Conservation Strategy (described below in Section 2.3.5).~~

The comment letter does not identify that the same text is repeated in Section 2.4.1 in reference to the Reduced Permit Term Alternative. Similar edits were made in that section to provide a consistent description of both action alternatives.

RTC 23.9 (EIS/EIR) – See the response to Comment 23.7.

RTC 23.10 (EIS/EIR) – The edit has been made as requested in the comment. The referenced paragraph in Section 2.3.1 of the Final EIS/EIR now reads as shown below:

As discussed in Section 2.2.2, the existing approach to permitting under CWA 404 provides the regulatory agencies little opportunity to evaluate individual project impacts or proposed mitigation within a regional or a watershed scale; ~~thus, the wetland regulatory agencies often have difficulty determining if projects are adequately mitigating for aquatic resource impacts.~~ Under the Proposed Action/Proposed Project Alternative, implementation of the SSHCP

Conservation Strategy and the ARP's **mitigation approach (avoidance, minimization and compensation) would be assumed to** ~~measures to avoid and minimize impacts to aquatic resources, the Proposed Action/Proposed Project would assure CWA 404 compensatory mitigation~~ **(avoidance, minimization and compensation)** ~~for unavoidable impacts to aquatic resources is considered from a watershed-based perspective, -~~ **These provisions, combined with a proposed in-lieu fee program (ILF); as discussed further below)**, and would **also** systematically prioritize compensatory mitigation projects based on anticipated impacts to aquatic resources, considering both watershed- and function-based factors.

RTC 23.11 (EIS/EIR) – Compliance with ESA Section 7(a)(2) for USACE's 404 CWA permitting of Covered Activities under the Reduced Permit Term Alternative would be achieved in the same manner as described for the Proposed Action/Proposed Project. See response to Comment 23.7.

RTC 23.12 (EIS/EIR) – The text in Section 2.4.1 of the Final EIS/EIR referenced in the comment now reads as shown below. Also see responses to Comments 23.7 and 23.9.

During the 30-year permit term, Covered Activity compliance with CWA 404 would be similar to the process described in Section 2.3.1 for the Proposed Action/Proposed Project Alternative. Each Covered Activity that meets the requirements of the HCP would be in compliance with the ESA, and any incidental take of federally listed species would be covered by the 30-year ESA incidental take permit. Therefore, **it is envisioned that in most cases** during the 30-year permit term, the USACE would not be required to initiate ESA Section 7 consultation with the USFWS before authorizing a Covered Activity project under CWA 404. This will shorten project timelines and reduce project costs, as was described for the Proposed Action/Proposed Project Alternative.

RTC 23.13 (EIS/EIR) – The edit has been made as requested in the comment. The referenced paragraph in Section 2.4.1 of the Final EIS/EIR now reads as shown below:

Because the HCP Conservation Strategy, ~~and the ARP,~~ **and proposed In Lieu Fee program** will allow the USACE and RWQCB the ability to evaluate ~~individual project impacts, and evaluate~~ proposed locations for compensatory mitigation using a watershed and regional-scale approach, wetland regulatory agencies would be better able to **plan for adequate compensatory mitigation** ~~determine if individual projects are adequately mitigating~~ for aquatic resource impacts in ecologically appropriate locations, as was described for the Conservation Strategy of the Proposed Action/Proposed Project Alternative.

RTC 23.14 (EIS/EIR) – The edit has been made as requested in the comment. The referenced text in Section 10.1.1 of the Final EIS/EIR now reads as shown below:

For discharge of dredged or fill material authorized under CWA 404, adverse impacts to waters of the United States (WOUS) must be avoided and minimized to the extent practicable. For unavoidable impacts, compensatory mitigation is **may be** required to replace the loss of WOUS functions. In 2008, the USACE and the U.S. Environmental Protection Agency (USEPA) jointly issued regulations for compensatory mitigation titled *Compensatory Mitigation for Losses of Aquatic Resources: Final Rule, 33 CFR Parts 325 and 332* (USACE and USEPA 2008).

RTC 23.15 (EIS/EIR) – The edit has been made as requested in the comment. The edits also reflect input provided on similar text in Comment 23.6. The referenced text in Section 10.1.1 of the Final EIS/EIR now reads as shown below. Instances of similar text elsewhere in the EIS/EIR have been edited in a similar manner.

~~In addition to setting minimum compensatory mitigation amounts, the~~ 2008 Compensatory Mitigation Rule establishes equivalent standards for **types of** aquatic resource compensatory mitigation projects regardless of whether they are conducted by mitigation banks, in-lieu fee programs, or permittees (**33 CFR Part 332.2(b)**). There are three **general options** forms of compensatory mitigation:

1. **Mitigation Bank:** a site, or suite of sites, where resources (e.g., wetlands, streams, riparian areas) are restored, established, enhanced, and/or preserved for the purpose of providing compensatory mitigation for impacts authorized by Department of the Army permits. In general, a mitigation bank sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the mitigation bank sponsor. The operation and use of a mitigation bank are governed by a mitigation banking instrument.
2. **In-Lieu Fee Program:** conducts the restoration, establishment, enhancement, and/or preservation of aquatic resources through funds paid to a governmental agencies or non-profit natural resources management entity by permittees to satisfy compensatory mitigation requirements for their Corps permits. Similar to a mitigation bank, an in-lieu fee program sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the in-lieu program sponsor. The operation and use of an in-lieu fee program are governed by an in-lieu fee program instrument.
3. **CWA-Permittee-Responsible Mitigation:** an aquatic resource restoration, establishment, enhancement, and/or preservation activity undertaken by the permittee (or an authorized agent or contractor) to provide compensatory mitigation for which the permittee retains full responsibility.

Use of mitigation banks and use of in-lieu fee programs are the preferred forms of compensatory mitigation under the 2008 Compensatory Mitigation

Rule as they usually involve consolidating compensatory mitigation projects where ecologically appropriate and use a watershed approach, consolidate resources, ~~provide financial planning and scientific expertise (which often is not practical for permittee responsible mitigation projects),~~ reduce temporal losses of functions, and reduce uncertainty over mitigation project success. The 2008 Mitigation Rule requires the district engineer to consider compensatory mitigation options in the following order: 1) Credits from a mitigation bank; 2) Credits from an in-lieu fee program; 3) Permittee-responsible mitigation under a watershed approach; 4) Permittee-responsible mitigation through on-site and in-kind mitigation; 5) Permittee-responsible mitigation through off-site and/or out of kind mitigation. However, this preference hierarchy may be overridden in cases where forms of mitigation lower on the preference hierarchy are determined to better serve the aquatic resource needs of a watershed and are documented in the administrative record.

RTC 23.16 (EIS/EIR) – The edit has been made as requested in the comment. The referenced text in Section 10.1.2 of the Final EIS/EIR now reads as shown below:

Seasonal Wetlands in the Planning Area tend to ~~be isolated features that~~ occur within moderate to large depressional features along streams, creeks, and rivers; along the edges of open water, or scattered within the Valley Grassland land cover.

RTC 23.17 (EIS/EIR) – The edit has been made as requested in the comment. The referenced text in Section 10.1.2 of the Final EIS/EIR now reads as shown below:

The movement of surface water between vernal pools can occur in a network of narrow and intermittent surface “swales” (Solomeshch et al. 2007). In many vernal pool landscapes, including those in the Planning Area, surface water flows through integrated ephemeral swales to other vernal pools, and ultimately may flow into a seasonal stream. Consequently, vernal pool landscapes comprise the upper watershed position of many stream systems (Rains et al. 2006).

RTC 23.18 (EIS/EIR) – The comment identifies text in the EIS/EIR that provides an explanation for why the draft ARP contains approximately 232 fewer acres of aquatic resources than the SSHCP. The comment states that USACE will review the ARP and provide comments to the SSHCP Plan Partners regarding this topic. The SSHCP Plan Partners appreciate the opportunity to further coordinate with USACE on the ARP, as well as the SSHCP and the EIS/EIR.

RTC 23.19 (EIS/EIR) – The Sacramento County General Plan Update Final EIR (Sacramento County General Plan EIR) (Sacramento County 2010) appears to use the term “wetland” fairly loosely to encompass a variety of aquatic habitat types. Although not explicitly stated, streams appear included in this “wetland” category as a list of potential impact mechanisms to wetlands includes “alteration of the bed and bank”. The

Draft EIS/EIR text in Section 10.2.2.1 referenced in the comment has been edited to read as shown below:

The *Sacramento County General Plan Update Final EIR* (Sacramento County General Plan EIR) (Sacramento County 2010) determined that impacts of planned future development on wetland and riparian resources would be less than significant (County of Sacramento 2010, pp. 8-31 through 8-34) because future projects would continue to comply with the existing regulations and policies discussed above in Section 10.1.1. **In the Sacramento County General Plan EIR, the term “wetland” is used to encompass a variety of aquatic habitats, including both jurisdictional and non-jurisdictional wetlands and streams (i.e., aquatic habitats that could be affected through alteration of the bed and bank) (County of Sacramento 2010, p. 8-32).**

RTC 23.20 (EIS/EIR) – Text is provided in Chapter 8, *Natural Communities, Land Covers and Common Plant and Animal Species*, that explains why the loss of aquatic resources in Table 10-4 is greater than the acreage of aquatic resources re-established or established shown in Table 10-6. As described on page 8-42 of Chapter 8:

The re-establishment and establishment acres of aquatic resources presented Table 8-5 reflect the Lead Agency assumption that the requirements of 2008 Compensatory Mitigation Rule to be re-established or established to replace lost aquatic resource functions and services at a minimum one-to-one acreage or one-to-one linear foot compensation-ratio would continue under the No Action/No Project Alternative. Table 8-5 assumes that compensatory mitigation for direct impact to Vernal Pools and Swales would occur within the Planning Area. However, compensatory mitigation for the other aquatic land covers (Stream/Creek VPIH, Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water) is assumed would continue to occur primarily by purchase of credits at an approved mitigation banks or an in-lieu fee program. However, several mitigation banks and in-lieu fee programs with service areas that overlap the Planning Area actually re-establish, establish, or enhance wetlands or other waters at locations outside the Planning Area. Therefore, Table 8-5 assumes that only one-half the necessary compensatory mitigation for direct impacts to Stream/Creek VPIH, Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water would occur inside the Planning Area.

The same acreages of aquatic resources impacts provided in Table 10-4 are provided in Table 8-4 and the same acreages of aquatic resources re-establishment and establishment provided in Table 10-6 are provided in Table 8-5. However, Chapter 10 of the Draft EIS/EIR did not include the explanatory text from Chapter 8. Text similar to that cited in the comment has been added to Chapter 10 of the Final EIS/EIR to further explain how acreages of compensatory mitigation were calculated under the No Action/No Project Alternative.

RTC 23.21 (EIS/EIR) – The evaluation of cumulative impacts for the No Action/No Project Alternative in Section 10.2.2.2 identifies that the combination of past and

present activities and projects have resulted in the existing condition regarding aquatic resources, and concludes that these combined past and present actions and projects have resulted in an existing significant cumulative impact on aquatic resources within the EIS/EIR Planning Area, and the larger resource study area. The Draft EIS/EIR does not conclude that the combination of past, present, and reasonably foreseeable future actions would not contribute to this significant effect, but only concludes:

1. many of the foreseeable other projects and actions discussed in Section 3.7.2 would not result in additional losses of aquatic resource functions and services from the study area;
2. a subset of the reasonably foreseeable future projects (e.g., foreseeable rural residential developments, agricultural activities on private lands) are likely to result in additional losses and additional adverse impacts to existing aquatic resources within the resource study area over the 50-year EIS/EIR study period; and
3. the incremental effects of the No Action/No Project Alternative would not make a considerable contribution to the existing significant cumulative impact on aquatic resources within the study area.

Conclusion #1 is supported by the identification of regulations and policies applicable to the reasonably foreseeable future projects that would result in the protection of aquatic resources and the implementation of compensatory mitigation, and the results of the review of USACE's CWA 404 project authorizations within the Planning Area between 1979 and 2013.

Conclusion #2 is clarified with the following edits to text in Section 10.2.2.2:

However, the foreseeable rural residential developments, the agricultural activities on private lands, and certain other future activities may not always trigger the regulations and policies listed above, and in those cases are likely to result in additional losses and additional adverse impacts to existing aquatic resources within the resource study area over the 50-year EIS/EIR study period.

Conclusion #3 is clarified with the following edits to the last paragraph in Section 10.2.2.2. The explanation for meeting the one-to-one mitigation standard provided above in response to Comment 20 supports the added text provided below.

As described above, ~~implementation~~ implementation of the No Action/No Project Alternative is assumed to meet the requirements of the 2008 Compensatory Mitigation Rule and aquatic resources would be re-established or established to replace lost aquatic resource functions and services at a minimum one-to-one acreage or one-to-one linear foot compensation-ratio. Compensatory mitigation, under this alternative could occur both inside and outside the Plan Area. With the resulting no net loss of aquatic resource functions and services. ~~When~~ the incremental direct and indirect effects of the No Action/ No Project Alternative are

viewed in connection with the effects of the past, present, and reasonably foreseeable future other projects and actions, the incremental effects of the No Action/No Project Alternative would not make a considerable contribution to the existing significant cumulative impact on aquatic resources within the study area.

RTC 23.22 (EIS/EIR) – Text identifying why it was assumed that there would be no riparian land cover preservation under the No Action/No Project Alternative has been added as shown in the paragraph below from the analysis of the No Action/No Project Alternative in Section 10.2.2.1 of the Final EIS/EIR.

Table 10-5 provides the estimated acreages of aquatic resource land cover types that would be preserved under the No Action/No Project Alternative inside the UDA and outside the UDA. As discussed in Section 2.2.32, 2.2.4, the lead agencies described the future No Action/No Project Alternative by estimating the minimum and maximum amounts of new urban development that could occur over a 50-year period inside the UDA under various mitigation scenarios. Under the scenario with the largest feasible acres of new development and the smallest feasible acres of aquatic-resource mitigation feasible, an estimated 1,740 acres of aquatic resources would be preserved in the Planning Area as project mitigation under the No Action/No Project Alternative (Table 10-5). **Table 10-5 identifies 0 acres of riparian land cover preservation under the No Action/No Project Alternative. This is because it is assumed that under the No Action/No Project Alternative all mitigation for unavoidable losses of riparian land cover would be achieved through re-establishment/ establishment of mixed riparian scrub and mixed riparian woodland land covers (see Table 10-6) and not by preservation of existing riparian land covers.**

RTC 23.23 (EIS/EIR) – See response to Comment 23.20. In addition, the Draft EIS/EIR text in Section 10.2.3.1 referenced in the comment has been edited in the Final EIS/EIR to read as shown below:

Because the Proposed Action/Proposed Project Alternative would result in greater impacts to aquatic resources, the a-total acreage of re-established/established aquatic resources would be greater under the Proposed Action/Proposed Project Alternative (Table 10-9) than that under the No Action/No Project Alternative (Table 10-6). The No Action/No Project Alternative results in 1,424 acres of re-establishment/establishment mitigation **in the Planning Area (see Section 10.2.2 for an explanation of the use of mitigation banks and in-lieu fee programs and potential for some compensatory mitigation to be located outside the Planning Area)**, and the Proposed Action/Proposed Project results in 1,740 acres of re-establishment /establishment mitigation **in the Planning Area**. For both alternatives, the amount of re-establishment/establishment is directly tied to the amount of impact, with each acre of land cover loss resulting in **at least** 1 acre of establishment/re-establishment. For the No Action/No Project Alternative, this

minimum one-to-one acreage is assumed based on the requirements of the 2008 Compensatory Mitigation Rule (33 CFR 332.3(f)).

RTC 23.24 (EIS/EIR) – The Draft EIS/EIR text in Section 10.2.3.2 referenced in the comment has been edited in the Final EIS/EIR to read as shown below. This text correlates with edits made in response to Comment 23.20.

The effects of past ~~and~~, present, ~~and reasonably foreseeable other~~ projects on aquatic resources in the Planning Area were described above in Section 10.2.2.2, and represent a significant adverse cumulative impact on the aquatic resources within the study area. **A subset of the reasonably foreseeable other projects (e.g., foreseeable rural residential developments, agricultural activities on private lands) are likely to result in additional losses and additional adverse impacts to existing aquatic resources within the resource study area over the 50-year EIS/EIR study period. However,** As discussed in Section 10.2.2.2, when the incremental direct and indirect effects of the No Action/No Project Alternative are viewed in connection with the significant adverse effects of the past, present, and reasonably foreseeable future other projects and actions, the incremental effects of the No Action/No Project Alternative would not make a considerable contribution to the existing significant cumulative impact on aquatic resources within the study area. Therefore, the No Action/No Project alternative would result in a ***Less Than Significant Adverse Impact.***

RTC 23.25 (EIS/EIR) – The paragraph in question was mistakenly retained from an earlier version of Chapter 10 and has been deleted in the Final EIS/EIR. Prior to completing the Draft EIS/EIR, the USFWS and the County made the determination to not separate the effects of the Reduced Permit Term Alternative between the first 30-year and remaining 20-year portions of the study period. Effects of the Reduced Permit Term Alternative are expressed for the entire alternative.

RTC 23.26 (EIS/EIR) – The Draft EIS/EIR text in Section 10.2.4 referenced in the comment has been edited in the Final EIS/EIR to read as shown below. This text correlates with edits made in response to Comments 23.20 and 23.24.

The effects of past ~~and~~, present, ~~and reasonably foreseeable other~~ projects on aquatic resources in the Planning Area were described above in Section 10.2.2.2, and represent a significant adverse cumulative impact on the aquatic resources within the study area. **A subset of the reasonably foreseeable other projects (e.g., foreseeable rural residential developments, agricultural activities on private lands) are likely to result in additional losses and additional adverse impacts to existing aquatic resources within the resource study area over the 50-year EIS/EIR study period. However,** As discussed in Section 10.2.2.2, when the incremental direct and indirect effects of the No Action/No Project Alternative are viewed in connection with the significant adverse effects of the past, present, and reasonably foreseeable future other projects and actions, the incremental effects of the No Action/No Project Alternative would not make a considerable contribution

to the existing significant cumulative impact on aquatic resources within the study area. Therefore, the No Action/No Project alternative would result in a ***Less Than Significant Adverse Impact***.

LETTER 24 U.S. ENVIRONMENTAL PROTECTION AGENCY
(SSHCP AND CWA PERMIT STRATEGY)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, CA 94105-3901

Michael Jewell
Regulatory Division Chief
U.S. Army Corps of Engineers
Sacramento District
1325 J Street
Sacramento, CA 95814

Subject: Public Notice (PN) SPK-1995-00386, Proposed Section 404 Clean Water Act Permit Strategy Aligned with the South Sacramento Habitat Conservation Plan, Sacramento County, CA

Dear ^{MIKE}~~Mr. Jewell~~:

Thank you for the opportunity to comment on the subject PN dated June 2nd, 2017. EPA continues to support the development of integrated regional aquatic resource and species habitat conservation strategies which enhance conservation of ecosystem functions and values while providing increased regulatory certainty to the public. The three-part permitting strategy described in this public notice applies to the Covered Activities defined in the South Sacramento Habitat Conservation Plan (SSHCP) and its associated Aquatic Resources Plan (ARP). It is EPA's opinion that the avoidance and minimization measures and preserve establishment approach set out in the SSHCP and ARP will result in improved aquatic resource conservation in the plan area, and that the proposed permitting strategy is consistent with the 404(b)(1) Guidelines [40 CFR 230.10].

24.1

Of crucial importance to the success of the SSHCP and ARP will be the development and implementation of a regional species habitat and aquatic resources monitoring program to ensure that conservation objectives are being met and aquatic resource functions are being preserved. Chapter 8 of the Draft SSHCP outlines several benchmarks which need to be achieved in the first 18 months of Plan implementation. In working towards these goals, consulting with EPA, the California Wetlands Monitoring Workgroup, and any other sources of regional expertise in aquatic resources monitoring is highly recommended.

24.2

Thank you for the opportunity to provide comments on the Public Notice. Please have your project manager contact Joseph Morgan with any questions at (415) 972-3309, or morgan.joseph@epa.gov.

Sincerely,

Paul Amato
Acting Supervisor
Wetlands Office

Printed on Recycled Paper

Cc:

Mary Pakenham-Walsh, Corps of Engineers Sacramento Office

Jennifer Norris, U.S. Fish and Wildlife Service

Tina Bartlett, California Department of Fish and Wildlife

Nichole Morgan, Central Valley Regional Water Quality Control Board

RTC 24.1 (SSHCP and CWA Permit Strategy) – Comments regarding support for development of an “integrated regional aquatic resource and species habitat conservation strategies,” with improved aquatic resource conservation in the SSHCP Plan Area resulting, and indicating consistency of the proposed Permit Strategy with the Section 404(b)(1) Guidelines, are noted.

RTC 24.2 (SSHCP and CWA Permit Strategy) – Comments regarding the importance of the SSHCP’s monitoring program, as referenced in Chapter 8 of the SSHCP and encouraged to draw upon sources of regional expertise in monitoring of aquatic resources, are noted.

LETTER 25 U.S. ENVIRONMENTAL PROTECTION AGENCY
(SSHCP AND EIS/EIR)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, CA 94105-3901

September 5, 2017

Ms. Jan C. Knight
Deputy Field Supervisor
Sacramento Fish and Wildlife Office
U.S. Fish and Wildlife Service
2800 Cottage Way, Room W-2605
Sacramento, California 95825

Subject: Draft Environmental Impact Statement for the South Sacramento Habitat Conservation Plan,
Sacramento County, California (EIS No. 20170092)

Dear Ms. Knight:

The U.S. Environmental Protection Agency has reviewed the Draft Environmental Impact Statement (EIS) for the South Sacramento Habitat Conservation Plan (SSHCP) pursuant to the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR Parts 1500-1508), and Section 309 of the Clean Air Act.

The EPA commends the U.S. Fish and Wildlife Service (Service) and the County of Sacramento on the release of the draft SSHCP. The development of the SSHCP has been a study in dedicated and thoughtful land use and conservation planning. Crafting it required convening a diverse group of stakeholders, conducting extensive fieldwork, and synthesizing data across a range of scientific disciplines. We appreciate that EPA was invited to be a cooperating agency early in the development of the SSHCP, and the Service's close coordination with EPA throughout its preparation. EPA strongly supports the SSHCP and its core Conservation Strategy, including the commitment to create a landscape-scale network of interconnected preserves, and the requirement for Covered Activities to incorporate low impact development design measures such as stream and preserve setbacks. The remainder of this letter provides suggestions for your consideration as you prepare the Final EIS for the SSHCP. 25.1

EPA suggests that the Service include additional information in the Final EIS regarding the proposed Capital Southeast Connector project (Southeast Connector). The Draft EIS identifies the Southeast Connector project as a Covered Activity under the SSHCP, but does not provide a project-level analysis. Such an analysis would include a demonstration of project-specific avoidance and minimization of impacts to waters of the U.S. The information to support a project-level analysis appears to be readily available, given that an Environmental Impact Report (EIR) was prepared for that project to comply with the California Environmental Quality Act. EPA suggests that the Final EIS disclose when the Southeast Connector would be built and how it would be permitted under Clean Water Act Section 404 (i.e., in segments or as one complete project per the description in the prior EIR), and identify the NEPA lead agency, as well as any other government agencies that would be involved and what each of those agencies' roles and responsibilities would be (include Caltrans, U.S. Army Corps of Engineers, the Joint Powers Authority, EPA, and any other potentially involved agencies). To further promote a shared understanding of the remaining approvals needed and facilitate more efficient project delivery, we 25.2

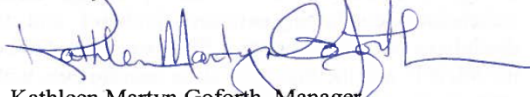
suggest that the Service convene an interagency meeting with the above-listed agencies before publication of the Final EIS.

The success of the SSHCP and Aquatic Resources Plan will depend, in part, on the development and implementation of a regional species habitat and aquatic resources monitoring program to ensure that conservation objectives are being met and aquatic resource functions preserved. Chapter 8 of the Draft SSHCP outlines several benchmarks that need to be achieved in the first 18 months of implementation. We suggest that the Service consult with EPA, the California Wetlands Monitoring Workgroup (CWMW), and other institutions with regional expertise in aquatic resources monitoring, to achieve these implementation goals. The CWMW's efforts towards developing an integrated framework to coordinate water quality and wildlife monitoring in California HCPs/NCCPs may be of particular relevance. 25.3

The DEIS does not identify the Service's preferred alternative. It is EPA's policy to rate each alternative when a preferred alternative is not identified. Based on our review of the DEIS, we have rated each of the action alternatives as *Lack of Objections* (LO) (see the enclosed "Summary of EPA Rating Definitions"). We concur with the Service's identification of the Proposed Action/Proposed Project as the environmentally preferable alternative. 25.4

We appreciate the opportunity to review this Draft EIS, and are available to discuss our comments. When the Final EIS is released for public review, please send one hard copy and one CD to the address above (mail code: ENF-4-2). If you have any questions, please contact me at 415-972-3521, or contact Jason Gerdes, the lead reviewer for this project. Mr. Gerdes can be reached at 415-947-4221 or gerdes.jason@epa.gov. 25.5

Sincerely,



Kathleen Martyn Goforth, Manager
Environmental Review Section

Enclosure: Summary of EPA Rating Definitions

SUMMARY OF EPA RATING DEFINITIONS*

This rating system was developed as a means to summarize the U.S. Environmental Protection Agency's (EPA) level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the Environmental Impact Statement (EIS).

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

ADEQUACY OF THE IMPACT STATEMENT

"Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. Because of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, Policy and Procedures for the Review of Federal Actions Impacting the Environment

RTC 25.1 (SSHCP) – The Plan Preparers appreciate the guidance and technical assistance provided by the U.S. EPA during preparation of the SSHCP.

RTC 25.2 (EIS/EIR) – The lead agencies acknowledge the request from EPA to include additional information regarding the proposed Capital Southeast Connector project (Southeast Connector). The Southeast Connector is a planned 34-mile roadway through the southern area of Sacramento County and into western El Dorado County, connecting Elk Grove, Rancho Cordova, Folsom and El Dorado Hills. The Connector project will be constructed in five segments based on geographic and jurisdictional boundaries, roadway classification, adjacent community characteristics, projected traffic demand, and potential financing opportunities. As described on the Connector website, creation of these segments is guided by the National Environmental Policy Act (NEPA) and Council on Environmental Quality guidance for independent utility and logical termini. For increased flexibility related to the timing of funding availability, the five segments are also broken down into smaller sub-segments – identified as 1, 2, or 3 – based on the existing roadway network and Connector roadway classifications.

The five segments and sub-segments of the Connector are as follows:

- A1 – I-5 Hood Franklin Interchange to Bruceville Road
- A2 – Bruceville to CA-99
- B1 – CA-99 to Waterman
- B2 – Waterman to Bradshaw
- B3 – Bradshaw to Bond
- C – Bond to Calvine
- D1 – Calvine Road to SR-16 Jackson Highway
- D2 – SR-16 Jackson Highway to White Rock/Grant Line Road
- D3 - White Rock to El Dorado County line
- E1- El Dorado to Latrobe (outside the Plan Area, not a Covered Activity)
- E2 - Latrobe Road to US-50 (outside the Plan Area, not a Covered Activity)
- E3 - US-50 to Silva Valley (outside the Plan Area, not a Covered Activity)

As stated in the SSHCP in Section 5.2.1:

“The entire footprint of the Capital Southeast Connector within the boundaries of Sacramento County is included in the SSHCP Plan Area, and activities related to the connector are SSHCP Covered Activities. Although the City of Folsom is not a Plan Permittee, the planned improvements to White Rock Road inside the Plan

Area and the area needed for the expansion of White Rock Road as part of the Capital Southeast Connector or independently by a Plan Permittee are within the SSHCP Plan Area, and activities related to White Rock Road are SSHCP Covered Activities.”

The EIS/EIR analyzes the effects of the segments within the Plan Area as Covered Activities, and the portions outside the Plan Area in El Dorado County are analyzed as part of the cumulative impact analysis. The segments of the Southeast Connector within Sacramento County are also analyzed as part of the No Action/No Project Alternative. The Connector has incorporated the SSHCP Conservation Strategy and Avoidance and Minimization Measures (AMMs) into its design and commitments, including SSHCP AMM ROAD-2, which provides for numerous wildlife crossings along the corridor. For example the previously prepared D2 segment mitigated negative declaration (as posted on the Connector website) and the NEPA Environmental Assessment (in preparation with the California Department of Transportation as lead agency) have incorporated several of the SSHCP AMMs, as will other project level environmental analyses for various segments when they are prepared.

Timing for construction of the Connector segments in the Plan Area, while difficult to predict precisely, could take up to 20 years and will depend primarily on funding availability. The NEPA lead agency for each of the segments will also depend in part on whether federal funding, a federal authorization, or a federal permit is involved. The California Department of Transportation has been granted authority by the Federal Highway Commission to serve as the NEPA lead agency for federal highway projects in California, including the D2 segment, and is also the NEPA lead agency for other segments that have initiated local approvals such as the A1/A2 and D3/E1 segments. While it is not possible to predict exactly how future CWA Section 404 permitting would be sought for each segment, it will be in compliance with the USACE’s draft Section 404 permit strategy (Appendix C of the Final EIS/EIR). In regards to project-specific avoidance and minimization of impacts to waters of the U.S., future Section 404 CWA permit evaluation by the USACE would follow the terms, conditions, and procedures described in the USACE’s (draft) Section 404 CWA permit strategy for SSHCP covered projects. The USACE’s permit strategy includes provisions for additional project-specific avoidance and minimization of impacts to waters of the U.S. as part of the abbreviated standard permit process (as described in Appendix C to the Final EIS/EIR).

For coverage under the PGP, applicants would need to substantiate avoidance and minimization of impacts to waters of the U.S. to the maximum extent practicable. As stated in the draft PGP, this would be considered satisfied when project applicants have designed and implemented activities to comply with all applicable avoidance and minimization measures contained in the SSHCP and the applicable local ARP ordinance. For the LOP and abbreviated standard permit processes, applicants would also need to incorporate all applicable avoidance and minimization measures contained in the SSHCP. Additionally, the USACE would consider project-level information in its evaluation of on-site avoidance and minimization of impacts to waters of the U.S. This includes information provided by the applicant regarding how the project has been designed to avoid and minimize impacts to waters of the U.S., and consideration of the site-specific landscape

context of the project. Where, for example, a project lies in close proximity to a stream, with a required SSHCP setback and potentially an adjacent wetland, the USACE envisions requiring minor adjustments (e.g., a wider stream setback).

The County, USFWS, and USACE welcome the opportunity to discuss the approvals of individual Connector segments located in the Plan Area with the EPA as a means to promote a greater understanding and more efficient project delivery for the Connector project, as the commenter suggests.

RTC 25.3 (SSHCP) – The SSHCP Implementing Entity looks forward to coordinating with the U.S. EPA and the California Wetlands Monitoring Workgroup in the first 18 months of SSHCP implementation to gain information regarding the development of the regional species habitat and aquatic species monitoring and management protocols discussed in Chapter 8 of the Final SSHCP.

RTC 25.4 (EIS/EIR) – Section 17.7 of the Final EIS/EIR now identifies the Proposed Action/Proposed Project Alternative as the USFWS' preferred alternative. We appreciate the EPA's concurrence that the Proposed Action/Proposed Project Alternative is also the environmentally preferable alternative.

RTC 25.5 (EIS/EIR) – The U.S. EPA's request for distribution of the Final EIS/EIR to EPA Region 9 has been noted.

LETTER 26 WILTON RANCHERIA
(CWA PERMIT STRATEGY)

Wilton Rancheria



9728 Kent Street, Elk Grove, CA 95624

Monday, June 19, 2017

Mary R. Pakenham-walsh
1325 J Street
Sacramento Ca 95814

JUL 24 2017

RE: SPK 1995-00386 South Sacramento Habitat Conservation Plan

Dear Mary R. Pakenham-walsh,

Thank you for your letter dated June 2, 2017 regarding the proposed project. Wilton Rancheria ("Tribe") is a federally-recognized Tribe as listed in the Federal Register, Vol. 74, No. 132, p. 33468-33469, as "Wilton Rancheria of Wilton, California". The Tribe's Service Delivery Area ("SDA") as listed in the Federal Register, Vol. 78, No. 176, p. 55731, is Sacramento County. However, the Tribe's ancestral territory spans from Sacramento County to portions of the surrounding Counties. The Tribe is concerned about projects and undertakings that have potential to impact resources that are of cultural and environmental significance to the tribe.

After review of your letter we have determined the project lies within the Tribe's ancestral territory. We appreciate the opportunity to comment on this and any other projects within the Tribe's ancestral territory that may be in your jurisdiction.

26.1

The Environmental Resources Department would like to receive any cultural resources assessments or other assessments that have been completed on all or part of the project's area of potential effect (APE), and area surrounding the APE including, but not limited to:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:
 - A listing of any and all known cultural resources have already been recorded on or adjacent to the APE;
 - Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
 - If the probability is low, moderate, or high that cultural resources are located in the APE or area surrounding the APE.
 - Whether the records search indicates a low, moderate or high probability that unrecorded cultural resources are located in the potential APE or area surrounding the APE; and
 - If a field investigation survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

26.2

Ph: 916-683-6000 | Fax: 916-683-6015 | www.wiltonrancheria-nsn.gov

- | | |
|---|--|
| <p>✦ The Tribe shall be present at any field investigation surveys conducted on the Applicants behalf.</p> <p>2. The results of any archaeological inventory survey that was conducted, including:</p> <ul style="list-style-type: none"> ▪ Any reports that may contain site forms, site significance, and suggested mitigation measures. ▪ Any reports or inventories found under the Native American Graves Protection and Repatriation Act. <p>✦ All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code Section 6254.10. All Wilton Rancheria correspondences shall be kept under this confidential section and only shared between the Tribe and lead agency.</p> <p>3. The results of any Sacred Lands File (SLF) check conducted through Native American Heritage Commission. The request form can be found at http://www.nahc.ca.gov/slf_request.html. USGS 7.5-minute quadrangle name, township, range, and section required for the search.</p> <p>4. Any ethnographic studies conducted for any area including all or part of the potential APE or areas surrounding the APE; and</p> <p>5. Any geotechnical reports regarding all or part of the potential APE or areas surrounding the APE.</p> <p>✦ The Tribe shall be notified before any geotechnical testing is planned. Geotechnical testing has potential to impact Tribal Cultural Resources and should be part of this consultation.</p> | <p>26.2
cont'd</p> <p>26.3</p> <p>26.4</p> <p>26.5</p> |
|---|--|

The information gathered will provide us with a better understanding of the project and will allow the Tribe to compare your records with our database.

Thank you again for taking these matters into consideration, if you have any questions please contact Ed Silva, Tribal Resources Coordinator via email at esilva@wiltonrancheria-nsn.gov.

Sincerely,



Antonio Ruiz, Jr.
Cultural Resources Officer
Wilton Rancheria

RTC 26.1 (CWA Permit Strategy) – The comment, in response to the USACE’s June 2017 public notice “Proposed Section 404 Clean Water Act Permit Strategy Aligned with the South Sacramento Habitat Conservation Plan,” regarding the project (SSHCP) lying within the Wilton Rancheria’s (“Tribe’s”) ancestral territory is noted.

RTC 26.2 (CWA Permit Strategy) - The comment, in response to the USACE’s June 2, 2017, public notice referenced in response to comment 26.1 requests copies of any record searches and/or cultural reports that have been completed within the project’s “area of potential effect” (APE). Chapter 11 of the SSHCP EIS/EIR describes existing conditions and environmental consequences of the proposed project. As stated in Section 11.2.1 of the EIS/EIR, no systematic survey of the 317,655-acre SSHCP Plan Area has been done. As described in Section 11.2.3 of the EIS/EIR, the proposed project (SSHCP) would include a multilevel CWA 404 permit strategy (as contained in the June 2, 2017 public notice, and also Appendix C to the SSHCP EIS/EIR). Authorization of individual projects under the CWA 404 permit strategy would require compliance with Section 106 of the National Historic Preservation Act, and related laws and policies concerning Tribal consultation. In addition, as explained in Section 10.4.2.7 of the final SSHCP, all future SSHCP covered projects and activities would comply with Section 106, including the SSHCP Covered Activities that do not utilize the USACE’s Section 404 CWA Permit Strategy aligned with the SSHCP.

RTC 26.3 (CWA Permit Strategy) – Please see the response to Comment 26.2.

RTC 26.4 (CWA Permit Strategy) – Please see the response to Comment 26.2.

RTC 26.5 (CWA Permit Strategy) – Please see the response to Comment 26.2.

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
1-3	permitting strategy	Corps suggestion
1-26	<u>and other Land-use Authority Permit Applicants</u>	Corps suggestion
1-26	<u>and other Land-use Authority Permit Applicants</u>	Corps suggestion
1-26	<u>consistent with</u> including the <u>USACE’s proposed issuance of a requirements of a</u>	Corps suggestion
1-26	to be implemented by Sacramento County and the other Land-use Authority Permit Applicants.	Corps suggestion
1-27	<u>consistent with the</u> including	Corps suggestion
1-27	<u>of the Corps’ proposed</u> of	Corps suggestion
1-27	PGPs to be implemented by Rancho Cordova, the Galt, and Sacramento County.	Corps suggestion
1-27	<u>permit</u>	Corps suggestion
1-28	<u>qualify for</u> fall under	Corps suggestion
1-30	<u>final</u> decision- <u>making on</u> to approve or deny	Corps suggestion
1-30	<u>strategy</u> permitting program	Corps suggestion
1-30	<u>maintains oversight</u> determines appropriateness <u>on</u> of	Corps suggestion
1-30	determines <u>confirms</u>	Corps suggestion
1-30	actions with <u>the regulations and policies of</u>	Corps suggestion
1-30	If the USACE decides to issue a 404 permit, the EPA may object to the issuance of a permit as part of its review and comment role.	Corps suggestion
1-30	s Secretary	Corps suggestion
1-30	<u>EPA</u> a <u>A</u> Administrator of the EPA	Corps suggestion
1-31	a <u>A</u> Assistant s Secretary	Corps suggestion

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
1-31	eCivil wWorks	Corps suggestion
1-31	<u>is</u> would reviewing <u>ing and commenting on</u>	Corps suggestion
1-31	<u>potentially</u>	Corps suggestion
1-31	<u>, as a Cooperating Agency on this EIS/EIR, and via review of the USACE's public noticing of the draft CWA 404 permit strategy.</u>	Corps suggestion
1-31	decided	Corps suggestion
1-31	for future SSHCP Covered Activities,	Corps suggestion
1-31	<u>retain its normal</u>	Corps suggestion
1-31	<u>and comment responsibilities in regard to</u> and determine appropriateness of any	Corps suggestion
1-31	SPs <u>applications</u> issued	Corps suggestion
1-31	individual	Corps suggestion
1-31	During these reviews, the EPA would use the information and programmatic analysis of Planning Area aquatic resources, species habitat, water quality, and hydrology impacts presented in the SSHCP EIS/EIR to the same extent that	Corps suggestion
1-32	the USACE used that information and analysis for their decision to issue the PGP, RGP, LOP, and SP permits for SSHCP Covered Activities.	Corps suggestion
1-34	<u>(potential)</u>	Corps suggestion
1-34	<u>[potential]</u>	Corps suggestion
1-34	permitting	Corps suggestion
1-34	<u>qualify for</u> fall under	Corps suggestion
1-34	LOP <u>procedure</u> process <u>and/or</u> the proposed CWA 404	Corps suggestion

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
1-35	<u>qualify for</u> fall under	Corps suggestion
1-35	<u>(potential)</u>	Corps suggestion
1-35	processes	Corps suggestion
1-35	<u>strategy</u> permitting processes	Corps suggestion
1-37	permitting	Corps suggestion
1-37	permitting	Corps suggestion
1-37	<u>potential</u>	Corps suggestion
1-37	<u>procedure</u>	Corps suggestion
1-37	<u>abbreviated</u>	Corps suggestion
1-37	<u>(potential)</u>	Corps suggestion
1-37	<u>procedure</u>	Corps suggestion
1-37	<u>abbreviated</u>	Corps suggestion
1-38	<u>qualify for</u> fall under	Corps suggestion
1-38	<u>(potential)</u>	Corps suggestion
1-38	<u>qualify for</u> fall under	Corps suggestion
1-38	<u>procedure</u> process	Corps suggestion
1-38	<u>qualify for</u> fall under	Corps suggestion
1-42	<u>permit strategy</u> permitting process	Corps suggestion
1-42	<u>potential</u> envisioned	Corps suggestion
1-42	for future Covered Activities	Corps suggestion
1-42	<u>under the local programs implemented</u>	Corps suggestion
1-42	Applicants, <u>in that most activities would be anticipated to meet the terms and conditions of the USACE's</u> under the	Corps suggestion

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
1-42	PGP. <u>Thus</u> , and would not require the	Corps suggestion
1-42	proponents <u>s would be most likely to receive a local permit under the ARP and local ordinances, rather than</u>	Corps suggestion
1-42	or prepare a CWA 404 permit application.	Corps suggestion
1-42	<u>USACE's proposed</u>	Corps suggestion
1-42	<u>procedure</u>	Corps suggestion
1-42	<u>abbreviated</u>	Corps suggestion
1-42	likely	Corps suggestion
1-42	<u>procedure</u>	Corps suggestion
1-42	<u>abbreviated</u>	Corps suggestion
1-42	processes	Corps suggestion
1-42	largely	Corps suggestion
1-42	and in the case of SPs, alleviating <u>ing</u>	Corps suggestion
1-42	<u>often</u> a	Corps suggestion
1-42	<u>procedure</u>	Corps suggestion
1-42	<u>abbreviated</u>	Corps suggestion
1-42	processes	Corps suggestion
1-42	<u>procedure</u>	Corps suggestion
1-42	<u>abbreviated</u>	Corps suggestion
1-42	processes	Corps suggestion

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
1-42	would realize greater efficiencies. may be satisfied with a smaller Environmental Assessment-level of review, rather than the EIS-level of review that is typical under the current project-by-project GWA permit process. Even f For	Corps suggestion
1-42	<u>, for which the Corps determines requires</u> and requiring the	Corps suggestion
1-43	proposed	Corps suggestion
1-43	<u>abbreviated</u>	Corps suggestion
1-43	<u>reduced in terms of process, information requirements, and timing. Please refer to Appendix C for additional description of the SP abbreviated process.</u> greatly abbreviated by relying on the regional, programmatic, and comprehensive analysis in the EIS/EIR.	Corps suggestion
1-43	<u>procedure</u>	Corps suggestion
1-43	<u>abbreviated</u>	Corps suggestion
2-2	<u>may</u>	Corps suggestion
2-3	<u>(e.g., exempt activities do not require authorization).</u>	Corps suggestion
2-3	<u>: however, on a case-by-case basis, additional information may be necessary. For this project, as part of its compliance documentation with EPA's 404(b)(1) Guidelines, the USACE will also consider additional information outside the purview of the NEPA process .</u>	Corps suggestion
2-4	<u>decision-making on</u> evaluation to <u>issuinge</u>	Corps suggestion
2-4	<u>ensure compliance with</u> follow	Corps suggestion

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter- Page	Edits	Reason for Edits
2-4	Guidelines, which in part require that USACE document that the Covered Activities would result in no more than minimal individual and cumulative adverse effects on wetlands and other waters of the United States and that the permitted action is the least environmentally damaging practicable alternative.	Corps suggestion
2-12	<u>; however, on a case-by-case basis, additional information may be necessary. For this project, as part of its compliance documentation with EPA's 404(b)(1) Guidelines, the USACE will also consider additional information outside the purview of the NEPA process</u> . Under the USACE public interest review, for activities where there are unresolved conflicts as to resource use, USACE must evaluate the practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed structure or work (33 CFR 320.4(a)(2)(ii)).	Corps suggestion
2-26	<u>for</u>	Corps suggestion
2-26	<u>require</u> could result in the direct fill or discharge to waters of the US must obtain	Corps suggestion
2-26	and	Corps suggestion
2-26	their <u>permit</u> authorization	Corps suggestion
2-26	<u>result in</u> cause a	Corps suggestion
2-26	fill or	Corps suggestion
2-26	<u>of dredged or fill material</u>	Corps suggestion
2-26	were	Corps suggestion
2-27	in	Corps suggestion
2-27	<u>USFWS</u> USACE	Corps suggestion

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter- Page	Edits	Reason for Edits
2-30	their	Corps suggestion
2-30	Proponents for individual	Corps suggestion
2-30	nationwide general	Corps suggestion
2-30	CWA 404 applications for standard permits would continue to require additional analyses and procedures, and therefore would continue to add time, complexity, and uncertainty to the project schedule and budget.	Corps suggestion
2-31	For proposed discharges of dredged or fill material	Corps suggestion
2-31	may be is	Corps suggestion
2-31	assumed to be required used.	Corps suggestion
2-31	In addition to setting minimum compensatory mitigation amounts, the	Corps suggestion
2-31	projects (33 CFR Part 332.2(b)) .	Corps suggestion
2-31	general option types of for	Corps suggestion
2-31	projects	Corps suggestion
2-31	use of	Corps suggestion
2-31	programs credits, and or	Corps suggestion
2-31	projects	Corps suggestion
2-31	banks credits	Corps suggestion
2-31	programs credits	Corps suggestion
2-31	, and they provide financial planning and scientific expertise (which often is not practical for permittee-responsible mitigation projects) ,	Corps suggestion

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter- Page	Edits	Reason for Edits
2-41	<u>minimize adverse effects to waters of the U.S., or, in certain circumstances, compensate for the unavoidable loss of waters of the U.S.,</u> avoid impacts from discharge of dredged or fill material into wetlands and other waters of the United States,	Corps suggestion
2-43	eliminate <u>reduce</u>	Corps suggestion
2-44	The SSHCP's Conservation Strategy would address cumulative impacts to vernal pool wetlands within the MCRA. As approved and permitted, Cumulative impacts within the MCRA, as defined in the Sunridge ROD (see Section 2.2.2) would be addressed through implementation of	Corps suggestion
2-44	<u>is intended to meet the vernal pool mitigation-related requirements included in the Sunridge ROD. As stated in Section 2.2.2, the Sunridge ROD recognizes a significant cumulative loss of Vernal Pool wetlands within the MCRA and provides criteria for compensatory mitigation for unavoidable impacts to vernal pools in the MCRA, with some flexibility allowable in implementation of the criteria. The SSHCP Conservation Strategy would adequately achieve the intent and objectives of these compensatory mitigation criteria.</u>	Corps suggestion
2-44	<u>it is envisioned that in most cases,</u>	Corps suggestion
2-44	intimate <u>initiate</u>	Corps suggestion
2-44	<u>There could be exceptions to this process, for example, if some time over the SSHCP permit term USACE authorized a covered activity that affected a threatened or endangered species that was not a SSHCP covered species.</u>	Corps suggestion

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter- Page	Edits	Reason for Edits
2-45	; thus, the wetland regulatory agencies often have difficulty determining if projects are adequately mitigating for aquatic resource impacts.	Corps suggestion
2-45	mitigation approach (avoidance, minimization, and compensation) would be assumed to measures to avoid and minimize impacts to aquatic resources, the Proposed Action/Proposed Project would	Corps suggestion
2-45	compensatory mitigation (<u>avoidance, minimization, and compensation</u>) for unavoidable impacts to aquatic resources	Corps suggestion
2-45	7. These provisions, combined with a proposed in-lieu fee program (ILF); as dicussed further below), and would also	Corps suggestion
2-46	permitting	Corps suggestion
2-54	of the	Corps suggestion
2-117	<u>would</u>	Corps suggestion
2-126	, and	Corps suggestion
2-126	<u>, and would</u>	Corps suggestion
2-127	processes	Corps suggestion
2-128	<u>S</u> section	Corps suggestion
2-128	<u>it is envisioned that in most cases,</u>	Corps suggestion
2-128	The Reduced Permit Term Alternative's Conservation Strategy would address cumulative impacts to vernal pools within the MCRA. Cumulative impacts within the MCRA identified in the	Corps suggestion

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
2-129	Sunridge ROD (see Section 2.2.2) would be are addressed through implementation of the Reduced Permit Term Alternative Conservation Strategy (described below in Section 2.4.5). <u>The Reduced Permit Term Conservation Strategy is intended to meet the vernal pool mitigation-related requirements included in the Sunridge ROD. As stated in Section 2.2.2, the Sunridge ROD recognizes a significant cumulative loss of Vernal Pool wetlands within the MCRA and provides criteria for compensatory mitigation for unavoidable impacts to vernal pools in the MCRA, with some flexibility allowable in implementation of the criteria. The Reduced Permit Term Alternative Conservation Strategy is intended to adequately achieve the intent and objectives of these compensatory mitigation criteria.</u>	Corps suggestion
2-129	<u>it is envisioned that in most cases</u>	Corps suggestion
2-130	<u>, and the ARP, and proposed ILF program</u>	Corps suggestion
2-130	individual project impacts, and evaluate	Corps suggestion
2-130	<u>plan for adequate compensatory mitigation</u> determine if individual projects are adequately mitigating	Corps suggestion
2-130	_ permitting	Corps suggestion
2-130	permitting	Corps suggestion
3-4	CHAPTERS 4 THROUGH <u>16</u>	Technical Edit (not in response to a comment)
3-16	Chapters 4 <u>through</u> –16	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
5-1	such as naturally occurring	Technical Edit (not in response to a comment)
5-1	discussed in Chapter 3 , Section 3.5	Technical Edit (not in response to a comment)
5-2	CWA Sections 401 and 402 are is directly	Technical Edit (not in response to a comment)
5-2	CWA Section 401 (CWA 401)	Technical Edit (not in response to a comment)
5-3	California Building Code (CBC) (California Code of Regulations (24 CCR), Title 24)	Technical Edit (not in response to a comment)
5-3	Alquist-Priolo Earthquake Fault Zoning Act of 1972 (California Public Resources Code, [PRC] Section 2621–2630	Technical Edit (not in response to a comment)
5-3	and establish ing es	Technical Edit (not in response to a comment)
5-10	gold mining activities that occurred in	Technical Edit (not in response to a comment)
5-13	discussed above previously	Technical Edit (not in response to a comment)
5-13	As discussed above for Like Figure 5-1	Technical Edit (not in response to a comment)
5-13	the locations and ecology of vernal pools and the ecology of a vernal pool is are closely	Technical Edit (not in response to a comment)
5-13	most by vernal pool	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
5-13	with the least <u>fewest</u> vernal pool	Technical Edit (not in response to a comment)
5-14	Planning Area consists are <u>is</u> the	Technical Edit (not in response to a comment)
5-14	older than that of the low	Technical Edit (not in response to a comment)
5-20	identified <u>previously</u> above in	Technical Edit (not in response to a comment)
5-21	other soils <u>with which</u> it is	Technical Edit (not in response to a comment)
5-21	consists of well- <u>drained</u> and	Technical Edit (not in response to a comment)
5-24	is described above <u>in the previous paragraph</u>	Technical Edit (not in response to a comment)
5-37	discussed above <u>previously</u> in	Technical Edit (not in response to a comment)
5-39	adverse impact <u>effect</u> could	Technical Edit (not in response to a comment)
5-40	beneficial impact <u>effect</u> could	Technical Edit (not in response to a comment)
5-45	adverse impacts <u>effects</u> to	Technical Edit (not in response to a comment)
5-45	adverse <u>effect</u> impact on	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter- Page	Edits	Reason for Edits
5-45	adverse <u>effect</u> impact on	Technical Edit (not in response to a comment)
5-46	intersect any <u>rd</u> rock	Technical Edit (not in response to a comment)
5-46	identified <u>earlier</u> above in	Technical Edit (not in response to a comment)
5-46	adverse <u>effect</u> impact on	Technical Edit (not in response to a comment)
5-47	described <u>previously</u> above	Technical Edit (not in response to a comment)
5-49	contain naturally <u>ly</u> occurring	Technical Edit (not in response to a comment)
5-49	because <u>fewer</u> less acres	Technical Edit (not in response to a comment)
5-50	of <u>effects</u> impacts from	Technical Edit (not in response to a comment)
5-51	adverse <u>effect</u> impact of	Technical Edit (not in response to a comment)
5-51	Cumulative Impact <u>effect</u> to	Technical Edit (not in response to a comment)
5-54	and <u>to</u> implement soil	Technical Edit (not in response to a comment)
5-54	and a <u>process</u> for	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
5-55	contain naturally occurring	Technical Edit (not in response to a comment)
5-57	of <u>effects</u> impacts from	Technical Edit (not in response to a comment)
5-57	cumulative impact <u>effect</u> when	Technical Edit (not in response to a comment)
5-57	cumulative impact <u>effect</u> when	Technical Edit (not in response to a comment)
5-57	beneficial <u>effect</u> impact to	Technical Edit (not in response to a comment)
5-58	significant impact <u>effect</u> to	Technical Edit (not in response to a comment)
5-58	adverse impact <u>effect</u> of	Technical Edit (not in response to a comment)
5-58	Cumulative Impact <u>effect</u> to	Technical Edit (not in response to a comment)
5-58	CDOC (California Department of Conservation). 1996. Probabilistic Seismic Hazard Assessment for the State of California. Open File Report 96-08. Prepared by M.D. Petersen, W.A. Bryant, C.H. Cramer, T. Cao, M. Reichle, A.D. Frankel, J.J. Lienkaemper, P.A. McCrory, D.P. Schwartz. Sacramento, California: California Department of Conservation, Division of Mines and Geology, in cooperation with U.S. Department of the Interior and the U.S. Geological Survey. Accessed September 2015. http://www.conservation.ca.gov/cgs/rghm/psha/ofr9608/Pages/index.aspx#Attenuation relations.	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter- Page	Edits	Reason for Edits
6-14	the <u>cumulative</u> impacts	Technical Edit (not in response to a comment)
7-1	obtained prior to <u>before</u> implementing	Technical Edit (not in response to a comment)
7-1	regulations that are relevant	Technical Edit (not in response to a comment)
7-2	are done <u>conducted</u> by	Technical Edit (not in response to a comment)
7-3	provided back to	Technical Edit (not in response to a comment)
7-4	and enforcement <u>ment of</u> ing the	Technical Edit (not in response to a comment)
7-4	protected, <u>and they</u> establish	Technical Edit (not in response to a comment)
7-6	land which <u>that</u> might	Technical Edit (not in response to a comment)
7-6	Agreement is comprised <u>includes</u> of seven	Technical Edit (not in response to a comment)
7-7	Partnership together develop <u>s</u> and implement <u>s</u> annual	Technical Edit (not in response to a comment)
7-8	Pursuant to their <u>its</u> stormwater	Technical Edit (not in response to a comment)
7-8	February 2013, which <u>and it</u> will be	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
7-17	and also <u>they</u> help	Technical Edit (not in response to a comment)
7-24	layer which <u>that</u> restricts	Technical Edit (not in response to a comment)
7-24	in both the	Technical Edit (not in response to a comment)
7-24	and for agricultural	Technical Edit (not in response to a comment)
7-25	year in the <u>from</u> 2000- <u>to</u> 2004 time period	Technical Edit (not in response to a comment)
7-26	include 4) well- head treatment systems, 2) blending water sources with elevated and low concentrations to achieve compliance, or 3) abandoning	Technical Edit (not in response to a comment)
7-26	in both the	Technical Edit (not in response to a comment)
7-27	for both remediation	Technical Edit (not in response to a comment)
7-27	and the containment	Technical Edit (not in response to a comment)
7-27	follows: 4) Aerojet (property that also includes the White Rock Road-North Dump landfill), 2) the former Mather Air Force Base (Mather AFB), and 3) Boeing	Technical Edit (not in response to a comment)
7-27	shown in <u>on</u> Figure	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter- Page	Edits	Reason for Edits
7-27	activities <u>at</u> the	Technical Edit (not in response to a comment)
7-27	and <u>they</u> now	Technical Edit (not in response to a comment)
7-30	water back into	Technical Edit (not in response to a comment)
7-31	discussed above in	Technical Edit (not in response to a comment)
7-32	Lake, and <u>as well as</u> the	Technical Edit (not in response to a comment)
7-36	UDA area were	Technical Edit (not in response to a comment)
7-36	channels, <u>and</u> construction	Technical Edit (not in response to a comment)
7-39	in closed proximity	Technical Edit (not in response to a comment)
7-40	CWA <u>Section</u> 303(d)	Technical Edit (not in response to a comment)
7-41	matter, and toxic	Technical Edit (not in response to a comment)
7-41	compounds, <u>and</u> E. coli	Technical Edit (not in response to a comment)
7-44	Contaminants are contributed	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
7-44	Table 7-2 above , numerous	Technical Edit (not in response to a comment)
7-44	Elk Grove, <u>and</u> Folsom	Technical Edit (not in response to a comment)
7-45	identifies describes the	Technical Edit (not in response to a comment)
7-46	and above in Section	Technical Edit (not in response to a comment)
7-46	provided below in	Technical Edit (not in response to a comment)
7-47	discussed above in	Technical Edit (not in response to a comment)
7-47	consider 4) the	Technical Edit (not in response to a comment)
7-47	area, and 2) will consider future <u>as well as</u> impacts	Technical Edit (not in response to a comment)
7-51	of in groundwater	Technical Edit (not in response to a comment)
7-51	from the in the	Technical Edit (not in response to a comment)
7-51	the total 86,000-acre	Technical Edit (not in response to a comment)
7-53	discussed above in	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
7-53	end <u>of</u> this	Technical Edit (not in response to a comment)
7-53	not been considered	Technical Edit (not in response to a comment)
7-54	described above in	Technical Edit (not in response to a comment)
7-55	use <u>that</u> may	Technical Edit (not in response to a comment)
7-55	discussed above <u>previously</u> , the	Technical Edit (not in response to a comment)
7-55	However, as described above , the	Technical Edit (not in response to a comment)
7-56	and thus and thus reduce	Technical Edit (not in response to a comment)
7-56	often, will include encroachments	Technical Edit (not in response to a comment)
7-57	Cordova through were	Technical Edit (not in response to a comment)
7-57	and above in Section	Technical Edit (not in response to a comment)
7-57	discussed in above in	Technical Edit (not in response to a comment)
7-58	structures which that could	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
7-58	and above in	Technical Edit (not in response to a comment)
7-58	S significant <u>Adverse</u> impacts <u>effects</u> to	Technical Edit (not in response to a comment)
7-59	described above and in	Technical Edit (not in response to a comment)
7-59	S significant <u>Adverse effects on</u> surface	Technical Edit (not in response to a comment)
7-59	and above in	Technical Edit (not in response to a comment)
7-59	described above in	Technical Edit (not in response to a comment)
7-60	<u>C</u> umulative Impact <u>effect on</u> to groundwater	Technical Edit (not in response to a comment)
7-60	effects <u>on</u> to surface	Technical Edit (not in response to a comment)
7-62	will be implemented <u>ed</u>	Technical Edit (not in response to a comment)
7-62	Permit, and <u>as well as</u> continued	Technical Edit (not in response to a comment)
7-63	and above in Section	Technical Edit (not in response to a comment)
7-63	S significant <u>Adverse</u> impacts <u>effects</u> to <u>on</u> surface	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
7-64	and <u>they</u> represents a	Technical Edit (not in response to a comment)
7-65	to <u>a</u> effect existing	Technical Edit (not in response to a comment)
7-65	contaminants, and <u>as well as</u> additional	Technical Edit (not in response to a comment)
7-65	are anticipated <u>expected</u> to	Technical Edit (not in response to a comment)
7-66	the downstream significant cumulative <u>effect on downstream</u> Delta water quality impact	Technical Edit (not in response to a comment)
7-67	Proposed Project <u>Alternative</u>	Technical Edit (not in response to a comment)
7-67	Section 7.2.2.1 <u>above</u>	Technical Edit (not in response to a comment)
7-67	and <u>it</u> provides	Technical Edit (not in response to a comment)
7-67	recharge are consistent	Technical Edit (not in response to a comment)
7-68	effects to <u>on</u> groundwater	Technical Edit (not in response to a comment)
7-68	Area <u>were</u> <u>are</u> described <u>above</u> in	Technical Edit (not in response to a comment)
7-68	As discussed <u>described</u> <u>herein</u> , the implementation	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
7-68	effect to <u>on</u> groundwater	Technical Edit (not in response to a comment)
7-68	Effect to <u>on</u> groundwater	Technical Edit (not in response to a comment)
7-69	Proposed Project <u>Alternative</u>	Technical Edit (not in response to a comment)
7-69	waters, <u>as well as</u> and 74	Technical Edit (not in response to a comment)
7-70	Watershed, to result <u>ing</u> in	Technical Edit (not in response to a comment)
7-70	Activity <u>to</u> incorporate	Technical Edit (not in response to a comment)
7-70	a. <u>Provides</u> a regional	Technical Edit (not in response to a comment)
7-71	requires <u>a</u> 25-foot	Technical Edit (not in response to a comment)
7-71	discussed above in	Technical Edit (not in response to a comment)
7-72	described above in	Technical Edit (not in response to a comment)
7-73	and <u>would</u> require	Technical Edit (not in response to a comment)
7-73	effect to <u>on</u> surface	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
7-74	Activity <u>to</u> implement	Technical Edit (not in response to a comment)
7-74	discussed above in	Technical Edit (not in response to a comment)
7-74	waterway, which reduc <u>ing</u> erosion	Technical Edit (not in response to a comment)
7-75	and would facilitate	Technical Edit (not in response to a comment)
7-75	implemented, and <u>as well as</u> annual	Technical Edit (not in response to a comment)
7-75	includes process for annual review of the effectiveness of each SSHCP AMM, and a	Technical Edit (not in response to a comment)
7-75	effects to <u>on</u> surface	Technical Edit (not in response to a comment)
7-75	effects to <u>on</u> surface	Technical Edit (not in response to a comment)
7-76	quality. ; <u>It would also</u> better improve	Technical Edit (not in response to a comment)
7-76	and <u>it</u> would	Technical Edit (not in response to a comment)
7-76	effects to <u>on</u> surface	Technical Edit (not in response to a comment)
7-76	described above in	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter- Page	Edits	Reason for Edits
7-76	discussed above in	Technical Edit (not in response to a comment)
7-76	here in , the implementation	Technical Edit (not in response to a comment)
7-77	and under the Proposed	Technical Edit (not in response to a comment)
7-77	term, and . <u>In addition</u> , relatively	Technical Edit (not in response to a comment)
7-78	<u>period</u> would not	Technical Edit (not in response to a comment)
7-79	effect to <u>on</u> groundwater	Technical Edit (not in response to a comment)
7-80	effect to <u>on</u> groundwater	Technical Edit (not in response to a comment)
7-80	e Effect to <u>on</u> groundwater	Technical Edit (not in response to a comment)
7-80	Area, and <u>as well as</u> a	Technical Edit (not in response to a comment)
7-80	a. <u>Provide</u> a regional	Technical Edit (not in response to a comment)
7-81	floodwaters, <u>and</u> , the floodplain they reduces	Technical Edit (not in response to a comment)
7-81	and also <u>they</u> help	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
7-81	discussed above in	Technical Edit (not in response to a comment)
7-81	areas that are zoned	Technical Edit (not in response to a comment)
7-82	period, and <u>as well as</u> a	Technical Edit (not in response to a comment)
7-83	effects to <u>on</u> surface	Technical Edit (not in response to a comment)
7-83	AMMs. <u>It would also r</u> Requires	Technical Edit (not in response to a comment)
7-83	resources, and requires <u>as well as</u> consistent	Technical Edit (not in response to a comment)
7-83	Activities, and <u>Moreover, it</u> would	Technical Edit (not in response to a comment)
7-83	described above in	Technical Edit (not in response to a comment)
7-85	implemented, and <u>as well as</u> annual	Technical Edit (not in response to a comment)
7-85	includes <u>a</u> process	Technical Edit (not in response to a comment)
7-86	UDA, <u>as well as</u> and a comprehensive	Technical Edit (not in response to a comment)
7-86	tributaries, and. <u>It would also</u> provide	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
7-86	would f Facilitate	Technical Edit (not in response to a comment)
7-86	described above in	Technical Edit (not in response to a comment)
7-08	in February 2013 <u>October 2017</u>	Technical Edit (not in response to a comment)
7-59	on the groundwater <u>surface water</u> hydrologic	Technical Edit (not in response to a comment)
7-74	and <u>maintains</u> more	Technical Edit (not in response to a comment)
7-85	and <u>maintains</u> more	Technical Edit (not in response to a comment)
7-90	<u>Sacramento Stormwater Quality Partnership. 2017. Sacramento Region Stormwater Quality Design Manual. October 2017.</u>	Technical Edit (not in response to a comment)
8-1	discussed below in	Technical Edit (not in response to a comment)
8-1	discussed later in Section 9.1.1 and not repeated in detail here,	Technical Edit (not in response to a comment)
8-2	species that <u>are</u> candidates	Technical Edit (not in response to a comment)
8-2	Avoided a <u>A</u> quatic resources	Technical Edit (not in response to a comment)
8-2	and the establishment	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
8-3	<u>A program that</u> conducts	Technical Edit (not in response to a comment)
8-3	mitigation-: <u>1)</u> P permittee	Technical Edit (not in response to a comment)
8-4	“harass,” like <u>which is included in</u> the ESA definition does	Technical Edit (not in response to a comment)
8-6	United States as well as <u>and</u> areas	Technical Edit (not in response to a comment)
8-6	<u>The Porter-Cologne Water Quality Control Act is discussed in more detail in Section 10.1.1 of this EIS/EIR.</u>	Technical Edit (not in response to a comment)
8-7	Cosumnes <u>River</u>	Technical Edit (not in response to a comment)
8-7	Swainson’s hawks (<u>Buteo swainsonii</u>), <u>and</u> the	Technical Edit (not in response to a comment)
8-13	species <u>that</u> and live	Technical Edit (not in response to a comment)
8-14	discussed above <u>previously</u>	Technical Edit (not in response to a comment)
8-22	discussions below <u>later in this section</u>	Technical Edit (not in response to a comment)
8-23	The Stream/Creek Vernal Pool Invertebrate Habitat Land Cover	Technical Edit (not in response to a comment)
8-23	land cover are <u>consists of</u> intermittent	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
8-23	discussed below in	Technical Edit (not in response to a comment)
8-27	described above <u>previously</u>	Technical Edit (not in response to a comment)
8-31	discussed <u>previously</u> above in	Technical Edit (not in response to a comment)
8-31	discussed above <u>previously</u> in	Technical Edit (not in response to a comment)
8-37	Also discussed above in	Technical Edit (not in response to a comment)
8-37	Chapter 2; and <u>they</u> include	Technical Edit (not in response to a comment)
8-46	discussed above <u>earlier</u> in	Technical Edit (not in response to a comment)
8-46	<u>this chapter consolidates the</u> discussion <u>ones</u> and analysis <u>izes of</u> impacts	Technical Edit (not in response to a comment)
8-47	described above in	Technical Edit (not in response to a comment)
8-47	The <u>following</u> discussion below qualitatively	Technical Edit (not in response to a comment)
8-52	Indirect Effects <u>of the Alternative</u>	Technical Edit (not in response to a comment)
8-54	Cumulative <u>Effects of the Alternative</u> Impact to Seasonal Wetlands, Freshwater Marsh, Open Water, and flowing Streams and Creek from the No Action/No Project Alternative.	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter- Page	Edits	Reason for Edits
8-54	described above previously in	Technical Edit (not in response to a comment)
8-55	Direct and Indirect Effects of the Alternative of the No Action/No Project Alternative	Technical Edit (not in response to a comment)
8-55	discussed above in	Technical Edit (not in response to a comment)
8-55	The following impact analysis below will qualitatively	Technical Edit (not in response to a comment)
8-56	expected to be mitigated by	Technical Edit (not in response to a comment)
8-56	Cumulative Impacts to Riparian Land Covers under the No Action/No Project Alternative Effects of the Alternative	Technical Edit (not in response to a comment)
8-56	and above in Section	Technical Edit (not in response to a comment)
8-57	details about of these	Technical Edit (not in response to a comment)
8-58	Section 8.1.2 above	Technical Edit (not in response to a comment)
8-58	Section 8.2.2.1 above	Technical Edit (not in response to a comment)
8-58	Direct and Indirect Effects of the No Action/No Project Alternative	Technical Edit (not in response to a comment)
8-58	fragmentation, and chronic	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
8-59	details of <u>about</u> these	Technical Edit (not in response to a comment)
8-62	Section 8.1.2 above	Technical Edit (not in response to a comment)
8-63	development displaced expected	Technical Edit (not in response to a comment)
8-64	and above in Section	Technical Edit (not in response to a comment)
8-64	details of <u>about</u> these	Technical Edit (not in response to a comment)
8-64	result of <u>in</u> a	Technical Edit (not in response to a comment)
8-65	Section 8.1.2 above	Technical Edit (not in response to a comment)
8-65	development displaced expected	Technical Edit (not in response to a comment)
8-66	Section 3.7.1, above in <u>and</u> Section	Technical Edit (not in response to a comment)
8-66	details <u>about</u> of these	Technical Edit (not in response to a comment)
8-66	result <u>in</u> of a	Technical Edit (not in response to a comment)
8-67	Table 8-3 above	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
8-68	details about <u>of</u> these	Technical Edit (not in response to a comment)
8-71	discussed above in	Technical Edit (not in response to a comment)
8-72	discussed above in	Technical Edit (not in response to a comment)
8-72	UTILITY-4); and <u>implementing</u> BMPs	Technical Edit (not in response to a comment)
8-74	contiguous, <u>and</u> interconnected, and preserves would	Technical Edit (not in response to a comment)
8-74	discussed above in	Technical Edit (not in response to a comment)
8-74	implemented of <u>for</u> the	Technical Edit (not in response to a comment)
8-75	Would directly	Technical Edit (not in response to a comment)
8-75	Would directly	Technical Edit (not in response to a comment)
8-75	would require	Technical Edit (not in response to a comment)
8-75	would preserve	Technical Edit (not in response to a comment)
8-75	would result	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
8-75	would preserve	Technical Edit (not in response to a comment)
8-76	Cumulative Effects of the Alternative on the Vernal Pool Ecosystem from the Propose Action/Proposed Project	Technical Edit (not in response to a comment)
8-76	described above in	Technical Edit (not in response to a comment)
8-76	discussed here in this s Section	Technical Edit (not in response to a comment)
8-77	No Cumulative effect Impact	Technical Edit (not in response to a comment)
8-77	discussed above in the Existing Conditions (Section	Technical Edit (not in response to a comment)
8-77	processes, similar aquatic habitats, and similar susceptibility	Technical Edit (not in response to a comment)
8-77	UTILITY-4); and by the implementation of AMMs requiring	Technical Edit (not in response to a comment)
8-77	(BMP-3)-, limit deposit	Technical Edit (not in response to a comment)
8-79	Would directly	Technical Edit (not in response to a comment)
8-79	would require	Technical Edit (not in response to a comment)
8-79	would preserve	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
8-79	would re-establish	Technical Edit (not in response to a comment)
8-79	would result	Technical Edit (not in response to a comment)
8-80	discussed here in <u>this s</u> Section	Technical Edit (not in response to a comment)
8-80	under than the	Technical Edit (not in response to a comment)
8-81	No Cumulative Impact <u>effect</u>	Technical Edit (not in response to a comment)
8-81	<u>limit</u> deposit	Technical Edit (not in response to a comment)
8-82	on <u>Riparian</u> aquatic land covers	Technical Edit (not in response to a comment)
8-82	implemented off <u>for</u> the	Technical Edit (not in response to a comment)
8-83	covers, <u>of which</u> with 74 of these acres <u>are</u> inside the UDA and 890 acres <u>are</u>	Technical Edit (not in response to a comment)
8-83	amount <u>that</u> equals	Technical Edit (not in response to a comment)
8-83	Significance of Direct and Indirect Effects <u>of the Alternative</u>	Technical Edit (not in response to a comment)
8-83	Would directly	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
8-83	would require	Technical Edit (not in response to a comment)
8-83	would preserve	Technical Edit (not in response to a comment)
8-83	would re-establish	Technical Edit (not in response to a comment)
8-83	would result	Technical Edit (not in response to a comment)
8-84	discussed here in <u>this s</u> Section	Technical Edit (not in response to a comment)
8-84	contribution <u>to</u> the	Technical Edit (not in response to a comment)
8-84	No Cumulative Impact <u>effect</u>	Technical Edit (not in response to a comment)
8-85	would directly <u>ly</u> impact	Technical Edit (not in response to a comment)
8-85	by implementa <u>ting</u> of AMMs	Technical Edit (not in response to a comment)
8-85	<u>limit</u> deposit	Technical Edit (not in response to a comment)
8-86	implemented of <u>for</u> the	Technical Edit (not in response to a comment)
8-87	Would directly	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
8-87	would require	Technical Edit (not in response to a comment)
8-87	would preserve	Technical Edit (not in response to a comment)
8-87	would result	Technical Edit (not in response to a comment)
8-88	Beneficial Impact effect when	Technical Edit (not in response to a comment)
8-89	limit deposit	Technical Edit (not in response to a comment)
8-90	93 fewer acres less of Blue	Technical Edit (not in response to a comment)
8-90	would require	Technical Edit (not in response to a comment)
8-90	the acres of Blue Oak Woodland and Blue Oak Savanna preservation in the Planning Area (47 acres) would provide acres of Blue Oak Woodland and Blue Oak Savanna preservation in the Planning Area (47 acres) equal acres of to the acres of expected	Technical Edit (not in response to a comment)
8-90	the acres of Blue Oak Woodland and Blue Oak Savanna re-establishment or establishment in the Planning Area (47 acres) would provide acres of Blue Oak Woodland and Blue Oak Savanna re-establishment or establishment in the Planning Area (47 acres) equal to the acres	Technical Edit (not in response to a comment)
8-90	would result	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
8-91	discussed here in <u>this s</u> Section	Technical Edit (not in response to a comment)
8-92	Cumulative Impact <u>effect</u>	Technical Edit (not in response to a comment)
8-92	by <u>implementing</u> AMMs	Technical Edit (not in response to a comment)
8-92	<u>limit</u> deposit	Technical Edit (not in response to a comment)
8-94	Would directly	Technical Edit (not in response to a comment)
8-95	would require	Technical Edit (not in response to a comment)
8-95	would preserve	Technical Edit (not in response to a comment)
8-95	would result	Technical Edit (not in response to a comment)
8-95	described above in	Technical Edit (not in response to a comment)
8-95	discussed here in <u>this s</u> Section	Technical Edit (not in response to a comment)
8-95	contribution <u>to</u> the	Technical Edit (not in response to a comment)
8-96	No Cumulative Impact <u>effect</u>	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
8-96	by <u>implementing</u> AMMs	Technical Edit (not in response to a comment)
8-96	<u>limit</u> deposit	Technical Edit (not in response to a comment)
8-97	implemented <u>for</u> the	Technical Edit (not in response to a comment)
8-98	would directly	Technical Edit (not in response to a comment)
8-98	would require	Technical Edit (not in response to a comment)
8-98	would preserve	Technical Edit (not in response to a comment)
8-99	would mitigate	Technical Edit (not in response to a comment)
8-99	would preserve	Technical Edit (not in response to a comment)
8-99	described above in	Technical Edit (not in response to a comment)
8-99	<u>would</u> preserve	Technical Edit (not in response to a comment)
8-99	contribution <u>to</u> the	Technical Edit (not in response to a comment)
8-100	Cumulative Impact <u>effect</u>	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter- Page	Edits	Reason for Edits
8-100	Table 8-3 above	Technical Edit (not in response to a comment)
8-101	would provide	Technical Edit (not in response to a comment)
8-101	would require	Technical Edit (not in response to a comment)
8-101	would require	Technical Edit (not in response to a comment)
8-102	would not	Technical Edit (not in response to a comment)
8-102	discussed here in this Section	Technical Edit (not in response to a comment)
8-102	contribution to the	Technical Edit (not in response to a comment)
8-103	Cumulative Impact effect	Technical Edit (not in response to a comment)
8-108) ; and implementing BMPs	Technical Edit (not in response to a comment)
8-110	Would directly	Technical Edit (not in response to a comment)
8-110	Would directly	Technical Edit (not in response to a comment)
8-110	would implement	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
8-110	would preserve	Technical Edit (not in response to a comment)
8-110	would preserve	Technical Edit (not in response to a comment)
8-110	Adverse Impact, <u>effect</u>	Technical Edit (not in response to a comment)
8-111	Cumulative Impact <u>effect</u>	Technical Edit (not in response to a comment)
8-112	<u>; and implementing</u> , BMPs	Technical Edit (not in response to a comment)
8-113	AMMs which <u>that</u> would	Technical Edit (not in response to a comment)
8-114	Would directly	Technical Edit (not in response to a comment)
8-114	described above in	Technical Edit (not in response to a comment)
8-115	discussed here in <u>this</u> sSection	Technical Edit (not in response to a comment)
8-115	discussed above <u>previously</u>	Technical Edit (not in response to a comment)
8-116	Cumulative Impact <u>effect</u>	Technical Edit (not in response to a comment)
8-116) _; <u>and implementing</u> BMPs	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter- Page	Edits	Reason for Edits
8-118	Would directly	Technical Edit (not in response to a comment)
8-118	would require	Technical Edit (not in response to a comment)
8-118	would preserve	Technical Edit (not in response to a comment)
8-118	would re-establish	Technical Edit (not in response to a comment)
8-118	would result	Technical Edit (not in response to a comment)
8-118	adverse impact <u>effect</u>	Technical Edit (not in response to a comment)
8-119	contribution <u>to</u> the	Technical Edit (not in response to a comment)
8-119	adverse <u>effect</u> impact	Technical Edit (not in response to a comment)
8-119	Cumulative Impact <u>effect</u>	Technical Edit (not in response to a comment)
8-120) ; se <u>and</u> would	Technical Edit (not in response to a comment)
8-121	Would directly	Technical Edit (not in response to a comment)
8-121	would require	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
8-121	would preserve	Technical Edit (not in response to a comment)
8-121	would result	Technical Edit (not in response to a comment)
8-121	described above in	Technical Edit (not in response to a comment)
8-122	discussed above previously	Technical Edit (not in response to a comment)
8-122	Cumulative Impact effect	Technical Edit (not in response to a comment)
8-124	would require	Technical Edit (not in response to a comment)
8-124	would result	Technical Edit (not in response to a comment)
8-125	described above	Technical Edit (not in response to a comment)
8-125	discussed here in this s Section	Technical Edit (not in response to a comment)
8-125	contribution to the	Technical Edit (not in response to a comment)
8-126	Cumulative effect Impact	Technical Edit (not in response to a comment)
8-128	would directly	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
8-128	would require	Technical Edit (not in response to a comment)
8-128	would preserve	Technical Edit (not in response to a comment)
8-128	would preserve	Technical Edit (not in response to a comment)
8-128	would result	Technical Edit (not in response to a comment)
8-128	would manage	Technical Edit (not in response to a comment)
8-129	discussed here in this S section	Technical Edit (not in response to a comment)
8-129	discussed previously above	Technical Edit (not in response to a comment)
8-130	Cumulative Impact effect	Technical Edit (not in response to a comment)
8-132	Would directly	Technical Edit (not in response to a comment)
8-132	would require	Technical Edit (not in response to a comment)
8-132	would preserve	Technical Edit (not in response to a comment)
8-132	would preserve	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
8-132	would result	Technical Edit (not in response to a comment)
8-132	would manage	Technical Edit (not in response to a comment)
8-134	Cumulative Impact <u>effect</u>	Technical Edit (not in response to a comment)
8-135	would provide	Technical Edit (not in response to a comment)
8-135	would require	Technical Edit (not in response to a comment)
8-136	would require	Technical Edit (not in response to a comment)
8-136	would not	Technical Edit (not in response to a comment)
8-137	Cumulative Impact <u>effect</u>	Technical Edit (not in response to a comment)
8-137	AECOM, Vollmar Consulting, and R.F. Holland. 2009. Loss of Central Valley vernal pools; land conversion, mitigation requirements, and preserve effectiveness. Prepared for Placer Land Trust, Auburn, California. 20pp. www.placerlandtrust.org.	Technical Edit (not in response to a comment)
8-137	AECOM and Vollmar Consulting. U.S. Army Corps of Engineers permitting and mitigation of Central Valley Vernal Pool Impacts 2000–2006. Prepared for Placer Land Trust, Auburn, California. 20pp. www.placerlandtrust.org.	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
8-137	Bosler, Robin C. 1999. Evaluating the impact of habitat fragmentation on the unique invertebrate communities of California's vernal pools. Progress report to the U.S. Environmental Protection Agency.	Technical Edit (not in response to a comment)
8-138	CDFW) California Department of Fish and Wildlife. 2015. Biogeographic Information and Observation System (BIOS). Version 5.24.12. Available at https://www.wildlife.ca.gov/Data/BIOS. Accessed on 01/06/2015.	Technical Edit (not in response to a comment)
8-138	(Connector JPA) Southeast Connector Joint Powers Authority. 2012. Capitol SouthEast Connector Project Program Environmental Impact Report. February 2012. Available at http://www.connectorjpa.net/project-documents.html.	Technical Edit (not in response to a comment)
8-138	eBird. 2015. eBird: An online database of bird distribution and abundance [a web application]. eBird, Ithaca, New York. Available: http://www.ebird.org. Accessed 01/06/2015.	Technical Edit (not in response to a comment)
8-139	Galt. 2008. City of Galt General Plan Update: 2030 Draft Environmental Impact Report. July 2008. Available at: http://www.ci.galt.ca.us/index.aspx?page=472.	Technical Edit (not in response to a comment)
8-140	Institute for Water Resources. 2015. The Mitigation Rule Retrospective: A Review of the 2008 Regulations Governing Compensatory Mitigation for Losses of Aquatic Resources: 2015-R-03. U.S. Army Institute for Water Resources. Alexandria, VA. Available at: http://www.iwr.usace.army.mil/Portals/70/docs/iwrreports/2015-R-03.pdf.	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter- Page	Edits	Reason for Edits
8-140	Katibah, E.F. 1984. "A Brief History of the Riparian Forest in the Central Valley of California." Pages 23-29 in California Riparian Systems: Ecology Conservation and Productive Management, edited by R.E. Warner and K.M. Hendrix. University of California Press, Berkeley, California.	Technical Edit (not in response to a comment)
8-141	Ritter, L.V. 1988. "Blue Oak Woodland." Pages x-x In Mayer, K.E. and Laudenslayer, W.F. editors, A Guide to Wildlife Habitats of California (Wildlife Habitat Relationships System). State of California Resources Agency, Department of Fish and Game, Sacramento, California. Available at: https://www.wildlife.ca.gov/Data/CWHR/Wildlife-Habitats.	Technical Edit (not in response to a comment)
8-142	Sacramento County. 2010. Sacramento County General Plan Update Final Environmental Impact Report. SCH no. 2007082086. April 2010. Available at: http://www.per.saccounty.net/EnvironmentalDocuments/Pages/SearchDocuments.aspx.	Technical Edit (not in response to a comment)
8-142	Sacramento County. 2014. Riparian Habitat (Description). Sacramento County Website. Accessed April 24, 2014. Available at: http://www.per.saccounty.net/InterestedCitizens/Pages/ER_Riparian.aspx.	Technical Edit (not in response to a comment)
8-142	Saunders, R. 2002. 2002 Crop & Livestock Report: Sacramento County, Sacramento California. Available at: http://www.agcomm.saccounty.net/Documents/CropandLivestockReports/2002Report.pdf.	Technical Edit (not in response to a comment)
8-142	Significant Natural Areas Program. 1981. California Fish and Game Code, 2011 edition, Sections 1930-1933. Available at: http://www.leginfo.ca.gov/cgi-bin/calawquery?codesection=fgc.	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
8-143	Smith, D. W. and W. L. Verrill. 1998. "Vernal Pool-Soil-Landform Relationships in the Central Valley, California." In Ecology, Conservation, and Management of Vernal Pool Ecosystems – Proceedings from a 1996 Conference, edited by C.W. Witham, E.T. Bauder, D. Belk, W.R. Ferrin Jr., and R. Orduff, 15–23. California Native Plant Society, Sacramento, California.	Technical Edit (not in response to a comment)
8-143	<u>USACE (U.S. Army Corps of Engineers). 2014. Memorandum for Record: Cumulative Impact Analysis for the South Sacramento Habitat Conservation Plan Area (SPK-1995-00386). Sacramento, California: USACE Sacramento Engineer District, California South Branch. Signed September 9, 2014.</u>	Technical Edit (not in response to a comment)
8-143	USACE (United States Army Corps of Engineers). 2014. Memorandum for Record: Cumulative Impact Analysis for the South Sacramento Habitat Conservation Plan Area (SPK-1995-00386). USACE Sacramento Engineer District, California South Branch, Sacramento California. Signed September 9, 2014. 39 pages.	Technical Edit (not in response to a comment)
8-140	<u>Kie, J. 2005. Annual Grassland. California Wildlife Habitat Relationships System. California Department of Fish and Game, California Interagency Wildlife Task Group. Accessed October 15, 2016. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=67384</u>	Technical Edit (not in response to a comment)
8-140	<u>Kreissman, B. 1991. California: An Environmental Atlas and Guide. Bear Klaw Press: Davis, CA. p 81.</u> Kreissman 1991	Technical Edit (not in response to a comment)
8-140	<u>Marty, J.T. 2005. Effects of Cattle Grazing on Diversity in Ephemeral Wetlands. Conservation Biology 19: 1626-1632.</u>	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
8-142	<u>Silveira, J.G. 1998. Avian Uses of Vernal Pools and Implications for Conservation Practice. Pages 92–106 in: C.W. Witham et al. (eds.), Ecology, Conservation, and Management of Vernal Pool Ecosystems, CNPS, Sacramento, California.</u>	Technical Edit (not in response to a comment)
8-143	<u>Williamson, R.J., G.E. Fogg, M.C. Rains, and T.H. Harter. 2005. Hydrology of Vernal Pools at Three Sites, Southern Sacramento Valley. Report to California Department of Transportation. Project F 2001 IR 20. University of California, Davis. 88 pages. http://www.dot.ca.gov/research/environmental/docs/vernal_pools_report_final.pdf.</u>	Technical Edit (not in response to a comment)
8-144	<u>Witham, C.W., R.F. Holland and J.E. Vollmar. 2014. Changes in the Distribution of Great Valley Vernal Pool Habitats from 2005 to 2012. Sacramento, CA. Report prepared for the U.S. Fish and Wildlife Service and Bureau of Reclamation CVPIA Habitat Restoration Program under Grant Agreement No. F11AP00169 with the USFWS.</u>	Technical Edit (not in response to a comment)
8-2	Establishment (creation)	Technical Edit (not in response to a comment)
8-4	and Game <u>Wildlife</u>	RTC 16.11
8-14	are 27 <u>17</u> natural	Technical Edit (not in response to a comment)
8-14	approximately 272,608 <u>596</u> acres	Technical Edit (not in response to a comment)
8-14	the 27 <u>17</u> natural	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
8-14	approximately 272,608 <u>596</u>	Technical Edit (not in response to a comment)
8-18	Existing Acres <u>Preserved</u> within	Technical Edit (not in response to a comment)
8-22	<u>Poirier</u> 2012	Technical Edit (not in response to a comment)
8-22	Calderado <u>Calderaro</u> 2005 <u>2011</u>	Technical Edit (not in response to a comment)
8-22	Placer Land Trust 2009	Technical Edit (not in response to a comment)
8-22	discussions below <u>later in this section</u>	Technical Edit (not in response to a comment)
8-23	Stream/Creek (VPIH) <u>land cover</u> natural community	Technical Edit (not in response to a comment)
8-27	described above <u>previously</u>	Technical Edit (not in response to a comment)
8-36	Nicholas <u>Nicolaus</u>	Technical Edit (not in response to a comment)
8-42	Acres <u>Directly</u> Affected	Technical Edit (not in response to a comment)
8-43	<u>Total Natural Uplands 21,799 1,770 23,569 149,921 15.7%</u>	Technical Edit (not in response to a comment)
8-43	272556 <u>596</u>	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter- Page	Edits	Reason for Edits
8-53	Freshwater Marsh, <u>Open Water</u>	Technical Edit (not in response to a comment)
8-53	Freshwater Marsh, <u>Open Water</u>	Technical Edit (not in response to a comment)
8-59	the <u>Blue Oak Woodland and Blue Oak Savanna</u> Riparian land	Technical Edit (not in response to a comment)
8-67	projects , activities, and actions	Technical Edit (not in response to a comment)
8-75	EDGE-ROAD-1	Technical Edit (not in response to a comment)
8-85	area's Seasonal Wetlands, Freshwater Marsh, Streams/Creeks, and Open Water <u>Riparian</u> land	Technical Edit (not in response to a comment)
8-88	the <u>Blue Oak Woodland and Blue Oak Savanna</u> Riparian land	Technical Edit (not in response to a comment)
8-94	Pasture- <u>Grasland</u>	Technical Edit (not in response to a comment)
8-94	Irrigated Pasture- <u>Grassland</u>	Technical Edit (not in response to a comment)
8-94	Irrigated Pasture- <u>Grassland</u>	Technical Edit (not in response to a comment)
8-94	Irrigated Pasture- <u>Grassland</u> farmland	Technical Edit (not in response to a comment)
8-118	Reduced Permit Term <u>Alternative</u> 's	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter- Page	Edits	Reason for Edits
8-128	Irrigated Pasture- <u>Grassland</u>	Technical Edit (not in response to a comment)
9-2	critical habitat as is <u>(1)</u> the	Technical Edit (not in response to a comment)
9-2	is <u>and (2)</u> Sspecific	Technical Edit (not in response to a comment)
9-3	responsibilities is <u>(1)</u> Aavoid and minimize	Technical Edit (not in response to a comment)
9-3	is <u>(2)</u> Rrestore	Technical Edit (not in response to a comment)
9-3	<u>and (3)</u> pPrevent	Technical Edit (not in response to a comment)
9-3	the CESA definition of take does not	Technical Edit (not in response to a comment)
9-3	harass,” like <u>which is included in</u> the ESA	Technical Edit (not in response to a comment)
9-4	Act, <u>discussed previously</u>	Technical Edit (not in response to a comment)
9-5	Swainson’s hawks <u>(Buteo swainsoni)</u> in	Technical Edit (not in response to a comment)
9-5	and requires a no net	Technical Edit (not in response to a comment)
9-9	EIR are contained <u>provided</u> in	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter- Page	Edits	Reason for Edits
9-9	occurrences, as well as <u>and</u> Critical	Technical Edit (not in response to a comment)
9-10	CDFW CNPS CRPR	Technical Edit (not in response to a comment)
9-11	<u>California Native Plant Society (CNPS)</u> CDFW California	Technical Edit (not in response to a comment)
9-11	2 <u>B</u> = Rare	Technical Edit (not in response to a comment)
9-11	CDFW California Rare Plant Rank (CRPR	Technical Edit (not in response to a comment)
9-11	Fairly <u>Moderately</u> threatened	Technical Edit (not in response to a comment)
9-11	0.3 = Not very threatened in California (low degree/immediacy of threats or no current threats known)	Technical Edit (not in response to a comment)
9-12	CDFW CNPS CRPR	Technical Edit (not in response to a comment)
9-13	E = listed as endangered under the ESA	Technical Edit (not in response to a comment)
9-13	* = species has designated critical habitat Critical Habitat located within the Planning Area.	Technical Edit (not in response to a comment)
9-13	1A = Presumed extirpated in California and either rare or extinct elsewhere	Technical Edit (not in response to a comment)
9-13	2A = Presumed extirpated in California, but more common elsewhere	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
9-13	3 = Plants which need more information and on the Review list	Technical Edit (not in response to a comment)
9-13	Fairly Moderately threatened	Technical Edit (not in response to a comment)
9-14	Legal Status Definitions	Technical Edit (not in response to a comment)
9-14	E = listed as endangered under the ESA	Technical Edit (not in response to a comment)
9-14	T = listed as threatened under the ESA	Technical Edit (not in response to a comment)
9-14	C = candidate for listing under the ESA	Technical Edit (not in response to a comment)
9-14	E = listed as endangered under CESA	Technical Edit (not in response to a comment)
9-14	C = Candidate for listing under CESA	Technical Edit (not in response to a comment)
9-14	CT = Candidate Threatened	Technical Edit (not in response to a comment)
9-14	CFP = Fully protected (legally protected)	Technical Edit (not in response to a comment)
9-14	— = no state status	Technical Edit (not in response to a comment)
9-15	habitat present within the designated critical habitat are presented in Section 9.2 where the total impacts to species habitat are presented	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
9-16	known because <u>for the following reasons:</u> there	Technical Edit (not in response to a comment)
9-16	; because of <u>there are</u> limitations	Technical Edit (not in response to a comment)
9-21	beneficial impact <u>effect</u> could	Technical Edit (not in response to a comment)
9-23	discussed above <u>previously</u> for	Technical Edit (not in response to a comment)
9-23	ways: <u>(1)</u> by	Technical Edit (not in response to a comment)
9-23	swales; <u>(2)</u> by	Technical Edit (not in response to a comment)
9-23	and <u>(3)</u> by	Technical Edit (not in response to a comment)
9-24	which <u>in turn</u> could	Technical Edit (not in response to a comment)
9-24	hydrology which <u>that</u> would	Technical Edit (not in response to a comment)
9-24	invertebrates, as well as <u>and</u> seed	Technical Edit (not in response to a comment)
9-27	Re-establish <u>mented</u> / Establish <u>mented</u>	Technical Edit (not in response to a comment)
9-29	habitat, as well as <u>and in</u>	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
9-31	discussed above <u>previously</u> for	Technical Edit (not in response to a comment)
9-31	The <u>following</u> discussion below focuses	Technical Edit (not in response to a comment)
9-32	population <u>of</u> seed- dispersing birds, <u>thereby</u> reducing	Technical Edit (not in response to a comment)
9-34	discussed above <u>previously</u> , these	Technical Edit (not in response to a comment)
9-37	habitat, as well as <u>and in</u> indirect	Technical Edit (not in response to a comment)
9-44	habitat, as well as <u>and in</u> indirect	Technical Edit (not in response to a comment)
9-53	modeled habitat, and approximately 21,148 acres of preservation of modeled habitat, for tricolored blackbird ; approximately 16,949 acres of	Technical Edit (not in response to a comment)
9-54	nesting and foraging land covers, and approximately 4,199 of foraging only land covers <u>for tricolored blackbird</u>	Technical Edit (not in response to a comment)
9-56	impacts to tricolored blackbird <u>western burrowing owl</u> for projects	Technical Edit (not in response to a comment)
9-66	failure, and <u>may</u> injure	Technical Edit (not in response to a comment)
9-66	established, and approximately 21,077 acres of preservation of modeled habitat <u>for northern harrier</u> , approximately	Technical Edit (not in response to a comment)
9-70	and <u>may</u> injure	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
9-77	and <u>may</u> injure	Technical Edit (not in response to a comment)
9-77	and result in	Technical Edit (not in response to a comment)
9-81	cases <u>cause</u> injury	Technical Edit (not in response to a comment)
9-83	or result in <u>the</u> loss	Technical Edit (not in response to a comment)
9-83	or result in <u>the</u> loss	Technical Edit (not in response to a comment)
9-94	Fairly <u>Moderately</u>	Technical Edit (not in response to a comment)
9-94	<u>S3 =</u>	Technical Edit (not in response to a comment)
9-105	Beneficial impact <u>effect</u> when	Technical Edit (not in response to a comment)
9-106	Cumulative Impact <u>effect</u>	Technical Edit (not in response to a comment)
9-108	Beneficial Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-109	Cumulative Impact <u>effect</u> to	Technical Edit (not in response to a comment)
9-113	Beneficial Impact <u>effect</u> on	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
9-113	Cumulative Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-117	Beneficial Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-118	Cumulative Impact <u>effect</u> to	Technical Edit (not in response to a comment)
9-119	re-establish ment <u>ed</u> /establish ment <u>ed</u> will	Technical Edit (not in response to a comment)
9-119	increasing protection <u>protection</u> of	Technical Edit (not in response to a comment)
9-120	Beneficial Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-121	Cumulative Impact <u>effect</u> to	Technical Edit (not in response to a comment)
9-123	increasing protection <u>protection</u> of	Technical Edit (not in response to a comment)
9-124	Beneficial Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-125	Cumulative Impact <u>effect</u> to	Technical Edit (not in response to a comment)
9-126	increasing protection <u>protection</u> of	Technical Edit (not in response to a comment)
9-128	Cumulative Impact <u>effect</u> to	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter- Page	Edits	Reason for Edits
9-132	Beneficial Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-133	Cumulative Impact <u>effect</u> for	Technical Edit (not in response to a comment)
9-133	Wintering/Nesting/ <u>Foraging</u> Habitat	Technical Edit (not in response to a comment)
9-134	increasing projection <u>protection</u> of	Technical Edit (not in response to a comment)
9-135	Beneficial Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-136	Cumulative Impact <u>effect</u> for	Technical Edit (not in response to a comment)
9-137	increasing projection <u>protection</u> of	Technical Edit (not in response to a comment)
9-138	Beneficial Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-139	Cumulative Impact <u>effect</u> for	Technical Edit (not in response to a comment)
9-141	increasing projection <u>protection</u> of	Technical Edit (not in response to a comment)
9-142	Beneficial Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-143	Cumulative Impact <u>effect</u> for	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
9-145	increasing projection <u>protection</u> of	Technical Edit (not in response to a comment)
9-145	species; that would also be required ; RAPTOR-1	Technical Edit (not in response to a comment)
9-146	Beneficial Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-146	Cumulative Impact <u>effect</u> for	Technical Edit (not in response to a comment)
9-148	increasing projection <u>protection</u> of	Technical Edit (not in response to a comment)
9-148	nesting/foraging <u>habitat</u> , and approximately 31,444 acres of foraging habitat for white-tailed kite	Technical Edit (not in response to a comment)
9-149	Beneficial Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-150	Cumulative Impact <u>effect</u> for	Technical Edit (not in response to a comment)
9-153	Beneficial Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-154	Cumulative Impact <u>effect</u> for	Technical Edit (not in response to a comment)
9-154	approximately 1,997 more <u>acres of</u> habitat	Technical Edit (not in response to a comment)
9-155	Beneficial Impact <u>effect</u> on	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
9-156	Cumulative Impact <u>effect</u> for	Technical Edit (not in response to a comment)
9-157	increasing projection <u>protection</u> of	Technical Edit (not in response to a comment)
9-157	species that would also be required; <u>RAPTOR-1</u>	Technical Edit (not in response to a comment)
9-158	Beneficial Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-159	Cumulative Impact <u>effect</u> for	Technical Edit (not in response to a comment)
9-160	increasing projection <u>protection</u> of	Technical Edit (not in response to a comment)
9-161	Beneficial Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-162	Cumulative Impact <u>effect</u> for	Technical Edit (not in response to a comment)
9-164	Beneficial Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-164	Cumulative Impact <u>effect</u> for	Technical Edit (not in response to a comment)
9-165	increasing projection <u>protection</u> of	Technical Edit (not in response to a comment)
9-166	Adverse Impact <u>effect</u> on	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
9-166	activities that that <u>may</u> remove	Technical Edit (not in response to a comment)
9-166	preserve additional a greater	Technical Edit (not in response to a comment)
9-167	applicable to ferruginous hawk bank swallow and	Technical Edit (not in response to a comment)
9-167	Cumulative Impact effect to	Technical Edit (not in response to a comment)
9-169	increasing projection protection of	Technical Edit (not in response to a comment)
9-170	Beneficial Impact effect on	Technical Edit (not in response to a comment)
9-170	Cumulative Impact effect for	Technical Edit (not in response to a comment)
9-172	increasing projection protection of	Technical Edit (not in response to a comment)
9-173	Beneficial Impact effect on	Technical Edit (not in response to a comment)
9-173	Cumulative Impact effect for	Technical Edit (not in response to a comment)
9-176	Beneficial Impact effect on	Technical Edit (not in response to a comment)
9-176	Cumulative Impact effect for	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
9-178	listing status	Technical Edit (not in response to a comment)
9-179	<u>S3 =</u>	Technical Edit (not in response to a comment)
9-179	<u>California Rare Plant Rank (CRPR)</u>	Technical Edit (not in response to a comment)
9-179	<u>2B = Rare, threatened, or endangered in California, but more common elsewhere</u>	Technical Edit (not in response to a comment)
9-179	<u>CRPR Threat Ranks</u>	Technical Edit (not in response to a comment)
9-180	<u>0.2 = Moderately threatened in California (moderate degree/immediacy of threat)</u>	Technical Edit (not in response to a comment)
9-182	Adverse Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-183	Cumulative Impact <u>effect</u> to	Technical Edit (not in response to a comment)
9-193	Adverse Impact <u>effect</u> when	Technical Edit (not in response to a comment)
9-194	Cumulative Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-196	increasing projection <u>protection</u> of	Technical Edit (not in response to a comment)
9-197	No <u>Effect</u> Impact on	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
9-197	impacts from the	Technical Edit (not in response to a comment)
9-198	Cumulative Impact <u>effect</u> to	Technical Edit (not in response to a comment)
9-201	Beneficial Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-202	Cumulative Impact <u>effect</u> for	Technical Edit (not in response to a comment)
9-204	No <u>Effect</u> Impact on	Technical Edit (not in response to a comment)
9-206	increasing protection <u>protection</u> of	Technical Edit (not in response to a comment)
9-208	No <u>Effect</u> Impact on	Technical Edit (not in response to a comment)
9-208	No <u>Effect</u> Impact for	Technical Edit (not in response to a comment)
9-210	increasing protection <u>protection</u> of	Technical Edit (not in response to a comment)
9-211	Beneficial Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-212	Cumulative Impact <u>effect</u> for	Technical Edit (not in response to a comment)
9-213	increasing protection <u>protection</u> of	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
9-214	Beneficial Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-215	Cumulative Impact <u>effect</u> for	Technical Edit (not in response to a comment)
9-217	Adverse Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-218	Cumulative Impact <u>effect</u> to	Technical Edit (not in response to a comment)
9-219	increasing projection <u>protection</u> of	Technical Edit (not in response to a comment)
9-220	Adverse Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-221	Cumulative Impact <u>effect</u> to	Technical Edit (not in response to a comment)
9-222	increasing projection <u>protection</u> of	Technical Edit (not in response to a comment)
9-223	Adverse Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-224	Cumulative Impact <u>effect</u> to	Technical Edit (not in response to a comment)
9-226	Adverse Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-227	and <u>would</u> be	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter- Page	Edits	Reason for Edits
9-227	Cumulative Impact <u>effect</u> to	Technical Edit (not in response to a comment)
9-228	increasing protection <u>protection</u> of	Technical Edit (not in response to a comment)
9-229	and <u>would</u> implement	Technical Edit (not in response to a comment)
9-229	Beneficial Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-230	and <u>would</u> be	Technical Edit (not in response to a comment)
9-230	Cumulative Impact <u>effect</u> for	Technical Edit (not in response to a comment)
9-231	increasing protection <u>protection</u> of	Technical Edit (not in response to a comment)
9-232	and <u>would</u> implement	Technical Edit (not in response to a comment)
9-232	Beneficial Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-233	Cumulative Impact <u>effect</u> for	Technical Edit (not in response to a comment)
9-236	Beneficial Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-237	and <u>would</u> be	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
9-237	Cumulative Impact <u>effect</u> for	Technical Edit (not in response to a comment)
9-237	those <u>previously identified</u> for	Technical Edit (not in response to a comment)
9-238	Beneficial Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-239	and <u>would</u> be	Technical Edit (not in response to a comment)
9-239	Cumulative Impact <u>effect</u> for	Technical Edit (not in response to a comment)
9-240	increasing projection <u>protection</u> of	Technical Edit (not in response to a comment)
9-241	Adverse Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-242	Cumulative Impact <u>effect</u> to	Technical Edit (not in response to a comment)
9-243	increasing projection <u>protection</u> of	Technical Edit (not in response to a comment)
9-244	Adverse Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-245	Cumulative Impact <u>effect</u> to	Technical Edit (not in response to a comment)
9-245	increasing projection <u>protection</u> of	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
9-246	and <u>would</u> implement	Technical Edit (not in response to a comment)
9-246	Beneficial Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-247	and <u>would</u> be	Technical Edit (not in response to a comment)
9-247	Cumulative Impact <u>effect</u> for	Technical Edit (not in response to a comment)
9-248	increasing projection <u>protection</u> of	Technical Edit (not in response to a comment)
9-249	Adverse Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-250	and <u>would</u> be	Technical Edit (not in response to a comment)
9-250	Cumulative Impact <u>effect</u> to	Technical Edit (not in response to a comment)
9-252	increasing projection <u>protection</u> of	Technical Edit (not in response to a comment)
9-253	and <u>would</u> implement	Technical Edit (not in response to a comment)
9-253	Adverse Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-254	and <u>would</u> be	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
9-254	Cumulative Impact <u>effect</u> to	Technical Edit (not in response to a comment)
9-255	increasing projection <u>protection</u> of	Technical Edit (not in response to a comment)
9-256	and <u>would</u> implement	Technical Edit (not in response to a comment)
9-256	Adverse Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-257	and <u>would</u> be	Technical Edit (not in response to a comment)
9-259	and <u>would</u> implement	Technical Edit (not in response to a comment)
9-259	Beneficial Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-260	Cumulative Impact <u>effect</u> for	Technical Edit (not in response to a comment)
9-262	listing status	Technical Edit (not in response to a comment)
9-263	<u>S3 =</u>	Technical Edit (not in response to a comment)
9-263	<u>California Rare Plant Rank (CRPR)</u>	Technical Edit (not in response to a comment)
9-263	<u>2B = Rare, threatened, or endangered in California, but more common elsewhere</u>	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
9-263	<u>CRPR Threat Ranks</u>	Technical Edit (not in response to a comment)
9-263	<u>0.2 = Moderately threatened in California (moderate degree/immediacy of threat)</u>	Technical Edit (not in response to a comment)
9-264	Adverse Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-265	Beneficial Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-265	and <u>would</u> be	Technical Edit (not in response to a comment)
9-266	Cumulative Impact <u>effect</u> to	Technical Edit (not in response to a comment)
9-266	Cumulative Impact <u>effect</u> for	Technical Edit (not in response to a comment)
9-266	<u>Calflora. 2015. Calflora: Information on California Plants for Education, Research, and Conservation. Berkeley, California: The Calflora Database. Accessed December 8, 2015. http://www.calflora.org/.</u>	Technical Edit (not in response to a comment)
9-266	Calflora. 2014. CalFlora: Information on California plants for education, research and conservation. [web application]. 2014. Berkeley, California: The Calflora Database [a non-profit organization]. Available: http://www.calflora.org/ (Accessed: December 8, 2015).	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
9-268	<u>USFWS. 2016. Draft Recovery Plan for the Central California Distinct Population Segment of the California Tiger Salamander (Ambystoma californiense). Sacramento, California: USFWS Region 8. March 11, 2016. Accessed December 4, 2017. https://www.fws.gov/sacramento/outreach/2016/3-11/docs/DRAFT_RP_CTS-20160113.pdf.</u>	Technical Edit (not in response to a comment)
9-103	Beneficial Impact <u>effect</u> when	Technical Edit (not in response to a comment)
9-131	Beneficial effect Impact on	Technical Edit (not in response to a comment)
9-238	Adverse Impact <u>effect</u> on	Technical Edit (not in response to a comment)
9-244	Adverse <u>effect</u> Impact on	Technical Edit (not in response to a comment)
9-248	Cumulative <u>effect</u> Impact for	Technical Edit (not in response to a comment)
10-1	include <u>potentially jurisdictional</u> waters of the United States that are regulated	Corps suggestion
10-1	waters of the United States that are regulated	Corps suggestion
10-2	mitigation is <u>may be</u> required	Corps suggestion
10-2	evaluates <u>the following</u> two types of permits under CWA 404: <u>(1)</u> general permits (nationwide, regional, and programmatic), and <u>(2)</u> individual	Technical Edit (not in response to a comment)
10-2	<u>1 Note that in the context of this Plan, the word “establish” is synonymous with “create.”</u>	Corps suggestion

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
10-3	In addition to setting minimum compensatory mitigation amounts, t The	Corps suggestion
10-3	three general options forms	Corps suggestion
10-3	for the purpose of to provide ing compensatory	Technical Edit (not in response to a comment)
10-3	<u>A program that c</u> onducts	Technical Edit (not in response to a comment)
10-3	provide financial planning and scientific expertise (which often is not practical for permittee-responsible	Corps suggestion
10-3	t The 2008 Mitigation Rule	Corps suggestion
10-3	<u>(33 CFR Part 332.2(b))</u>	Corps suggestion
10-4	mitigation projects),	
10-10	<u>Ephemeral</u>	Technical Edit (not in response to a comment)
10-10	<u>(Intermittent and Perennial</u>	Technical Edit (not in response to a comment)
10-11	tules (<u>Schoenoplectus acutus var. occidentalis</u> Scirpus acutus)	Technical Edit (not in response to a comment)
10-11	or excavated, <u>or otherwise disturbed</u> former	Technical Edit (not in response to a comment)
10-12	ultimately <u>may flow in</u> to	Technical Edit (not in response to a comment)
10-12	in all downgradient	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
10-13	Seasonal Wetlands in the Planning Area tend to be isolated features that occur	Corps suggestion
10-15	irrigation, because of discharges	Technical Edit (not in response to a comment)
10-15	and because of other unseasonal human	Technical Edit (not in response to a comment)
10-16	Other Waters category <u>land covers</u> because	Technical Edit (not in response to a comment)
10-16	<u>, or it may not be considered a water of the United States (e.g., neither a stream nor a wetland).</u>	Corps suggestion
10-17	or manmade <u>constructed</u> ponds	Technical Edit (not in response to a comment)
10-17	or just a	Technical Edit (not in response to a comment)
10-18	walls, so <u>and</u> support	Technical Edit (not in response to a comment)
10-18	wild rose <u>briar</u>	Technical Edit (not in response to a comment)
10-19	<u>California</u> wild grape	Technical Edit (not in response to a comment)
10-24	(punctuation added)	Corps suggestion
10-25	non-jurisdictional as <u>because</u> they are mitigation sites comprised <u>composed</u> of	Technical Edit (not in response to a comment)
10-26	each other waters, and each riparian	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
10-26	each of the Wetlands, the each of the Other Waters, and each of the Riparian	Technical Edit (not in response to a comment)
10-27	Wetland Waters	Technical Edit (not in response to a comment)
10-27	Wetland Waters	Technical Edit (not in response to a comment)
10-29	A large majority	Technical Edit (not in response to a comment)
10-29	<u>qualify for</u> fall under the	Technical Edit (not in response to a comment)
10-29	and comprises <u>makes up</u>	Technical Edit (not in response to a comment)
10-31	large majority (92%) of agricultural areas are cropland and vineyards. Aquatic and non-habitat land covers each comprise <u>make up</u> about <u>approximately</u> 3%	Technical Edit (not in response to a comment)
10-32	a very small	Technical Edit (not in response to a comment)
10-33	together comprise <u>compose</u> about <u>approximately</u> 5%	Technical Edit (not in response to a comment)
10-34	comprise <u>compose</u> the remaining acreage, but only totaling 1,450 acres, or 8%, of the land cover in	Technical Edit (not in response to a comment)
10-36	waters <u>provided</u> undertaken as	Corps suggestion
10-37	Having <u>inge</u> a substantial	Corps suggestion
10-37	<u>aquatic</u> wetland and riparian resources	Corps suggestion

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
10-37	Scrub, <u>and Mine Tailing Riparian Woodland</u>) are	Technical Edit (not in response to a comment)
10-38	be permanently impacted	Corps suggestion
10-38	of <u>the</u> its current amount	Corps suggestion
10-38	past, <u>present, and reasonably foreseeable</u> impacts	Technical Edit (not in response to a comment)
10-38	waters from individual discharges of dredged or fill material from	Corps suggestion
10-38	Area, to the extent reasonable and practical.	Corps suggestion
10-39	<u>provided</u> undertaken as compensatory mitigation for authorized <u>loss of waters</u> CWA 404 fill discharges between	Corps suggestion
10-39	considered the progress of currently proposed projects in the CWA 404 permitting process, and the likelihood of a proposed project ultimately being implemented, to help identify reasonably foreseeable future CWA 404 actions and <u>associated</u> their foreseeable <u>estimated</u> impacts to the wetlands and the other water land covers <u>waters of the United States</u>	Corps suggestion
10-39	<u>aquatic resources</u> hydrology and water quality	Technical Edit (not in response to a comment)
10-40	<u>In the Sacramento County General Plan EIR, the term “wetland” is used to encompass a variety of aquatic habitats, including both jurisdictional and non-jurisdictional wetlands and streams (i.e., aquatic habitats that could be affected through alteration of the bed and bank) (County of Sacramento 2010, p. 8-32).</u>	Corps suggestion
10-40	<u>in the Draft EIR [Galt 2008], the Final EIR did not reprint these conclusions</u>	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
10-40	would <u>be assumed to</u> directly	Technical Edit (not in response to a comment)
10-40	<u>aquatic resources</u>	Technical Edit (not in response to a comment)
10-43	acres <u>would be directly impacted</u> impacted	Technical Edit (not in response to a comment)
10-43	acres <u>would be directly impacted</u> impacted	Technical Edit (not in response to a comment)
10-45	<u>Notes: UDA = Urban Development Area; VPIH = vernal pool invertebrate habitat</u>	Technical Edit (not in response to a comment)
10-45	<u>or other policy guidance in effect at the time</u>	
10-45	<u>Table 10-5 identifies zero 0 acres of riparian habitat preservation under the No Action/No Project Alternative. This is because it is assumed that under the No Action/No Project Alternative all mitigation for unavoidable losses of riparian habitat would be achieved through re-establishment/establishment of mixed riparian scrub and mixed riparian woodland</u>	Corps suggestion

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
10-47	<u>Like As described in Section 8.2.2, the re-establishment/ and establishment acres of aquatic resources presented in Table 10-6 reflect the Lead Agencies' assumption that the requirements of the 2008 Compensatory Mitigation Rule to be re-established/ or established to replace lost aquatic resource functions and services at a minimum one-to-one acreage or one-to-one linear foot compensation- ratio would continue under the No Action/No Project Alternative. It is assumed in Table 10-6 assumes that compensatory mitigation for direct impact to Vernal Pools and Swales would occur within the Planning Area. However, compensatory mitigation for the other Aquatic land covers (Stream/Creek [VPIH], Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water) is assumed would to continue to occur primarily by purchasing of credits at an approved mitigation banks or through an in-lieu fee program. However, several mitigation banks and in-lieu fee programs with service areas that overlap the Planning Area actually re-establish, establish, or enhance wetlands or other waters at locations outside the Planning Area. Therefore, Table 8-5 assumes that only one-half of the necessary compensatory mitigation for direct impacts to Stream/Creek (VPIH), Seasonal Wetland, Freshwater Marsh, Stream/Creek, and Open Water would occur inside the Planning Area.</u>	Corps suggestion
10-48	and <u>certain</u> other future activities <u>may not always trigger the regulations and policies listed above, and in those</u>	Corps suggestion
10-48	implantation <u>implementation</u>	

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
10-48	<u>the requirements of the 2008 Compensatory Mitigation Rule, and aquatic resources would be re-established/ or established to replace lost aquatic resource functions and services at a minimum one-to-one acreage or one-to-one linear foot compensation- ratio. Compensatory mitigation, under this alternative could occur both inside and outside the Planning Area. With the resulting no net loss of aquatic resource functions and services.</u>	Technical Edit (not in response to a comment)
10-49	preserve <u>special-status</u> sensitive species	Technical Edit (not in response to a comment)
10-50	mitigation- <u>Conservation</u> sStrategy	Corps suggestion
10-53	resulting in <u>at least</u> one acre of establishment/re-establishment	Corps suggestion
10-53	than <u>would be</u> these required	Technical Edit (not in response to a comment)
10-53	not fully effective	Technical Edit (not in response to a comment)
10-54	overall mitigation <u>Conservation</u> sStrategy	Technical Edit (not in response to a comment)
10-54	their many existing and potential beneficial uses , and important to	Technical Edit (not in response to a comment)
10-55	anticipated <u>to be preserved</u> under	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
10-56	The ARP compensatory mitigation ratios are based upon factors consistent with the federal mitigation rule. The purpose of the ARP compensatory mitigation ratios strategy is to proactively offset unavoidable impacts to aquatic resources and maintain or improve physical, chemical, and biological functions of aquatic resources within the Planning Area.	Corps suggestion
10-57	<u>in the Planning Area (see Section 10.2.2 for an explanation of the use of mitigation banks and in-lieu fee programs and potential for some compensatory mitigation to be located outside the Planning Area in Section 10.2.2)</u>	Corps suggestion
10-57	mitigation <u>in the Planning Area</u>	
10-57	in <u>at least</u> one one <u>1</u>	Technical Edit (not in response to a comment)
10-57	C onservation S strategy	Corps suggestion
10-57	C onservation S strategy	Corps suggestion
10-58	a man-made <u>constructed</u> land	Technical Edit (not in response to a comment)
10-58	other man-made <u>constructed</u> features	Technical Edit (not in response to a comment)
10-58	inclusive of <u>including</u> the	Technical Edit (not in response to a comment)
10-58	indirectly <u>impacted</u> lost	Technical Edit (not in response to a comment)
10-58	81 fewer <u>less</u> acres	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
10-60	past <u>and</u> , present, and reasonably foreseeable other	Technical Edit (not in response to a comment)
10-60	<u>A subset of the reasonably foreseeable other projects (e.g., foreseeable rural residential developments, agricultural activities on private lands) are is likely to result in additional losses and additional adverse impacts to existing aquatic resources within the resource study area over the 50-year EIS/EIR study period. However,</u>	Corps suggestion
10-61	contiguous or would be interconnected	Technical Edit (not in response to a comment)
10-62	The Reduced Permit Term Alternative would directly impact approximately 1,097 acres of aquatic resources during the 30-year permit term (Table 10-10). In the remaining 20 years of the 50-year EIS/EIR Study Period (Section 3.6.3) an estimated additional 758 acres of aquatic resources would be lost. Over the EIS/EIR 50-year study period, the Reduced Permit Term Alternative would result in the direct loss of approximately 1,856 acres of aquatic resources in the Planning Area (Table 10-8). This direct loss of aquatic resources is 124 acres greater than the direct loss of approximately 1,732 acres of aquatic resources under the No Action/No Project Alternative (Table 10-2).	Corps suggestion
10-62	would be 90 <u>110</u> acres	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
10-64	The Reduced Permit Term Alternative would result in the loss of 931 acres of wetland waters, which is 110 more acres than the 821-acre loss anticipated under the No Action/No Project Alternative. The Reduced Permit Term Alternative would result in the loss of 315 other waters, which is 44 acres less than the 359-acre loss anticipated under the No Action/No Project Alternative. The Reduced Permit Term Alternative would result in the loss of 485 acres of Riparian land cover types, which is 55 acres more than the 427 acres expected under the No Action/No Project Alternative. In total, the Reduced Permit Term Alternative would result in the loss of 1,728 acres of aquatic resources, which is 121 acres more than the loss of aquatic resources under the No Action/No Project Alternative (Table 10-4); however, preservation of aquatic resources under the Reduced Permit Term Alternative, as discussed below, is greater by 1,038 acres compared to the No Action/No Project Alternative.	Corps suggestion
10-64	regulatory framework guidelines	Corps suggestion
10-65	C onservation S strategy	Technical Edit (not in response to a comment)
10-65	acres larger more amount than is	Technical Edit (not in response to a comment)
10-65	and would systematically	Technical Edit (not in response to a comment)
10-67	and would result	Technical Edit (not in response to a comment)
10-67	would again be	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
10-69	past, and present, and reasonably foreseeable other	Technical Edit (not in response to a comment)
10-69	<u>A subset of the reasonably foreseeable other projects (e.g., foreseeable rural residential developments, agricultural activities on private lands) are likely to result in additional losses and additional adverse impacts to existing aquatic resources within the resource study area over the 50-year EIS/EIR study period. However,</u>	Corps suggestion
10-69	<u>Aadverse effectimpact</u>	Technical Edit (not in response to a comment)
10-70	<u>14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.</u>	Technical Edit (not in response to a comment)
10-70	<u>33 CFR 322.1–322.5. Permits for Structures or Work in or Affecting Navigable Waters of the United States.</u>	Technical Edit (not in response to a comment)
10-70	<u>33 CFR 328.1–328.5. Definition of Waters of the United States.</u>	Technical Edit (not in response to a comment)
10-70	<u>33 CFR 330.1–330.6. Nationwide Permit Program.</u>	Technical Edit (not in response to a comment)
10-70	<u>33 CFR 332.1–332.8. Compensatory Mitigation for Losses of Aquatic Resources.</u>	Technical Edit (not in response to a comment)
10-70	<u>40 CFR 230.1–231.98. Section 404(B)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material.</u>	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
10-70	<u>40 CFR 1500–1508. Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act and Index to Parts 1500 through 1508. In Chapter V, Council on Environmental Quality. November 28, 1978.</u>	Technical Edit (not in response to a comment)
10-71	<u>Galt. 2009b. Final Environmental Impact Report for the 2030 Galt General Plan. Final. SCH No. 2007082092. Prepared by ESA, in association with Mintier Harnish, Applied Development Economics, and Omni Means. Sacramento, California: ESA. March 2009. Accessed June 29, 2016. http://www.saclafco.org/SphereofInfluenceInformation/Documents/galtsoi/sac_024063.pdf.</u>	Technical Edit (not in response to a comment)
10-71	<u>Marty, J.T. 2005. Effects of cattle grazing on diversity in ephemeral wetlands. Conserv. Biol. 19: 1626-1632</u>	Technical Edit (not in response to a comment)
10-72	<u>Robins, J.D. and J.E. Vollmar. 2002. Livestock grazing and vernal pools. J.E. Vollmar (Ed.), Wildlife and rare plant ecology of eastern Merced County's vernal pool grasslands, Vollmar Consulting, Berkeley, CA, USA (2002), pp. 401-428</u>	Technical Edit (not in response to a comment)
10-72	<u>Smith, D.W. and W.L. Verrill. 1998. Vernal pool-soil landform relationships in the Central Valley, California. Pages 15-23 in C. W. Witham, E. T. Bauder, D. Belk, W. R. Ferren, Jr. and R. Ornduff (Editors). Ecology, Conservation, and Management of Vernal Pool Ecosystems - Proceedings from a 1996 Conference. California Native Plant Society, Sacramento, CA</u>	Technical Edit (not in response to a comment)
11-35	Adverse Impacts <u>effects</u> to	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
11-38	Adverse Impacts effects on	Technical Edit (not in response to a comment)
11-40	Cumulative Impact effect to	Technical Edit (not in response to a comment)
11-43	Cumulative Impact effect to	Technical Edit (not in response to a comment)
12-4	State Water Resources Control Board (SWRCB)	Technical Edit (not in response to a comment)
12-4	Regional Water Quality Control Boards (RWQCBs)	Technical Edit (not in response to a comment)
12-19	the Sacramento Regional County Sanitation District (Regional San)	Technical Edit
12-49	e Effect	Technical Edit (not in response to a comment)
12-49	e Effect	Technical Edit (not in response to a comment)
12-50	e Effects	Technical Edit (not in response to a comment)
12-50	e Effect	Technical Edit (not in response to a comment)
12-51	e Effect	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
12-78	<u>Regional San. 2008. Sacramento Regional Wastewater Treatment Plant Master Plan 2020: Final Executive Summary. Prepared by Carollo Engineers. Sacramento, California: Carollo Engineers. May 2008. Accessed June 28, 2016. http://www.regionalsan.com/sites/main/files/file-attachments/exec-sum_0.pdf.</u>	Technical Edit (not in response to a comment)
14-2	sets forth a	Technical Edit (not in response to a comment)
14-2	for further more information	Technical Edit (not in response to a comment)
14-3	<u>µg/m3 = micrograms per cubic meter; CO = carbon monoxide; km = kilometers; NO2 = nitrogen dioxide; PM10 = respirable particulate matter; PM2.5 = fine particulate matter; ppb = parts per billion; ppm = parts per million; SO2 = sulfur dioxide</u> µg/m3 = micrograms per cubic meter; km = kilometers; ppb = parts per billion; ppm = parts per million	Technical Edit (not in response to a comment)
14-9	and then are projected to increase very slightly	Technical Edit (not in response to a comment)
14-12	<u>CO = carbon monoxide; NO2 = nitrogen dioxide; PM10 = respirable particulate matter; PM2.5 = fine particulate matter; SO2 = sulfur dioxide</u>	Technical Edit (not in response to a comment)
14-13	<u>Averaging Time</u>	Technical Edit (not in response to a comment)
14-20	Service, and/or U.S.	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
14-21	require very little	Technical Edit (not in response to a comment)
14-22	rules for the purpose of to reducing dust	Technical Edit (not in response to a comment)
14-23	significance per <u>according to</u> the	Technical Edit (not in response to a comment)
14-23	VMT traveled within	Technical Edit (not in response to a comment)
14-25	for further <u>more</u> information	Technical Edit (not in response to a comment)
14-25	emissions; <u>therefore</u> , so they	Technical Edit (not in response to a comment)
14-27	practices and or regulatory	Technical Edit (not in response to a comment)
14-32	Cumulative impact <u>effect</u>	Technical Edit (not in response to a comment)
14-33	Alternative—, and <u>as well as the</u>	Technical Edit (not in response to a comment)
14-33	Strategy of <u>for</u> the	Technical Edit (not in response to a comment)
14-33	3.6.3); <u>therefore</u> , so the	Technical Edit (not in response to a comment)
14-40	EPA (U.S. Environmental Protection Agency). 2012. 77 FR 64036–64039.	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
15-1	effects <u>affects</u>	Technical Edit (not in response to a comment)
15-1	<u>Greenhouse Gas</u> GHG	Technical Edit (not in response to a comment)
15-1	Environmental Quality (CEQ)	Technical Edit (not in response to a comment)
15-2	metric tons of carbon dioxide equivalent	Technical Edit (not in response to a comment)
15-2	public.” <u>(0000).</u>	Technical Edit (not in response to a comment)
15-2	adap <u>t</u> s	Technical Edit (not in response to a comment)
15-2	addresses <u>es</u>	Technical Edit (not in response to a comment)
15-2	^[1] <u>Note that in the context of this Plan, the word “establish” is synonymous with “create.”</u>	Technical Edit (not in response to a comment)
15-3	<u>(California Health and Safety Code, Section 38551):“ (a) . . .</u>	Technical Edit (not in response to a comment)
15-3	“(California Health and Safety Code, Division 25.5, Part 3, Section 38551).”	Technical Edit (not in response to a comment)
15-3	(<u>C</u> ARB)	Technical Edit (not in response to a comment)
15-3	CO ₂ -equivalent (CO₂e- <u>further</u>	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
15-3	of	Technical Edit (not in response to a comment)
15-3	<u>C</u> ARB's	Technical Edit (not in response to a comment)
15-3	<u>C</u> ARB	Technical Edit (not in response to a comment)
15-4	<u>C</u> ARB	Technical Edit (not in response to a comment)
15-4	[degrees Celsius]	Technical Edit (not in response to a comment)
15-4	[degrees Celsius]	Technical Edit (not in response to a comment)
15-4	[degrees Fahrenheit]	Technical Edit (not in response to a comment)
15-4	[degrees Fahrenheit]	Technical Edit (not in response to a comment)
15-4	Pprogram	Technical Edit (not in response to a comment)
15-4	strengthen <u>ing of</u>	Technical Edit (not in response to a comment)
15-4	32,	Technical Edit (not in response to a comment)
15-4	above <u>previously</u>	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
15-4	<u>California</u>	Technical Edit (not in response to a comment)
15-5	<u>C</u> ARB	Technical Edit (not in response to a comment)
15-5	<u>s</u> State's	Technical Edit (not in response to a comment)
15-5	<u>Planning Area</u> project area	Technical Edit (not in response to a comment)
15-5	below	Technical Edit (not in response to a comment)
15-6	<u>[C]</u> ARB	Technical Edit (not in response to a comment)
15-7	<u>[C]</u> ARB	Technical Edit (not in response to a comment)
15-8	<u>Greenhouse Gas</u> GHG	Technical Edit (not in response to a comment)
15-8	about approximately one 1	Technical Edit (not in response to a comment)
15-9	<u>which are</u>	Technical Edit (not in response to a comment)
15-9	Metric Tons <u>MT</u>	Technical Edit (not in response to a comment)
15-9	<u>Notes: CO2e = carbon dioxide equivalent; MT = metric tons</u>	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
15-10	°F to 7 degrees Fahrenheit (°F)	Technical Edit (not in response to a comment)
15-10	°F	Technical Edit (not in response to a comment)
15-11	(<i>Pinus longaeva</i>)	Technical Edit (not in response to a comment)
15-11	as because	Technical Edit (not in response to a comment)
15-12	The	Technical Edit (not in response to a comment)
15-12	e.g., i.e.,	Technical Edit (not in response to a comment)
15-12	conceptual planned	Technical Edit (not in response to a comment)
15-12	(CalEEMod)	Technical Edit (not in response to a comment)
15-13	<u>Modeling Data and Assumptions for Air Quality and Greenhouse Gas Analyses</u> AQ and GHG Data.	Technical Edit (not in response to a comment)
15-13	above previously	Technical Edit (not in response to a comment)
15-14	below	Technical Edit (not in response to a comment)
15-14	thresholds	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
15-14	as well as for <u>and</u>	Technical Edit (not in response to a comment)
15-14	above <u>previously</u>	Technical Edit (not in response to a comment)
15-14	will considers	Technical Edit (not in response to a comment)
15-14	will presents	Technical Edit (not in response to a comment)
15-15	in	Technical Edit (not in response to a comment)
15-15	<u>; therefore,</u> so	Technical Edit (not in response to a comment)
15-16	<u>U</u> rban <u>S</u> services <u>B</u> oundary	Technical Edit (not in response to a comment)
15-16	above <u>previously</u>	Technical Edit (not in response to a comment)
15-16	<u>resource</u> regulatory	Technical Edit (not in response to a comment)
15-16	USFWS <u>U.S. Fish and Wildlife Service</u> and/or USACE <u>U.S. Army Corps of Engineers</u>	Technical Edit (not in response to a comment)
15-16	as <u>since</u>	Technical Edit (not in response to a comment)
15-17	of	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
15-17	of	Technical Edit (not in response to a comment)
15-17	Climate <u>climate</u>	Technical Edit (not in response to a comment)
15-17	Change <u>change</u>	Technical Edit (not in response to a comment)
15-17	given the fact that <u>because</u>	Technical Edit (not in response to a comment)
15-17	<u>those</u>	Technical Edit (not in response to a comment)
15-18	given the fact that <u>because</u>	Technical Edit (not in response to a comment)
15-18	<u>those</u>	Technical Edit (not in response to a comment)
15-18	is <u>was</u>	Technical Edit (not in response to a comment)
15-18	above <u>previously</u>	Technical Edit (not in response to a comment)
15-18	above <u>previously</u>	Technical Edit (not in response to a comment)
15-18	thus	Technical Edit (not in response to a comment)
15-19	<u>Acres of Direct Impacts to Each Natural Land Cover Under the No Action/No Project Alternative</u>	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
15-19	Estimated Direct Impacts to Natural Land Cover Types under the No Action/No Project Alternative	Technical Edit (not in response to a comment)
15-19	transporting <u>transportation of</u>	Technical Edit (not in response to a comment)
15-19	than <u>from</u>	Technical Edit (not in response to a comment)
15-20	, so as	Technical Edit (not in response to a comment)
15-20	Alternative <u>alternative</u>	Technical Edit (not in response to a comment)
15-20	of	Technical Edit (not in response to a comment)
15-20	of	Technical Edit (not in response to a comment)
15-20	<u>those</u>	Technical Edit (not in response to a comment)
15-22	above <u>previously</u>	Technical Edit (not in response to a comment)
15-22	thus	Technical Edit (not in response to a comment)
15-22	above <u>previously</u>	Technical Edit (not in response to a comment)
15-22	<u>Expected Direct Impacts to Natural Land Covers – Proposed Action/Proposed Project Alternative</u>	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter- Page	Edits	Reason for Edits
15-22	Direct and Indirect Effects on Natural Land Cover – Proposed Action/Proposed Project Alternative	Technical Edit (not in response to a comment)
15-22	As <u>C</u> ompared	Technical Edit (not in response to a comment)
15-23	above <u>previously</u>	Technical Edit (not in response to a comment)
15-23	above <u>previously</u>	Technical Edit (not in response to a comment)
15-24	, and also discussed	Technical Edit (not in response to a comment)
15-25	<u>Habitat Conservation Plan (HCP)</u>	Technical Edit (not in response to a comment)
15-25	<u>; therefore,</u> , so	Technical Edit (not in response to a comment)
15-25	would be	Technical Edit (not in response to a comment)
15-25	also	Technical Edit (not in response to a comment)
15-26	from	Technical Edit (not in response to a comment)
15-26	as	Technical Edit (not in response to a comment)
15-27	above <u>previously</u>	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter- Page	Edits	Reason for Edits
15-27	these	Technical Edit (not in response to a comment)
15-27	above <u>previously</u>	Technical Edit (not in response to a comment)
15-27	thus	Technical Edit (not in response to a comment)
15-28	<u>Expected Direct Impacts to Natural Land Covers – Reduced Permit Term Alternative</u>	Technical Edit (not in response to a comment)
15-28	Expected Loss of Natural Land Cover Types – Reduced Permit Term Alternative	Technical Edit (not in response to a comment)
15-28	above <u>previously</u>	Technical Edit (not in response to a comment)
15-28	these	Technical Edit (not in response to a comment)
15-29	to <u>on</u>	Technical Edit (not in response to a comment)
15-29	above <u>previously</u>	Technical Edit (not in response to a comment)
15-29	above <u>previously</u>	Technical Edit (not in response to a comment)
15-29	I Although, if	Technical Edit (not in response to a comment)
16-2	and healthful environment	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter-Page	Edits	Reason for Edits
16-10	Spanish culture real or origin	Technical Edit (not in response to a comment)
16-18	finding <u>on</u> whether	Technical Edit (not in response to a comment)
16-18	and hous <u>inge</u>	Technical Edit (not in response to a comment)
16-18	Section 16.2. <u>12.1</u>	Technical Edit (not in response to a comment)
16-31	REFERENCES CITED IN THIS CHAPTER	Technical Edit (not in response to a comment)
16-1	and 16. <u>12.21</u>	Technical Edit (not in response to a comment)
16-1	action <u>a</u> effect	Technical Edit (not in response to a comment)
16-1	justice effect	Technical Edit (not in response to a comment)
17-2	Wetlands and Waters of the U.S. and State <u>Aquatic Resources</u>	Technical Edit (not in response to a comment)
17-2	and Utilities <u>Facilities</u>	Technical Edit (not in response to a comment)
17-3	have effects <u>an impact</u> on	Technical Edit (not in response to a comment)
17-4	the proposed <u>ed project</u> al	Technical Edit (not in response to a comment)

TABLE 19-2: FINAL EIS/EIR TECHNICAL EDIT/CHANGE LOG

Chapter- Page	Edits	Reason for Edits
17-4	potential <u>for</u> each	Technical Edit (not in response to a comment)
17-6	<u>of the CEQA Guidelines</u> states	Technical Edit (not in response to a comment)
17-8	and <u>measureable</u> objectives	Technical Edit (not in response to a comment)
17-9	REFERENCES CITED IN THIS CHAPTER	Technical Edit (not in response to a comment)

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