Santa Clara Valley Habitat Plan
Final Environmental Impact Report/ Environmental Impact Statement

Volume I

Santa Clara County, California

CEQA Lead Agencies
County of Santa Clara
City of San José
City of Morgan Hill
City of Gilroy
Santa Clara Valley Water District
Santa Clara Valley Transit Authority

CEQA Responsible Agency
California Department of Fish and Game

NEPA Lead Agency
U.S. Fish and Wildlife Service

August 2012

Lead Agencies:
County of Santa Clara
City of San José
City of Morgan Hill
City of Gilroy
Santa Clara Valley Water District
Santa Clara Valley Transportation Authority

United States Fish and Wildlife Service

Final Environmental Impact Report and Environmental Impact Statement for the Santa Clara Valley Habitat Plan

August 2012

Abstract

This document evaluates the environmental consequences of issuing an incidental take permit under the federal Endangered Species Act and implementing land and infrastructure development and related activities, generally within Santa Clara County, California, pursuant to a proposed Habitat Conservation Plan/Natural Communities Conservation Plan. Net benefits to most biological resources are expected compared to "business-as-usual." The conservation program would have minor impacts to other resources, which can be mitigated to less-than-significant.

For further information and to submit comments, contact:

Cori Mustin
Senior Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
Sacramento Field Office
2800 Cottage Way, Room W-2605
Sacramento, CA 95825
(916) 414-6600
cori_mustin@fws.gov

Ken Schreiber
Program Manager
County of Santa Clara
County Government Center, East Wing – 11th Floor
70 W. Hedding Street
San José, California 95110
(408) 299-5789
ken.schreiber@ceo.sccgov.org

Executive Summary

ES 1.0 Introduction

This document is the joint Environmental Impact Report (EIR) and Environmental Impact Statement (EIS) for the Santa Clara Valley Habitat Conservation Plan/Natural Community Conservation Plan (Habitat Plan), pursuant to the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA).

Six local government organizations in the Santa Clara Valley area – the Local Partners – have applied for an Incidental Take Permits (ITP) pursuant to the Federal Endangered Species Act (FESA).[1] The U.S. Fish and Wildlife Service (USFWS) is the federal Lead Agency under NEPA for considering the Local Partners' application. The USFWS will consider the application, including the required conservation plan (i.e., the Habitat Plan) and Implementing Agreement (IA), pursuant to FESA issuance criteria. Issuance of the ITP, and subsequent implementation of the Habitat Plan consistent with the IA, is the Proposed Action considered in this EIR/EIS.

The Local Partners also prepared the Habitat Plan to satisfy the requirements of the State Natural Community Conservation Planning (NCCP) Act. The California Department of Fish and Game (CDFG) is a CEQA Responsible Agency in this process, and will be considering action to approve the Habitat Plan consistent with the requirements of the California Fish and Game Code, including the NCCP Act.

Permits issued by the USFWS and CDFG (jointly the Wildlife Agencies) would authorize incidental take of 18 plant and animal species included in the Habitat Plan.[2] Incidental take of these Covered Species would be authorized for a range of activities conducted by the Local Partners and described in the Habitat Plan. These Covered Activities are most of the anticipated actions that the Local Partners expect to undertake or authorize in the Santa Clara Valley area during the next 50 years (the proposed term of the permits).[3] Permit issuance would establish a regional reserve system as described in the Habitat Plan, and would address and satisfy immediate and future regulatory compliance needs of the Local Partners and the Wildlife Agencies.

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[1] The Local Partners are the County of Santa Clara, City of San José, City of Morgan Hill, City of Gilroy, Santa Clara Valley Water District (SCVWD), and Santa Clara Valley Transportation Authority (VTA). Each of the Local Partners is a Lead Agency for CEQA review.

[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] For most species, the Permit Area would be 460,205 acres, encompassing most of the Santa Clara Valley and surrounding areas and excluding State Park lands. For burrowing owls, the Permit Area would be 508,699 acres, including an expanded conservation area specifically for burrowing owls. Section 1.2 describes the Permit Area and the similar area (the Study Area – 519,506 acres) used to encompass the range of Covered Activities and to develop the Habitat Plan conservation strategy.

ES 2.0 Proposed Action and Alternatives

The Proposed Action was developed by the Local Partners in consultation with the USFWS and CDFG, and is intended to address the conservation needs of the 18 Covered Species based on implementation of seven categories of Covered Activities: urban development, instream capital projects, instream operations and maintenance activities, rural capital projects, rural project operations and maintenance, rural development, and conservation strategy implementation.

The Proposed Action includes a comprehensive framework for impact mitigation and conservation, developed to address the impacts of the seven categories of Covered Activities on the 18 Covered Species. Key elements of the conservation strategy are summarized as follows:

- Some of the Covered Activities would be constrained by additional avoidance requirements, including limitations on the amount of serpentine grassland that could be developed and prohibitions on take of some newly discovered plant occurrences. Other activities could be constrained by caps placed on the amount of suitable habitat that could be developed.
- Land cover conversions from urbanization and related infrastructure improvement projects would occur consistent with a series of conditions intended to minimize the effects of the activity.
- Habitat would be preserved via the Reserve System, which would be sized to mitigate impacts to all Covered Species resulting from all Covered Activities, to ensure preservation of natural communities, and to contribute to the recovery of Covered Species. The Reserve System would include up to 46,920 acres, mostly from acquisition of private lands from willing sellers.
- The Reserve System would be assembled in a coordinated manner to maximize the potential for larger-scale conservation of natural communities and the preservation (and enhancement) of opportunities for species to move between areas of suitable habitat.
- The Habitat Plan requires implementation of various habitat enhancement, restoration, and creation activities for lands in the Reserve System.
- The Reserve System would be assembled according to a schedule that ensures that an appropriate amount of compensatory habitat is provided in rough step with Covered Activity impacts.
- The Reserve System would be managed in a coordinated manner, including a comprehensive monitoring and reporting program and a series of required studies to provide needed data to enhance scientific understanding and ensure compliance.
- Performance standards would be established to ensure that the Reserve System successfully mitigates the impacts of the Covered Activities, including occupancy requirements for some of the Covered Species.

The Proposed Action is summarized in more detail in Section 2.4 of this document. In addition, this EIR/EIS is being circulated for review along with the Habitat Plan and IA, and these documents are incorporated by reference into this EIR/EIS.

This EIR/EIS also evaluates impacts of an alternative (Alternative A) that would reduce the proposed term of the permits from 50 years to 30 years. Most of the modified Habitat Plan under Alternative A would be the same as or similar to the Proposed Action, but the shorter permit term would limit the scale of the conservation strategy (e.g., the Reserve System would be smaller), and some of the Local Partner activities that are anticipated occur in the future (i.e., more than 30 years from now) would not be Covered Activities under Alternative A. Under Alternative A, the Reserve System would be 36,964 acres, rather than 46,920 acres under the Proposed Action).

In this EIR/EIS, the impacts of the Proposed Action and Alternative A are compared to a No Action Alternative, which is based on a "business-as-usual" approach to addressing the existing regulatory requirements associated with the proposed Covered Species. Under the No Action Alternative, urbanization and associated infrastructure improvements would continue to occur in the Santa Clara Valley area – similar to the Proposed Action. Biological resources impacts would be considered only for projects with a discretionary action by one of the Local Partners, or with a potential to adversely affect listed species. Impacts and mitigation measures would be determined on a case-by-case basis, with no regional framework for impact avoidance, minimization, and mitigation.

ES 3.0 Environmental Consequences

The Proposed Action would provide a basis for the Local Partners to coordinate and standardize the process for permitting and mitigating the take of Covered Species within the Permit Area. Approval of the permits would result in implementing this regional conservation strategy to ensure the protection of Covered Species and their habitat within the Permit Area. In general, biological resources conservation under the Proposed Action or Alternative A would be better than under the No Action Alternative. Impacts to biological resources would be similar to or less than the No Action Alternative, and mitigation for these impacts would be superior to the No Action Alternative. Table ES-1 and ES-2 summarize the impacts evaluated in this EIR/EIS, including impacts to biological resources and other resources potentially affected by the Proposed Action and alternatives.

TABLE ES- 1
Summary of Impacts to Species Considered (Proposed Action and Alternative A)[a]

Species	Covered Species?	Project Impacts	Cumulative Effects (NEPA)[b]	Cumulative Effects (CEQA)[c]
Bay checkerspot butterfly	Yes	B	B	B
Opler's longhorn moth	No	B	B	B
Foothill yellow-legged frog	Yes	B	LTS	LTS
Fish (North County)[d]	No	B	LTS	LTS
Fish (South County)[e]	No	B	LTS	LTS
California tiger salamander	Yes	B	LTS	LTS
California red-legged frog	Yes	B	LTS	LTS
Western pond turtle	Yes	B	LTS	LTS
California whipsnake	No	B	LTS	LTS
Golden eagle	No	B	LTS	LTS
Burrowing owl	Yes	B	LTS	LTS
Least Bell's vireo	Yes	B	LTS	LTS
Tricolored blackbird	Yes	B	LTS	LTS
Bank swallow	No	B	LTS	LTS
Townsend's big-eared bat	No	B	LTS	LTS
Pallid bat	No	B	LTS	LTS
San Francisco dusky-footed woodrat	No	B	LTS	LTS
San Joaquin kit fox	Yes	B	S	LTS
American badger	No	B	S	LTS
Serpentine Plants[f]	Yes	B	B	B
Bigscale balsamroot	No	B	B	B
Chaparral harebell	No	B	B	B
Congdon's tarplant	No	B	B	B
San Francisco collinsia	No	B	B	B
Loma Prieta hoita	Yes	B	B	B
Hall's bush-mallow	No	B	B	B
Santa Cruz Mountains beardtongue	No	B	B	B

[a]Impact significance under the Proposed Action and Alternative A are *relative to* the No Action Alternative

[b]Cumulative impact significance under NEPA is from past, present, and reasonably foreseeable future actions.

[c]Cumulative impact significance under CEQA is the project's contribution to cumulative effects.

[d]Central California coastal steelhead, Central Valley fall-run Chinook salmon, and Pacific lamprey.

[e]South Central California coastal steelhead, Pacific lamprey, and Monterey roach.

[f]Tiburon Indian paintbrush, Coyote ceanothus, Mount Hamilton thistle, Santa Clara Valley dudleya, fragrant fritillary, smooth lessingia, Metcalf Canyon jewelflower, and most beautiful jewelflower

Key: S = Significant Adverse Impact. LTS = Less than Significant Impact. B = Beneficial Impact

TABLE ES-2
Summary of Impacts to Other Resources Considered (Proposed Action and Alternative A)[a]

Resource	Project Impacts	Cumulative Effects (NEPA)[b]	Cumulative Effects (CEQA)[c]
Land Use	LTS	S	LTS
Agriculture	S	S	LTS
Mitigation Measures to reduce impacts of the Proposed Action and Alternative A to a less-than-significant level: MM 7-1 – Mitigation for the conversion of prime farmland for habitat restoration shall consist of replacing the lost farmland acreage on a one-to-one (1:1) basis. For every acre of prime farmland lost, the Implementing Entity shall demonstrate that at least an equivalent amount of prime farmland of substantially similar quality and character has been permanently protected for purposes of continued farming by land acquisitions or conservation easements.			
Public Services	LTS	LTS	LTS
Recreation	B	B	B
Hydrology and Water Quality	B	LTS	LTS
Hazardous Materials	S	LTS	LTS
Mitigation Measures to reduce impacts of the Proposed Action and Alternative A to a less-than-significant level: MM 11-1 – Conduct Phase 1 Environmental Site Assessment prior to certification of a reserve site. MM 11-2 – Include contingency plan in reserve unit management plans for unexpected discovery of hazardous materials during Reserve System management.			
Socioeconomics and Environmental Justice	LTS	LTS	LTS
Cultural Resources	S	S	LTS
Mitigation Measures to reduce impacts of the Proposed Action and Alternative A to a less-than-significant level: MM 13-1 – In consultation with the USFWS, the Implementing Entity will prepare a Cultural Resources Management Plan to ensure that implementation of the Habitat Plan would not result in significant impacts to historic properties.			
Transportation and Circulation	S	LTS	LTS
Mitigation Measure to reduce impacts of the Proposed Action and Alternative A to a less-than-significant level: MM 14-1 – Implement traffic control plan when conducting stream restoration activities in areas with primarily local residential traffic or with existing bikeways.			
Noise	S	LTS	LTS
Mitigation Measure to reduce impacts of the Proposed Action and Alternative A to a less-than-significant level: MM 15-1 – Implement restrictions on construction activity prior to initiating stream restoration, pond creation, or other projects requiring the use of earthmoving or similar heavy equipment when such activity occurs within 1,600 feet of residential areas or other areas with sensitive receptors.			
Air Quality and Greenhouse Gases	LTS	LTS	LTS
Mineral Resources	LTS	LTS	LTS
Wildfires	LTS	LTS	LTS

[a]Impact significance under the Proposed Action and Alternative A are *relative to* the No Action Alternative.

[b]Cumulative impact significance under NEPA is from past, present, and reasonably foreseeable future actions.

[c]Cumulative impact significance under CEQA is the project's contribution to cumulative effects.

Key: S = Significant Adverse Impact. LTS = Less than Significant Impact. B = Beneficial Impact

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Acronyms and Abbreviations

CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
EIR/EIS	Environmental Impact Report/Environmental Impact Statement
FESA	Federal Endangered Species Act
Habitat Plan	Santa Clara Valley Habitat Conservation Plan/Natural Community Conservation Plan
HCP	Habitat Conservation Plan
IA	Implementing Agreement
ITP	Incidental Take Permit
MOU	Memorandum of Understanding
NCCP Act	California Natural Community Conservation Planning Act of 1991
NEPA	National Environmental Policy Act
NMFS	National Oceanic and Atmospheric Administration, National Marine Fisheries Service
NOI	Notice of Intent
NOP	Notice of Preparation
ROD	Record of Decision
RWQCB	San Francisco Bay Regional Water Quality Control Board
SCVWD	Santa Clara Valley Water District
SPHO	State Historic Preservation Officer
USACE	United States Army Corps of Engineers
USC	United States Code
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VTA	Santa Clara Valley Transportation Authority

CHAPTER 1

Introduction

Pursuant to the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA), this joint Environmental Impact Report/Environmental Impact Statement (EIR/EIS) evaluates the impacts associated with issuing permits (described below) and implementing the joint Habitat Conservation Plan (HCP) and Natural Community Conservation Plan (NCCP) for the Santa Clara Valley.

This Final EIR/EIS updates the Draft EIR/EIS, which was circulated for 120-day public review and comment period starting on December 10, 2010. The description of the Proposed Action (see Section 2.4) has been updated to reflect changes to the proposed HCP/NCCP, which have been made in response to comments. These changes include removal of three of the proposed covered species, updated calculations of land cover, clarified text for lands not subject to plan implementation processes, and similar updates to the version of the plan that was circulated for public review in December 2010. Many of the plan updates address plan costs, fees and other implementation and plan management processes of limited importance to the consideration of environmental impacts. Overall, the environmental impacts of the Proposed Action were reduced relative to the impacts described in the Draft EIR/EIS as a result of the reduced scope of the Proposed Action. Comments from the public review period, and responses to comments, are presented in Volume 2 of this document.

1.1 Project Overview

On July 31, 2001, the U.S. Fish and Wildlife Service (USFWS) issued a consolidated Biological Opinion addressing several infrastructure and development projects under consideration.[1] As described in the Project Description section of the Biological Opinion, the County of Santa Clara (County), City of San José, Santa Clara Valley Water District (SCVWD), and Santa Clara Valley Transportation Authority (VTA) made a commitment to develop a joint HCP/NCCP to address future development within the County.

Subsequently, the County, the City of San José, SCVWD, and VTA entered into discussions that led to the signing of a Memorandum of Understanding (MOU) in June 2004 to prepare a joint HCP/NCCP (City of San José et al., 2004). Soon after the MOU was signed, these local agencies entered negotiations with the California Department of Fish and Game (CDFG) to develop a Planning Agreement, which is a requirement of the NCCP Act.

Two other municipalities – the City of Morgan Hill and the City of Gilroy – joined the process in 2005. Collectively, the six local agencies are called the Local Partners.

All six Local Partners signed the Planning Agreement on October 20, 2005 (County of Santa Clara et al., 2005), with subsequent signatures by the USFWS and CDFG. The purpose of the

[1] The July 31, 2001 Biological Opinion addressed the following projects: U.S. Highway 101 Widening, Route 85/U.S. Highway 101 South Interchange, Riparian and Wetland Consolidated Biological Mitigation Project, Bailey Avenue Extension/U.S. Highway 101 Interchange, and the Coyote Valley Research Park projects.

Planning Agreement was to lay the groundwork for development of an HCP/NCCP. Specifically, the Planning Agreement achieved the following:

- Defined the signatories' goals and obligations with respect to development of the joint HCP/NCCP.
- Created a preliminary description of the geographic scope, natural communities and species, and conservation objectives for the joint HCP/NCCP.
- Ensured coordination between the Local Partners, USFWS, and CDFG.
- Encouraged concurrent planning for wetlands.
- Established a process for inclusion of scientific input and public participation.

The Planning Agreement defined the intent of the joint HCP/NCCP to satisfy the requirements for an HCP under Section 10 of the federal Endangered Species Act (FESA) and an NCCP under the state NCCP Act. Pursuant to the Planning Agreement, the role of the Local Partners has been to manage and fund development of the joint HCP/NCCP in consultation with the USFWS and CDFG. Pursuant to FESA Section 10(a)(1)(B), the approved HCP/NCCP and associated permits—Incidental Take Permits (ITPs)—would authorize incidental take of federally listed species. The approved HCP/NCCP also would enable CDFG to authorize take of species consistent with the NCCP Act and Section 2835 of the California Fish and Game Code. The USFWS and CDFG are referred to in this document as the Wildlife Agencies.

With this background, the Local Partners prepared an HCP/NCCP, hereinafter referred to as the Habitat Plan. The Habitat Plan is described in Chapter 2, Proposed Action and Alternatives, as a key component of the "proposed action" that is evaluated in this EIR/EIS.

1.2 Study Area and Permit Area

The Local Partners began the planning process by defining a broad area as the area for which incidental take coverage would be needed. The Study Area is defined as the area in which all of the proposed "Covered Activities" would occur, impacts would be evaluated, and the conservation strategy would be implemented. It is also the Study Area for this EIR/EIS.

The Study Area lies within Santa Clara County, as shown in Figure 1-1. Santa Clara County has a land area of approximately 835,449 acres; the Study Area encompasses 519,506 acres, or approximately 62 percent of the County (Figure 1-2). The boundary of the Study Area was based on political, ecological, and hydrologic factors. Watersheds of the Study Area include the Coyote Creek watershed (except for the Baylands), a large portion of the Guadalupe River watershed, and those portions of Llagas and Uvas Creeks and the Pajaro River within Santa Clara County.

The northern edge of the Study Area is defined by the boundary of Alameda and Santa Clara Counties, excluding the City of Milpitas and lands to the north owned by the San Francisco Public Utilities Commission (SFPUC). Lands in Joseph D. Grant County Park and Mount Madonna County Park outside the Coyote Creek and Llagas, Uvas, and Pajaro

watersheds are included in the Study Area, marking the eastern and southwestern boundaries, respectively. This allows full coverage of activities in these County parks.

Tulare Hill, the Santa Teresa Hills, and the Calero Reservoir area, all within the Guadalupe River watershed, are included in the Study Area to ensure inclusion of serpentine soils and all occupied and potential habitat for Bay checkerspot butterfly, one of the primary species considered in the Habitat Plan. Almaden Quicksilver County Park is included in the Study Area to ensure inclusion of additional serpentine habitat, which supports a disproportionately high number of Habitat Plan species, particularly plants. Lands along Los Gatos Creek upstream through Vasona County Park, owned by SCVWD, and County Parks are included in the Study Area to allow additional coverage of activities by these agencies.

The entire City of San José, with the exception of the Baylands including Alviso, lies within the Study Area. The northern boundary of the Study Area in San José was defined to exclude current and historic tidally influenced areas. This line was drawn with reference to December 2005 color aerial photographs, historic maps of tidal areas (SFEI, 2006), and data from the Baylands Ecosystem Goals Project (Goals Project, 1999). San José's Baylands were excluded from the Study Area to avoid covering species restricted to salt marshes and other saline habitats, which would significantly complicate the Habitat Plan.

Upon completion of this process and the issuance of an ITP, incidental take coverage would be provided within a defined Permit Area that would be somewhat different than the Study Area. There would be two Permit Areas – one for the western burrowing owl and one for the other species addressed in the Habitat Plan.[2] The western burrowing owl Permit Area would be comprised of the Study Area minus Henry W. Coe State Park and Pacheco State Park, and would include the Expanded Study Area for Burrowing Owl Conservation. The total size of the Permit Area for the burrowing owl would therefore be 508,669 acres. The Permit Area for the remaining Covered Species would be comprised of the Study Area minus Henry W. Coe State Park and Pacheco State Park. The total size of the Permit Area for all Covered Species with the exception of the western burrowing owl would therefore be 460,205 acres.

1.3 Roles and Responsibilities

The County facilitated preparation of the Habitat Plan and shares the CEQA Lead Agency role with the five other Local Partners. The Local Partners would be responsible for adopting the Habitat Plan, certifying the EIR, making findings pursuant to CEQA, and executing the Implementing Agreement. The Local Partners would rely on the proposed Habitat Plan for the federal ITP under FESA and state take permits under the California Fish and Game Code. CDFG is a CEQA Responsible and Trustee Agency.

The USFWS is the federal Lead Agency pursuant to NEPA. USFWS would consider issuing a federal ITP to the Local Partners, and CDFG would consider issuing take authorization to Local Partners pursuant to the California Fish and Game Code.

[2] The Permit Area may include other small areas where a parcel acquired for conservation purposes straddles the mapped Permit Area as long as more than half of each parcel is contained in the Permit Area. These additional areas would not exceed 250 acres (see Habitat Plan Section 1.2.2).

Under the terms of the permits, an Implementing Agreement, and the Habitat Plan, the take of species addressed in the Habitat Plan (the Covered Species) would be authorized for activities described in the Habitat Plan (the Covered Activities). The term of the permits would be 50 years. The Local Partners may choose to apply for renewal of the permits prior to the end of the Permit Term subject to any regulatory or statutory provisions in effect at the time of renewal.

1.4 Relationship between Habitat Plan and EIR/EIS

The Proposed Action evaluated in this EIR/EIS was derived from the following information contained in the Habitat Plan: Study Area boundaries, purpose and objectives, and Covered Activities. In addition to the Covered Species described in the Habitat Plan, the EIR/EIS considers other species that may be affected by permit issuance. The EIR/EIS also evaluates a range of reasonable alternatives that may result in more, less, different, or similar effects to the environment in comparison to the Habitat Plan. Finally, the EIR/EIS identifies potentially significant impacts on other resources that could occur directly or indirectly with implementation of the proposed action or alternatives. For all potentially significant impacts resulting from the proposed action or alternatives, the EIR/EIS identifies mitigation measures where feasible to reduce these impacts to a level below significance.

The USFWS and the Local Partners are providing this EIR/EIS to stakeholders, the public, and local agencies for review. Upon completion of the waiting period, the USFWS will prepare a Record of Decision (ROD) certifying the completion of the document and its selection of an alternative for implementation. Similarly, the Local Partners will consider adopting the Habitat Plan and subsequently prepare a Notice of Determination certifying the completion of the CEQA process.

1.5 Purpose & Need and Goals & Objectives

NEPA (40 CFR 1502.13) requires an EIS to briefly describe the underlying purpose and need for the Agency's proposed and alternative actions. Similarly, CEQA Section 15124[b] requires an EIR to contain a statement of the goals and objectives of the project proponents.

The Local Partners are proposing to carry out activities detailed in the following planning documents:

- City of San José General Plan.
- City of Morgan Hill General Plan.
- City of Gilroy General Plan.
- County of Santa Clara General Plan.
- Coyote Watershed Stream Stewardship Plan.
- SCVWD Flood Protection and Stream Stewardship Program.
- South County Airport Master Plan.
- Strategic Plan for the Santa Clara County Parks and Recreation System.
- Valley Transportation Plan 2035.

The Local Partners consolidated the activities necessary to implement these planning documents into the following seven categories of Covered Activities – urban development,

instream capital projects, instream operations and maintenance, rural capital projects, rural operation and maintenance, rural development, and conservation strategy implementation. These seven categories of activities are proposed for coverage under the Habitat Plan. Activities associated with these seven categories of Covered Activities may result in the incidental take of species currently listed under FESA and CESA as well as species that are not currently listed but may become listed during the Permit Term. As a result, the six Local Partners have applied for ITPs pursuant to Section 10(a)(1)(b) of FESA and Section 2800 *et seq* of California Fish and Game Code.

In response to the application, the USFWS is proposing to issue an incidental take permit for species currently listed under FESA as well as species that are not currently listed but may become listed during the Permit Term. The purpose of the federal action is to comprehensively protect and conserve multiple species and to conserve, enhance, and restore the habitat and ecosystems upon which these species depend to ensure their long-term survival in the Study Area.

The following goals and objectives further clarify the purpose of the proposed action.

- Provide a streamlined permitting process while ensuring improved conservation.
- Provide a comprehensive means to coordinate and standardize the mitigation and compensation requirements of FESA, CESA, CEQA, NEPA, the NCCP Act, and other applicable laws and regulations relating to biological and natural resources within the Study Area so that public and private actions will be governed equally and consistently, thereby reducing delays, expenses, and regulatory duplication.
- Assemble and maintain a reserve system within the Study Area that focuses on preservation and enhancement actions that provide for the protection of species, natural communities, and ecosystems on a landscape level.

1.6 Public and Agency Involvement

1.6.1 EIR/EIS Public Outreach

Public Notices – Scoping

Public scoping began on September 6, 2007 with the publication of a Notice of Intent (NOI) in the *Federal Register* (pursuant to NEPA) and a Notice of Preparation (NOP) with the State Clearinghouse (pursuant to CEQA). These documents are provided in Appendix B. The NOP was also published in the *San José Mercury News, Morgan Hill Times*, and *Gilroy Dispatch* newspapers; posted on the project Web site (www.scv-habitatplan.org); and distributed to a mailing list of 543 recipients in and around Santa Clara County. The mailing list included participants from past planning projects in the area, from ongoing stakeholder meetings, and from local and state agencies.

The NOI and NOP notified the public of the proposed Habitat Plan, the intent to prepare the EIR/EIS, and the public meeting held on September 26, 2007. Details of the project were provided to introduce the proposal to the public. Finally, these notices informed the public that written comments would be accepted for 47 days until October 22, 2007 and outlined the various ways to provide input to the planning process. The NOP included a map of the

Study Area and a list of the Covered Species. A media advisory was distributed to approximately 25 local media, including newspapers and radio and television broadcasters. Confirmatory calls were made and emails were sent the week of the meeting to reporters at San José Mercury News, San Francisco Chronicle, Pinnacle News, Morgan Hill Times, and Gilroy Dispatch.

Public Notices – Draft EIR/EIS

On December 10, 2010, the USFWS published a Notice of Availability for the Habitat Plan and Draft EIR/EIS in the Federal Register. This started a public comment period of approximately 120 days. Similarly, the Local Partners advertised the documents to stakeholders and the general public, including notices in local newspapers. Two public meetings were held during the comment period – February 9, 2010 in Morgan Hill, and February 15, 2011 in Palo Alto. Project Web Site

A public Web site was created to keep the public informed and involved during the development of the Habitat Plan and the environmental review process. The Web site can be accessed at: www.scv-habitatplan.org. Documents, maps, photos, and a Frequently Asked Questions section on the Web site provide the public with project information. A link is dedicated to public involvement and includes a calendar; information on the liaison, stakeholder, and public meetings; and a form to sign up for e-mail updates. The Web site also has a section dedicated to submitting questions and/or comments, which provides a quick and easy outlet for the public to get involved. All public meeting materials and press releases are provided on the site as well.

Media Coverage

Articles concerning the project and habitat conservation issues in the Study Area have been covered in the *San Francisco Chronicle, Washington Post, Sunday Pinnacle, Mercury News*, and *Gilroy Dispatch* since February 2007. The Bay checkerspot butterfly has been the focus of several articles, which brings awareness to the need for conservation focus. Articles concerning the Habitat Plan and initiation of the EIR/EIS process began in October 2007. These articles are provided on the project Web site.

Liaison Group

Elected officials from each Local Partner's legislative body meet regularly as a Liaison Group to review and provide guidance on issues to be acted on by the elected bodies as well as issues of concern to the Local Partners' Management Team.

Stakeholder Group

A stakeholder group was formed early in the process and consisted of approximately 25 members of the public who represented a wide variety of interests, experience, and communities. Participants include conservation organizations, business and development interests, landowners, agricultural interests, open-space land-management organizations, and the general public. The group convenes monthly to review plan components, policies, and to advise the management and liaison teams. A list of the stakeholders is included on the Web site.

Public Scoping Meeting

The public scoping meeting was held on September 26, 2007 at the Morgan Hill Community Center from 7:00 p.m. to 9:00 p.m. Thirty-eight participants signed in. The meeting was part of a larger stakeholder meeting. A presentation was made, and questions were taken. Scoping comments are summarized in Section 1.6.2 below, and in Chapter 20, Consultation and Coordination.

Draft EIR/EIS Public Meetings

Public meetings on the Habitat Plan and Draft EIR/EIS were held on February 9, 2011 in Morgan Hill, and February 15, 2011 in Palo Alto. Both meetings were from 6:30 – 8:30 p.m. Approximately 45 people attended the Morgan Hill meeting, and approximately 40 people attended the Palo Alto meeting. Comments are briefly summarized in Section 1.6.2 below, and in Chapter 20, Consultation and Coordination. Complete public meeting summaries, including questions and comments (and responses to comments) are provided in Volume 2.

Collaboration and Consultation with Tribes

The County coordinated with the Native American Heritage Commission to compile a list of individuals or organizations that may have knowledge of heritage lands or other resources of interest that the project could potentially affect. These representatives received a copy of the NOP, notification of the Draft EIR/EIS, and letters requesting their comments. The Habitat Plan Program Manager met with representatives of the Amah Mutsun Tribal Band on March 2, 2011.

1.6.2 Issues from Scoping and Comments

During the scoping period, a total of 126 individuals or groups submitted 25 letters; many of these letters were submitted in batches where numerous commenters submitted the same comment(s). Many of these letters included multiple comments. In addition to the written comments received, five individuals provided verbal comments at the scoping meeting held on September 26, 2007. Most of the comments pertain to the Habitat Plan, while some apply to both the plan and the EIR/EIS processes. Table 1-1 summarizes the key elements of the issues identified during scoping.

TABLE 1-1
Scoping Issue Summary
Santa Clara Valley Habitat Plan EIR/EIS

Issue Category	# Comments	% Comments
Watershed management	74	31.4
Planning process	35	14.8
Mitigation	31	13.1
Habitat management	24	10.2
Water resources and hydrology	20	8.5
Sensitive species	20	8.5
Flood management	11	4.7

TABLE 1-1
Scoping Issue Summary
Santa Clara Valley Habitat Plan EIR/EIS

Issue Category	# Comments	% Comments
Land management	8	3.4
Erosion control	6	2.5
Mining	5	2.1
Native American issues	1	0.4
Fire control	1	0.4

During the Habitat Plan and Draft EIR/EIS public review process, interested parties (agencies, other stakeholders, and the general public) submitted a total of 794 comments. Comments were submitted in 53 letters or other written correspondence (e.g., emails, comment cards), or verbally during the two public meetings. Over 90 percent of the comments were about the Habitat Plan, generally following these major themes:

- The scale and cost of the Draft Habitat Plan is to large; the Habitat Plan should focus on critical needs and be implemented in the most cost-effective manner.
- The Habitat Plan fees should be applied more equitably.
- An economic analysis should evaluate the Habitat Plan's impact on total fee/exaction burdens, competitiveness, property tax revenue, and other economic factors.
- The Habitat Plan would have greater benefit if it streamlined the wetland permitting process, reducing uncertainty about mitigation requirements, across regulatory agencies.
- The Conservation Strategy does not adequately recognize the importance of grazing for resource management and the desire of many ranch owners to continue ranching with conservation easements rather than selling the land.
- The proposed Joint Powers Authority would create a new, unnecessary layer of government.
- Habitat Plan approval should be subject to a public vote.
- The value of Coyote Valley as species habitat and habitat corridor is undervalued in the Habitat Plan both in the Conservation Strategy and fee schedule.
- The Habitat Plan does not consider wide-ranging species and focuses more on ESA/HCP requirements than CEQA/NCCP requirements.
- The proposed Habitat Plan would not provide streamlined environmental compliance or regulatory permitting when compared to the current process.
- Public access should not be allowed in the Reserve System and development fees should not be used to fund public access.

- The Habitat Plan does not adequately evaluate the presence of the willing sellers for Reserve System lands and should emphasize the conservation easements over fee title acquisitions.
- The Habitat Plan should include an alternative that allows for a mitigation bank market-based solution.
- Other comments addressed specific technical elements of the Habitat Plan, and the remaining comments were on the EIR/EIS. Volume 2 contains all of the comments and responses, including responses to the major themes.

1.7 Decisions to be Made

1.7.1 U.S. Fish and Wildlife Service

The USFWS must decide whether to issue a Section 10(a)(1)(B) permit and for which alternative. FESA requires that specific criteria be met before USFWS may issue an ITP. USFWS would also be jointly responsible for executing the Implementing Agreement.

Permit Issuance Criteria

The issuance criteria for an ITP are contained in Section 10(a)(2)(B) of FESA and the FESA implementing regulations (50 CFR 17.22, 17.32[b][2][i]-[ii]). These issuance criteria include:

- The taking will be incidental to otherwise lawful activities.
- The applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such taking.
- The applicant will ensure that adequate funding for the conservation plan and procedures to deal with unforeseen circumstances will be provided.
- The taking will not appreciably reduce the likelihood of survival and recovery of the species in the wild.
- The applicant will ensure that other measures that the USFWS may require will be provided.

As described in Section 10(a)(2)(A) of FESA and its implementing regulations (50 CFR 17.22, 17.32[b][1][iii]), the applicant must prepare a conservation plan that specifies the following:

- The impact that will likely result from the taking.
- 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.
- What alternative actions to such taking the applicant considered and the reasons why those alternatives will not be used.
- Other measures that USFWS may determine to be necessary or appropriate.

During its evaluation of a complete Section 10(a)(1)(B) permit application, the USFWS will develop a decision package that will contain a Biological Opinion, Findings and Recommendations, NEPA decision document (in this case, a ROD), Implementing Agreement, and ITP (if applicable). This package will document the rationale behind the USFWS's decision to either approve or deny a Section 10(a)(1)(B) permit application. If a Section 10(a)(1)(B) permit is issued, it will contain standard terms and conditions, and may also contain additional terms and conditions as deemed appropriate by the USFWS. Permit denial regulations are codified in 50 CFR 13.21(b).

Federal Endangered Species Act Section 7

Because issuance of a Section 10 permit is a federal action, USFWS will conduct an internal Section 7 consultation. Although the provisions of Section 7 and Section 10 are similar, Section 7 and its regulations require an analysis of the following: indirect effects, effects on federally listed plants, and effects on critical habitat. The results of this internal consultation will be documented in a Biological Opinion.

National Environmental Policy Act

Issuance of an ITP is a federal action subject to NEPA. An EIS is required when the project or activity that would occur is a major federal action significantly affecting the quality of the human environment. USFWS determined that the issuance of an ITP for the Habitat Plan would be a major federal action likely to result in a significant impact on the human environment and thus warranted the preparation of an EIS. The EIS culminates in a ROD, which documents USFWS's final decision.

1.7.2 California Department of Fish and Game

The decision to be made by CDFG will be whether to approve the NCCP and to issue incidental take authorization for the species that are covered in the Habitat Plan, pursuant to Section 2835 of the Fish and Game Code. The determination as to whether the criteria for approval of the NCCP and issuance of ITPs have been met will be described in CDFG's permit decision and CEQA findings. CDFG would also be jointly responsible for executing the Implementing Agreement.

Natural Community Conservation Planning Act

In accordance with the NCCP Act (California Fish and Game Code, Section 2800 et seq.), CDFG will approve the NCCP for implementation after making the following findings based upon substantial evidence in the environmental review:

- The Habitat Plan has been developed consistent with the process identified in the planning agreement entered into pursuant to Section 2810.
- The Habitat Plan integrates adaptive management strategies that are periodically evaluated and modified on the basis of information from the monitoring program and other sources. These strategies will assist in providing for the conservation of Covered Species and ecosystems within the Study Area.
- The Habitat Plan provides for the protection of habitat, natural communities, and species diversity on a landscape or ecosystem level through the creation and long-term

management of habitat reserves or other measures that provide equivalent conservation of Covered Species appropriate for terrestrial, aquatic, and marine habitats within the Study Area.

- The development of reserve systems and conservation actions needed for the conservation of species in the Study Area includes:
  - Conserving, restoring, and managing representative natural and seminatural landscapes to maintain the ecological integrity of large habitat blocks, ecosystem function, and biological diversity.
  - Establishing one or more reserves or other measures that provide equivalent conservation of Covered Species within the Study Area and linkages between the reserves and adjacent habitat areas outside the Study Area.
  - Protecting and maintaining habitat areas that are large enough to support sustainable populations of Covered Species.
  - Incorporating a range of environmental gradients (e.g., slope, elevation, aspect, coastal or inland characteristics) and high habitat diversity to provide for shifting species distributions due to changed circumstances.
  - Sustaining the effective movement and interchange of organisms between habitat areas in a manner that maintains the ecological integrity of the habitat areas within the Study Area.
- The Habitat Plan identifies activities, and any restrictions on those activities, allowed within reserve areas that are compatible with the conservation of species, habitats, natural communities, and their associated ecological functions.
- The Habitat Plan contains specific conservation actions that meet the biological needs of Covered Species and are based on the best available scientific information regarding the status of Covered Species and the impacts of permitted activities on those species.
- The Habitat Plan contains a monitoring program.
- The Habitat Plan contains an adaptive management program.
- The Habitat Plan includes the estimated timeframe and process by which the reserves or other conservation actions are to be implemented, including obligations of landowners and plan signatories and consequences of the failure to acquire lands in a timely manner.
- The Habitat Plan contains provisions that ensure adequate funding to carry out the conservation actions identified in the plan.

Section 2835 of the California Fish and Game Code allows CDFG to authorize take in an NCCP for any identified species whose conservation and management is provided for in the Habitat Plan, whether or not the species is listed as threatened or endangered under CESA or FESA.

California Environmental Quality Act

NCCPs require appropriate compliance with CEQA. The CEQA document for the NCCP must include a specific mitigation, monitoring, and reporting program consistent with the requirements of Division 13 (commencing with Section 21000) of the Public Resources Code. CDFG, as a Responsible Agency under CEQA, would be required to adopt the EIR and make findings pursuant to the EIR.

1.7.3 Local Partners

The Local Partners would be responsible for adopting the Habitat Plan, certifying the EIR, making findings pursuant to CEQA, and executing the Implementing Agreement. The participating jurisdictions would hold a FESA Section 10(a)(1)(B) ITP and an NCCP Act permit that would authorize take resulting from Covered Activities within their respective jurisdictions. To implement the Habitat Plan, the Local Partners would rely on the land use authority provided through their general plans and zoning ordinances. Local jurisdictions would be required to pass local ordinances to implement the Habitat Plan.

The permits are expected to facilitate Local Partner project review and approval. This includes both Local Partner projects (e.g., infrastructure development) and projects subject to Local Partner discretionary action (e.g., subdivision maps by private developers). The Local Partners would rely on the Habitat Plan (and this EIR/EIS) to address cumulative biological resources impacts associated with urbanization and infrastructure development projects within the Permit Area.

1.8 Document Organization

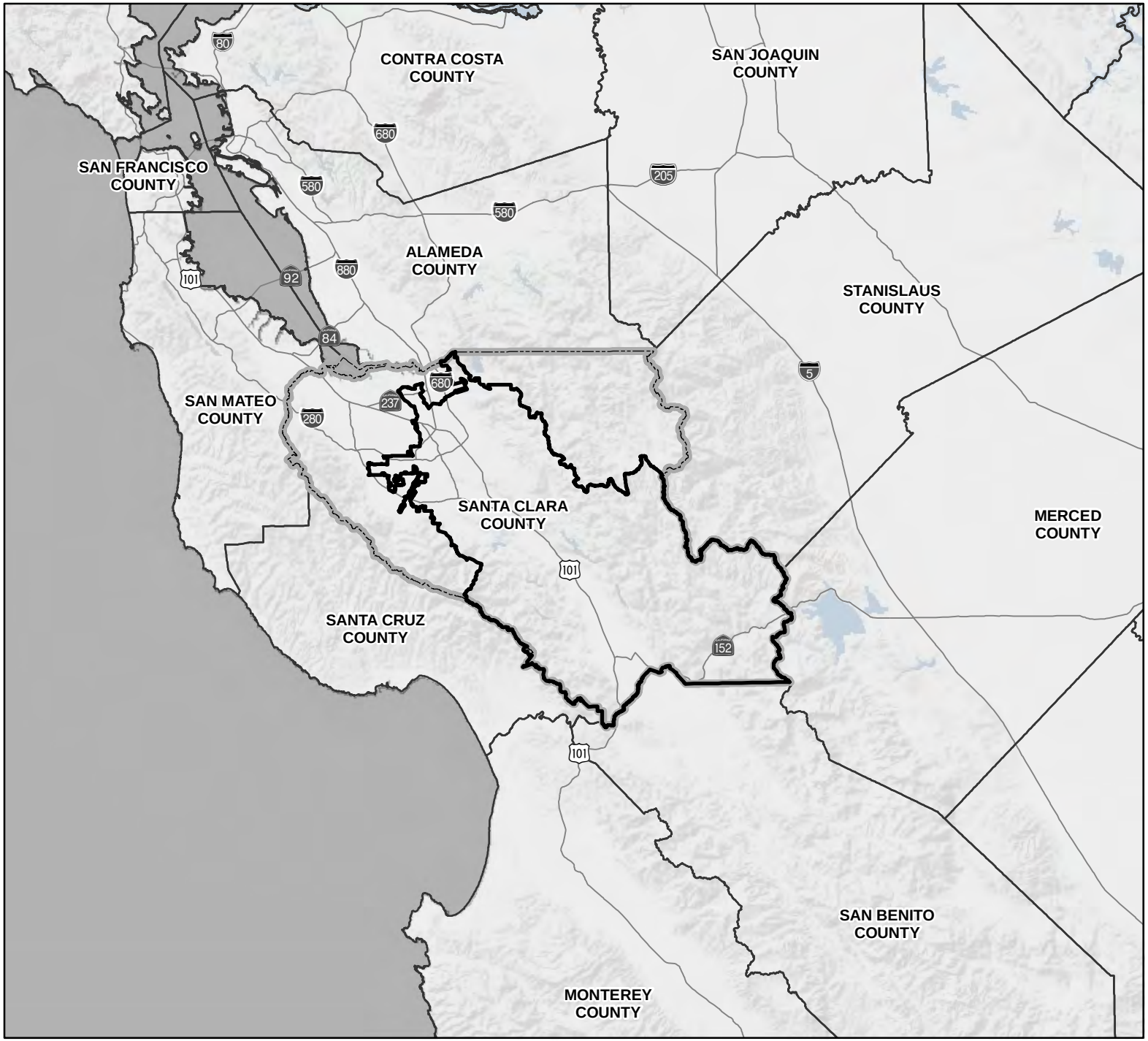
This EIR/EIS is presented in the chapters and appendices listed below.

- Volume 1 contains the following chapters:
  - Chapter 1.0, Introduction, provides a brief overview of the Study Area, project team organization and responsibilities, and connection between the individual elements of the Habitat Plan and the analysis of the EIR/EIS. Chapter 1.0 also presents the purpose, need, and objectives of the proposed Habitat Plan pursuant to both CEQA and NEPA and as defined by USFWS and each of the Local Partners.
  - Chapter 2.0, Proposed Action and Alternatives, summarizes the Proposed Action and a reasonable range of alternatives considered. This chapter also describes the alternatives screening approach and the alternatives considered but eliminated from further consideration.
  - Chapter 3.0, Approach to the Analysis, outlines the methodology followed to select resources to be evaluated in the EIR/EIS and to determine significance.
  - Chapter 4.0, Projects with Cumulative Effects, identifies past, present, and reasonably foreseeable future projects that may directly or indirectly contribute to cumulative effects.
  - Chapters 5.0 through 18.0 are organized by resource. Each chapter introduces the affected environment of a resource followed directly by the corresponding impacts

evaluation. An equal level of consideration is given to the No Action Alternative and each of the alternative conservation strategies.

  - Chapter 19.0, Other CEQA and NEPA Required Analyses, describes other sections that are required under either CEQA or NEPA, including Short-Term Uses of the Environment versus Maintenance and Enhancement of Long-Term Productivity, Irreversible and Irretrievable Commitments of Resources, Significant Unavoidable Adverse Impacts, Growth Inducement, and Consistency with federal Executive Orders.
  - Chapter 20.0, Consultation and Coordination, identifies the agencies, tribes, and organizations involved in the preparation of this document and the persons and groups who have received notification or copies of the EIR/EIS.
  - Chapter 21.0, List of Preparers, identifies the individuals involved in the preparation of this document.
  - Chapter 22.0, Document Recipients, includes a list of local, state, and federal agencies, stakeholders, interest groups, and individuals who received notice that the EIR/EIS was available for review and comment.
  - Chapter 23.0, References, is a comprehensive bibliography of references cited in the text.
  - Appendix A, Glossary, lists terms and their definitions used in this document.
  - Appendix B, Scoping Materials, includes the NOI and the NOP.
  - Appendix C, Special Status Species List, includes lists of special-status wildlife and plants known to occur or have the potential to occur in the Study Area.

- Volume 2 includes the following information:
  - Complete summaries of the Draft EIR/EIS public meetings, including questions and comments (and responses to comments).
  - All comments from the Habitat Plan and Draft EIR/EIS public review, and responses to comments.



VICINITY MAP

LEGEND

- Study Area
- Santa Clara County
- California Counties

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FIGURE 1-1
Regional Location
Santa Clara Valley HP EIR/EIS
Santa Clara County, California

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VICINITY MAP

LEGEND

- Cities
- Rivers and Streams
- Lakes and Reservoirs
- Study Area
- Santa Clara County
- California Counties

FIGURE 1-2
Study Area
Santa Clara Valley HP EIR/EIS
Santa Clara County, California

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CHAPTER 2

Proposed Action and Alternatives

This chapter describes the Proposed Action – issuance of incidental take permits by the Wildlife Agencies and implementation of the proposed Habitat Plan by the Local Partners. In addition, this section describes a reasonable range of alternatives to be evaluated in this EIR/EIS and alternatives considered but eliminated from further evaluation.

2.1 Approach to Developing Alternatives

Permit issuance requires compliance with both CEQA and NEPA. Requirements for alternatives analysis under both of these laws direct an EIR/EIS to consider a reasonable range of alternatives that could accomplish the lead agencies' purpose and need, including a No Action Alternative. The alternatives are to be presented in comparative form for decision makers and the public to choose among options. CEQA and NEPA provide guidance that can be used to assist defining the range of alternatives to be considered in the EIR/EIS.

An EIS must consider a reasonable range of alternatives as defined by the circumstances and the facts of the proposed federal action. Reasonable alternatives include those that are practical or feasible from a technical, economic, and environmental standpoint and using common sense. The Lead Agency must devote substantial treatment to each alternative considered. If alternatives have been eliminated from detailed study, the EIS must briefly discuss the reasons for their elimination (40 Code of Federal Regulations [CFR], Part 1502, Section 14 [40 CFR 1502.14]).

An EIR also must consider a reasonable range of alternatives for analysis. The alternatives considered under CEQA must also meet the basic project objectives, must be feasible, and should not result in greater impacts on the environment than the proposed project. To determine whether alternatives are feasible, the Lead Agencies are guided by the general definition of feasibility found in the CEQA Guidelines Section 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." The Lead Agency should take into account 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 alternatives to be evaluated in the EIR (CEQA Guidelines Section 15126.6[f][1]).

An EIR must describe the rationale for selection and rejection of alternatives and the information that the Lead Agency used during the decision making process. 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 (CEQA Guidelines Section 15126.6[c]).

To meet these policy requirements, reasonability is based on the following criteria:

- Alternatives should meet the objectives under CEQA and to fulfill the purpose and need under NEPA.
- Alternatives should be reasonable and feasible in terms of economic, environmental, legal, social, and technological factors.
- Alternatives should be implementable by each of the Local Partners.
- Alternatives should strive to avoid or substantially reduce one or more significant impacts of the proposed action.

2.2 Alternatives Carried Forward for Detailed Analysis

The following alternatives were determined to meet the above criteria.

- **No Action Alternative**. The Wildlife Agencies would not issue incidental take permits and the Local Partners would not implement the proposed Habitat Plan. Activities would continue in a manner consistent with current practices. This alternative represents the No Project Alternative, as defined under CEQA, and the No Action Alternative, as defined under NEPA.
- **Proposed Action**. The Wildlife Agencies would issue incidental take permits and the Local Partners would implement the proposed Habitat Plan.
- **Alternative A.** The Wildlife Agencies would issue incidental take permits and the Local Partners would implement a modified version of the Habitat Plan described in the Proposed Action. The Habitat Plan in Alternative A would have a reduced permit term of 30 years. The reduced permit term would result in a reduction of Covered Activities as well as a reduction in the conservation strategy analyzed in the Proposed Action.

2.3 No Action Alternative

The No Action Alternative is presented in terms of what would happen in the Study Area in the absence of the proposed incidental take permits from the Wildlife Agencies and implementation of the Habitat Plan. For ease of comparison, the No Action Alternative is described in a similar format as the Proposed Action (Section 2.4), including a description of expected activities over a 50-year study period to correspond to the 50-year Permit Term under the Proposed Action.

2.3.1 Typical Activities

Under the No Action Alternative, various types of activities would continue to occur in the Study Area consistent with current regulatory practices.[1] The various types of activities are described below:

- Urban development would continue to occur pursuant to the General Plans of the three local governments (City of San José, City of Morgan Hill, and City of Gilroy). Urban development would occur up to the planning limits of urban growth boundaries (see Section 2.4.1.1). In addition to residential, commercial, and industrial development, this category also includes the construction, maintenance, and use of urban infrastructure (e.g., road, utilities), parks and recreation facilities, public services, and similar types of urban land uses.
- Public infrastructure projects within stream areas would continue to be constructed under the No Action Alternative. Types of instream capital projects expected to occur include installation and rehabilitation of flood control facilities, repair and seismic retrofit of dams, construction of new road and transit bridges and rehabilitation of existing bridges, and development of creekside trails and bicycle/pedestrian bridges.
- Public infrastructure projects within stream areas would continue to be operated and maintained under the No Action Alternative. This category includes activities such as trail repair, sediment and debris removal, and natural resources protection projects (e.g., erosion control, vegetation management). Most instream operations and maintenance activities would be conducted by SCVWD. This category also includes the ongoing routing operations of the SCVWD reservoirs.
- Infrastructure projects outside urban areas would continue to be constructed under the No Action Alternative. Types of rural capital projects expected to occur include rural transportation projects, bicycle and pedestrian improvements, new recreational facilities, and other types of infrastructure projects in rural areas.
- Infrastructure projects outside urban areas would continue to be operated and maintained under the No Action Alternative. This category includes activities such as utility line and facility operations and maintenance, vegetation and invasive species management, and road maintenance.
- Development activities in unincorporated areas would continue to occur under the No Action Alternative. This is primarily rural residential development outside of city limits (including in the San Martin area), but also includes limited commercial, industrial, and other types of development consistent with the Santa Clara County General Plan.[2]

The activities described above would require consideration of environmental effects on a project-by-project basis. In some cases, these activities would be subject to review under FESA and CESA (e.g., as part of federal and state authorization to fill wetlands or as

[1] Regulatory practices are likely to change over the next 50 years, but assumptions about future changes to existing regulations (or new regulations) would require a great deal of speculation. For this analysis, future regulations are assumed to be consistent with existing regulations.

[2] Although most rural development would occur in unincorporated Santa Clara County, some rural development is expected to occur within the San José, Morgan Hill, and Gilroy growth boundaries.

individual Section 10 processes), which would subject the activities to restrictions based on the needs of federally and state-listed species. In many cases, the activities would be subject to review under CEQA, which is expected to provide the primary mechanism to consider project effects on biological and other resources. The anticipated number of each type of activity that would result in take of listed species is listed below. The types of activities undertaken to mitigate impacts to biological resources are discussed in Section 2.3.3.

- Many individual urban development projects would occur within the planning limits of urban growth that would have the potential to result in take of listed species, would be subject to detailed review under CEQA, and would be subject to detailed review for consistency with other environmental regulations (e.g., Clean Water Act prohibition of discharge of fill into Waters of the United States). The specific number of these types of projects is unknown, with year-to-year variability depending on market conditions, but is expected to average approximately 60 per year or approximately 3,000 urban development projects over 50 years. These projects would comply with FESA either through the Section 7 or Section 10 processes, and additional protections for species and habitats may be required as a result of CEQA review. Many more urban development actions would take place over 50 years, but these would be minor discretionary or ministerial actions (e.g., building permits) with no (or very limited) impacts to biological resources and would not be subject to review under CEQA (or would only comply with minimal CEQA requirements).
- There would be approximately 400 to 500 individual instream capital projects that would occur within the Study Area. It is expected that all of these projects could have some potential to result in take of listed species. All instream capital projects are expected to require authorization under the Clean Water Act, and therefore would comply with FESA through Section 7 consultations. These projects also are expected to require detailed CEQA review, which may result in additional protections for species and habitats.
- There would be approximately 100 large individual rural capital projects that are expected to occur within the Study Area, and possibly as many as 1,000 smaller projects. Some of these activities would have no potential to result in take of listed species, would not be subject to review under CEQA (or would only comply with minimal CEQA requirements), and would not be subject to detailed review for consistency with other environmental regulations. Other rural capital projects, however, could result in take of listed species and would be subject to more-rigorous CEQA review processes. Approximately 10-30 percent of road improvement projects and less than 5 percent of County Parks projects are expected to fall into this category. These projects would comply with FESA either through the Section 7 or Section 10 processes, and additional protections for species and habitats may be required as a result of CEQA review.
- Instream and rural operations and maintenance activities are expected to occur throughout the Study Area, but because of their nature it is not possible to quantify the number of projects that may occur. It is also not possible to predict how many of these activities could result in take of listed species. In many cases, the likelihood of take is very low. In some cases (e.g., SCVWD stream maintenance activities), the possibility is greater, and would be addressed by Section 7 consultations. Most operations and maintenance activities do not undergo CEQA review.

- There would be approximately 20 individual rural development projects per year, or approximately 1,000 projects over 50 years, that would occur within the Study Area. Some of these projects would not be subject to review under CEQA (or would comply with minimal CEQA requirements). Most rural development projects are unlikely to require detailed review under the Clean Water Act or other environmental regulations. The potential for take of listed species would be remote on a parcel-by-parcel basis; therefore, it is unlikely that individual projects would complete Section 10 processes. In some cases (expected to be fewer than 10 percent), some mitigation for species and habitat impacts would be provided.

2.3.2 Typical Species Considered

Under the No Action Alternative, compliance with FESA and CESA would continue to be addressed on a case-by-case basis. Projects that could result in take of federally listed species would be required to individually comply with FESA through either the Section 10 process when there is no federal nexus (e.g., development of an HCP) or through the Section 7 consultation process in cases in which federal authorization (e.g., Clean Water Act Section 404 permitting by the USACE) or funding (e.g., Federal Highway Administration funding for transportation projects) is required. Section 7 compliance would focus on federally listed species and would not address state-listed or unlisted species.

Projects and activities with a potential to take state-listed species would be required to comply with CESA through the CEQA process. Project proponents would be required to prepare the appropriate environmental documents and to comply with any mitigation requirements identified as part of project-specific environmental review, as well as any applicable policies contained in the general plans for each of the participating jurisdictions. CDFG could also require mitigation for state- or federally listed species as conditions of Streambed Alteration Agreements, if required for a specific project.

Consideration of biological resources impacts under CEQA encompasses more species than the listed species considered under the federal and state consultation requirements discussed above. Typical CEQA review includes species designated as “special concern” by CDFG and plants designated as rare by CDFG and the California Native Plant Society. Determinations of impact significance and adequate mitigation would be made by the individual local agency approving the project, with limited opportunities for participation by the Wildlife Agencies.

Conservation of species and habitats provided through mitigation and compensation under the existing regulatory framework would likely result in a pattern of conservation that is fragmented and managed in a piecemeal fashion. The No Action Alternative would be incapable of conserving certain essential ecological processes, there would not be a coordinated system of biological corridors and linkages provided to connect conservation areas and the ability to provide linkages through project-by-project mitigation may be precluded over time through continued development. Also, under the No Action Alternative, sensitive species would be at greater risk because there would be no comprehensive strategy to avoid, minimize, or mitigate effects. Furthermore, there would be no mechanism to comprehensively provide for species recovery. Relative to other alternatives analyzed in detail in this document, recovery of currently listed species would

be more difficult and the need to protect currently unlisted species under federal and state law would likely be more necessary.

2.3.3 Typical Species Mitigation

As a result of federal and state consultation for impacts to listed species, and project-by-project CEQA review for impacts to biological resources, various types of mitigation measures are expected to be required. These include the following typical measures:

- Avoidance and minimization measures incorporating generally accepted species-specific protocols (e.g., for California red-legged frog and California tiger salamander) and/or project-specific measures as negotiated with the Wildlife Agencies. This could include preservation and management of onsite habitat. Other avoidance and minimization requirements could include preconstruction surveys, construction timing restrictions, setback requirements, use restrictions, or other similar measures.
- Restoration and/or enhancement of onsite habitat.
- Compensatory mitigation in offsite areas, including the following options:
  - Purchasing credits at a private conservation bank.
  - Purchasing and restoring large areas of habitat and using those areas to mitigate for various project impacts, similar to a mitigation bank. This option has been used in the Study Area by VTA and SCVWD, with mitigation sites in the Coyote Ridge and lower Uvas Creek areas, respectively.
  - Purchasing and restoring habitat to mitigate for individual project impacts. In the Study Area, this option was used for the Metcalf Energy Center in the Coyote Valley area.

  Private mitigation banks within and near the Study Area and some of the larger habitat mitigation projects are described in Chapter 4, Projects with Cumulative Effects. Although these options provide larger blocks of habitat with management requirements consistent with Wildlife Agency requirements, there would not be a comprehensive mitigation framework for the Study Area under the No Action Alternative.

2.4 Proposed Action

The Proposed Action for the USFWS is to issue an Incidental Take Permit based on the applications submitted by the Local Partners, which includes the Habitat Plan. The Habitat Plan is designed to provide a basis for the Local Partners to coordinate and standardize the process for permitting and mitigating the impact of the take of Covered Species within the Permit Area. The Permit Area is 460,205 acres (508,669 acres for burrowing owls) and is the area in which the Local Partners have requested incidental take authorization from USFWS and CDFG for activities and projects covered by this Habitat Plan (see Section 2.4.1 below). The Permit Area also could include small, unmapped areas. Land management and monitoring activities may occur outside the mapped Permit Area boundary, where a conservation parcel straddles the mapped Permit Area, as long as more than half of each parcel is contained within the Permit Area. These unmapped areas would not exceed a total

of 250 acres. If permits are issued, this regional conservation strategy would be implemented to ensure the protection of Covered Species and their habitat within the Permit Area. In addition, an Implementing Entity would be created to carry out the Habitat Plan on a day-to-day basis.[3] The Habitat Plan is based on the expectation of ITPs with terms of 50 years from the Wildlife Agencies.

The key elements of the proposed Habitat Plan are summarized below.

2.4.1 Covered Activities

The Habitat Plan identifies a range of Covered Activities. These are projects or ongoing activities in the Permit Area that may result in take of listed species or species that may become listed during the Permit Term. All Covered Activities would be subject to the approval authority of the individual Local Partner in whose jurisdiction the activity would occur. Incidental take associated with Covered Activities authorized by the Local Partners would be covered if the activity is compliant with the Habitat Plan. As part of the standard approval process, most projects would require separate, project-level environmental review under CEQA and, in some cases, NEPA. The Local Partners would track their own Covered Activities and associated take, and regularly report to the Implementing Entity.

Not all private development activity would be required to participate in the Habitat Plan. The Habitat Plan would not apply to private urban and rural developments that do not require a permit from a city or the County. In addition, private development additions of less than 5,000 square feet of new impervious surface to existing developed sites, regardless of parcel size, would not be subject to the Habitat Plan. Private development activities that require ground disturbance would only be covered if they meet specific criteria listed in the Habitat Plan (see *Private Development Subject to the Plan* in Habitat Plan Section 2.3.2, Urban Development).

Covered Activities have been separated into seven general categories: urban development, instream capital projects, instream operations and maintenance, rural capital projects, rural operations and maintenance (outside streams), rural development, and conservation strategy implementation. For a detailed description of Covered Activities, please see Section 2.3 of the Habitat Plan. The Covered Activities are summarized as follows. All seven categories of Covered Activities could occur within the Permit Area.

Urban Development

Covered Activities within the urban growth boundaries include all types of urban development.[4] This category is intended to be as inclusive as possible to account for all types of ground-disturbing activities and projects, public and private, which could occur in an urbanized area. It is assumed that urban development within the urban growth boundaries would be conducted in accordance with the general plans for each of the local land use authorities. This category includes, but is not limited to the construction,

[3] Although the Implementing Entity would be the primary organization responsible for carrying out the conservation strategy, other aspects of the conservation strategy may be implemented by individual Local Partners or by "implementing partners" such as The Nature Conservancy.

[4] The Habitat Plan provides additional information about the urban growth boundaries, which are defined for this project as the "planning limits of urban growth" – areas in which this type of Covered Activity would occur. Planning limits of urban growth are shown on Habitat Plan Figure 2-2.

maintenance, and use of the following: residential, commercial, industrial, and other types of urban development within the cities of San José, Morgan Hill, and Gilroy, and in areas designated for urban development in unincorporated areas; transportation facilities; public service and cultural facilities; recreational facilities; public and private utilities; water supply and delivery facilities; stormwater management facilities; funeral/interment services; vegetation management; and hazardous material remediation.

Instream Capital Projects

This category includes public infrastructure projects that occur within streams. Activities within streams are those activities or projects that occur in or immediately adjacent to creeks and that may result in impacts to a creek or canal. This includes activities in the stream channel, along the stream bank, and on adjacent lands at the top-of-bank within the riparian corridor including maintenance of access roads and installation of pedestrian/biking/ equestrian trails. These activities occur in both urban and rural areas.

Instream capital projects that are proposed for coverage are discussed below:

- **Flood Protection Projects.** SCVWD would implement flood protection projects consistent with its Clean, Safe Creeks and Natural Flood Protection Plan and its Coyote Watershed Stream Stewardship Plan. These projects would include activities such as increasing levee heights, setting levees back from streams, building floodwalls, enlarging culverts, removing structures, and enlarging channel widths and depths. Habitat improvements are typically incorporated into these projects. In some cases, these projects would involve participation by the U.S. Army Corps of Engineers (USACE).[5] Known locations of flood protection capital projects are shown on Habitat Plan Figure 2-6.
  - Guadalupe Watershed. Known projects include channel improvements on Alamitos Creek and Ross Creek. Other anticipated future activities include flood protection improvements along Calero Creek, Canoas Creek, Los Gatos Creek, and Randol Creek.
  - Coyote Watershed. Known projects include levee and floodwall improvements on Berryessa Creek and Upper Penitencia Creek. Other anticipated future activities include flood protection improvements along Coyote Creek, Fisher Creek, Quimby Creek, Sierra Creek, South Babb Creek, and Upper Silver Creek.
  - Llagas Watershed. Known projects include channel improvements on West Little Llagas Creek. Other anticipated future activities include flood protection improvements along East Little Llagas Creek, Jones Creek, and Lions Creek.
  - Uvas Watershed. Anticipated future activities include flood protection improvements along Gavilan Creek and along the entirely of Uvas Creek downstream of Uvas Dam.
- **Levee Reconstruction.** The Federal Emergency Management Agency (FEMA) recently required that levees throughout the United States be evaluated according to current levee construction standards. Many of the existing levees in the Study Area are not expected to meet the new FEMA requirements and will need to be reconstructed.

[5] The USACE is responsible for levees developed with federal participation. Within the Study Area, many of the 23 miles of SCVWD levees are subject to USACE jurisdiction.

Reconstruction activities are expected to include structural changes such as expanding the levee footprint, increasing the levee height, and adding new material to the levee. Habitat improvements are typically incorporated into these projects. SCVWD levees are shown on Habitat Plan Figure 2-6 – levee reconstruction projects are expected to occur along 10 miles in this area, and this would be a Covered Activity.

- Guadalupe Watershed. Reconstruction of levees along Alamitos Creek, Canoas Creek, Guadalupe Creek, Guadalupe River, Los Gatos Creek, and Randol Creek.
- Coyote Watershed. Reconstruction of levees along Berryessa Creek, Coyote Creek, Thompson Creek, and Upper Penitencia Creek.
- Llagas Watershed. Reconstruction of levees along Jones Creek, Llagas Creek, Lions Creek, West Branch Llagas Creek, and miscellaneous levees near (but not along) Llagas Creek.
- Uvas Watershed. Reconstruction of levees along Uvas Creek.

- **Canal Reconstruction, Realignment, and Decommissioning.** This category includes the reconstruction of SCVWD's water conveyance canals: Almaden-Calero Canal, Coyote Canal, Coyote Canal Extension, Cochrane Channel, Coyote-Alamitos Canal, Vasona Canal, and Madrone Channel. One or more of these canals may be replaced with pipelines. In addition, it is possible that one or more of these canals would be decommissioned, allowing the canal footprint to be restored for other purposes (such as habitat enhancement or trail development).

- **Proposed Three Creeks HCP Conservation Strategy – Geomorphic Rehabilitation.**[6] Geomorphic rehabilitation and gravel projects that are part of the Three Creeks HCP conservation strategy would be covered instream capital projects in the Habitat Plan. Geomorphic rehabilitation activities are projects that substantially modify and improve stream channels for fish passage purposes (e.g., channel sinuosity, riffle-pool habitat). Specific projects may include the following:

  - Ogier Ponds separation from the channel.
  - Coyote Percolation Pond separation from the channel.
  - Pond 10b separation from the channel.
  - Geomorphic rehabilitation in the Coyote Creek watershed below Anderson Dam.
  - Geomorphic rehabilitation in the Guadalupe River watershed below Calero, Almaden, and Guadalupe dams. Project sites include Guadalupe Dam to downstream of the Alamitos Diversion Dam and the upstream end of Almaden Reservoir to the confluence of Alamitos Creek and Guadalupe Creek.

  Geomorphic rehabilitation projects would be Covered Activities in the Habitat Plan, but they would not be implemented until the Three Creeks HCP is approved by NMFS and CDFG.

[6] The Three Creeks HCP is discussed in Section 2.6.4, Incidental Take Coverage for Fish Species, and in Section 4.2, Future Projects included in the Cumulative Impacts Analysis. The Three Creeks HCP is also described in detail in Habitat Plan Section 1.2.5. The Proposed Action covers the activities described in the Three Creeks HCP conservation program for potential impacts to the proposed Habitat Plan covered species. Under the proposed Three Creeks HCP, SCVWD will request incidental take permits from FWS and CDFG for the species and geographic areas unique to the Three Creeks HCP.

- **Proposed Three Creeks HCP Conservation Strategy – Alamitos Creek/Almaden Reservoir Fish Passage.** SCVWD proposes to provide steelhead with passage to upstream habitat. Project details have not been finalized, but may include construction of a fish collection facility and implementation of a "trap-and-truck" operation to convey fish around the dam. As described in Habitat Plan Table 4-5a, up to 30 acres of land and 50 feet of stream would be permanently affected by this project.

- **Proposed Three Creeks HCP Conservation Strategy – Gravel Enhancement Program.** Installation of gravel traps in the upstream reaches of Coyote, Anderson, Almaden, and Guadalupe Reservoirs (below the high-water line) are proposed. Excavation may occur a maximum of one time per year per gravel trap if needed but is expected to generally occur once every 3 years per gravel trap. The following locations are being considered for the gravel enhancement program:

  - Anderson Dam to below Coyote Percolation Ponds.
  - Almaden Dam to Lake Almaden.
  - Guadalupe Dam to the confluence with Alamitos Creek.
  - Camden Avenue Drop Structure downstream to the confluence with the Guadalupe River.

- **Proposed Three Creeks HCP Conservation Strategy –In-Stream Cover Enhancement.** In-stream habitat improvements may be undertaken that may include localized installation of boulders, large woody debris, or biotechnical treatments along stream banks to improve cover and riparian functions for salmonids. Activities may also include removal of exotic vegetation and replanting with native riparian vegetation.

- **Proposed Three Creeks HCP Conservation Strategy –Fish Passage Enhancement.** The activity would incorporate an on-going program to remove small physical and hydrologic barriers to movement of salmonids and other fish and wildlife. Activities would include replacement of small culverts with bridged weir structures to provide access to tributary streams.

- **Dam-Related Capital Projects.** This category includes dam safety retrofit and dam instrumentation projects at dams within the Permit Area. These activities may be required by the state Division of Safety of Dams (DSOD) in order to ensure that the dams meet all required dam safety standards. Dam safety retrofit projects would occur at SCVWD's Alamden, Anderson, Calero, and Guadalupe Dams; six smaller dams operated by County Parks (five at Joseph D. Grant County Park and one at Ed R. Levin County Park); and the City of San José's dam at Cherry Flat Reservoir.

  Dam safety retrofit activities at SCVWD dams would be major projects that could entail strengthening the upstream embankment, strengthening the downstream embankment, or strengthening the dam internally. Most dam repair and seismic retrofit projects would require the drawdown of the water surface elevations in the reservoirs. SCVWD would prepare a plan to avoid and minimize Covered Species impacts for each individual reservoir dewatering event, and the plan would be subject to review and approval by the Wildlife Agencies. Installation of supplemental water supply systems to support downstream flows also would be a Covered Activity. The Habitat Plan provides additional details about these projects, and assumptions for estimating land cover impacts

including assumptions about borrow sites. Dam safety retrofit projects at County Parks and City of San José dams would require similar types of activities, but the extent of work would be much smaller because of the small size of each of the seven facilities.

Dam-related capital projects also include the installation of monitoring equipment at each of the eight SCVWD dams in the Study Area (SCVWD Dam Instrumentation Project).

- **In-Channel Groundwater Recharge Facilities.** SCVWD would rehabilitate and reoperate two in-channel facilities that divert instream flows to off-channel groundwater percolation ponds. Two projects would be covered, as follows:
  - Diversion of Coyote Creek flows into the Ford Road Ponds would be modified either by installing an inflatable dam for gravity diversion, or by installing a new intake facility and pipeline. The activity may include removing an existing in-channel percolation pond and reconfiguring the channel.
  - Diversion of Llagas Creek flows into the Church Avenue Ponds would be modified, possibly by installing an inflatable dam for gravity diversion, with a permanent fish passage structure.
- **New Bridge Construction and Replacement/Rehabilitation.** All of the Local Partners operate and maintain bridges within the Permit Area. The lifespan of a typical bridge is 50 years; therefore, it is expected that every bridge in the Permit Area would require major repair or replacement over the Permit Term. The construction of new bridges, as well as repair and replacement of all existing bridges, both within and outside urban areas, is a proposed Covered Activity.
- **Streamside Trails and Crossings.** Portions of new trails installed in the Permit Area will need to cross streams and will require installation of bridges or other types of crossings. These projects are proposed Covered Activities.

Instream Operations and Maintenance

Activities within streams are those activities or projects that occur in or immediately adjacent to creeks and that may result in impacts to a creek or a canal. This includes activities in the stream channel, along the stream bank, and adjacent lands at the top-of-bank within the riparian corridor including maintenance of access roads. These Covered Activities occur in both urban and rural areas. Instream operation and maintenance activities that are proposed Covered Activities are discussed below:

- **Facility and Stream Maintenance.** This activity includes general facility and stream maintenance activities by Local Partners other than SCVWD.[7] This category includes trail repair, trash removal, storm system maintenance, small erosion control and bank stabilization projects, vegetation management, stream gauge maintenance, and similar small-scale activities.
- **Sediment Removal and Mercury Remediation.** The removal of accumulated sediment would be a Covered Activity; however, activities with a primary goal of mercury

[7] Routine stream maintenance activities conducted by SCVWD have already received incidental take coverage under the Stream Maintenance Program, and therefore routine stream maintenance by SCVWD is not a proposed Covered Activity. The Stream Maintenance Program is discussed under cumulative effects (see Section 4.2).

remediation are not. Current regulations require that sediment be tested for contaminants, including mercury, before it is used elsewhere in the watershed or distributed to a landfill. Sediment that tests positive for mercury must be disposed of in a hazardous materials facility. Although mercury remediation is undertaken through some sediment removal projects, mercury remediation is not the primary goal but rather a result of proper, and regulated, sediment disposal.

- **Reservoir Operations under DSOD Interim Storage Restrictions.** This category addresses the storage of water behind dams consistent with existing or potential new DSOD interim storage restrictions. At this time, interim storage restrictions have been established for Almaden, Anderson, Coyote, Calero, and Guadalupe dams (see Habitat Plan Table 2-5), but these restrictions could be changed or restrictions could be added to other SCVWD reservoirs. Operations under interim storage restrictions, up to the maximum identified in Habitat Plan Table 2-5, would be a Covered Activity.

- **Recharge Operations and Maintenance.** The Habitat Plan also includes on-going operation and maintenance of diversions to recharge facilities and discharge of water from the recharge ponds into the various channels. This includes the periodic installation of flashboard dams and temporary spreader dams for diversions and instream recharge. Maintenance activities include inspection, cleaning, sediment and debris removal, and similar activities.

- **Reservoir and Recharge Pond Operations – Uvas and Llagas Creek Watersheds.** SCVWD proposes to reoperate reservoirs and recharge ponds in the Uvas and Llagas Creek watersheds. Uvas Dam would be operated to include winter base flows, winter pulse flows, spring out-migration releases, summer rearing releases, and ramping restrictions. In addition, operational priorities for Uvas Dam, Uvas Creek, the Uvas/Llagas transfer pipeline, Chesbro Reservoir, Llagas Creek, and the Church Avenue recharge ponds are also identified for maintenance of live stream and aquatic habitat to the extent practicable. This Covered Activity would not be implemented until SCVWD receives authorization from NMFS and CDFG.

- **Dam Maintenance Program.** This activity addresses the activities associated with operation and maintenance of SCVWD dams and appurtenant structures. Covered Activities conducted under the SCVWD Dam Maintenance Program include, but are not limited to, the following activities:

  - Drawdown of reservoirs to repair intake structures and hydraulic systems.
  - Drawdown of reservoir due to seismic retrofit.
  - Clearing dam faces of shrubs and woody material.
  - Resurfacing or otherwise maintaining or repairing access roads to dams.
  - Minor sediment removal as required for maintenance of intake structures and hydraulic systems.
  - Rodent control on dams.

  - Erosion control, including dam face, access roads, and in streams/plunge pools below spillways.
  - Concrete repairs.

  This Covered Activity would occur at the Coyote Percolation Pond and at the eight SCVWD dams within the Study Area: Almaden Dam, Anderson Dam, Calero Dam (including Calero main, auxiliary, and Fellows Dike), Chesbro Dam, Coyote Dam, Guadalupe Dam, Uvas Dam, and Vasona Dam.

- **Dam and Reservoir Maintenance.** Similar to the SCVWD Dam Maintenance Program, dam and reservoir maintenance activities would be conducted by County Parks and the City of San José. Activities similar to those described for the SCVWD Dam Maintenance Program (but smaller in scale) also would occur at Grant Lake (Joseph D. Grant County Park) and Sandywool Lake (Ed R. Levin County Park), both operated by County Parks, and at Cherry Flat Reservoir operated by the City of San José.
- **Non-Routine Stream Maintenance.** The permits associated with the SCVWD Stream Maintenance Program do not cover "non-routine" activities; therefore, these activities would be covered under the Proposed Action. Non-routine stream maintenance performed by SCVWD for water supply and flood protection include the following activities:
  - One-time extensive vegetation removal, including removal of trees larger than 6 inches in diameter, in the Lower Llagas flood control channel to restore flood protection capacity.
  - Repairs to canals including bank stabilization, sediment removal, and vegetation management not otherwise permitted by the Stream Maintenance Program.
- **Proposed Three Creeks HCP Conservation Strategy – Reservoir and Recharge Reoperation.** This category addresses the storage of water behind dams and release of water from reservoirs to enhance flow, temperature, and water quality conditions downstream of reservoirs to promote better fish habitat consistent with the proposed Three Creeks HCP. These activities would be implemented at Coyote Creek, Upper Penitencia Creek, and Alamitos Creek (Almaden Reservoir and Alamitos Diversion). These would be Covered Activities in the Habitat Plan, but reoperation of SCVWD facilities would not occur until the Three Creeks HCP is approved by NMFS and CDFG.
- **Proposed Three Creeks HCP Conservation Strategy – Upper Penitencia Creek Management Program**. In addition to reoperation of facilities in Upper Penitencia Creek (described above) as part of the Three Creeks HCP conservation strategy, SCVWD also would implement an Upper Penitencia Creek Management Program to substantially isolate the creek from the influence of water supply operations. The program would have five main elements, intended to minimize effects of water supply operations on salmonid spawning, rearing, and outmigration.
  - Remove the existing Noble Diversion.
  - Relocate the Dorel Drive steam flow gauge 200 feet downstream.
  - Rededicate the existing SCVWD water right to change the beneficial use to protection of fisheries.

  - Isolate the creek from off-channel recharge operations using screens.
  - Manage imported water releases to ensure flow augmentation does not result in the creation of measurable flow at Stream Flow Gauge 87 (the existing Mabury Gauge).

  These would be Covered Activities in the Habitat Plan, but the Upper Penitencia Creek Management Program would not occur until the Three Creeks HCP is approved by NMFS and CDFG.

- **Proposed Three Creeks HCP Conservation Strategy – Supplemental Flow Program.** SCVWD is proposing to implement a supplemental flow program at the base of Anderson and Calero Main dams and bypass flows at Almaden and Guadalupe dams to ensure that the summer flow targets can be reliably met under a variety of conditions. Additional reliability is necessary because of DSOD interim storage restrictions as well as other factors such as short-term equipment failures and scheduled and unscheduled maintenance that requires reservoir dewatering. Supplemental flows would be supplied by various means, including the following types of projects:

  - Bypassing reservoir inflows around the reservoir using existing or temporary pipelines.
  - Using existing pipelines or installing temporary pipelines to divert other sources of water (e.g., imported or recycled water) into the streams, provided that temperature and water quality criteria are met.
  - Installing temporary groundwater wells and pipelines and discharging the pumped water into the streams.

  The implementation of this supplemental flow program is a proposed Covered Activity. Like other instream operations and maintenance activities that are part of the Three Creeks HCP conservation strategy, the supplemental flow program would not be implemented until the Three Creeks HCP is approved by NMFS and CDFG.

- **Proposed Three Creeks HCP Conservation Strategy – Monitoring Program.** Monitoring activities for species covered by the Three Creeks HCP also would be a Covered Activity under the Habitat Plan. Monitoring activities are expected to include activities such as data collection (e.g., temperature measurement) and species surveys using techniques such as electrofishing, PIT tagging, radio telemetry, camera traps, and video monitoring).

Rural Capital Projects

This category addresses public infrastructure (capital) projects occurring outside of the urban growth boundaries. Rural capital projects and activities that are proposed for coverage are discussed below.

- **Rural Transportation Projects.** Transportation projects taking place outside the urban growth boundaries are proposed as Covered Activities. Specific projects included in this category are as follows (also see Habitat Plan Table 2-6 and Figure 2-7):
  - U.S. Highway 101 (Buena Vista interchange).
  - U.S. Highway 101 (Coyote Valley Parkway interchange).
  - U.S. Highway 101 (East Middle Interchange).
  - U.S. Highway 101 Improvement Project (Monterey Road to SR 129), including new Santa Teresa Boulevard interchange.
  - U.S. Highway 101 Widening (Cochrane Road to Monterey Highway).
  - S.R. 237 carpool/express lane (full length inside the study area) – includes converting the existing median to express lanes.
  - S.R. 85 carpool/express lane (full length inside the study area) – includes converting the existing median to express lanes.
  - U.S. 101 carpool/express lane (western study area boundary to Cochrane Road) – includes converting the existing median to express lanes.
  - U.S. Highway 101 High-Occupancy Vehicle Projects (convert existing medians to express lanes).
  - SR 152 and SR 156 Interchange.
  - Caltrain – double tracking from San José to Gilroy.
  - Ferguson /New North-South Corridor Projects.
  - Marcella/Center/Hill/Peet North-South Corridor Projects.
  - Monterey Road North-South Corridor Projects.
  - Santa Teresa/Hale Corridor Projects.
  - Uvas/McKean/Almaden North-South Corridor Projects.
  - East-West Corridor Projects.

  In addition to the specific projects identified above, County Roads anticipates constructing 33 miles of safety and/or operational projects that require widening of the shoulder or minor straightening of curves.

- **South County Airport Expansion.** The South County Airport is located within the unincorporated community of San Martin in Santa Clara County. A new Master Plan for the South County Airport was completed in 2006 and outlines the expansion and redevelopment of the airport. Actions may include extending the runway, realigning the runway, realigning taxi lanes, remodeling airport facilities and terminal buildings, relocating the existing animal shelter, and upgrading lights and signage.

- **Kirby Canyon Recycling and Disposal Facility Development.** The Kirby Canyon Recycling and Disposal Facility is located at the southern end of Coyote Ridge near

Anderson Reservoir. Future development of Fill Areas 3 and 4 are proposed as Covered Activities for species covered by the Habitat Plan but not covered by existing permits.

- **Off-Channel Groundwater Recharge Ponds.** To enhance its water supply infrastructure and to meet future anticipated demand, SCVWD may construct up to four new groundwater recharge ponds. Two of these sites would be located within Morgan Hill one site would be located in San Martin (each approximately 10 acres). The fourth site would be located in the Coyote Valley area (approximately 15 acres). The exact locations of the ponds and any required access roads would be identified through future siting studies.
- **County Parks Projects.** Covered Activities include the implementation of various types of projects within Santa Clara County parks and related facilities. Proposed Covered Activities include the following:
  - Trail and fire road development, and installation of related infrastructure such as bridges, staging areas, restrooms, parking lots, and signage.
  - Development of borrow sites for materials used for trail structures or restoration projects.
  - Development of regional recreation opportunities and supporting infrastructure including group and family picnic area, drive-in campgrounds, back-country camp areas, a regional swimming facility, nature/education centers, historic and cultural resources, disc golf courses, an 18-hole golf course and clubhouse, sports fields, off-leash dog parks, dog runs, road and mountain bike parks, fishing ponds, events pavilions, shade structures, hang gliding/paragliding landing sites, urban edge farming, historic agricultural park, agricultural marketing areas, community gardens, research and demonstration gardens, youth agricultural areas, staging areas including restrooms, equestrian staging areas including water troughs, parking lots, operations and maintenance facilities and buildings, park ranger facilities, multiple-use areas, public art installations, gateway sites (e.g., trailheads, park entrances, kiosks), paved and dirt roads, seating (e.g., benches), landscaping, fencing, irrigation, water tanks, interpretive signage, and sewer, water, and other utilities.
  - Capital improvements to existing trail systems including reconstruction, realignment, and (in areas where the use is compatible), the addition of separate single-use trails (e.g., equestrian trails). These improvements also include trail restoration in areas where abandoned trails are no longer in use.
  - Capital improvement expansion or rehabilitation of existing facilities including campgrounds, equestrian camping sites, day-use picnic sites, staging areas, parking, restrooms, entry and gateway sites (e.g., trailheads, park entrances, kiosks), buildings, landscaping, irrigation, fencing, interpretive signage, and sewer, water, and other utilities.
  - Restoration, creation, enhancement, and/or rehabilitation of habitat including riparian areas, wetlands, and ponds, and grassland and oak woodland natural communities.

- Installation of fish screens at Parkway Lakes, Cottonwood Lake, and Spring Valley.
- Construction of stock ponds or spring boxes for cattle management and installation of wells to supply stock ponds.
- Reconstruction of pond dams or spring boxes to maintain water levels and facility functioning.
- Replacement of the water delivery system at Jackson Ranch.

County Parks estimates that, outside of the urban growth areas, it would construct no more than 20 miles of fire roads; 25 miles of unpaved, single-track trail; 3 miles of paved service roads; 7 miles of paved, multi-use trails; 10 miles of paved roads; up to 300 non-bridge water crossings (e.g., single-track trail crossings); 20 large bridges (i.e., one- or two-way automobile use); and 30 small bridges and puncheons (i.e., footbridges). In addition, County Parks estimates that it would construct larger-scale projects (e.g., nature center, large picnic areas, pavilions, golf courses, etc.) requiring approximately 1,700 acres.

- **Alum Rock Park Riparian Management Plan.** Implementation of this plan by the City of San José is a proposed Covered Activity. Activities implemented pursuant to this plan are expected to include hillslope protection measures, stream restoration projects, riparian and aquatic habitat restoration and enhancement, and relocating a picnic area.
- **Open Space Authority Projects.** The Open Space Authority is planning to implement several types of projects on its reserve system, including visitor amenities, multi-use trails, and administrative facilities.

Rural Operations and Maintenance

This category addresses the rural operation and maintenance activities proposed to be covered under the Habitat Plan. Rural operation and maintenance activities include the following: utility line or facility operation and maintenance; vegetation management; activities associated with maintenance of small facilities; and maintenance of infrastructure facilities. Specific activities are described below:

- **Utility Maintenance.** Routine maintenance and repair of existing utilities (e.g., electric transmission lines, gas pipelines, petroleum pipelines, telecommunications lines, cellular telephone stations) is a proposed Covered Activity. Coverage would be applied on a case-by-case basis to Participating Special Entities (as defined in Habitat Plan Section 8.4).
- **Facility Maintenance.** Facility maintenance refers to maintenance of existing facilities such as buildings, roads, trails, parking lots, and airport property. This includes vegetation management activities such as fuel reduction using prescribed burning, grazing, and exotic vegetation removal. Facility management also includes the maintenance of infrastructure such as buildings, roads, utilities (e.g., septic, water, and power systems), and stormwater treatment facilities. Rodent, pest, and invasive plant species abatement activities also could be conducted for facilities maintenance.

- **Pond Maintenance.** Pond maintenance on private lands outside the Reserve System is a Covered Activity if the project proponent receives a ministerial or discretionary permit for this activity from the County or one of the cities and complies with the management actions listed in Habitat Plan Chapter 2 and the conditions and application process described in Habitat Plan Chapter 6. Management actions to avoid and minimize impacts include both required and recommended actions.
- **SCVWD Operations and Maintenance Activities and Programs.** SCVWD operations and maintenance activities outside of streams include the following: operations and maintenance of pump stations, operations yards, utility yards and corporation yards including storing sediment and truck access; maintenance of groundwater recharge sites and associated facilities; and maintenance of water supply facilities. In addition, maintenance of SCVWD's 39 rain gages would be Covered Activity.

  Rural operations and maintenance activities also include implementation of SCVWD's Pipeline Maintenance Program. The Pipeline Maintenance Program addresses routine maintenance activities for SCVWD's water conveyance system, including over 125 miles of pipelines. The following activities that occur within the Permit Area would be covered by the Habitat Plan.

- Cathodic protection, including application of electrical currents to pipelines.
- Leak repair, including discharge of water to drain the pipes and allow repair.
- Internal inspection, which may require discharge of water to drain the pipes.
- Discharge of water from emergency valves during pressure surges.
- Rehabilitation or replacement of existing pipeline components such as pipe sections or connections, joints, and air release valves and other appurtenances.
- Bank stabilization and erosion control within creeks related to pipeline maintenance.
- Replacement or repair of buried service valves.
- Maintenance of pipeline turnouts, potentially using chemicals or mechanical means.
- Replacement or repair of appurtenances, fittings, manholes, and meters.
- Maintenance of pipeline facilities and appurtenances within vaults.
- Inspection and repair of telemetry cables.
- Inspection and repair of meters.
- Maintenance of pump stations, operation yards, utility yards, and corporation yards, potentially using chemicals or mechanical means.
- Repairs to access roads, including filling potholes, installing drainage and erosion control measures, conducting shoulder and slope repairs, and regravelling existing roads.

- **County of Santa Clara.** County of Santa Clara rural operations and maintenance activities proposed as Covered Activities include the following:
  - Maintenance, repair, and rehabilitation of County roads and road shoulders, including pothole repairs, overlays, resurfacing of existing paved areas, construction of retaining walls, vegetation removal, and regarding to maintain a functional shoulder.
  - Maintenance of infrastructure associated with roads including drainage ditches, culverts, and retaining walls.
  - Operations, maintenance, and fire protection of rural juvenile detention facilities (e.g., James Ranch, Muriel Wright Center), medical treatment facilities (e.g., Mariposa Lodge), the Santa Clara County Justice Training Center (also known as Holden Ranch), and the Santa Clara County Weapons Training Center (also known as the Sheriff's Firing Range).
  - Operation, maintenance, and management of County parks including trail and road maintenance, facility maintenance, and vegetation management around structures.
  - County Parks management of natural resources including grassland, oak woodland, and riparian natural communities; protection and enhancement of freshwater resources; erosion control; and sensitive species management and monitoring. Management may include prescribed burns, mechanical fuel removal, invasive vegetation management, manual labor, restricted herbicide use, bullfrog management, feral pig removal, management of other exotic nuisance species, and managed grazing.
  - County Parks management and maintenance of ponds and spring boxes including temporary draining for amphibian management, dredging or clearing of debris and sediment for water management for cattle, and rehabilitation.
  - County Parks dam maintenance including burrow management, vegetation removal, dam repairs, and dam facility repairs.
  - Removal of infrastructure (e.g., building structures, roads, trails, stock ponds) for public safety, resource protection, and park management. County Parks may remove up to four stock ponds that do not provide habitat for Covered Species, and potentially others subject to approval by the USFWS and CDFG.
  - Use of County Parks, which may include walking, hiking, horseback riding, biking (road and mountain), fishing, swimming in designated swim facilities, recreational sports, nature-watching, horse-drawn carts, drive-in camping, equestrian camping, back-country camping, and use of on- and off-leash dog areas.
  - Vegetation management for exotic species removal and native vegetation plantings, including the use of livestock grazing and prescribed burns.
  - Trail maintenance including grading, clearing, brushing, erosion control, paving, re-paving, abandonment, and restoration.

  - Pest abatement to manage rodents, insects, and diseases, and weed abatement to manage fire hazards including removal of dead and dying wood, trees, and vegetation in agricultural areas. May include mowing and disking for weed abatement and spraying for insect and disease management.
  - Survey and monitoring activities.
  - Enhancement and restoration projects.
  - Removal of fish barriers (such as low-flow crossings) and installation of fish screens.
  - Maintenance of water delivery systems, including maintenance of instream diversion structures.
  - Activities associated with the management of large facilities including golf courses, large event facilities, and sports complexes.
  - Equestrian facilities and uses including equestrian stables, equestrian centers, trails, manure management, equestrian group camping, and horse grazing activities.
  - Minor remediation projects for spills, illegal dumping, fuel/chemical storage, and firing ranges.

- **Open Space Authority.** Operations and maintenance activities conducted by the Open Space Authority would be covered by the Habitat Plan. These activities include the following:
  - Vegetation management, including fuel reduction using prescribed burns, grazing activities, exotic vegetation control/removal, hazardous tree work, abatement of hazardous vegetation, and algae control in ponds.
  - Invasive wildlife species management, including feral pig and bullfrog management.
  - Restoration, rehabilitation, and enhancement (not including removal) of existing stock ponds.
  - Creation of new ponds to support livestock grazing or wildlife.
  - Spring development, including installation of a spring box and repair of existing spring boxes.
  - Road and/or trail closure or realignment.
  - Use of Open Space Authority lands outside of the Reserve System consistent with their management plans. Uses vary by park but may include walking, hiking, biking (road and mountain), horseback riding, and nature watching. Coverage is only provided to the Open Space Authority for the indirect effects of allowable recreational uses.
  - Activities associated with the maintenance of facilities including small structures, paving, and landscaping.
  - Maintenance of infrastructure facilities including buildings, roads (paved and unpaved), and utilities (septic, water, and power systems).

Rural Development

Activities and projects associated with rural development include private development, with the majority expected to be residential and in areas outside of the urban growth areas. It is anticipated that rural development will occur according to existing general plans in areas currently allowed and identified. Specific rural development activities proposed as Covered Activities are described below:

- Rural residential development (e.g., single family homes, subdivisions) consistent with the Santa Clara County General Plan. This may include privately owned bridges, driveways, access roads, vineyards or orchards, and other features commonly associated with rural dwelling units.
- Rural residential development on the non-urban hillsides of eastern San José, in the Coyote Valley Urban Reserve, and in the South Almaden Valley Urban Reserve consistent with the San José General Plan.
- Residential development in the Morgan Hill Southeast Quadrant consistent with the Morgan Hill General Plan.
- Residential development in the Hecker Pass Specific Plan area consistent with the Gilroy General Plan.
- Non-residential development in rural areas that requires approval from the County or cities, such as telecom facilities and small utility outposts.
- New intensive agriculture and related activities that require discretionary approval, such as mushroom farms, commercial stables, equestrian event facilities, and wineries.
- Commercial, industrial, institutional, and recreational development in unincorporated areas of the County, including San Martin, consistent with the Santa Clara County General Plan. This includes the following specific projects.
  - County projects at the Mariposa Lodge, James and Holden Ranches, and Muriel Wright Center
  - Expansion of the Z Best Composting site, which would be 66.7 acres at buildout
  - Expansion of the existing Pacheco Pass Landfill, which would use approximately 5.25 acres of the site
  - Expansion of the existing Freeman Quarry, which is a proposed 90-acre expansion of the existing 61-acre quarry

Conservation Strategy Implementation

The Habitat Plan would provide take authorization for projects and activities associated with implementation of the conservation strategy. These activities would take place within the Reserve System with the following possible exceptions: western burrowing owl conservation actions (see Habitat Plan Section 5.4.6), Coyote ceanothus creation (see Habitat Plan Section 5.4.11), onsite stream restoration activities conducted by the Local Partners (see Habitat Plan Section 5.2.5 under the definition of *Habitat Restoration*), and monitoring (see

Habitat Plan Chapter 7). Covered Activities associated with the conservation strategy would include the following:

- **Management Activities.** This category includes all management actions required by the Habitat Plan or other actions that might be necessary to achieve the biological goals and objectives. These actions may include, but are not limited to: vegetation management; relocation of Covered Species; seed collection from covered plant species; demolition or removal of structures, roads, or man-made livestock ponds; control of non-native species; stream maintenance; surveys and monitoring; fire management; hazardous materials remediation; repair of existing facilities; and operations related to water delivery. This category also includes the creation of new dirt and paved roads (including bridges), drilling new wells, and installing new fences.
- **Public Access and Recreation in the Reserve System.** Limited public access and recreational use of Reserve System would be permitted under the guidelines of the Habitat Plan. The Local Partners would be covered for incidental take of Covered Species resulting from appropriate public use of trails and parking lots within the Study Area, or outside the designated Reserve System, provided that use is consistent with the Habitat Plan. This category also includes construction and maintenance of recreational facilities such as trails, staging areas, parking, restrooms, wildlife observation platforms, and educational kiosks.
- **Habitat Enhancement, Restoration, and Creation.** The conservation strategy sets forth requirements for habitat enhancement, restoration, and creation. Enhancement activities generally fall under the preserve management category. Habitat restoration and creation would generally be disruptive only in the short term because these activities may involve soil disturbance, removal of undesirable plants, and limited grading.
- **Species Surveys, Monitoring, and Research.** Biologists would be required to conduct surveys for Covered Species, natural communities, and other resources within the Reserve on a regular basis for monitoring, research, and adaptive management purposes.
- **Emergency Activities.** The Wildlife Agencies will not obstruct an emergency response decision made by the Local Partners, where human life or properties are at stake. With the exception of changed circumstances addressed in Habitat Plan Chapter 10, take associated with emergencies are not covered by the Plan and associated permits.
- **Neighboring Landowners Protection Program.** With certain provisions and restrictions, agricultural lands within 1 mile of the Reserve System boundary would be eligible for limited coverage for incidental take of California tiger salamanders, California red-legged frogs, and western pond turtles during the course of routine agricultural activities and during the Permit Term.

Other Activities and Activities Not Covered

Activities or projects not specifically described above may be evaluated for coverage under the Habitat Plan on a case-by-case basis by the Implementing Entity. Special districts not subject to the jurisdiction of the Permittees may conduct or initiate projects within the Permit Area that could affect listed species and that may require incidental take

authorization. The Habitat Plan refers to these special districts as Participating Special Entities. The process whereby Participating Special Entities can request coverage under the Habitat Plan is described in Habitat Plan Section 8.4. Specific findings must be made to ensure that the activity is consistent with the Habitat Plan and does not conflict with plan implementation.

Projects and activities that would not be covered under the Habitat Plan are listed below and described in Section 2.4 of the Habitat Plan (also see Chapter 4, Projects with Cumulative Effects):

- SCVWD Stream Maintenance Program
- City of Gilroy expansion beyond the current "planning limit of urban growth" Consistent with the Gilroy General Plan
- California High-Speed Train System – San José to Merced Project
- New highway between Interstate 5 and U.S. Highway 101
- Routine and ongoing agricultural activities outside the planning limits of urban growth
- Expansion of cultivated agriculture into natural lands
- Vineyard development that is not assessed by the County through a County permit process
- Timber harvest operations
- Quarries and other mining operations other than the expansion of Freeman Quarry
- New and expanded landfills other than Kirby Canyon and Pacheco Pass landfill expansions, and landfills occurring within the planning limits of urban growth of the three cities
- Mercury removal/remediation, except as relates to routine stream maintenance activities
- Projects led by the U.S. Army Corps of Engineers
- Pacheco Dam reconstruction and reservoir enlargement
- Pesticide/herbicide application for the federal permits
- Installation and operation of groundwater wells, except as described in this chapter for open space and stream flow management
- Increased development due to the incorporation of San Martin
- Dam removal and/or construction of new dams
- Wind farm development
- Importing water from outside the SCVWD service area
- Emergency activities not defined as "changed circumstances" in Habitat Plan Chapter 10

2.4.2 Covered Species

Covered Species are species that would be authorized for incidental take and conserved and protected through the Habitat Plan. The Habitat Plan proposes 18 special-status species for coverage under the incidental take permits (Table 2-1). The conservation strategy includes measures for all 18 species, whether or not they are currently listed. Consistent with the federal No Surprises Regulation (see Habitat Plan Section 10.2.2), additional mitigation for adequately addressed non-listed Covered Species would not be required upon listing during the Permit Term.

TABLE 2-1
Proposed Covered Species in the Santa Clara Valley Habitat Plan

Species	Scientific Name	Status[a]	
		State	Federal
Invertebrates			
Bay checkerspot butterfly	*Euphydryas editha bayensis*	—	FT[b]
Amphibians and Reptiles			
California tiger salamander	*Ambystoma californiense*	ST	FT
California red-legged frog	*Rana aurona draytoni*	CSC	FT
Foothill yellow-legged frog	*Rana boylii*	CSC	—
Western pond turtle	*Clemmys marmorata*	CSC	—
Birds			
Western burrowing owl	*Athene cunicularia hypugea*	CSC	MBTA
Least Bell's vireo	*Vireo bellii pusillus*	SE	FE, MBTA
Tricolored blackbird	*Agelaius tricolor*	CSC	MBTA
Mammals			
San Joaquin kit fox	*Vulpes macrotis mutica*	ST	FE
Plants			
Tiburon Indian paintbrush	*Castilleja affinis* ssp. *Negecta*	ST	FE
Coyote ceanothus	*Ceanothus ferrisae*	—	FE
Mount Hamilton thistle	*Cirsium fontinale* var. *campylon*	—	—
Santa Clara Valley dudleya	*Dudleya setchellii*	—	FE
Fragrant fritillary	*Fritillaria liliacea*	—	—
Loma Prieta hoita	*Hoita strobilina*	—	—
Smooth lessingia	*Lessingia micradenia* var. *glabrata*	—	—
Metcalf Canyon jewelflower	*Streptanthus albidus* ssp. *albidus*	—	FE
Most beautiful jewelflower	*Streptanthus albidus* ssp. *peramoenus*	—	—

TABLE 2-1
Proposed Covered Species in the Santa Clara Valley Habitat Plan

Species	Scientific Name	Status[a]	
		State	Federal

Notes:

[a]Status

Federal		State	
FE	Federally Endangered	SE	State Listed as Endangered
FT	Federally Threatened	ST	State Listed as Threatened
MBTA	Migratory Bird Treaty Act	SR	State Listed as Rare
		CSC	California Special Concern Species

[b]The USFWS has recommended that the Bay checkerspot butterfly by reclassified as an endangered species (USFWS 2009).

2.4.3 Conservation Strategy

Overview

The Habitat Plan proposes a comprehensive framework for impact mitigation and conservation within the Permit Area. Subsections 2.4.3.2 – 2.4.3.4 below describe key elements of the conservation strategy that could result in environmental impacts (adverse or beneficial), focusing on the proposed Reserve System and the conservation strategy for impact avoidance and Reserve System management. Other parts of the Habitat Plan are summarized in this overview. The Habitat Plan, which is incorporated by reference into this EIR/EIS, provides more detail about the conservation strategy. To facilitate project understanding and review, cross-references to the Habitat Plan are provided in the subsections below.

The Habitat Plan describes the logic behind the conservation strategy. The strategy for the Proposed Action is presented in the following sections of the Habitat Plan:

- Biological Goals and Objectives (Habitat Plan Section 5.2.1 and Tables 5-1 a-d). The Habitat Plan describes biological goals and objectives at three levels, as follows:
  - Three landscape-level goals with 13 specific objectives (Table 5-1a). The large scale of these goals provide a framework to pursue challenging regional objectives such as maintaining ecological processes, providing environmental gradients, protecting regional biological diversity, and preserving regional wildlife linkages.
  - Seven natural community-level goals with 31 objectives (Table 5-1b). These address the preservation of the natural communities selected for conservation in the Habitat Plan: grasslands, chaparral and northern coastal scrub, oak and conifer woodland, riverine and riparian forest and scrub, and wetlands and ponds.
  - Nine species-level goals with 43 objectives (Tables 5-1c and 5-1d). These supplement and focus the landscape and natural community goals and objectives to ensure that individual species needs are addressed. Most of the biological goals and objectives are designed to at least maintain current populations of Covered Species (and other

native species) in the Permit Area. In most cases, populations of Covered Species are expected to increase as a result of the conservation strategy.

The 19 goals are broad, guiding principles based on conservation needs. The 87 objectives are expressed as conservation targets or desired outcomes, and are typically quantitative and/or measurable. Those objectives that could not be quantified at the time the Habitat Plan was written would be quantified for compliance purposes during plan implementation. For example, the term "population" could not be clearly defined for several plants proposed for coverage (e.g., Santa Clara Valley dudleya) because of data gaps. As a result, the Implementing Entity would conduct targeted studies during the preliminary years of implementation to define "population" for these plants so that the progress toward the goals to "increase the number and size of populations of" covered plants can be tracked throughout the Permit Term.

- Reserve System Design (Habitat Plan Section 5.2.3). The Reserve System (described in Section 2.4.3.2 below) is an important component of the conservation strategy. The approach to Reserve System acquisition is based on strategies such as maximizing large blocks of contiguous habitat, minimizing edges, protecting areas of high-quality existing habitat, preserving connectivity, and buffering urban impacts. Especially important is how the ultimate Reserve System fits into the larger landscape of protected open space within the Permit Area, including how it helps close local and regional gaps between existing habitat areas. Existing protected open space areas are identified in Habitat Plan Tables 2-2 and 5-5 and shown on Habitat Plan Figure 2-3. Results of the "conservation gap analysis" are presented in Habitat Plan Tables 5-4, 5-6, 5-7, and 5-8. Important linkages are described in Habitat Plan Table 5-9 and shown on Habitat Plan Figure 5-6.

- Permit Term (Habitat Plan Section 1.2.3). Under the Proposed Action, permits would be valid 50 years. This is the time period in which incidental take associated with all Covered Activities within the Permit Area are authorized, and in which all of the conservation actions must be successfully completed. A long Permit Term is expected to benefit the Covered Species by providing more time for collecting data and studying the success of the conservation strategy, as specified in the Habitat Plan. This would inform the process of fine-tuning the conservation strategy to optimize management and realize benefits after the permits have expired. In addition, a long Permit Term would enable the Implementing Entity to accomplish the Habitat Plan's land acquisition, enhancement, and restoration goals because reserve units would be purchased based on a willing-seller market.

There are many other components of the Habitat Plan that are not relevant to evaluating the potential environmental consequences of the Proposed Action, and therefore are not discussed in detail in this EIR/EIS. These include, but are not limited to, the following:

- Application processes for applying incidental take coverage to individual Covered Activities (Habitat Plan Sections 6.7 and 6.8).

- Institutional structure and responsibilities of the Implementing Entity (Habitat Plan Sections 8.2 and 8.3).

- Mechanisms and procedures for Wildlife Agency participation in Habitat Plan implementation (throughout Habitat Plan Chapters 7, 8, and 10).

- Data collection and management (Habitat Plan Section 8.10).
- Habitat Plan implementation costs and funding mechanisms (Habitat Plan Chapter 9), including assurances that funding would be available to meet the biological goals and objectives.

Reserve System

Land preservation is a key component of the conservation strategy, which calls for the establishment, enhancement, and long-term management of a Reserve System for the benefit of natural communities, Covered Species, and overall biodiversity and ecosystem functions. The system of new reserves is anticipated to be linked to existing protected lands to form a network of protected areas outside the area where new urban growth would be permitted. The Reserve System design and assembly principles are described in Habitat Plan Section 5.2.3. The Reserve System would be assembled no later than Year 45 of the Permit Term, and would be at least 46,496 acres and up to 46,920 acres.

- The Reserve System would include a minimum of 33,205 acres and an estimated 33,629 acres of newly acquired lands. In other words, at least 33,205 acres of currently unprotected lands would be protected under the Proposed Action. Acquisition could occur by purchase in fee title or conservation easement (see Habitat Plan Section 8.6).
- The Reserve System would include up to an additional 13,291 acres of existing open space lands that would be managed consistent with the Habitat Plan (see Habitat Plan Table 5-5).

Minimum land acquisition requirements must be met in order to mitigate impacts of Covered Activities and to ensure that the ability of Covered Species to recover in the wild is not precluded. However, requirements have been established such that the amount of land acquired is always greater than strict mitigation requirements. In this way, the contribution to species recovery would be assured. Minimum acquisition requirements are provided in Habitat Plan Table 5-13, and additional information is presented in Habitat Plan Section 5.3.1. An additional 100 miles of streams also would be protected under the Proposed Action.

To ensure that acquisition occurs in locations that would maximize the benefits to natural communities and Covered Species, acquisition requirements were developed based on geographic units called Conservation Analysis Zones. Acquisition priorities for each zone were developed primarily on the basis of the ecological opportunities and constraints for collectively achieving the biological goals and objectives for Covered Species and natural communities. Factors that guide conservation opportunities include land-cover type, extent, and distribution; existing land use patterns; and planned future land use activities. Based on these factors, 11 Conservation Analysis Zones or groups of zones were selected for specific conservation requirements (Table 2-2).[8] Additional information about each of the Conservation Analysis Zones is provided in Habitat Plan Section 5.3.1. Land acquisition and enhancement requirements for select Conservation Analysis Zones are presented in Habitat Plan Tables 5-17 and 5-18.

[8] It is expected that most of the Reserve System would be located within these 11 zone groups. Therefore, other zones are not discussed in this EIR/EIS.

TABLE 2-2
Conservation Analysis Zones with Conservation Targets

Zone(s)	Location	Acreage Requirements	Key Contributions
Alameda-1 Coyote-7	In Diablo Range in far northern Study Area.	Acquire 2,300 acres of natural lands.	Enhance linkages between protected lands in northern Study Area, and with other protected lands north of the Study Area consistent with Habitat Plan Linkage 4.
Guadalupe-1 Guadalupe-3	Includes Calero Reservoir and northern half of Tulare Hill. Downstream of Almaden and Calero Reservoirs.	Contribute to overall Guadalupe watershed acquisitions (1,600 acres). Acquire at least 500 acres of serpentine grasslands. Protect lands for burrowing owls.	Completes the linkage between Diablo Range and Santa Cruz Mountains across Tulare Hill. Enhances linkages Calero County Park and protected habitat in the Santa Cruz Mountains. Protects important areas of serpentine habitat.
Coyote-4	Upper Coyote Creek watershed above Anderson Reservoir, including parts of San Felipe Creek.	Acquire at least 4,200 acres, including 100 acres of serpentine grasslands.	Links Coyote Ridge to higher elevation parts of the Diablo Range (Habitat Plan Linkage 7). Links Anderson Lake with Silver Creek Hills (Habitat Plan Linkage 6). Links Joseph D. Grant County Park with Henry W. Coe State Park (Habitat Plan Linkage 5).
Coyote-5 Coyote-6	Coyote Ridge, Coyote Valley, and eastern portion of Santa Teresa Hills.	Acquire at least 2,800 acres of serpentine grasslands on both sides of the Coyote Valley. Targeted acquisitions for Bay checkerspot butterfly and Coyote ceanothus.	Enhance linkages across Santa Teresa Hills, and between Santa Teresa Hills and Coyote Ridge (Habitat Plan Linkages 6 and 8). Very important areas for Bay checkerspot butterfly and serpentine plants.
Llagas-3	Valley floor from Morgan Hill to San Martin, including surrounding foothills.	Acquire at least 100 acres of serpentine grasslands.	Protects serpentine habitat and species populations south of Santa Teresa Hills and Coyote Ridge. Provides opportunities for riparian restoration along Llagas Creek.
Llagas-4	Valley floor surrounding Gilroy.	No specific land acquisition requirements.	Protect designated critical habitat for California tiger salamander.
Pescadero-1	Southern portion of Study Area in Santa Cruz Mountains.	No specific land acquisition requirements.	Supports Habitat Plan Linkages 13, 19, and 20.
Uvas-1 Uvas-2 Uvas-5 Uvas-6	Entire Uvas watershed from ridgeline to Pajaro confluence.	Acquire 6,600 acres, apportioned between the six zones (see Habitat Plan Table 5-18). Extend Uvas Creek Park Preserve 1.6 miles upstream to Hecker Pass Road. Protect at least 1 mile of Uvas Creek above Uvas Reservoir.	Supports Habitat Plan Linkages 13, 19, and 20. Protects high elevation redwood and knobcone pine forests.

TABLE 2-2
Conservation Analysis Zones with Conservation Targets

Zone(s)	Location	Acreage Requirements	Key Contributions
Llagas-2	Around and upstream of Chesbro Reservoir.	Acquire 200 acres of serpentine grasslands. Acquire at least 1 mile of Llagas Creek above Chesbro Dam.	Protects serpentine habitat and species populations south of Santa Teresa Hills and Coyote Ridge. Provides opportunities for riparian restoration along Llagas Creek. Helps protect linkages between Chesbro Reservoir and protected areas to the west.
Pacheco-1 Pacheco-2 Pacheco-3 Pacheco-4 Pacheco-5 Pacheco-6	Upper and middle Pacheco watershed area.	Acquire 2,400 acres. Protect at least 1 mile of the mainstem Pacheco Creek, North Fork Pacheco Creek (below Pacheco Dam), or South Fork Pacheco Creek.	Provides extensive opportunities for riparian enhancement. Provides opportunities for movement across SR 152 (Habitat Plan Linkage 15). Supports Pacheco Creek corridor (Habitat Plan Linkage 17).
Pacheco-7 Pacheco-8 Coyote-2	Lower Pacheco watershed and portion of Coyote watershed	Acquire 5,500 acres, apportioned between the three zones (see Habitat Plan Table 5-18).	Provides opportunities for movement between Henry W. Coe State Park and wetland areas in northern San Benito County (Habitat Plan Linkage 14).

Source: ICF International, 2012

The Conservation Analysis Zones (excluding areas within urban growth boundaries) are shown on Figure 2-1. Figure 2-1 also shows the existing open space areas (from Habitat Plan Table 5-5) that are proposed to become part of the Reserve System. The existing open spaces are expected to be added to the Reserve System areas and would be enhanced as directed by the Habitat Plan. It is important to note that the Conservation Analysis Zones shown in Figure 2-1 are the areas where Reserve System acquisition is mostly likely to occur. The large areas on Figure 2-1 highlight approximately 200,000 acres of the 519,506-acre Study Area; within that area, at least 33,205 acres of Reserve System lands (about 16.6 percent of the highlighted area) would be acquired.

To address the need to acquire habitat for the Covered Species and not just land cover types, the Implementing Entity also would acquire land with modeled habitat for each Covered Species for which models were developed in the minimum amounts specified in Habitat Plan Table 5-17. The Implementing Entity would also demonstrate species presence in the Reserve System for the following five covered wildlife species:

- Bay checkerspot butterfly
- California red-legged frog
- California tiger salamander
- Western pond turtle
- Foothill yellow-legged frog

These species were selected because they are known to consistently breed in multiple locations in the Study Area or because they are so rare that it is necessary to be assured that

occupied lands are protected. Habitat Plan Section 5.3.1 describes these species-specific occupancy requirements in detail.

The timing and sequence of land acquisition relative to impacts is critical to the success of the Habitat Plan. Progress toward assembling the Reserve System, through land acquisition or purchase of easements, must comply with the Stay Ahead provision described in Habitat Plan Section 8.6.1. The Stay Ahead provision also includes a requirement for acquisition of covered plant occurrences to always stay ahead of impacts to these species (Habitat Plan Table 5-16), with the exception of Coyote ceanothus. The Habitat Plan requires the Reserve System to be assembled by Year 45 of the 50-year Permit Term, and requires a formal progress review in Year 20 of implementation. In addition to the Stay Ahead provision, the Habitat Plan also outlines commitments for restoration and creation of aquatic land cover types by time period (Habitat Plan Table 5-14).

Each reserve unit would have a unique reserve management plan. Based on site-specific conditions and reserve objectives, each reserve management plan would identify management and maintenance actions necessary to ensure that desired ecosystem characteristics and functions are maintained and enhanced consistent with the Habitat Plan biological goals and objectives. Each plan is expected to address the following as appropriate:

- Objectives of the conservation area
- Vegetation management
- Invasive species management
- Fire management
- Infrastructure maintenance
- Recreation use
- Agricultural use
- Mosquito abatement

In addition, each plan would describe reserve-specific monitoring and adaptive management measures. Habitat Plan Section 5.2.5 describes the process by which reserve management plans would be developed, reviewed, and adopted.

Conservation Actions

As previously discussed, Habitat Plan Tables 5-1 a-d outline the biological goals and objectives. These tables also describe "conservation actions" that would be implemented to achieve the goals and objectives. This section summarizes these conservation actions, focusing on those actions with potential environmental effects (adverse and beneficial). Additional information is provided in Habitat Plan Section 5.3.Conservation actions are labeled as follows.

- Land acquisition measures are labeled as "LAND-##"
  - Landscape acquisition measures are labeled as "LAND-L#"
  - Grassland acquisition measures are labeled as "LAND-G#"
  - Chaparral and northern coastal scrub land acquisition measures are labeled as "LAND-C#"

  - Oak and conifer woodland acquisition measures are labeled as "LAND-OC#"
  - Riverine and riparian forest and scrub land acquisition measures are labeled as "LAND-R#"
  - Wetland and pond acquisition measures are labeled as "LAND-WP#"
  - Specific plant occurrence acquisition measures are labeled as "LAND-P#"
- Landscape management measures are labeled as "LM-#"
- Grassland management measures are labeled as "GRASS-#"
- Chaparral and northern coastal scrub management measures are labeled as "CHAP-#"
- Oak and conifer woodland management measures are labeled as "OAK-#"
- Riverine and riparian forest management measures are labeled as "STREAM-#"
- Wetland and pond management measures are labeled as "POND-#"
- Directed studies are labeled as "STUDIES-#"

Management Measures for Natural Communities. The Habitat Plan includes specific conservation actions for the Implementing Entity to manage the Reserve System for the preservation and enhancement of natural communities and the Covered Species. Conservation actions are described in this section for grasslands, chaparral and northern coastal scrub, oak and conifer woodland, wetlands and ponds, and riparian woodland. Additional measures for streams (e.g., acquisition, restoration, and management), and unique requirements for other habitat types and species, are described in later sections.

Grasslands in the Reserve System would be enhanced to maintain a mosaic of grassland types and enhance grassland vegetation alliances. Techniques for grassland enhancement include grazing (GRASS-1), prescribed burning (GRASS-2), mowing (GRASS-3), seeding with native grasses and forbs (GRASS-4), and promoting populations of ground-dwelling mammals (GRASS-5 and GRASS-6).

Chaparral and northern coastal scrub would be enhanced to create and maintain a mosaic of stands with varying ages. Various techniques for enhancement include mechanical and hand thinning (CHAP-2), but prescribed burning may also be used in limited situations (CHAP-1). In addition, studies would be conducted to promote understanding of appropriate enhancement methods.

Oak and conifer woodland habitat would be enhanced to promote natural regeneration. Management techniques for oak woodland enhancement include using prescribed burns to reduce non-native, invasive grass cover plants (OAK-1), reducing or eliminating exotic wildlife such as feral pigs (LM-12), and restoring natural processes such as fire and grazing. Techniques for conifer woodland enhancement include prescribed burns (OAK-2) and mechanical thinning (OAK-3). For both oak and conifer woodlands, studies would be conducted to promote understanding of appropriate enhancement methods.

Wetlands and ponds located in the Reserve System would be enhanced to increase overall ecological functions and values and to enhance the ability of these habitats to support existing and new populations of the Covered Species. Enhancement activities may include fencing wetlands (POND-1), installing woody debris (POND-2), managing vegetation (planting appropriate types of plants [POND-3] and removing invasive or non-native

species), managing populations of non-native wildlife such as bullfrogs, removing sediment (POND-4), and ensuring reliable water supplies.

Riparian habitat located in the Reserve System would be enhanced to promote natural community functions. Enhancement actions include planting and/or seeding native understory and overstory riparian vegetation near the edge of low-flow channels (STREAM-2) and to fill in gaps between riparian habitat areas (STREAM-3).

Linkages. As discussed above, the Reserve System has been planned to meet important biological goals and objectives, including the protection of key linkages described in the Habitat Plan. This function of the Reserve System is specifically identified in LAND-L4 – LAND-L10, which target reserve acquisition to the following linkages (also see Table 2-2 above):

- Conservation Action LAND-L4: Linkage 10, between the Santa Teresa Hills and Metcalf Canyon
- Conservation Action LAND-L5: Linkage 6, along Coyote Ridge (2,900 acres of serpentine grassland)
- Conservation Action LAND-L6: Linkage 14, between Henry W. Coe State Park and San Felipe Lake (at least 3,000 acres)
- Conservation Action LAND-L7: Linkage 4, between the northeast corner of the Study Area and protected lands in Alameda County (at least 2,300 acres)
- Conservation Action LAND-L8: Linkage 9, between Almaden Quicksilver County Park and protected lands near Calero Reservoir (at least 500 acres)
- Conservation Action LAND-L9: Linkages 18, 19, and 20 between the Santa Cruz Mountains and the Gabilan Range (2,000 acres)
- Conservation Action LAND-L10: Linkage 6, between Silver Creek and Kirby Canyon

In addition to this strategy for Reserve System acquisition, the Habitat Plan also includes additional conservation actions to promote species movement within and between natural communities within and outside of the Study Area, focusing on five geographic areas:

- Movement across U.S. Highway 101 and other barriers in the following areas:
  - Between San José and Morgan Hill (Habitat Plan Linkages 8 and 10)
  - Between Gilroy and the county line (Habitat Plan Linkages 18, 19, and 20)
- Movement across SR 152 (Pacheco Pass Highway) between the SR 156 interchange and Pacheco Pass (Habitat Plan Linkage 15).
- Movement across SR 152 (Hecker Pass Road) between urban Gilroy and the Santa Cruz Mountains (Habitat Plan Linkage 12).

Species movement along each of these linkages would be promoted by implementing LM-1 through LM-5:

- LM-1. Remove fences and roads in areas where they are no longer needed and where their removal could increase the permeability of the Study Area for wildlife.
- LM-2. Replace small culverts that create a one-way barrier with large, straight culverts that allow direct movement from one side of the road to the other and ensure that the culvert is visible to the target species.
- LM-3. Where structurally possible, replace culverts with free span bridges to allow wildlife to move freely under roadways.
- LM-4. Ensure that median barrier removal and/or median perforations are considered as alternatives during project design.
- LM-5. Remove or perforate sections of median barriers along roadways to improve successful wildlife crossings, and install fencing or other features to direct wildlife to those open sections within the first 20 years of implementation.

The Habitat Plan also requires the Implementing Entity to conduct a feasibility study to evaluate engineering options to improve wildlife movement in three focal areas: from Tulare Hill to Anderson Reservoir, across Pacheco Creek (SR 152), and along the Pajaro River riparian corridor (STUDIES-1).

Stream Acquisition. The Habitat Plan requires the protection of at least 100 miles of streams. This requirement is independent of the Reserve System acquisition requirement (at least 33,205 acres, described above) – protection could include acquisition as part of the Reserve System or dedication of stream setbacks (described below in Section 2.4.3.4). In addition to the overall requirement, the Habitat Plan also specifies that riverine acquisition must occur in several specific areas. Key measures are presented below:

- Extend Uvas Creek Park Preserve 1.6 miles upstream to Hecker Pass Road (LAND-R1).
- Acquire at least 1.0 mile of Uvas Creek above Uvas Reservoir.
- Acquire at least 1.0 mile of Llagas Creek above Chesbro Reservoir.
- Acquire at least 2.0 miles of Pacheco Creek between Pacheco Reservoir and San Felipe Lake.

Riparian Acquisition. The Habitat Plan requires that riparian habitat acquisition occur at a 2:1 mitigation ratio, resulting in the requirement to acquire up to 580 acres of willow riparian forest and scrub or mixed riparian forest and woodland. A minimum of 250 acres of these riparian habitat types would be acquired regardless of the level of impact. The Habitat Plan identifies the following areas as priority areas for riparian acquisition (LAND-R2):

- Upper Penitencia Creek; Upper Coyote Creek
- San Felipe Creek
- Uvas Creek
- Bodfish Creek; Little Arthur Creek
- Tar Creek
- Pescadero Creek; Pajaro River; Pacheco Creek and its tributaries

In addition, a minimum of 40 acres of Central California sycamore alluvial woodland would be acquired (Conservation Action LAND-R3).

Wetland and Pond Acquisition. The Habitat Plan requires that wetland and pond acquisition occur at a 2:1 mitigation ratio, which results in the need to acquire up to 50 acres of perennial wetlands, 30 acres of seasonal wetlands, and 104 acres of ponds assuming that all of the Covered Activity impacts occur (LAND-WP1b, -WP2b, and –WP3b). A minimum of 10 acres of perennial wetlands, 5 acres of seasonal wetlands, and 50 acres of ponds would be acquired regardless of the level of impact (LAND-WP1a, -WP2a, and –WP3a). The Habitat Plan identifies the following areas as priority areas for pond acquisition:

- The area between Alum Rock Park and Joseph D. Grant County Park
- The area between Cañada de Oro Preserve and Chesbro Reservoir
- The area south of Henry W. Coe State Park along the Cañada de los Osos

The Habitat Plan does not identify priority areas for wetland acquisition, but states that these land cover types occur mostly on the Santa Clara Valley floor or in the nearby foothills.

Stream Restoration. Stream restoration generally involves substantial physical modifications to stream banks or stream channels to return them to natural or semi-natural conditions. Stream restoration would occur at a 1:1 mitigation ratio, resulting in an expected requirement to restore 10.4 miles of streams. At least 1 mile of the 10.4 miles of stream restoration would occur regardless of the level of impact from the Covered Activities. The conservation actions do not specify the locations of the stream restoration actions. Restoration could occur on or off the Reserve System (see Habitat Plan Section 5.2.5 for details). All stream restoration activities are required to be completed by Year 40.

Riparian Restoration. The Habitat Plan also requires the re-establishment of riparian vegetation in areas where it has been severely degraded and once occurred. Restoration is expected to occur on up to 339 acres of degraded riparian habitat (willow riparian forest and scrub, mixed riparian forest and woodland) depending on the level of Covered Activity impacts, 50 acres of which would be restored regardless of the level of impact. Up to 14 acres of central California sycamore alluvial woodland would be restored if all impacts occur. Restoration could occur in the Reserve System or in other areas depending on site-specific assessments. The Habitat Plan indicates that riparian restoration activities are mostly likely to occur in the following areas:

- Coyote Creek, including tributaries such as Fisher Creek and Thompson Creek
- Alamitos Creek and tributaries
- Los Gatos Creek below Vasona Dam
- Uvas Creek, including reaches above Uvas Dam and tributaries such as Little Arthur Creek and Bodfish Creek
- Llagas Creek, particularly above Chesbro Dam
- Pajaro River
- Pacheco Creek

In many cases, riparian restoration and stream restoration would occur together in the same location. All riparian restoration activities are required to be completed by Year 40.

Wetland and Pond Restoration and Creation. The Habitat Plan includes conservation actions for the restoration of wetlands and creation of ponds. Wetland restoration is expected to occur on up to 45 acres of freshwater marsh (perennial wetlands) and 30 acres of seasonal wetlands depending on the level of Covered Activity impacts (POND-7 and -8). A minimum of 20 acres of the 45 acres of freshwater marsh would be restored regardless of the level of Covered Activity impacts (POND-6). Restoration could include recreating the historic topography of the site and planting native freshwater emergent and aquatic plants. All wetland restoration activities would be completed by Year 40.

Pond creation is defined as the establishment of a pond in a new area (i.e., that does not currently support a pond). Under the Proposed Action, up to 72 acres of ponds would be created depending on the level of Covered Activity impacts (POND-10). Regardless of the level of impact, at least 20 acres of the 72 acres of ponds would be created at 40 sites (POND-9), at least 10 sites in the Santa Cruz Mountains and 20 sites in the Diablo Range. Pond creation would occur away from streams, and is expected to supplement the existing system of stock ponds. Ponds would be excavated to provide deeper pools for California red-legged frog adults and sub-adults and western pond turtles, and to provide shallow areas for California red-legged frog tadpoles, California tiger salamander larvae, and western pond turtle hatchlings (POND-13).

Additional Species - Specific Conservation Actions. In addition to landscape and natural community-level conservation actions, the Habitat Plan also includes species-level conservation actions. For the most part, these actions would assist the Implementing Entity in achieving species-specific biological goals and objectives. Key conservation actions are listed below:

- GRASS-7: Translocate Bay checkerspot butterflies (eggs, larvae, or adults) from core populations into suitable but unoccupied sites if natural dispersal fails to reestablish populations.
- LAND-G6: Acquire or obtain easements on burrowing owl nesting habitat within 5 miles of the San José Water Pollution Control Plant bufferlands, north of SR 237.
- LAND-G7: Acquire or obtain easements on burrowing owl nesting habitat within 5 miles of San José International Airport or other important northern San José breeding sites.
- LAND-G8: Acquire or obtain easements on 21,310 acres of suitable overwintering habitat in the Diablo Range that support ground squirrel populations or could support them with improved management.
- LAND-G9: Acquire or obtain easements on 4,100 acres of annual grassland and suitable oak woodland types north and south of SR 152 in modeled San Joaquin kit fox habitat.
- STREAM-7: Implement a brown-headed cowbird control program if least Bell's vireos become regular nesters in the Study Area.

- STREAM-8: Increase the amount of cobblestone substrate suitable for breeding foothill yellow-legged frogs.
- Acquire sites that support the following:[9]
  - Three occurrences of Coyote ceanothus (LAND-P1)
  - Fifty-five occurrences of Santa Clara Valley dudleya (LAND-P2)
  - Thirteen occurrences of Metcalf Canyon jewelflower (LAND-P3)
  - North side of Tulare Hill to promote reintroduction of Metcalf Canyon jewelflower on west side of Valley (LAND-P4)
  - Seventeen occurrences of most beautiful jewelflower (LAND-P5)
  - Twenty-two occurrences of Mount Hamilton thistle (LAND-P6)
  - Twenty-four occurrences of smooth lessingia (LAND-P7)
  - Four occurrences of fragrant fritillary (LAND-P8)
  - The Tiburon Indian paintbrush occurrence at the Kirby Canyon Recycling and Disposal Facility mitigation site (LAND-P9)
  - Four occurrences of Loma Prieta hoita (LAND-P11)

Studies. The Habitat Plan includes a requirement for directed studies that would be performed by the Implementing Entity. Seventeen of these studies address terrestrial and semi-aquatic species, and are listed in Habitat Plan Table 5-2b (STUDIES-1 through -17).

Conditions on Covered Activities

The Habitat Plan includes a series of conditions on the Covered Activities to ensure that impacts to the Covered Species are avoided or minimized as much as possible. The conditions also address minimization of impacts to natural communities. Key conditions are summarized below. Additional detail is provided in Habitat Plan Chapter 6.

Condition 1. Avoid Direct Impacts to Legally Protected Plant and Wildlife Species. Covered Activities would avoid all impacts to Contra Costa goldfields. In addition, impacts to wildlife would be avoided consistent with relevant laws (e.g., Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act).

Condition 2. Incorporate Urban-Reserve System Interface Design Requirements. Where urban development occurs near Reserve System lands, measures would be implemented to minimize the interface between developed areas and the Reserve System. Measures include access limitations (e.g., fence design and gates) and lighting restrictions.

Condition 3. Maintain Hydrologic Conditions and Protect Water Quality. All Covered Activities would implement stormwater pollution prevention measures consistent with current plans, and as those plans may be amended. The Habitat Plan also lists

[9] These acquisition requirements assume that no additional occurrences of these covered plant species are found and impacted during the permit term. Refer to Table 5-16 of the Habitat Plan, which describes additional preservation (and creation) requirements if additional occurrences of covered plant species are found and impacted. Table 5-16 also describes the maximum number of created occurrences that can be provided in lieu of preserved natural occurrences.

115 stream-related avoidance and minimization measures to be implemented with the Covered Activities; these are described in Habitat Plan Table 6-2.

Condition 4. Avoidance and Minimization for Instream Projects. In addition to the water quality measures summarized in Condition 3, the Habitat Plan also lists other measures to be implemented for instream capital projects. Habitat Plan Table 6-2 includes 115 avoidance and minimization measures that would be applied to instream projects. These include erosion control and spill prevention measures, requirements for salvage of aquatic species from dewatered channels, flow management requirements, and invasive species control requirements. Condition 4 also lists several categories of measures, including the following:

- Design requirements to help ensure that the project development process incorporates avoidance and minimization into project design, including guidance for salmonid passage at stream crossings
- Construction practices to ensure that impacts are avoided (e.g., through work windows) or minimized (e.g., through exclusion fencing) during project construction
- Post-construction practices such as revegetation
- Requirements specific to reservoir dewatering such as installation of supplementary water supply systems

Condition 5. Avoidance and Minimization Measures for Instream Operations and Maintenance. Similar to Condition 4 above, the 35 avoidance and minimization measures listed in Habitat Plan Table 6-2 also would be implemented for instream operations and maintenance activities. In addition to these measures, SCVWD also would implement a rodent burrow survey protocol prior to burrowing rodent control activities under the Dam Maintenance Program. The burrow surveys would help avoid and minimize impacts to Covered Species that may inhabit the rodent burrows.

Condition 6. Design and Construction Requirements for Covered Transportation Projects. Similar to the requirements of Condition 3 and Condition 4, the Habitat Plan includes a suite of avoidance and minimization measures for covered transportation projects (Table 6-3). These are summarized below:

- A data collection program to study wildlife movement throughout the Study Area, with local data collection beginning 1 year prior to design.
- Design requirements to help ensure that the project development process incorporates avoidance and minimization into project design, including how existing undercrossings can be enhanced (e.g., increasing culvert sizes) and dangerous wildlife crossing points can be fenced.
- Construction practices to ensure that impacts are avoided or minimized during project construction. These would be consistent with standard water quality BMPs, but include addition measures specific to road construction.
- Post-construction practices such as revegetation.

Condition 7. Rural Development Design and Construction Requirements. The Habitat Plan contains design and construction requirements for rural development projects, as described below:

- Impacted areas (the "building envelope") shall be shown on all development applications. The building envelope should be located as close as possible to existing infrastructure, and away from any adjacent Reserve System lands.
- Unnecessary modifications to site hydrology are discouraged.
- When subject to discretionary review, vineyards should implement avoidance and minimization measures such as erosion and sediment control measures and planting vine rows along existing contours.
- Minimize the development of new private rural roads, and implement erosion control measures during construction.
- Other requirements such as restrictions on invasive plants and outdoor lighting.

Condition 8. Implement Avoidance and Minimization Measures for Rural Road Maintenance. The Habitat Plan contains a list of avoidance and minimization measures to be implemented for Rural Road Maintenance. These measures are similar to those described for Condition 4, but the list is more extensive (52 measures – see Habitat Plan Table 6-4). In addition to the BMPs in Habitat Plan Table 6-4, Condition 8 also includes other requirements such as limitations on pesticide and herbicide use, timing restrictions to avoid nesting birds, and equipment cleaning requirements to control the spread of noxious weeds.

Condition 9. Prepare and Implement a Recreation Plan. Individual recreation plan components of reserve unit management plans (see Section 2.4.3.2) would describe how and where recreational and educational uses can be implemented in a manner consistent with the biological goals and objectives. For those Reserve System lands where recreation is allowed, recreation is expected to be limited to recreational trails and associated staging facilities (e.g., parking areas, restrooms, kiosks) subject to the maximum number allowed by the Habitat Plan. In addition, up to three backpack camps are expected to be developed.

Condition 10. Fuel Buffer. Fuel buffers of at least 30 feet and up to 100 feet are required to be maintained around new dwellings or structures (the applicable Covered Activities) in the Diablo Range or Santa Cruz Mountains, or in grassland, chaparral, oak woodland, or conifer woodland habitats.

Condition 11. Stream and Riparian Setbacks. Setbacks would be required for all Covered Activities occurring near streams and riparian areas. Proposed setbacks are shown in Table 2-3. Also see Habitat Plan Figures 6-3a through 6-3d. The proposed setback requirements in the Habitat Plan are based on an extensive literature review of applicable research from both local and national sources (Habitat Plan Table 6-6) and consultation with the Wildlife Agencies. The Habitat Plan discusses the application of Condition 11 to Covered Activities, including some exemptions and exceptions. The Habitat Plan also describes an in-lieu fee process in which encroachment fees can be paid in areas where meeting the setback requirements are not possible.

TABLE 2-3
Stream Setbacks

Stream Category[a]	Location[b]	Slope Class (percent)	Setback
1	Inside USA	0-30	100 feet
1	Inside USA	>30	150 feet
1	Outside USA	0-30	150 feet
1	Outside USA	>30	200 feet
2	Inside USA	0-30	35 feet
2	Inside USA	>30	35 feet
2	Outside USA	0-30	35 feet
2	Outside USA	>30	35 feet

[a]Category 1 streams have sufficient flow to support Covered Species and riparian habitat. Category 2 streams include all ephemeral streams and some intermittent stream reaches. See Habitat Plan for more detail.

[b]USA = Urban Services Area, generally corresponding to existing city limits.

Condition 12. Wetland and Pond Avoidance and Minimization. The Habitat Plan includes measures to help ensure the long-term protection of high-quality wetland and pond areas that are avoided during implementation of the Covered Activities. This condition requires that project proponents pay a wetland fee for impacts to wetlands and ponds. Other measures include installing exclusion fencing during construction, limiting herbicide use, and using appropriate erosion control measures.

Condition 13. Serpentine and Associated Covered Species Avoidance and Minimization. Some impacts to serpentine habitats would occur during implementation of Covered Activities. The Habitat Plan has been prepared to compensate for these losses, but Condition 13 provides additional measures to avoid and minimize impacts where possible. These measures include site design recommendations and landscape restrictions.

Condition 14. Valley Oak and Blue Oak Woodland Avoidance and Minimization. Condition 14 provides additional measures to avoid and minimize impacts to oak woodland habitats, including site design recommendations, buffer zones, disturbance restrictions (e.g., hand pruning), and landscape and irrigation restrictions.

Condition 15. Western Burrowing Owl. Western burrowing owl habitat surveys will be required in all modeled occupied nesting habitat during both the breeding and non-breeding season (see Habitat Plan Figure 5-11). Modeled habitat will be updated throughout the permit term based on the best available scientific data. If suitable habitat is detected during habitat surveys, and if the project does not fully avoid impacts to suitable habitat, preconstruction surveys are required prior to any ground disturbance in accordance with the protocols described in the Habitat Plan. Based on the results of the preconstruction surveys, construction activities would be required to avoid active burrow areas (250-foot buffer during both the breeding and non-breeding seasons). The Habitat Plan describes certain allowances for construction inside of the 250-foot non-disturbance buffer. Passive relocation would not be allowed until a positive growth trend is achieved. Once this occurs, passive relocation may be allowed, with the approval of the Wildlife Agencies, on project sites in the non-breeding season (September 1–January 31) if the other avoidance and minimization measures do not allow work

to continue. Passive relocation would only be proposed if the burrow needed to be removed or had the potential of collapsing (e.g., from construction activities).

Condition 16. Least Bell's Vireo. The Habitat Plan requires the Implementing Entity to prepare a map of areas with potential least Bell's vireo breeding habitat. Surveys are required if a project occurring within the mapped area is within 250 feet of riparian land cover types. If early successional riparian vegetation is found during these surveys, the project proponent may revise the proposed project to avoid all areas within a 250-foot buffer around the potential nesting habitat and surveys will be concluded. If the 250-foot buffer is not avoided, preconstruction surveys would be required. If active nests are found, a 250-foot no-activity buffer would be established during the breeding season. The no-activity buffer could increase if monitoring indicates that breeding is being affected, or construction may be halted if necessary. Disturbance to previous nesting sites (for up to 3 years) will also be avoided during the breeding season unless the disturbance is required for the conservation strategy or to maintain public safety.

Condition 17. Tricolored Blackbird. The Habitat Plan requires the Implementing Entity to prepare a map of areas with suitable tricolored blackbird breeding habitat. Preconstruction surveys would be required for Covered Activities occurring in these mapped areas to determine if nesting has occurred within the past 5 years. If active nests are found or nests have been used in the past 5 years, a 250-foot no-activity buffer would be established during the breeding season. The buffer would be established from the outer edge of all hydric vegetation associated with the breeding colony. The no-activity buffer could increase if monitoring indicates that breeding is being affected, or construction may be halted if necessary.

Condition 18. San Joaquin Kit Fox. The Habitat Plan requires the Implementing Entity to prepare and maintain a map of areas with suitable kit fox breeding habitat. Initial species surveys and preconstruction surveys would be required for Covered Activities occurring in these mapped areas. If a suitable kit fox den is found, the den would be monitored by a qualified biologist to determine active use. Inactive dens would be destroyed to deter kit foxes from returning to the development site. Any kit fox activity would require complete avoidance within a 250-foot buffer area and consultation with the USFWS and CDFG.

Condition 19. Plant Salvage when Impacts are Unavoidable. When impacts to covered plant species are unavoidable, the Implementing Entity may salvage the covered plants. This could include relocating the plant or by other means such as harvesting seeds.

Condition 20. Avoid and Minimize Impacts to Covered Plant Occurrences. The Habitat Plan requires avoidance and minimization measures when surveys show that covered plant species are located on a site to be disturbed by a Covered Activity. Surveys would record the baseline condition of covered plant species prior to impact. Avoidance and minimization measures would include installing fenced exclusion zones around plant occurrences. In addition, post-construction monitoring would be required to study residual effects and determine the need for compensatory mitigation. Monitoring would occur for a minimum of 5 years for annuals and a minimum of 3 years for perennials in accordance with the requirements of the Habitat Plan.

In addition to these conditions, preconstruction and construction surveys would be required for some land cover types with suitable breeding habitat for some of the Covered Species. The land

cover types and species triggering preconstruction survey requirements are listed below. The results of preconstruction surveys would dictate the need for construction monitoring.

- For any Covered Activities occurring in serpentine bunchgrass grasslands in existing Bay checkerspot butterfly habitat units, identify and map extent of larval host plants
- For any Covered Activities in serpentine bunchgrass grassland, survey for smooth lessingia, fragrant fritillary, Metcalf Canyon jewelflower, most beautiful jewelflower, Tiburon Indian paintbrush, and Coyote ceanothus
- For any Covered Activities in serpentine rock outcrops, survey for Santa Clara Valley dudleya, smooth lessingia, Metcalf Canyon jewelflower, most beautiful jewelflower, and Tiburon Indian paintbrush
- For any Covered Activities in serpentine seep, survey for Mount Hamilton thistle
- For any Covered Activities in mixed serpentine chaparral, survey for Coyote ceanothus and most beautiful jewelflower
- For any Covered Activities in mixed oak woodland and forest with serpentine soils, survey for Loma Prieta hoita
- For Covered Activities in coast live oak forest and woodland with serpentine soils, survey for Loma Prieta hoita
- For any Covered Activities in areas of northern coastal scrub/Diablan sage scrub with serpentine soils, survey for Coyote ceanothus, Metcalf Canyon jewelflower, most beautiful jewelflower, and smooth lessingia
- For any Covered Activities occurring within one-quarter mile of a known occurrence of a covered plant, survey for that plant

Monitoring and Adaptive Management Program

The Habitat Plan includes an integrated monitoring and adaptive management process, which is described in detail in Habitat Plan Chapter 7. Such a program is required for HCPs and NCCPs, but it is especially important in this case because of the inherent uncertainty in implementing a long-term regional conservation plan with complex terrestrial and aquatic programs. The overarching objective of the monitoring and adaptive management program is to ensure that the biological goals and objectives are being achieved. Specific objectives are as follows:

- Provide an organizational framework and decision-making process for evaluating monitoring, targeted studies, and other data to adjust management actions.
- Document the baseline condition of biological resources in the Reserve System and other key habitat outside of the Reserve System using existing data, modeling, and the results of ongoing field surveys.
- Develop conceptual models for natural communities and Covered Species, if applicable, that can be used as a basis for collecting information, verifying hypotheses, and designing and changing management practices.

- Incorporate hypothesis testing and experimental management, including targeted studies to address critical uncertainties and to improve management and monitoring efforts.
- Develop and implement scientifically valid monitoring protocols at multiple scales to ensure that data collected will inform management and integrate with other monitoring efforts.
- Ensure that monitoring data are collected, analyzed, stored, and organized so the date are accessible to the Implementing Entity, the Local Partners, regulatory agencies, scientists, and, as appropriate, the public.

The program would be fully developed and implemented over time. Habitat Plan Chapter 7 provides the framework for the program, but the Implementing Entity would develop a more detailed program during the initial years of Habitat Plan implementation. Extensive baseline data is expected to be collected during these initial years as well. Following this inventory phase, it is expected that the Implementing Entity would initiate targeted studies to address critical uncertainties. Most targeted studies are expected to occur within the first 5-10 years of Habitat Plan implementation, but they could occur throughout the 50-year Permit Term as long as critical uncertainties exist. The intent of targeted studies is to inform long-term management so that changes can be implemented as necessary. The logic for the monitoring and adaptive management program is illustrated in Habitat Plan Figures 7-4 and 7-5.

Monitoring would occur at the landscape, natural community, and species scales. Landscape monitoring would examine large-scale uncertainties such as habitat fragmentation, and is expected to include the following studies:

- Assimilate results of pre-acquisition assessments and other surveys.
- Refine land cover maps.
- Assess and monitor landscape linkages.
- Track invasive species.
- Track recreation-related impacts in the Reserve System.
- Monitor disturbance events.

Natural community monitoring would focus on issues germane to specific natural communities: grasslands, chaparral and northern coastal scrub, oak and conifer woodland, stream and riparian forest and scrub, and wetlands and ponds.

- Grassland Actions:
  - Assess condition of natural community.
  - Monitor actions to promote native plants and reduce invasive species.
  - Monitor ground squirrel populations and burrow use.
- Chaparral and Northern Coastal Scrub Actions:
  - Assess condition of natural community.
  - Evaluate effects of periodic disturbance.
  - Track adjacent natural community encroachment into chaparral.
- Oak and Conifer Woodland Actions:
  - Assess condition of natural community.
  - Evaluate effects of periodic disturbance.
  - Evaluate seeding, planting, and other enhancement efforts.

- Stream and Riparian Forest and Scrub Actions:
  - Assess condition of natural community.
  - Monitor riparian restoration projects.
  - Evaluate effects of periodic disturbance.
  - Monitor stream restoration projects.
- Wetland and Pond Actions:
  - Assess condition of natural community.
  - Evaluate habitat enhancement, restoration, and creation activities.
  - Evaluate efforts to reduce impacts associated with livestock and non-native plants and animals.

For species-level actions, the Covered Species are categories into three groups in order to prioritize monitoring and maximize efficiencies. The logic for the grouping is explained in Habitat Plan Section 7.3.3.

- Group 1 Species:
  - Bay checkerspot butterfly: document and monitor status, evaluate response to habitat enhancement and restoration, evaluate use of translocation to establish new populations, and monitor new threats.
  - California red-legged frog: document and monitor status; evaluate response to habitat enhancement, restoration, and creation; evaluate use of adjacent uplands and non-breeding aquatic habitats; evaluate response of predator control programs; and monitor additional threats.
  - Western burrowing owl: document and monitor status, evaluate response to habitat protection and enhancement, and monitor additional threats.
  - California tiger salamander: document and monitor status; evaluate response to habitat enhancement, restoration, and creation; evaluate use of burrows; evaluate response of predator control programs; and monitor additional threats.
  - Tiburon Indian paintbrush: document and monitor status, evaluate response to habitat enhancement, conduct targeted studies, and monitor additional threats.
  - Coyote ceanothus: document and monitor status, evaluate response to habitat enhancement, conduct targeted studies, and monitor additional threats.
  - Santa Clara Valley dudleya: document and monitor status, evaluate response to habitat enhancement, conduct targeted studies, and monitor additional threats.
  - Metcalf Canyon jewelflower: document and monitor status, evaluate response to habitat enhancement, conduct targeted studies, and monitor additional threats.

- Group 2 Species:
  - Foothill yellow-legged frog: document and monitor status, evaluate response to enhancement and restoration of stream habitat, evaluate management of riparian corridors, evaluate response to non-native plant and animal control, and monitor additional threats.
  - Western pond turtle: document and monitor status, evaluate response to enhancement and restoration of stream habitat, and monitor additional threats.
  - Other covered plants: document and monitor status, evaluate response to habitat enhancement, conduct targeted studies, and monitor additional threats.
- Group 3 Species:
  - San Joaquin kit fox: document and monitor status, evaluate response to habitat enhancement, and monitor additional threats.
  - Least Bell's vireo: document and monitor status, evaluate response to habitat enhancement and restoration, and monitor additional threats.
  - Tricolored blackbird: document and monitor status; evaluate response to habitat enhancement, restoration, and creation; and monitor additional threats.

2.5 Alternative A – Reduced Permit Term

Under Alternative A, the USFWS and CDFG would issue incidental take permits and the Local Partners would implement a combined Habitat Conservation Plan and Natural Communities Conservation Plan that is similar to the proposed Habitat Plan (described above as the Proposed Action). The Permit Term under Alternative A, however, would be limited to 30 years rather than 50 years. Because of the reduced term, the extent of Covered Activities and the conservation strategy would be different than under the Proposed Action, generally smaller in scale. At the end of the 30-year term under Alternative A, activities within the Permit Area would continue to occur in the same manner as described under the No Action Alternative.

The key elements of Alternative A are summarized below, following the same general categories as the Proposed Action.

2.5.1 Covered Activities

The types of activities proposed for incidental take coverage would be the same as described above for the Proposed Action. Implementation of the Covered Activities, however, would be different because of the reduced Permit Term. The seven general categories of Covered Activities, and how they are expected to change under Alternative A, are listed below:

- **Activities and projects associated with urban development.** Under Alternative A, the category of urban development would continue to include all types of ground-disturbing activities and projects within the planning limits of urban growth. Urban development would be conducted in accordance with the general plans for each of the local land use authorities (see Section 2.4.1.1 above). Incidental take coverage, however, would be applied to fewer acres under Alternative A depending on the

anticipated buildout schedules of the local land use authority. The level of anticipated development for each of the municipalities is as follows:

- City of Gilroy. The City of Gilroy anticipates that buildout of the City would occur within the existing general plan boundary, which represents a 20-year development time frame. Under Alternative A, therefore, incidental take coverage would be applied to the same acres as the general plan boundary because full development would occur within a 30-year term (i.e., same as the Proposed Action). Any additional development is anticipated to occur within existing urbanized area (e.g., infill projects).
- City of Morgan Hill. The City of Morgan Hill anticipates that buildout of the City will occur outside of the existing general plan boundary but within its larger Urban Limit Line. Under the Proposed Action, urban development in Morgan Hill would continue to occur throughout the entire 50-year Permit Term. For Alternative A, however, it is assumed that the level of urban development in the City of Morgan Hill would be 60 percent of the level of urban development under the Proposed Action because the Permit Term would be 60 percent of the Proposed Action's 50-year term. Urban development after the end of the Permit Term (i.e., the remaining 40 percent of anticipated development) would occur outside of the framework provided by the Habitat Plan and would occur in a manner similar to the No Action Alternative.
- City of San José. The City of San José anticipates that buildout of the City will occur within the "Greenline" – the Urban Growth Boundary adopted in 2000. Under the Proposed Action, urban development within the Greenline would occur consistent with the proposed General Plan, which assumes full buildout by 2040. Under Alternative A, therefore, incidental take coverage would be applied to the same acres as the Greenline because full development would occur within a 30-year Permit Term (i.e., same as the Proposed Action). Any additional development after 2040 is anticipated to occur within existing urbanized area (e.g., redevelopment or intensification of existing urban lands).

Under the Proposed Action, development within the planning limits of urban growth is expected to account for 11,931 acres of permanent impacts. With the constraints described above for the cities of Gilroy, Morgan Hill, and San José, development under Alternative A would account for 10,738 acres of impacts. The remaining 1,193 acres would be developed consistent with the No Action Alternative.

For Morgan Hill, it is not possible to predict exactly what areas would be developed consistent with Alternative A (i.e., with incidental take coverage) and what areas would be developed consistent with the No Action Alternative (i.e., with no ITPs). The timing of development is not based on location, but rather on market forces and other unpredictable factors. For this alternative, it is assumed that incidental take coverage is simply applied to 60 percent of the lands scheduled for development under the Proposed Action.

- **Activities and projects associated with instream capital projects.** Under Alternative A, this category would continue to include public infrastructure projects that occur within streams. The instream capital projects proposed for incidental take coverage could occur at any time over the Proposed Action's 50-year term, but the Local Partners have indicated that a

substantial number of these projects would be completed well before the end of the 50-year term and likely within 30 years. Assumptions for Alternative A are described below:

- Construction of new bridges and trails (including temporary impacts) in the cities of Gilroy and San José would occur within 30 years, consistent with the urban development assumptions described above. Sixty percent of the new bridges and trails in the City of Morgan Hill would be constructed within 30 years. Sixty percent of the new bridges and trails in unincorporated Santa Clara County would be constructed within 30 years.
- Eighty percent of the local bridge repair and replacement projects in all jurisdictions would be completed within 30 years.
- All of the bridge repair and replacement projects by VTA would be completed within 30 years.
- Instream capital projects by SCVWD (i.e., flood control, levee reconstruction, dam-related capital projects, and new in-channel groundwater recharge facilities) would be 70 percent complete within 30 years.

- **Activities and projects associated with instream operations and maintenance.** Under Alternative A, this category would continue to include ongoing operations and maintenance that occurs in or immediately adjacent to creeks. In addition to the general operations and maintenance activities implemented by the cities or by County Parks including sediment removal, Alternative A also would cover SCVWD "non-routine" stream maintenance projects;[10] dam maintenance projects in the Guadalupe, Coyote, and Pajaro watersheds; and rain gage maintenance. Because this category is for ongoing activities, it is expected that the initial impacts would occur within the 30-year permit term under Alternative A. Instream operations and maintenance activities would continue to occur after the end of the 30-year term, but in a manner consistent with the No Action Alternative.
- **Rural capital projects.** Under Alternative A, this category would continue to address public infrastructure (capital) projects occurring outside of the planning limits of urban growth. The rural capital projects proposed for incidental take coverage could occur at any time over the Proposed Action's 50-year term, but the Local Partners have indicated that a substantial number of these projects would be completed well before the end of the 50-year term and likely within 30 years. Assumptions for Alternative A are described below:
  - Rural transportation projects undertaken by Santa Clara County are expected to be 80 percent complete within 30 years
  - Rural transportation projects undertaken by VTA are expected to be 100 percent complete within 30 years

[10] "Routine" stream maintenance actions by SCVWD are covered by a separate program – the Stream Maintenance Program – and are not proposed Covered Activities under any of the alternatives. Implementation of the Stream Maintenance Program is considered under cumulative effects.

- County Parks projects are expected to be 70 percent complete within 30 years
- All other identified rural capital projects are assumed to be complete within 30 years. This includes the South County Airport Expansion, Kirby Canyon Landfill Expansion, SCVWD recharge basins (Llagas #1 - #3, Coyote Greenbelt), Alum Rock Park Riparian Management Plan, and various small capital projects by the Open Space Authority

Under Alternative A, incidental take coverage would be applied to those rural capital projects that are completed within 30 years. The remaining projects would occur in a manner consistent with the No Action Alternative.

- **Activities and projects associated with rural operation and maintenance.** Under Alternative A, this category would continue to addresses SCVWD, Santa Clara County, and Open Space Authority facility operation and maintenance activities, as well as utility line operation and maintenance activities, similar to the Proposed Action. However, for the purposes of this impacts analysis, it is assumed that the initial impacts would occur within the 30-year permit term under Alternative A. Rural operations and maintenance activities would continue to occur after the end of the 30-year term, but in a manner consistent with the No Action Alternative.
- **Activities and projects associated with rural development.** Under Alternative A, activities and projects associated with rural development would continue to include private development, with the majority expected to be residential and in areas outside of the city-defined planning limits of urban growth. For this category, land use authority is with Santa Clara County.

  The level of activities under Alternative A are expected to be 60 percent of the level under the Proposed Action. Under the Proposed Action, rural development is expected to account for 3,067 acres of permanent impacts to lands in the Permit Area. Under Alternative A, rural development would account for 1,840 acres of impacts. The remaining 1,227 acres would be developed consistent with the No Action Alternative. As described above for the urban development category, it is not possible to predict exactly what areas would be developed consistent with Alternative A (i.e., with incidental take coverage) and what areas would be developed consistent with the No Action Alternative (i.e., with no ITPs).
- **Activities and projects associated with conservation strategy implementation.** Under Alternative A, incidental take authorization would be provided for projects and activities associated with implementation of the Alternative A conservation strategy. Most of these activities would take place within the Alternative A Reserve System; however, some conservation activities may also occur outside of the Alternative A Reserve System on public or private lands. The Alternative A Reserve System and other elements of the Alternative A conservation strategy are described below in Section 2.5.3, Conservation Strategy and Actions.

2.5.2 Covered Species

Covered Species are species that would be authorized for incidental take and conserved and protected under Alternative A are the same as described above for the Proposed Action (see Table 2-1).

2.5.3 Conservation Strategy

Under Alternative A, the conservation strategy is similar to the Proposed Action but has been scaled back to fit the reduced scale of the Covered Activities and a shorter permit term. The overall goals of the conservation strategy are the same as the Proposed Action – minimize and mitigate the impacts of Covered Activities, contribute to the recovery of listed Covered Species, and reduce the need for listing non-listed Covered Species by protecting and enhancing their populations.

Reserve System

Similar to the Proposed Action, a Reserve System would be established to preserve key habitat areas and link them with existing protected areas. Under Alternative A, however, the Reserve System would be smaller than under the Proposed Action. A 30-year permit term (20 years less than the Proposed Action) would reduce the amount of time the Implementing Entity would have to develop the Reserve System, which would be assembled on a willing seller basis. In addition, acquisition and enhancement activities to mitigate the effects of the Covered Activities would be scaled back commensurate with the reduced impact level. Under Alternative A, acquisition of new land and incorporation of existing open space would be 26,564 acres and 10,400 acres, respectively, compared to 33,205 acres and 13,291 acres, respectively, under the Proposed Action.

Under Alternative A, Reserve System acquisition would be complete by Year 25 following permit issuance, and all Reserve System enhancement activities would be completed by Year 20 following permit issuance (compared to 45 years and 40 years, respectively, under the Proposed Action). All other aspects of the Reserve System (e.g., acquisition requirements by conservation analysis zones, Stay-Ahead and Jump Start provisions, species occupancy, etc.) would be analogous to the Proposed Action.

Conservation Actions and Conditions

Under Alternative A, conservation actions and conditions for the benefit of Covered Species would be implemented in the same manner as under the Proposed Action (see Sections 2.4.3.3 and 2.4.3.4). The extent of the actions would be reduced because of the smaller Reserve System, but the individual actions would still occur.

2.6 Alternatives Eliminated from Further Consideration

Several additional alternatives were considered. During the evaluation of these other alternatives, it was determined that they were not reasonable in the context of the criteria in Section 2.1. They are briefly described in this section, but are not evaluated in detail in this EIR/EIS.

2.6.1 Acquisition-Focused Alternative

An alternative was considered that focused on habitat acquisition to a greater degree than under the Proposed Action. Under the Acquisition-Focused Alternative, up to 46,629 acres would be acquired as part of the Reserve System, rather than 33,629 acres under the Proposed Action. To compensate for the greater level of acquisition, existing open space would not be incorporated into the Reserve System under this alternative. There are many

areas within the Study Area that could play a key role in ensuring the long-term viability of some of the species proposed for coverage under the Proposed Action and Alternative A. However, many of these existing open space areas are not permanently protected and/or are not managed primarily for natural communities and sensitive species. For example, Santa Teresa County Park includes more than 670 acres of serpentine bunch grassland and is an important satellite population for the Bay checkerspot butterfly on the west side of the valley. Rare endemic plant species proposed for coverage under both the Proposed Action and Alternative A are known to occur within the park (i.e., the most beautiful jewelflower and the Santa Clara Valley dudleya). However, the Park's primary management goal is not related to ecological protection. Incorporating a portion of Santa Teresa County Park into the Reserve System would allow the Implementing Entity to introduce livestock grazing onsite to enhance serpentine habitat for these rare endemic species and would be critical to obtaining the biological goals and objectives of the Proposed Action and Alternative A. As such, protection of existing open space along with enhancement, management, and monitoring assured under the Proposed Action and Alternative A were considered necessary to meet the purpose and need and goals and objectives of this EIR/EIS. In addition, preliminary analysis suggests that a significant increase in new acquisitions to compensate for up to 13,291 acres of existing open space incorporated into the Reserve System is not economically feasible and thus is not a reasonable alternative to carry forward in this EIR/EIS.

2.6.2 Enhancement Focused Alternative

Under this alternative, the Wildlife Agencies would grant incidental take authorization and the Local Partners would implement a combined Habitat Conservation Plan and Natural Communities Conservation Plan that is similar to the proposed Habitat Plan (described above as the Proposed Action). The Habitat Plan requires the acquisition and preservation of a minimum of 33,205 acres of land for the benefit of Covered Species, along with the incorporation and enhancement of up to an additional 13,291 acres of existing open space into the Reserve System. The focus of this alternative, however, would be on the enhancement of existing open space component of the conservation strategy. Under this alternative, acquisition of new land would be reduced and enhancement of incorporated existing open space would be increased. The Covered Activities, Covered Species, and conservation strategy would be similar to the Proposed Action, but the conservation strategy would place more emphasis on the enhancement component by increasing the acreage of existing open space lands that would be enhanced (i.e., over and above the acreage shown in Figure 2-1).

This alternative does not appear to be feasible, however, because the upper limit of enhancement under the Proposed Action (13,291 acres) appears to be a practical maximum commitment. In developing the Proposed Action, the Local Partners reviewed opportunities for using the existing open space lands in the Study Area to promote biological goals and objectives, and developed a subcategory of the Reserve System for existing conservation lands. The existing conservation lands proposed for the Reserve System are shown on Figure 2-1. Additional lands (in any substantial amount) were not available for the following reasons:

- Lands were in active recreational use or planned for future recreational use, and therefore would not be consistent with the Habitat Plan biological goals and objectives.

- Lands were unsuitable for the Covered Species, with little or no opportunity for enhancement.
- Lands already supported the Covered Species, and there was little opportunity for further enhancement.

For these reasons, the alternative is not being carried forward for detailed consideration.

2.6.3 Reduced Take

Another alternative considered was one that reduced the expected amount of incidental take by reducing the extent of the Covered Activities. For example, urban and rural development would be reduced to levels below that anticipated under the existing General Plans. This alternative was determined to not be reasonable because there would be significantly less incentive for the Local Partners to pursue the Habitat Plan without having incidental take coverage to fully execute their adopted development plans.

2.6.4 Incidental Take Coverage for Fish Species

An alternative was considered that would propose coverage for the following four fish species: (1) central California coast steelhead, a federally threatened species that likely occurs in the Guadalupe River and Coyote Creek watersheds; (2) south-central California coast steelhead, a federally threatened species and state Species of Special Concern that occurs in the Pajaro River watershed (primarily in the Uvas Creek watershed); (3) Central Valley fall-run Chinook salmon, a federal Species of Concern and state Species of Special Concern that occurs in the Guadalupe River and Coyote Creek watersheds; and (4) Pacific lamprey, a federal Species of Concern that likely occurs in larger streams in the Study Area. This alternative would add new measures to the conservation strategy to protect, enhance, and restore habitat conditions for these fish species – this alternative would include conservation actions such as the following:

- Criteria for releasing water from key Study Area reservoirs to accomplish objectives such as:
  - Preventing stranding of fish and other wildlife resulting from rapid decreases in reservoir releases ("ramping criteria").
  - Providing sufficient amounts of cold water in designated habitat areas ("coldwater management zones"). This would be accomplished by holding sufficient quantities of water in upstream reservoirs to create and manage a "coldwater pool."
  - Providing sufficient minimum flows in designated habitat areas during the winter ("winter base flows") to maintain suitable habitat conditions.
  - Providing high flows for short periods in spring ("spring pulse flows") to enhance habitat conditions and help attract adult steelhead to swim upstream.
- Physical habitat restoration activities in various locations downstream of Study Area reservoirs, including activities such as channel reconfiguration.
- Fish passage enhancement projects to remove barriers that block or otherwise interfere with upstream and downstream fish passage, and other measures that would improve

access to instream habitat. This category could include activities that would provide a major expansion of the range of covered fish species in the Study Area.

These and other measures have been considered over the past several years as potential conservation actions in both the Habitat Plan (i.e., the Proposed Action) and the proposed Three Creeks HCP. The Three Creeks HCP would be the primary vehicle for implementing an aquatic conservation strategy in the Study Area, but the Habitat Plan could help support Three Creeks HCP implementation and reinforce a comprehensive terrestrial and aquatic conservation strategy in the Study Area. However, administrative challenges (primarily timing issues) precluded the full integration of the proposed Three Creeks HCP into the Habitat Plan. Because of the desire by the Local Partners and the Wildlife Agencies to finalize and begin implementing the conservation strategy for the terrestrial and semi-aquatic species in the Habitat Plan, this alternative is not being carried forward for detailed consideration.

It is anticipated that the Three Creeks HCP conservation strategy will continue to be developed upon finalization and implementation of the Habitat Plan, and it is possible that the Habitat Plan could be amended to incorporate additional fish conservation measures in the south county watersheds. In this EIR/EIS, the Three Creeks HCP is considered in the analysis of cumulative impacts (see description in Chapter 4 of this document). This EIR/EIS also considers fish species in the analysis of biological resources impacts (see Chapter 5), including adverse effects from Covered Activities, ancillary benefits to fish as a result of the conservation strategy for terrestrial and semi-aquatic species, and potential cumulative benefits from implementation of the Three Creeks HCP.

2.6.5 Henry W. Coe State Park

Henry W. Coe State Park is located in the Diablo Range in eastern Santa Clara County and western Stanislaus County. At 85,843 acres, it is the largest state park in Northern California. An alternative was considered that would expand the Proposed Action to incorporate Coe Park. Under this alternative, management activities in Coe Park would be Covered Activities, and the proposed Habitat Plan conservation strategy would apply to Coe Park to supplement existing management by the California Department of Parks and Recreation (State Parks). Coe Park activities covered under this alternative would include small rural capital projects (e.g., upgrading trailhead facilities) and rural operations and maintenance activities (e.g., vegetation and invasive species management). In return for extending incidental take coverage to Coe Park, the conservation strategy (see Habitat Plan Chapters 5 and 6) would include portions of Coe Park that were protected, monitored, and managed in accordance with the Habitat Plan requirements. An important focus would be the management of existing stock ponds to enhance and restore habitat conditions for Covered Species such as the California red-legged frog, California tiger salamander, and western pond turtle. Pond management activities would include physical habitat restoration (e.g., dam stabilization, silt removal) and invasive species management measures (e.g., bullfrog eradication). Under this alternative, State Parks would be required to retain a minimum number of ponds in Coe Park, and to restore stream conditions in areas where existing stock ponds could not be retained.

The Proposed Action was developed to incorporate Coe Park as part of the conservation strategy, including the pond management measures discussed above. Data collection and

analysis was performed to support this component of the Proposed Action. A reasonable effort was made to incorporate State Parks as a co-Applicant to the Habitat Plan, but the agency declined participating in the Habitat Plan. State Parks determined that the requirements of the Proposed Action, including its mandate for specific pond management activities, would conflict with its statutory obligations to manage toward natural processes and for the "composite whole." State Parks also declined to permanently incorporate portions of Coe Park into the Reserve System. Although this alternative cannot be carried forward without State Parks participation, State Parks, the Wildlife Agencies, and the Local Partners expect that the data collection and analysis done to date could be used to support future habitat restoration projects at Coe Park unrelated to the Proposed Action.

2.6.6 San Benito County

The Proposed Action includes a Study Area of 519,506 acres in Santa Clara County, with biological goals and objectives focusing on the protection, enhancement, and restoration of habitat conditions for Covered Species in the Permit Area. The biological goals and objectives could be further supported by incorporating other areas of suitable habitat into the Permit Area, and an alternative was considered that would extend the Permit Area south to include lands in San Benito County. Including lands in northern San Benito County would extend the conservation strategy to other areas of the southern Santa Clara Valley, including important habitat areas such as Soap Lake (see Habitat Plan Section 3.2.5). In addition, including northern San Benito County in the Permit Area would allow the conservation strategy to be applied to both the north and south side of the Pajaro River and Pacheco Creek (the county line generally follows these features). Scoping comments indicated strong public support for watershed protection and restoration of hydrologic features and functions; greater geographic coverage of the Pajaro River and Pacheco Creek could further support the protection, enhancement, and restoration of aquatic habitat for the benefit of many aquatic, semi-aquatic, and terrestrial species.

This alternative is not being carried forward for several reasons that are primarily administrative. As described in the Habitat Plan (see Section 1.1.3, Background), the Proposed Action originated from a 2001 USFWS Biological Opinion that included the development of a regional HCP in Santa Clara County to offset the cumulative and indirect effects of large-scale development and infrastructure projects on federally listed species. The specific projects driving the USFWS's recommendation are located within Santa Clara County, and the organizational and planning process since 2001 has been focused on the initial area of concern (i.e., what is now the Permit Area). The current Habitat Plan Permit Area is within the jurisdictional authority of the Local Partners, especially Santa Clara County. Extending the Study Area to northern San Benito County would introduce at least one new Local Partner (San Benito County) and potentially others (e.g., City of San Juan Bautista, City of Hollister) depending on the extent of the revised Permit Area. Amending the existing Local Partner agreements to incorporate new Local Partners would present difficult administrative and implementation challenges, which likely would cause substantial delays in the planning process.[11]

[11] It should be noted, however, that other conservation activities are underway or planned in San Benito County that have a high likelihood of supporting the Habitat Plan goals for protecting the Pajaro River corridor. These activities include acquisitions

In addition, as discussed above in Section 2.6.4, key fish species of concern (including south/central California coast steelhead, found in the Pajaro River) are no longer proposed Covered Species in the Proposed Action. The Proposed Action's focus on terrestrial and semi-aquatic species reduces the extent of potential benefits to the conservation strategy to be gained by including additional lands south of the Pajaro River and Pacheco Creek.

2.6.7 Rural Clustering

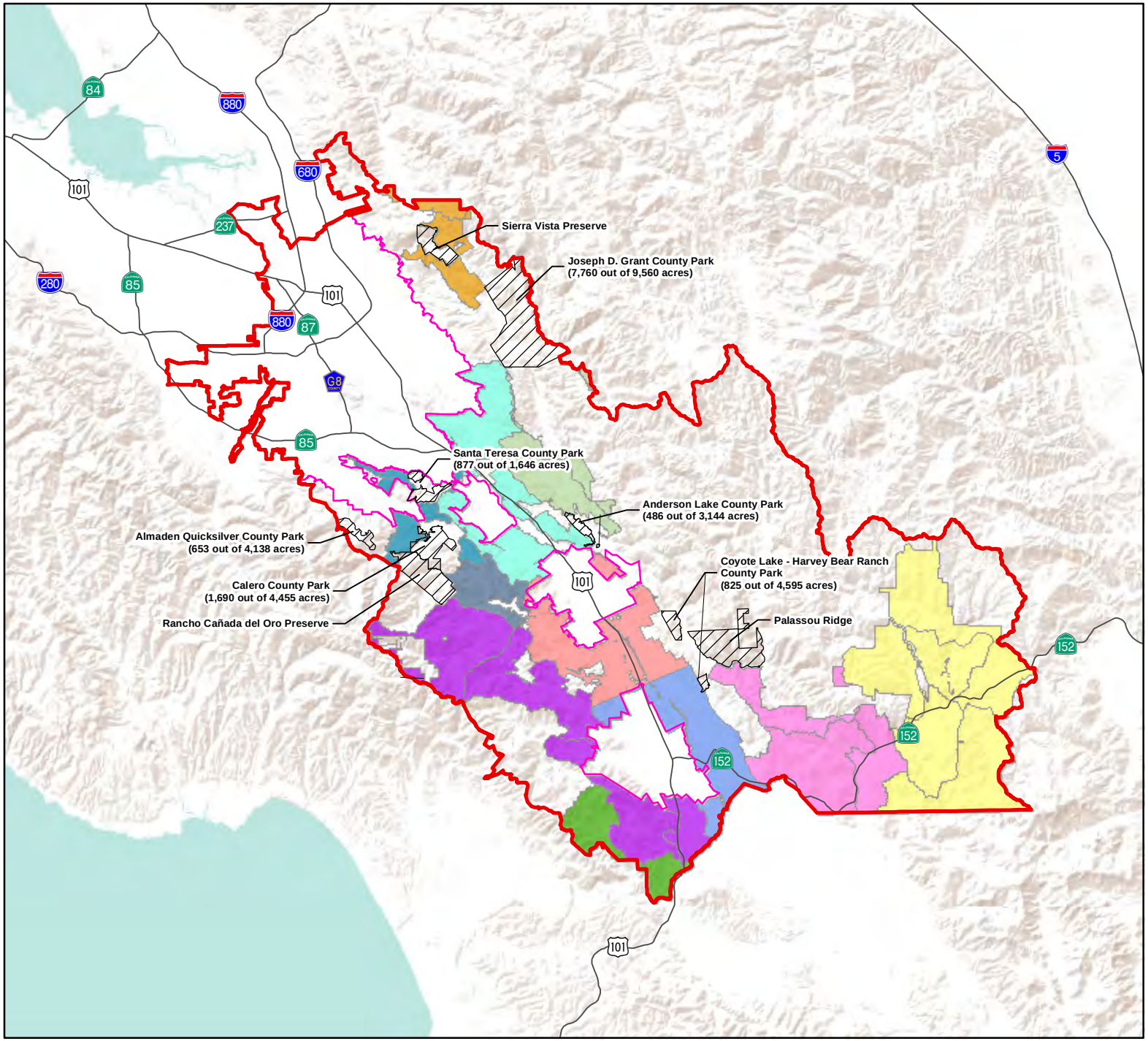
Scoping comments suggested that the Habitat Plan consider a thorough review of Santa Clara County policies that affect the clustering of rural residential housing.[12] "Clustering" of development refers to a type of land subdivision where lots are concentrated or clustered in proximity to each other on a property. The purposes of clustering include reducing improvement costs (e.g., road lengths) and preserving open space.

Because of topography, clustering of residential development is presently encouraged in the Hillside zoning district "to preserve contiguous open space and achieve efficiency in the provision of access to dwellings (Section 2.20.010C of the Zoning Ordinance). Clustering is also allowed in the Rural Residential zoning district. Clustering is not, however, allowed in the Agricultural Ranchland zoning district (Section 2.20.010B of the Zoning Ordinance). This is consistent with Policy R-LU41 of the Santa Clara County General Plan, which specifically disallows clustering within the Agricultural Ranchland zone (Santa Clara County, 1994). The Rural Clustering alternative would extend the clustering provisions of the Hillside and Rural Residential zones to the Agricultural Ranchland zone.

Santa Clara County has stated that it may be difficult to realize environmental benefits from encouraging clustering in the Agricultural Ranchland zone (Santa Clara County, 2007). General Plan policies for the zone (Policies R-LU35 – R-LU44) encourage the preservation of a very low density rural setting, with strict controls over subdividing properties. The landscape created by these strict controls (originally established in the 1980 General Plan) has been very stable, with only nine small subdivisions (two to four lots) within the Agricultural Ranchland zone between 1990 and 2006 (Santa Clara County, 2007). Changing the policy framework that currently regulates land uses in the Agricultural Ranchland zone could have a destabilizing effect, resulting in increased land speculation and growth pressure, and would be inconsistent with the General Plan. The potential benefits of extending the County's clustering policies to the Agricultural Ranchland zone may be strongly outweighed by increased environmental impacts. For this reason, the alternative is not being carried forward for detailed consideration.

by The Nature Conservancy (targeting 1,500 acres of conservation easements in San Benito County) and other conservation organizations, and development of a 295-acre mitigation bank (by Wildlands, Inc.) in the Soap Lake area.

[12] The commenter states: "Clustering discourages sprawl while current policies encourage sprawl which degrades wildlife habitat and connectivity." From Santa Clara Valley Habitat Plan EIR/EIS scoping comments jointly filed by Lisa Flores, Alice Valdez, Peter Piepul, Raquel Dueñes, Beatrice Santiago, and Somira Pech in October 2007.



VICINITY MAP

LEGEND

- Study Area
- Planning Limit of Urban Growth
- Existing Open Space Areas Proposed for Reserve System

Conservation Analysis Zone(s)

- Alameda-1 and Coyote- 7
- Guadalupe-1 and Guadalupe-3
- Coyote- 4
- Coyote- 5 and Coyote- 6
- Llagas- 3
- Llagas- 4
- Pescadero- 1
- Uvas 1-2, 5-6
- Llagas- 2
- Pacheco 1- 6
- Coyote-2, Pacheco- 7 and Pacheco- 8

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FIGURE 2-1
Potential Reserve System Areas
Santa Clara Valley HP EIR/EIS
Santa Clara County, California

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CHAPTER 3

Approach to the Analysis

This chapter discusses the approach taken in defining the existing conditions and analyzing the effects of the permits and alternative conservation actions. Resource discussions are focused on those topical areas that have the potential to be significantly affected by the proposed or alternative actions. Section 3.1 identifies these resource areas and explains the approach to the impact analysis. Environmental resources that would not likely be affected have been eliminated from further consideration for the reasons explained in Section 3.2.

3.1 Resource Areas Considered in Detail in the EIR/EIS

A key issues analysis was completed early in the EIR/EIS planning process to identify potentially significant impacts resulting from implementation of the proposed Habitat Plan or alternative conservation actions on the environment or specific resources. Resources considered were derived from the Council on Environmental Quality regulations for implementing NEPA, Appendix G of the CEQA Guidelines, and input received from the public during the project scoping period. The key issues analysis identified the following resources that could be impacted by the proposed or alternative actions or were identified during scoping as resources of concern:

- Chapter 5 – Biological Resources.
- Chapter 6 – Land Use.
- Chapter 7 – Agriculture.
- Chapter 8 – Public Services.
- Chapter 9 – Recreation.
- Chapter 10 – Hydrology and Water Quality.
- Chapter 11 – Hazardous Materials.
- Chapter 12 – Socioeconomics and Environmental Justice.
- Chapter 13 – Cultural Resources.
- Chapter 14 – Transportation and Circulation.
- Chapter 15 – Noise.
- Chapter 16 – Air Quality and Global Climate Change.
- Chapter 17 – Mineral Resources.
- Chapter 18 – Wildfires.

3.2 Approach to Analyzing Resources Considered

Each chapter includes a characterization of existing conditions (Affected Environment), an explanation of the methodology and significance criteria considered, followed by an impact evaluation (Environmental Consequences). The Affected Environment describes resource conditions as they existed at the time the CEQA NOP was published (September 7, 2007) including, where appropriate, a discussion of the regulatory framework (e.g., laws, regulations) in place to protect and manage the resource. The Affected Environment

describes the Study Area in general, but where appropriate (e.g., the Recreation and Transportation chapters) also provides additional details on the areas that may be acquired as part of the Reserve System (see Figure 2-1).

3.2.1 No Action Alternative

Environmental Consequences/Environmental Impacts

Expected changes to the resource in the absence of the Proposed Action are the subject of the No Action Alternative analysis. This analysis generally follows a 50-year study period to correspond with the Permit Term under the Proposed Action. As described in Chapter 2, the No Action Alternative encompasses most of the same activities that would be Covered Activities under the Proposed Action. The most important difference, however, is in how biological resources would be considered under the No Action Alternative.

- Biological resource impacts would be considered only for projects with a discretionary action by one of the Local Partners, or with a potential to adversely affect listed species (i.e., would require consultation with the USFWS, NMFS, and/or CDFG).
- Biological resource impacts would be considered on a case-by-case basis, with no regional framework for impact avoidance and minimization.
- Biological resource mitigation would be considered on a case-by-case basis, with various types of mitigation measures (see Section 2.3.3) including compensatory mitigation in offsite areas. There would be no regional framework for conservation of natural communities and preservation of habitat linkages.

Analysis of the No Action Alternative is based heavily on the analysis of Covered Activities in the Habitat Plan, with the exception of activities associated with the conservation strategy. The analysis in the Habitat Plan addresses most of the reasonably foreseeable activities in the Study Area associated with urbanization and associated infrastructure development, operation, and maintenance (see Section 2.3.1). In addition, the analysis is based on extensive consultation with the Local Partners and Wildlife Agencies, resulting in a detailed database of activities that allows for a quantitative analysis of anticipated changes in land uses. The process of identifying these activities is described in Habitat Plan Chapter 2 (Land Use and Covered Activities) and the approach to developing the database is described in Habitat Plan Section 4.4 (Impact Assessment Methods). The land use changes associated with these activities would have various types of effects on each of the resources considered in this document, including direct and indirect effects, temporary effects associated with construction, and long-term effects of operation. Conclusions about the significance of these impacts are based on the severity of the expected land use changes and the adequacy of the regulatory framework to provide effective mitigation.

Both permanent and temporary direct impacts are considered. Permanent impacts are direct impacts that permanently remove or alter a land cover. For biological resources, alteration of a land cover for more than 1 year is considered a permanent impact. Alteration of a land cover for less than one year, allowing the disturbed area to recover to pre-project or improved conditions, is considered a temporary impact. In addition, indirect effects also are considered. Indirect effects are a secondary consequence of the activities that may occur later in time or are otherwise further removed from the direct effects of the activities.

Because of their complexity, cumulative effects are considered separately, as discussed below.

Cumulative Effects

The cumulative effects of the No Action Alternative are described in each of the resource chapters (Chapters 5 through 18). The cumulative effects analysis for the No Action Alternative accounts for impacts associated with past activities (see descriptions in Section 4.1). For all resources considered in this document, past activities have resulted in substantial environmental degradation. In many cases, the severity of cumulative impacts under the No Action Alternative is addressed by the regulatory framework. The analysis focuses on the overall cumulative effects associated with the past projects, together with the activities that would occur under the No Action Alternative. This is intended to satisfy the basic objective of describing cumulative effects under NEPA. In addition, the discussion also addresses the contribution of the No Action Alternative to cumulative effects pursuant to CEQA.

The other projects that contribute to cumulative impacts (i.e., ongoing activities and the projects described in Section 4.2) are reasonably foreseeable under the No Action Alternative. However, in order to focus the cumulative impacts analysis on the action alternatives, the ongoing activities and the other reasonably foreseeable projects are described for the Proposed Action and Alternative A – not under the No Action Alternative. This helps reinforce the No Action Alternative as a baseline for analyzing the effects of the action alternatives.

3.2.2 Proposed Action and Alternative A

Environmental Consequences/Environmental Impacts

The Proposed Action adds this regional framework for biological resource impact avoidance, minimization, and mitigation, and for natural community conservation. This is provided by the Habitat Plan, implemented as a result of permit issuance by Wildlife Agencies. The Proposed Action impact analysis focuses on how permit issuance (implementation of the Habitat Plan) could affect the resource differently than under the No Action Alternative. The following concepts were used to help focus the analysis:

- The Habitat Plan conservation strategy would apply to all Covered Activities.
- All of the Covered Activities would be implemented using the avoidance and minimization measures summarized in Section 2.4.3.4. More activities would be subject to avoidance and minimization requirements than under the No Action Alternative.
- Acquisition and enhancement of a large, connected Reserve System, with coordinated management for the benefit of the Covered Species, is the primary physical manifestation of the Proposed Action. The Reserve System would have a substantially larger footprint (at least 33,205 acres of newly protected lands) compared to the (unquantified) system of independent mitigation sites under the No Action Alternative.
- Acquisition and enhancement of the Reserve System would be dispersed throughout the Study Area, but would be directed toward the Conservation Analysis Zones shown in Figure 2-1.

- Activities on the Reserve System would occur consistent with the Reserve System conservation actions summarized in Section 2.4.3.3. This includes a change in management priorities for up to the 13,291 acres of existing open space incorporated into the Reserve System.[1]

The impacts of the No Action Alternative also would occur under the Proposed Action and Alternative A. In order to focus the analysis on the consequences of issuing the incidental take permits, however, the analysis of the Proposed Action describes how these general concepts for biological resources mitigation could affect each of the individual resources considered. Impacts from Alternative A are analyzed using the same approach. Direct (permanent and temporary) and indirect impacts are considered as described above for the No Action Alternative.

Cumulative Effects

The cumulative impacts of the Proposed Action are the cumulative impacts of the No Action Alternative plus the effects of the other projects that contribute to cumulative impacts (i.e., ongoing activities and the future projects described in Section 4.2). The other projects would not contribute to cumulative effects for all of the resources, and therefore each resource section (Chapters 5 through 18) identifies which of the other projects are relevant to the analysis. The analysis focuses on the overall cumulative effects associated with the applicable future projects, together with the Proposed Action, and also addresses the contribution of the Proposed Action to cumulative effects. As described above for the No Action Alternative, this is intended to satisfy both NEPA and CEQA. Conclusions about significance are typically stated as follows:

- Less than significant cumulative effect (acceptable conclusion under both NEPA and CEQA).
- Significant cumulative effect (acceptable conclusion under NEPA, but additional conclusion required under CEQA).
  - No contribution to a significant cumulative effect.
  - Less than cumulatively considerable contribution to a significant cumulative effect.
  - Cumulatively considerable contribution to a significant cumulative effect.

The cumulative impacts of Alternative A are the same as the cumulative impacts of the Proposed Action; however, cumulative impacts from Year 30 to Year 50 would be the same as under the No Action Alternative.

Determination of Significance

The analysis of the Proposed Action and Alternative A ends with a summary statement regarding the significance of the impacts identified in the discussion of environmental impacts (including cumulative effects). For each alternative, a determination of significance follows the analysis of project and cumulative impacts. The determination of significance for the Proposed Action and Alternative A focuses on the incremental change in impacts to

[1] Because of the limited activities expected to occur, activities within the Expanded Study Area for Burrowing Owl Conservation are discussed only in the evaluation of burrowing owl impacts (Section 5.4.11).

each resource compared to the No Action Alternative, and determinations are made for both project-specific (in **boldface** type) and cumulative impacts.

As described above, the impacts of the No Action Alternative also would occur under the Proposed Action and Alternative A, but the determination of significance is made relative to the No Action Alternative in order to focus the analysis on the incremental change in impact severity associated with issuing the incidental take permits From that perspective, the analysis determines that some impacts would be beneficial compared to the No Action Alternative.

3.3 Resource Areas Not Considered in Detail in the EIR/EIS

Based on the preliminary key issues analysis, it was determined that aesthetics and visual resources, geology and soils, population displacement, public services (specifically schools), utilities and services systems, and energy resources were not likely to be significantly affected by the proposed or alternative actions. These resource issues are not discussed in detail in the EIR/EIS for the reasons described below.

3.3.1 Aesthetics and Visual Resources

Implementation of the proposed or alternative actions would result in preservation of lands and would not substantially affect visual resources. Habitat restoration may have short-term effects on the visual landscape but would provide long-term visual benefits in Santa Clara County by enhancing open space within area viewsheds. Infrastructure improvements associated with the conservation actions and reserve development would be small in scale and would not be expected to significantly alter the visual landscape or substantially affect any visual resources. Potential aesthetic and visual resources impacts from land development projects would be evaluated by the Local Partners during project-specific CEQA review.

3.3.2 Geology and Soils

The primary focus of the Habitat Plan is to protect the Covered Species and to preserve their natural communities. While conservation actions may require a modest level of earth movement associated with habitat restoration or recreational development, these activities would be small in scale and short-term. No substantial effect on soils or geology and no change in topography or effect from seismic activities are anticipated. Erosional effects would be minor. Although sedimentation in and around regional watersheds is a concern raised during public scoping, this issue is discussed in the hydrology and water quality analysis (Chapter 10, Hydrology and Water Quality). Potential geology and soils impacts from land development projects would be evaluated by the Local Partners during project-specific CEQA review.

3.3.3 Population Displacement

Permit issuance would not directly or indirectly result in population growth trends that would displace a substantial number of people. The conservation strategy is focused on undeveloped land and relies on acquisition of property from willing sellers, which in some cases may involve the relocation of an existing home from the acquired parcel. Urban

growth would be expected to occur in accordance with relevant general plans and would therefore occur in a manner that balances the local needs for population and housing. Population displacement was studied in the *Economic Impact Analysis of the Santa Clara Valley Habitat Conservation Plan* (Willdan Financial Services, 2011). The Economic Impact Analysis concluded that the Habitat Plan's development impact fees are unlikely to cause a competitive disadvantage to real estate development in the Study Area. This is because the fees likely would be absorbed through small market adjustments to land prices rather than passed forward in the form of higher sales prices for finished real estate products. Urban development also would be subject to local land use agency approvals, including the appropriate level of project-specific CEQA review. No significant effects on population, growth trends, or urban displacement would result from the proposed or alternative actions.

3.3.4 Public Services (Schools)

The proposed or alternative actions would not directly or indirectly affect the capacity of existing schools. Specific land development projects would be considered by the Local Partners as appropriate, and would require separate CEQA review. Potential impacts on public services would be considered in these project-specific CEQA documents, and project approval would be subject to conditions of approval, such as mitigation fees for schools.

3.3.5 Utilities and Service Systems

The proposed or alternative actions would not directly or indirectly place additional demands on the existing utilities in the Study Area. Reserves established consistent with the Habitat Plan would be maintained as open space and would not place any substantial new demands on utilities. Although certain office and support facilities are included, there would be no substantial increase on utility demand. Land development projects requiring new utility infrastructure would be subject to Local Partner approvals, including the appropriate level of project-specific CEQA review.

Both the Proposed Action and Alternative A prohibit development and use within the Reserve System that would be incompatible with the biological goals and objectives. Although installation of utilities would likely be incompatible with the preservation objectives, the Habitat Plan acknowledges that maintenance of utilities is likely to occur.

3.3.6 Energy Resources

The proposed or alternative actions would have only minor impacts on energy resources. Energy use from land development projects would be evaluated by the Local Partners during project-specific CEQA review. Anticipated activities conducted under the Habitat Plan, such as wildlife surveys, habitat enhancement and restoration, and construction and maintenance of minor support facilities would require use of petroleum products and electricity. These activities would be of very small scale and intensity, and the corresponding demand for energy resources would be minor. The minor demand for these services would not measurably affect existing supplies.

CHAPTER 4

Projects with Cumulative Effects

Cumulative impacts analysis is required by CEQA and NEPA. Cumulative effects result from incremental impacts of the action when considered together with other past, present, and reasonably foreseeable future actions. As explained in the previous chapter, Chapters 5 through 18 of this EIR/EIS discuss the anticipated direct and indirect environmental consequences of the Proposed Action and alternatives. In addition, Chapters 5 through 18 also describe cumulative effects. Cumulative effects are considered in the context of other local, state, and federal management activities and projects in Santa Clara County and surrounding areas, as described in this section.

The purpose of this section is to establish the context of the cumulative impacts analysis, incorporated at the end of each resource described in Chapters 5 through 18, by describing how past and ongoing actions have contributed to current environmental conditions. This section also describes future projects that may result in additional cumulative impacts.

4.1 Past and Ongoing Actions Contributing to Cumulative Impacts

The description of the Affected Environment in Chapters 5 through 18 is a product of past and ongoing actions that have shaped environmental conditions in the region. This section is a brief summary of these actions for the purpose of describing past and ongoing actions that have contributed to (and continue to contribute to) cumulative impacts. Ongoing actions that are proposed Covered Activities are not discussed as cumulative actions.

4.1.1 Mining

Hard-rock mining, including mercury mining, in the upper Guadalupe watershed area was an important activity in the development of the Santa Clara Valley area. Most of these mines have been closed and remediated, and the sites are mostly incorporated into local or regional parks or private developments. Therefore, with the exception of the limited mercury cleanup activities described in Section 4.2.12 below, this activity is no longer contributing to cumulative impacts in the Study Area.

Mining for construction aggregate, including both hard-rock, and sand and gravel mining, remains an important activity in Santa Clara County. Active mines are described in Chapter 17, Mineral Resources. New or expanded hard-rock aggregate mines could be proposed within the 50-year permit term, but at this time no specific actions are known.[1] Most in-channel sand and gravel mines, however, have been closed and remediated. These include the Santa Clara Sand and Gravel facility (Parkway Lakes on Coyote Creek), Ogier Ponds on Coyote Creek, Uvas Pit upstream of Christmas Hill Park in Gilroy, and several others. At this

[1] The Freeman Quarry expansion is a proposed Covered Activity.

time, there are no active in-channel sand and gravel mines in the Study Area, and no future in-channel mines are reasonably foreseeable within the proposed 50-year permit term.

In addition to mining, dredging for salt ponds and other activities in San Francisco Bay greatly contributed to the loss of habitat for salt marsh species and degraded conditions for steelhead and other fish migration. This portion of the County is outside of the Study Area. There are substantial ongoing activities to restore major portions of this area of the County (e.g., South Bay Salt Ponds Restoration Project described below), and a substantial portion of the area will remain in salt production.

4.1.2 Agricultural and Urban Development

Land conversion in the Santa Clara Valley area includes the conversion of natural lands to farmland, the subsequent urbanization of farmland to urban and rural residential uses, and the direct conversion of natural lands to urban and rural residential uses. Agriculture was an important contributor to the early development of the Santa Clara Valley, and farming remains an important industry in the southern portion of the Plan Area (lower Llagas and Uvas watersheds) and south into San Benito County. In addition to orchards and row crops, grazing is an important agricultural practice throughout the Study Area, primarily in the foothills east and west of the valley floor. The development of orchards and row crops has reduced or eliminated habitat for many species (especially plant species) whose habitat requirements are not compatible with agricultural production. In addition, the land disturbances associated with farming contributed to sedimentation of waterways, and use of fertilizers and pesticides (including rodenticides) also contributed to water pollution and may have contributed (directly and indirectly) to species mortality.[2] Although farming has resulted in adverse effects to natural conditions in the Santa Clara Valley, some farmland provides relatively undisturbed open space and provides habitat for many species. Similarly, grazing altered habitat conditions for many species and contributed to water pollution, but appropriately managed grazing can be compatible with the habitat needs of many species.

Farming and grazing are expected to continue to occur in and around the Study Area, primarily outside of the Planning Limits of Urban Growth in the areas currently used for agriculture. Farmlands are subject to continuing shifts in crop types depending on various factors including global economic conditions. The environmental impacts associated with farming operations vary depending on the management of crops. Shifts in farmland uses are not proposed as Covered Activities, but are reasonably expected to occur in the future. It is not possible, however, to predict how crops may change over the 50 year study period.

A substantial amount of farmland and grazing land has been converted to urban development and rural residential development over the past several decades (see discussion in Section 2.2.1 of the Habitat Plan). This has resulted in a further decrease in habitat, because the habitat conditions provided by farmlands and grazing lands have been lost. Urbanization impacted plants and wildlife through nitrogen deposition, erosion and sedimentation, pollution of waterways, and disruption of movement habitat linkages. In general, however, the adverse effects of urban development are being addressed through extensive local efforts to put boundaries on urban growth (e.g., the San José Greenline),

[2] The USEPA registers pesticides in consultation with the USFWS. In some cases, consultation results in a determination that pesticide use is likely to adversely affect listed species and/or critical habitat.

promote compact development, minimize air and water pollution, divert waste from landfills (e.g., through recycling), develop public transit, and through other substantive efforts. The approach to conservation and open space planning by each of the municipal Local Partners is discussed in Section 2.2.1 of the Habitat Plan.

4.1.3 Infrastructure Development

Agricultural and urban development has been accompanied by the development of infrastructure to support these land uses. Some of the major infrastructure development activities and general effects on species and their habitats are described below:

- Water supply development initially began with the installation of groundwater wells throughout the Santa Clara Valley. Groundwater overdraft resulted in the construction of several major reservoirs in the Study Area, starting with Calero, Almaden, Guadalupe, and Vasona Dams and later including Anderson, Chesbro, and Uvas Dams. In addition, percolation ponds were constructed for groundwater recharge. These new water projects were supported by importing water from the federal Central Valley Project (via the Santa Clara Conduit) and the State Water Project (via the South Bay Aqueduct). Water supply projects substantially changed flows and temperatures in waterways downstream of the dams, generally degrading habitat conditions for fish such as Central California Coastal steelhead. The hydrologic changes also altered riparian habitat conditions downstream of the dams.

- Flood control projects, including the levee system and most of the larger dams, were developed to provide flood protection to farmlands in the Santa Clara Valley, and to the surrounding communities. Extensive work has been undertaken to bolster flood protection for urban areas, which require a higher level of protection than agricultural areas. Flood control projects have degraded instream and nearby wetland and riparian communities, but may also have provided additional water in reservoirs to maintain instream flows in the summer. Efforts have been underway to upgrade flood control systems while restoring natural stream channels to the extent possible (e.g., Upper Guadalupe River flood control project).

- Roads and freeways were an important consideration in the development of the Habitat Plan. U.S. Highway 101 is especially relevant to the Habitat Plan because it provides the critical north-south connection between San José and the South County. Also, U.S. Highway 101 is a significant obstacle for east-west movement for many species between the Santa Cruz Mountains and the Diablo Range (especially critical in the Coyote Valley area near Tulare Hill). Other key roads in the Study Area include Monterey Road and Santa Teresa Boulevard between San José and Gilroy, State Route 152 across Pacheco Pass, Hecker Pass Road between Gilroy and Watsonville, and State Route 25 between Gilroy and Hollister.

4.1.4 Park Acquisition and Management

A substantial amount of land preservation has occurred along with the urbanization of the Santa Clara Valley. In addition to urban parks within the planning limits of urban growth, notable regional park areas are as follows:

- Sunol Regional Wilderness and Mission Peak Regional Preserve, located in Alameda County north of the Study Area.
- Ed Levin County Park, Alum Rock Park, Joseph D. Grant County Park, and several Open Space Preserves in the foothills east of San José.
- Coyote Creek Park Chain from Anderson Reservoir north to Downtown San José.
- Almaden Quicksilver County Park, Calero Reservoir County Park, Rancho Cañada de Oro Open Space Preserve, and Santa Teresa County Park in the hills south of San José.
- Chesbro Reservoir Park (Llagas Creek) and Uvas Reservoir County Park (Uvas Creek).
- Anderson Lake County Park, Coyote Lake-Harvey Bear Ranch County Park, and several Open Space Preserves in the upper Coyote Creek watershed.
- Henry W. Coe State Park.
- Uvas Canyon County Park, Uvas Open Space Preserve, and Mount Madonna County Park in the upper Uvas Creek watershed.
- Cañada de los Osos Ecological Area, located to the south of Henry W. Coe State Park.
- Pacheco State Park, located east of Pacheco Pass and encompassing San Luis Reservoir.

These parks preserve habitat in and around the Study Area, and benefit many Covered Species. Although some portions of these parks are strictly managed for preservation (e.g., Orestimba Wilderness sector of Henry W. Coe State Park), most areas are managed for a variety of recreational uses such as hiking, biking, picnicking, boating, vehicular access, and camping. Some recreational uses can disturb habitat through mechanisms such as increased noise, congregation, and other disruptions.

4.2 Future Projects Included in the Cumulative Impacts Analysis

The following subsections describe projects that may occur in or adjacent to the Study Area over the permit term. These projects have the potential to contribute, in combination with the Proposed Action and alternatives, to cumulative impacts. Figure 4.1 presents the geographic distribution of these projects within and adjacent to the Study Area.

4.2.1 Draft Three Creeks Habitat Conservation Plan

SCVWD is in the process of preparing the Three Creeks HCP, which would cover three northern Santa Clara County watersheds:

- Coyote Creek (Coyote, Penitencia, San Felipe, and Packwood creeks).
- Guadalupe River (Guadalupe, Calero, Alamitos, and Los Gatos creeks and the mainstem Guadalupe River).
- Stevens Creek.

The Three Creeks HCP, as well as the Proposed Action and Alternative A, address take of listed species while allowing appropriate and compatible growth and development in accordance with applicable laws. To the extent that the planning and permit areas, Covered Species, and purposes of the Three Creeks HCP, the Proposed Action, and Alternative A coincide, the plans are consistent with one another.

The Study Areas for the Proposed Action, Alternative A, and the Three Creeks HCP overlap, but with key differences in north and south Santa Clara County. The Three Creeks HCP addresses Covered Activities in the upper Los Gatos Creek and Stevens Creek areas (the Western Study Area for the Three Creeks HCP), whereas these areas are not included in the Proposed Action and Alternative A Study Areas. In addition, while the Study Areas for the Proposed Action and Alternative A include all of the Llagas/Uvas/Pajaro watersheds within the County and the entire Coyote Creek watershed except for the Baylands, the Three Creeks HCP does not address watersheds draining to Monterey Bay or portions of the channels in the tidally influenced Baylands.

The Three Creeks HCP conservation strategy in most of the Guadalupe River and Coyote Creek watersheds is incorporated as a Covered Activity under the Proposed Action and Alternative A. Three Creek HCP activities within its Western Study Area (Los Gatos Creek and Stevens Creek areas) and in portions of the Guadalupe River and Coyote Creek watersheds are analyzed as cumulative projects in Chapters 5 through 18.

4.2.2 Alameda Watershed Habitat Conservation Plan

The San Francisco Public Utilities Commission (SFPUC) began an HCP process for the Alameda Watershed in 2003, and is currently in the process of completing the HCP and the associated environmental review. The Alameda Watershed HCP Study Area encompasses 47,800 acres, including approximately 13,000 acres in Santa Clara County. The Study Area contains two reservoirs—the San Antonio Reservoir to the north and the Calaveras Reservoir to the south. Interstate 680 and Route 84 meet in the northern portion of the watershed, and Calaveras Road extends north-south down the center. Milpitas and Fremont lie to the west and Pleasanton and Livermore are located to the northeast.

The Alameda Watershed Habitat Conservation Plan is intended to mitigate impacts that ongoing SFPUC operations, maintenance, and other activities have on plants and wildlife within the Alameda Watershed. The Alameda Watershed HCP will enable the SFPUC to implement the operation and maintenance activities set forth in the Alameda Watershed Management Plan. Many of the species proposed for incidental take coverage in the Alameda Watershed HCP also are proposed for coverage in the Habitat Plan. Benefits from

the Proposed Action or Alternative A could be increased by Alameda Watershed HCP conservation actions. Similarly, adverse effects could be magnified.

4.2.3 Stanford University HCP

Stanford University prepared a draft HCP for its 8,180-acre ownership, located in Santa Clara and San Mateo Counties, and is in the process of completing the HCP and environmental review. Proposed Covered Species include California red-legged frog, San Francisco garter snake, steelhead, California tiger salamander, and western pond turtle. Proposed Covered Activities relate to the ongoing operations and maintenance activities, as well as future land development (expected to be mostly infill development). The conservation strategy is expected to focus on the restoration of degraded habitat using "mitigation accounts" to balance Covered Activity implementation with mitigation needs. In addition, conservation easements are expected to be added to substantial portions of the undeveloped ownership. The proposed HCP also contains other standard elements such as avoidance and minimization measures and a monitoring program.

4.2.4 Pacific Gas and Electric Operations and Maintenance HCP

The Pacific Gas and Electric Company (PG&E) is proposing an HCP to cover its operations and maintenance activities in its Bay Area region. A draft of the Bay Area HCP is still under preparation. Covered activities are expected to include all routine operations and maintenance activities for gas and electric infrastructure, and minor new construction.

4.2.5 South Bay Salt Ponds Restoration Project

The South Bay Salt Ponds Restoration Project is a multi-agency effort to restore over 50 salt ponds formerly owned by Cargill, Inc. along the southern edges of San Francisco Bay. Most of the southern unit of the restoration project (Alviso Unit) is now managed by the USFWS as the Don Edwards National Wildlife Refuge. Restoration of the Alviso Unit includes conversion of the 28 salt ponds to "managed pond" habitat and restoration of perimeter areas to tidal marsh habitat. Managed ponds are intended to recreate more natural tidal conditions in the former salt ponds, which is expected to provide habitat for salt marsh species such as the salt marsh harvest mouse and California clapper rail as well as maintain conditions for many migratory bird species. Tidal marsh restoration areas are proposed along major existing waterways (e.g., Coyote Creek, Alviso Slough, Guadalupe Slough) and are intended to promote a more natural channel as these freshwater creeks flow into San Francisco Bay. Restoration is expected to contribute to the recovery of South Bay fish species including the Central California Coastal steelhead.

4.2.6 Mount Hamilton Project

The Nature Conservancy, a private conservation organization, is in the process of acquiring land for habitat conservation within a 1.5 million acre area encompassing a substantial portion of eastern Santa Clara County as well as portions of southern Alameda County, western Merced and Stanislaus Counties, and northern San Benito County. The Nature Conservancy seeks to protect the most ecologically critical 500,000 acres of this area by working with local cattle ranchers, public agencies, and their partners (The Nature Conservancy, 2009). Acquisitions to date include the following:

- Rancho Cañada de Pala. The Nature Conservancy owns the 1,756-acre Rancho Cañada de Pala preserve, located in oak woodland and grassland areas straddling the Alameda Creek and Coyote Creek watersheds. The preserve was acquired and is managed mostly for California tiger salamander habitat, and contains numerous occupied ponds.
- Blue Oak Ranch Reserve. The Nature Conservancy holds a conservation easement on the 3,259-acre Blue Oak Ranch Reserve, which abuts the north side of Joseph D. Grant County Park. The reserve is part of the University of California Natural Reserve System, and is managed for teaching, research, and public outreach.
- San Felipe Ranch. The Nature Conservancy owns a conservation easement on the 28,359-acre San Felipe Ranch, a privately owned working cattle ranch. The ranch occupies most of the Coyote-4 and Coyote-5 Conservation Analysis Zones, and connects Joseph D. Grant County Park with Henry W. Coe State Park.
- Lakeview Meadows Ranch. The Nature Conservancy worked with the Santa Clara County Open Space Authority to purchase the 9,234-acre Lakeview Meadows Ranch property in 1999. The Open Space Authority manages 3,447 acres as its Palassou Ridge Open Space Preserve.
- Simon Newman Ranch and Romero Ranch. The Nature Conservancy acquired the Simon Newman and Romero Ranches in 1998, a total area of approximately 61,000 acres. The western portion of Romero Ranch is within the Study Area, just east of the Pacheco-1 Conservation Analysis Zone. Most of the area is in western Merced and Stanislaus Counties. Both areas continue to be managed for grazing.
- South Valley Ranch. The Nature Conservancy acquired the 2,899-acre South Valley ranch property to preserve oak woodland and related habitat in the San Antonio Valley. South Valley ranch contains highly intact wildflower fields and a herd of tule elk. The Nature Conservancy transferred ownership to CDFG in 2007.

Because The Nature Conservancy maintains a goal of protecting 500,000 acres, additional acquisitions are expected to occur within the area, including priority areas within the Pajaro River floodplain. At this time, however, specific acquisition actions have not been identified.

4.2.7 Other Habitat Preservation Programs

In addition to the Draft Three Creeks HCP, the Alameda Watershed HCP, and the Mount Hamilton Project, various other activities are taking place in and around the Study Area for the benefit of habitat preservation and restoration. The primary organization undertaking these activities is the Silicon Valley Land Conservancy, which is a private conservation

organization that is currently managing several properties in and around the Study Area. Current landholdings and easement total approximately 1,620 acres.[3] Conservancy lands are as follows:

- Tulare Hill Ecological Reserve. This site is a 116-acre area of serpentine habitat located on the southern half of Tulare Hill.
- Coyote Ridge Ecological Reserve. This is a 95-acre area of serpentine habitat located along the north side of the Kirby Canyon Recycling and Disposal Facility.
- Basking Ridge Conservation Easement, a 206-acre area of serpentine habitat located north of U.S. Highway 101 and Metcalf Road.
- Fisher Creek Conservation Easement, a 9-acre area set aside for riparian protection and enhancement adjacent to the Tulare Hill Ecological Reserve.
- Carnadero Preserve, Dorado Farm, and Mission Organics Agricultural Conservation Easements, totaling 1,155 acres of prime agricultural land and riparian habitat along Uvas (Carnadero) Creek near the confluence with the Pajaro River. The easement is intended to preserve the area in agricultural production and for stream mitigation.
- Cooper Agricultural Conservation Easement, a 40-acre farm in the Little Arthur Creek watershed.

Other agencies and organizations are involved with preservation programs in and around the Study Area. These include the federal Natural Resources Conservation Service, California Department of Fish and Game, California Department of Conservation, the Kirby Canyon Landfill Conservation Trust, and the American Farmland Trust.[4] Generally, these programs are small relative to the ones described above and focus on partnering with other organizations such as The Nature Conservancy. Specific future actions by these other agencies and organizations have not been identified.

4.2.8 Conservation Banks

Conservation banks are privately owned lands that preserve and restore habitat conditions for species, which creates credits that can be sold as needed to allow development within the bank's service area. Three conservation banks are located in or adjacent to the Study Area:

- The proposed Lucky Day Wildlife Conservation and Wetland Mitigation Bank is located on 1,600 acres north of Gilroy. The bank is intended to provide mitigation credits for California tiger salamander, golden eagle, tricolored blackbird, pond turtle, burrowing owl, and Santa Clara Valley dudleya.
- The 237-acre Pajaro River Mitigation Bank is located on the south side of the Pajaro River in San Benito County, west of San Felipe Lake. The bank is authorized by the

[3] The Silicon Valley Land Conservancy is divesting its landholdings, which are expected to be acquired by existing organizations in the Study Area such as County Parks and the Open Space Authority. At this time, the landholdings are still in the process of being divested, and therefore this EIR/EIS continues to refer to the Silicon Valley Land Conservancy as the controlling organization.

[4] In addition, SCVWD and VTA (Local Partners in the Habitat Plan) operate small conservation areas within the Study Area.

USACE and operated by Wildlands, Inc., and provides wetland mitigation credits for development in San Benito, Santa Cruz, and Monterey Counties.

- The 640-acre Ohlone Preserve Conservation Bank is located in the Alameda Creek watershed north of the Study Area in Alameda County. The bank is authorized by the USFWS and operated by Fletcher Conservation Properties, and provides mitigation credits for California red-legged frog, California tiger salamander, and Alameda whipsnake.

In addition to these mitigation banks, the area also is served by other mitigation banks (located elsewhere) dedicated to species such as the California red-legged frog and California tiger salamander.

4.2.9 City of Gilroy Expansion

The Gilroy General Plan (2002) designates a number of areas outside the 20-year planning boundary as future areas for development and open space (Faus pers. comm.). Policy 2.11 of the Gilroy General Plan designates two areas outside of the Planning Limit of Urban Growth as potential areas for future development. These areas are as follows:

- The area north of Day Road, west of Santa Teresa Boulevard, and east of the foothills. The City has determined that this is area is suitable for long-term residential expansion and related development. This area is within the Llagas-4 Conservation Analysis Zone.
- The area east of U.S. Highway 101 between Buena Vista and Masten Avenue, bordering on the highway. The City has determined that this area is suitable for long-term expansion of highway-oriented commercial development. This area is within the Llagas-4 Conservation Analysis Zone.

Impacts associated with expansion of urban development into these areas were not assessed for the Habitat Plan and are not a Covered Activity under any of the alternatives described in this document. Impacts associated with the two areas above are evaluated as cumulative impacts.

4.2.10 California High-Speed Train System – San José to Merced Project

The Federal Railroad Administration (FRA) and the California High Speed Rail Authority (CHSRA) are currently planning the California High-Speed Train (HST) System. To date, FRA and CHSRA have adopted a Statewide Program EIR/EIS, which studied various alignment options for the HST System, and also adopted the Bay Area to Central Valley Program EIR/EIS, which selected a Pacheco Pass corridor as the preferred alternative for HST System access between the Bay Area and Central Valley. The proposed alignment for the High-Speed Train System through Pacheco Pass (see Figure 4-1) traverses the Study Area. At this time, FRA and the CHSRA are designing the specific route, following existing rail corridors between San José and Gilroy, and generally following Highway 152 from Gilroy over Pacheco Pass. In addition, FRA and the CHSRA are preparing a project-level environmental document. It is possible that portions of, or all, of this alignment could be constructed within the permit term.

4.2.11 SCVWD Stream Maintenance Program

The SCVWD Stream Maintenance Program was developed to streamline the permitting process for routine stream maintenance activities, thus allowing SCVWD to continue preserving the existing level of flood protection of streams and water-delivery function of canals in an efficient manner. The Stream Maintenance Program was authorized in 2002 and the impact analysis of the program was based on a 20-year study period. Permits received under the program include: Section 7 biological opinions from NMFS and USFWS, Section 404 Permit, CDFG 1601 Streambed Alteration Agreement, Regional Board Waste Discharge Requirements Permits (Central Coast and San Francisco Bay Boards), and a San Francisco Bay Conservation and Development Commission (BCDC) permit.

The Stream Maintenance Program provides coverage for the following activities on streams for which SCVWD has maintenance responsibilities:

- Vegetation management for instream and upland areas. Management is performed using herbicide and mechanical techniques.
- Sediment removal to return engineered channels to as-built conditions.
- Bank protection for erosion control.
- Minor maintenance activities that avoid significant impacts requiring mitigation. This category includes such activities as graffiti removal, repair of structures with in-kind materials within the existing footprint, and tree pruning along maintenance roads and fence lines to provide access and to remove hazards.

Under the Stream Maintenance Program, routine maintenance is undertaken with consideration of special-status species that may be affected by the activities. Detailed BMPs were developed (and are continually updated through adaptive management) to reduce impacts from program activities, including potential impacts on special-status species. Even after application of BMPs, the program results in significant impacts. Thus, SCVWD is responsible for mitigation associated with its maintenance activities.

Mitigation for the Stream Maintenance Program includes the restoration of 30 acres of tidal wetlands, creation of 14 acres of freshwater wetlands, purchase of approximately 1,000 acres in the upper watershed areas for stream and watershed protection, and implementation of 125 acres of giant reed (*Arundo donax*) control including removal and follow-up monitoring and removal. Lands restored or purchased will be preserved in perpetuity as open space. In addition, mitigation for bank protection projects is calculated for each project. Mitigation is based on a table of ratios in Appendix E of the Stream Maintenance Program document.

The Stream Maintenance Program provides incidental take coverage for five federally listed species, three of which are also covered by the Habitat Plan[5]. Existing permits also address impacts on waters of the United States and waters of the state. The current permits are written for 10 years, expiring in 2012. SCVWD has complied with FESA through Section 7 consultation with both USFWS and NMFS. As such, the Stream Maintenance Program is not a proposed Covered Activity under either the Proposed Action or Alternative A.

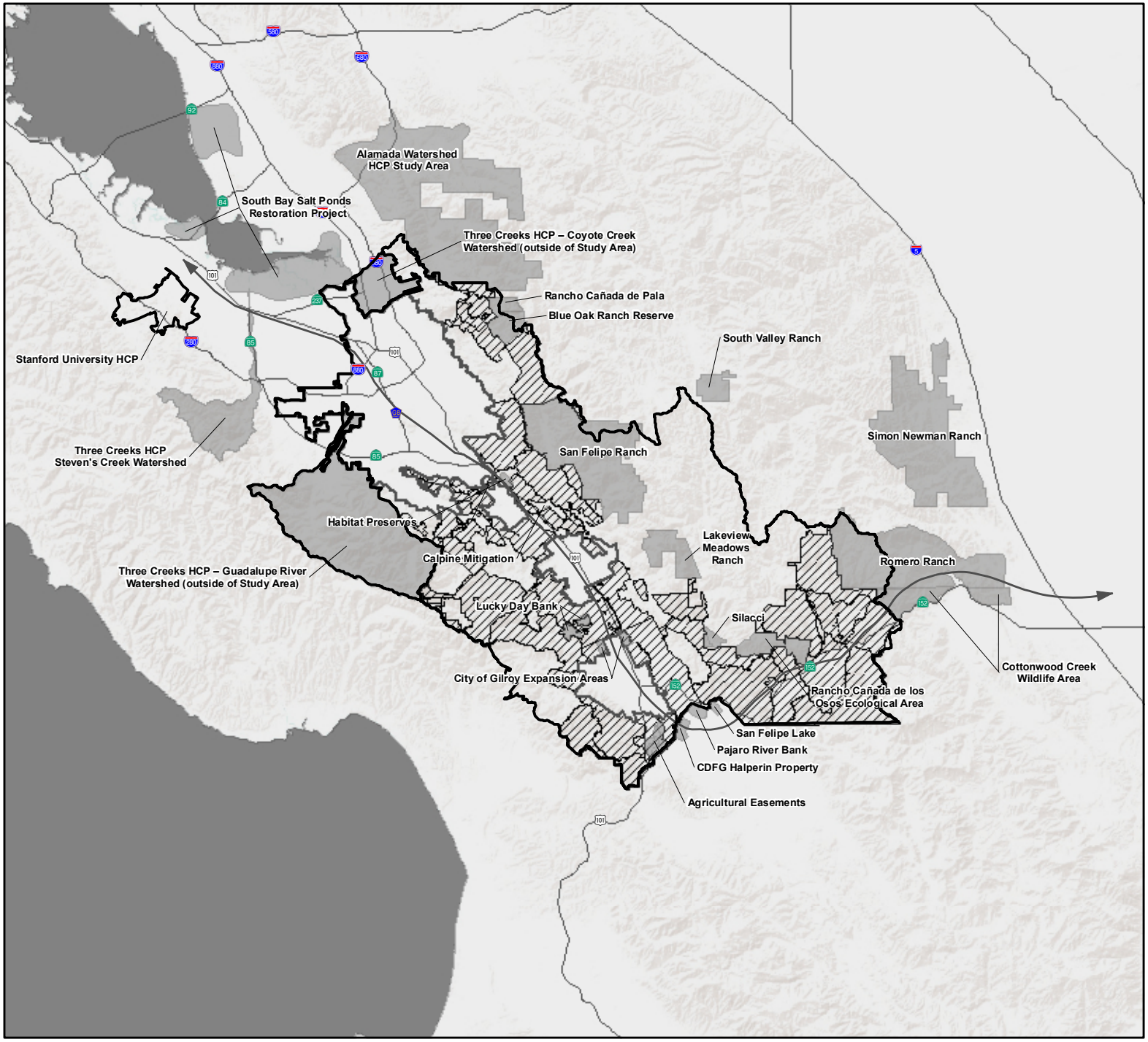
[5] Bay checkerspot butterfly, California red-legged frog, least Bell's vireo, salt marsh harvest mouse, and western snowy plover are covered by SCVWD Stream Maintenance Program; the first three are also covered by the Habitat Plan.

4.2.12 Mercury Removal and Remediation

Due to past land use and mineral extraction, mercury is a contaminant of concern for several parks, reservoirs, and streams within the Study Area, including Calero Reservoir, Almaden Reservoir, Guadalupe Reservoir, Guadalupe Creek, Guadalupe River, Alamitos Creek, and Coyote Creek. Because the extent of mercury pollution is still largely unknown, and because mercury remediation plans and implementation of plans will undoubtedly be highly complex, mercury removal/remediation activities and projects are not proposed to be covered by Habitat Plan.[6]

Expected future actions within the Guadalupe River watershed would be consistent with the recently approved Guadalupe River Watershed Mercury Total Maximum Daily Load (TMDL). These actions would include the installation of erosion control systems in the upper Guadalupe River watershed and bank stability and habitat restoration projects in the Alamitos Creek watershed. Both of these actions would be completed by December 31, 2018. Other actions may occur as a result of various studies, but at this time the specific actions have not been defined. All activities are expected to be completed so that all remediation objectives are met by December 31, 2028.

[6] Mercury removal that occurs in the course of sediment removal or dredging projects conducted by SCVWD is covered by the Habitat Plan (i.e., projects whose primary purpose is sediment removal, not mercury remediation). See Section 2.3.4 of the Habitat Plan.



VICINITY MAP

LEGEND

Cumulative Projects

- High Speed Train
- Project Areas

Other Data

- Study Area
- Planning Limit of Urban Growth
- Potential Reserve Areas

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0 4 8

Miles

FIGURE 4-1
Cumulative Projects
Santa Clara Valley HP EIR/EIS
Santa Clara County, California

CH2MHILL

CHAPTER 5

Biological Resources

5.1 Environmental Setting/Affected Environment

This section discusses habitat conditions in the Study Area as a framework for describing how anticipated changes in habitat could affect the fish, wildlife, and plant species that are considered in this document (see Appendix C). This section also outlines the regulatory framework for protecting these species.

5.1.1 Regulatory Framework

Federal Regulations

Endangered Species Act. FESA is described in Chapter 1, Introduction, and in Section 20.1.1.

Migratory Bird Treaty Act. The Migratory Bird Treaty Act is described in Section 20.1.5.

Bald and Golden Eagle Protection Act. The Bald and Golden Eagle Protection Act prohibits the taking or possession of and commerce in bald and golden eagles, with limited exceptions. Under the Act, it is a violation to "…take, possess, sell, purchase, barter, offer to sell, transport, export or import, at any time or in any manner, any bald eagle commonly known as the American eagle, or golden eagle, alive or dead, or any part, nest, or egg, thereof…." Take is defined to include pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, and disturb. Disturb is further defined as "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

Recent revisions to the Bald and Golden Eagle Protection Act authorizes take of bald eagles and golden eagles under the following conditions: (1) where the take is compatible with the preservation of the bald eagle and golden eagle, (2) is necessary to protect an interest in a particular locality, (3) is associated with but not the purpose of an otherwise lawful activity, and (4) for individual instances of take the take cannot be avoided, or (5) for programmatic take the take is unavoidable even though advanced conservation practices are being implemented (50 CFR 22.26). Permits issued under this regulation usually authorize disturbance only; however, in limited cases a permit may authorize lethal take that results from but is not the purpose of an otherwise lawful activity.

The bald eagle is not a proposed Covered Species. For golden eagles, the Local Partners are not seeking a permit under the Bald and Golden Eagle Protection Act, and the proposed Incidental Take Permits would not permit direct injury or death of golden eagles or their eggs, or disturbance to nests.

Clean Water Act. The federal Clean Water Act (CWA) regulates discharges of pollutants to waters of the United States and serves as the primary federal law protecting the quality of the nation's surface waters, including lakes, rivers, estuaries, coastal waters, and wetlands.

The CWA empowers the USEPA to set national water quality standards and effluent limitations and includes programs addressing both point-source and nonpoint-source pollution. Point-source pollution is pollution that originates or enters surface waters at a single, discrete location, such as an outfall structure or an excavation or construction site. Nonpoint-source pollution originates over a broader area and includes urban contaminants in stormwater runoff and sediment loading from upstream areas. CWA operates on the principle that all discharges into the nation's waters are unlawful unless specifically authorized by a permit; permit review is CWA's primary regulatory tool.

The following sections provide additional details on specific sections of CWA.

Water Quality Certification (Section 401). Under the CWA Section 401, applicants for a federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the United States must obtain certification from the state in which the discharge would originate. Therefore, all projects that have a federal component and may affect state water quality (including projects that require federal agency approval, such as issuance of a Section 404 permit, discussed below) must also comply with CWA Section 401.

Permits for Stormwater Discharge (Section 402). Section 402 of the CWA regulates construction-related stormwater discharges to surface waters through the National Pollutant Discharge Elimination System (NPDES) program. In California, the State Water Resources Control Board (SWRCB) is authorized by the USEPA to oversee the NPDES program through the Regional Water Quality Control Boards (RWQCBs) (see the related discussion under Porter-Cologne Water Quality Control Act below).

Under Section 402, construction projects that disturb more than 1 acre of land are authorized under the NPDES General Permit for Storm Water Discharges Associated with Construction Activity. This NPDES permit requires the applicant to file a notice of intent and to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP needs to include a site map and a description of proposed construction activities. In addition, it describes the Best Management Practices (BMPs) that will be implemented to prevent soil erosion and discharge of other construction-related pollutants (e.g., petroleum products, solvents, paints, cement) that could contaminate nearby water resources. Permittees are required to conduct annual monitoring and reporting to ensure that BMPs are correctly implemented and effective in controlling the discharge of stormwater related pollutants.

Permits for Fill Placement in Waters and Wetlands (Section 404). Under Section 404, the USACE and the USEPA regulate the discharge of dredged and fill materials into waters of the United States. Applicants must obtain a permit from the USACE for all discharges of dredged or fill material into waters of the United States, including wetlands, before proceeding with a proposed activity. Isolated waters and wetlands that are not used in interstate or foreign commerce may not be regulated. As part of the wetland delineation and verification process, USACE determines whether the wetlands are isolated and if they have a link to commerce.

State Regulations

California Endangered Species Act. CESA (California Fish and Game Code Section 2050 et seq.) establishes state policy to conserve, protect, restore, and enhance threatened or endangered species and their habitats. CESA mandates that state agencies should not approve projects that jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. There are no state agency consultation procedures under CESA. For projects that would affect a species that is federally and state-listed, compliance with FESA satisfies CESA if CDFG determines that the federal incidental take authorization is consistent with CESA. For projects that would result in take of a species that is only state listed, the project proponent must apply for a separate permit under Section 2081(b) of the Fish and Game Code.

California Native Plant Protection Act. The Native Plant Protection Act (NPPA) directs CDFG to "preserve, protect and enhance rare and endangered plants in this state." The NPPA gave the California Fish and Game Commission the power to designate native plants as endangered or rare, and to require permits for collecting, transporting, or selling such plants. Regulations enacting the NPPA are found in California Fish and Game Code Sections 1900-1913.

California Fish and Game Code Section 1602. Under Section 1602 of the California Fish and Game Code, agencies are required to notify CDFG before implementing any project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Preliminary notification and project review generally occur during the environmental process. When an existing fish or wildlife resource may be substantially adversely affected, CDFG is required to propose reasonable changes to the project to protect the resources. These modifications are formalized in a Streambed Alteration Agreement.

California Fish and Game Code – Various Sections. The California Fish and Game Code provides protection from take for a variety of species. Section 5050 prohibits take of fully protected amphibians and reptiles. Section 3515 prohibits take of fully protected fish species. Eggs and nests of all birds are protected under Section 3503, nesting birds (including raptors and passerines) under Sections 3503.5 and 3513, birds of prey under Section 3503.5, and fully protected birds under Section 3511. Migratory nongame birds are protected under Section 3800. Fully protected mammals are listed under Section 4700. The California Fish and Game Code defines take as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Except for take related to scientific research, all take of fully protected species is prohibited.

Porter-Cologne Water Quality Control Act. The Porter-Cologne Water Quality Control Act authorizes the SWRCB to regulate state water quality and protect beneficial uses. The Act provides for the development and periodic review of Water Quality Control Plans (Basin Plans) that designate beneficial uses of California's major rivers and groundwater basins and establish narrative and numerical water quality objectives for those waters (Central Valley Regional Water Quality Control Board 1998). Basin Plans are implemented through issuance of Waste Discharge Requirements and NPDES permits regulating waste discharges.

5.1.2 Natural Communities and Land Cover

There are seven natural communities within the Study Area made up of approximately 28 natural land-cover types, and two non-natural communities made up of approximately 10 disturbed land-cover types. Natural and non-natural communities are shown on Figure 5-1, and their component land cover types are shown on Figure 5-2. Table 5-1 lists each natural and non-natural community and Table 5-2 lists the associated land covers, including their extent within the Study Area. For more information and for detailed descriptions of each of the natural communities and land covers, see Habitat Plan Section 3.3.5.

TABLE 5-1
Natural and Non-Natural Communities in the Study Area

Community	Category	Acres	% of Study Area
Oak Woodland	Natural	156,930	34.1
Developed*	Non-Natural	115,897	25.2
Grassland	Natural	92,483	20.1
Chaparral and Northern Coastal Scrub	Natural	37,960	8.2
Agricultural	Non-Natural	37,738	8.2
Conifer Woodland	Natural	10,823	2.4
Riparian Forest and Scrub	Natural	6,682	1.5
Aquatic	Natural	1,110	0.2
Wetland	Natural	583	0.1
Total		**460,205**	**100.0**

*Includes the land cover categories “agriculture developed/covered agriculture” and “reservoir.”
Source: ICF International, 2012 (see Habitat Plan Table 3-7, which presents the land cover information for the Study Area minus lands managed by the California Department of Parks and Recreation).

TABLE 5-2
Land Cover Types in the Study Area

Land Cover Type	Community Category	Acres	Percent of Study Area
Urban-Suburban	Developed	89,438	19.43
Mixed Oak Woodland and Forest	Oak Woodland	84,488	18.36
California Annual Grassland	Grassland	81,795	17.77
Grain, Row-Crop, Hay and Pasture, Disked/Short-term Fallowed	Agricultural	33,648	7.31
Coast Live Oak Woodland and Forest	Oak Woodland	31,652	6.88

TABLE 5-2
Land Cover Types in the Study Area

Land Cover Type	Community Category	Acres	Percent of Study Area
Northern Mixed Chaparral/Chamise Chaparral	Chaparral and Northern Coastal Scrub	23,763	5.16
Valley Oak Woodland	Oak Woodland	12,895	2.80
Rural-Residential	Developed	12,414	2.70
Blue Oak Woodland	Oak Woodland	11,160	2.43
Foothill Pine-Oak Woodland	Oak Woodland	10,960	2.38
Serpentine Bunchgrass Grassland	Grassland	10,308	2.24
Northern Coastal Scrub/Diablan Coastal Sage Scrub	Chaparral and Northern Coastal Scrub	10,306	2.24
Redwood Forest	Conifer Woodland	9,693	2.11
Golf Courses/Urban Parks	Developed	8,673	1.88
Mixed Evergreen Forest	Oak Woodland	5,775	1.25
Mixed Riparian Woodland and Forest	Riparian Forest and Scrub	3,776	0.82
Mixed Serpentine Chaparral	Chaparral and Northern Coastal Scrub	3,712	0.81
Reservoir	Developed	2,767	0.60
Orchard	Agricultural	2,697	0.59
Willow Riparian Forest, Woodland, and Scrub	Riparian Forest and Scrub	2,544	0.55
Agriculture Developed	Developed	1,935	0.42
Vineyard	Agricultural	1,393	0.30
Ponds	Aquatic	1,110	0.24
Knobcone Pine Woodland	Conifer Woodland	711	0.15
Ponderosa Pine Woodland	Conifer Woodland	419	0.09
Coastal and Valley Freshwater Marsh	Wetland	381	0.08
Central California Sycamore Alluvial Woodland	Riparian Forest and Scrub	373	0.08
Landfill	Developed	364	0.08
Serpentine Rock Outcrop/Barrens	Grassland	260	0.06
Barren	Developed	211	0.05
Seasonal Wetland	Wetland	201	0.04
Coyote Brush Scrub	Chaparral and Northern Coastal Scrub	180	0.04
Ornamental Woodland	Developed	95	0.02
Rock Outcrop	Grassland	87	0.02
Serpentine Seep	Grassland	34	0.01
	Total	**460,205**	**100.00**

Source: ICF International, 2012

5.1.3 Special-Status Species

Appendix C summarizes the process for selecting special-status plant and animal species to consider in detail in this EIR/EIS. As described in Appendix C, all of the 18 Covered Species (in the Proposed Action and Alternative A) and 19 additional species were selected for evaluation. Information about each of these species is provided in the analysis section of this chapter. Additional information is presented in Appendix C, and detailed information on the Covered Species is presented in the Habitat Plan (see especially Chapter 3 and Appendix D).

Special-Status Plants

A total of 44 special-status plant species are known to occur or have the potential to occur within the Study Area. Please refer to Appendix C for a summary of the legal status, distribution, habitat, and likelihood for occurrence in the Study Area for each of these special-status species. Of the 44 special-status plant species, 9 would be covered under the Proposed Action and Alternative A. Covered plant species are listed in Table 5-3, along with a general description of their habitat requirements and known distribution. More detailed information about each of these species can be found in the Habitat Plan (see Habitat Plan Chapter 3 and Appendix D).

TABLE 5-3
Covered Plant Species

Species	General Description*
Tiburon Indian paintbrush *Castilleja affinis* ssp. *neglecta*	Tiburon Indian paintbrush is a strict serpentine endemic species found in rocky serpentine bunchgrass communities between 250 and 1,300 feet in elevation. Tiburon Indian paintbrush is known to occur in Marin, Napa, and Santa Clara Counties The range of the plant is approximately 30 miles (east-west) by 70 miles (north-south) The two known occurrences of the species in the Study Area are found along Coyote Ridge north of Morgan Hill. Neither of these occurrences currently is protected.
Coyote ceanothus *Ceanothus ferrisae*	Coyote ceanothus is generally found growing on dry slopes in chaparral, grassland, and coastal scrub on serpentine soils, from approximately 400 to 1,500 feet. Species commonly associated with Coyote ceanothus are California sagebrush, foothill pine, bigberry manzanita, toyon, California coffeeberry, and leather oak. Within the Study Area, coyote ceanothus is known to occur in three locations in the Mt. Hamilton Range, all within 4 miles of one another and all within the Study Area. None of the Study Area occurrences currently are protected.
Mount Hamilton thistle *Cirsium fontinale* var. *campylon*	Mount Hamilton thistle is a large herbaceous perennial thistle endemic to the San Francisco Bay Area, with clusters of populations in the Mount Hamilton Ranges and in the hills adjacent to the northern Santa Clara Valley. In the Study Area, there are 40 known occurrences of Mount Hamilton thistle, generally in the Santa Teresa Hills and east of U.S. Highway 101 in the low hills and canyons along Coyote Ridge and the Silver Creek Hills, two of which are protected.
Santa Clara Valley dudleya *Dudleya setchellii*	Santa Clara Valley dudleya is only found in Santa Clara County in the vicinity of Coyote Valley, from San José south about 20 miles to San Martin, at elevations of 300 to 900 feet. It is restricted to rocky outcrops in serpentine grassland and oak woodland that are otherwise largely unvegetated. Adjacent serpentine grasslands typically are dominated by a mixture of native grasses, such as purple needlegrass and non-native grasses, such as wild oats and soft chess. There are a total of 157 extant occurrences, all of which occur within the Study Area. Two of these occurrences are protected permanently.

TABLE 5-3
Covered Plant Species

Species	General Description*
fragrant fritillary *Fritillaria liliacea*	Fragrant fritillary occurs in grasslands, woodland, and coastal scrub up to 1,345 feet and in vernal pool areas. The species typically occurs on serpentine soils, although occurrences on heavy clay soils and other soil types have also been reported. Within the Study Area, eight occurrences of fragrant fritillary have been documented in Calero County Park, in Almaden Quicksilver County Park, and on private lands. None of these documented occurrences are protected permanently.
Loma Prieta hoita *Hoita strobilina*	Loma Prieta hoita is native to California, occurring in mixed oak woodland and coast live oak forest, at elevations between 100 feet and 2,000 feet. Loma Prieta hoita is known to occur at 11 locations on public and private lands within the Study Area, and one of these occurrences is protected permanently.
smooth lessingia *Lessingia micradenia* var. *glabrata*	Smooth lessingia occurs on serpentine outcrops and in rocky soils in serpentine bunchgrass grassland at elevations of 400 to 1,600 feet. It appears to prefer areas with low vegetation cover, sometimes occurring on roadcuts or at roadsides. Smooth lessingia is endemic to Santa Clara County on the eastern slopes of the Santa Cruz Mountains and the hills adjacent to the Santa Clara Valley, with 39 known occurrences, three of which are protected permanently.
Metcalf Canyon jewelflower *Streptanthus albidus* ssp. *albidus*	Metcalf Canyon jewelflower is a serpentine endemic that can be found between 200 and 1,200 feet in elevation. It grows in serpentine grasslands and on serpentine outcrops and road cuts that have little soil development and are surrounded by grasslands. There are 10 known occurrences of Metcalf Canyon jewelflower within the Study Area, generally within San José or adjacent County jurisdiction and mostly on the east side of Santa Clara Valley along U.S. Highway 101. One of these occurrences is protected permanently.
most beautiful jewelflower *Streptanthus albidus* ssp. *peramoenus*	Primary habitat for most beautiful jewelflower is defined as serpentine bunchgrass grassland, serpentine rock outcrops/barren, and mixed serpentine chaparral between 0 and 3,500 feet elevation on slopes with all degrees of steepness. Within the Study Area, there are 37 known occurrences of this species, three of which are protected permanently.

*Based on species descriptions in the Habitat Plan (Chapter 3 and Appendix D).

Six other special-status species with a high potential to occur or are known to occur within the Study Area that are not covered under the Proposed Action and Alternative A are listed below, and are described in the sections that follow:

- Bigscale balsamroot (*Balsamorhiza macrolepis* var. *macrolepis*)
- Chaparral harebell (*Campanula exigua*)
- Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*)
- Hall's bush mallow (*Malacothamnus hallii*)
- San Francisco collinsia (*Collinsia multicolor*)
- Santa Cruz Mountains beardtongue (*Penstemon rattanii* var. *kleei*)

The remaining species were identified as having moderate or low potential to occur in the Study Area. These species are not discussed below, but are described in Appendix C.

Bigscale Balsamroot. Bigscale balsamroot is native to California, where it occurs in various land cover types at elevations, primarily in the mountains bordering the northern Central Valley from Santa Clara County to Tehama County, between 300 and 4,500 feet. Primary habitat types for bigscale balsamroot are California annual grassland, serpentine bunchgrass grassland, and mixed oak woodland and forest. Population size varies considerably among locations. Some

occurrences consist of only a few plants, others of a few hundred plants, and others have dense stands consisting of thousands of plants (California Natural Diversity Database 2006).Within the Study Area, bigscale balsamroot is only known from one occurrence at Coyote Lake – Harvey Bear Ranch County Park (approximately 100 individuals).

Chaparral Harebell. Chaparral harebell is native to California, occurring in open, rocky sites in mixed serpentine chaparral or blue oak woodland at elevations ranging from 900 to 4,100 feet. The only known occurrence of chaparral harebell in the Study Area is located in the Furtado Open Space area, northeast of Alum Rock Park (approximately 15 individuals).

Congdon's Tarplant. Congdon's tarplant is native to California, occurring in valley and foothill grasslands at elevations up to 750 feet. Congdon's tarplant occurs in alkaline, often heavy clay soils in mesic areas within grassland communities with ruderal and native alkali-tolerant plants. Within the Study Area, Congdon's tarplant has been reported below Calero Reservoir and in two locations within urban San José (near Los Gatos Creek and near the U.S. Highway 101/Capitol Expressway interchange).

San Francisco collinsia. San Francisco collinsia is native to California, occurring in various land cover types at elevations ranging from 100 to 800 feet. Its primary habitat types are wet (mesic) areas in coast live oak forest and woodland, closed-cone coniferous forest, mixed serpentine chaparral, and northern coastal scrub/Diablan sage scrub. Within the Study Area, San Francisco collinsia is only known from one occurrence at Anderson Dam (between 300 and 500 individuals). The occurrence at Anderson Dam represents the most inland occurrence known in the species' range, and currently is not protected.

Hall's Bush Mallow. Hall's bush mallow is native to California, occurring in serpentine bunchgrass grasslands at elevations between 0 feet and 2,500 feet. Hall's bush mallow is known to occur at 20 locations on public and private lands within the Study Area.

Santa Cruz Mountains Beardtongue. Santa Cruz Mountains beardtongue is native to California, occurring in chaparral and coniferous forests, often within sandy soil. Within the Study Area, Santa Cruz Mountains beardtongue has been reported below Uvas Reservoir and in the Santa Teresa Hills.

Special-Status Fish and Wildlife

A total of 41 special-status wildlife species are known to occur or have the potential to occur within the Study Area. Please refer to Appendix C for a summary of the legal status, distribution, habitat, and likelihood for occurrence in the Study Area for each of these special-status species. Of the 41 special-status fish and wildlife species, 9 would be covered under the Proposed Action and Alternative A. Covered wildlife species are listed in Table 5-4, along with a general description of their habitat requirements and known distribution. More detailed information about each of these species can be found in the Habitat Plan (see Habitat Plan Chapter 3 and Appendix D).

TABLE 5-4
Covered Wildlife Species

Species	General Description[a]
Bay checkerspot butterfly *Euphydryas editha bayensis*	The Bay checkerspot butterfly is a federally listed threatened species that inhabits serpentine grasslands in the southern and eastern parts of the San Francisco Bay Area[b]. Most butterfly populations are located along the ridge east of U.S. Highway 101 between San José and Morgan Hill with smaller, scattered populations on the western foothills and along the eastern foothills south of Morgan Hill. The species has been affected by habitat loss and degradation (including changes in vegetative community composition as a result of nitrogen deposition). There is a total of 16,601 acres of critical habitat designated in the Study Area.
foothill yellow-legged frog *Rana boylii*	Foothill yellow-legged frogs spend most of their lives in or near perennial streams and are active mostly during the daytime, feeding on aquatic and other insects. Tadpoles graze the surface of rocks and vegetation to consume algae and detritus. Breeding habitat occurs in flowing water (e.g., small to medium-sized streams), with egg masses deposited on the downstream side of rocks in shallow, slower-moving water in late spring and early summer (i.e., after the peak instream flow period). Within the Study Area, foothill yellow-legged frogs have been documented in many perennial streams, primarily in the upper stream reaches above dams and reservoirs. Although remnant populations of foothill yellow-legged frogs may occur downstream of existing dams in the Study Area, remaining populations are most likely to be located upstream of dams or in streams that are not hydrologically affected by existing dams.
California tiger salamander *Ambystoma californiense*	California tiger salamanders are a subspecies of tiger salamander endemic to California, and are likely to be found in most areas of suitable habitat throughout the state (generally grasslands and the grassy understory of open woodlands below 1,500 feet in elevation). They are terrestrial during most of their lives, living underground in burrows dug (usually) by California ground squirrels and eating earthworms, snails, insects, and small mammals. During the winter, adult salamanders emerge from their burrows and migrate to aquatic breeding sites, typically ephemeral ponds and wetlands. Spawning usually occurs within a few days after migration, and the adults probably leave the breeding sites soon after spawning to return to their burrows. Adult California tiger salamanders are rarely observed except during this brief breeding period. Juvenile salamanders remain in the breeding ponds until they metamorphose into adults, typically after 3 to 6 months. Dispersal to upland refugia usually occurs in fairly close proximity to breeding ponds, but potential upland habitat includes all grasslands and woodland areas within 1.3 miles of breeding habitat. In the Study Area, breeding habitat is provided by coastal and valley freshwater marsh, seasonal wetland, and ponds. The location of these habitat types are found throughout the Study Area. It should be noted that almost all of the Study Area outside of urban areas is within 1.3 miles of these potential breeding sites. California tiger salamanders are known to occur throughout the Study Area, with clusters of known populations in Henry W. Coe State Park and Joseph D. Grant County Park. California tiger salamander is a federally listed species, with the central population (including the Study Area) listed as threatened. It is also under consideration for “endangered” status by the California Fish and Game Commission. There is a total of 32,866 acres of critical habitat designated in the Study Area. Critical habitat has been designated at sites throughout California, including eight sites in the Study Area.

TABLE 5-4
Covered Wildlife Species

Species	General Description[a]
California red-legged frog *Rana aurora draytonii*	California red-legged frogs spend most of their lives in or near water. In the Study Area, breeding habitat is provided by coastal and valley freshwater marsh, seasonal wetland, and ponds, including adjacent riparian areas. These habitat types are found throughout the Study Area. Most additional habitat requirements for red-legged frogs are provided within 100 feet or so of wetlands and ponds. California red-legged frogs are known to occur throughout the Study Area, with clusters of known populations in Henry W. Coe State Park. California red-legged frog is a federally listed (threatened) species. A total of 207,801 acres of critical habitat has been designated in the Study Area, including two sites encompassing most of the Diablo Range in the Study Area.
western pond turtle *Clemmys marmorata*	Western pond turtles spend most of their lives in or near water. In the Study Area, habitat is provided by coastal and valley freshwater marsh, seasonal wetland, ponds, and streams, including adjacent riparian areas. These habitat types are found throughout the Study Area. Most additional habitat requirements are provided within a few hundred feet of wetland areas (e.g., laying eggs in nearby sunny, upland areas). Pond turtles are known to occur throughout the Study Area.
tricolored blackbird *Agelaius tricolor*	Tricolored blackbirds breed colonially in wetland and riparian areas that contain reeds, cattails, or similar vegetation (including blackberry brambles) with adjacent areas of wetlands, field crops, grasslands, and similar land cover types where they can forage for insects, seeds, and other food. Tricolored blackbirds are found almost exclusively in California, primarily in the Central Valley, including a few recently documented breeding colonies in the Study Area (where they are considered rare and uncommon).
western burrowing owl *Athene cunicularia*	Burrowing owls are ground-dwelling birds that occur in a variety of lowland natural communities that contain open, well-drained terrain; short, sparse vegetation; and underground burrows or burrow facsimiles. The presence of nest burrows dug by other animals (e.g., ground squirrels) is a critical requirement. Burrowing owls are opportunistic predators, hunting in uncultivated fields and other habitats with an abundance of small mammals. Annual grassland and ruderal habitats on the valley floor, and developed sites (e.g., urban and rural residential areas, levees and other embankments) with suitable conditions, provide potential burrowing owl nesting and foraging habitat. In the Study Area, breeding and overwintering populations of burrowing owls are known to occur at San José International Airport and near Alviso (north of SR 237). Burrowing owls probably occur at other sites as well. Despite the presence of suitable habitat in parts of south Santa Clara County, burrowing owls are not known to occur in this portion of the Study Area.
least Bell's vireo *Vireo belli pusillus*	Least Bell's vireos are small songbirds that breed in Baja California, Southern California, and the Central Coast region of California (overwintering areas are in southern Mexico). Historic populations are thought to include the Central Valley and most Coast Range valley areas, and the current range of this species is thought to include portions of Santa Clara County based on documentation of a nest along the Pajaro River east of Gilroy in 1997 (SCVWD, 2002d). Breeding and foraging habitat for least Bell's vireos is primarily dense riparian woodlands and riparian scrub. Least Bell's vireos are a federally and state-listed endangered species. A draft Recovery Plan has been prepared, and critical habitat has been designated at 10 sites in Southern California (USFWS, 1998).

TABLE 5-4
Covered Wildlife Species

Species	General Description[a]
San Joaquin kit fox *Vulpes macrotis mutica*	San Joaquin kit foxes are small animals that historically occurred throughout arid lands in the San Joaquin Valley and surrounding foothills, preying on small animals such as ground squirrels and rabbits. Kit foxes can be found in most natural land cover types, as well as in and around irrigated agricultural areas. They build dens or occupy existing dens, generally in natural areas with loose soils. Some breeding may occur within the Study Area, and foxes may move through the southeastern portion of the Study Area between areas of known breeding activity (e.g., San Luis Reservoir, eastern Alameda and Contra Costa Counties).

[a]Based on species descriptions in the Habitat Plan (Chapter 3 and Appendix D).

[b]The USFWS has recommended that the Bay checkerspot butterfly be reclassified as an endangered species (USFWS, 2009).

The 13 other special-status species that are known to occur or have a high potential to occur within the Study Area that are not covered under the Proposed Action and Alternative A are listed below, and are described in the sections that follow:

- Opler's longhorn moth (*Adela oplerella*)
- Central California coastal steelhead (*Oncorhynchus mykiss*)
- Pacific lamprey (*Lampetra tridentata*)
- Central Valley fall-run Chinook salmon (*Oncorhynchus tshawytscha*)
- South-Central California coastal steelhead (*Oncorhynchus mykiss*)
- Monterey roach (*Lavinia symmetricus subditus*)
- California whipsnake (*Masticophis lateralis*)
- Golden eagle (Aquila chrysaetos)
- Bank swallow (*Riparia riparia*)
- Pallid bat (*Antrozous pallidus*)
- Pacific Townsend's (=western) big-eared bat (*Corynorhynus townsendii townsendii)*
- San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*)
- American badger (*Taxidea taxus*)

The remaining 19 species were identified as having moderate or low potential to occur in the Study Area. These species are not discussed in this chapter, but are described in Appendix C.

Opler's Longhorn Moth. Opler's longhorn moth is a small insect that inhabits serpentine habitats in the Study Area, primarily serpentine bunchgrass grassland, and similar habitats in the San Francisco Bay Area. There are six known occurrences of Opler's longhorn moth in the Study Area, and likely occur in areas of suitable habitat where their host plant (California cream cups) is present. Although not federally or state listed, Opler's longhorn moth is addressed as a species of concern in the Recovery Plan for Serpentine Soil Species of the San Francisco Bay Area (USFWS, 1998). It is expected to benefit from the various conservation actions implemented for the Bay checkerspot butterfly, but the Recovery Plan also identifies additional conservation actions such as survey and monitoring activities, a program to reintroduce the species into appropriate habitat, and additional research activities.

Central California Coastal Steelhead. The central California coastal steelhead population includes the coastal populations of steelhead from the Russian River south to Aptos Creek in Santa Cruz County. Spawning habitat requires a gravel substrate with sufficient flow velocity to maintain circulation through the gravel, and most upstream migration for spawning occurs from mid-December to mid-April. High quality steelhead rearing habitat includes shaded pools of small, cool, low-flow upstream reaches where steelhead typically reside for 1 to 2 years before migrating to the ocean (usually in spring). Because of this long rearing timeframe, adequate year-round flows of sufficiently cool water are required. In the North County streams, existing barriers block upstream steelhead movement to areas of suitable spawning and rearing habitat; therefore, any spawning and rearing that occurs likely takes place in areas of less-than-suitable habitat. The presence of steelhead in North County streams is unknown but, based on the results of various studies, they are likely to occur. Rainbow trout (essentially, steelhead that do not migrate to the ocean for their adult lives) are known to occur in North County streams; these fish may represent steelhead populations, but it is unclear if they are resident or anadromous.

Pacific Lamprey. Pacific lampreys are found along the Pacific coast in much of the northern hemisphere. Like steelhead and Chinook salmon, lampreys are anadromous; however, little is known about lamprey habitat requirements. Lampreys have been documented to occur in North County streams, and are probably restricted to larger streams (e.g., mainstems of Guadalupe River and Coyote Creek). In the South County, lampreys have been documented in the Llagas Creek and Uvas Creek watersheds.

Central Valley Fall-Run Chinook Salmon. The Central Valley population of fall-run Chinook salmon is the population that spawns generally in the Sacramento River and San Joaquin River watersheds. Like steelhead, Chinook salmon spawning requires a gravel substrate with sufficient flow velocity to maintain circulation through the gravel. Unlike steelhead, however, Chinook salmon typically do not remain in the area for more than a few months after hatching. Rearing habitat still requires sufficient flow of sufficiently cool water, but Chinook salmon can tolerate higher temperatures than steelhead. Chinook salmon are known to occur in the Guadalupe River and Coyote Creek watersheds, primarily in Downtown San José. It is unknown, however, if these populations occurred historically (i.e., prior to the creation of suitable habitat conditions downstream of reservoirs), or if the current populations represent strays from wild or hatchery populations from the Sacramento River and San Joaquin River watersheds.

South-Central California Coastal Steelhead. South-central California coastal steelhead populations are found from the tributaries to Monterey Bay south to Point Conception in Santa Barbara County. The habitat requirements for this species are generally the same as the central California coastal population described above. Steelhead are present in the South County streams, using the Pajaro River for migration and dispersing to spawning areas below existing dams, primarily in the Uvas Creek and Pescadero Creek watersheds.

Monterey Roach. Monterey roach is a small fish native to California that typically inhabits small tributaries in open foothill areas, and is tolerant of a wide variety of habitat conditions. Because its range typically includes intermittent streams, it tends to congregate

in pools during the dry season and is capable of tolerating higher temperatures than steelhead. Monterey roach is known to occur in the Parajo River watershed.[1]

California Whipsnake. The California whipsnake (or striped racer) is usually divided into two subspecies – Alameda whipsnake and chaparral whipsnake. The Alameda whipsnake subspecies was described based on morphological differences between specimens of the California whipsnake collected in the San Francisco East Bay and specimens collected throughout the rest of the range of the species, with an intergrade zone in southern Alameda County and northern Santa Clara County. The Alameda whipsnake, which occurs in chaparral and coastal scrub communities in far northern Santa Clara County, is a state and federally listed (threatened) species. One critical habitat unit encompasses a portion of Santa Clara County, but is outside of the Study Area (Ohlone Regional Wilderness, primarily in Alameda County). The chaparral whipsnake is found throughout its range, which encompasses a large portion of chaparral and coastal scrub vegetation found California and northern Baja California.

Golden Eagle. Golden eagles are large raptors that forage across a wide range of natural communities, hunting for small animals such as ground squirrels and rabbits. Within the Study Area, golden eagles could forage across most land cover types other than developed and irrigated agricultural lands. Nesting habitat is more limited, with large trees and secluded cliffs with overhanging ledges as preferred nest site characteristics. Several nest sites have been observed in the Study Area, two above Calero Reservoir and several in county parks along the east side of the Santa Clara Valley (Ed R. Levin, Joseph D. Grant, and Coyote Lake – Harvey Bear Ranch). Additional unknown nest sites are likely to occur in the Study Area.

Bank Swallow. The bank swallow is a small colonial-nesting bird, with an almost worldwide distribution. Bank swallows excavate nests in the vertical banks and bluffs with fine-textured soils. These features can occur in a variety of land cover types in the Study Area, but generally are located in cut banks of sinuous water courses. Aerial foraging for insects occurs over open water and in grasslands and fields, usually in fairly close proximity to nest sites. There is one documented occurrence of this species in the Study Area, in a railroad cut near the Pajaro River.

Pallid Bat. Pallid bats are light colored, large bats with similar habitat requirements as Townsend's big-eared bats (cave and cave-like roosting sites, broad range of foraging habitat types). Pallid bats are fairly common at lower elevations, and are likely to occur in the Study Area.

Pacific Townsend's big-eared bat. Townsend's big-eared bat is a medium sized bat that forages at night, feeding mostly on moths. Distribution is strongly correlated with the presence of roosting sites, which includes caves, buildings, bridges, and hollow trees. Foraging can occur on most any land cover type. Townsend's big-eared bat is likely to occur within the Study Area, with one documented occurrence in Almaden Quicksilver County Park. No breeding sites have been documented within the Study Area.

San Francisco Dusky-Footed Woodrat. The San Francisco dusky-footed woodrat is a medium-sized rodent that lives in dense shrubs and trees in a variety of woodland, brush, and

[1] Note that the various sub-populations of California roach (*Hesperoleucus symmetricus*), including Monterey roach, are not recognized as distinct subspecies by the American Fisheries Society (American Fisheries Society, 2004).

forest communities where they forage for nuts, fruits, and other vegetation. Dusky-footed woodrats build large stick "lodges," where they live in loosely cooperative societies. The San Francisco subspecies is one of 11 recognized subspecies of dusky-footed woodrats. In 2008, over 70 woodrat lodges were observed in the Coyote Creek watershed in or adjacent to stands of giant reed (*Arundo donax*) during routine surveys under the SCVWD Arundo Control Program. Little information is known about dusky-footed woodrats in the Study Area other than the information developed as part of the Arundo Control Program. Although the presence of woodrats is confirmed in areas of giant reed (and in some areas of other nearby riparian vegetation), it is assumed that woodrats occur in other suitable habitat in the Study Area.

American Badger. American badgers are large members of the weasel family that inhabit a wide range of natural communities. Badgers are ground-dwelling animals, and require friable soils that support burrows for den sites and permit digging for prey (e.g., ground squirrels and other small animals). Within the Study Area, grasslands likely provide the most suitable badger habitat, although badgers also could occur in other habitat types with appropriate soil conditions. The California Natural Diversity Database reports two known occurrences of this species in the Study Area, reported from the Morgan Hill and Gilroy USGS quadrangles. Additional badgers may be present in the grassland and/or oak woodland habitats within or near Henry Coe State Park, Santa Teresa County Park, Calero County Park, Coyote Valley, and between Metcalf Canyon and Tulare Hill (Diamond, 2006).

5.2 Methodology and Significance Criteria

For the No Action Alternative, potential impacts to biological resources were analyzed based on predicted changes to land cover types in the Study Area, using the GIS database developed for the Habitat Plan. GIS data developed for the Habitat Plan was verified before being referenced in this document. The quantitative analysis for permanent impacts to land cover type in this chapter correspond with Table 4-2 of the Habitat Plan. Temporary impacts to land cover types referenced below correspond to Table 4-3 of the Habitat Plan. When this analysis was not done for the Habitat Plan, temporary impacts are discussed qualitatively. As described in Chapter 3, predicted changes in land cover from urban development, instream capital projects, instream operations and maintenance activities, rural capital projects, rural operations and maintenance activities, and rural development are used as a surrogate for the impacts of the No Action Alternative (i.e., what would happen in the absence of comprehensive Habitat Plan). The additional consequences of the No Action Alternative are based on the expected mitigation and additional contributions to species recovery requirements for biological resource impacts resulting from project-by-project review. The discussion of these potential mitigation and/or species recovery requirements is qualitative (i.e., not based on the GIS database), and the requirements are expected to vary considerably based on the likelihood that individual species would be considered (or not considered) on a project-by-project basis and how any disclosed impacts would be avoided, minimized, and/or mitigated.

The Habitat Plan includes habitat models for most species proposed for coverage (Appendix D of the Habitat Plan). The analysis that follows assumes that these habitat models accurately represent the baseline conditions for biological resources on a programmatic scale. This assumption was deemed appropriate because both the USFWS and CDFG worked very closely with the Local Partners throughout the development of the Plan (2006-2012) to

develop and refine the habitat models. Recognizing the limitations of the land cover analysis (i.e. minimum mapping unit resolution, access during ground truthing, etc.), the Local Partners and Wildlife Agencies believe that, for some species, the impacts analysis in this EIR/EIS benefits from the habitat models developed for the Habitat Plan. For those species that reference the Habitat Plan models, references to permanent and temporary impacts to modeled habitat correspond with Table 4-4 of the Habitat Plan. For species that are addressed in this chapter but that are not proposed Covered Species under the Habitat Plan, the analysis that follows focuses on land cover type surrogates that are likely to provide suitable habitat.

The impacts analysis for the Proposed Action and Alternative A builds on the analysis of the No Action Alternative, focusing on any anticipated changes to the level of impacts (e.g., from conservation actions or from land cover changes on the Reserve System). In almost every case, the Proposed Action and Alternative A provide theoretical benefits compared to the No Action Alternative, and the analysis strives to articulate those benefits and why they are likely to be realized. Benefits are expected to occur as a result of several mechanisms under the Proposed Action and Alternative A, including standardized avoidance and minimization measures, coordinated landscape-level mitigation and conservation, standardized long-term monitoring and management, and coordinated studies that address critical uncertainties and species threats. These mechanisms are also summarized in Chapter 3 (Approach).

Within this methodology framework, impacts would be significant if any of the alternatives would have a substantial adverse effect, either directly or indirectly, on any of the special-status species identified above in Section 5.1.3. Because of the efforts to prepare a joint HCP/NCCP covering a broad range of species with varying habitat types, the analysis of these special-status species encompasses the range of impacts to other biological resources (e.g., sensitive habitats and natural communities, wetlands, movement corridors, etc.).

5.3 No Action Alternative

As described in Chapter 3 (Approach), the analysis of impacts under the No Action Alternative encompasses most of the same activities that would be Covered Activities under the Proposed Action. The most important difference is in how biological resource impacts would be identified and mitigated. Under the No Action Alternative, biological resources impacts would be considered only for projects with a discretionary action by one of the Local Partners, or with a potential to adversely affect listed species. Impacts and mitigation measures would be determined on a case-by-case basis, with no regional framework for impact avoidance, minimization, and mitigation. It is likely that lands would be preserved for listed species (e.g., Bay checkerspot butterfly), but there would be no regional framework for the conservation of natural communities and preservation of habitat linkages.

5.3.1 Bay Checkerspot Butterfly

Environmental Consequences/Environmental Effects

Under the No Action Alternative, activities associated with the urbanization of the Study Area, including infrastructure development, would occur. These activities would result in both permanent and temporary impacts to Bay checkerspot butterflies from conversion of existing habitat to developed uses. The No Action Alternative is expected to convert the land cover type that supports key Bay checkerspot butterfly habitat (serpentine bunchgrass

grassland) from 10,308 acres to 9,658 acres (Table 5-5), a decrease of 6.3 percent. Most of the 10,308 acres of serpentine bunchgrass grassland (8,621 acres, or approximately 84%) were modeled as suitable habitat for the Bay checkerspot butterfly (ICF International, 2012), and therefore most of the impacts from development activities are likely to occur in areas of modeled habitat.

TABLE 5-5
Permanent Impacts on Land Cover Types Containing Bay Checkerspot Butterfly Habitat

Land Cover Type	Total in Study Area	Percent of Study Area	Impacts from Development Activities	New Total in Study Area	New Percent of Study Area
Serpentine bunchgrass grassland	10,308	2.24	650	9,658	2.10

Source: ICF International, 2012

Most of this change would be a result of urban and rural development, including urban development within the City of San José (e.g., portions of the Silver Creek Hills and Communications Hill areas), urban development within the City of Morgan Hill (e.g., north of Llagas Road), and rural development along Coyote Ridge. These and other affected areas are shown on Figure 5-3. In addition, urban development activities would affect portions of designated Bay checkerspot butterfly critical habitat, including in the Silver Creek Hills and Santa Teresa Hills (i.e., area surrounding the IBM Almaden Research Center) within the City of San José and north of Llagas Road in the City of Morgan Hill. Rural development could affect other areas of critical habitat. As shown in Figure 5-3, there is more designated critical habitat (16,601 acres) than serpentine bunchgrass grassland land cover (10,308 acres). This is because critical habitat includes primary constituent elements that include more than serpentine bunchgrass grassland.[2]

Conversion of other natural land cover types (i.e., other than serpentine bunchgrass grassland) near areas of suitable habitat (see Figure 5-3) could affect Bay checkerspot butterflies by limiting their ability to move between areas of suitable habitat. This is especially important for butterflies potentially crossing from the east side to the west side of the Coyote Valley area.

Under the No Action Alternative, existing regulatory processes provide a way to mitigate impacts to Bay checkerspot butterflies. Most impacts are expected to occur as a result of activities that are subject to discretionary authorization by local agencies, and therefore would be subject to environmental review under CEQA and likely other regulations that would help ensure compliance with FESA. Impacts to Bay checkerspot butterfly habitat would be mitigated through various measures including avoidance of habitat and compensation for unavoidable habitat conversions. Because the species is endemic to the area and the limited amount of remaining suitable habitat, it is likely that FESA and CEQA processes would require that some areas proposed for development be avoided. This is especially likely in areas of designated critical habitat, which would require additional evaluation under FESA. Any such avoidance requirements would reduce the number of permanently affected acres to less than the amount of suitable habitat occurring on 650 acres of serpentine bunchgrass grassland described in Table 5-5. It is not possible to predict the

[2] See Final Rule, 73 FR 50406.

amount of habitat that would be avoided or preserved because avoidance (and preservation and management requirements) would be determined on a project-by-project basis.

Compensation for unavoidable habitat impacts likely would be similar to that conducted for previous projects impacting the Bay checkerspot butterfly, which includes preservation, monitoring, and management of habitat on a project-by-project basis. For example, 211 acres of natural lands on Coyote Ridge and Tulare Hill, including serpentine grasslands, are preserved and managed as Bay checkerspot butterfly habitat as mitigation for impacts from the Metcalf Energy Center project. In a similar manner, compensation for impacts to suitable habitat (and/or designated critical habitat) would be provided by acquiring other nearby serpentine grassland areas. It is not possible to predict, however, how many acres would be acquired since project-level compensation will be commensurate with the impact, given the baseline condition of the species at the time of project evaluation.

As shown in Table 5-5, most serpentine grassland areas (9,658 out of 10,308 acres, or about 94%) would not be developed. Under the No Action Alternative, these areas are expected to be managed for multiple purposes, including grazing or other non-intensive agricultural use. In some cases, undeveloped serpentine grassland would be managed as habitat preserves as mitigation for development activity.

In addition to the direct effects described above, the No Action Alternative also could result in indirect effects to Bay checkerspot butterflies, including effects from nitrogen deposition and pesticide use. The deposition of reactive forms of nitrogen from the atmosphere – nitrogen oxides (NO_x) and ammonia and their reaction products – acts as a fertilizer that disrupts the natural plant communities in serpentine soils, which are naturally poor in nutrients (California Energy Commission, 2006). The problems associated with nitrogen deposition are described in detail in the Habitat Plan (Appendix E) including a detailed description of existing sources of nitrogen deposition. Important findings reported in Habitat Plan Appendix E include the percentage of nitrogen deposition originating from within the Study Area (46%, mostly from vehicles) and the expected increase in nitrogen deposition over time (about a 67% increase by 2060 under the most rigorous analysis). This predicted increase in nitrogen deposition would result in further changes to plant communities and an increase in adverse effects to Bay checkerspot butterflies.

Mitigation for nitrogen deposition impacts could result from ongoing regulatory efforts to control ozone, which could in turn reduce emission of precursor compounds such as NO_x. As described in Chapter 16, Air Quality, NO_x emissions in the Bay Area may decrease as a result of regional mitigation strategies to comply with federal and state air pollution laws. Therefore, potential risks to Bay checkerspot butterfly could be reduced over time if the regional mitigation strategies are successful.

Bay checkerspot butterflies may be affected by pesticide use in the Study Area. Potential impact mechanisms include spraying agricultural chemicals, which could result in drift to non-target areas. In addition, urbanization of the Study Area under the No Action Alternative is expected to result in a corresponding increase in pesticide use in urban areas (e.g., by homeowners and landscapers), and a decrease in agricultural pesticide use. Pesticide use in other areas, including most of the serpentine grassland areas, is expected to remain low, similar to existing conditions. Although a reduction in agricultural pesticide use would be beneficial because of the more widespread use of restricted-use chemicals and

the potential for drift into non-target areas such as serpentine grasslands, use in agricultural areas is more likely to be by licensed applicators compared to unlicensed use of general-use chemicals by homeowners. In addition, the proximity of serpentine grasslands to urban development, rather than to intensive agricultural areas, indicates a greater potential for pesticide impacts to Bay checkerspot butterflies.

Recognition of the risks from pesticide use has resulted in the creation of a regulatory structure for pesticide control based on a licensing process. Chemicals are licensed by the USEPA, and labels are created that strictly control how chemicals are to be used. The process by which the USEPA considers potential effects on listed species is currently changing. In the future, it is expected that there will be greater restrictions (e.g., specific timing, location, and application instructions) on the use of many pesticides based on a more rigorous consultation process between the USEPA and the USFWS. Therefore, it is possible that potential risks to Bay checkerspot butterfly could be reduced over time.

Cumulative Effects

As described in Section 4.1.1.2, urban development and associated infrastructure have replaced natural lands in the Study Area, including lands recently used for grazing. Direct loss of available habitat for Bay checkerspot butterflies has been exacerbated by nitrogen deposition and other types of indirect effects. This trend is expected to continue under the No Action Alternative as continued development occurs, but little additional conversion of serpentine bunchgrass grasslands is expected other than the changes in Table 5-5. The Cities of San José and Morgan Hill have urban limit lines, which are expected to limit the extent of additional habitat loss.

5.3.2 Opler's Longhorn Moth

Environmental Consequences/Environmental Effects

Under the No Action Alternative, direct and indirect impacts to Opler's longhorn moth within the Study Area are expected to be approximately same as described for Bay checkerspot butterfly because of their generally similar habitat requirements. This includes the loss of up to 650 acres of serpentine bunchgrass grassland, and the related impacts discussed above for Bay checkerspot butterfly. Impacts from fragmentation of suitable habitat, however, may be greater because Opler's longhorn moths do not have the same dispersal abilities (i.e., flying range) as Bay checkerspot butterflies.

Cumulative Effects

Same as Bay checkerspot butterfly.

Determination of Significance

Same as Bay checkerspot butterfly.

5.3.3 Foothill Yellow-Legged Frog

Environmental Consequences/Environmental Effects

Urbanization and associated infrastructure development under the No Action Alternative could affect foothill yellow-legged frog habitat upstream and downstream of the major dams and

reservoirs in the Study Area. However, previous and ongoing disturbance downstream of dams resulting from flow regulation and flood control have greatly degraded foothill yellow-legged frog habitat in streams that are hydrologically affected by existing dams. Primary habitat is defined in the Habitat Plan as low-gradient streams (0 to 4% slope) or rivers not regulated by a dam, in riparian forest/scrub, grassland, oak woodland, and conifer woodland land cover types (ICF International, 2012). Secondary habitat is defined by the Habitat Plan as moderate-gradient streams (4 to 10% slope) or rivers in riparian woodland/scrub, grassland, oak savanna, and oak woodland land cover types (ICF International, 2012) (Habitat Plan, Appendix D).In upstream areas, permanent and temporary impacts would occur as a result of instream capital projects such as bridge repair projects on county roads, instream operations and maintenance, and rural and other development in upland habitat near streams.

Instream capital projects (e.g., flood protection activities, levee reconstruction) and other similar activities are expected to permanently impact 9.4 miles of the 2,391.5 miles of streams in the Study Area. In addition, temporary effects to streams also would occur (estimated to be 48.0 miles of riverine habitat), usually as a result of the additional disturbance required to construct instream capital projects. Most of these projects would occur downstream of existing dams in urbanized areas with a history of extensive flood control improvements and flow regulation. In general, foothill yellow-legged frogs are less likely to occur in these areas, which are considered secondary (low use) habitat. Therefore, the majority of the anticipated take would likely occur upstream of dams or on portions of streams that are not hydrologically affected by dams.

Total modeled primary habitat in the Study Area is approximately 244 miles (ICF International, 2012). Because these areas are remote (i.e., not close to areas where most development activities are expected to occur), permanent impacts to primary modeled habitat are expected to be minor (less than 1%, or 1.9 miles).

Under the No Action Alternative, mitigation for direct impacts to primary habitat foothill yellow-legged frogs may occur as a result of CEQA review for discretionary projects within areas of suitable habitat. As stated above, most of the discretionary instream capital projects would occur below dams in areas that are unlikely to contain suitable habitat, but some projects (e.g., bridge reconstruction) would occur in upstream reaches that are known or likely to provide suitable frog habitat. CEQA review could include preconstruction surveys and avoidance measures such as work windows (i.e., prohibiting construction during the breeding season). Disturbances in stream areas also could require mitigation by protecting and/or restoring other stream reaches. For these reasons, direct effects to primary habitat under the No Action Alternative are expected to be mitigated.

The species would continue to be threatened by dam operations in areas of secondary habitat below major dams and reservoirs. For example, poorly timed reservoir releases could scour egg masses or wash breeding or rearing individuals downstream. Under the No Action Alternative, instream operations and maintenance activities by SCVWD are expected to provide improved instream conditions in several areas and, in some cases, attempt to better mimic natural flow conditions (i.e., flow conditions without the interference of dams and reservoirs). These activities are expected to minimize existing adverse effects, and may benefit foothill yellow-legged frogs by improving conditions below the dams sufficiently to allow the frogs to reestablish breeding populations in these areas. The possibility of beneficial effects would be enhanced if these activities are planned to specifically benefit foothill yellow-legged

frogs as well as fish (e.g., by ensuring that spring pulse flows are not so high that eggs are dislodged and by providing cobble as well as gravel substrate). Under the No Action Alternative, these flow-related effects (potentially beneficial as well as adverse) are expected to be analyzed on a project-by-project basis during CEQA review (usually with SCVWD as the Lead Agency), and potentially under NEPA during environmental review of the proposed Three Creeks HCP and other actions requiring federal authorization.

In addition to the direct and indirect effects described above, foothill yellow-legged frogs would continue to be threatened by other indirect effects such as sedimentation of breeding areas as a consequence of development activity, and predation and competition from introduced species.

Cumulative Effects

Foothill yellow-legged frogs have been affected by loss of habitat under the No Action Alternative. Flood control activities, such as the creation of dams and reservoirs, has substantially altered downstream flows such that suitable instream habitat for foothill yellow-legged frogs has been degraded or lost. To the extent areas of suitable habitat existed in the Study Area prior to the development of flood control infrastructure, it is likely that most of those areas have been substantially altered by reservoir operations that emphasize the conveyance of flood flows and diversion to recharge ponds. There have been fewer cumulative effects from past actions in upstream areas because of the relatively small amount of development compared to downstream areas. Cumulative effects are primarily a result of rural development activities that have resulted in increased sedimentation of breeding areas and similar types of effects. Overall cumulative effects, however, are substantial given the habitat changes in downstream areas.

5.3.4 Fish (North County Streams)

Environmental Consequences/Environmental Effects

For the North County streams (generally the Guadalupe River and Coyote Creek watersheds), fish species considered in this EIR/EIS are central California coastal steelhead, Central Valley fall-run Chinook salmon, and Pacific lamprey.

Fish Habitat Impacts. Urbanization and associated infrastructure development under the No Action Alternative is expected to permanently impact 9.4 miles of the 2,391.5 miles of streams in the Study Area. Most of these riverine impacts are expected to occur downstream of existing dams.[3] Impacts are almost entirely a consequence of instream capital projects such as flood protection activities, levee reconstruction, and dam safety projects. In addition, temporary effects to streams also would occur, usually as a result of the additional disturbance required to construct instream capital projects but also as a result of various operations and maintenance activities, estimated at an additional 48.0 miles of riverine habitat that would be temporarily affected. Temporary effects also would include the mobilization of sediment associated with construction activity in streams or on banks.

[3] The analysis focuses on potential impacts to anadromous fish species that migrate out of the watersheds to live their adult lives in the ocean, and so by definition the analysis focuses on the areas downstream of the existing dams and other barriers to upstream movement.

Riparian habitat also would be impacted under the No Action Alternative. Over the next 50 years, approximately 289 acres of riparian habitat would be developed in the Study Area. Approximately two-thirds of this impact would be a result of instream capital projects. In addition, temporary effects to riparian habitat also would occur, often as a result of the additional disturbance required to construct instream capital projects but also as a result of various operations and maintenance activities. This additional temporary impact is estimated to be 209 acres of riparian habitat.

For all species, permanent loss of riverine and associated riparian habitat is expected to result in on-site and/or off-site protection, enhancement, and restoration. Enhancement and restoration could include activities to improve upstream and downstream movement (e.g., barrier modification or removal). Permanent disturbance of riverine and riparian habitat is expected to require mitigation as part of CEQA review and as required by various other regulatory processes (e.g., Clean Water Act, Fish and Game Code). Mitigation likely would occur in fairly close proximity to the impact. Temporary impacts also would likely be addressed through on-site restoration. Monitoring would be required for both permanent and temporary impacts in order to ensure that riverine and riparian restoration efforts are successful.

As described above for foothill yellow-legged frogs, several of the instream capital projects would be developed to balance flood control with the restoration of natural stream channel and adjacent riparian conditions (e.g., increasing channel sinuosity and pool-riffle habitat). The No Action Alternative also includes a gravel program that would augment potential spawning areas downstream of several existing dams with gravel collected from upstream of the reservoirs. In addition, the No Action Alternative also would increase flow variability to rehabilitate instream habitat conditions below several existing dams, including summer coldwater management zones, winter base flows, and spring pulse flows. These stream restoration and flow management activities are expected to provide improved instream conditions in several areas and, in some cases, attempt to better mimic natural flow conditions (i.e., flow conditions without the interference of dams and reservoirs). These activities may improve conditions below the dams sufficiently to benefit steelhead, salmon, and lampreys. For example, the creation of coldwater management zones is expected to provide areas for rearing steelhead to take refuge from potentially lethal areas of high water temperature.

Direct Mortality. There is a potential for mortality of eggs and juvenile fish during the construction of instream capital projects and instream operations and maintenance activities. Most of the instream activities are expected to require subsequent discretionary review, including permits from resource agencies (e.g., CDFG) typical of instream projects. Because steelhead are a federally listed species and because portions of the Study Area are within designated critical habitat (Coyote Creek watershed and lower portion of Guadalupe River watershed), the discretionary review process is likely to include mitigation measures to minimize take. The measures are likely to include preconstruction survey requirements and work windows (i.e., restrictions on activity during key spawning periods). Similar mitigation measures may be required for Chinook salmon and Pacific lamprey, possibly as a result of CEQA review, but this is unlikely because neither are special-status species.

Reducing Fish Entrainment. Some of these instream capital projects would be implemented for the purpose of providing long-term reductions in fish mortality. These projects include physically separating two groundwater recharge ponds (Ogier Ponds and Coyote

Percolation Ponds) from the Coyote Creek channel to eliminate fish entrainment into the ponds, improving juvenile fish passage below Almaden Reservoir, and modifying the diversion structures for two other groundwater recharge ponds (Ford Road and Church Avenue ponds) to reduce entrainment. Long-term benefits (minimization of fish mortality) are expected as a result of this subset of instream capital projects.

Indirect Effects. Indirect effects resulting from increased urbanization also would impact these habitats by potentially increasing levels of disturbance (i.e., associated with harassment and/or waste) and/or increasing stream velocities (i.e., from increased stormwater runoff associated with more impervious surface area) and temperatures. An increase of impervious surfaces within a watershed may result in changes to instream flows, temperatures, and stream geomorphology. Increases in impervious surfaces can also result in increased water pollutants in local streams. Herbicides, pesticides, and other toxic materials can cause diminished production or mortality of fish or their food sources. Fertilizers and other organic materials can cause algal blooms that decrease dissolved oxygen levels, while fine sediments may degrade spawning beds. Indirect effects are being addressed locally and regionally through local plans and policies for water quality control. For example, the Santa Clara Valley Water Resource Protection Collaborative (led by SCVWD) has developed guidelines and standards for land use near streams, which are being implemented by local land use authorities. In addition, the Santa Clara Valley Urban Runoff Pollution Prevention Program directs local efforts to control pollution in stormwater runoff. Chapter 10, Hydrology and Water Quality, contains more information about local plans and policies for control of indirect effects to riverine habitat.

Cumulative Effects

Steelhead spawning has been heavily impacted by the loss of habitat associated with the construction of dams, which blocked access to high quality spawning habitat. Loss of habitat from dam construction has been further complicated by the construction of other migration barriers downstream of the dams (e.g., Alamitos drop structure on the Guadalupe River). Operation of these flood control projects has substantially altered downstream flows such that suitable instream spawning and habitat has been substantially degraded. Impacts to steelhead have likely been more severe than impacts to Chinook salmon or lampreys. To the extent areas of suitable habitat existed in the Study Area prior to the development of flood control infrastructure, it is likely that most of those areas have been substantially altered by reservoir operations that emphasize the conveyance of flood flows and diversion to recharge ponds. Increased loss of potential habitat, however, is unlikely to occur because no additional conversions of natural stream channels and no additional dam or reservoir construction projects are expected within the Study Area.

Urban development and related activities (see Section 4.1.1) also have caused a variety of other adverse effects including reduced channel complexity, loss of riparian vegetation (which provides several benefits to anadromous fish), and reduced water quality from sediment. Any steelhead present in North County streams have been forced to spawn in areas of poor quality habitat. Impacts to steelhead have likely been more severe than impacts to Chinook salmon or lampreys.

5.3.5 Fish (South County Streams)

Environmental Consequences/Environmental Effects

For the South County streams (generally Llagas, Uvas [Carnadero], and Pacheco Creek watersheds, but also the Pajaro River, Pescadero Creek, and other small tributaries), fish species considered in this EIR/EIS are south-central California coastal steelhead, Pacific lamprey, and Monterey roach.

As described above for the North County streams, urbanization and associated infrastructure development is expected to (permanently and temporarily) impact riverine and riparian habitat, including in the South County area. There is a potential for mortality of eggs and juvenile fish during the construction of instream capital projects and instream operations and maintenance activities. Like North County streams, most of these activities are expected to require discretionary review to determine impacts to federally listed steelhead (the South County streams also are designated as steelhead critical habitat). The discretionary review process is likely to include mitigation measures to minimize the chances of mortality. Similar mitigation measures may be required for Pacific lamprey or Monterey roach, possibly as a result of CEQA review, but this is unlikely because Pacific lamprey and Monterey roaches are not listed species.

Mitigation for loss of riverine and riparian habitat is expected as a result of project review as described above for North County streams.

The No Action Alternative includes several instream capital projects that would be developed to balance flood control with the restoration of natural stream channel and adjacent riparian conditions. Specific designs have not yet been prepared, but may include geomorphic rehabilitation (e.g., increasing channel sinuosity and pool-riffle habitat) of several stream reaches in the Llagas Creek and Uvas Creek watersheds. In addition, the No Action Alternative also includes changed operating rules for water supply facilities in the Llagas Creek and Uvas Creek watershed. The proposed operating rules would coordinate the operation of Chesbro and Uvas reservoirs, increasing flow variability to improve instream habitat conditions in Uvas Creek (below the reservoir), including winter base flows, winter pulse flows, spring out-migrant releases, summer rearing releases, and ramping restrictions. As described for the North County streams, these activities may improve conditions below Uvas Dam sufficiently to benefit steelhead (and lampreys). For example, providing adequate flow is expected to ensure that there are sufficient areas of suitable steelhead rearing habitat. Although the extent of riffles and coldwater zones in Uvas Creek has not been defined under the proposed operating rules, it is expected that many warmer backwater areas would still remain available as additional habitat for Monterey roach. The specific benefits in terms of improving fish habitat conditions, however, remain speculative.

Indirect effects are as described above for North County streams. However, there would be a greater proportion of rural development in the South County area, and therefore sedimentation and related indirect impacts are likely to be greater.

Cumulative Effects

Steelhead spawning has been heavily impacted by the loss of habitat associated with the construction of dams, which blocked access to high quality spawning habitat. Operation of these flood control projects has substantially altered downstream flows such that suitable instream spawning and habitat has been substantially degraded. Impacts to steelhead have likely been more severe than impacts to Monterey roach or lampreys. To the extent areas of suitable habitat existed in the Study Area prior to the development of flood control infrastructure, it is likely that most of those areas have been substantially altered by reservoir operations that emphasize the conveyance of flood flows. Increased loss of potential habitat, however, is unlikely to occur because no additional conversions of natural stream channels and no additional dam or reservoir construction projects are expected within the Study Area.

Urban development and related activities (see Section 4.1.1) also have caused a variety of other adverse effects including reduced channel complexity, loss of riparian vegetation, and reduced water quality from sediment. Any steelhead present in South County streams have been forced to spawn in areas of poor quality habitat. Impacts to steelhead have likely been more severe than impacts to Monterey roach or Pacific lampreys.

5.3.6 California Tiger Salamander

Environmental Consequences/Environmental Effects

Urbanization and associated infrastructure development would continue to cause the loss of wetland and pond habitat in the Study Area, which is likely to contain suitable breeding habitat for California tiger salamanders (see Figure 5-4). Over the next 50 years, approximately 106 acres of wetlands and ponds could be developed in the Study Area (Table 5-6). More than two-thirds of this impact would be a result of urban development. Of the total 1,692 acres of wetland and pond land cover types in the Study Area, approximately 1,027 acres (60%) is expected to contain suitable breeding habitat based on habitat modeling performed for the Habitat Plan (ICF International, 2012). In addition, up to 18 acres of temporary effects to wetland and pond habitat also would occur, often as a result of the additional disturbance required to construct instream capital projects but also as a result of various operations and maintenance activities.

TABLE 5-6
Permanent Impacts on Land Cover Types Containing California Tiger Salamander Breeding Habitat

Land Cover Type	Total in Study Area	Percent of Study Area	Impacts from Development Activities	New Total in Study Area	New Percent of Study Area
Coastal and Valley Freshwater Marsh	381	0.08	34	347	0.08
Seasonal Wetland	201	0.04	21	180	0.04
Pond	1,110	0.24	51	1,059	0.23
Total	**1,692**	**0.36**	**106**	**1,586**	**0.35**

Source: ICF International, 2012

Because of the status of California tiger salamanders as threatened species, it is expected that when this species is encountered, impacts to any active breeding sites would be minimized with implementation of mitigation measures. This is especially likely in areas of designated critical habitat, which would require additional evaluation under FESA. Existing regulatory processes (e.g., CEQA review of discretionary infrastructure projects) are likely to require pre-construction surveys for species presence at potential breeding sites and strict avoidance measures if salamanders are discovered.

Mitigation for the loss of breeding habitat is likely to occur under the No Action Alternative. Permanent disturbance of wetland habitat often requires mitigation as part of CEQA review and as required by various other regulatory processes typical of instream projects (e.g., Clean Water Act, Fish and Game Code). Temporary impacts also would require mitigation, but typically by simple restoration of the disturbed area. Monitoring is likely to be required for both permanent and temporary impacts in order to ensure that restoration is successful.

In addition to impacts to breeding habitat, the No Action Alternative also would have impacts to upland areas (non-breeding habitat), where California tiger salamanders spend most of their lives in underground burrows. Approximately 14,000 acres would be developed out of approximately 343,000 acres (Table 5-7), indicating that most undeveloped land within the Study Area would remain undeveloped. An additional 2,009 acres of upland refugia habitat would be temporarily affected. It is estimated that approximately 94 percent of this area (323,721 acres) is modeled non-breeding habitat (ICF International, 2012). Most of this land, located within 1.3 miles of potential salamander breeding habitat, would be managed for grazing, farmland, or as part of existing parks and preserves (e.g., Henry W. Coe State Park)

TABLE 5-7
Permanent Impacts on Land Cover Types Containing California Tiger Salamander Upland Refugia Habitat

Land Cover Type	Total in Study Area	Percent of Study Area	Impacts from Development Activities	New Total in Study Area	New Percent of Study Area
Grassland	92,483	20.1	2,541	89,942	19.5
Chaparral and northern coastal scrub	37,960	8.2	385	37,575	8.2
Oak woodland	156,930	34.1	2,608	154,322	33.5
Riparian forest/scrub	6,682	1.5	289	6,393	1.4
Conifer woodland	10,823	2.4	116	10,707	2.3
Wetlands	583	0.1	54	529	0.1
Agriculture	37,738	8.2	8,003	29,735	6.5
Total	**343,199**	**74.6**	**13,996**	**329,203**	**71.5**

Source: ICF International, 2012

For the approximately 14,000 acres of natural land cover and farmlands that are expected to be developed under the No Action Alternative, mitigation for the loss of upland habitat is likely to occur. Because of the status of California tiger salamanders as threatened species, it is expected that impacts to upland habitat would be minimized with implementation of

mitigation measures. This is especially likely in areas of designated critical habitat, which would require additional evaluation under FESA. Existing regulatory processes (e.g., CEQA review of discretionary infrastructure projects) are likely to require pre-construction surveys for species presence in potential upland habitat, and strict avoidance measures if salamanders are discovered. In addition, it is possible that mitigation measures would not be implemented and mortality would occur where development of occupied sites occurs without discretionary (including CEQA) review. Because salamanders live most of their lives underground and potentially throughout most of the Study Area, most of these individuals would not be discovered during preconstruction surveys and mortality would be likely to occur. California tiger salamanders may benefit from habitat avoidance for other species (e.g., preservation of serpentine grasslands for Bay checkerspot butterflies).

Indirect effects on salamander populations are expected to result from various activities associated with urbanization of the Study Area. Activities that result in the loss of ground squirrel populations (e.g., rodent control) or in the removal or excavation of rodent burrows could result in the direct loss of individual salamanders living in the burrows. Increased vehicular traffic following road widening within dispersal areas could increase the number of individuals that are killed or injured on roadways. An increase in urban development adjacent to breeding habitat would facilitate an increase in predators (e.g., feral cats, raccoons, and skunks) that decrease breeding success and kill reptiles and amphibians. In addition, land development can fragment areas of existing habitat. One condition that has exacerbated fragmentation has been the hybridization of California tiger salamanders with barred tiger salamander, an introduced species. The adverse effects of hybridization (e.g., competition, predation, loss of genetic diversity) would continue to occur under the No Action Alternative.

Cumulative Effects

California tiger salamanders have been affected by loss of breeding habitat (wetlands and ponds), the loss of adjacent upland habitats, and several indirect effects including the effects of barred tiger salamanders. Under the No Action Alternative, other activities have contributed to these impacts (see Section 4.1.1), resulting in increased disturbance from human activity and the general loss and degradation of habitat in the Study Area. Increased disturbance is expected to continue under the No Action Alternative.

5.3.7 California Red-Legged Frog

Environmental Consequences/Environmental Effects

Urbanization and associated infrastructure development would continue to cause the loss of wetland and pond habitat in the Study Area, which is likely to contain suitable primary (breeding and foraging) habitat for California red-legged frogs (see Figure 5-5). Over the next 50 years, approximately 106 acres of wetlands and ponds could be developed in the Study Area (see Table 5-6, discussed above for California tiger salamanders). More than two-thirds of this impact would be a result of urban development. An additional 18 acres of wetlands and ponds are expected to be temporarily affected over the next 50 years, often as a result of the additional disturbance required to construct instream capital projects but also as a result of various operations and maintenance activities. Impacts to San Francisco dusky-footed woodrat nests also could result in impacts to California red-legged frogs using woodrat nests as refugia.

Primary habitat, as defined in Habitat Plan Appendix D, also includes streams and adjacent riparian woodland areas, which also could be affected by urbanization and associated infrastructure development. Approximately 9.4 miles of streams are expected to be permanently affected and approximately 48 miles of streams are expected to be temporarily affected under the No Action alternative. As such, approximately 299 acres of modeled California red-legged frog primary habitat are expected to be permanently affected under the No Action Alternative (ICF International, 2012).

Because of the status of California red-legged frogs as threatened species, it is expected that when this species is encountered, impacts to any active breeding sites would be minimized with implementation of mitigation measures. This is especially likely in areas of designated critical habitat, which would require additional evaluation under FESA. Existing regulatory processes (e.g., CEQA review of discretionary infrastructure projects) are likely to require pre-construction surveys for species presence at potential breeding sites and strict avoidance measures if red-legged frogs are discovered.

Mitigation for the loss of primary habitat is likely to occur under the No Action Alternative. Permanent disturbance of wetland habitat often requires mitigation as part of CEQA review and as required by various other regulatory processes typical of instream projects (e.g., Clean Water Act, Fish and Game Code). Temporary impacts also would require mitigation, but typically by simple restoration of the disturbed area. Monitoring is likely to be required for both permanent and temporary impacts in order to ensure that restoration is successful.

In addition to impacts to primary habitat, the No Action Alternative also would have impacts to secondary habitat – upland areas used for movement and refugia. Approximately 14,000 acres would be developed out of approximately 343,000 acres (see Table 5-7 above for California tiger salamanders), indicating that most undeveloped land within the Study Area would remain undeveloped. It is estimated that approximately 97 percent of this area (331,672 acres) is modeled movement and refugia habitat (ICF International, 2012). An additional 1,489 acres of modeled movement habitat would be temporarily affected. Most of the remaining land would be managed for grazing, farmland, or as part of existing parks and reserves (e.g., Henry W. Coe State Park). No changes to existing conditions are expected in these areas. Mitigation for impacts to natural land cover is expected to occur in a similar manner as described above for California tiger salamanders.

Indirect effects on red-legged frog populations are expected to result from various activities associated with urbanization of the Study Area. Increased vehicular traffic following road widening within dispersal areas could increase the number of individuals that are killed or injured on roadways. An increase in urban development adjacent to breeding habitat would facilitate an increase in predators (e.g., feral cats, raccoons, and skunks) that decrease breeding success could kill or injure individuals. In addition, land development would likely result in increased fragmentation of habitat.

Cumulative Effects

California red-legged frogs have been affected by loss of breeding and foraging habitat, by the loss of adjacent upland habitats, and by indirect impacts. Under the No Action Alternative, other activities have contributed to these impacts (see Section 4.1.1), resulting in increased

disturbance from human activity and the general loss and degradation of habitat in the Study Area. Increased disturbance is expected to continue under the No Action Alternative.

5.3.8 Western Pond Turtle

Environmental Consequences/Environmental Effects

Urbanization and associated infrastructure development would continue to cause the loss of wetland, pond, and riverine habitat in the Study Area. Over the next 50 years, approximately 85 acres of perennial wetlands and ponds would be developed in the Study Area (see Table 5-6 above). More than two-thirds of this impact would be a result of urban development. In addition, instream capital projects (e.g., flood protection activities, levee reconstruction) and other similar activities are expected to permanently impact 9.4 of the 2,391.5 miles of streams in the Study Area. Temporary effects to perennial wetland, pond, and riverine habitat also would occur, often as a result of the additional disturbance required to construct instream capital projects but also as a result of various operations and maintenance activities. An additional 16 acres of perennial wetland and pond habitat and 48 miles of riverine habitat would be temporarily affected.

Under the No Action Alternative, mitigation for potential impacts to western pond turtles may occur as a result of CEQA review for discretionary projects within areas of suitable habitat. CEQA review could include preconstruction surveys and relocation processes. Disturbances in wetland areas also could require mitigation by protecting and/or restoring other wetland areas. It is possible, however, that mitigation measures would not be implemented and mortality would occur where development of occupied sites occurs without discretionary (including CEQA) review.

Mitigation for the loss of wetland, pond, and riverine habitat is likely to occur under the No Action Alternative. Permanent disturbance of these habitat types often requires mitigation as part of CEQA review and as required by various other regulatory processes typical of instream projects (e.g., Clean Water Act, Fish and Game Code). Temporary impacts also would require mitigation, but typically by simple restoration of the disturbed area. Monitoring is likely to be required for both permanent and temporary impacts in order to ensure that restoration is successful.

In addition to impacts to wetland, pond, and riverine habitat, the No Action Alternative also would have impacts to upland areas used for nesting, overwintering, and movement by western pond turtles. Areas within 150 feet of perennial wetlands, ponds, and streams could be suitable as nesting and overwintering sites, and areas within 1,200 feet could be used for movement between areas of primary habitat. Most undeveloped lands in the Study Area, however, would remain undeveloped under the No Action Alternative. Although some areas immediately adjacent to perennial wetlands, ponds, and streams are likely to be protected by other regulatory processes (as described above), mitigation for the loss of upland areas for western pond turtles is unlikely to occur under the No Action Alternative (but may be protected as a result of federal consultation actions for listed species such as Bay checkerspot butterfly, California tiger salamander, and California red-legged frog).

Indirect effects on western pond turtle populations are expected to result from various activities associated with urbanization of the Study Area. For example, an increase in urban development adjacent to wetland habitat would facilitate an increase in predators (e.g., feral

cats, raccoons, and skunks) and/or competitors (e.g., red-eared sliders) that decrease breeding success and kill reptiles and amphibians. In addition, land development can fragment areas of existing habitat.

Cumulative Effects

Western pond turtles have been affected by loss of habitat, by the loss of adjacent upland habitats and by indirect impacts. Under the No Action Alternative, other activities have contributed to these impacts (see Section 4.1.1), resulting in increased disturbance from human activity and the general loss and degradation of habitat in the Study Area. Increased disturbance is expected to continue under the No Action Alternative.

5.3.9 California Whipsnake

Environmental Consequences/Environmental Effects

Urbanization and associated infrastructure development would continue to occur in the Study Area under the No Action Alternative. Over the next 50 years, approximately 384 acres of chaparral habitat suitable for California whipsnakes would be developed in the Study Area (Table 5-8). An additional 136 acres would be temporarily affected.

TABLE 5-8
Permanent Impacts on Land Cover Types Containing California Whipsnake Habitat

Land Cover Type	Total in Study Area	Percent of Study Area	Impacts from Development Activities	New Total in Study Area	New Percent of Study Area
Northern mixed chaparral/ chamise chaparral	23,763	5.2	78	23,685	5.1
Mixed serpentine chaparral	3,712	0.8	127	3,585	0.8
Northern coastal scrub/ Diablan sage scrub	10,306	2.2	169	10,137	2.2
Coyote brush scrub	180	0.1	10	170	0.1
Total	**37,960**	**8.2**	**384**	**37,577**	**8.2**

Source: ICF International, 2012

Direct impacts to California whipsnakes could occur during project construction. Because California whipsnakes are not listed or considered special-status species under CEQA, it is unlikely that construction activity would take any special precautions to avoid impacts. If development projects are shown to affect the listed Alameda whipsnake, a subspecies of California whipsnake, special measures to avoid and minimize impacts during construction are likely to be required. Existing regulatory processes (e.g., CEQA review of discretionary infrastructure projects) are likely to require pre-construction surveys for species presence by qualified biologists. Strict avoidance measures if Alameda whipsnakes are discovered may include onsite inspections by qualified biologists and limitations on materials used during construction (e.g., no monofilament plastic netting for erosion control).

Compensation for loss of most whipsnake foraging habitat is unlikely to occur under the No Action Alternative, mostly because chaparral is not a sensitive habitat type in the project area, and is unlikely to require mitigation from development impacts. As shown in Table 5-8, development is expected to affect a very small amount of chaparral habitat within the Study Area (less than 1% of all chaparral land cover types), indicating that a substantial amount of suitable habitat is likely to remain under the No Action Alternative. If development projects are shown to affect the listed Alameda whipsnake, compensatory mitigation would be provided through preservation of onsite or nearby suitable (chaparral) habitat, or by purchasing credits in a mitigation bank approved for Alameda whipsnake mitigation.

Indirect effects on whipsnake populations are expected to result from various activities associated with urbanization of the Study Area. Increased vehicular traffic following road widening could increase the number of individuals that are killed or injured on roadways. An increase in urban development adjacent to suitable habitat would facilitate an increase in predators (e.g., feral cats, raccoons, and skunks) that decrease breeding success and kill reptiles and amphibians. These effects would continue to occur under the No Action Alternative.

Cumulative Effects

California whipsnakes have been affected by loss of chaparral habitat acreage and degraded habitat conditions. Under the No Action Alternative, other activities have contributed to these impacts (see Section 4.1.1), resulting in increased disturbance from human activity and the general loss and degradation of habitat in the Study Area. Increased disturbance is expected to continue under the No Action Alternative, but the amount of habitat loss would be minimal.

5.3.10 Golden Eagle

Environmental Consequences/Environmental Effects

Urbanization and associated infrastructure development would continue to occur in the Study Area under the No Action Alternative. Over the next 50 years, approximately 207 acres of areas containing potential golden eagle nesting habitat would be developed in the Study Area (Table 5-9). Almost all of these impacts would occur as a result of rural capital projects and rural development. An additional 104 acres would be temporarily affected, primarily resulting from rural operations and maintenance activities.

TABLE 5-9
Permanent Impacts on Land Cover Types Containing Golden Eagle Nesting Habitat

Land Cover Type	Total in Study Area	Percent of Study Area	Impacts from Development Activities	New Total in Study Area	New Percent of Study Area
Foothill pine-oak woodland	10,960	2.4	44	10,916	2.4
Mixed evergreen forest	5,775	1.3	48	5,727	1.2
Conifer woodland	10,823	2.4	115	10,708	2.3
Total	**27,558**	**6.0**	**207**	**27,351**	**5.9**

Source: ICF International, 2012

Direct disturbance (e.g., removing nest trees) is unlikely to occur because most primary (nesting) habitat is in remote portions of the Study Area (e.g., secluded cliffs with overhanging ledges and large trees). Existing regulatory processes are expected to provide some protection for active nest sites if any active sites occur near development projects. Compliance with the Bald and Golden Eagle Protection Act, Migratory Bird Treaty Act, and various sections of the California Fish and Game Code would be required for all projects. In addition, CEQA review would be required for discretionary actions, which could result in project-specific avoidance measures. It is possible, however, that individual development and operations and maintenance activities could overlook active nest sites.

Urbanization and associated infrastructure development would continue to cause the loss of foraging habitat for golden eagles in the Study Area. Over the next 50 years, approximately 6,000 acres of natural lands would be developed in the Study Area, most of which is likely to be golden eagle foraging habitat. Development of more than 8,000 acres of agricultural lands also could affect golden eagle foraging habitat. These development activities and related operations and maintenance activities also could result in the indirect disturbance of golden eagle nest sites (e.g., by disrupting nesting activities). The Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act do not provide protection for habitat more broadly, however. Therefore, under the No Action Alternative, avoidance of golden eagle foraging habitat is unlikely to occur, although eagles may benefit from habitat avoidance for other species.

Compensation for loss of most golden eagle foraging habitat is unlikely to occur under the No Action Alternative, mostly because golden eagles forage in a wide variety of natural communities that are unlikely to require mitigation from development impacts. Golden eagles would benefit from the preservation of serpentine habitat (resulting from Bay checkerspot butterfly mitigation), but this would be a small portion of the overall amount of suitable foraging habitat in the Study Area.

Golden eagles also may continue to be affected by activities such as rodent control (e.g., diminished prey population, poisoning) and pesticide use. Rodent control activities are expected to occur in portions of the Study Area (e.g., areas with dams and levees). Pesticide use is expected to decline because approximately 8,004 acres of irrigated agricultural lands are expected to be developed in the Study Area. Pesticide use would occur in developed areas, but to a lesser extent than in agricultural areas.

Cumulative Effects

Golden eagles have been affected by loss of foraging habitat, pesticide toxicity, and other factors. Under the No Action Alternative, other activities have contributed to these impacts (see Section 4.1.1). Beneficial effects from other activities have included the preservation of foraging habitat (e.g., in county parks) and banning chemicals harmful to eagles (e.g., DDT). Within the Study Area, a large amount of potential foraging habitat would remain undeveloped under the No Action Alternative.

5.3.11 Burrowing Owl

Environmental Consequences/Environmental Effects

Urbanization and associated infrastructure development would continue to cause the loss of potentially suitable habitat for burrowing owls in the Study Area. Over the next 50 years,

approximately 2,519 acres of grasslands would be developed in the Study Area (Table 5-10). An additional 665 acres of grassland will likely be temporarily affected over the next 50 years under the No Action Alternative. In addition to loss of grassland areas, development and related operations and maintenance activities (e.g. airport operations, levee maintenance) also would result in the loss or disturbance of potentially suitable habitat in unmapped ruderal areas.

TABLE 5-10
Permanent Impacts on Land Cover Types Containing Burrowing Owl Habitat

Land Cover Type	Total in Study Area	Percent of Study Area	Impacts from Development Activities	New Total in Study Area	New Percent of Study Area
California annual grassland	81,795	17.8	1,869	79,926	17.4
Serpentine bunchgrass grassland	10,308	2.2	650	9,658	2.1
Total	**92,103**	**20.0**	**2,519**	**89,584**	**19.5**

Source: ICF International, 2012

The Habitat Plan presents a more detailed study of potential impacts to currently occupied burrowing owl nesting habitat, and states that 198 acres of occupied nesting habitat (defined as breeding sites and essential foraging habitat within 0.5 miles of a nest site) would be developed (out of 1,348 acres in the Study Area) (ICF International, 2012). All of the expected impacts would occur within the City of San José as a result of urban development. Permanent impacts to potential (unoccupied) nesting habitat (approximately 4,000 acres) also could occur as a result of rural development and conversion of farmlands to urban development. Habitat modeling for the Habitat Plan indicates that there is approximately 132,770 acres of additional habitat used only for overwintering, 9,671 acres of which also could be affected by urbanization and infrastructure development under the No Action Alternative (ICF International, 2012).

Under the No Action Alternative, mitigation for the loss of occupied burrowing owl habitat is likely to focus on the avoidance of mortality when occupied sites would be disturbed by development, consistent with CEQA and the Migratory Bird Treaty Act. Avoidance and minimization measures would be required when projects are subject to CEQA review, and are expected to include avoidance of all nearby development activity during active nesting, passive relocation to areas of suitable habitat (which may include artificial burrows), and vegetation management in preserved areas to improve habitat conditions. The size of nearby preserved areas (for passive relocation) would be established on a case-by-case basis. Because the burrowing owl population in the Study Area is so low, it is likely that the CEQA process would require that some areas proposed for development be avoided. Any such avoidance requirements would reduce the number of affected acres of occupied nest habitat (198 acres). It is not possible to predict the amount of habitat that would be avoided or preserved because avoidance (and preservation and management requirements) would be determined on a project-by-project basis. Although mortality and injury is prohibited under the Migratory Bird Treaty Act, it is possible that mitigation measures would not be implemented and mortality would occur where development of occupied sites occurs without discretionary (including CEQA) review.

Mitigation for the loss of suitable but unoccupied habitat may occur in some cases based on project-specific mitigation requirements negotiated with CDFG. Preservation of serpentine bunchgrass grassland and other upland land cover types is likely to occur as a result of consultation under FESA for listed species (e.g., Bay checkerspot butterfly), which also could benefit burrowing owls.

Indirect effects may occur as a result of urbanization and other activities under the No Action Alternative. The predominant indirect effects on burrowing owls are increased harassment from people, increased vehicle-related disturbance (e.g., of breeding habitat near roads), increased vehicle strikes, isolation of individuals on vacant lots, and predation by domestic animals.

Cumulative Effects

Burrowing owls have been affected by loss of habitat, rodent control, and other factors. Under the No Action Alternative, other activities would continue to contribute to these past and ongoing impacts (see Section 4.1.1). Beneficial effects from other activities include the creation of potentially suitable habitat. Negative effects from other activities include increased disturbance from human activity and the general loss and degradation of habitat in the Study Area. Increased disturbance is expected to continue under the No Action Alternative.

5.3.12 Least Bell's Vireo

Environmental Consequences/Environmental Effects

Urbanization and associated infrastructure development would continue to cause the loss of riparian habitat in the Study Area. Over the next 50 years, approximately 290 acres of riparian habitat would be developed in the Study Area (Table 5-11). Approximately two-thirds of this impact would be a result of instream capital projects such as flood protection activities, levee reconstruction, and bridge repair. In addition, temporary effects to riparian habitat also would occur, often as a result of the additional disturbance required to construct instream capital projects but also as a result of various operations and maintenance activities. Approximately 209 acres of riparian habitat could be temporarily affected.

TABLE 5-11
Total Impacts on Land Cover Types Containing Least Bell's Vireo Habitat

Land Cover Type	Total in Study Area	Percent of Study Area	Impacts from Development Activities	New Total in Study Area	New Percent of Study Area
Willow riparian forest and scrub	2,544	0.55	179	2,365	0.51
Central California sycamore alluvial woodland	373	0.08	7	366	0.08
Mixed riparian forest and woodland	3,766	0.82	104	3,662	0.80
Total	**6,682**	**1.45**	**290**	**6,393**	**1.39**

Source: ICF International, 2012

Of the 6,682 acres of riparian habitat in the Study Area, only 3,097 acres (about 46%) is considered primary habitat for least Bell's vireo (i.e., breeding and foraging habitat) in the Habitat Plan (ICF International, 2012). Riparian habitat in the northern portion of the Study Area is currently excluded from the definition of least Bell's vireo primary habitat because the recent occurrences of this species in the Study Area have been in the southern Santa Clara Valley area.

Because of the federal and state endangered status of least Bell's vireos, avoidance of active nest sites is expected to occur when this species is encountered. Existing regulatory processes (e.g., CEQA review of discretionary infrastructure projects) are likely to require pre-construction surveys for active nests and strict avoidance measures if nests are discovered. It is unlikely that any take in the form of death or injury would be authorized because of the protections of the Migratory Bird Treaty Act. However, least Bell's vireos are small, secretive birds that live in dense riparian areas, and therefore it is possible that individual projects or operations and maintenance activities could overlook active nest sites. In addition, it is possible that mitigation measures would not be implemented and mortality would occur where development of occupied sites occurs without discretionary (including CEQA) review.

Mitigation for the loss of suitable but unoccupied habitat is likely to occur under the No Action Alternative. Permanent disturbance of riparian habitat often requires mitigation as part of CEQA review and as required by various other regulatory processes typical of instream projects (e.g., Clean Water Act, Fish and Game Code). Mitigation likely would occur in fairly close proximity to the impact. Temporary impacts also would require mitigation, but typically by simple restoration of the disturbed area. Monitoring is likely to be required for both permanent and temporary impacts in order to ensure that restoration is successful.

Least Bell's vireo is expected to be indirectly affected by water flows and adjacent land uses that alter associated riparian habitat within the Study Area. In addition, breeding success could be reduced if adjacent land uses resulted in nonnative, or feral, nest predators (i.e., cats) or high numbers of parasitic brown-headed cowbirds. Development of agricultural and urban areas nest to riparian areas may enhance habitat conditions for brown-headed cowbirds, which occur in open habitats, such as fields, pastures, meadows, forest edges, and lawns. Brown-headed cowbirds are known to contribute to nest failure for least Bell's vireo (through brood parasitism). Under the No Action Alternative, urban development would increase but a substantial portion of new development would occur on agricultural lands. Potential indirect impacts from cowbird parasitism, therefore, are not expected to change under the No Action Alternative.

Cumulative Effects

Least Bell's vireos have been affected by loss of riparian habitat for nesting and foraging. Under the No Action Alternative, other activities have contributed to these impacts (see Section 4.1.1), resulting in increased disturbance from human activity and the general loss and degradation of riparian habitat in the Study Area. Although least Bell's vireos are not currently known to breed in the Study Area, their breeding range was formerly widespread throughout California. Increased disturbance is expected to continue under the No Action Alternative.

5.3.13 Tricolored Blackbird

Environmental Consequences/Environmental Effects

Urbanization and associated infrastructure development would continue to cause the loss of tricolored blackbird breeding habitat in the Study Area. Over the next 50 years, approximately 374 acres of tricolored blackbird breeding habitat would be developed in the Study Area (Table 5-12), primarily from urban development and instream capital projects. Of the 8,173 acres of land covers likely to contain tricolored blackbird breeding habitat in the Study Area, almost all (7,933 acres) is considered primary habitat in the Habitat Plan (ICF International, 2012). In addition, approximately 225 acres of breeding habitat could be temporarily affected. These development activities and related operations and maintenance activities also could result in disturbance of potential nest sites, either directly (e.g., by removing blackberry brambles) or indirectly (e.g., by disrupting nesting activities).

TABLE 5-12
Permanent Impacts on Land Cover Types Containing Tricolored Blackbird Breeding Habitat

Land Cover Type	Total in Study Area	Percent of Study Area	Impacts from Development Activities	New Total in Study Area	New Percent of Study Area
Riparian forest and scrub	6,682	1.5	289	6,393	1.4
Coastal and valley freshwater marsh	381	0.1	34	347	0.1
Ponds	1,110	0.2	51	1,059	0.2
Total	**8,173**	**1.8**	**374**	**7,799**	**1.7**

Source: ICF International, 2012

Under the No Action Alternative, mitigation for the loss of tricolored blackbird nesting colonies is likely to focus on the avoidance of mortality when occupied sites would be disturbed by development. Avoidance and minimization measures would be required when projects are subject to CEQA review, and are expected to include avoidance of all nearby development activity during active nesting followed by vegetation removal to prevent further nesting. It is unlikely that any take in the form of death or injury would be authorized because of the protections of the Migratory Bird Treaty Act. It is possible that mitigation measures would not be implemented and mortality would occur where development of occupied sites occurs without discretionary (including CEQA) review.

Mitigation for the loss of suitable but unoccupied nesting habitat is likely to occur under the No Action Alternative because of existing regulatory processes that protect wetland habitats.

In addition, there are approximately 132,358 acres of tricolored blackbird secondary habitat in the Study Area, of which approximately 10,317 acres (7.8%) would be developed (ICF International, 2012). Under the No Action Alternative, however, avoidance of secondary habitat is unlikely to occur, although tricolored blackbirds may benefit from habitat avoidance for other species. Compensation for loss of most tricolored blackbird foraging and overwintering habitat is unlikely to occur under the No Action Alternative, mostly because tricolored blackbirds forage in a wide variety of natural communities that are unlikely to require mitigation from development impacts.

Cumulative Effects

Tricolored blackbirds have been affected by loss of nesting and foraging habitat. Under the No Action Alternative, other activities have contributed to these impacts (see Section 4.1.1), resulting in increased disturbance from human activity and the general loss and degradation of habitat in the Study Area. Although there are very few tricolored blackbirds breeding colonies currently known to occur in the Study Area, their breeding range was more formerly widespread. Increased disturbance is expected to continue under the No Action Alternative.

5.3.14 Bank Swallow

Environmental Consequences/Environmental Effects

Urbanization and associated infrastructure development under the No Action Alternative is expected to permanently impact 9.4 miles of the 2,391.5 miles of streams in the Study Area. These impacts are almost entirely a consequence of instream capital projects such as flood protection activities, levee reconstruction, and bridge repair. In addition, temporary effects to streams also would occur, usually as a result of the additional disturbance required to construct instream capital projects. Approximately 48 miles of riverine habitat would be temporarily affected. Because of the location of these projects (generally in or near the urbanized portions of the Study Area with a history of extensive flood control improvements), the presence of suitable bank swallow nesting habitat (or actual occupied nests) is unlikely. According to SCVWD biologists, there is no bank swallow suitable habitat in the North County. Bank swallow suitable habitat consists of near-vertical bank about one meter in height, only found along the Parajo River in the Study Area. No development activities are anticipated to take place along the banks of the Pajaro River, and for this reason adverse effects are not likely to occur under the No Action Alternative.

The instream capital projects that are expected to occur under the No Action Alternative include various types of in-channel flood control improvements. These projects are intended to enhance flood control for public safety reasons, but also include provisions to balance flood control with the restoration of natural stream channel and adjacent riparian conditions. For example, the SCVWD Clean, Safe Creeks and Natural Flood Protection Plan and the Coyote Watershed Stream Stewardship Plan include activities to expand in-channel floodplain areas (rather than hardening banks), create new flow bypass channels, and use setback levees. Activities anticipated to occur under the proposed Three Creeks HCP include "geomorphic rehabilitation" to provide enhanced instream habitat conditions to benefit fish (see discussion above). In addition, increased flow variability is expected to be provided below Anderson, Calero, Almaden, and Guadalupe Reservoirs. These proposed flow changes include spring pulse flows (two five-day pulses of 50 cubic feet per second when allowed by reservoir storage) that may be sufficiently high to provide natural bank erosion. These stream restoration activities may provide improved conditions to allow the natural creation of suitable bank swallow nesting habitat.

Cumulative Effects

Bank swallows have been affected by the loss of vertical banks along streams in the Study Area, primarily as a result of flood control activities such as levee construction and bank protection (e.g., placing riprap along banks). Although there are very few bank swallow colonies currently known to occur in the Study Area, their breeding range was formerly

more widespread. To the extent areas of suitable habitat existed in the Study Area prior to the development of flood control infrastructure, it is likely that most of those areas have been replaced by hardened stream channels that emphasize the conveyance of flood flows. Increased loss of potential habitat, however, is unlikely to occur because no additional conversions of natural stream channels are expected within the Study Area.

5.3.15 Townsend's Big-Eared Bat

Environmental Consequences/Environmental Effects

Under the No Action Alternative, activities associated with the urbanization of the Study Area, including infrastructure development, would occur. These activities could result in impacts to Townsend's big-eared bats by disturbing roost sites (including maternity roosts and winter hibernacula) and by converting foraging habitat to developed uses. One particular type of roosting structure – box girder bridges – would be affected. Of the 10 box girder bridges in the Study Area, all are likely to require replacement within the next 50 years. Although Townsend's western big-eared bats are not known to occur at these sites, impacts could occur if they are present at the time of construction. In addition to this disturbance, potential roosting habitat would be lost if the bridges are replaced with structures that cannot be used by roosting bats. Roosting also could be disturbed with demolition of unoccupied buildings that provide habitat to Townsend's big-eared bats. Loss of foraging habitat also would occur (approximately 6,000 acres of natural land cover is expected to be developed within the next 50 years), but foraging habitat is not likely a limiting factor for this species, and most foraging habitat in the Study Area would remain undeveloped.

Under the No Action Alternative, existing regulatory processes may provide a way to mitigate impacts to Townsend's big-eared bats. Replacement of box girder bridges is expected to require discretionary authorization by local agencies, and therefore would be subject to environmental review under CEQA. Direct impacts identified during CEQA review likely would be minimized by avoiding construction when bats are roosting. Compensatory mitigation in the form of creation of replacement habitat is unlikely, especially considering that Townsend's big-eared bats are not a listed species.

Indirect impacts such as increased harassment or disturbance associated with human population growth or recreation could affect individual bats that roost in caves, buildings, bridges, or other structures within the Study Area. The introduction of new roadways and increased urbanization create artificial light that could change foraging behavior of bats or expose bats to increased predation.

Cumulative Effects

Urban development and associated infrastructure likely have had positive and negative effects on Townsend's big-eared bats. Positive effects have included the creation of new roosting sites, including mines, bridges, and abandoned buildings. Negative effects have included increased disturbance from human activity, remediation of abandoned mines (e.g., covering mine shafts), and the general loss and degradation of foraging habitat and natural roosting sites in the Study Area. Although limited information is available about the current presence of Townsend's big-eared bats within the Study Area, their range was formerly widespread throughout California. Increased disturbance is expected to continue under the No Action Alternative.

5.3.16 Pallid Bat

Environmental Consequences/Environmental Effects

Under the No Action Alternative, direct and indirect effects, and potential impact avoidance and mitigation options, are expected to be the same as described for Townsend's big-eared bat.

Cumulative Effects

Under the No Action Alternative, cumulative effects are expected to be the same as described for Townsend's big-eared bat.

5.3.17 San Francisco Dusky-Footed Woodrat

Environmental Consequences/Environmental Effects

Under the No Action Alternative, activities associated with the urbanization of the Study Area, including infrastructure development, operations, and maintenance activities, would occur. These activities could result in impacts to dusky-footed woodrats by disturbing stick lodges and by converting nearby foraging habitat to developed uses. Mortality could occur if woodrats are present in stick lodges at the time of construction. The potential for this to occur would be limited to riparian areas, which could include woodrat stick lodges. Under the No Action Alternative, approximately 289 acres of riparian habitat would be converted to developed use, and temporary impacts would occur on an additional 209 acres. Loss of foraging habitat also would occur (approximately 6,000 acres of natural land cover is expected to be developed within the next 50 years).

Under the No Action Alternative, avoidance of active stick lodges may occur as a result of CEQA review for discretionary projects within areas of suitable habitat. CEQA review could require measures to avoid or minimize impacts to active nests, such as preconstruction surveys to confirm presence, use of exclusion fencing, and relocation of woodrat nests to areas of preserved, enhanced or restored suitable habitat. However, woodrat nest relocation is still experimental and success remains uncertain, therefore monitoring of mitigation sites would be required and remedial actions would need to be developed and be implemented if success criteria are not met.

Indirect impacts to San Francisco dusky-footed woodrats could occur as a result of SCVWD rodent control activities for flood control facility maintenance (e.g., dams and levees). For example, rodenticides used for burrowing animals such as California ground squirrels could be ingested by foraging woodrats. SCVWD is studying improved methods of rodent control that could minimize impacts to woodrats (e.g., limitations on locating bait stations near woodrat nests), but these methods are still under development.

Cumulative Effects

Urban development and associated infrastructure improvement likely have had negative effects on dusky-footed woodrats, including increased disturbance from human activity and the general loss and degradation of habitat in the Study Area. Increased disturbance is expected to continue under the No Action Alternative.

5.3.18 San Joaquin Kit Fox

Environmental Consequences/Environmental Effects

Urbanization and associated infrastructure development in the Study Area could result in the loss of San Joaquin kit fox habitat. Of the 38,543 acres of modeled movement and foraging habitat in the Study Area, 198 acres could be permanently affected and 46 acres could be temporarily affected under the No Action Alternative (ICF International, 2012). Of the 2,349 acres of modeled low use habitat in the Study Area, 28 acres could be permanently affected and 6 acres could be temporarily affected (ICF International, 2012). Some of this development could threaten habitat connectivity within the Study Area, as well as connectivity with habitat immediately to the north and south of the Study Area. In particular, development occurring in the southern and southeastern portion of the Study Area, which contains suitable foraging and movement habitat for San Joaquin kit fox, could result in habitat fragmentation, which is a significant threat to the San Joaquin kit fox. These development activities and related operations and maintenance activities also could result in the disturbance of kit fox dens. Although kit fox dens have not been recently documented in the Study Area, it is possible that breeding could occur in the Study Area given the amount of undisturbed suitable habitat. Projects with the greatest potential to affect kit foxes are linear infrastructure projects that impede movement, such as new roads. Within the kit fox range in the Study Area, no such projects are anticipated. However, road widening and retrofitting projects could occur within the Study Area. If such projects do not accommodate wildlife crossing (i.e. perforated median barriers, undercrossings, appropriately sized culverts, etc.), they could exacerbate connectivity issues and result in death or injury to kit foxes.

Because kit foxes are a listed species (endangered under FESA, threatened under CESA), avoidance of active dens is expected to occur. Existing regulatory processes (e.g., CEQA review of discretionary infrastructure projects) are likely to require pre-construction surveys for kit fox dens, strict avoidance and/or minimization measures if dens are discovered, and measures to prevent dens from being established in the project area. Under the No Action Alternative, avoidance of kit fox dispersal and foraging habitat within its range is unlikely to occur.

Kit foxes also may continue to be affected by activities such as rodent control, both in terms of loss of prey and inadvertent poisoning. Within the kit fox range in the Study Area, however, there is little infrastructure that would normally require active rodent control.

Cumulative Effects

Kit foxes have been affected by loss of habitat, barriers to movement, pesticide toxicity, and other factors. Under the No Action Alternative, other activities have contributed to these impacts (see Section 4.1.1). Within the Study Area, the most important adverse impact likely was the construction of SR 152 east of Gilroy. SR 152 is a major east-west highway over Pacheco Pass, within has likely interfered with north-south kit fox movement. Beneficial effects from other activities have included the preservation of foraging habitat (e.g., in state parks and preserves). Within the Study Area, a large amount of potential kit fox habitat would remain undeveloped under the No Action Alternative.

5.3.19 American Badger

Environmental Consequences/Environmental Effects

Urbanization and associated infrastructure development would continue to cause the loss of suitable habitat for badgers in the Study Area. Over the next 50 years, approximately 2,519 acres of grasslands would be developed in the Study Area (Table 5-13). An additional 665 acres of grassland would likely be temporarily affected under the No Action Alternative. These development activities and related operations and maintenance activities also could result in disturbance of badger dens. Although there are few known badger occurrences in the Study Area, it is likely that badgers could inhabit the Study Area given the amount of undisturbed habitat that is expected to remain.

TABLE 5-13
Permanent Impacts on Land Cover Types Containing American Badger Habitat

Land Cover Type	Total in Study Area	Percent of Study Area	Impacts from Development Activities	New Total in Study Area	New Percent of Study Area
California annual grassland	81,795	17.8	1,869	79,926	17.4
Serpentine bunchgrass grassland	10,308	2.3	650	9,658	2.1
Total	**92,103**	**20.0**	**2,519**	**89,584**	**19.5**

Source: ICF International, 2012

Projects with the greatest potential for impacts to badgers are linear infrastructure projects that impede movement, such as new roads. Several new roads are expected to be constructed in the Study Area in the next 50 years, mostly new connections within the existing road network near Morgan Hill and Gilroy. These new road connections would occur in areas of marginally suitable habitat for badgers (e.g., agricultural and rural residential areas), and are unlikely to affect existing movement corridors. Road widening and retrofitting projects that do not accommodate wildlife crossing (i.e. perforated median barriers, undercrossings, appropriately sized culverts, etc.), could exacerbate connectivity issues and result in death or injury to badgers.

Under the No Action Alternative, avoidance of badger habitat is unlikely to occur, although badgers may benefit from habitat avoidance for other species (e.g., preservation of serpentine habitat for Bay checkerspot butterflies). Avoidance of active dens may occur as a result of CEQA review for discretionary projects within areas of suitable habitat. CEQA review could require mitigation of impacts to active badger dens, such as preconstruction surveys to confirm presence and relocation to areas of preserved suitable habitat.

Compensation for loss of California annual grassland is unlikely to occur under the No Action Alternative. Badgers would benefit from preservation of serpentine bunchgrass grasslands (resulting from Bay checkerspot butterfly mitigation), but this would be a small portion of the overall amount of suitable habitat in the Study Area. Badgers also may continue to be affected by activities such as rodent control, both in terms of reduced prey abundance and inadvertent poisoning. Rodent control activities are expected to continue to occur in portions of the Study

Area (e.g., areas with dams and levees). These areas, however, are not typically within grassland areas, and are unlikely to result in impacts to badgers.

Cumulative Effects

Badgers have been affected by loss of habitat, barriers to movement, pesticide toxicity, and other factors. Under the No Action Alternative, other activities have contributed to these impacts (see Section 4.1.1). Within the Study Area, the most important adverse impact has been the loss of suitable grassland habitat. In addition, movement also has been limited by the construction of SR 152 east of Gilroy (discussed above for San Joaquin kit fox) and by U.S. Highway 101 between San José and Morgan Hill, which likely has impeded movement between the east and west sides of the Santa Clara Valley. Beneficial effects from other activities have included the preservation of foraging habitat (e.g., in county and state parks). Within the Study Area, a large amount of suitable habitat would remain undeveloped under the No Action Alternative.

5.3.20 Serpentine Plants

Environmental Consequences/Environmental Effects

Eight of the 15 plant species evaluated in this document are found in serpentine bunchgrass grassland and related serpentine land cover types. Table 5-14 lists the eight species considered in this section, and their habitat associations.

TABLE 5-14
Serpentine Plants

	Land Cover Associations				
Plant Name	**Serpentine Bunchgrass Grassland**	**Serpentine Rock Outcrops**	**Serpentine Seeps**	**Mixed Serpentine Chaparral**	**Other***
Tiburon Indian paintbrush	X	X			
Coyote ceanothus	X			X	
Mt. Hamilton thistle	X		X		Suitable aquatic sites in foothill pine-oak woodland and coast live oak forest and woodland
Santa Clara Valley dudleya	X	X			Serpentine outcrops in oak woodlands
fragrant fritillary	X				Other grassland habitat, oak woodlands, and coastal scrub
smooth lessingia	X	X			
Metcalf Canyon jewelflower	X	X			
most beautiful jewelflower	X	X		X	Rock outcrops (non-serpentine)

*Secondary habitats in which these species are likely to be found (see Habitat Plan, Appendix D).

Under the No Action Alternative, activities associated with the urbanization of the Study Area, including infrastructure development, would occur. These activities would result in the conversion of existing serpentine land cover types to developed uses. The No Action Alternative is expected to reduce serpentine land cover from 14,314 acres to 13,515.5 acres (Table 5-15), a decrease of 5.6 percent.

TABLE 5-15
Permanent Impacts on Serpentine Land Cover Types

Land Cover Type	Total in Study Area	Percent of Study Area	Impacts from Development Activities	New Total in Study Area	New Percent of Study Area
Serpentine bunchgrass grassland	10,308	2.24	650	9,658	2.10
Serpentine rock outcrops/barrens	260	0.06	21	239	0.05
Serpentine seeps	34	0.01	0.5	33.5	0.01
Mixed serpentine chaparral	3,712	0.81	127	3,585	0.78
Total	**14,314**	**3.11**	**798**	**13.515.5**	**2.94**

Source: ICF International, 2012

These changes in serpentine land cover would affect primary habitat for these species in the Study Area, which ranges from 487 acres (Mount Hamilton thistle) to 14,277 acres (most beautiful jewelflower) based on habitat modeling for the Habitat Plan (ICF International, 2012).[4] Primary habitat for these species is a subset of the land cover types described in Table 5-15. For this reason, impacts to primary habitat are expected to be less than the land cover impacts in Table 5-15. In addition, changes in serpentine land cover would affect secondary habitat, ranging from 85 acres (most beautiful jewelflower) to 156,635 acres (fragrant fritillary) based on the habitat modeling for the Habitat Plan (ICF International, 2012).

Most of these impacts would be a result of urban and rural development, including urban development within the City of San José (e.g., portions of the Silver Creek Hills and Communications Hill areas), urban development within the City of Morgan Hill (e.g., north of Llagas Road), and rural development along Coyote Ridge. Expansion of the Kirby Canyon Recycling and Disposal Facility also would affect a large amount of serpentine land cover types. These activities would affect known occurrences of all of these species, and may affect currently undocumented occurrences in areas of suitable habitat. In addition, most of the SCVWD dam safety and dam maintenance activities are expected to affect known occurrences of several of these species. Permanent impacts to known occurrences that are likely to occur under the No Action Alternative are listed below:[5]

[4] Habitat modeling was not performed for the Santa Clara Valley dudleya because its microhabitat requirements (scattered patches of serpentine rock outcrops) occur at a finer scale than the Habitat Plan GIS minimum mapping resolution. Habitat models were not developed for Tiburon Indian paintbrush and Coyote ceanothus for similar reasons, and because their occurrences are well-documented in the Study Area.

[5] The term “permanent impact” for the purposes of this document equates to the loss of viability of an existing occurrence. In some cases, this means that the entire occurrence will be removed. In other cases, we assume that partial removal or permanent impact would occur to the extent that the occurrences’ viability is lost.

- **Tiburon Indian paintbrush.** None of the two known extant occurrences of Tiburon Indian paintbrush in the Study Area are anticipated to be permanently impacted. One of the two occurrences is in the process of being protected with a conservation easement by Waste Management Inc. to compensate for effects of a previous project.
- **Coyote ceanothus.** A portion of one of the three known extant occurrences of Coyote ceanothus in the Study Area could be permanently impacted. This occurrence is on land that would be partially affected by seismic retrofit and dam maintenance activities at Anderson Dam. The other two known occurrences are not expected to be affected by development.
- **Mt. Hamilton thistle.** Six of the 40 known extant occurrences of Mount Hamilton thistle in the Study Area could be permanently impacted. These occurrences would be affected by urban development, canal reconstruction, dam and reservoir maintenance, and dam seismic safety retrofits. The other known occurrences are not expected to be affected by development.
- **Santa Clara Valley dudleya.** Eleven of the 207 known extant occurrences of Santa Clara Valley dudleya in the Study Area could be permanently impacted. These occurrences would be affected by urban development, canal reconstruction, dam and reservoir maintenance, and dam seismic safety retrofits. The other known occurrences are not expected to be affected by development.
- **Fragrant fritillary.** One of the eight known extant occurrences of fragrant fritillary in the Study Area could be permanently impacted. This occurrence would be affected by urban development. The other known occurrences are not expected to be affected by development.
- **Smooth lessingia.** Six of the 39 known extant occurrences of smooth lessingia in the Study Area could be permanently impacted. These occurrences would be affected by canal reconstruction and dam seismic safety retrofits. The other known occurrences are not expected to be affected by development.
- **Metcalf Canyon jewelflower.** Two of the 10 known extant occurrences of Metcalf Canyon jewelflower in the Study Area could be permanently impacted. These occurrences would be affected by urban development in San José. The other known occurrences are not expected to be affected by development.
- **Most beautiful jewelflower.** Six of the 39 known extant occurrences of most beautiful jewelflower in the Study Area could be permanently impacted. One of these occurrences would be affected by urban development in Morgan Hill, one would be affected by canal reconstruction, and four could be affected by dam seismic safety retrofits. The other known occurrences are not expected to be affected by development.

Although impacts are not expected to occur to other known occurrences, it is possible that new occurrences would be discovered within areas that would be affected by urbanization and associated infrastructure improvements. This is likely to be the case for annuals and other smaller plants (Santa Clara Valley dudleya, fragrant fritillary, smooth lessingia, Metcalf Canyon jewelflower, most beautiful jewelflower).

Under the No Action Alternative, existing regulatory processes may provide a way to minimize and mitigate impacts to known (and currently undocumented) occurrences of

these eight serpentine plant species. As described above for the Bay checkerspot butterfly, impacts are expected to occur as a result of activities that are subject to discretionary authorization by local agencies, and therefore would be subject to environmental review under CEQA and likely other regulations that would help ensure compliance with FESA and CESA. For listed species, avoidance and minimization measures and compensatory mitigation requirements could be negotiated on a case-by-case basis whenever consultation is required under FESA. Similarly, mitigation for impacts to other (non-listed) plant species could be developed during CEQA review for individual discretionary actions. However, mitigation may be restricted to salvage and transplant activities. Mitigation of any type is unlikely for impacts from projects that are not subject to discretionary review. Although compensatory mitigation may not be provided specifically for these species, they could benefit from preserves created for Bay checkerspot butterflies.

Most serpentine land cover types (13,515.5 out of 14,314 acres, or about 94%) would not be developed (Table 5-15). Under the No Action Alternative, these areas are expected to be managed for multiple purposes, including habitat reserves where owned for that purpose, for parks and recreation use, or as grazing land or other non-intensive agricultural use.

Preserve areas and other undeveloped serpentine habitat would still be subject to indirect effects, including the effects of nitrogen deposition (i.e., increased competition from non-native, invasive grasses).

Cumulative Effects

As described in Section 4.1.1.2, urban development and associated infrastructure have replaced natural lands in the Study Area, including lands recently used for grazing. Direct loss of eight serpentine plant species and their associated habitat has been exacerbated by nitrogen deposition. However, the indirect effects associated with nitrogen deposition may diminish over time as a result of efforts to reduce ozone precursors (e.g., NO_x). Development-related impacts would continue under the No Action Alternative as described in Table 5-15. The Cities of San José and Morgan Hill have urban limit lines, which are expected to limit the extent of additional habitat loss.

5.3.21 Bigscale Balsamroot

Environmental Consequences/Environmental Effects

Under the No Action Alternative, the only known occurrence of bigscale balsamroot within the Study Area, located in Coyote Lake-Harvey Bear Ranch County Park, would not be affected. Suitable habitat within the Study Area could be modified or converted from activities associated with the urbanization of the Study Area, including infrastructure development. These activities would result in the conversion of existing land cover types that contain primary habitat for bigscale balsamroot (Table 5-16).

TABLE 5-16
Total Impacts on Land Cover Types Containing Bigscale Balsamroot Primary Habitat

Land Cover Type	Total in Study Area	Percent of Study Area	Impacts from Development Activities	New Total in Study Area	New Percent of Study Area
California annual grassland	81,795	17.8	1,869	79,926	17.4
Serpentine bunchgrass grassland	10,308	2.2	650	9,658	2.1
Mixed oak woodland and forest	84,488	18.4	1,384	83,104	18.1
Total	**175,591**	**38.6**	**3,903**	**172,688**	**37.5**

Source: ICF International, 2012

An additional 967 acres of suitable habitat would also be temporarily affected under the No Action alternative. Although these activities would not affect the known bigscale balsamroot occurrence at Coyote Lake – Harvey Bear Ranch County Park, currently undocumented occurrences in the Study Area also could be affected.

Under the No Action Alternative, existing regulatory processes may provide a way to mitigate impacts to currently undocumented occurrences of bigscale balsamroot. Impacts are expected to occur as a result of activities that are subject to discretionary authorization by local agencies (e.g., new subdivisions, large new facilities in rural areas), and therefore would be subject to environmental review under CEQA. Plant species, however, are not subject to strict take prohibitions under FESA. For an unlisted species such as bigscale balsamroot, avoidance and minimization measures and compensatory mitigation requirements could be developed during CEQA review for individual discretionary actions, but mitigation may be limited to salvage and transplant activities of any individuals that are discovered during the review process. Mitigation of any type is unlikely for impacts from projects that are not subject to discretionary review.

Most of the land cover types supporting bigscale balsamroot primary habitat would not be developed (Table 5-16). Under the No Action Alternative, these areas are expected to be managed for multiple purposes, including parks and recreation use or as grazing land or other non-intensive agricultural use.

Cumulative Effects

As described in Section 4.1.1.2, urban development and associated infrastructure have replaced natural lands in the Study Area, including lands recently used for grazing. This trend is expected to continue under the No Action Alternative as continued development occurs, but little additional conversion of habitat is expected.

5.3.22 Chaparral Harebell

Environmental Consequences/Environmental Effects

Under the No Action Alternative, the only known extant occurrence of chaparral harebell within the Study Area, located northeast of Alum Rock Park, would not be affected. Suitable habitat within the Study Area could be modified or converted from activities associated with the urbanization of the Study Area, including infrastructure development. These

activities would result in the conversion of existing land cover types that contain primary habitat for chaparral harebell (Table 5-17).

TABLE 5-17
Permanent Impacts on Land Cover Types Containing Chaparral Harebell Primary Habitat

Land Cover Type	Total in Study Area	Percent of Study Area	Impacts from Development Activities	New Total in Study Area	New Percent of Study Area
Mixed serpentine chaparral	3,712	0.81	127	3,585	0.78
Blue oak woodland	11,160	2.43	122	11,038	2.40
Total	**14,872**	**3.23**	**249**	**14,623**	**3.18**

Source: ICF International, 2012

An additional 69 acres of suitable habitat would also be temporarily affected under the No Action alternative. Although these activities would not affect the known chaparral harebell occurrence, currently unknown occurrences in the Study Area also could be affected.

Under the No Action Alternative, existing regulatory processes may provide a way to mitigate impacts to currently undocumented occurrences of chaparral harebell. Impacts are expected to occur as a result of activities that are subject to discretionary authorization by local agencies (e.g., new subdivisions, large new facilities in rural areas), and therefore would be subject to environmental review under CEQA. For an unlisted species such as chaparral harebell, avoidance and minimization measures and compensatory mitigation requirements could be developed during CEQA review for individual discretionary actions, but mitigation may be limited to salvage and transplant activities of any individuals that are discovered during the review process. Mitigation of any type is unlikely for impacts from projects that are not subject to discretionary review.

Most of the land cover types supporting chaparral harebell primary habitat would not be developed (Table 5-17). Under the No Action Alternative, these areas are expected to be managed for multiple purposes, including parks and recreation use or as grazing land or other non-intensive agricultural use.

Cumulative Effects

As described in Section 4.1.1.2, urban development and associated infrastructure have replaced natural lands in the Study Area, including lands recently used for grazing. This trend is expected to continue under the No Action Alternative as continued development occurs, but little additional conversion of habitat is expected.

5.3.23 Congdon's Tarplant

Environmental Consequences/Environmental Effects

Under the No Action Alternative, suitable habitat within the Study Area could be modified or converted from activities associated with the urbanization of the Study Area, including infrastructure development. These activities would result in the conversion of that existing land cover type that contains primary habitat for Congdon's tarplant (Table 5-18).

TABLE 5-18
Permanent Impacts on Land Cover Types Containing Congdon's Tarplant Habitat

Land Cover Type	Total in Study Area	Percent of Study Area	Impacts from Development Activities	New Total in Study Area	New Percent of Study Area
California annual grassland	81,795	17.8	1,869	79,926	17.4

Source: ICF International, 2012

An additional 574 acres of suitable habitat would also be temporarily affected under the No Action alternative. These activities may affect known occurrences, and currently undocumented occurrences in the Study Area also could be affected.

Under the No Action Alternative, existing regulatory processes may provide a way to mitigate impacts to Congdon's tarplant. Impacts are expected to occur as a result of activities that are subject to discretionary authorization by local agencies (e.g., new subdivisions, large new facilities in rural areas), and therefore would be subject to environmental review under CEQA. For an unlisted species such as Congdon's tarplant, avoidance and minimization measures and compensatory mitigation requirements could be developed during CEQA review for individual discretionary actions, but mitigation may be limited to salvage and transplant activities of any individuals that are discovered during the review process. Mitigation of any type is unlikely for impacts from projects that are not subject to discretionary review.

Most of the land cover type supporting Congdon's tarplant habitat would not be developed (Table 5-18). Under the No Action Alternative, these areas are expected to be managed for multiple purposes, including parks and recreation use or as grazing land or other non-intensive agricultural use.

Cumulative Effects

As described in Section 4.1.1.2, urban development and associated infrastructure have replaced natural lands in the Study Area, including lands recently used for grazing. This trend is expected to continue under the No Action Alternative as continued development occurs, but little additional conversion of habitat is expected.

5.3.24 San Francisco Collinsia

Environmental Consequences/Environmental Effects

Under the No Action Alternative, the only known occurrence of San Francisco collinsia within the Study would be affected by planned improvements at Anderson Dam. In addition, suitable habitat within the Study Area could be modified or converted from activities associated with the urbanization of the Study Area, including infrastructure development. These activities would result in the conversion of existing land cover types that contain primary habitat for San Francisco collinsia (Table 5-19).

TABLE 5-19
Permanent Impacts on Land Cover Types Containing San Francisco Collinsia Primary Habitat

Land Cover Type	Total in Study Area	Percent of Study Area	Impacts from Development Activities	New Total in Study Area	New Percent of Study Area
Mixed serpentine chaparral	3,712	0.81	127	3,585	0.78
Northern coastal scrub/Diablan sage scrub	10,306	2.24	169	10,137	2.20
Coast live oak forest and woodland	31,652	6.88	821	30,831	6.70
Knobcone pine forest	711	0.15	8	703	0.15
Total	**46,381**	**10.1**	**1,125**	**45,256**	**9.8**

Source: ICF International, 2012

An additional 279 acres of suitable habitat would also be temporarily affected under the No Action alternative. Most of this change would be a result of development in rural areas (including rural capital projects), which is most likely to occur in the land cover types and at the elevations preferred by this species. In addition, currently undocumented occurrences in the Study Area also could be affected.

Under the No Action Alternative, existing regulatory processes may provide a way to mitigate impacts to San Francisco collinsia. Potential impacts to the known occurrence along the margins of Anderson Reservoir would be considered during site-specific review of any major capital projects that would result in increased water surface elevations (e.g., dam safety retrofit). This major capital project would be subject to review under CEQA, and may include other discretionary actions requiring compliance with other laws and regulations. Impacts to some currently undocumented occurrences are expected to occur as a result of activities that are subject to discretionary authorization by local agencies, and therefore would be subject to environmental review under CEQA. For an unlisted species such as San Francisco collinsia, avoidance and minimization measures and compensatory mitigation requirements could be developed during CEQA review for individual discretionary actions, but mitigation may be restricted to salvage and transplant activities of any individuals that are discovered during the review process. Mitigation of any type is unlikely for impacts from projects that are not subject to discretionary review.

Most of the land cover types supporting San Francisco collinsia habitat would not be developed (Table 5-19). Under the No Action Alternative, these areas are expected to be managed for multiple purposes, including parks and recreation use or as grazing land or other non-intensive agricultural use.

Cumulative Effects

As described in Section 4.1.1.2, urban development and associated infrastructure have replaced natural lands in the Study Area, including lands recently used for grazing. This trend is expected to continue under the No Action Alternative as continued development occurs, but little additional conversion of habitat is expected.

5.3.25 Loma Prieta Hoita

Environmental Consequences/Environmental Effects

Under the No Action Alternative, none of the known occurrences of Loma Prieta hoita are expected to be affected. However, suitable habitat within the Study Area could be modified or converted from activities associated with the urbanization of the Study Area, including infrastructure development. These activities would result in the conversion of existing land cover types that contain primary habitat for Loma Prieta hoita (Table 5-20).

TABLE 5-20
Permanent Impacts on Land Cover Types Containing Loma Prieta Hoita Primary Habitat

Land Cover Type	Total in Study Area	Percent of Study Area	Impacts from Development Activities	New Total in Study Area	New Percent of Study Area
Mixed oak woodland and forest	84,488	18.4	1,384	83,104	18.1
Coast live oak forest and woodland	31,652	6.9	821	30,831	6.7
Total	**116,140**	**25.2**	**2,205**	**113,935**	**24.8**

Source: ICF International, 2012

Most of these 116,140 acres (104,126 acres, or approximately 90%) is modeled as primary habitat (ICF International, 2012), and therefore most of the impacts from development activities are likely to occur in areas of suitable habitat. In addition, 17,745 acres are modeled as secondary habitat ICF International, 2012). An additional 483 acres of suitable habitat would also be temporarily affected under the No Action alternative. Although these activities may affect known occurrences on private lands, currently undocumented occurrences in the Study Area also could be affected.

Under the No Action Alternative, existing regulatory processes may provide a way to mitigate impacts to Loma Prieta hoita. Impacts are expected to occur as a result of activities that are subject to discretionary authorization by local agencies (e.g., new subdivisions, large new facilities in rural areas), and therefore would be subject to environmental review under CEQA. For an unlisted species such as Loma Prieta hoita, avoidance and minimization measures and compensatory mitigation requirements could be developed during CEQA review for individual discretionary actions, but mitigation may be limited to salvage and transplant activities of any individuals that are discovered during the review process. Mitigation of any type is unlikely for impacts from projects that are not subject to discretionary review.

Most of the land cover types supporting Loma Prieta hoita primary habitat would not be developed (Table 5-20). Under the No Action Alternative, these areas are expected to be managed for multiple purposes, including parks and recreation use or as grazing land or other non-intensive agricultural use.

Cumulative Effects

As described in Section 4.1.1.2, urban development and associated infrastructure have replaced natural lands in the Study Area, including lands recently used for grazing. This

trend is expected to continue under the No Action Alternative as continued development occurs, but little additional conversion of habitat is expected.

5.3.26 Hall's Bush Mallow

Environmental Consequences/Environmental Effects

Under the No Action Alternative, three of the known occurrences of Hall's bush mallow could be affected by development. Suitable habitat within the Study Area could be modified or converted from activities associated with the urbanization of the Study Area, including infrastructure development. These activities would result in the conversion of the existing land cover type that contains primary habitat for Hall's bush mallow (Table 5-21).

TABLE 5-21
Permanent Impacts on Land Cover Types Containing Hall's Bush Mallow Primary Habitat

Land Cover Type	Total in Study Area	Percent of Study Area	Impacts from Development Activities	New Total in Study Area	New Percent of Study Area
Northern mixed chaparral/chamise chaparral	23,763	5.2	78	23,685	5.1

Source: ICF International, 2012

Most of the anticipated impacts to suitable habitat (58 acres out of 78 acres) would be a result of rural development; this is more likely to occur in the land cover types and at the elevations preferred by this species. An additional 31 acres of suitable habitat would also be temporarily affected under the No Action Alternative. Although these activities may affect known occurrences on private lands, currently undocumented occurrences in the Study Area also could be affected.

Under the No Action Alternative, existing regulatory processes may provide a way to mitigate impacts to Hall's bush mallow. Impacts are expected to occur as a result of activities that are subject to discretionary authorization by local agencies, and therefore would be subject to environmental review under CEQA. For an unlisted species such as Hall's bush mallow, avoidance and minimization measures and compensatory mitigation requirements could be developed during CEQA review for individual discretionary actions, but mitigation may be limited to salvage and transplant activities of any individuals that are discovered during the review process. Mitigation of any type is unlikely for impacts from projects that are not subject to discretionary review.

Most of the land cover types supporting Hall's bush mallow habitat would not be developed (Table 5-21). Under the No Action Alternative, these areas are expected to be managed for multiple purposes, including parks and recreation use or as grazing land or other non-intensive agricultural use.

Cumulative Effects

As described in Section 4.1.1.2, urban development and associated infrastructure have replaced natural lands in the Study Area, including lands recently used for grazing. This

trend is expected to continue under the No Action Alternative as continued development occurs, but little additional conversion of habitat is expected.

5.3.27 Santa Cruz Mountains Beardtongue

Environmental Consequences/Environmental Effects

Under the No Action Alternative, suitable habitat within the Study Area could be modified or converted from activities associated with the urbanization of the Study Area, including infrastructure development. These activities would result in the conversion of existing land cover types that contain primary habitat for Santa Cruz Mountains beardtongue (Table 5-22).

TABLE 5-22
Permanent Impacts on Land Cover Types Containing Santa Cruz Mountains Beardtongue Habitat

Land Cover Type	Total in Study Area	Percent of Study Area	Impacts from Development Activities	New Total in Study Area	New Percent of Study Area
Northern coastal scrub/Diablan sage scrub	10,306	2.24	169	10,137	2.20
Mixed evergreen forest	5,775	1.25	48	5,727	1.24
Redwood forest	9,693	2.11	108	9,585	2.08
Knobcone pine forest	711	0.15	8	703	0.15
Total	**26,485**	**5.8**	**333**	**26,152**	**5.7**

Source: ICF International, 2012

An additional 149 acres of suitable habitat would also be temporarily affected under the No Action alternative. These activities may affect known occurrences, and currently undocumented occurrences in the Study Area also could be affected.

Under the No Action Alternative, existing regulatory processes may provide a way to mitigate impacts to Santa Cruz Mountains beardtongue. Impacts from rural capital projects would likely be subject to discretionary authorization by local agencies, and therefore would be subject to environmental review under CEQA. For an unlisted species such as Santa Cruz Mountains beardtongue, avoidance and minimization measures and compensatory mitigation requirements could be developed during CEQA review for individual discretionary actions, but mitigation may be limited to salvage and transplant activities of any individuals that are discovered during the review process. Mitigation of any type is unlikely for impacts from projects that are not subject to discretionary review.

Most of the land cover types supporting Santa Cruz Mountains beardtongue habitat would not be developed (Table 5-22). Under the No Action Alternative, these areas are expected to be managed for multiple purposes, including parks and recreation use or as grazing land or other non-intensive agricultural use.

Cumulative Effects

As described in Section 4.1.1.2, urban development and associated infrastructure have replaced natural lands in the Study Area, including lands recently used for grazing. This trend is expected to continue under the No Action Alternative as continued development occurs, but little additional conversion of habitat is expected.

5.4 Proposed Action

As described in Chapter 3 (Approach), the analysis of the Proposed Action builds on the No Action Alternative by adding a regional framework for biological resource impact avoidance, minimization, mitigation, and natural community conservation (i.e., the Habitat Plan). This section focuses on how the Proposed Action would affect biological resources from the perspective of changes relative to the No Action Alternative. In general, impacts to biological resources would be similar to or less than under the No Action Alternative, and mitigation would be superior to the No Action Alternative. Major reasons for these conclusions are briefly summarized in the bullets below, and discussed in more detail in the following sections:

- Most of the same land cover conversions described under the No Action Alternative would also occur under the Proposed Action, but in some cases (e.g., Bay checkerspot butterfly) a maximum allowed conversion acreage would be established that is lower than what would occur under the No Action Alternative.
- Land cover conversions from urbanization and related infrastructure improvement projects would occur consistent with a series of conditions intended to minimize the effects of the activity. These additional constraints typically exceed the normal constraints on development under the No Action Alternative.
- Habitat would be preserved via the Reserve System, which would be sized to mitigate impacts to all Covered Species resulting from all Covered Activities, to ensure preservation of natural communities, and to contribute to the recovery of Covered Species. This would greatly exceed the biological value of compensatory habitat expected to be provided under the No Action Alternative.
- The Reserve System would be assembled in a coordinated manner to maximize the potential for larger-scale conservation of natural communities and the preservation (and enhancement) of opportunities for species to move between areas of suitable habitat.
- Preservation, enhancement, restoration, and creation actions would be completed in rough step with Covered Activity impacts.
- The Reserve System would be managed in a coordinated manner, including a comprehensive monitoring and reporting program and a series of required studies to provide needed data to enhance scientific understanding and ensure compliance.
- Performance standards would be established to ensure that the Reserve System successfully mitigates the impacts of the Covered Activities, including occupancy requirements for some of the Covered Species.
- The scale of the Habitat Plan, including its contributions to natural community conservation and species recovery, provides opportunities to leverage grant funding not normally available to individual mitigation projects.
- These benefits to Covered Species (relative to the No Action Alternative) would be shared with other species with similar habitat requirements, including several other special-status species discussed in this section.

5.4.1 Bay Checkerspot Butterfly

Environmental Consequences/Environmental Effects

Under the Proposed Action, development and related infrastructure activities covered under the Habitat Plan would result in impacts to serpentine bunchgrass grassland such that the amount of this land cover would be reduced similar to the No Action Alternative. It is expected, however, that the amount of habitat converted to developed use would be less. Under the No Action Alternative, up to 650 acres of serpentine bunchgrass grassland could be developed, although the actual acreage is expected to be less for the reasons described under the No Action Alternative impact analysis. Under the Proposed Action, conversion of serpentine bunchgrass grasslands would be limited to 550 acres, and within that land cover type no more than 300 acres of modeled occupied or potential Bay checkerspot butterfly habitat would be permanently impacted.[6] This is likely to result in a greater amount of avoided habitat (including designated critical habitat) under the Proposed Action.

In addition, the Habitat Plan limits the conversion of designated critical habitat for Bay checkerspot butterfly. Under the Proposed Action, less than 550 acres of critical habitat would be permanently impacted and a maximum of 86 acres would be temporarily impacted.[7] An estimated 9,627 acres of critical habitat would likely be protected within the Reserve System by Year 45 of the permit term. The Habitat Plan also describes a system of 22 Bay checkerspot butterfly habitat units, and limits development impacts to 3 percent of any one habitat unit.[8] Unit specific impact limits would not likely be established on a regional scale under the No Action Alternative.

The Proposed Action also includes minimization measures for projects in serpentine land cover types (Condition 13, Serpentine and Associated Species Avoidance and Minimization). These measures include optimizing the configuration of preserved areas, buffering preserved areas for adjacent development, and preconstruction survey requirements.[9] These measures would be similar to, but likely greater than, project-specific minimization measures established during project-by-project review under the No Action Alternative.

The Reserve System to be established under the Proposed Action is based on a comprehensive reserve acquisition strategy that (among other things) targets most of the remaining serpentine bunchgrass grassland land cover in the Study Area. Conservation Action LAND-G3 requires the acquisition of 4,000 acres of serpentine bunchgrass grassland, which is more than seven times the maximum amount converted by development activities (550 acres). This is likely to be greater than the total amount of Bay checkerspot butterfly habitat acquired under the No Action Alternative. Of the 4,000 acres of serpentine bunchgrass grassland preserved under the Proposed Action, a minimum of 3,800 acres

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[6] The 300 acre limit does not apply to modeled habitat mapped as “historic/unoccupied” and “occupancy unknown” (see Habitat Plan Section 5.4.1 for details).

[7] Impacts to modeled primary Bay checkerspot butterfly habitat would be capped at 300 acres and impacts to serpentine bunchgrass grassland would be capped at 550 acres. The difference of 250 acres may occur on Bay checkerspot butterfly critical habitat, although it is unlikely that all of the 250 acres of impact would also overlap with critical habitat.

[8] Eleven percent in one of the units to accommodate the planned expansion of the Kirby Canyon Recycling and Disposal Facility, and 13 percent in another of the units to accommodate the Mariposa Lodge/Sheriff’s Firing Range project, both of which are Covered Activities.

[9] Preconstruction surveys, when required, would occur in areas identified in the Habitat Plan (Appendix D) as Bay checkerspot butterfly habitat units.

would be Bay checkerspot habitat. An additional 754 acres (minimum) of Bay checkerspot butterfly habitat on existing open space lands would be added to the Reserve System. Pursuant to Conservation Action LAND-L5, most of the acquisitions (2,900 acres) would occur in the Coyote Ridge area, located east of U.S. Highway 101 between San José and Morgan Hill. Together with existing protected areas, the Proposed Action would contribute to protecting 70 percent of core habitat on Coyote Ridge, which supports the densest populations of Bay checkerspot butterfly. Buffers would be established during Reserve System acquisition pursuant to Condition 2 (Urban-Reserve System Interface Design Requirements). Mitigation sites under the No Action Alternative would be established on suitable Bay checkerspot butterfly habitat, but there would be no opportunity to carefully plan the assembly process without the framework established by the Proposed Action.

The Proposed Action also includes a comprehensive reserve management program that would enhance habitat conditions on serpentine bunchgrass grasslands added to the Reserve System. The grazing management program (Conservation Action GRASS-1) is expected to be especially important for Bay checkerspot butterfly conservation by helping to control non-native invasive grasses. Other vegetation management activities e.g., planting native grasses and forbs, mowing and hand-pulling non-native grasses) also would benefit Bay checkerspot butterflies. The Implementing Entity will be required to ensure that each of the four core habitat units identified in Figure 5-A of the 1998 Serpentine Recovery Plan (Kirby, Metcalf, San Felipe, and Silver Creek Hills) are occupied four out of every 10 consecutive years of the permit term. The Implementing Entity also would acquire and manage land to ensure occupancy of at least three of the six (50%) satellite habitat units identified in the 1998 Serpentine Recovery Plan (W. Hills of Santa Clara Valley, Tulare Hill, Santa Teresa Hills, Calero, Communication Hill, or North of Llagas Avenue) by Year 45.[10] Conservation Action GRASS-7 also would allow, with Wildlife Agency consent, the translocation of Bay checkerspot butterflies from core populations into suitable but unoccupied sites if natural dispersal fails to reestablish populations. Although similar measures could be implemented on mitigation sites under the No Action Alternative, the coordinated management process across this large Reserve System under the Proposed Action (including comprehensive monitoring and adaptive management) would not occur.

Potential adverse impacts associated with the Reserve System include a limited amount of conversion of serpentine bunchgrass grasslands (approximately 23 acres) for trails, trailhead facilities, and similar reserve operations and management uses. Potential impacts from management activities and public recreation (where allowed) could occur, but these impacts are likely to be minor and similar to the No Action Alternative (e.g., managed as ranchland). Adverse effects are minor compared to the benefits of the Reserve System.

Indirect impacts (e.g., from nitrogen deposition, pesticides) are expected to be similar to the No Action Alternative. The effects of nitrogen deposition on serpentine habitat may be reduced, however, because of the management and monitoring efforts by the Implementing Entity to enhance habitat conditions on serpentine grasslands. Pesticide impacts could be somewhat less because of the Urban-Reserve Interface Design Requirements (Habitat Plan Condition 2).

[10] A “core” habitat unit is a moderate to large area of suitable habitat that supports persistent Bay checkerspot butterfly populations. A “satellite” habitat unit is generally smaller and contains less high-quality habitat than core areas, and may occur at some distance from core areas. Among the satellite habitat units, Communication Hill is considered a historic/unoccupied site. Therefore, the three occupied satellite units could occur in any of the five remaining satellite units that are described by the Habitat Plan as occupied, potential, or occupancy unknown.

Cumulative Effects

Under the Proposed Action, cumulative effects would occur as a result of the following activities:

- Other conservation activities
- High Speed Train

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

Under the Proposed Action, cumulative effects to Bay checkerspot butterflies could occur as a result of other habitat preservation activities, such as the acquisition and management of suitable habitat by others (e.g., The Nature Conservancy). Cumulative impacts are expected to be minor, however, because most of the remaining serpentine bunchgrass grassland land cover would be acquired as part of the Reserve System under the Proposed Action. Any additional habitat preservation would likely be beneficial. Chapter 16, Air Quality and Greenhouse Gases, describes how the regional ozone attainment strategy emphasizes regional rail systems, including the High Speed Train project. Therefore, it is possible that the High Speed Train project could benefit Bay checkerspot butterflies by supporting a reduction in vehicle traffic and an associated reduction in nitrogen deposition.

Determination of Significance

Compared to the No Action Alternative, impacts (including cumulative impacts) would be **beneficial**.

5.4.2 Opler's Longhorn Moth

Environmental Consequences/Environmental Effects

Under the Proposed Action, impacts to Opler's longhorn moth are expected to be approximately the same as impacts to Bay checkerspot butterfly. Overall impacts are expected to be beneficial compared to the No Action Alternative. Efforts to provide landscape linkages within serpentine bunchgrass grassland areas (Conservation Actions LAND-L4, LAND-L5, LAND-L8, and LAND-L10) may provide additional benefits to Opler's longhorn moth because they do not have the ability to disperse across long distances of unsuitable habitat.

Cumulative Effects

Same as Bay checkerspot butterfly.

Determination of Significance

Same as Bay checkerspot butterfly.

5.4.3 Foothill Yellow-Legged Frog

Environmental Consequences/Environmental Effects

Under the Proposed Action, urbanization and associated infrastructure development is expected to occur in a similar manner as under the No Action Alternative. As described above, this includes minor loss of primary habitat upstream of major dams and reservoirs, loss of secondary habitat downstream of major dams and reservoirs, and indirect effects

associated with reservoir operations and maintenance activities (e.g., changes in reservoir releases). Avoidance of impacts to occupied breeding sites is expected to be similar to the No Action Alternative. Mitigation for impacts to instream habitat, however, is expected to be substantially greater under the Proposed Action, including protection of 100 miles of streams in the Study Area (80 miles of which would be foothill yellow-legged frog modeled habitat), management of these stream reaches as part of the Reserve System, and restoration of up to 10.4 miles of these stream reaches to restore them to natural or semi-natural conditions. These activities are expected to occur both upstream and downstream of major dams and reservoirs, in areas of both primary and secondary habitat for foothill yellow-legged frogs.

The Proposed Action targets riverine acquisition and restoration in areas where foothill yellow-legged frogs are likely to occur (see Conservation Action LAND-R5), and specifically targets four existing occurrences (three on Llagas Creek above Chesbro Reservoir, and one on San Felipe Creek above Anderson Reservoir). In contrast, mitigation for riverine habitat impacts would be developed on a case-by-case basis under the No Action Alternative, likely without a comprehensive strategy for focusing mitigation efforts in targeted areas.

The Proposed Action also contains various other measures that are also expected to improve foothill yellow-legged frog habitat conditions in the Study Area, including increasing the amount of cobble substrate near known yellow-legged frog occurrences (Conservation Action STREAM-8), riparian restoration associated with required stream restoration activities, new urban development setbacks (Condition 11), and invasive species control activities (e.g., Conservation Action LM-14). The Habitat Plan would also require the Implementing Entity to demonstrate species occupancy in the Reserve System upstream of dams that present permanent barriers to the species or on streams unaffected by dam operations. Occupied foothill yellow-legged frog habitat within the Reserve System is defined as perennial streams with an observation of egg masses by Year 45. The Implementing Entity would protect occupied habitat in the Reserve System in at least three of the Study Area watersheds, in both the Diablo Range and in the Santa Cruz Mountains. These additional activities are unlikely to occur under the No Action Alternative.

Cumulative Effects

Under the Proposed Action, cumulative effects to foothill yellow-legged frogs could occur as a result of other activities in upstream areas of primary habitat, and in downstream areas of secondary habitat. Within upstream areas, these other activities are expected to include:

- Other conservation activities
- High Speed Train

Within downstream areas, these other activities are expected to include:

- Instream activities under the proposed Three Creeks HCP, mercury remediation projects, or Stream Maintenance Program

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

Cumulative effects could occur as a result of other habitat preservation activities, such as the acquisition and management of suitable breeding and foraging habitat by others. Because of

the extent of the remaining natural lands in the Study Area, other preservation activities could result in beneficial effects, especially if the other land management agencies emphasize habitat conditions for foothill yellow-legged frogs. In this manner, the Proposed Action would beneficially contribute to increased protection of existing habitat.

The High Speed Train project is expected to cross many small drainages along the SR 152 corridor (Pacheco Pass Highway). Although some parts of the alignment would be tunneled, other project areas would cross these drainages with bridges of culverts. Removal of natural stream channels and areas of adjacent upland habitat could be substantial. The Proposed Action, however, is not expected to affect habitat conditions in this area and therefore would not contribute to this adverse cumulative effect.

Cumulative effects also could occur as a result of other activities that disturb secondary habitat, such as mercury remediation and the SCVWD Stream Maintenance Program. It is not expected that these activities would disturb primary habitat because primary habitat conditions are unlikely to occur downstream of existing reservoirs. In addition, it is possible that some areas of secondary habitat would have long-term benefits because these programs are expected to contribute to stream restoration. Implementation of the proposed Three Creeks HCP in the Stevens Creek watershed may have similar benefits as the Proposed Action, including the establishment of more natural flow conditions, including ramping requirements, which would reduce potential impacts from stranding and egg desiccation).

Determination of Significance

Compared to the No Action Alternative, impacts would be **beneficial**, and the Proposed Action would have less than significant cumulative effects.

5.4.4 Fish (North County Streams)

Environmental Consequences/Environmental Effects

Under the Proposed Action, urbanization and associated infrastructure development is expected to occur in a similar manner as under the No Action Alternative, including changes to instream and riparian habitat conditions associated with instream capital projects and operations and maintenance activities. Avoidance and minimization measures for steelhead, salmon, and lampreys are expected to be similar to the No Action Alternative.

Mitigation for impacts to instream habitat, however, is expected to be greater under the Proposed Action and would consist of both acquisition and restoration. Up to approximately 618 acres of riparian habitat (including California sycamore alluvial woodland) and 100 miles of streams would be protected and enhanced in the Reserve System. Up to 10.4 miles of streams would be restored. A minimum of 50 acres of willow riparian forest and scrub or mixed riparian forest and woodland would be restored in the Reserve System to contribute to the recovery of Covered Species and an estimated 339 acres would be restored to compensate for all impacts. An estimated 14 acres of Central California coastal sycamore alluvial woodland would also be restored to compensate for expected impacts.

Protection and restoration of instream habitat would keep in rough step with impacts. In addition, the Implementing Entity would have to meet minimum levels of acquisition and restoration at predetermined milestones during the permit term. These requirements would ensure that acquisition and restoration of instream habitat occur at a steady pace, regardless

of the pace of impacts. These protection and restoration requirements apply across the entire Study Area (including South County streams as well as North County streams).

The requirement to preserve and restore riparian vegetation is more widespread throughout the Study Area, with restoration activities targeting lower reaches of Coyote Creek and tributaries such as Fisher Creek and Thompson Creek, Alamitos Creek and tributaries, and Los Gatos Creek below Vasona Dam. To the extent that riverine and riparian restoration actions occur in the Guadalupe River and Coyote Creek watersheds, these activities are expected to improve conditions for fish in North County streams, potentially resulting in new areas of suitable habitat.

The Proposed Action also contains various other measures that are also expected to reduce the indirect effects of urbanization and associated infrastructure projects. The additional measures include the following:

- New development standards for stormwater quantity and quality (Conditions 3 – 8)
- New development setbacks from watercourses (Condition 11)
- Restrictions on livestock grazing along streams (Conservation Action STREAM-1)
- Invasive and exotic species control activities (e.g., Conservation Action LM-11)

These additional minimization measures are unlikely to occur under the No Action Alternative (see Chapter 10, however, for a discussion of water quality regulations).

Cumulative Effects

Under the Proposed Action, cumulative effects to steelhead, salmon, and lampreys could occur as a result of other activities that disturb riverine and riparian habitat. These include:

- Instream activities under the proposed Three Creeks HCP, mercury remediation projects, or Stream Maintenance Program

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

These activities could disturb existing spawning habitat, but it is assumed that these disturbances would be minimized and that mitigation measures would be implemented to compensate for unavoidable impacts. It is possible that these other projects may contribute to potential beneficial effects by improving flow and physical habitat conditions both in and near the Study Areas.

Determination of Significance

Compared to the No Action Alternative, impacts would be **beneficial**, and the Proposed Action would have less than significant cumulative effects.

5.4.5 Fish (South County Streams)

Environmental Consequences/Environmental Effects

Under the Proposed Action, urbanization and associated infrastructure development is expected to occur in a similar manner as under the No Action Alternative, including changes to instream and riparian habitat conditions associated with instream capital projects and

operations and maintenance activities. Avoidance and minimization measures for steelhead, lampreys, and Monterey roach are expected to be similar to the No Action Alternative.

Mitigation for impacts to instream habitat, however, is expected to be greater under the Proposed Action, and would consist of both acquisition and restoration. Up to approximately 618 acres of riparian habitat (including California sycamore alluvial woodland) and 100 miles of streams would be protected and enhanced in the Reserve System. Up to 10.4 miles of streams would be restored. A minimum of 50 acres of willow riparian forest and scrub or mixed riparian forest and woodland would be restored in the Reserve System to contribute to the recovery of Covered Species and an estimated 339 acres would be restored to compensate for all impacts. An estimated 14 acres of Central California coastal sycamore alluvial woodland would also be restored to compensate for expected impacts.

Protection and restoration of instream habitat would keep in rough step with impacts. In addition, the Implementing Entity would have to meet minimum levels of acquisition and restoration at predetermined milestones during the permit term. These requirements would ensure that acquisition and restoration of instream habitat occur at a steady pace, regardless of the pace of impacts. These protection and restoration requirements apply across the entire Study Area (including South County streams as well as North County streams).

The requirement to preserve and restore riparian vegetation is more widespread throughout the Study Area, with restoration activities targeting Uvas (Carnadero) Creek and tributaries such as Little Arthur Creek and Bodfish Creek, Llagas Creek (particularly above Chesbro Reservoir), Pacheco Creek, and the Pajaro River. To the extent that riverine and riparian restoration actions occur in the Guadalupe River and Coyote Creek watersheds, these activities may provide improved conditions for fish in North County streams, resulting in new areas of suitable habitat.

The Proposed Action also contains various other measures that are also expected to reduce the indirect effects of urbanization and associated infrastructure projects. The additional measures include the following:

- New development standards for stormwater quantity and quality (Conditions 3 – 8)
- New development setbacks from watercourses (Condition 11)
- Restrictions on livestock grazing along streams (Conservation Action STREAM-1)
- Invasive and exotic species control activities (e.g., Conservation Action LM-11)

These additional minimization measures are unlikely to occur under the No Action Alternative (see Chapter 10, however, for a discussion of water quality regulations).

Cumulative Effects

Under the Proposed Action, cumulative effects to steelhead, lampreys, and Monterey roach could occur as a result of other activities that disturb riverine and riparian habitat. These include:

- SCVWD Stream Maintenance Program

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

Instream activities under the Stream Maintenance Program could disturb existing spawning habitat, but it is assumed that these disturbances would be minimized and that mitigation measures would be implemented to compensate for unavoidable impacts. It is possible that the Stream Maintenance Program may contribute to potential beneficial effects by improving physical habitat conditions both in and near the Study Areas.

Determination of Significance

Compared to the No Action Alternative, impacts would be **beneficial**, and the Proposed Action would have less than significant cumulative effects.

5.4.6 California Tiger Salamander

Environmental Consequences/Environmental Effects

A similar amount of development is expected to occur under the Proposed Action relative to the No Action Alternative; however, much more breeding habitat would be avoided under the Proposed Action. No more than 92 acres of wetlands and ponds could be developed under the Proposed Action (compared to the 106 acres of expected development under the No Action Alternative). Wetland and pond minimization measures also would be implemented (Habitat Plan Condition 12).

Conservation actions and mitigation for impacts to breeding habitat (perennial wetlands, seasonal wetlands, and ponds) also are expected to be substantially greater under the Proposed Action. The Habitat Plan would preserve, restore, and/or create California tiger salamander breeding habitat according to ratios described below and in Tables 5-13 and 5-21 of the Habitat Plan. As such, if the maximum allowable impacts occur to an aquatic land cover type, the maximum amount of preservation, restoration, and/or creation would occur. If however, less impacts occur than are allowed under the Habitat Plan, the Plan also provides for a minimum acreage of each breeding habitat type to ensure that the conservation strategy contributes to the recovery of the species. Mitigation for loss of breeding habitat is expected to occur as follows:

- **Perennial wetlands:** For every 1 acre of impact to perennial wetlands, 2 acres would be preserved and enhanced, which would result in the preservation of 50 acres if all allowable impacts occurred. Of the 50 acres, a minimum of 10 acres would be preserved regardless of the level of impacts to contribute to recovery. In addition to these preservation requirements, 1 acre of perennial wetland would be restored for every acre impacted, which would result in a maximum of 25 acres of restored perennial wetlands. An additional 20 acres of perennial wetlands would be restored, regardless of impacts, to contribute to recovery.

- **Seasonal wetlands:** For every 1 acre of impact to seasonal wetlands, 2 acres would be preserved and enhanced, which would result in the preservation of 30 acres if all allowable impacts occurred. Of the 30 acres, a minimum of 5 acres would be preserved regardless of the level of impacts to contribute to recovery. In addition to these preservation requirements, 2 acres of seasonal wetland would be restored for every acre impacted, which would result in a maximum of 30 acres of restored seasonal wetlands.

- **Ponds:** For every 1 acre of impact to ponds, 2 acres would be preserved and enhanced, which would result in the preservation of 104 acres if all allowable impacts occurred. Of the 104 acres, a minimum of 50 acres would be preserved regardless of the level of impacts to contribute to recovery. In addition to these preservation requirements, 1 acre of pond would be created for every acre impacted, which would result in a maximum of 52 acres of created ponds. Twenty acres of ponds would be restored, regardless of impacts, to contribute to recovery.

These mitigation ratios may be similar to what would occur under the No Action Alternative, but would include additional wetland restoration and pond creation requirements (to contribute to species recovery) that would not occur under the No Action Alternative. Preservation, restoration, and creation efforts would also be coordinated on a regional level and would thus result in large contiguous complexes of aquatic habitat rather than small disjunct preserves with marginal ecological value that would likely result from the No Action Alternative.

The Proposed Action would focus acquisition, restoration, and creation efforts in areas with a higher concentration of ponds, including the area between Alum Rock Park and Joseph D. Grant County Park, the area between Cañada de Oro Preserve and Chesbro Reservoir, and the area south of Henry W. Coe State Park along the Cañada de los Osos. In addition, areas within Joseph D. Grant County Park that contain suitable breeding complexes would be added to the Reserve System. Under the No Action Alternative, mitigation would be developed on a case-by-case basis, and would not include a comprehensive strategy for focusing mitigation efforts in targeted areas.

A large amount of upland habitat also would be preserved under the Proposed Action. Upland habitat preservation requirements total approximately 17,440 acres of grasslands, 2,500 acres of chaparral and northern coastal scrub, 12,900 acres of oak woodland, and at least 290 acres of riparian woodland and scrub (including Central California sycamore alluvial woodland). A total of 195 acres of modeled breeding and foraging habitat and 41,700 acres of modeled upland refugia and dispersal habitat would be preserved in the Reserve System under the Proposed Action. Although some upland habitat preservation is expected to occur under the No Action Alternative, most of these upland acquisitions are unlikely to occur.

In addition, the Habitat Plan limits the conversion of designated critical habitat for the California tiger salamander. Under the Proposed Action, a maximum of 272 acres of critical habitat would be permanently impacted and a maximum of 125 acres would be temporarily impacted. An estimated 8,722 acres of critical habitat would likely be protected within the Reserve System by Year 45 of the permit term.

The Implementing Entity will be required to ensure that at least 30 percent of the wetlands and ponds are occupied or have been occupied by Year 45 of plan implementation (within an interim milestone of 25% by Year 30) in order to demonstrate the effectiveness of the conservation strategy.

The Proposed Action also contains various other measures that are expected to improve connections between wetlands and areas of adjacent habitat (see Conservation Actions LAND-G2, LAND-WP7 and LAND-OC1 through OC-5). Ponds and wetlands would be further enhanced by eradicating or reducing exotic species (e.g., nonnative fish, bullfrogs) (see

Conservation Action LM-13). Grazing is expected to continue to occur on most of the preserved upland areas similar to the No Action Alternative, but management of these lands would include additional measures that could benefit California tiger salamanders (e.g., exclusionary fencing to protect targeted from disturbance from cattle and feral pigs). In addition, the Implementing Entity would implement a management, monitoring, and adaptive management program to address the problem of hybridization between California tiger salamanders and barred tiger salamanders (Habitat Plan Appendix K), and would implement related programs and studies (Conservation Actions POND-11, POND-12, and STUDIES-8). These additional activities are unlikely to occur under the No Action Alternative.

Cumulative Effects

Under the Proposed Action, cumulative effects could occur as a result of other activities in breeding and upland habitat. These other activities are expected to include:

- Other conservation activities
- High Speed Train

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

Cumulative effects could occur as a result of other habitat preservation activities, such as the acquisition and management of suitable breeding and upland habitat by others. Because of the extent of the remaining natural lands in the Study Area, other preservation activities could result in beneficial effects, especially if the other land management agencies emphasize habitat conditions for California tiger salamanders. The Proposed Action would beneficially contribute to increased protection of existing habitat.

The High Speed Train project is expected to cross many small drainages and nearby upland areas along the SR 152 corridor (Pacheco Pass Highway). Although some parts of the alignment would be tunneled, other project areas would cross these drainages with bridges of culverts. Removal of natural stream channels and areas of adjacent upland habitat could be substantial. The Proposed Action, however, is not expected to affect habitat conditions in this area and therefore would not contribute to this adverse cumulative effect.

Determination of Significance

Compared to the No Action Alternative, impacts would be **beneficial**, and the Proposed Action would have less than significant cumulative effects.

5.4.7 California Red-Legged Frog

Environmental Consequences/Environmental Effects

A similar amount of development is expected to occur under the Proposed Action relative to the No Action Alternative, however much more primary habitat would be avoided under the Proposed Action. For example, no more than 77 acres of perennial wetlands and ponds could be developed under the Proposed Action (compared to the 85 acres of expected development under the No Action Alternative). Wetland and pond minimization measures are described in Condition 12 of the Habitat Plan. Stream impact minimization measures are described in Conditions 3, 4, 5, 7, and 11.

Conservation actions and mitigation for impacts to breeding habitat also are expected to be substantially greater under the Proposed Action. The Habitat Plan would preserve, restore, and/or create California red-legged frog primary habitat according to ratios described above for California tiger salamander. However, unlike California tiger salamanders, California red-legged frog breeding habitat also includes streams and adjacent riparian areas. Mitigation for loss of these breeding habitat types is expected to occur as follows:

- **Streams:** A total of 100 miles of streams would be preserved regardless of the level of impacts to contribute to recovery. In addition, 1 mile of stream would be restored for every mile impacted, which would result in a maximum of 9.4 miles of restored streams if all allowable impacts occurred. An additional 1 mile of stream would be restored, regardless of impacts, to contribute to recovery.
- **Willow riparian forest and scrub or mixed riparian forest and woodland:** For every 1 acre of impact to riparian habitat, 2 acres would be preserved and enhanced, which would result in the preservation of 578 acres if all allowable impacts occurred. Of the 578 acres, a minimum of 250 acres would be preserved regardless of the level of impacts to contribute to recovery. In addition to these preservation requirements up to 339 acres of riparian habitat would be restored. Fifty acres of riparian would be restored, regardless of impacts, to contribute to recovery.
- **Central California sycamore alluvial woodland:** A total of 40 acres of sycamore alluvial woodland would be preserved regardless of the level of impacts to contribute to recovery. In addition, 2 acres of sycamore alluvial woodland would be restored for every acre impacted, which would result in a maximum of 14 acres of restored sycamore alluvial woodland.

These mitigation ratios may be similar to what would occur under the No Action Alternative, but would include additional wetland restoration and pond creation requirements (to contribute to species recovery) that would not occur under the No Action Alternative. Preservation, restoration, and creation efforts would also be coordinated on a regional level and would thus result in large contiguous complexes of aquatic habitat as opposed to small disjunct preserves with marginal ecological value that would likely result from the No Action Alternative.

A large amount of upland habitat would be preserved under the Proposed Action. Upland habitat preservation requirements total approximately 17,440 acres of grasslands, 2,500 acres of chaparral and northern coastal scrub, 12,900 acres of oak woodland, and at least 290 acres of riparian woodland and scrub (including Central California sycamore alluvial woodland). A total of 1,430 acres of primary habitat (breeding and foraging) and 41,800 acres of secondary modeled habitat (movement and refugia) would be preserved in the Reserve System under the Proposed Action. Although some upland habitat preservation is expected to occur under the No Action Alternative, most of these upland acquisitions are unlikely to occur.

In addition, the Habitat Plan limits the conversion of designated critical habitat for the California red-legged frog. Under the Proposed Action, a maximum of 1,035 acres of critical habitat would be permanently impacted and a maximum of 277 acres would be temporarily impacted. An estimated 21,736 acres of critical habitat would likely be protected within the Reserve System by Year 45 of the permit term.

The Implementing Entity will be required to ensure that at least 40 percent of the wetlands and ponds in each of the federal Recovery Units 4 and 6 in the Reserve System are occupied or have been occupied by Year 45 of plan implementation (within an interim milestone of 35% by Year 30) in order to demonstrate the effectiveness of the conservation strategy.[11]

The Proposed Action also contains various other measures that are expected to improve connections between wetlands and areas of adjacent habitat (see Conservation Actions LAND-G2, LAND-WP7, and LAND-OC1 through OC-5). Ponds and wetlands would be further enhanced by eradicating or reducing exotic species (e.g., nonnative fish, bullfrogs) (see Conservation Action LM-13). Grazing is expected to continue to occur on most of the preserved upland areas similar to the No Action Alternative, but management of these lands would include additional measures that could benefit California red-legged frog (e.g., exclusionary fencing to protect targeted from disturbance from cattle and feral pigs). These additional activities are unlikely to occur under the No Action Alternative.

Cumulative Effects

Under the Proposed Action, cumulative effects could occur as a result of other activities in breeding and upland habitat. These other activities are expected to include:

- Other conservation activities
- High Speed Train

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

Cumulative effects could occur as a result of other habitat preservation activities, such as the acquisition and management of suitable breeding and upland habitat by others. Because of the extent of the remaining natural lands in the Study Area, other preservation activities could result in beneficial effects, especially if the other land management agencies emphasize habitat conditions for California red-legged frogs. The Proposed Action would beneficially contribute to increased protection of existing habitat.

The High Speed Train project is expected to cross many small drainages and nearby upland areas along the SR 152 corridor (Pacheco Pass Highway). Although some parts of the alignment would be tunneled, other project areas would cross these drainages with bridges of culverts. Removal of natural stream channels and areas of adjacent upland habitat could be substantial. The Proposed Action, however, is not expected to affect habitat conditions in this area and therefore would not contribute to this adverse cumulative effect.

Determination of Significance

Compared to the No Action Alternative, impacts would be **beneficial**, and the Proposed Action would have less than significant cumulative effects.

[11] The designated areas are Federal Recovery Units 4 and 6, included within designated California red-legged frog critical habitat in the Study Area (Figure 5-5).

5.4.8 Western Pond Turtle

Environmental Consequences/Environmental Effects

A similar amount of development is expected to occur under the Proposed Action, relative to the No Action Alternative. However, much more primary habitat would be avoided under the Proposed Action. No more than 77 acres of perennial wetlands and ponds could be developed (compared to the 85 acres of expected development under the No Action Alternative). In addition, the Proposed Action includes the protection of 100 miles of streams in the Study Area, management of these stream reaches as part of the Reserve System, and restoration of up to 10.4 miles of stream reaches.

Mitigation for impacts to wetlands, along with protection of streams and other aquatic habitats, also is expected to be substantially greater under the Proposed Action, and are expected to occur in the same manner as described above for California tiger salamander, California red-legged frog and foothill yellow legged frog.

A large amount of upland habitat would be preserved under the Proposed Action. Upland habitat preservation requirements total approximately 17,440 acres of grasslands, 2,500 acres of chaparral and northern coastal scrub, 12,900 acres of oak woodland, and at least 290 acres of riparian woodland and scrub (including Central California sycamore alluvial woodland). A total of 9,800 acres of primary habitat (nest sites, basking, overwintering) and 29,100 acres of secondary modeled habitat (nest sites and movement) would be preserved in the Reserve System under the Proposed Action. Although some upland habitat is expected to occur under the No Action Alternative, most of these upland acquisitions are unlikely to occur.

The Implementing Entity will be required to ensure that at least 25 percent of the wetlands and ponds are occupied or have been occupied by Year 45 of plan implementation (within an interim milestone of 20% by Year 30) in order to demonstrate the effectiveness of the conservation strategy.

The Proposed Action also contains various other measures that are expected to improve connections between wetlands and areas of adjacent habitat (see Conservation Actions LAND-G2, LAND-WP7, and LAND-OC1 through OC-5). Effects on western pond turtle nests associated with dewatering events for dam seismic retrofit activities would be minimized by measures that would avoid overtopping bankfull during May and July. Ponds and wetlands would be further enhanced by eradicating or reducing exotic species (e.g., nonnative fish, bullfrogs) (see Conservation Action LM-13). Grazing is expected to continue to occur on most of the preserved upland areas similar to the No Action Alternative, but management of these lands would include additional measures that could benefit western pond turtle (e.g., exclusionary fencing to protect targeted from disturbance from cattle and feral pigs). These additional activities are unlikely to occur under the No Action Alternative.

Cumulative Effects

Under the Proposed Action, cumulative effects could occur as a result of other activities in primary and upland habitat. These other activities are expected to include:

- Other conservation activities
- High Speed Train

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

Cumulative effects could occur as a result of other habitat preservation activities, such as the acquisition and management of primary and upland habitat by others. Because of the extent of the remaining natural lands in the Study Area, other preservation activities could result in beneficial effects, especially if the other land management agencies emphasize habitat conditions for western pond turtle. The Proposed Action would beneficially contribute to increased protection of existing habitat.

The High Speed Train project is expected to cross many small drainages and nearby upland areas along the SR 152 corridor (Pacheco Pass Highway). Although some parts of the alignment would be tunneled, other project areas would cross these drainages with bridges of culverts. Removal of natural stream channels and areas of adjacent upland habitat could be substantial. The Proposed Action, however, is not expected to affect habitat conditions in this area and therefore would not contribute to this adverse cumulative effect.

Determination of Significance

Compared to the No Action Alternative, impacts would be **beneficial**, and the Proposed Action would have less than significant cumulative effects.

5.4.9 California Whipsnake

Environmental Consequences/Environmental Effects

Under the Proposed Action, urbanization and associated infrastructure development is expected to occur in a similar manner as under the No Action Alternative. Potential impacts to California whipsnakes from rural development and other activities occurring in chaparral land cover types are expected to be similar to the No Action Alternative. Under both alternatives, it is unlikely that construction activity would take any special precautions to avoid impacts because California whipsnakes are not listed or considered special-status species under CEQA.

The proposed Reserve System would include up to 2,500 acres of chaparral land cover types. Potentially suitable habitat for California whipsnakes would be preserved to a greater extent under the Proposed Action than under the No Action Alternative because chaparral is not a sensitive habitat type in the project area and unlikely to be mitigated. In addition, conservation measures to enhance chaparral habitat conditions (e.g., prescribed burning, mechanical thinning) are likely to improve habitat conditions for California whipsnakes.

Cumulative Effects

Under the Proposed Action, cumulative effects would occur as a result of the following projects:

- Other conservation activities

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

Other land preservation activities (e.g., Mount Hamilton Project) are expected to benefit California whipsnakes by contributing additional habitat. The Proposed Action would beneficially contribute to increased protection of existing habitat.

Determination of Significance

Compared to the No Action Alternative, impacts (including cumulative impacts) would be **beneficial**.

5.4.10 Golden Eagle

Environmental Consequences/Environmental Effects

Under the Proposed Action, urbanization and associated infrastructure development is expected to occur in a similar manner as under the No Action Alternative. Therefore it is anticipated that 207 acres of nesting habitat may be lost from rural development over the next 50 years. Prior to disturbing golden eagle nesting habitat, individual landowners, developers, and/or a local government agency would be required to coordinate with FWS to determine if a permit would be required under the Bald and Golden Eagle Protection Act. This could require nest surveys, monitoring, and preparing eagle conservation plans prior to construction. FWS would be required to prepare site-specific NEPA documents for each permit application prior to issuing a permit. Avoidance and minimization of golden eagle nest sites would occur in the same manner as under the No Action Alternative, consistent with the Bald and Golden Eagle Protection Act. Golden eagle foraging habitat would be preserved to a greater extent under the Proposed Action than under the No Action Alternative. Golden eagles forage across a wide range of natural communities, and most of the Reserve System would provide suitable foraging habitat. Although some upland habitat preservation is expected to occur under the No Action Alternative, preservation of upland habitat is expected to be substantially greater under the Proposed Action. For example, grassland preservation would total over 17,400 acres under the Proposed Action (see Habitat Plan Table 5-13).

Indirect impacts from rodent control activities also would be reduced under the Proposed Action. The Proposed Action includes conservation actions that are expected to result in improved management of ground squirrels (Conservation Actions GRASS-5 and GRASS-6). These measures may enhance golden eagle prey populations and reduce the potential for inadvertent poisoning.

Cumulative Effects

Under the Proposed Action, cumulative effects could occur as a result of other activities in upland area. These other activities are expected to include:

- Other conservation activities
- High Speed Train

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

Other land preservation activities (e.g., Mount Hamilton Project) are expected to benefit golden eagles by contributing additional foraging habitat. The Proposed Action would beneficially contribute to increased protection of existing foraging habitat.

The golden eagle population has experienced adverse effects from energy development, especially direct mortality from wind turbines and power lines. No new wind power projects (or other energy projects) or major new power transmission projects are currently being considered in the Study Area, although small power transmission lines are likely to occur (see Section 4.2.4, subheading Pacific Gas and Electric Operations and Maintenance HCP). New power transmission line projects are likely to include avian protection requirements to minimize bird mortality impacts. The High Speed Train includes an overhead contact power system that could electrocute birds that collide with wires. This potential effect is expected to be minimized by proper design of the overhead contact system. Proper design measures such as wide spacing of the wires (so that large birds do not touch two wires and complete a circuit) is expected to be identified as a mitigation measure during environmental review of the High Speed Train, which is still in progress.

Determination of Significance

Compared to the No Action Alternative, impacts would be **beneficial**, and the Proposed Action would have less than significant cumulative effects.

5.4.11 Burrowing Owl

Environmental Consequences/Environmental Effects

Under the Proposed Action, development and related infrastructure activities covered under the Habitat Plan would result in impacts to California annual grassland and serpentine bunchgrass grassland such that the amount of this land cover would be reduced similar to the No Action Alternative. It is expected, however, that the amount of these land cover types converted to developed use would be less because the Proposed Action limits the conversion of serpentine bunchgrass grasslands to 550 acres.

Impacts to modeled occupied nesting habitat, potential nesting habitat, and overwintering habitat are expected to be the same between the No Action and the Proposed Action. However, the Proposed Action differs from the No Action Alternative because it would result in much more conservation of modeled habitat than would result under the No Action Alternative. The Proposed Action includes a conservation strategy that would increase the size and viability of the breeding population of western burrowing owls and increase the distribution of breeding and wintering burrowing owls. This would be accomplished in several ways, as described below. Additional details regarding the burrowing owl conservation strategy are presented in Habitat Plan Appendix M.

- Assembly of the Reserve System, including the acquisition of existing private lands, would be based (in part) on burrowing owl habitat requirements, including suitable overwintering habitat in the Diablo Range that supports ground squirrel populations (Conservation Action LAND-G8), and occupied and potential nesting habitat in the Diablo Range, on the valley floor, and within the expanded Study Area (described below).
- Reserve management measures (on both private lands and existing open space acquired for the Reserve System) to enhance habitat conditions for burrowing owls, including improved management of ground squirrels (GRASS-5 and GRASS-6), grazing and mowing grasslands to maintain optimal burrowing owl conditions (GRASS-8), and installation of artificial burrows (GRASS-9).

- Designation of an expanded Study Area for burrowing owl conservation, which would allow conservation actions (including acquisitions and management agreement) to occur outside of the Study Area (Figure 5-6). Activities within the expanded Study Area would include the management of 5,300 acres of occupied or modeled potential habitat (via purchase in fee title, conservation easements, or management agreements). Management would be conducted according to the following tiers of conservation action priorities:
  - Tier 1 conservation actions would stabilize the existing population by protecting and/or managing occupied burrowing owl nesting habitat.
  - Tier 2 conservation actions would facilitate growth and expansion of existing colonies, the number of colonies, and the range of the species by protecting and managing potential burrowing owl nesting habitat.
  - Tier 3 conservation actions would consist of more experimental and active methodologies such as population augmentation and owl relocation to increase owl numbers and expand distribution.

The Implementing Entity will be required to demonstrate a positive growth rate of burrowing owls. Adaptive management would be used to implement more active conservation measures of the population goals are not reached. The overall burrowing owl conservation program under the Proposed Action would be greater than the project-specific minimization measures established during project-by-project review under the No Action Alternative.

The Proposed Action also differs from the No Action Alternative in that limited take authorization would be provided under the Proposed Action if the proposed conservation strategy for the burrowing owl is successful. Since burrowing owls, which do not currently have a federal listing status, are protected by the Migratory Bird Treaty Act, there are currently no regulatory mechanisms to authorize incidental take for this species. Until the owl population in the South Bay Population reaches the population growth trend described in Section 5.4.6, the Habitat Plan does not cover take of individual owls, except for conservation strategy implementation or if an exception to the passive relocation prohibition is granted (see Habitat Plan Chapter 6, Condition 15). Condition 15 and other avoidance measures described in Chapter 6 will be used to avoid such impacts. Once a positive growth rate is achieved, take of individual owls in all forms would be allowed for all covered activities. Since the population is now in decline and because of the limitations of the population viability analysis model, it is anticipated that at least a 10 year period is necessary for the conservation activities to have a positive effect and to detect that effect through monitoring. Once the target growth trend is reached and take of individual owls for all covered activities is allowed, the amount of allowable take will be determined annually by the Implementing Entity in partnership with the Wildlife Agencies based on owl monitoring data and population viability modeling. The amount of take annually will be the number of owls in excess of those needed to maintain the positive growth trend as determined by the population viability analysis. If the positive growth trend is lost during implementation, take authorization would again be limited to all forms of take associated with the implementation of the burrowing owl conservation strategy.

Take of burrowing owls resulting from the expiration of temporary management agreements will only be authorized if the targeted population growth described in Habitat Plan Chapter 5 is being met. The amount of take would be counted toward the annual take authorized for

that year. The only exception to this rule is that take of owls associated with implementation of the conservation strategy may continue and is not counted towards the annual take limit.

Cumulative Effects

Under the Proposed Action, cumulative effects would occur as a result of the following projects:

- Other conservation activities

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

Under the Proposed Action, cumulative effects to burrowing owls could occur as a result of other habitat preservation activities, such as the acquisition and management of suitable habitat by others (e.g., The Nature Conservancy), in areas of occupied and potential nesting and overwintering habitat. Because of the extent of the remaining natural lands in the Study Area, other preservation activities could result in beneficial effects to overwintering habitat. In this manner, the Proposed Action would beneficially contribute to increased protection of existing habitat. Other habitat preservation activities, however, are not likely to contribute to protection of occupied or potential nesting habitat.

Determination of Significance

Compared to the No Action Alternative, impacts would be **beneficial**, and the Proposed Action would have less than significant cumulative effects.

5.4.12 Least Bell's Vireo

Environmental Consequences/Environmental Effects

Under the Proposed Action, urbanization and associated infrastructure development is expected to occur in a similar manner as under the No Action Alternative, including loss of riparian habitat associated with instream capital and operations and maintenance projects. Avoidance of impacts to occupied nest sites is expected to be similar to the No Action Alternative, but may be greater under the Proposed Action because of additional attention to preconstruction survey requirements (see Condition 16: Implementation of procedures to avoid or minimize direct impacts of Covered Activities on Least Bell's Vireo). In addition, mortality or injury of least Bell's vireos would not be authorized under the Proposed Action, which would be the same as the No Action Alternative because of the Migratory Bird Treaty Act.

Loss of riparian habitat may be less because the Proposed Action would limit impacts to no more than 72 acres of least Bell's vireo primary habitat (2.3% of modeled primary habitat in the Study Area) and no more than 43 acres of temporary impacts.

Conservation actions and mitigation for impacts to riparian habitat are expected to be substantially greater under the Proposed Action. The Proposed Action requires that at least 290 acres of riparian habitat be preserved regardless of the level of impact, and that an additional 50 acres of riparian habitat be restored in order to contribute to species recovery. In contrast, mitigation for riparian habitat impacts would be developed on a case-by-case basis under the No Action Alternative, likely without a comprehensive strategy for focusing mitigation efforts in targeted areas.

In addition to these overall requirements for impacts to riparian areas, the Proposed Action also includes specific habitat acquisition targets for the Reserve System including 462 acres of modeled least Bell's vireo habitat. This would occur as part of the Reserve System acquisition process, including extending the Uvas Creek Park Preserve 1.6 miles upstream of its existing boundary (Conservation Action LAND-R1). Acquisition of these large habitat areas and management as part of the Reserve System would not occur under the No Action Alternative.

The Proposed Action also contains various other measures that are expected to improve riparian habitat conditions in the Study Area, including riparian restoration associated with required stream restoration activities, new urban development setbacks (Condition 11), and invasive species control activities (Conservation Action LM-11). These additional activities are unlikely to occur under the No Action Alternative.

Potential adverse impacts associated with the Reserve System include minor conversion of riparian habitat (expected to be approximately 7 acres) associated with reserve operations and maintenance activities. Adverse effects are minor compared to the benefits of the Proposed Action.

Indirect impacts from cowbird parasitism also may be improved under the Proposed Action. Conservation Action STREAM-7 requires implementation of a brown-headed cowbird control program if least Bell's vireos become regular nesters in the Study Area and cowbird eggs are discovered in the vireo nests. Such a control program is unlikely to occur under the No Action Alternative.

Cumulative Effects

Under the Proposed Action, cumulative effects would occur as a result of the following project:

- SCVWD Stream Maintenance Program

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

Cumulative effects to least Bell's vireos could occur as a result of other activities that disturb riparian habitat, such as activities by SCVWD under its Stream Maintenance Program that could disturb potential least Bell's vireo nesting habitat. Occupied nesting sites (if discovered) would be avoided. In addition, it is expected that nesting habitat would experience net benefits as a result of these programs (e.g., restoration and enhancement of riparian habitat conditions).

Determination of Significance

Compared to the No Action Alternative, impacts would be **beneficial**, and the Proposed Action would have less than significant cumulative effects.

5.4.13 Tricolored Blackbird

Environmental Consequences/Environmental Effects

Under the Proposed Action, urbanization and associated infrastructure development is expected to occur in a similar manner as under the No Action Alternative, including

potential loss of habitat and disturbance to tricolored blackbird nesting colonies. Implementation of Habitat Plan Condition 17 is expected to result in fewer impacts on breeding individuals than under the No Action Alternative. Condition 17 would include requirements for species surveys when projects are proposed within 250 of suitable habitat, preconstruction surveys when nesting habitat (plus a 250-foot buffer) cannot be avoided, and construction monitoring if projects occur during the breeding season. The condition also includes species-specific avoidance and minimization measures. Mortality or injury of tricolored blackbirds would not be authorized under the Proposed Action, which would be the same as the No Action Alternative because of the Migratory Bird Treaty Act. However, an added benefit of the Proposed Action is the Habitat Plan does not authorize the removal of historic and active breeding habitat and no impacts are allowed to active colonies.[12]

The conservation strategy and the conditions of Proposed Action would result in substantially more mitigation and conservation for the tricolored blackbird than the No Action Alternative. A minimum of 1,000 acres of modeled primary habitat (breeding and foraging) and 18,000 acres of modeled secondary habitat (foraging and wintering) would be protected in the Reserve System. An additional 40 acres of primary habitat and 3,800 acres of secondary habitat on existing open space would be incorporated into the Reserve. Pursuant to Conservation Action LAND-WP8, at least four sites (at least two acres each) that support, historically supported, or could support tricolored blackbird colonies would be acquired as part of the Reserve System. In addition, Conservation Action LAND-WP9 requires that at least 200 acres of suitable foraging habitat be acquired for the Reserve System within 2 miles of each of the breeding colony sites. The Proposed Action also targets areas for acquisition, as follows:

- Dry land farming or ranching complexes in Coyote Valley and the Diablo Hills (specifically mentioned in LAND-WP8)
- Areas between Henry W. Coe State Park and San Felipe Lake
- Pescadero and Tar Creek watersheds southwest of Gilroy
- Pacheco Creek corridor
- West and south of Chesbro Reservoir

The Proposed Action includes other measures to help protect breeding colony sites and adjacent foraging habitat, including financial and regulatory incentives for landowners (POND-14, POND-15), vegetation enhancement (POND-16, POND-17), and habitat protection (POND-1). These measures would not occur under the No Action Alternative.

Wetland and pond protection, restoration, and creation measures previously described for the California tiger salamander and California red-legged frog also would provide additional benefits to tricolored blackbirds. These measures are expected to be greater than under the No Action Alternative.

[12] If a pond or wetland has documented breeding within the past 5 years, it will not be directly impacted by Covered Activities. Best efforts will be used to determine historic use. Best efforts will include at a minimum, a CNDDB records search, discussion with local experts, and investigation of site for historic nesting materials.

Cumulative Effects

Under the Proposed Action, cumulative effects could occur as a result of other activities that disturb wetland and riparian habitat, such as:

- Other conservation activities
- SCVWD Stream Maintenance Program
- Three Creeks HCP (Stevens Creek watershed)

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

Other activities that disturb wetland and riparian habitat could disturb potential tricolored blackbird nesting habitat. However, disturbance of active breeding colonies would be avoided because of the protections of the Migratory Bird Treaty Act and CEQA review, and other CEQA-required mitigation measures would be implemented to compensate for disturbance of riparian habitat. In addition, it is expected that nesting habitat would experience net benefits as a result of these programs (e.g., restoration and enhancement of riparian habitat conditions), although it may not be possible to preserve adequate foraging habitat near these areas.

Other land preservation activities (e.g., acquisition of easements on agricultural lands in the Pajaro River area) are expected to benefit tricolored blackbirds by contributing additional foraging (and potentially nesting) habitat. The Proposed Action would beneficially contribute to increased protection of existing foraging habitat.

Determination of Significance

Compared to the No Action Alternative, impacts would be **beneficial**, and the Proposed Action would have less than significant cumulative effects.

5.4.14 Bank Swallow

Environmental Consequences/Environmental Effects

Under the Proposed Action, urbanization and associated infrastructure development is expected to occur in a similar manner as under the No Action Alternative, including flood control and stream restoration activities as discussed in Section 5.3.13 above. Additional stream restoration activities are expected to occur under the Proposed Action, including protection of 100 miles of streams in the Study Area, management of these stream reaches as part of the Reserve System, and restoration of up to 10.4miles of these stream reaches to restore them to natural or semi-natural conditions. Some of these stream protection and restoration actions may occur along the Pajaro River, which is the only portion of the Study Area that contains suitable bank swallow habitat. As described under the No Action Alternative, stream restoration may provide improved conditions to allow the natural creation of suitable bank swallow nesting habitat elsewhere in the Study Area. These activities are expected to provide ancillary benefits to bank swallows in the event that bank swallow breeding populations increase in the Study Area.

Cumulative Effects

Under the Proposed Action, cumulative effects to bank swallows could occur as a result of other activities that disturb riverine habitat, such as:

- SCVWD Stream Maintenance Program
- Three Creeks HCP (Stevens Creek watershed)

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

It is not expected that these activities would disturb nests because suitable nesting habitat is unlikely to occur and any active nest sites discovered would likely be protected. In addition, it is possible that potential nesting habitat would benefit from these programs (e.g., stream restoration activities). Instream habitat improvements in northern Santa Clara County (e.g., Stevens Creek watershed) may not provide much benefit to bank swallows, however, because of the generally urbanized character of this area. Other cumulative projects are not expected to contribute to bank swallow impacts.

Determination of Significance

Compared to the No Action Alternative, impacts would be **beneficial**, and the Proposed Action would have less than significant cumulative effects.

5.4.15 Townsend's Big-Eared Bat

Environmental Consequences/Environmental Effects

Under the Proposed Action, development and related infrastructure activities covered under the Habitat Plan would result in impacts to roosting sites similar to the No Action Alternative. For example, 10 box girder bridges are expected to be replaced, and a reduction of foraging habitat and harassment of roosting individuals could occur with building demolition. Impact avoidance and minimization would be addressed on a project-by-project basis.

Under the Proposed Action, the Implementing Entity would also protect 1,400 acres of coastal scrub, 12,900 acres of oak woodlands, and a minimum of 290 acres of Central California sycamore alluvial woodland and willow riparian forest and scrub or mixed riparian forest and woodland areas within the Reserve System (LAND-L6, LAND-L7, LAND-L8, LAND-L9, LAND-R2), all of which are potential foraging habitat for the species. These increases in habitat protection would not occur under the No Action Alternative.

Loss of foraging habitat would occur similar to the No Action Alternative. The Proposed Action, however, would result in a Reserve System of at least 46,496 acres, which would provide greater preservation of foraging habitat than under the No Action Alternative. Most of these new acquisitions are expected to encompass suitable foraging habitat for Townsend's big-eared bats.

Indirect impacts, such as increased harassment or disturbance associated with recreation, could increase because recreation would be allowed in the Reserve System. Implementation of Habitat Plan Condition 9, however, would likely reduce effects to Townsend's big-eared bats because allowable recreational uses in general would be limited to passive uses (i.e.

walking, hiking running, nonmotorized bicycle riding, etc.) and would be controlled and restricted by area and time (i.e., daylight hours only).

Cumulative Effects

Under the Proposed Action, cumulative effects would occur as a result of the following projects:

- Other conservation activities
- High Speed Train

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

Because of the extent of the remaining natural lands in the Study Area, other preservation activities could result in beneficial effects in terms of Townsend's big-eared bat foraging habitat. Potential benefits to roosting habitat on other natural lands, however, are speculative because there is no management of these other lands specifically for bat protection and enhancement at this time. Potential benefits or adverse effects of the High-Speed Train project have not yet been determined, but could include the creation of new roosting habitat associated with tunneling activities in the Pacheco Pass area (e.g., tunnel shafts, rock disposal sites).

Determination of Significance

Compared to the No Action Alternative, impacts would be **beneficial**, and the Proposed Action would have less than significant cumulative effects.

5.4.16 Pallid Bat

Environmental Consequences/Environmental Effects

Impacts to pallid bats would be the same as impacts to Townsend's big-eared bats. Pallid bats would benefit from the acquisition of a Reserve System of at least 46,496 acres.

Cumulative Effects

Under the Proposed Action, cumulative effects would occur as a result of the following projects:

- Other conservation activities
- High Speed Train

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

Because of the extent of the remaining natural lands in the Study Area, other preservation activities could result in beneficial effects in terms of pallid bat foraging habitat. Potential benefits to roosting habitat on other natural lands, however, are speculative because management of these other lands for bat protection and enhancement is unknown. Potential benefits or adverse effects of the High-Speed Train project have not yet been determined, but could include the creation of new roosting habitat associated with tunneling activities in the Pacheco Pass area (e.g., tunnel shafts, rock disposal sites).

Determination of Significance

Compared to the No Action Alternative, impacts would be **beneficial**, and the Proposed Action would have less than significant cumulative effects.

5.4.17 San Francisco Dusky-Footed Woodrat

Environmental Consequences/Environmental Effects

Under the Proposed Action, urbanization and associated infrastructure development is expected to occur in a similar manner as under the No Action Alternative. Potential impacts to dusky-footed woodrat lodges are expected to be similar to the No Action Alternative. Under both alternatives, avoidance of active lodges may occur as a result of CEQA review of discretionary projects within areas of suitable habitat.

Riparian habitat, which could provide suitable conditions for woodrat nesting, would be preserved to a greater extent under the Proposed Action than under the No Action Alternative. The Proposed Action requires that at least 290 acres of riparian habitat be preserved regardless of the level of impact, and that an additional 50 acres of riparian habitat be restored in order to contribute to species recovery. The proposed Reserve System would include acquisition of upland areas that may be suitable for woodrat foraging, additional areas associated with stream restoration projects. Dusky-footed woodrats may benefit from stream restoration projects in the lower Coyote Creek watershed, where woodrats have been observed during surveys for the Arundo Control Program. However, temporary impacts may occur in areas where woodrats inhabit degraded areas (e.g., disturbed areas colonized by giant reed) that would be subject to highly disruptive stream and riparian restoration activities. Mortality could occur if woodrats are present in stick lodges at the time of construction. Impacts from temporary activities are expected to be the same as under the No Action Alternative.

Cumulative Effects

Under the Proposed Action, cumulative effects to dusky-footed woodrats could occur as a result of other activities that disturb wetland and riparian habitat, such as:

- SCVWD Stream Maintenance Program
- Proposed Three Creeks HCP (Stevens Creek watershed)

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

These activities could disturb active stick lodges, especially to known nesting areas in the lower Coyote Creek watershed that are being affected by the Arundo Control Program (part of the SCVWD Stream Maintenance Program). For the Arundo Control Program, SCVWD has prepared an *implementation plan* for removal of giant reed (e.g., through use of herbicides) in active woodrat areas, which includes a series of management measures to minimize impacts to woodrats (e.g., worker awareness training, buffer zones, construction of alternate woodrat lodges). Although temporary impacts are likely to occur, it is expected that known nesting habitat in riparian areas would experience net benefits as a result of the Arundo Control Program through the restoration and enhancement of natural riparian habitat. Similar adverse effects and benefits may occur as a result of proposed Three Creeks HCP implementation activities in the Stevens Creek watershed, but at this time there is no

implementation plan to minimize woodrat impacts. Other cumulative projects are not expected to contribute to woodrat impacts.

Determination of Significance

Compared to the No Action Alternative, impacts would be **beneficial**, and the Proposed Action would have less than significant cumulative effects.

5.4.18 San Joaquin Kit Fox

Environmental Consequences/Environmental Effects

Under the Proposed Action, urbanization and associated infrastructure development is expected to occur in a manner similar to the No Action Alternative. Potential impacts to kit fox dens are expected to be similar to the No Action Alternative – because kit foxes are federally listed endangered species (and state-listed threatened species), strict survey and avoidance requirements would occur under both alternatives during project development within its known range. Survey requirements, however, are expected to be more rigorous under the Proposed Action because of the implementation of Condition 18.

The Proposed Action would likely improve habitat connectivity and provide greater habitat protection in the Study Area. Proposed measures to improve connectivity include the following:

- Requirements to acquire lands for the Reserve System in a manner that promotes movement along identified linkages. For example, Conservation Action LAND-G9 requires the acquisition (as part of the Reserve System) of 4,100 acres of modeled kit fox habitat north and south of SR 152.
- Conservation Actions that require focused study of specific projects to improve connectivity. Based on the Habitat Plan monitoring program for wildlife movement in target areas, the following measures would be implemented:
  - LM-1: Remove fences and roads in areas where they are no longer needed and where their removal would increase permeability for wildlife.
  - LM-2: When replacing small culverts, ensure that the culvert has a natural bottom and is large enough for larger mammals (e.g., deer, mountain lions) to pass, if feasible. Do not obscure the culvert opening, and use fencing to direct wildlife to the culvert opening.
  - LM-3: Where structurally possible, replace culverts with free-span bridges.
  - LM-4: Ensure that median barrier removal and/or median perforations are considered as alternatives during project design.
  - LM-5: Remove median barriers perforate sections of median barriers along roadways to improve successful wildlife crossings and install fencing or other features to direct wildlife to those open sections within first 20 years of implementation. Use feasibility study to determine location and length of barrier removal.

- Design and construction requirements for covered transportation projects (Condition 6). This condition would require that wildlife movement needs be considered in all covered transportation improvement projects (e.g., highway and mass transit projects, roadway projects and interchange updates, road safety and operational improvements, and dirt road construction). For these projects, data on wildlife movement would be collected for at least 1 year prior to project design (where feasible), wildlife movement across the project footprint would be incorporated into the project design, best management practices would be implemented during project construction, and restoration of disturbed areas would be required after the completion of construction activities.

These actions would not occur under the No Action Alternative.

Indirect impacts from rodent control activities also may be reduced under the Proposed Action. The Proposed Action includes several conservation actions that are expected to result in improved management of ground squirrel populations (e.g., Conservation Actions GRASS-5 and GRASS-6). These measures may enhance kit fox prey abundance and reduce the potential for inadvertent poisoning.

Cumulative Effects

Under the Proposed Action, cumulative effects would occur as a result of the following projects:

- Other conservation activities
- High Speed Train

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

Other land preservation activities (e.g., Mount Hamilton Project) are expected to benefit kit foxes by contributing additional habitat. The Proposed Action would beneficially contribute to increased protection of existing habitat.

As described in Section 5.3.18, kit foxes have been affected by barriers to movement, including SR 152 over Pacheco Pass. The Proposed Action would beneficially contribute to increased movement as described above. The High Speed Train, however, would add a new movement barrier along the SR 152 corridor. This impact could be mitigated by design of the High Speed Train project. Large portions of the alignment in the Pacheco Pass area are expected to be underground in tunnels, which would allow unimpeded movement above ground. In addition, the alignment is expected to include aerial structures and culverts at drainage crossings. If properly designed, these crossings could provide for continued movement across the alignment. Mitigation measures for the High Speed Train would be confirmed during environmental review, which is still in progress.

Determination of Significance

Compared to the No Action Alternative, impacts would be **beneficial**, and the Proposed Action would have a less than cumulatively considerable contribution to potentially significant cumulative effects.

5.4.19 American Badger

Environmental Consequences/Environmental Effects

Under the Proposed Action, urbanization and associated infrastructure development is expected to occur in a similar manner as under the No Action Alternative. Potential impacts to badger dens are expected to be similar to the No Action Alternative. Under both alternatives, avoidance of active dens may occur as a result of CEQA review of discretionary projects within areas of suitable habitat.

Suitable habitat would be preserved to a greater extent under the Proposed Action than under the No Action Alternative. The proposed Reserve System would include a minimum of 13,300 acres of California annual grassland and 4,000 acres of serpentine bunchgrass grassland.

The Proposed Action also may improve habitat connectivity in the Study Area (see discussion above for San Joaquin kit fox). Linkages between natural communities would be enhanced throughout the Study Area, including grasslands along the eastern side of the Santa Clara Valley (Linkages 4 – 7) and between the east and west sides of the Santa Clara Valley (Linkages 8 – 10). Wildlife movement also would be further enhanced by the implementation of Condition 6 for all covered improvements to transportation infrastructure. This emphasis on enhancing connections between natural communities could benefit badger movement, and would not occur under the No Action Alternative.

Indirect impacts from rodent control activities also may be reduced under the Proposed Action. The Proposed Action includes several conservation actions that are expected to result in improved management of ground squirrel populations (e.g., Conservation Actions GRASS-5 and GRASS-6). These measures may enhance prey abundance and reduce the potential for inadvertent poisoning.

Cumulative Effects

Under the Proposed Action, cumulative effects would occur as a result of the following projects:

- Other conservation activities
- High Speed Train

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

Other land preservation activities (e.g., Mount Hamilton Project) are expected to benefit badgers by contributing additional habitat. The Proposed Action would beneficially contribute to increased protection of existing habitat.

As described in Section 5.3.19, badgers have been affected by barriers to movement, including SR 152 over Pacheco Pass and U.S. Highway 101 between San José and Morgan Hill. The Proposed Action would beneficially contribute to increased movement. The High Speed Train, however, would add a new movement barrier along both the SR 152 and U.S. Highway 101 corridors. As describe above for San Joaquin kit fox, mitigation for the alignment over Pacheco Pass (e.g., tunnels, culverts) is expected to be considered during ongoing environmental review for the High Speed Train. Tunnels are unlikely along the

alignment between San José and Morgan Hill, however, and there are few drainage crossings in the area. Environmental review of the High Speed Train should consider potential wildlife movement in this area in a manner consistent with the Proposed Action (e.g., Conservation Actions LM-1 through LM-5).

Determination of Significance

Compared to the No Action Alternative, impacts would be **beneficial**, and the Proposed Action would have a less than cumulatively considerable contribution to potentially significant cumulative effects.

5.4.20 Serpentine Plants

Environmental Consequences/Environmental Effects

Under the Proposed Action, fewer development-related impacts would affect serpentine plants, relative to the No Action Alternative. Under the No Action Alternative, up to 650 acres of serpentine bunchgrass grassland could be developed. Under the Proposed Action, conversion of serpentine bunchgrass grasslands would be limited to 550 acres. This is likely to result in a greater amount of avoided habitat under the Proposed Action. In addition to this general avoidance benefit, the Habitat Plan also requires strict minimization standards for two of these species, as follows:

- Preservation of the remaining Tiburon Indian paintbrush occurrence near the Kirby Canyon Recycling and Disposal Facility, which isn't fully protected under the No Action Alternative (Conservation Action LAND-P9).
- Limitations on extent of impacts to the Coyote ceanothus occurrence that would be partially affected by dam maintenance activities at Anderson Dam (no more than 3,650 individuals, or 5 percent of the individuals in the population adjacent to Anderson Dam, whichever is smaller).

Other impacts to serpentine plant species would occur in the same manner as under the No Action Alternative, but the Proposed Action would impose additional restrictions on the extent of these impacts via additional avoidance and minimization requirements, as follows:

- Condition 20 minimizes effects to all covered plants by requiring covered activities to be confined to the minimum area necessary to complete the activity or construction. This condition also requires monitoring, assessment, and management of avoided plant occurrences.
- If avoidance and minimization is not possible, Condition 19 provides the Implementing Entity with the option to salvage and translocate the individual plants that would be affected. Because of the extensive survey requirements, it is expected that salvage under the Proposed Action would encompass more occurrences than under the No Action Alternative.

- In addition to the normal "stay ahead" provisions for Reserve System acquisition, the Proposed Action contains a specific provision that prohibit all impacts to covered plant occurrences until acquisition targets are met.[13]
- Surveys for covered plants are required in specified areas (see discussion of species-specific conservation actions in Chapter 2) to identify populations of covered plants and assess the conditions of these populations. It is likely that these surveys would discover new occurrences of covered plant species, and provide the Implementing Entity an opportunity to conduct avoidance and minimization activities.
- Total impacts to covered plant occurrences would be capped based on current known occurrences, with cap increases if new occurrences are discovered (see Habitat Plan Tables 4-6 and 5-16).
- If additional occurrences are discovered, those additional occurrences must be acquired as part of the Reserve System. If multiple new occurrences are found, then some additional impacts would be allowed (see Habitat Plan Table 5-16). This would not apply to Tiburon Indian paintbrush, Coyote ceanothus, or Metcalf Canyon jewelflower (i.e., impacts are capped based on known occurrences).

These avoidance and minimization requirements would not occur under the No Action Alternative.

The Reserve System to be established under the Proposed Action is based on a comprehensive reserve acquisition strategy that (among other things) targets most of the remaining serpentine grassland land cover in the Study Area. Conservation Action LAND-G1 requires the acquisition of 4,000 acres of serpentine bunchgrass grassland, 120 acres of serpentine rock outcrops/barrens, and 10 acres of serpentine seeps. This amount of acquisition is substantially more than the amount converted by development activities, and is likely to be greater than the total amount of serpentine land cover types acquired under the No Action Alternative. Five of the serpentine plant species (Mt. Hamilton thistle, fragrant fritillary, smooth lessingia, Metcalf Canyon jewelflower, and most beautiful jewelflower) have specific acquisition requirements for modeled primary (and, in some cases, secondary) habitat (Habitat Plan Table 5-19).

The Habitat Plan also targets Reserve System acquisition to include known occurrences of these eight serpentine plant species (see discussion of species-specific conservation actions in Chapter 2); therefore, preservation of these occurrences would be assured under the Proposed Action. Reserve System acquisition may also benefit currently undocumented occurrences of these species. In addition, a minimum 500-foot buffer would be established between protected plant occurrences and adverse land uses.[14] The No Action Alternative, which is based on a project-by-project review process, precludes this type of landscape-level conservation planning that would be fostered by the Proposed Action. The Proposed Action would result in the preservation, management, and monitoring of more serpentine plant occurrences and suitable habitat than possible under the No Action Alternative.

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[13] Exceptions to this rule are made for the Coyote ceanothus, the impacted occurrence of which is located in the vicinity of Anderson Dam. Due to public safety concerns, retrofit activities may be required prior to mitigation.

[14] This buffer may be reduced or increased in specific circumstances where, based on documented site conditions, plant occurrences are protected from adverse land uses by another means or site conditions warrant a larger buffer.

The Proposed Action also includes a comprehensive reserve management program that would enhance habitat conditions on the 4,000 acres of acquired serpentine grassland, including several programs to control non-native invasive grasses (e.g., grazing, prescribed burning, planting native grasses and forbs, and mowing and hand-pulling non-native grasses). The Proposed Action includes other enhancement measures such as targeted studies, seed collection and other activities to support population creation. For Coyote ceanothus, smooth lessingia, and Metcalf Canyon jewelflower, the Proposed Action requires the creation of new populations of these species if additional occurrences of these species cannot be found and acquired as part of the Reserve System. Although some of these measures could be used on mitigation sites under the No Action Alternative, the coordinated management process across this large Reserve System under the Proposed Action (including comprehensive monitoring and adaptive management) would not occur.

Potential adverse impacts associated with the Reserve System include minor conversion of serpentine grasslands (approximately 23 acres) and mixed serpentine chaparral (approximately 4 acres) for trails, trailhead facilities, and similar reserve operations and management uses. Potential impacts from management activities and public recreation (where allowed) could occur, but these impacts are likely to be minor and similar to the No Action Alternative (e.g., managed as grazing land). Adverse effects are minor compared to the benefits of the Proposed Action.

Indirect impacts (e.g., from nitrogen deposition) are expected to be similar to the No Action Alternative. The effects of nitrogen deposition on serpentine habitat may be reduced, however, because of the management and monitoring efforts by the Implementing Entity to enhance habitat conditions on serpentine grasslands.

Cumulative Effects

Under the Proposed Action, cumulative effects would occur as a result of the following projects:

- Other conservation activities
- High Speed Train

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

Cumulative effects to serpentine plants could occur as a result of other habitat preservation activities, such as the acquisition and management of suitable habitat by others (e.g., The Nature Conservancy). Cumulative impacts are expected to be minor, however, because most of the remaining serpentine grassland land cover types would be acquired, managed, and monitored as part of the Reserve System under the Proposed Action. Any additional habitat preservation would likely be beneficial. Chapter 16, Air Quality and Greenhouse Gases, describes how the regional ozone attainment strategy emphasizes regional rail systems, including the High Speed Train project. Therefore, it is possible that the High Speed Train project could benefit habitat conditions for serpentine plants by supporting a reduction in vehicle traffic and an associated reduction in nitrogen deposition. Adverse impacts could occur from other planned activities, including a new transmission line that would impact the population of Coyote ceanothus at Anderson Reservoir. Other cumulative projects are not expected to contribute to cumulative impacts.

Determination of Significance

Compared to the No Action Alternative, impacts (including cumulative effects) would be **beneficial**.

5.4.21 Bigscale Balsamroot

Environmental Consequences/Environmental Effects

Under the Proposed Action, development and related infrastructure activities covered under the Habitat Plan would result in impacts to bigscale balsamroot habitat such that the total amount would be reduced similar to the No Action Alternative. The one known occurrence of bigscale balsamroot at Coyote Lake-Harvey Bear Ranch County Park would remain protected in an existing open space area (same as the No Action Alternative).

Implementation of the Proposed Action would have ancillary benefits to bigscale balsamroot. Acquisition of the Reserve System would include approximately 30,000 acres of grasslands and oak woodlands, which are expected to contain suitable habitat for this species. The Proposed Action also includes a comprehensive reserve management program that would enhance habitat conditions on grasslands and oak woodlands, including measures such as grazing, prescribed burning, planting native grasses and forbs, mowing and hand-pulling non-native grasses, and controlling feral pig populations.

Cumulative Effects

Under the Proposed Action, cumulative effects would occur as a result of the following projects:

- Other conservation activities

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

Because of the extent of the remaining natural lands in the Study Area, other preservation activities could result in substantial beneficial effects. Other cumulative projects are not expected to contribute to cumulative impacts.

Determination of Significance

Compared to the No Action Alternative, impacts (including cumulative effects) would be **beneficial**.

5.4.22 Chaparral Harebell

Environmental Consequences/Environmental Effects

Under the Proposed Action, development and related infrastructure activities covered under the Habitat Plan would result in impacts to chaparral harebell habitat such that the total amount would be reduced similar to the No Action Alternative. The one known occurrence of chaparral harebell, however, would remain protected in an existing open space area (same as the No Action Alternative). For discretionary projects, mitigation would be on a project-by-project basis as described for the No Action Alternative. Mitigation of any type is unlikely for impacts from projects that are not subject to discretionary review.

Implementation of the Proposed Action would have ancillary benefits to chaparral harebell. Acquisition of the Reserve System would include serpentine chaparral (700 acres) and blue oak woodland (1,100 acres), which are expected to contain suitable habitat for this species. The Proposed Action also includes a comprehensive reserve management program that would enhance habitat conditions on these land cover types, including measures such as grazing, prescribed burning, planting native grasses and forbs, feral pig control, and mowing and hand-pulling non-native grasses.

Cumulative Effects

Under the Proposed Action, cumulative effects would occur as a result of the following projects:

- Other conservation activities

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

Because of the extent of the remaining natural lands in the Study Area, other preservation activities could result in substantial beneficial effects. Other cumulative projects are not expected to contribute to cumulative impacts.

Determination of Significance

Compared to the No Action Alternative, impacts (including cumulative effects) would be **beneficial**.

5.4.23 Congdon's Tarplant

Environmental Consequences/Environmental Effects

Under the Proposed Action, development and related infrastructure activities covered under the Habitat Plan would result in impacts to Congdon's tarplant habitat such that the total amount would be reduced similar to the No Action Alternative. For discretionary projects, mitigation would be on a project-by-project basis as described for the No Action Alternative. Mitigation of any type is unlikely for impacts from projects that are not subject to discretionary review.

Implementation of the Proposed Action would have ancillary benefits to Congdon's tarplant. Acquisition of the Reserve System would include California annual grasslands (at least 13,300 acres), which are expected to contain suitable habitat for this species. The Proposed Action also includes a comprehensive reserve management program that would enhance habitat conditions on grasslands, including measures such as grazing, prescribed burning, planting native grasses and forbs, and mowing and hand-pulling non-native grasses.

Cumulative Effects

Under the Proposed Action, cumulative effects would occur as a result of the following projects:

- Other conservation activities

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

Because of the extent of the remaining natural lands in the Study Area, other preservation activities could result in substantial beneficial effects. Other cumulative projects are not expected to contribute to cumulative impacts.

Determination of Significance

Compared to the No Action Alternative, impacts (including cumulative effects) would be **beneficial**.

5.4.24 San Francisco Collinsia

Environmental Consequences/Environmental Effects

Under the Proposed Action, development and related infrastructure activities covered under the Habitat Plan would result in impacts to San Francisco collinsia habitat such that the total amount would be reduced similar to the No Action Alternative. The one known occurrence of San Francisco collinsia would be affected in the same manner as under the No Action Alternative (i.e., by seismic safety retrofit activities at Anderson Reservoir). Implementation of the Proposed Action would have ancillary benefits to the San Francisco collinsia. At least 5,000 acres of potentially suitable habitat (mixed serpentine chaparral, northern coastal scrub/Diablan sage scrub, coast live oak forest and woodland) would be acquired for the Reserve System. The Proposed Action also includes a comprehensive reserve management program that would enhance habitat conditions in the chaparral and woodland areas, including measures such as prescribed burning and controlling feral pig populations.

Cumulative Effects

Under the Proposed Action, cumulative effects would occur as a result of the following projects:

- Other conservation activities

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

Because of the extent of the remaining natural lands in the Study Area, other preservation activities could result in substantial beneficial effects. Other cumulative projects are not expected to contribute to cumulative impacts.

Determination of Significance

Compared to the No Action Alternative, impacts (including cumulative effects) would be **beneficial**.

5.4.25 Loma Prieta Hoita

Environmental Consequences/Environmental Effects

Under the Proposed Action, development and related infrastructure activities covered under the Habitat Plan would result in impacts to Loma Prieta hoita habitat such that the

total amount would be reduced similar to the No Action Alternative. However, impacts to known occurrences of Loma Prieta hoita, which are foreseeable under the No Action Alternative, would be prohibited under the Proposed Action. The Habitat Plan also requires the addition of four existing occurrences into the Reserve System (Conservation Action LAND-P11). In addition, if new occurrences are discovered, the Habitat Plan would limit the extent of impacts to no more than two of these newly discovered occurrences. These avoidance requirements are unlikely to occur under the No Action Alternative.

The overall benefits of the Proposed Action, compared to the No Action Alternative, would be similar to the benefits to serpentine plant species described above. These include increased survey requirements, avoidance and minimization measures, acquisition of suitable habitat, mitigation in advance of impacts, impact caps, and enhancement of Reserve System lands. At least 7,100 acres of mixed oak woodland and forest, and 2,900 acres of coast live oak forest and woodland, would be incorporated into the Reserve System.

Cumulative Effects

Under the Proposed Action, cumulative effects would occur as a result of the following projects:

- Other conservation activities

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

Because of the extent of the remaining natural lands in the Study Area, other preservation activities could result in substantial beneficial effects. Other cumulative projects are not expected to contribute to cumulative impacts.

Determination of Significance

Compared to the No Action Alternative, impacts (including cumulative effects) would be **beneficial**.

5.4.26 Hall's Bush Mallow

Environmental Consequences/Environmental Effects

Under the Proposed Action, development and related infrastructure activities covered under the Habitat Plan would result in impacts to Hall's bush mallow habitat such that the total amount would be reduced similar to the No Action Alternative. Impacts to known occurrences of Hall's bush mallow would occur in the same manner as under the No Action Alternative. For discretionary projects, mitigation would be on a project-by-project basis as described for the No Action Alternative. Mitigation of any type is unlikely for impacts from projects that are not subject to discretionary review.

Implementation of the Proposed Action would have ancillary benefits to Hall's bush mallow. Acquisition of the Reserve System would include 400 acres of northern mixed chaparral/chamise chaparral, as well as other land covers that may provide Hall's bush mallow habitat. The Proposed Action also includes a comprehensive reserve management program that would enhance habitat conditions on these land cover types, including

measures such as grazing, prescribed burning, planting native grasses and forbs, and mowing and hand-pulling non-native grasses.

Cumulative Effects

Under the Proposed Action, cumulative effects would occur as a result of the following projects:

- Other conservation activities

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

Because of the extent of the remaining natural lands in the Study Area, other preservation activities could result in substantial beneficial effects. Other cumulative projects are not expected to contribute to cumulative impacts.

Determination of Significance

Compared to the No Action Alternative, impacts (including cumulative effects) would be **beneficial**.

5.4.27 Santa Cruz Mountains Beardtongue

Environmental Consequences/Environmental Effects

Under the Proposed Action, development and related infrastructure activities covered under the Habitat Plan would result in impacts to Santa Cruz Mountains beardtongue habitat such that the total amount would be reduced similar to the No Action Alternative. For discretionary projects, mitigation would be on a project-by-project basis as described for the No Action Alternative. Mitigation of any type is unlikely for impacts from projects that are not subject to discretionary review.

Implementation of the Proposed Action would have ancillary benefits to Santa Cruz Mountains beardtongue. Acquisition of the Reserve System would include northern coastal scrub/Diablan sage scrub (1,400 acres), mixed evergreen forest (20 acres), and redwood forest (10 acres), which are expected to contain suitable habitat for this species. The Proposed Action also includes a comprehensive reserve management program that would enhance habitat conditions on these land cover types, including measures such as prescribed burning, mechanical thinning, grazing, and controlling feral pig populations.

Cumulative Effects

Under the Proposed Action, cumulative effects would occur as a result of the following projects:

- Other conservation activities

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

Because of the extent of the remaining natural lands in the Study Area, other preservation activities could result in substantial beneficial effects. Other cumulative projects are not expected to contribute to cumulative impacts.

Determination of Significance

Compared to the No Action Alternative, impacts (including cumulative effects) would be **beneficial**.

5.5 Alternative A

The biological resources impacts of Alternative A would be similar to the impacts of the Proposed Action. Alternative A builds upon the No Action Alternative by adding a regional framework for biological resources impact avoidance, minimization, mitigation, and natural community conservation. The Habitat Plan that would be implemented under Alternative A also would result in similar or reduced levels of impacts and superior mitigation compared to the No Action Alternative for the same reasons as described above in the introduction to Section 5.4. As described in Section 2.5, however, the modified Habitat Plan under Alternative A would only be implemented for a period of 30 years. This would result in a smaller Reserve System, because some of the activities driving the size of the Reserve System under the Proposed Action would be implemented after Year 30. For those activities occurring after Year 30, impacts to biological resources would be the same as under the No Action Alternative.

5.5.1 Bay Checkerspot Butterfly

Environmental Consequences/Environmental Effects

Under Alternative A, development and related infrastructure activities would result in impacts to serpentine bunchgrass grasslands such that the amount of this land cover would be reduced similar to the No Action Alternative. Most of the anticipated development activity within Bay checkerspot butterfly habitat would occur within the 30-year permit term, but some development (e.g., in Morgan Hill and in some rural areas) would occur after Year 30. Development prior to Year 30 would have similar beneficial and adverse effects as the Proposed Action, including a comprehensive strategy to avoid and minimize impacts to Bay checkerspot butterfly habitat, and a targeted reserve assembly and management strategy. After Year 30, impacts would be the same as the No Action Alternative.

Cumulative Effects

Same as the Proposed Action.

Determination of Significance

Same as the Proposed Action.

5.5.2 Opler's Longhorn Moth

Environmental Consequences/Environmental Effects

Same as Bay checkerspot butterfly.

Cumulative Effects

Same as the Proposed Action.

Determination of Significance

Same as the Proposed Action.

5.5.3 Foothill Yellow-Legged Frog

Environmental Consequences/Environmental Effects

Under Alternative A, impacts to foothill yellow-legged frogs are expected to be similar to the Proposed Action (i.e., beneficial compared to the No Action Alternative). The amount of preserved and restored riverine habitat, however, would be less than under the Proposed Action because of the smaller Reserve System.

Cumulative Effects

Same as the Proposed Action.

Determination of Significance

Same as the Proposed Action.

5.5.4 Fish (North County Streams)

Environmental Consequences/Environmental Effects

Under Alternative A, impacts to steelhead, salmon, and lampreys are expected to be similar to the Proposed Action (i.e., potentially beneficial compared to the No Action Alternative). The amount of preserved and restored riverine and riparian habitat, however, would be less than under the Proposed Action because of the smaller Reserve System.

Cumulative Effects

Same as the Proposed Action.

Determination of Significance

Same as the Proposed Action.

5.5.5 Fish (South County Streams)

Environmental Consequences/Environmental Effects

Under Alternative A, impacts to steelhead, lampreys, and Monterey roach are expected to be similar to the Proposed Action (i.e., potentially beneficial compared to the No Action Alternative). The amount of preserved and restored riverine and riparian habitat, however, would be less than under the Proposed Action because of the smaller Reserve System.

Cumulative Effects

Same as the Proposed Action.

Determination of Significance

Same as the Proposed Action.

5.5.6 California Tiger Salamander, California Red-Legged Frog, and Western Pond Turtle

Environmental Consequences/Environmental Effects

Under Alternative A, impacts to these species are expected to be similar to the Proposed Action (i.e., beneficial compared to the No Action Alternative). The amount of preserved habitat, however, would be less than under the Proposed Action because of the smaller Reserve System.

Cumulative Effects

Same as the Proposed Action.

Determination of Significance

Same as the Proposed Action.

5.5.7 California Whipsnake

Environmental Consequences/Environmental Effects

Under Alternative A, impacts to California whipsnake are expected to be similar to the Proposed Action (i.e., beneficial compared to the No Action Alternative) because of the commitment to preserve and manage chaparral land cover. The amount of preserved habitat, however, would be less than under the Proposed Action because of the smaller Reserve System.

Cumulative Effects

Same as the Proposed Action.

Determination of Significance

Same as the Proposed Action.

5.5.8 Golden Eagle

Environmental Consequences/Environmental Effects

Under Alternative A, impacts to golden eagles are expected to be similar to the Proposed Action (i.e., beneficial compared to the No Action Alternative) because of the commitment to preserve and manage the wide range of natural communities that provide suitable foraging habitat. The amount of preserved habitat, however, would be less than under the Proposed Action because of the smaller Reserve System.

Cumulative Effects

Same as the Proposed Action.

Determination of Significance

Same as the Proposed Action.

5.5.9 Burrowing Owl

Environmental Consequences/Environmental Effects

Under Alternative A, development and related infrastructure activities would result in impacts to burrowing owl habitat such that the amount of these land cover types would be reduced similar to the No Action Alternative. Most of the anticipated development activity within these areas would occur within the 30-year permit term. Development prior to Year 30 would have similar effects as the Proposed Action, including strict monitoring of burrowing owl populations and development constraints if populations do not meet target growth trends. Activities within the expanded Study Area for burrowing owl conservation would be the same as under the Proposed Action. After Year 30, impacts would be the same as the No Action Alternative.

Cumulative Effects

Same as the Proposed Action.

Determination of Significance

Same as the Proposed Action.

5.5.10 Least Bell's Vireo

Environmental Consequences/Environmental Effects

Under Alternative A, impacts to least Bell's vireos are expected to be similar to the Proposed Action (i.e., beneficial compared to the No Action Alternative). The amount of preserved riparian habitat, however, would be less than under the Proposed Action because of the smaller Reserve System.

Cumulative Effects

Same as the Proposed Action.

Determination of Significance

Same as the Proposed Action.

5.5.11 Tricolored Blackbird

Environmental Consequences/Environmental Effects

Under Alternative A, impacts to tricolored blackbirds are expected to be similar to the Proposed Action (i.e., beneficial compared to the No Action Alternative). The amount of preserved breeding and foraging habitat, however, would be less than under the Proposed Action because of the smaller Reserve System and little or no tricolored blackbird foraging habitat mitigation between Years 30 and 50.

Cumulative Effects

Same as the Proposed Action.

Determination of Significance

Same as the Proposed Action.

5.5.12 Bank Swallow

Environmental Consequences/Environmental Effects

Under Alternative A, impacts to bank swallows are expected to be similar to the Proposed Action (i.e., beneficial compared to the No Action Alternative) because of the extensive stream restoration activities. The amount of stream restoration, however, would be less than under the Proposed Action because of the reduced commitment to habitat preservation, restoration, and creation.

Cumulative Effects

Same as the Proposed Action.

Determination of Significance

Same as the Proposed Action.

5.5.13 Townsend's Big-Eared Bat and Pallid Bat

Environmental Consequences/Environmental Effects

Under Alternative A, impacts to these two bat species are expected to be similar to the Proposed Action (i.e., beneficial compared to the No Action Alternative) because of the commitment to preserve, restore, and manage the broad range of habitats used by these species. The amount of preserved and restored habitat, however, would be less than under the Proposed Action because of the smaller Reserve System.

Cumulative Effects

Same as the Proposed Action.

Determination of Significance

Same as the Proposed Action.

5.5.14 San Francisco Dusky Footed Woodrat

Environmental Consequences/Environmental Effects

Under Alternative A, impacts to dusky-footed woodrats are expected to be similar to the Proposed Action (i.e., short-term adverse effects, but long-term benefits compared to the No Action Alternative). The amount of preserved riparian habitat, however, would be less than under the Proposed Action because of the smaller Reserve System.

Cumulative Effects

Same as the Proposed Action.

Determination of Significance

Same as the Proposed Action.

5.5.15 San Joaquin Kit Fox

Environmental Consequences/Environmental Effects

Under Alternative A, impacts to San Joaquin kit fox are expected to be similar to the Proposed Action (i.e., beneficial compared to the No Action Alternative). The amount of preserved movement and foraging habitat, however, would be less than under the Proposed Action because of the smaller Reserve System.

Cumulative Effects

Same as the Proposed Action.

Determination of Significance

Same as the Proposed Action.

5.5.16 American Badger

Environmental Consequences/Environmental Effects

Under Alternative A, impacts to badgers are expected to be similar to the Proposed Action (i.e., beneficial compared to the No Action Alternative). The amount of preserved grassland, however, would be less than under the Proposed Action because of the smaller Reserve System and little or no grassland mitigation between Years 30 and 50.

Cumulative Effects

Same as the Proposed Action.

Determination of Significance

Same as the Proposed Action.

5.5.17 Serpentine Plants

Environmental Consequences/Environmental Effects

Under Alternative A, development and related infrastructure activities would result in impacts to serpentine grasslands and mixed serpentine chaparral such that the amount of this land cover would be reduced similar to the No Action Alternative. Most of the anticipated development activity within these areas would occur within the 30-year permit term, but some development (e.g., in Morgan Hill and in some rural areas) would occur after Year 30. Development prior to Year 30 would have similar beneficial and adverse effects as the Proposed Action, including a comprehensive strategy to avoid and minimize impacts to serpentine plant occurrences, and a targeted reserve assembly and management strategy. After Year 30, impacts would be the same as the No Action Alternative.

Cumulative Effects

Same as the Proposed Action.

Determination of Significance

Same as the Proposed Action.

5.5.18 Bigscale Balsamroot

Environmental Consequences/Environmental Effects

Under Alternative A, impacts to bigscale balsamroot are expected to be similar to the Proposed Action (i.e., beneficial compared to the No Action Alternative) because of the commitment to preserve and manage grasslands and oak woodlands. The amount of preserved habitat, however, would be less than under the Proposed Action because of the smaller Reserve System.

Cumulative Effects

Same as the Proposed Action.

Determination of Significance

Same as the Proposed Action.

5.5.19 Chaparral Harebell

Environmental Consequences/Environmental Effects

Under Alternative A, impacts to chaparral harebell are expected to be similar to the Proposed Action (i.e., beneficial compared to the No Action Alternative) because of the commitment to preserve and manage serpentine chaparral and blue oak woodlands. The amount of preserved habitat, however, would be less than under the Proposed Action because of the smaller Reserve System.

Cumulative Effects

Same as the Proposed Action.

Determination of Significance

Same as the Proposed Action.

5.5.20 Congdon's Tarplant

Environmental Consequences/Environmental Effects

Under Alternative A, impacts to Congdon's tarplant are expected to be similar to the Proposed Action (i.e., beneficial compared to the No Action Alternative) because of the commitment to preserve and manage California annual grasslands. The amount of preserved habitat, however, would be less than under the Proposed Action because of the smaller Reserve System.

Cumulative Effects

Same as the Proposed Action.

Determination of Significance

Same as the Proposed Action.

5.5.21 San Francisco Collinsia

Environmental Consequences/Environmental Effects

Under Alternative A, impacts to San Francisco collinsia are expected to be similar to the Proposed Action (i.e., beneficial compared to the No Action Alternative) because of the commitment to preserve and manage the wide range of suitable habitat types used by this species. The amount of preserved habitat, however, would be less than under the Proposed Action because of the smaller Reserve System.

Cumulative Effects

Same as the Proposed Action.

Determination of Significance

Same as the Proposed Action.

5.5.22 Loma Prieta Hoita

Environmental Consequences/Environmental Effects

Under Alternative A, development and related infrastructure activities would result in impacts to Loma Prieta hoita habitat such that the amount of these land cover types would be reduced similar to the No Action Alternative. Most of the anticipated development activity within these areas would occur within the 30-year permit term, but some development (e.g., in Morgan Hill and in some rural areas) would occur after Year 30. Development prior to Year 30 would have similar beneficial and adverse effects as the Proposed Action, including a comprehensive strategy to avoid impacts to Loma Prieta hoita occurrences, and a targeted reserve assembly and management strategy. After Year 30, impacts would be the same as the No Action Alternative.

Cumulative Effects

Same as the Proposed Action.

Determination of Significance

Same as the Proposed Action.

5.5.23 Hall's Bush Mallow

Environmental Consequences/Environmental Effects

Under Alternative A, impacts to Hall's bush mallow are expected to be similar to the Proposed Action (i.e., beneficial compared to the No Action Alternative) because of the commitment to preserve and manage northern mixed chaparral/chemise chaparral. The amount of preserved habitat, however, would be less than under the Proposed Action because of the smaller Reserve System.

Cumulative Effects

Same as the Proposed Action.

Determination of Significance

Same as the Proposed Action.

5.5.24 Santa Cruz Mountains Beardtongue

Environmental Consequences/Environmental Effects

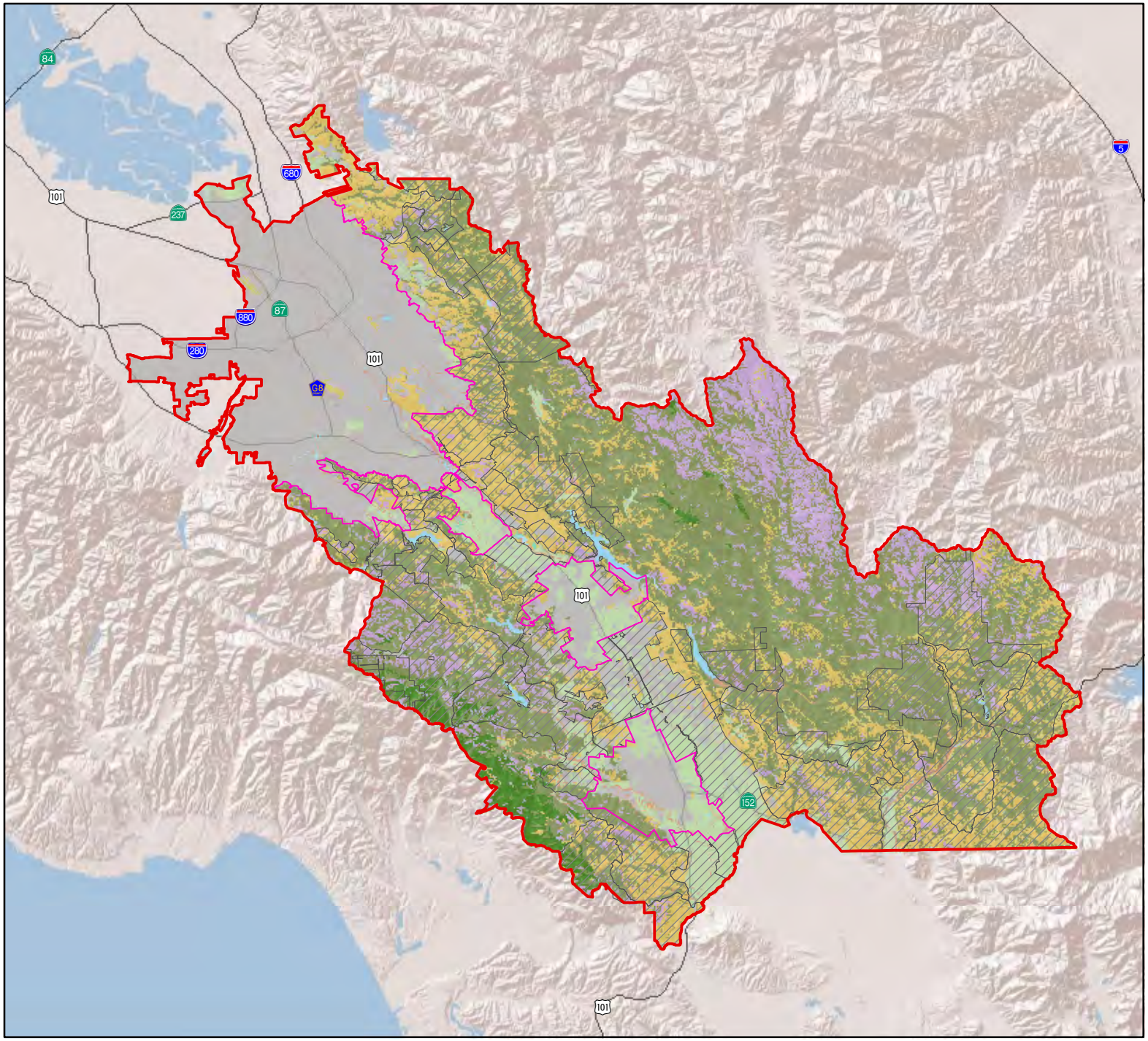
Under Alternative A, impacts to Santa Cruz Mountains beardtongue are expected to be similar to the Proposed Action (i.e., beneficial compared to the No Action Alternative) because of the commitment to preserve and manage northern coastal scrub/Diablan sage scrub, mixed evergreen forest, and redwood forest. The amount of preserved habitat, however, would be less than under the Proposed Action because of the smaller Reserve System.

Cumulative Effects

Same as the Proposed Action.

Determination of Significance

Same as the Proposed Action.



VICINITY MAP

LEGEND

Natural Communities

- Grasslands
- Chaparral & Northern Coastal Scrub
- Oak Woodland
- Riparian Forest and Scrub
- Conifer Woodland
- Wetland
- Aquatic
- Agricultural
- Developed

Other Data

- Study Area
- Planning Limit of Urban Growth
- Potential Reserve Areas

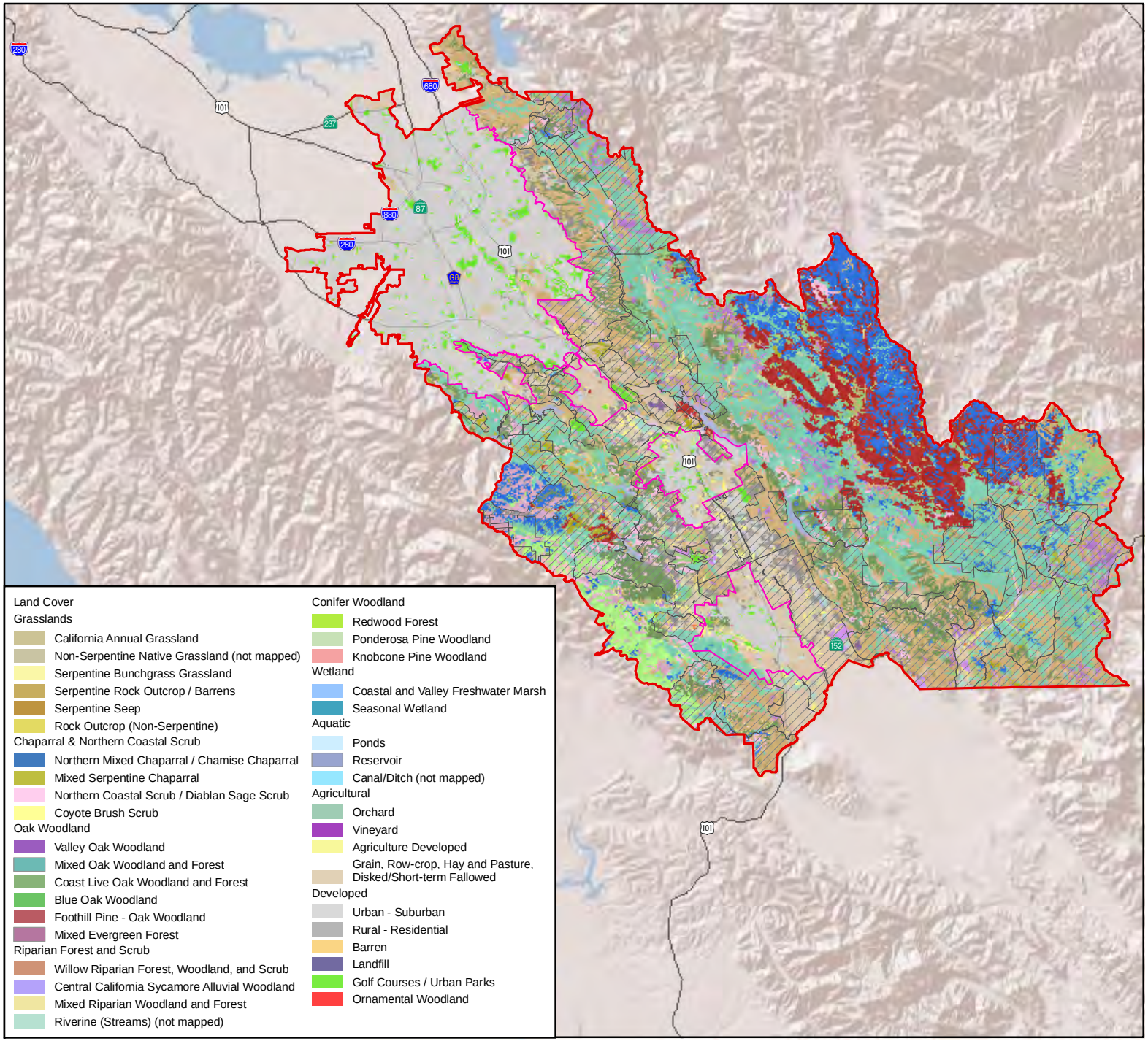
N

0 2.5 5

Miles

FIGURE 5-1
Natural Communities
Santa Clara Valley HP EIR/EIS
Santa Clara County, California

CH2MHILL



VICINITY MAP

Legend

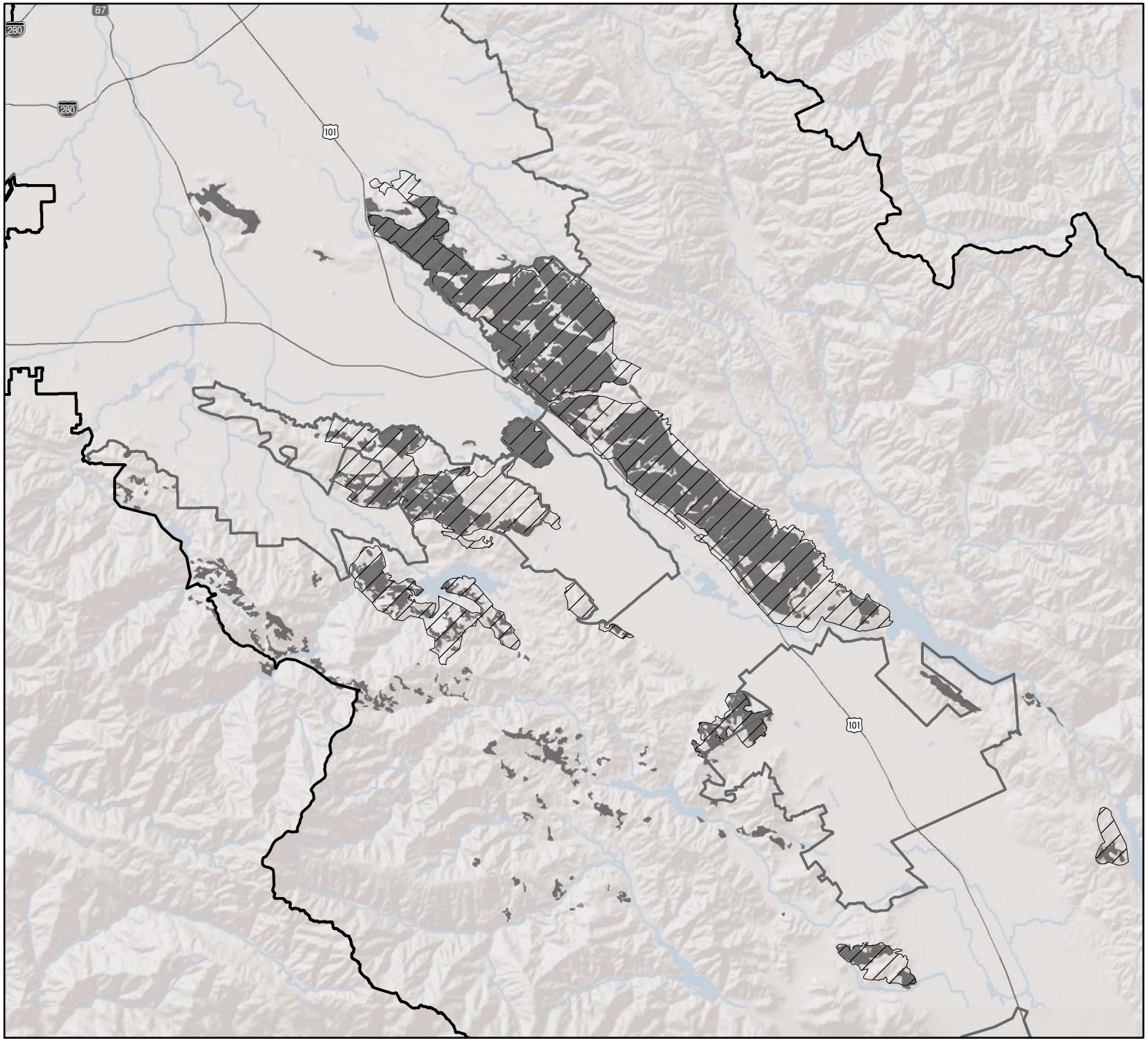
- Study Area
- Planning Limit of Urban Growth
- Potential Reserve Areas

N

0 3 6
Miles

FIGURE 5-2
Land Cover
Santa Clara Valley HP EIR/EIS
Santa Clara County, California

CH2MHILL



VICINITY MAP

LEGEND

- Serpentine Bunchgrass Grassland
- Bay Checkerspot Butterfly Critical Habitat
- Study Area
- Planning Limit of Urban Growth

Notes:
Data courtesy of U.S. Fish and Wildlife Service, Aug. 2008 and ICF International (2010).

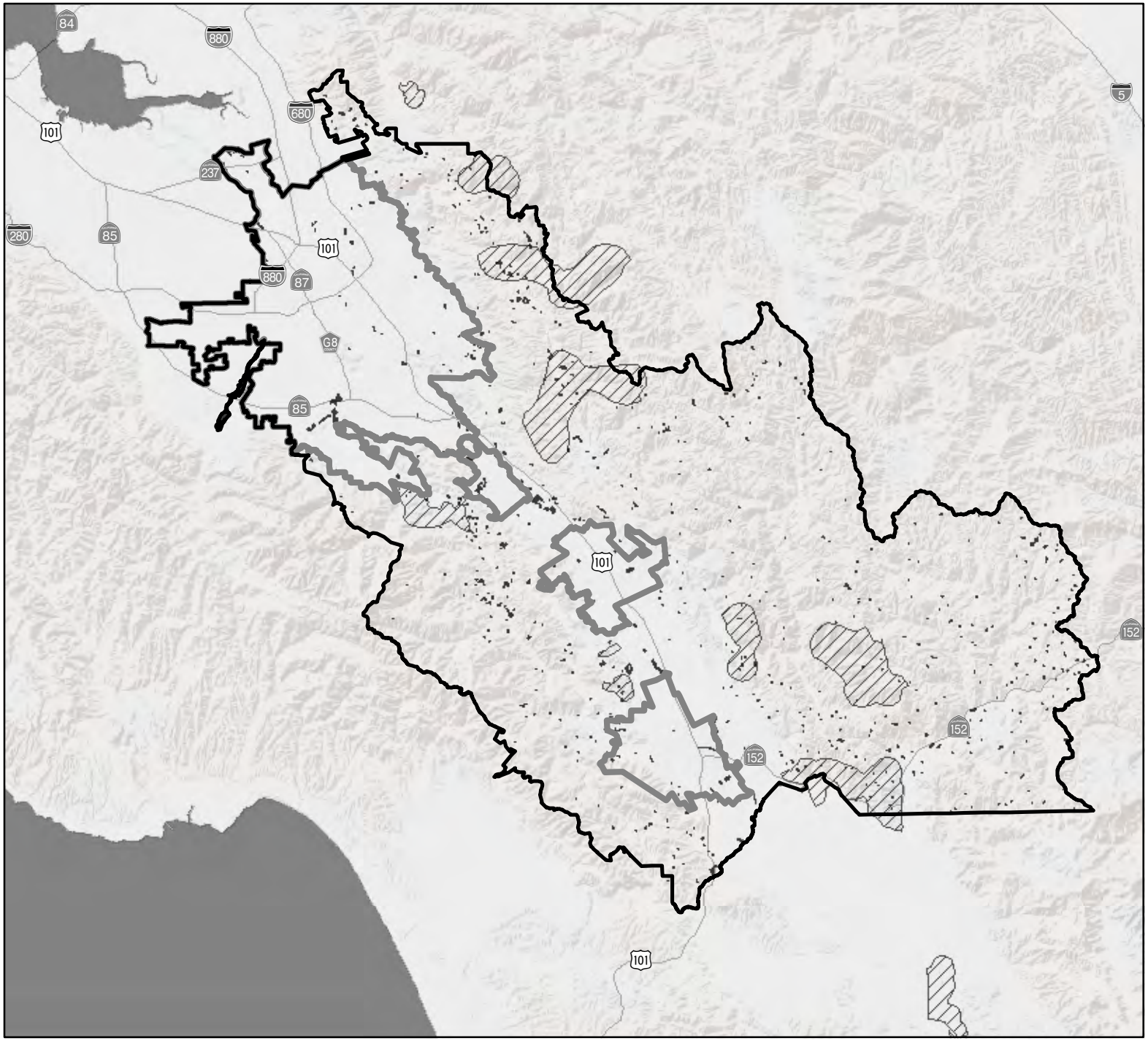
N

0 1 2
Miles

FIGURE 5-3
Land Cover Supporting Bay Checkerspot Butterfly Habitat
Santa Clara Valley HP EIR/EIS
Santa Clara County, California

CH2MHILL

SAC \\ZION\SACGIS\PROJ\SANTACLARACOUNTY\361097\MAPFILES\EIREIS_MAPS\FIGURE5-3_BAYCHECKERSPOTBUTTERFLYHABITAT.MXD SSCOPES 11/17/2010 10:51:30 AM



VICINITY MAP

LEGEND

- Breeding Habitat Land Covers (Coastal and Valley Freshwater Marsh, Seasonal Wetland and Ponds)
- California Tiger Salamander Critical Habitat
- Study Area
- Planning Limit of Urban Growth

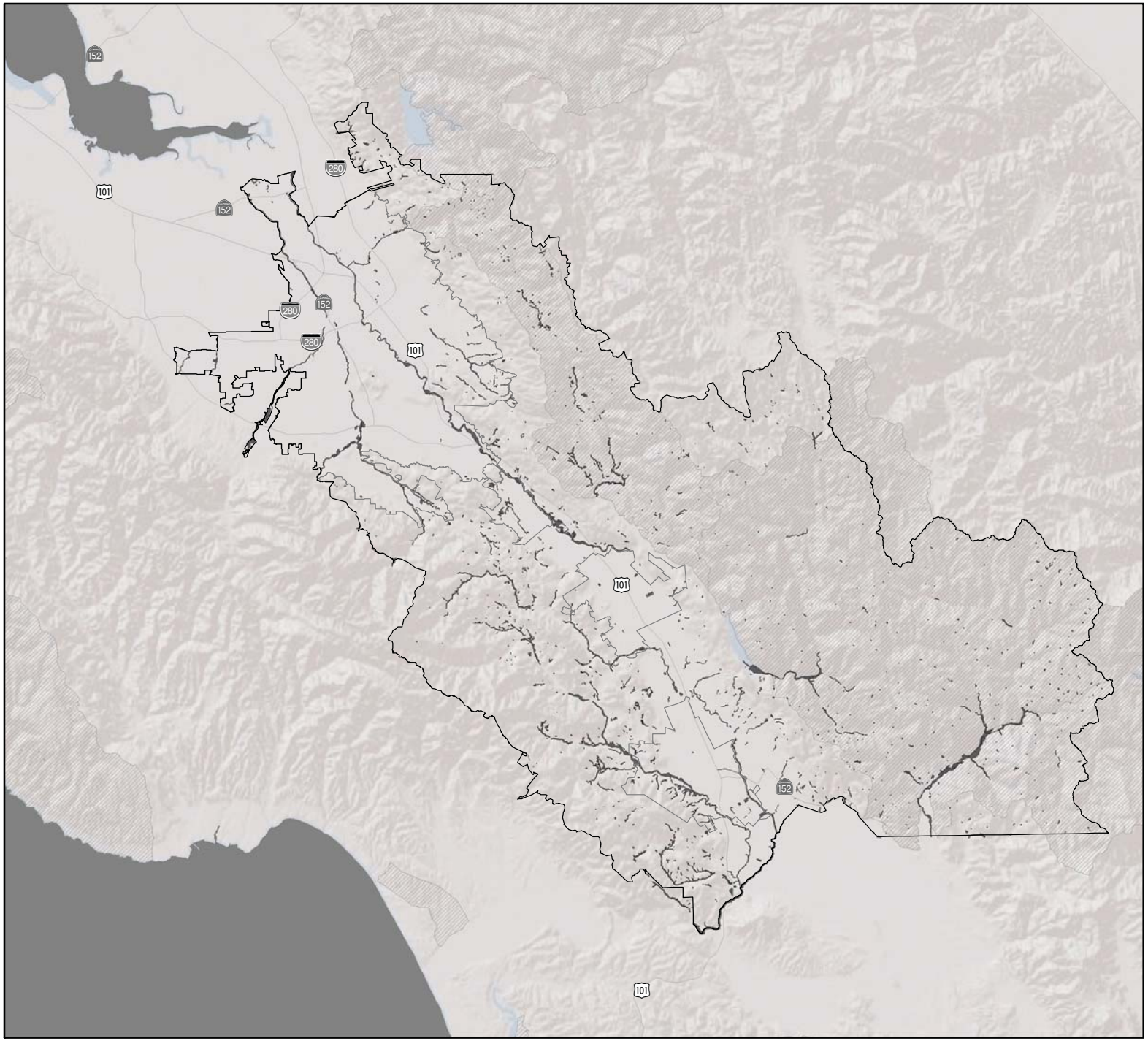
Notes:
Data courtesy of U.S. Fish and Wildlife Service, Aug. 2008 and ICF International (2010).

N

0 3 6
Miles

FIGURE 5-4
Land Covers Supporting California Tiger Salamander Breeding Habitat
Santa Clara Valley HP EIR/EIS
Santa Clara County, California

CH2MHILL



VICINITY MAP

LEGEND

- Primary Habitat Land Covers (Riparian, Riverine, Coastal and Valley Freshwater Marsh, Seasonal Wetland, Pond)
- California Red-Legged Frog Critical Habitat
- Study Area
- Planning Limit of Urban Growth

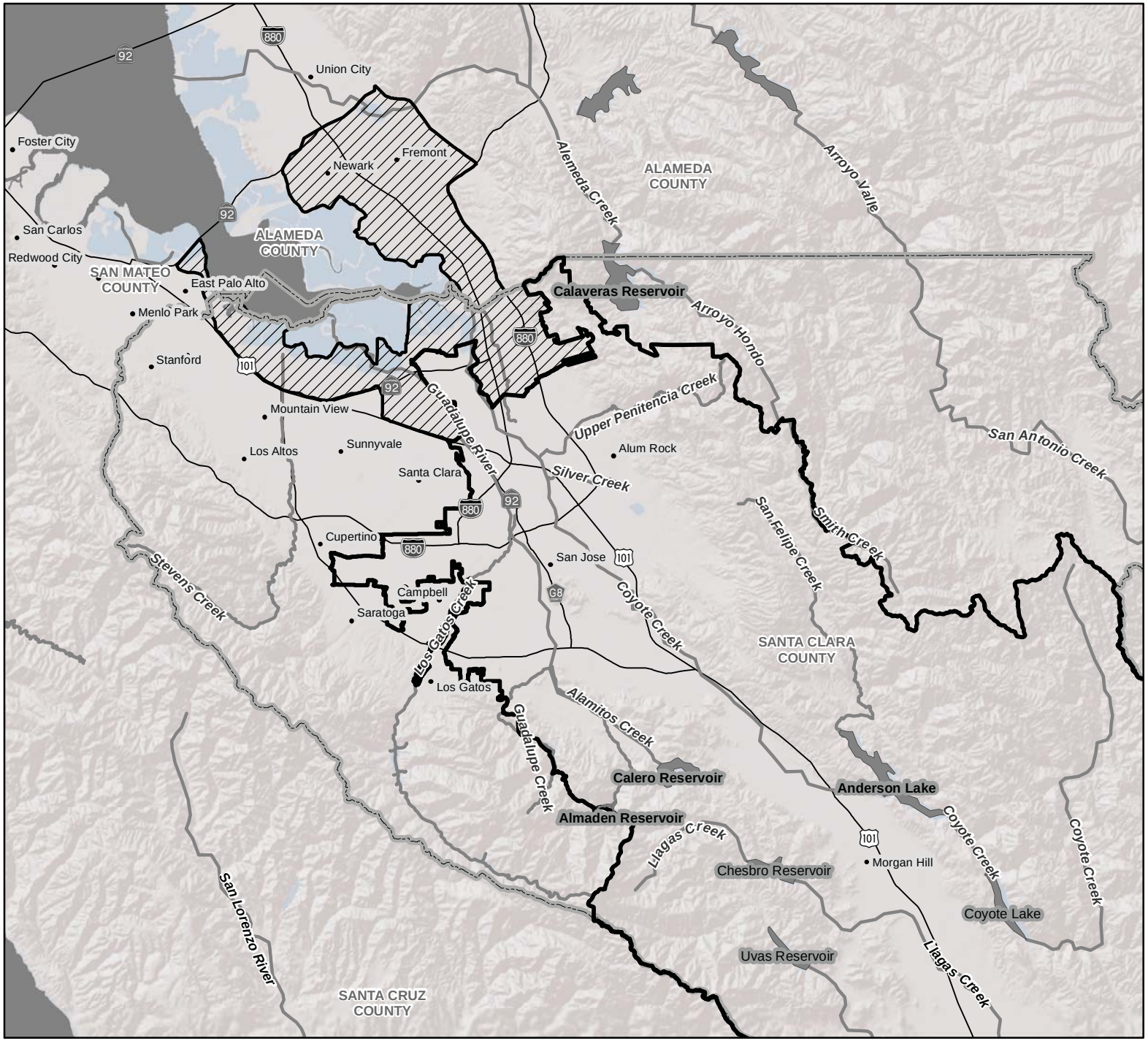
Notes:
Data courtesy of U.S. Fish and Wildlife Service, Aug. 2008 and ICF International (2010).

N

0 3 6
Miles

FIGURE 5-5
Land Cover Types Supporting California Red-Legged Frog Primary Habitat
Santa Clara Valley HP EIR/EIS
Santa Clara County, California

CH2MHILL



VICINITY MAP

LEGEND

- Cities
- Rivers and Streams
- Lakes and Reservoirs
- Study Area
- Santa Clara County
- Expanded Study Area for Burrowing Owl Conservation

N

0 5
Miles

FIGURE 5-6
Expanded Study Area for Burrowing Owl Conservation
Santa Clara Valley HP EIR/EIS
Santa Clara County, California

CHAPTER 6

Land Use

6.1 Environmental Setting/Affected Environment

This chapter examines existing land use conditions and land use plans in the Study Area. It provides an overview of the primary land use agencies within the Study Area and a brief description of each agency's mission and jurisdiction. This chapter also provides history and context for future development in the Study Area, reviews existing land-use conditions and relevant land use plans, and presents the criteria used to determine land use categories for the Habitat Plan.

The Study Area is located in Santa Clara County. Land use plans and policies have been established by the County and by the Cities of San José, Morgan Hill, and Gilroy. Land use designations within the Study Area include parks and open space, agriculture, and urban uses (Figure 6-1).

6.1.1 Local Plans and Policies

Santa Clara County

The Santa Clara Valley runs the entire length of the County from north to south, ringed by the Diablo Range on the east, and the Santa Cruz Mountains on the west. The Valley is generally split into two geographic regions, the North Valley and the South Valley. Salt marshes, tidal wetlands, and mostly abandoned salt ponds lie in the northern part of the County, adjacent to San Francisco Bay (County of Santa Clara, 2006a). The North Valley is extensively urbanized comprising approximately 90 percent of the County's residents. Twelve of the County's 14 cities are located in the North Valley, while the remaining two cities, Morgan Hill and Gilroy, are located in the South Valley. The South Valley remains predominantly rural, with the exception of Morgan Hill, Gilroy, and the small unincorporated community of San Martin. Low-density residential developments are also scattered along the Valley floor and foothill areas (County of Santa Clara 2006b).

As early as 1970, the County and cities of the Valley anticipated rapid growth and began implementing policies that would help guide development, prevent sprawl, and protect the abundant natural resources of the region. The most recent Santa Clara County General Plan was adopted in 1994. An important cornerstone of the County General Plan is a vision of "compact development" as an overall approach to managing future growth. The concept of compact development strives to direct future growth into appropriate locations within existing urban areas, particularly along transit corridors and closer to employment centers rather than sprawling outward into the hillsides and the rural countryside. Many of the policies in the County General Plan address land use issues involving the rural unincorporated areas of the County over which the County has direct land use authority. The overall direction of these policies is to maintain the scenic rural character of these areas and to promote conservation and productive use of their natural resources for agriculture, ranching, watershed, public recreation, and wildlife habitat.

Approximately 77 percent of the Study Area (398,250 acres) is in unincorporated areas of Santa Clara County. Existing development within the unincorporated area is concentrated in the small community of San Martin, located between Morgan Hill and Gilroy, and in the foothills adjacent to either side of the Santa Clara Valley.

San Martin is approximately 12.3 square miles of unincorporated community between the sphere of influence lines of Morgan Hill and Gilroy, the Diablo Range to the east and the Santa Cruz Mountains to the west. San Martin is a rural residential community built around a village dating back to the early 1900s. This community, surrounded by large farms and orchards, retains a pastoral rural character (County of Santa Clara, 2001).

Most of the County's agricultural land is located along the floor of the South Valley, outside of the urbanized areas. Economically, agriculture is a small component of the County's economy. The importance of agriculture relates primarily to the amount of land used for agricultural activities. Currently in Santa Clara County, approximately 20,900 acres are in irrigated agriculture; 87 percent of this agriculture is in unincorporated areas of the County, while 13 percent is in incorporated areas. Nearly all of this land is within the Study Area. In addition to cropland, significant parts of the Study Area are used for grazing cattle and other ranchland activities.

Reflecting Santa Clara County's vision, each of the three primary cities participating in the Habitat Plan has now adopted an ultimate buildout line (termed the "planned limit of urban growth" for the purposes of the Habitat Plan). The Cities of San José, Morgan Hill, and Gilroy maintain a strong commitment to guide higher density, urban types of development within the adopted buildout limits, and to protect the natural and agricultural resources surrounding their respective cities. All local ordinances related to balancing urban growth and development with resource conservation will remain applicable to all activities proposed within the Study Area.

City of San José

San José, founded in 1777, was California's first civilian settlement. San José is located in the North Valley, on the eastern side of the Valley and adjacent to the southern tip of the San Francisco Bay. San José is by far the most populous city in Santa Clara County, the third most populous city in California (after Los Angeles and San Diego), and the tenth most populous city in the United States. Most of the City of San José, except for a small portion near San Francisco Bay (9 percent of the incorporated City), lies within the Study Area. Land use in San José is varied and includes a large urban core, as well as approximately 13,780 acres (12 percent of the incorporated City) of non-urban hillside.

The City of San José General Plan identifies several "Major Strategies" that represent central themes of planning in the City through 2040. These Major Strategies include Focused Growth, Urban Villages, Measurable Sustainability / Environmental Stewardship, and Life Amidst Abundant Natural Resources. A portion of Life Amidst Abundant Natural Resources Major Strategy, identified as the Greenline/Urban Growth Boundary, is directed at preserving the scenic backdrop of the hillsides surrounding San José, preserving land that protects water, habitat, or agricultural resources, and offers recreational opportunities (City of San José, 2011).

The City adopted Measure K, the establishment of the Greenline/Urban Growth Boundary, in 2000 with over 81 percent of voter support. The stated intention of the ballot measure was

to develop a clearer geographic identity for San José as well as to preserve valuable open space resources. This line is the anticipated ultimate boundary of urban growth for San José, and the City has several policies in place that would prohibit the expansion of the Greenline/Urban Growth Boundary. As a requirement of the 2000 ballot measure, the boundary may only be repealed or amended by the voters of the City of San José (Mena, pers. comm., 2006). Therefore, the City's Greenline/Urban Growth Boundary represents the City's planning limit of urban growth.

City of Morgan Hill

Morgan Hill is located in southern Santa Clara Valley, approximately 12 miles south of San José and 10 miles north of Gilroy (City of Morgan Hill, 2006). The City of Morgan Hill developed its current General Plan in 2001 and made revisions to the plan in 2006 to adopt an urban limit line and greenbelt policies. The General Plan envisions Morgan Hill keeping its small-town character while offering new opportunities for businesses and amenities for residents. Agriculture will continue at the outskirts, and new housing for a range of incomes will be accommodated in a variety of locations. Urban land uses will be encouraged around the downtown, and incentives would foster infill development instead of sprawl (City of Morgan Hill, 2006).

The City of Morgan Hill anticipates ultimate build out of the City will occur within its Urban Limit Line adopted in April, 2006. Therefore, the City's Urban Limit Line is being used to represent its planning limit of urban growth for the Habitat Plan. The Urban Limit Line separates urban and future urban areas from rural areas. The Urban Limit Line is a longer term version of the City's Urban Growth Boundary and is intended to reflect the City's long-term policy for growth in Morgan Hill, beyond the 20-year time frame of the Urban Growth Boundary. The purpose of the Urban Limit Line is to encourage more efficient growth patterns, minimize public costs, and protect environmental resources. Some, but not all, of the land outside the Urban Limit Line has been identified as Greenbelt (Golden, pers. comm., 2006).

City of Gilroy

The City of Gilroy is located close to the southern border of Santa Clara County where U.S. Highway 101 intersects with SR 152. The City adopted its most recent General Plan on June 13, 2002 (City of Gilroy, 2002). This document is a statement of community values and priorities, projecting out to the year 2020. The vision for Gilroy's future emphasizes a compact pattern of development, surrounded by open space and working agricultural lands, helping to retain the City's small-town character and rural atmosphere. The City's General Plan boundary will be used to represent the City's planning limit of urban growth for the Habitat Plan. This commitment to grow only within the existing General Plan boundary reflects the City's commitment to preserving open space and working agricultural lands (City of Gilroy, 2005).

In addition to the General Plan, Gilroy recently developed the Hecker Pass Specific Plan to "protect and enhance the Hecker Pass Area's rural character, open space, and agricultural uses" (City of Gilroy, 2005). The Hecker Pass Specific Plan encourages new opportunities for open space through the design and development process, including active recreation areas, habitat protection areas, agricultural areas, scenic open spaces, and neighborhood open spaces (interspersed between clusters of residential development). For all open spaces, the Specific

Plan should ensure (a) that open space dedications are permanent, and (b) that appropriate mechanisms are in place to address ongoing maintenance and management issues.

6.1.2 Existing Land Uses

The Study Area lies within Santa Clara County, which has a total land area of approximately 835,449 acres. Encompassing 519,506 acres, the Study Area includes approximately 62 percent of County lands. The Study Area includes the Llagas, Uvas, and Pajaro watersheds within Santa Clara County and the entire Coyote Creek watershed, except for the Baylands. A large portion of the Guadalupe watershed is also within the Study Area. The Study Area also encompasses small areas outside these watersheds. The northern edge of the Study Area is defined by the boundary of Alameda and Santa Clara Counties, excluding the City of Milpitas and lands to the north owned by the San Francisco Public Utilities Commission (SFPUC).

For the purposes of this analysis, existing land uses are described in terms of the "land cover types" used as units of analysis in the Habitat Plan. A land cover type is defined as the dominant character of the land surface discernible from aerial photographs, as determined by vegetation, water, or human uses (Habitat Plan Chapter 3). Current land cover types within the Study Area are broadly categorized in three ways:

- **Undeveloped lands** within the Study Area include the following land cover types: grasslands, chaparral and coastal scrub, oak woodland, riparian forest and scrub, conifer woodland, and wetland. The natural communities discussion in Chapter 5, Biological Resources, provides definitions for these lands and identifies common habitat and wildlife associations for undeveloped uses within the Study Area.
- **Farmlands** include orchard; vineyard; and grain, row-crop, hay, and pasture agriculture. A more detailed discussion of the extent and type of farmlands within the Study Area is presented in Chapter 7, Agriculture, of this document.
- **Developed lands** within the Study Area consist of urban-suburban development, rural residential, developed/covered agriculture, barren lands, landfill, golf courses and urban parks, ornamental woodlands, and open water.

Table 6-1 briefly defines these existing land cover types and outlines the percentage of the Study Area encompassed by each existing use.

TABLE 6-1
Existing Land Cover Types

Type	Definition	Acreage	Percent Cover of Study Area
Undeveloped Lands	See Chapter 5, Biological Resources, Table 5-1 (see "Natural" categories), for further information.	306,571	66.6
Farmlands	Primarily irrigated cropland or pasture. See Chapter 7, Agriculture, Table 7-1, for further information	37,738	8.2
Developed Lands	Areas where native vegetation has been cleared for urban, rural, or agricultural development, including urban parks or for major infrastructure (e.g., freeways, reservoirs).	115,897	25.2
Total		**460,205**	**100.0**

Source: based on ICF International, 2012 (see Habitat Plan Table 3-7, which presents the land cover information for the Study Area minus lands managed by the California Department of Parks and Recreation)

6.1.3 Land Use Designations

Designated land uses within the Study Area are shown on Figure 6-1. For planning purposes, and for the purposes of this environmental review, use categories were derived from over 80 designations set forth by Santa Clara County and the Cities of San José, Morgan Hill, and Gilroy, and were aggregated into the following six categories:

1. Urban Development
2. Rural Residential
3. Ranchland/Woodland
4. Agriculture
5. Urban Parks and Open Space
6. Rural Parks and Open Space

These categories are distinct from the land cover categories in that they correspond to local designations for allowable land uses rather than existing uses that have been mapped within the Study Area. Development of these six categories was guided by the nature of the activities to be covered within each land use category and their relative potential impact on biological resources. For example, the many urban land use categories (e.g., residential, commercial, industrial) were combined into a single land use category because they all result in similar effects on biological resources.

- **Urban-Suburban Development** includes residential densities greater than one dwelling unit per 2.5 acres, as well as all industrial, commercial, institutional, public facilities, public/quasi-public, and major educational facilities land-use designations.
- **Rural Residential** includes low-density residential development density of one dwelling unit per 2.6 to 20 acres. Rural residential lands tend to be located in the unincorporated areas of the County; however, the Cities of San José, Morgan Hill, and Gilroy also maintain land use densities that correspond to this category.
- **Ranchland/Woodland** includes rural lands with a development density of one dwelling unit per 20.1 to 160 acres. This category is comprised of all lands not otherwise designated. It includes open lands common in the western slopes of the Diablo Range as well as the woodlands common to the eastern slopes of the Santa Cruz Mountains. According to the County General Plan, ranchlands are defined as "lands predominantly used as ranches in rural unincorporated areas of the County, remote from urbanized areas and generally less accessible than other mountain lands."
- **Agriculture** includes lands designated by the County that may be used for "agriculture and ancillary uses; uses necessary to directly support local agriculture; and other uses compatible with agriculture which clearly enhance the long term viability of local agriculture and agricultural lands" (County of Santa Clara 2001). In addition to the County, the City of Gilroy supports some agriculture in the Hecker Pass Special Use District and Specific Plan. Agriculture in this area includes low intensity crops such as vineyards, orchards, and some row crops (City of Gilroy 2005).
- **Urban Parks and Open Space** includes lands designated by Cities or the County for parks and recreation, and for open space that is surrounded by urban development or is itself highly developed or landscaped. These sites are all located within incorporated

city limits and are unlikely to be used by any of the Covered Species except along some rivers and creeks. See Chapter 9, Recreation, for further discussion on parks and recreation.

- **Rural Parks and Open Space** includes parks and open space in rural areas, including larger parcels of land located on the urban fringe, and indicates that the landscape may be used by Covered Species. This category includes federal land; local, state, and regional parks; private lands that are protected with conservation easements or dedicated development rights, or that are used in a manner that would allow use by Covered Species (including large golf courses on the urban fringe); and public watershed lands. See Chapter 9, Recreation, for further discussion on parks and recreation.

6.2 Methodology and Significance Criteria

The assessment of potential land use impacts is based on the anticipated changes in land cover over 50 years (corresponding to the Permit Term under the Proposed Action). Changes in land cover were assessed by overlaying anticipated urban, rural, and associated infrastructure development, operation, and maintenance (see Section 2.3.1) onto the existing land cover types using GIS. Potential land use impacts also were considered in terms of how activities would be consistent with applicable land use plans and policies. For all alternatives, land conversion is expected to occur as a result of urban development and other activities. Some lands would be preserved and/or restored as mitigation for these activities under the No Action Alternative. For the Proposed Action and Alternative A, similar conservation activities would occur consistent with the Habitat Plan (or as modified by the alternative). For all alternatives, the anticipated location of the conservation activities was compared to existing land uses (Figure 6-1).

Impacts would be significant if an alternative would result in the following:

- Physically dividing an established community.
- Conflicts with the applicable land use plans, policies, or regulations of an agency with jurisdiction over the project, including, but not limited to, general plans, specific plans, and zoning ordinances.

6.3 No Action Alternative

6.3.1 Environmental Consequences/Environmental Effects

Activities that would occur under the No Action Alternative include urban development, instream capital projects, rural capital projects, and rural development. These activities would cause a permanent change in land cover. Future land cover types resulting from these activities are summarized in Table 6-2 below.

TABLE 6-2
Permanent Changes in Land Cover Types under the No Action Alternative

Land Cover Type	Total in Study Area	Percent of Study Area	Impacts from Development Activities	New Total in Study Area	New Percent of Study Area
Undeveloped Lands	306,571	66.6	(6,044)	300,527	65.3
Farmlands	37,738	8.2	(8,003)	29,735	6.5
Developed Lands	115,897	25.2	14,047	129,944	28.2
Total	**460,205**	**100.0**	**0**	**460,205**	**100.0**

Note:
( ) = Net loss of land cover type
Source: based on ICF International, 2012

Individual activities would be assessed for compliance with local policies and regulations under CEQA (and, in some cases, NEPA) as they occur, and would be individually required to mitigate any potentially significant land use impacts. Development is expected to be consistent with general plan guidance.

In addition, mitigation for biological resources impacts also would occur under the No Action Alternative as a consequence of urbanization and infrastructure development. Under the No Action Alternative, mitigation requirements are expected to apply to many discretionary activities on a case-by-case basis, and include requirements for onsite habitat preservation as well as the acquisition and restoration of offsite habitat areas (including purchasing credits in conservation banks). These mitigation activities could simply maintain existing land uses (e.g., grazing) subject to conservation requirements, but could substantially change some existing land uses. For example, farmland could be purchased and converted to wetlands. However, most of the land that would be acquired likely would consist of natural land cover types, and therefore would not result in substantial changes in land use. Farmland impacts are discussed further in Chapter 7, Agriculture.

6.3.2 Cumulative Effects

The entire Study Area used to be undeveloped. As described in Section 4.1.1.2, major portions of the Study Area have changed from undeveloped land to agricultural land to developed land, eventually reaching the land use distribution shown in Table 6-1 above. The response to these changes has been the adoption of land use plans and policies that have attempted to minimize the adverse effects of land use changes (e.g., traffic, pollution) and shape future growth in an orderly manner with amenities suitable for urban areas (e.g., parks, public transit). Examples of these efforts include the plans and policies described above in Section 6.1.3. These planning efforts have provided a framework for managing and mitigating cumulative land use impacts.

6.4 Proposed Action

6.4.1 Environmental Consequences/Environmental Effects

Under the Proposed Action, the Covered Activities would be implemented, including the Habitat Plan conservation strategy. With regard to land use, the effects of implementing the Covered Activities associated with urban development, instream capital projects, rural capital projects, and rural development would be the same as described above for the No Action Alternative (i.e., Table 6-2). Instead of habitat mitigation on a project-by-project basis, however, the Reserve System conservation strategy would result in acquisition of at least 33,205 acres, enhancement of up to 13,291 acres of existing open space lands, and protection of 100 stream miles. Under the Proposed Action, a total of 46,496 to 46,920 acres of remaining undeveloped lands would be preserved in perpetuity and managed consistent with the reserve design and management goals described in the Habitat Plan. Most of the acquisitions would occur within the Conservation Analysis Zones shown on Figure 6-1 (also see Figure 2-1), which are mostly in areas designated as ranchlands or woodlands. More acreage would be dedicated to habitat conservation under the Proposed Action than under the No Action Alternative because the Reserve System commitment in the Habitat Plan is expected to be greater than mitigation requirements based on impacts to listed species.

Establishment of the Reserve System may result in some inconsistencies with adjacent land uses and with local plans and policies. In most cases, however, individual reserves would maintain existing land uses (e.g., grazing) subject to conservation requirements. The design process for individual reserves would take into account relevant land use considerations, such as parcel size and land cover type. Areas without extensive rural development, for instance, would be favored over areas with such development, to avoid habitat incursions and edge effects. In addition, urban or planned urban areas would be buffered to reduce conflicts between developed land uses and natural communities as described in Condition 2, Urban-Reserve System Interface Design Requirements.

Potential for land use incompatibilities also would be addressed through implementation of Neighboring Landowners Assurances (see Habitat Plan Section 10.2.7). With certain provisions and restrictions, farmlands within 1 mile of a reserve boundary are eligible for take coverage during the course of routine agricultural activities, during the Permit Term, and for take beyond the baseline condition that existed prior to the establishment of the neighboring reserves. This provision of the Habitat Plan is intended to address concerns about land use incompatibility resulting from the potential for listed species to increase in number and colonize nearby private lands that are not part of the Reserve System.

6.4.2 Cumulative Effects

Under the Proposed Action, cumulative effects would occur as a result of the following projects.

- Other conservation activities.
- High-Speed Train.

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

Under the Proposed Action, local planning efforts (e.g., general plans) would continue to provide a framework for addressing cumulative land use impacts. Within this framework, other preservation activities would continue to occur as in recent years, including acquisitions by The Nature Conservancy and the Open Space Authority. For similar reasons as described above, establishment of these preserves may result in some land use inconsistencies but most preserves would maintain existing land uses (e.g., grazing) subject to conservation requirements. These impacts would not be significant. Development of the High-Speed Train project would divide agricultural areas south and east of Gilroy. These impacts are potentially significant, but the Proposed Action would not contribute to these effects (see additional discussion in Chapter 7, Agriculture).

6.4.3 Determination of Significance

Compared to the No Action Alternative, the Proposed Action would have **less-than-significant** impacts and would have a less than cumulatively considerable contribution to significant cumulative effects.

6.5 Alternative A

6.5.1 Environmental Consequences/Environmental Effects

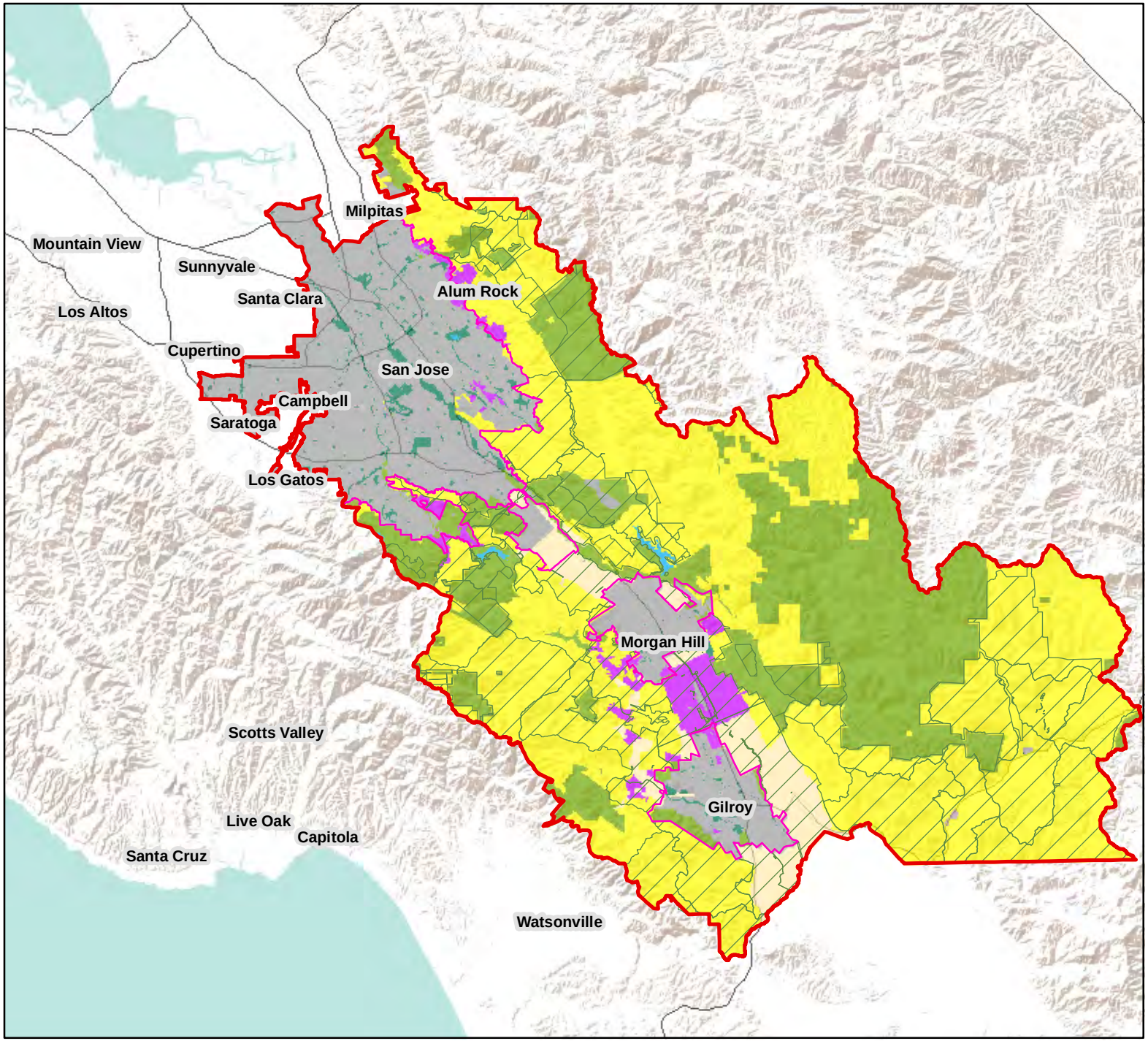
Under Alternative A, the effects of implementing the Covered Activities associated with urban development, instream capital projects, rural capital projects, and rural development would be the same as described above for the No Action Alternative (i.e., Table 6-2). Under Alternative A, a smaller amount of undeveloped lands would be preserved in perpetuity and managed consistent with reserve design and management objectives. These objectives would be similar to Habitat Plan, including Condition 2 and Neighboring Landowner Assurances. Overall, the smaller Reserve System under Alternative A is expected to result fewer potential land use conflicts than the Proposed Action.

6.5.2 Cumulative Effects

Same as Proposed Action.

6.5.3 Determination of Significance

Same as Proposed Action.



VICINITY MAP

LEGEND

- Study Area
- Planning Limit of Urban Growth
- Potential Reserve Areas
- Agriculture
- Ranchland
- Rural Parks and Open Space
- Rural Residential
- Urban Development
- Urban Parks and Open Space
- Water

N

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Miles

FIGURE 6-1
Land Use Designations
Santa Clara Valley HP EIR/EIS
Santa Clara County, California

CHAPTER 7

Agriculture

7.1 Environmental Setting/Affected Environment

This chapter discusses the land use setting of the Study Area specific to agriculture and the regulations that guide that use. The section focuses on both farmlands and natural lands used for grazing.

7.1.1 Regulatory Setting

Farmland Mapping and Monitoring Program

The California Department of Conservation has the primary responsibility for reporting statewide farmland data and trends. The California Department of Conservation's Farmland Mapping and Monitoring Program categorizes and maps Important Farmlands every two years (most current data is 2010). Types of Important Farmlands are defined in Table 7-1. Counties may, at their discretion, establish criteria for the designation of Farmland of Local Importance.

TABLE 7-1
Definitions for Important Farmland Categories

Farmland Category	Definition
Prime Farmland	Prime Farmland is land that has the best combination of physical and chemical characteristics 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	This land is similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to hold and store moisture. Farmland of Statewide Importance must have been used for the production of irrigated crops at some time during the two update cycles prior to the mapping date.
Unique Farmland	This is land of lesser quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include nonirrigated 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	This is land of importance to the local agricultural economy and is determined by each county's Board of Supervisors and local advisory committee. In Santa Clara County, this land includes small orchards and vineyards primarily in the foothill areas, as well as land cultivated as dry cropland for grains and hay.
Grazing Land	Grazing land is land on which the existing vegetation, whether grown naturally or through management, is suitable for grazing or browsing of livestock.
Urban and Built-up Land	This is used for residential, industrial, commercial, construction, institutional, and public administrative purposes; railroad yards; cemeteries; airports; golf courses; sanitary landfills; sewage treatment plants; water control structures; and other development purposes.

TABLE 7-1
Definitions for Important Farmland Categories

Farmland Category	Definition
Other Land	Other land is that which is not included in any of the other mapping categories. The following types of land are generally included low-density rural development; brush, timber, and other lands not suitable for livestock grazing; government lands not available for agricultural use; roads systems for freeway interchanges; vacant and nonagricultural land larger than 40 acres in size and surrounded on all sides by urban development; confined livestock facilities of 10 or more acres; strip mines and borrow and gravel pits; a variety of other rural land uses.
Water	Perennial water bodes with an extent of at least 40 acres.

Source: California Department of Conservation, 2010

California Land Conservation Act (Williamson Act)

The California Land Conservation Act of 1965, or Williamson Act, established the state's primary program for the retention of private land in agriculture and open space use. The Williamson Act is a voluntary program that offers reduced property taxes on lands that have enforceable restrictions on their use via contracts between individual land owners and local governments. Categories used to describe Williamson Act lands are defined in Table 7-2.

TABLE 7-2
Definitions of Williamson Act Categories

Farmland Category	Definition
Prime Agricultural Land	Land which is enrolled under California Land Conservation Act contract and meets any of the following criteria (as set forth under California Government Code Section 51201): 1. Land which qualifies for rating as Class I or Class II in the Natural Resources Conservation Service land use capability classifications. 2. Land which qualifies for rating 80 to 100 in the Storie Index Rating. 3. Land which supports livestock used for the production of food and fiber and which has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture. 4. Land planted with fruit or nut-bearing trees, vines, bushes or crops which have a nonbearing period of less than five years and which will normally return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than two hundred dollars per acre. 5. Land which has returned from the production of unprocessed agricultural plant production and has an annual gross value of not less than 200 dollars per acre for three of the previous 5 years.
Non-Prime Agricultural Land	Land which is enrolled under California Land Conservation Act contract and does not meet any of the criteria for classification as Prime Agricultural Land. Non-Prime Land is defined as Open Space Land of statewide Significance under the California Open Space Subvention Act (see California Government Code Section 16143), and may be identified as such in other documents. Most Non-Prime Land is in agricultural uses such as grazing or non-irrigated crops. However, Non-Prime Land may also include other open space uses which are compatible with agriculture and consistent with local general plans.

Source: Department of Conservation, Division of Land Resource Protection

Santa Clara County administers the Williamson Act program in the Study Area. Under the County Williamson Act Ordinance (Division C-13, Chapter I in County Code), landowners may apply to contract with the County to voluntarily restrict their land to agricultural and compatible uses. Restrictions are enforced through a rolling term 10-year contract. Unless the landowner or the County files a notice of nonrenewal, the contract is automatically renewed for an additional year on January 1. In return for the voluntary restriction, contracted parcels are assessed for property tax purposes at a rate consistent with their actual (agricultural) use, rather than potential market value.

While restricted by a Williamson Act contract, land cannot be used for any other purpose than the commercial production of agricultural commodities, and uses outlined in the contract's compatible use list. Any proposed uses and development must satisfy the compatibility principles outlined in Section C13-15 of the County Williamson Act Contract Ordinance and the Williamson Act (Government Code Section 51238.1). When a property is no longer used for commercial agricultural production, it is subject to nonrenewal by the County and is generally not eligible for land use approvals or building permits. At this time, the landowner may pursue nonrenewal or contract cancellation, or may exchange the Williamson Act contract for an Open Space Easement agreement. The "Guideline for Policies Governing the Exchange of an Existing Williamson Act Contract for an Open Space Easement" defines the policies and criteria by which the Santa Clara County Board of Supervisors evaluates the eligibility of a property for transfer from a Williamson Act contract to an Open Space Easement.

Local Land Use Plans

Each city and county in the Study Area has a general plan that guides land use and development decisions within the respective jurisdiction. Individual counties and municipalities regulate agricultural land uses primarily through the adoption of land use plans, policies, and agricultural zoning that restrict the locations, type, and intensity of land development and use that is allowed. The Santa Clara County General Plan establishes two farmland designations: Agricultural Large Scale and Agriculture Medium Scale. Minimum parcel sizes in agriculture areas are 40 and 20 acres, for large and medium scale agriculture, respectively. County lands designated as Agriculture may be used for: "agriculture and ancillary uses; uses necessary to directly support local agriculture; and other uses compatible with agriculture which clearly enhance the long-term viability of local agriculture and agricultural lands" (County of Santa Clara, 1994). The County's "Hillsides" and "Ranchlands" land use designations also allow agricultural and grazing uses.

In addition to the County, the City of Gilroy supports some farmland in the Hecker Pass Special Use District and Specific Plan. Farmland in this area includes low intensity crops such as vineyards, orchards, and some row crops (City of Gilroy, 2005).

7.1.2 Existing Agricultural Uses

Land cover types within the Study Area were developed and mapped for the Habitat Plan. Three farmland categories encompass all areas where the native vegetation has been cleared for agricultural use, totaling 37,738 acres (7.3 percent of the Study Area):

- **Grain, row-crop, hay, and pasture, disked/short-term fallowed** is the most common of the agriculture land cover types in the low-lying areas of the Study Area, occupying

33,648 acres (6.5 percent). These land cover types are abundant throughout the Santa Clara Valley south of San José, and have the highest presence near the southern boundary of the county.

- **Orchards** are scattered in relatively small patches throughout the Santa Clara Valley floor from the southern point of San José, south to the county line. Orchards comprise an estimated 2,697 acres of the Study Area (0.52 percent). Coyote Valley has the largest orchard area within the Study Area.
- **Vineyards** occupy 1,393 acres of the Study Area (0.27 percent) and are mostly located in the southern portion of the county, in the foothills west of San Martin, and along SR 152, east of Gilroy.

Agricultural activities (primarily grazing) are supported on lands other than those designated as farmland in the Habitat Plan. Grazing lands are not identified as a natural community in the Habitat Plan, but grazing occurs on several natural community types including grasslands (17.7 percent of the Study Area), chaparral and northern coastal scrub (7.3 percent of the Study Area), and oak woodland (30.2 percent of the Study Area). Mostly, these areas occur in the hills and mountainous areas surrounding the Santa Clara Valley.

7.1.3 Important Farmlands

The majority of Prime Farmland and Farmland of Statewide Importance are found in the central and southern areas of the county, along the U.S. Highway 101 corridor. According to Farmland Mapping and Monitoring Program data, approximately 17,181 acres within the Study Area are designated as Prime Farmlands, 3,630 acres are designated as Farmland of Statewide Importance, and 4,235 acres are designated as Farmland of Local Importance. An additional 1,730 acres are designated as Unique Farmland. Large portions of the Study Area are designated as Grazing Land. Figure 7-1 shows the important farmlands in the Study Area.

7.1.4 Williamson Act Lands

The majority of the Williamson Act lands designated as Prime Agricultural Land are located in the southern portion of the Study Area east and south of Gilroy. Most of the privately owned grazing lands in mountains east and west of the Santa Clara Valley are under Williamson Act contract as Non-Prime Agricultural Land. According to data from Santa Clara County, approximately 219,757 acres within the Study Area are currently under Williamson Act contract. Of this total, 14,059 acres (6.4 percent) are classified as Prime Agricultural Land and the remainder is classified as Non-Prime Agricultural Land. As described above, these classifications are different from those that apply to the Important Farmlands mapped by the California Department of Conservation. Figure 7-2 shows lands under Williamson Act contract that are in the Study Area.

7.2 Methodology and Significance Criteria

For the No Action Alternative, permanent farmland conversion was estimated by comparing (using GIS) expected development activities with areas containing important farmlands and Williamson Act contracts. The analysis of the Proposed Action and

Alternative A builds upon the No Action Alternative analysis by comparing the expected Reserve System area with important farmland areas and Williamson Act contract lands, and conducting a qualitative assessment of any additional land conversions or conflicts that may occur. The proposed action or an alternative would have a significant impact if it results in either of the following:

- Conversion of a more than 10 acres of Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or Farmland of Local Importance to non-agricultural use.
- Conflicts with a Williamson Act contract.

7.3 No Action Alternative

7.3.1 Environmental Consequences/Environmental Effects

Under the No Action Alternative, activities associated with the urbanization of the Study Area, including infrastructure development, would occur. This would result in impacts to lands currently used for farming such that total farmland within the Study Area would be reduced from 37,738 to 29,735 acres, an impact of 8,003 acres. Table 7-3 below shows the estimated impacts on various types of existing agricultural uses that would occur under the No Action Alternative.

TABLE 7-3
Impacts on Farmlands

Farmland Type	Total in Study Area	Percent of Study Area	Impacts from Development Activities	New Total in Study Area	New Percent of Study Area
Orchard	2,697	0.58	625	2,072	.045
Vineyard	1,393	0.30	36	1,357	.029
Grain, row crop, hay and pasture, disked/ short-term fallowed	33,648	7.31	7,342	26,306	5.72
TOTAL	**37,738**	**8.20**	**8,003**	**29,735**	**6.46**

Source: Based on ICF International, 2012

Most of the change would be a result of urban development (6,711 acres, or approximately 84 percent of the total impact), including urban development in San José, Morgan Hill, and Gilroy (see Figure 7-1). As shown in Figure 7-1, much of this area is designated as important farmland. Individual new developments that would conflict with zoning for agriculture or attempt to convert important farmland to nonagricultural uses would be evaluated under CEQA on an individual basis as they occur, and would be required to mitigate significant impacts on agriculture (e.g., by purchasing conservation easements on other farmland as mitigation).

Most of the important farmlands within the San José, Morgan Hill, and Gilroy urban growth boundaries are not under Williamson Act contract (compare Figure 7-2 to Figure 7-1). For the areas under contract that would be affected by urbanization and infrastructure development, Williamson Act lands would remain in agricultural production unless the

individual property owners request removal of lands from the contracts as they expire, or be allowed to cancel the contract (subject to substantial penalties).

Urbanization and infrastructure development also would reduce grazing opportunities in grasslands from 20.1 to 19.5 percent of the Study Area, chaparral and northern coastal scrub from 8.25 to 8.16 percent of the Study Area, and oak woodland from 34.1 to 33.5 percent of the Study Area (ICF International, 2012). Loss of land cover types that could be used for grazing (approximately 5,534 acres total) would not be significant given the extent of areas that would remain for grazing.

In addition, and on a case-by-case basis, mitigation for biological resources impacts also would occur under the No Action Alternative as a consequence of urbanization and infrastructure development. Under the No Action Alternative, mitigation requirements are expected to apply to many discretionary activities on a case-by-case basis, and include requirements for onsite habitat preservation as well as the acquisition and restoration of offsite habitat areas (including purchasing credits in conservation banks). Grazing can often be managed in a way consistent with, and even beneficial to, special status species management. Portions of farmlands can sometimes be managed in a way that is consistent with special status species preservation. In both cases, site-specific land use restrictions would be clearly described in the conservation easements for each site. For these reasons, it is unlikely that farmland conflicts would occur as a result of biological resource mitigation activities under the No Action Alternative.

7.3.2 Cumulative Effects

As described in Section 4.1.2, Santa Clara Valley agriculture has been replaced by urban development in much of the Study Area, and by the infrastructure developed to support urban growth. This has been a substantial change in agricultural land use. This trend is expected to continue under the No Action Alternative as continued development occurs (see Table 7-3), resulting in a worsening of cumulative impacts to agricultural lands.

7.4 Proposed Action

7.4.1 Environmental Consequences/Environmental Effects

Under the Proposed Action, the urban development and related infrastructure activities covered under the Habitat Plan would result in impacts to lands currently used for farming such that the total farmland within the Study Area would be reduced in a manner consistent with the No Action Alternative (see Table 7-3). In addition, Covered Activities would include the implementation of the Habitat Plan conservation strategy, including the acquisition of land for inclusion within a Reserve System. Some areas expected to be acquired may contain land designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. To meet the Habitat Plan acquisition requirements, some lands currently enrolled under Williamson Act contract may be incorporated into the Reserve System. The amount of land acquired for the Reserve System (acquisitions of at least 33,205 acres contributing to a Reserve System of at least 46,496 acres) is expected to be greater than the amount of habitat mitigation land under the No Action Alternative.

Of the minimum 33,205 acres of land acquisitions for the Reserve System, almost all are expected to occur on natural lands that are not used for farming. In many cases, these natural lands are used for grazing. Under the Proposed Action, the Implementing Entity would prepare reserve management plans addressing (among other things) the use of grazing as part of vegetation management. Although the management plan could include limitations on some grazing activities, it is expected that grazing would continue to be allowed on the natural lands acquired for the Reserve System because grazing is typically consistent with habitat management. No adverse impacts to grazing are expected, and grazing opportunities may be increased under the Proposed Action because of the benefits of grazing to the Reserve System (e.g., weed control).

The Habitat Plan emphasizes acquisition of natural land cover types, and does not include farmland acquisition, restoration, or enhancement targets. Nevertheless, some parcels acquired for the Reserve System may include incidental areas of farmland. Economically viable farming would not be possible where habitat restoration occurs. The amount of land expected to be removed from production is not specified in the Habitat Plan, but it is estimated to be approximately 14 acres based on land cover modeling. Given the farmland quality in the Study Area most of these converted farmlands are likely to be Prime Farmland. This would be a substantial conversion of farmland, exceeding the 10-acre significance threshold.

For the 14 acres of important farmland that would be converted to habitat use it is highly likely that most of these lands would be under Williamson Act contract. In some cases, the Implementing Entity may request that the Williamson Act contract be converted from an "agriculture" to an "open space" contract type. Also, the Implementing Entity could file for an exchange of the Williamson Act contract to an Open Space Easement agreement, or could delay restoration to wildlife habitat and file for non-renewal so that the Williamson Act contract can expire. Although this is an important administrative process for the Implementing Entity, resolving the Williamson Act conflict by either of these means would eliminate the conflict, and the impact would be less than significant.

Mitigation Measure. The following mitigation measure is required to reduce impacts from approximately 14 acres of potential farmland conversion:

7-1: Mitigation for the conversion of prime farmland for habitat restoration shall consist of replacing the lost farmland acreage on a one-to-one (1:1) basis. For every acre of prime farmland lost, the Implementing Entity shall demonstrate that at least an equivalent amount of prime farmland of substantially similar quality and character has been permanently protected for purposes of continued farming by land acquisitions or conservation easements.

Implementation of this measure would reduce the impact to less than significant.

7.4.2 Cumulative Effects

Under the Proposed Action, cumulative effects would occur as a result of the following projects.

- Other conservation activities
- Further expansion of the Gilroy city limits
- High Speed Train

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

The agricultural resource impacts of other conservation activities are expected to be similar to the Proposed Action. New preserves in the Diablo Range (especially those managed by The Nature Conservancy) continue to include grazing as part of land management. Similar to the Proposed Action, grazing continues to be supported in these areas. Similar potential conflicts, however, could occur in the Santa Clara Valley. Although some preserves (especially those originally acquired by the Silicon Valley Conservancy) are maintained in agricultural production, the Pajaro River Mitigation Bank is in the process of converting farmland (in San Benito County) to wetlands. Overall, however, some conservation activities appear to be consistent with agriculture and may help promote the long-term viability of agriculture through the use of conservation easements.

Future expansion of the City of Gilroy in the Day Road area (mostly Farmland of Statewide Importance) and Masten Avenue area (mostly Prime Farmland) could affect important farmland. Although there are no specific plans at this time, the total size of these two areas is on the order of 1,200 acres.

The High Speed Train project would be located mostly along existing transportation corridors. South and east of Gilroy, however, the alignment would be at-grade on important farmlands in Santa Clara and San Benito Counties. Impacts would be calculated as part of the San José to Merced Project EIR, but a 100-foot corridor in this area (approximately 8 miles through both counties) would result in impacts on the order of 100 acres. In addition, individual farms and farm roads would be divided by the corridor. These impacts could be minimized by elevating the guideway in the area between Gilroy and the first Pacheco Pass tunnel.

Future projects (Gilroy expansion and High Speed Train projects) would worsen the impacts identified under the No Action Alternative. Overall cumulative impacts would remain significant under the Proposed Action. The Proposed Action would preserve grazing land through creation of the Reserve System, but may also contribute a small amount of additional farmland conversion (estimated to be about 14 acres) to this significant cumulative impact.

7.4.3 Determination of Significance

Compared to the No Action Alternative, impacts to agriculture would be **less than significant** with the implementation of Mitigation Measure 7-1, and the Proposed Action would have a less than cumulatively considerable contribution to significant cumulative effects.

7.5 Alternative A

7.5.1 Environmental Consequences/Environmental Effects

Under Alternative A, the urban development and related infrastructure activities would reduce the amount of agricultural lands in the Study Area consistent with Table 7-3. Overall, the smaller Reserve System under Alternative A is expected to result the conversion

of slightly fewer acres of farmland to habitat use, and slightly fewer potential Williamson Act conflicts. Although the extent of the impacts would be less under Alternative A than under the Proposed Action, they remain potentially significant compared to the No Action Alternative.

Mitigation Measure. Implement Mitigation Measure 7-1 described above.

7.5.2 Cumulative Effects

Same as Proposed Action.

7.5.3 Determination of Significance

Same as Proposed Action.

VICINITY MAP

LEGEND

- Study Area
- Planning Limit of Urban Growth
- Potential Reserve Areas

Important Farmland

- Prime Farmland
- Farmland of Statewide Important
- Unique Farmland
- Farmland of Local Important
- Grazing Land
- Other Land
- Urban and Built-Up Land
- Water Area

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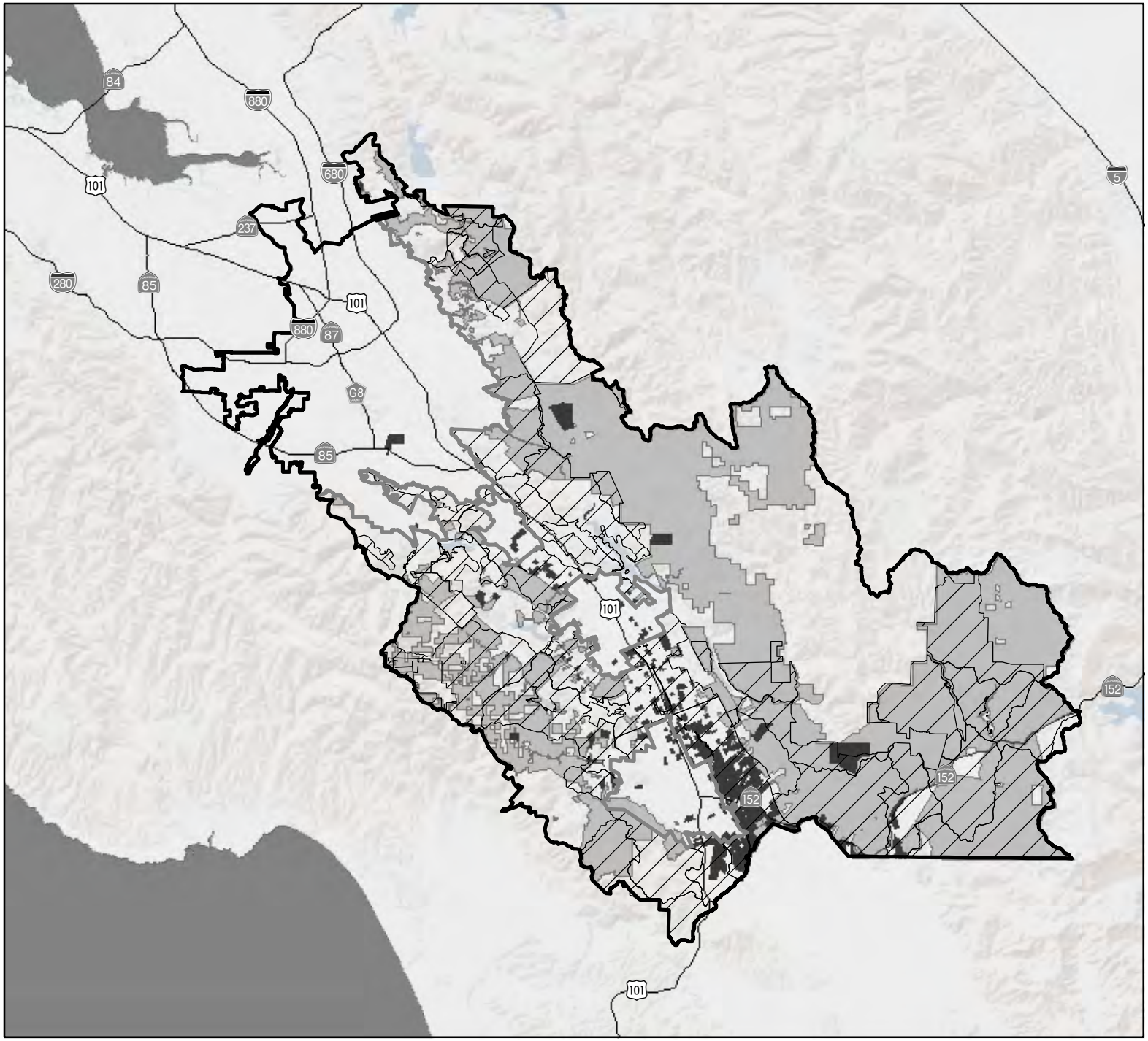
Miles

FIGURE 7-1
Important Farmlands
Santa Clara Valley HP EIR/EIS
Santa Clara County, California



VICINITY MAP

LEGEND

- Study Area
- Planning Limit of Urban Growth
- Potential Reserve Areas

Williamson Act Lands

- Prime
- Non-Prime

N

0 3 6
Miles

FIGURE 7-2
Williamson Act Lands

Santa Clara Valley HP EIR/EIS
Santa Clara County, California

CHAPTER 8

Public Services

8.1 Environmental Setting/Affected Environment

This chapter describes public services, specifically fire and police protection, in the Study Area. Parks and recreation are discussed in Chapter 9, and wildfire management is discussed in Chapter 18.

8.1.1 Fire Services

Established in 1947, the Santa Clara County Fire Department is a California Fire Protection District serving unincorporated Santa Clara County and various communities including Morgan Hill. There are sixteen fire stations and three battalion districts in the Department. The Department covers approximately 100 square miles and a population of over 210,000. The Department employs over 265 fire prevention, suppression, investigation, administration, and maintenance personnel. In addition, approximately 40 volunteer firefighters provide support to the Department. First-call equipment is deployed to deliver initial fire attack and emergency medical response services within five minutes at least 30 percent of the time. Daily emergency response staffing consists of approximately 60 fire personnel. Wildland-urban interface companies are trained and equipped to provide structure protection and limited initial attack on wildland incidents. A brush alarm for vegetation fires in wildland/urban interface areas consists of two engine companies and nine staff, including a Battalion Chief (Santa Clara County, 2007).

Chapter 18 provides a discussion of existing wildfire threat and management conditions within the Study Area.

8.1.2 Police Services

The Santa Clara County Sheriff's Office provides service to unincorporated Santa Clara County and some of the local communities. The Sheriff's Office also maintains contracts with VTA and the Santa Clara County Parks Department for law enforcement services. There are 586 sworn personnel working for the Sheriff's Office (Doty, 2007). The Sheriff's headquarters is located in the City of San José and is the first to respond to calls in the unincorporated areas. When backup is needed, other sheriff's substations, adjacent city police, or California Highway Patrol respond. There are three Santa Clara County substations, including the South County Substation in San Martin.

The City of San José, City of Morgan Hill, and City of Gilroy each operate local police departments, generally serving within the incorporated city limits. The City of San José has approximately 1,400 sworn officers operating from one main headquarters and three community policing centers (City of San José, 2007). In addition, the San José Police Department is under contract to provide police services to the Open Space Authority. The City of Morgan Hill has approximately 32 sworn officers and one police station

(MacKnight, 2007). The City of Gilroy has approximately 61 sworn officers and one police station (City of Gilroy, 2006a).

8.2 Methodology/Significance Criteria

Potential impacts to public services were analyzed based on consultation with agency staff and examining the expected changes in land use under all alternatives. This included a review of relevant parts of the Habitat Plan (e.g., management objectives for the Reserve System) for the Proposed Action and Alternative A. Impacts would be significant if an alternative would result in a substantial adverse physical impacts associated with the provision of new or physically altered police or fire facilities, the construction of which could cause significant environmental impacts.

8.3 No Action Alternative

8.3.1 Environmental Consequences/Environmental Effects

Under the No Action Alternative, activities such as implementation of the Local Partners' General Plans (including urban and rural land development) and construction and maintenance of infrastructure projects would continue to occur. Based on General Plan goals and policies, and in consideration of past expansions of police and fire services, it is expected that police and fire services would continue to expand in proportion to land development activities, and that such expansion would require new or expanded facilities. This is a result of the expected increase in property taxes and development impact fees resulting from urban and rural growth, and allocation of those taxes and fees to public services in a manner consistent with local standards.

Mitigation of impacts to biological resources would continue to occur on a case-by-case basis under the No Action Alternative. In the absence of a comprehensive conservation strategy, it is not possible to determine where and in what amounts compensatory habitat would be provided, but some conservation activities are expected to occur in Santa Clara County on publicly owned lands or conservation banks. Because it is expected that these lands would be managed solely for habitat conservation purposes, it is unlikely that these lands would generate substantial human activity (e.g., recreation) such that additional police or fire services would be necessary. Changes in management on these lands could affect the possibility of the lands being used for illegal activities (e.g., cultivation of marijuana). It is unlikely, however, that these small, disjunct parcels would generate levels of illegal activity such that additional police services would be necessary. Any incremental change is unlikely to require the provision of new or physically altered police or fire protection services.

8.3.2 Cumulative Effects

Similar to the discussion above, police and fire services have expanded throughout the Study Area in proportion to land development. The result of these past activities is the current level of service described in Section 8.1 above.

8.4 Proposed Action

8.4.1 Environmental Consequences/Environmental Effects

The Proposed Action incorporates Covered Activities such as urban and rural land development, and the construction and operation of various infrastructure projects for water, transportation, and other systems. Impacts to police and fire services from these activities would be the same as described under the No Action Alternative.

The Proposed Action also incorporates the Habitat Plan conservation strategy, including the acquisition of at least 33,205 acres of new reserves on natural and agricultural lands, enhancement of up to 13,291 acres of existing open space, and a comprehensive reserve management program to benefit the Covered Species. In terms of public safety and fire services, the reserve management program could result in increased demands for park rangers, open space management, police, and fire services, due to increased public access on newly acquired private lands, but is not expected to change service demands on existing open space added to the Reserve System (typically county parks). Increased public access to lands currently under private ownership is primarily expected to be as a result of the recreational and educational use of reserve units owned in fee title. Condition 9 requires the preparation of a Recreation Plan for the Reserve System, including restrictions on the level of activity anticipated to be compatible with the preservation and enhancement of natural communities, Covered Species, and biological diversity. The limited amount of recreational and educational use envisioned in the Habitat Plan indicates that increased demands for public safety and fire services would be very small compared, for example, to urban parks or large recreational facilities. The incremental demand would be met by patrols by Implementing Entity field staff, and also funded by the payment of in-lieu fees to service providers (e.g., Santa Clara County Fire Department, Santa Clara County Sherriff's Office). These fees are budgeted as part of the Implementing Agency's program management budget (see Habitat Plan Chapter 9, Costs and Funding). Ongoing management activities by Implementing Entity field staff, along with patrols by local public safety staff funded by in-lieu feeds, are expected to adequately minimize the potential for illegal activities on the Reserve System. The small increment of new demand resulting from public access would not result in the need to provide new or expanded police or fire stations.

Increased demands for fire services also could result from fire management practices on the Reserve System, either by resulting in increased wildfire or by requiring increased service by local fire departments to participate in controlled burns. With regard to controlled burns, it is expected that fire department costs would be offset by in-lieu fee payments. With regard to wildfires, see the discussion in Chapter 18, Wildfires. In both cases, any potential for increased demands are expected to be small and would not require providing new or expanded fire stations.

8.4.2 Cumulative Effects

Under the Proposed Action, cumulative effects would occur as a result of the following projects:

- Other conservation activities

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

Cumulative effects to police and fire services would include the additional demands resulting from other habitat preservation activities occurring in and near the Study Area. This includes the acquisition of property by other organizations such as The Nature Conservancy and the Open Space Authority. In many cases, public access to these preserves would be allowed. For the same reasons described above, public access could result in increased demands for police and fire services. In addition, the use of fire as a management tool is expected to occur on most preserves, which could result in increased demands on fire personnel. It is expected that these impacts would be offset by in-lieu fee payment or other arrangements between the landowners and public safety providers.

8.4.3 Determination of Significance

Compared to the No Action Alternative, the Proposed Action would result in **less-than-significant** impacts and less-than-significant cumulative effects.

8.5 Alternative A

8.5.1 Environmental Consequences/Environmental Effects

Compared to the No Action Alternative, Alternative A incorporates a Reserve System including the acquisition of new reserves and the enhancement of existing open space areas. Areas prioritized for Reserve System acquisition and enhancement under Alternative A are expected to be similar to the Proposed Action, but the Reserve System would be smaller. In terms of police and fire services, the Alternative A reserve management program could result in increased demands for police and fire services due to increased public access and increased use of fire management practices on the Alternative A Reserve System. The types of impacts would be similar to those discussed above for the Proposed Action. Because the Reserve System would be smaller, it is expected that potential impacts would be proportionately less. In-lieu fee payments also are expected to be proportionately less. The small increment of new demand resulting from public access would not result in the need to provide new or expanded police or fire stations.

8.5.2 Cumulative Effects

Same as Proposed Action.

8.5.3 Determination of Significance

Same as Proposed Action.

CHAPTER 9

Recreation

9.1 Environmental Setting/Affected Environment

Of the 519,506-acre Study Area, an estimated 117,686 acres (26 percent) are currently owned by public agencies or private conservation organizations, or are subject to private conservation easements. These areas range from urban parks to County and state parks of varying sizes. This section provides an overview of existing open space agencies with holdings in the Study Area and the major open space units that they operate. Significant park and open space areas within the Study Area are shown on Figure 9-1.

9.1.1 California Department of Parks and Recreation

The California Department of Parks and Recreation (State Parks) operates Henry W. Coe State Park, which is the largest state park in Northern California at 85,843 acres (57,353 acres of which are within the Study Area). The park's original size was approximately 13,000 acres. Since the 1980s, the park has expanded considerably through the purchase of adjacent properties on all sides.

Elevations in this rugged park range from approximately 1,000 to 3,560 feet. The park has a diverse mix of habitat types including grassland, oak woodland, ponderosa pine forest, mixed chaparral, riparian woodland, and over 100 ponds. The park also supports two large man-made lakes, Mississippi Lake and Coit Lake, as well as the headwaters of Coyote Creek and several miles of Pacheco and Orestimba creeks. The 23,300-acre Orestimba Wilderness, a state designated wilderness area that accounts for approximately 27 percent of the total acreage of the park, is entirely within Stanislaus County, adjacent to the Study Area. The park is open year-round for hikers, mountain bikers, backpackers, equestrians, picnickers, and photographers on over 100 miles of trails and roads. Anglers can hike to remote lakes and streams for sport fishing. Access to the park by car is extremely limited, with only four entrances and paved roads that stop at the margins of the park. The main entrance and park headquarters is approximately 13 miles east of U.S. Highway 101 northeast of Gilroy and accessed via the Dunne Avenue exit from U.S. Highway 101 in Morgan Hill (California State Parks, 2004).

9.1.2 California Department of Fish and Game

CDFG owns the Cañada de los Osos Ecological Area, formerly the Stevenson Ranch, located on Jamieson Road, about ten miles east of Gilroy. CDFG purchased the 4,400-acre ranch in 2001 with the assistance of The Nature Conservancy. Two hundred acres of the property were sold to State Parks as a trailhead into Henry W. Coe State Park. The remaining 4,200 acres are managed by the CDFG in cooperation with the California Deer Association for youth outdoor education programs and the improvement of wildlife habitat on the property. Game fish populations may be enhanced to help support youth fishing programs.

9.1.3 County of Santa Clara Parks and Recreation Department

The mission of the County of Santa Clara Parks and Recreation Department (County Parks) is to provide, protect, and preserve regional parklands for the enjoyment, education, and inspiration of this and future generations (County of Santa Clara Parks and Recreation Department, 2003a). Since its inception in 1956, County Parks' park system has grown to encompass approximately 46,000 acres in 29 park units that provide a variety of urban and rural recreational amenities. For more than four decades, County Parks has focused on purchasing and developing a network of regional parks and trails along the hillsides adjacent to the urban fringe and along the creeks that pass through the urban service area. This "necklace of parks" vision was put into place in the early 1960s and has since guided park acquisition and development (County of Santa Clara Parks and Recreation Department, 2003a).

Santa Clara County Parks and Recreation System Strategic Plan

With the goal of accommodating the growing outdoor recreation needs of an increasing urban population, the County Parks Strategic Plan (County of Santa Clara, Parks and Recreation Department, 2003a) lays out a vision that will allow the system to continue to meet the needs of the County's residents. The vision of the Plan is captured in the following statement:

> *We create a growing and diverse system of regional parks, trails, and open spaces of Countywide significance that connects people with the natural environment, offers visitor experiences that renew the human spirit, and balances recreation opportunities with resource protection* (County of Santa Clara, Parks and Recreation Department, 2003a).

The County Parks Strategic Plan focuses on the balance of recreation and natural resource protection, guiding the improvement and expansion of the County park system to meet the growing demand for high-quality recreational opportunities in Santa Clara County while also supporting local natural and cultural resources (County of Santa Clara, Parks and Recreation Department, 2003a).

As described in the Strategic Plan, the County's Acquisition Action Plan ensures the expansion of the regional park and trail system lands to provide opportunities to meet the County's varied park needs. County park lands are acquired by the County principally through a percentage of property tax funds generated by the Santa Clara County Park Charter, and to a lesser extent through state bond monies, grants, and gifts of property. The Parks Charter Fund currently stipulates that a minimum of 15 percent of the funding be allocated to land acquisition, five percent used for capital development, and the remainder used for operation of the park system.

Santa Clara County Countywide Trails Master Plan Update

The Countywide Trails Master Plan Update was completed in November 1995 by the County of Santa Clara Parks and Recreation Department. This update provides a vision for a network of contiguous trails that connects local and regional parks and open space preserves with urbanized areas. As part of the update to the County General Plan, trail policies and guidelines were proposed to guide continued planning and expansion of the regional trails

network, define a process for implementing trails and coordinating with private and public property owners, establishing priorities, mitigating environmental impacts, and directing trail use, design, operations, and management (County of Santa Clara, 1995).

The Countywide Trails Master Plan is the guiding plan for the development and management of a regional trail system that is intended to provide (at buildout) up to 535 miles of off-street trail routes. At the time the plan was adopted, approximately 105 miles of the system was in place. The Study Area contains existing and proposed regional, sub-regional, and connector trails, including the ones listed below. Proposed trails would be developed in cooperation with willing private landowners, and subject to a trail-specific master planning process. In addition to the trails listed below, the Master Plan also describes numerous additional trails within urban areas, including along waterways such as Coyote Creek, Los Gatos Creek, Penitencia Creek, and Guadalupe Creek:

- Juan Bautista de Anza National Historic Trail. Proposed trail, including segments along the Pajaro River and Little Llagas Creek.
- Bay Area Ridge Trail.
- Monterey-Yosemite State Trail.
- Benito-Clara Trail.
- Coyote Creek-Llagas Creek Trail.
- West Valley Trail.
- Morgan Hill and San Martin Cross Valley Trails.
- Guadalupe Reservoir – Calero Trail.
- Calero – Santa Teresa Trail.
- Bailey Avenue Trail.
- Silver Valley Trail.
- Silver Creek Loop.
- South Metcalf Trail.
- Willow Springs Trail.
- Paradise Valley Trail
- San Martin/South Valley Trails.
- Uvas Reservoir to Uvas Canyon County Park Trail.
- Little Arthur Creek Trail.
- Hecker Pass Trail.
- Buena Vista/Day Trail.
- West Branch Llagas Creek Trail.
- Skyline-Summit Trail.

Natural Resources Management

County Parks maintains an active natural resources management program guided by the County Parks Strategic Plan, Board-approved natural resource management plans, and natural resources management guidelines (County of Santa Clara, Parks and Recreation Department, 2004).

County Parks is in the process of developing comprehensive natural resource management plans for all of its park units. The Coyote Lake-Harvey Bear Ranch County Park was one of the first county parks to undergo a natural resource management plan as part of a master planning effort (Rana Creek Restoration, 2004). The Coyote Creek Parkway Integrated Natural Resources Management Plan and Master Plan (Integrated Plan) was adopted in March 2007 (Santa Clara County Parks and Recreation Department, 2006).

The current focus of the natural resources management program is conducting system-wide assessments of resources within the parks to identify and prioritize management actions. Site-specific management projects have been limited due to funding and staffing constraints and the need for management plans. Recent projects have included riparian enhancement, livestock grazing programs, wetland restoration, and prescribed burns. Many of these actions, including an ongoing grazing program, have taken place at Joseph D. Grant County Park.

Major County Parks

Several large parks within the Study Area are owned and/or managed by County Parks. Collectively, these parks are representative of the diverse resources available in Santa Clara County and support a variety of recreational interests including hiking, hiking with dogs on-leash, mountain bicycling, golf, archery, dog parks, boating, fishing, horseback riding, camping (including backcountry camping), picnicking and day use, and natural and cultural interpretation. A brief discussion of major County parks within the Study Area is included below.

Almaden Quicksilver County Park. Almaden Quicksilver County Park is located on the western border of the Study Area, surrounding much of Guadalupe and Almaden Reservoirs. The park was historically used for mining activities and was once home to more than 1,800 miners and their families. The park encompasses 4,138 acres, occupying a majority of Capitancillos Ridge. The park is known for its early spring wildflowers and history surrounding the late 19th Century mining era. The park provides over 34 miles of hiking trails, including 23 miles of equestrian trails and 10 miles of bike trails. All trails in the park are open to dog owners to walk their dogs on leash (County of Santa Clara Parks and Recreation Department, 2006).

Anderson Lake County Park. Anderson Lake County Park is located in the foothills of the Diablo Range east of Morgan Hill, and surrounds Anderson Reservoir, the largest reservoir in Santa Clara County. The approximately 3,144-acre park includes incorporates other parks including segments of the Coyote Creek Parkway multiple use trails, the Jackson Ranch historic park site, the Moses L. Rosendin Park, and the Burnett Park area (County of Santa Clara Parks and Recreation Department, 2006).

Calero County Park. Calero County Park is located in the eastern foothills of the Santa Cruz Mountains, south of Santa Teresa County Park and San José. This approximately 4,455-acre park is separated into two distinct areas: Calero Reservoir, which offers a variety of recreational activities including boating and fishing, and the adjoining "back country" that supports oak woodland, chaparral, and riparian plant communities, and associated wildlife habitats. The backcountry offers 18.6 miles of trails available to hikers and equestrians (County of Santa Clara Parks and Recreation Department, 2006). County Parks is currently developing a Trails Master Plan for Calero County Park and a Stables Location Feasibility Study to develop a new regional equestrian facility within the County parks system.

In 2009, County Parks acquired a 966-acre addition to Calero County Park. This new unit, known as Rancho San Vicente, is located west of Calero Reservoir, generally between McKean Road and Almaden Road, and helps connect Calero County Park with Almaden Quicksilver County Park.

Chesbro Reservoir County Park. Chesbro Reservoir County Park is an approximately 216-acre park and reservoir located in the foothills of the Santa Cruz Mountains west of Morgan Hill. The reservoir and park are accessible from U.S. Highway 101 or SR 85. Chesbro Reservoir was formed from the damming of Llagas Creek. Recreational activities within the park include shoreline fishing and other activities at the park center. There are no designated trails within the park at this time.

Coyote Creek Parkway. Coyote Creek Parkway is an approximately 1,804-acre park that meanders along Coyote Creek for 15 miles, bridging the gap between rural and urban parks along the valley floor within the Study Area. Coyote Creek Parkway crosses through portions of Hellyer County Park to the north and Anderson Lake County Park to the south. The north portion features a paved multi-use trail popular with bicyclists, rollerbladers, and hikers. South of Metcalf Road, an equestrian trail parallels the paved trail (County of Santa Clara Parks and Recreation Department, 2006). County Parks is currently implementing the 2007-approved Coyote Creek Parkway Integrated Natural Resources Management Plan and Master Plan.

Coyote Lake-Harvey Bear Ranch County Park. Coyote Lake-Harvey Bear Ranch County Park is located in the western foothills of the Diablo Range, east of San Martin. This approximately 4,595-acre park encompasses Coyote Lake (Coyote Reservoir), providing opportunities for power boating, jetskiing, waterskiing, sailing, canoeing/kayaking, and fishing. The lake contains bluegill, black crappie, channel catfish, carp, and black bass. In the spring, the lake is stocked with rainbow trout. The Bear and Mendoza Ranch sections of the park provide over 13 miles of hiking, biking and equestrian trails (County of Santa Clara Parks and Recreation Department, 2006). A master plan and natural resources management plan were adopted for this park in 2003 (County of Santa Clara Parks and Recreation Department, 2003b; Rana Creek Habitat Restoration, 2004).

Ed R. Levin County Park. Ed R. Levin County Park is located in the northern most tip of the Study Area. This approximately 1,541-acre park combines the traditional features of an urban regional park with the trail system of a rural regional park and natural area. One of the highest points in the Study Area, Monument Peak, is located in the park. Hikers, equestrians, and cyclists enjoy sections of the park's 19-mile trail system. The southern

portion of the park, known as the Spring Valley Area, is named for the many springs that flow freely in this area (County of Santa Clara Parks and Recreation Department, 2006).

Joseph D. Grant County Park. The approximately 9,560-acre Joseph D. Grant County Park is the largest of Santa Clara County's regional parks. It is located on the eastern border of the Study Area in the Diablo Range. Cattle grazing is allowed in some parts of the park, monitored under a joint resource management plan (for Joseph D. Grant and Ed R. Levin County Parks, October 1996). Hikers and equestrians have access to an extensive 52-mile trail system. Mountain bikes are permitted on nearly half of the park's trails. The diverse trail system at the park makes this a popular place to stage large-scale organized trail events such as equestrian endurance rides, mountain bike events, and foot races (County of Santa Clara Parks and Recreation Department, 2006). Within its western portion, near the entrance, the park also contains three campgrounds, a group picnic site, and fishing opportunities at Grant Lake and McCreery Lake.

Los Gatos County Park. Los Gatos County Park is an approximately 147-acre park consisting of 10.2 acres of land owned by the County and approximately 137 acres of land owned by the Santa Clara Valley Water District and leased to the County for park purposes. A master plan was adopted for the park in 2002. A portion of the Los Gator Creek Trail, which is a nine-mile trail operated by County Parks, City of Campbell, Town of Los Gatos and the City of San José, is located within the County Park. Los Gatos Creek is one of the few urban streams in the Santa Clara Valley which remains relatively intact. It is both a riparian corridor for plants and wildlife and is part of an intricate system of water resources and flood protection. Recreational opportunities along the trail include walking, hiking, biking, and nature viewing. As part of the approved Master Plan, implementation of the future trail development will offer additional recreational opportunities while tying Santa Clara County together with a regional trail network.

Martial Cottle Park. Martial Cottle Park lies within the northern portion of the Santa Clara Valley in an unincorporated area of Santa Clara County. The Park is accessed via SR 87, U.S. Highway 101, and Highway 85.The Park is comprised of two ownerships: the State-owned Martial Cottle Park State Recreation Area (136.52 acres) and the County-owned Martial Cottle Park (120.12 acres). The County and state parcels are located immediately adjacent to each other, and have been joined into a single entity for the purposes of cohesive planning and operations. Currently not part of the Park is a Life Estate Area (30.9 acres) owned by Walter Cottle Lester that will ultimately become part of the Park. With this property, the park will be a total of approximately 287 acres. A combined State Park General Plan and County Park Master Plan was completed and adopted by the County of Santa Clara Board of Supervisors and the California State Park and Recreation Commission in 2011. The Park will be developed and operated as a historical agricultural park by County Parks as the lead agency under a Joint Powers and Operating Agreement.

Motorcycle County Park. Motorcycle County Park is the County's only off-road vehicle park. This approximately 442-acre park is located in the foothills of the Diablo Range, east of the southern tip of San José. The park supports 20 miles of dirt trails (County of Santa Clara Parks and Recreation Department, 2006).

Mount Madonna County Park. This approximately 4,103-acre park is dominated by redwood forests characteristic of the Santa Cruz Mountains. To the east, the park overlooks the

Valley; to the west, Monterey Bay. As the slopes of Mount Madonna descend toward the valley, the landscape changes from redwood forest to oak woodland, dense chaparral, and grassy meadows. Hikers and equestrians have access to an extensive 14-mile trail system (County of Santa Clara Parks and Recreation Department, 2006). Other park amenities include campgrounds, picnic areas, and an equestrian staging area. County Parks recently acquired a new unit, known as Clark Canyon, which adds an additional 408 acres to Mount Madonna County Park. Clark Canyon is southeast of the main park, along Whitehurst Road, and is not yet open to the public.

Santa Teresa County Park. Santa Teresa County Park is located in the Santa Teresa Hills ten miles south of downtown San José. This diverse, approximately 1,646-acre park offers a variety of recreational opportunities including golf, an equestrian staging area, and picnic sites for large groups. Additionally, the park offers over 18 miles of unpaved trails for equestrian, hiking and bicycle use. The Coyote Alamitos Canal, which is owned by SCVWD, also crosses through the park (County of Santa Clara Parks and Recreation Department, 2006). County Parks recently adopted a site plan for the Santa Teresa County Park Historic Area to complete the historic area and integrate with the previously developed portions that include the Bernal-Gulnac-Joice Ranch and Santa Teresa Spring sites.

Uvas Canyon County Park. Uvas Canyon County Park is located in the Santa Cruz Mountains, west of Morgan Hill and San Martin, upstream of Uvas Reservoir. This wooded, approximately 1,133-acre park offers hiking, camping, and picnicking opportunities throughout most of the year. The park has six miles of hiking trails.

Uvas Reservoir County Park. Uvas Reservoir County Park is open for non-power boating and fishing (Santa Clara County Parks and Recreation Department, 2006).

9.1.4 Santa Clara County Open Space Authority

The Santa Clara County Open Space Authority (Open Space Authority) was created on February 1, 1993 by the California State Legislature, in response to efforts by citizens and local governments of Santa Clara County to protect the open spaces that were being threatened by development. The Open Space Authority is governed by an elected seven-member board of directors, each representing a unique district. The Authority comprises the cities of Campbell, Milpitas, Morgan Hill, Santa Clara, and San José, as well as much of the unincorporated areas of Santa Clara County.

The Open Space Authority's Board has defined its purpose as follows (Santa Clara County Open Space Authority, 2005):

> *Preservation of Open Space and creation of greenbelts between communities, lands on the valley floor, hillsides, viewsheds and watersheds, baylands and riparian corridors, are immediate high priorities. These are needed to counter the continuing and serious conversion of these lands to urban uses, to preserve the quality of life in the County and to encourage outdoor recreation and continuing agricultural activities. Development and implementation of land management policies that provide proper care of open space lands and allow public access appropriate to the nature of the land for recreation are consistent with ecological values and compatible with agricultural uses.*

The Open Space Authority has preserved 28 properties and over 10,000 acres throughout Santa Clara County, including Rancho Cañada del Oro Open Space Preserve and Palassou Ridge Open Space Preserve, which are located in the Study Area (see following discussion below). The Open Space Authority's properties are protected through a combination of conservation easements and fee title purchase (Santa Clara County Open Space Authority, 2005).

- The 3,882-acre Rancho Cañada del Oro Open Space Preserve is located adjacent to Calero County Park, southwest of San José. The preserve includes five existing trails totaling 8 miles. The preserve also includes a parking area, restrooms, and an equestrian staging area (Santa Clara County Open Space Authority, 2005).
- The 3,515-acre Palassou Ridge Open Space Preserve (formerly Lakeview Meadows) is located at the eastern edge of Coyote Reservoir, west of Henry W. Coe State Park. This area provides opportunities for preserving uninterrupted habitat corridors and significant riparian and watershed resources. Trail connections to Henry Coe State Park and potentially to Nature Conservancy lands could provide public access and a component of a future regional trail network (Santa Clara County Open Space Authority, 2006).
- The 702-acre Doan Ranch complex includes the 574-acre Doan Ranch and the adjacent 128-acre Nielson Ranch. The site is located off Cañada Road in the foothills east of Gilroy, just south of Henry W. Coe State Park. At this time, Doan Ranch is not open to the public.

9.1.5 City Parks

The cities of San José, Morgan Hill, and Gilroy support a network of parks and open space. Most of these parks are managed for intensive recreational use and include such features as athletic facilities, community centers, turf fields, picnic areas, and trails. Few of the city parks provide important plant or wildlife habitat. One exception is Alum Rock Park in San José. This 740-acre park provides recreational opportunities including 13 miles of trails (some of which are open to mountain bikers and equestrians), picnic areas, playgrounds, and a visitor center. Other city parks that may have important habitat value include Penitencia Creek Park in San José, and Eagle Ridge open space, Uvas Creek Preserve, and Christmas Hill Park in Gilroy.

- The City of San José has nine regional parks and 152 neighborhood parks totaling 3,642 acres of parks within the City (City of San José, 2007). The City lists 15 parks and recreation facilities including golf courses, libraries, community centers, parks, sports pavilions, gardens, and historical landmarks.
- The City of Morgan Hill owns about 66 acres of public parkland. Community Park and Galvan Park are the two largest at 24 acres and eight acres, respectively. Paradise Park and adjacent rail areas total about 15 acres. Other neighborhood parks include Diana Park, Oak Creek Park, and Nordstrom Park (City of Morgan Hill, 2001).
- The City of Gilroy has a variety of parks and recreation facilities located throughout the community. Approximately 108 acres of developed park lands were located in the City in 2004 (City of Gilroy, 2004). The two community parks Las Animas and Christmas Hill

are identified as the "flagships" of the park system. Other parks and recreation facilities include a series of neighborhood and neighborhood/school parks, mini-parks with recreation facilities, sports parks, preserves, trails, and special use facilities such as the Gilroy Youth Center, the Senior Center, Wheeler Community Center, Willey Cultural Center, and others.

9.2 Methodology and Significance Criteria

For the No Action Alternative, changes to recreation opportunities were estimated by comparing (using GIS) expected development activities with areas containing important recreational resources. The analysis of the Proposed Action and Alternative A builds upon the No Action Alternative analysis by comparing the expected Reserve System area with the existing open space areas shown on Figure 9-1. An alternative would have a significant impact if it results in the following.

- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.
- Include recreation facilities or require the construction or expansion of recreation facilities which might have an adverse physical effect on the environment.
- Decrease access to existing recreation facilities.

9.3 No Action Alternative

9.3.1 Environmental Consequences/Environmental Effects

Under the No Action Alternative, existing parks and open space operated by federal, state, regional, and local agencies would continue to be available to recreational users. New growth and development within the Study Area would continue to occur, and would result in the need for expanded and additional parks and recreational amenities. Development of new or expanded recreational facilities would be consistent with current local plans and policies. Recreation related impacts associated with individual development projects would be addressed by CEQA on a case-by-case basis. Individual development projects would potentially provide for mitigation, including land dedication for recreational purposes or payment of in-lieu fees for park development. Existing park lands would continue to be used for public recreation purposes, and County Parks would continue to undertake site-by-site Master Planning and development projects (e.g., development of trails consistent with the Countywide Trails Master Plan Update and other approved plans). Hunting and fishing on private lands in rural areas would continue to occur consistent with CDFG license regulations. Infrastructure development activities under the No Action Alternative also may result in temporary adverse effects on recreation due to temporary interruptions in the availability of recreational opportunities and amenities.

In addition, mitigation for biological resources impacts also would occur under the No Action Alternative as a consequence of urbanization and infrastructure development. Under the No Action Alternative, mitigation requirements are expected to apply to

discretionary activities on a case-by-case basis, and include requirements for onsite habitat preservation as well as the acquisition and restoration of offsite habitat areas (including purchasing credits in conservation banks). Smaller habitat preserve areas are not expected to provide recreation benefits under the No Action Alternative. These areas would be managed primarily for ecological benefits, with very little to no provisions for public access (e.g., parking areas and trails).

9.3.2 Cumulative Effects

Section 4.1.4 describes the substantial amount of parkland acquisition and development that has occurred along with the urbanization of the Santa Clara Valley. These parks have contributed to providing diverse recreational opportunities to residents in the Study Area and surrounding areas. Although some portions of the parks are strictly managed for preservation (e.g., Orestimba Wilderness sector of Henry W. Coe State Park), most areas are managed for passive and active recreational uses such as hiking, biking, picnicking, boating, and camping. This has been a beneficial effect. Continued development of park and recreation facilities concurrent with urbanization of the Study Area, as described above, would contribute to these beneficial effects.

9.4 Proposed Action

9.4.1 Environmental Consequences/Environmental Effects

Recreational use of the lands within the Study Area is expected to increase with implementation of the Proposed Action. As under the No Action Alternative, the demand for recreational amenities under the Proposed Action would increase over time as a result of planned development and population growth within the Study Area (e.g., the Covered Activities of urban and rural development). Under the Proposed Action, recreational use within the Study Area also would increase as a result of land acquisition for the Reserve System (at least 33,205 acres), and implementation of actions to expand recreational access and enhance recreational opportunities on the Reserve System consistent with the Habitat Plan conservation strategy. Under the Proposed Action, public access, consistent with the biological goals and objectives, would be provided on all Reserve System lands owned by a public agency. Management activities associated with Habitat Plan implementation include the construction and maintenance of recreational facilities such as trails, staging areas, parking lots, restrooms, wildlife observation platforms, and educational kiosks. For private lands acquired for the Reserve System, any existing hunting and fishing opportunities are likely to be curtailed, although hunting may be used as a management tool in some limited circumstances (e.g., control of feral pig populations).

Public access to privately owned land under conservation easement would only be permitted with the landowner's consent and consistent with a public access plan developed by the Implementing Entity and agreed to by the property owner. Landowners who have fished or hunted large game on property acquired by conservation easement would be allowed to continue this use as long as it is consistent with the Habitat Plan biological goals and objectives. Recreation in areas not incorporated into the Reserve System would remain unaffected.

Management of existing parks that are incorporated into the Reserve System (up to 13,291 acres) would continue to be the purview of County Parks (or other implementation partners) and their applicable recreation plans, consistent with easements acquired by the Implementing Entity. Ongoing recreation in these areas within existing parks would continue as long as the recreation activities are consistent with the Habitat Plan conservation strategy. It is possible that some recreation activities would be curtailed because of conflicts with Covered Species goals and objective. For example, fishing may be incompatible with stream and riparian restoration activities, and some hiking areas may be closed in order to protect plant occurrences or highly sensitive wildlife habitat (e.g., bat roosts). This impact is expected to be negligible, however, because existing open space areas most likely to be added to the Reserve System (see Figure 2-1) were chosen, in part, because existing recreational uses are generally consistent with the Habitat Plan biological goals and objectives.

For all lands acquired for the Reserve System, any public access limitations would be described in each individual reserve unit management plan, which would be prepared within 5 years of the first acquisition of each reserve unit (including acquisition of easements on existing open space lands – see Habitat Plan Condition 9 for additional discussion).

9.4.2 Cumulative Effects

Under the Proposed Action, cumulative effects would occur as a result of the following projects:

- Other conservation activities

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

The beneficial cumulative effects to recreation are expected to continue under the Proposed Action. The addition of new preserves within the Study Area (e.g., lands acquired by The Nature Conservancy) would increase access to lands currently under private ownership. There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects. The cumulative contribution of the Proposed Action is expected to be positive. Implementation of the Habitat Plan not only would result in an increase in recreational opportunities and amenities within the Study Area, but also would enable existing and future recreational uses to be coordinated with the conservation of sensitive resources. This would allow recreational use to be maximized and impacts to Covered Species to be minimized over time.

9.4.3 Determination of Significance

The Proposed Action is expected to increase recreational use within the Study Area compared to the No Action Alternative. This would be a **beneficial** impact. Cumulative effects would be beneficial, and the Proposed Action would have a cumulatively considerable (beneficial) contribution to the beneficial cumulative effect.

9.5 Alternative A

9.5.1 Environmental Consequences/Environmental Effects

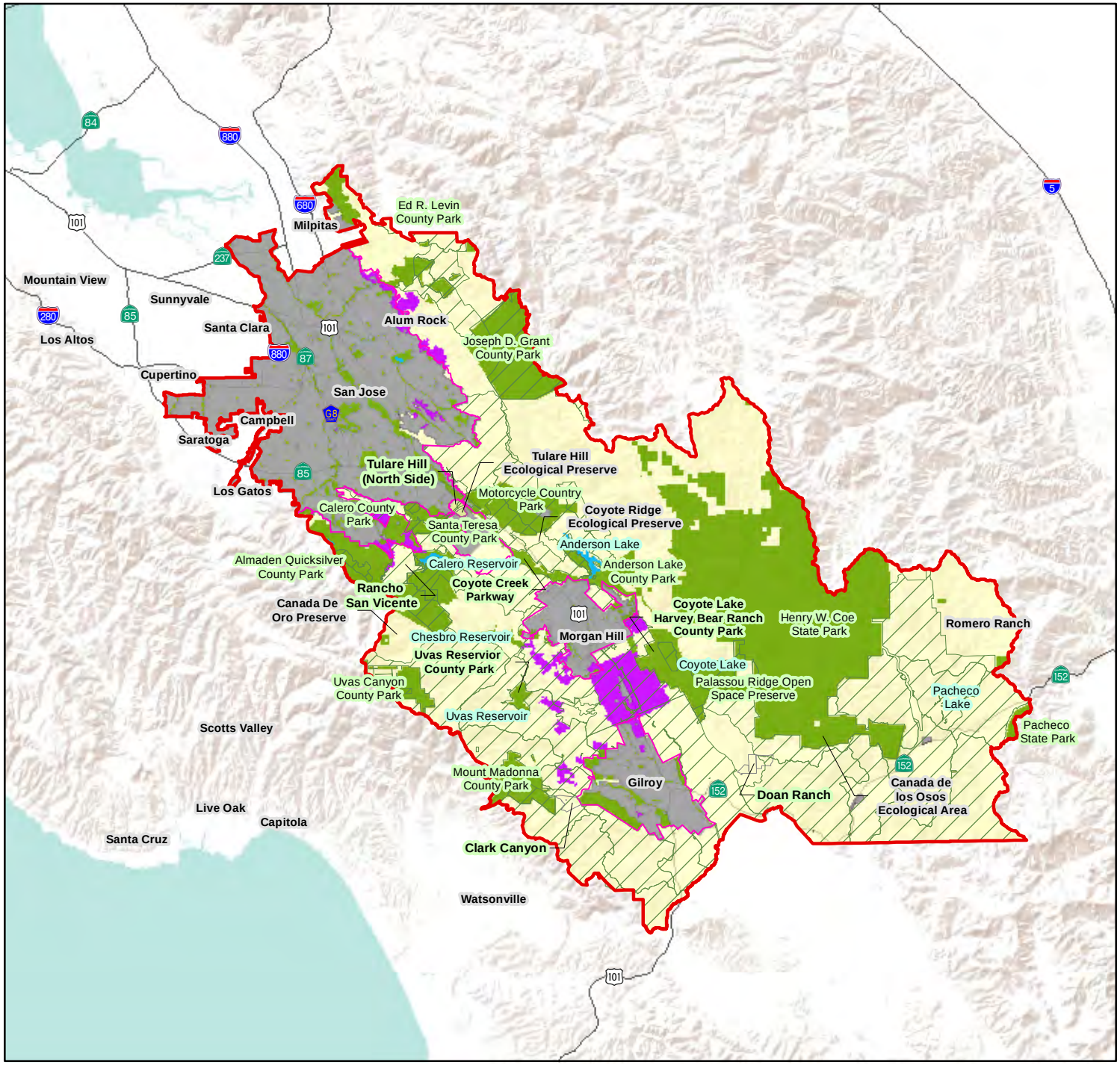
Under Alternative A, the demand for recreational amenities would increase as a result of planned development and population growth within the Study Area (e.g., the Covered Activities of urban and rural development). This would be mitigated by implementation of existing local requirements that new development provide or fund park and recreation improvements. Recreational use within the Study Area also would increase as a result of land acquisition for the Reserve System, and implementation of the conservation actions (e.g., Condition 9) that would expand recreational access and enhance recreational opportunities within the Study Area. Overall, the smaller Reserve System under Alternative A is expected to result in fewer recreational benefits than the Proposed Action.

9.5.2 Cumulative Effects

Same as Proposed Action.

9.5.3 Determination of Significance

Same as Proposed Action.



VICINITY MAP

LEGEND

- Study Area
- Planning Limit of Urban Growth
- Potential Reserve Areas
- Farmland/ Ranchland
- Parks and Open Space
- Rural Residential
- Urban Development
- Water Bodies

N

0 3 6
Miles

FIGURE 9-1
Significant Parks and Open Space
Santa Clara Valley HP EIR/EIS
Santa Clara County, California

CHAPTER 10

Hydrology and Water Quality

10.1 Environmental Setting/Affected Environment

This chapter describes the hydrology, water quality, and flooding conditions that characterize the Study Area. This chapter also outlines the regulatory framework for protecting these resources.

10.1.1 Regulatory Setting

In addition to complying with the requirements of CEQA and NEPA, projects in the Study Area must comply with the following regulations related to hydrology and water quality.

Federal Regulations

Federal Clean Water Act. The federal Clean Water Act (CWA) was enacted by Congress in 1972 and its goal was to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." The CWA prohibits the discharge of pollutants to navigable waters from point and nonpoint sources unless authorized by a National Pollutant Discharge Elimination System (NPDES) permit. The USEPA has granted the State of California authority in administering and enforcing the provisions of the CWA and NPDES. NPDES is the primary federal program that regulates point-source and non-point source discharges to waters of the United States.

The State of California adopts water quality standards to protect beneficial uses of state waters as required by Section 303 of the CWA and the Porter-Cologne Water Quality Act of 1969 (described below).

Placement of clean fill materials into waters of the United States is regulated by Section 404 of the CWA, which is administered by USACE. Under the CWA, the state must issue Section 401 Water Quality Certification for a project to be permitted under Section 404. Water quality certification requires the evaluation of water quality considerations associated with dredging or placement of fill materials in waters of the United States.

Executive Order 11988 – Floodplain Management. Executive Order 11988 requires federal agencies to recognize the significant values of floodplains and to consider the public benefits that would be realized from restoring and preserving floodplains. Under this order, the Corps of Engineers is required to provide leadership and take action to accomplish the following objectives:

- Avoid development in the base floodplain, unless such development is the only practicable alternative.
- Reduce the hazard and risk associated with floods.
- Minimize the impact of floods on human safety, health, and welfare.
- Restore and preserve the natural and beneficial values of the base floodplain.

State Regulations

Porter-Cologne Act. Enacted by the California Legislature in 1969, the Porter-Cologne Water Quality Control Act established the State Water Resources Control Board (SWRCB), the primary state agency for protecting the quality of the state's surface and groundwater supplies and enforcing the CWA. The Act also divided the state into nine regional basins, each with a Regional Water Quality Control Board (RWQCB). Administration of the Porter-Cologne Act is delegated to the nine RWQCBs.

The Porter-Cologne Act authorizes the SWRCB to prepare comprehensive water quality control plans or "Basin Plans" for major watersheds in California. For each waterbody, the Basin Plans identify beneficial uses of water to be protected, establish water quality objectives (ambient standards) necessary to support the beneficial uses, and outline the actions needed to bring waterbodies into compliance with water quality objectives.

The San Francisco Bay and Central Coast RWQCBs, which regulate water quality within the Study Area, implement the policies of the SWRCB by making policy recommendations and issuing permits to improve water quality within their jurisdictional boundaries. Policy recommendations are made in the Basin Plans for the San Francisco Bay and Central Coast Regions. The Guadalupe and Coyote watersheds are within the regulatory boundaries of the San Francisco Bay RWQCB. The Pajaro watershed is within the Central Coast RWQCB regulatory boundary.

The SWRCB and the San Francisco Bay and Central Coast RWQCBs regulate discharges to water resources through the issuance of a variety of permits, including Wastewater Permits (discharges of treated wastewaters to surface water bodies), Municipal Stormwater Permits (municipal processes for stormwater quality control), and General NPDES Stormwater Permits for construction and industrial activities. The most recent Municipal Stormwater Permit for portions of the Study Area draining to San Francisco Bay (Guadalupe and Coyote watersheds) was adopted in October 2009, and the most recent permit for the areas draining to the Pajaro River was adopted in March 2010. The statewide General NPDES Permit for construction activities requires the preparation of a Stormwater Pollution Prevention Plan (SWPPP), including detailed Best Management Practices (BMPs) for erosion control, for all construction activities with more than 1 acre of land disturbance. The construction General Permit was recently updated (effective July 1, 2010) to include numeric standards and more stringent monitoring requirements.

Santa Clara Valley Water District

SCVWD is the primary water resource agency for Santa Clara County, providing water to the residents and businesses of Santa Clara County as a water wholesaler. SCVWD is also a flood protection agency and is the major steward for the over 800 miles of streams and creeks in the County and its underground aquifers. Stewardship responsibilities include creek restoration and wildlife habitat projects, pollution prevention, and a commitment to natural flood protection (SCVWD, 2006).

The mission of SCVWD is to maintain "a healthy, safe, and enhanced quality of living in Santa Clara County through watershed stewardship and comprehensive management of water resources in a practical, cost-effective, and environmentally sensitive manner" (SCVWD, 2006). This mission reflects the current approach to water management utilized by

SCVWD that balances water supply, flood protection, and environmental sensitivity. SCVWD has developed several programs including the Stream Maintenance Program and Watershed Stewardship Program that also reflect this management approach.

SCVWD is a conjunctive-use agency, managing and using both groundwater and surface water supplies to ensure water supply reliability. Water supply sources include natural runoff, groundwater, and water imported from the Sacramento/San Joaquin Delta via the South Bay Aqueduct of the State Water Project (SWP) and the San Felipe Division of the Central Valley Project (CVP). It owns and operates ten reservoirs, with a main function of providing water supply (including via groundwater recharge) and a secondary function of providing flood control. Some reservoirs also serve a tertiary need for recreation. Only one reservoir, Chesbro Reservoir, is operated primarily as a flood-control facility and secondarily for water supply (Showalter pers. comm.). Eight of the ten reservoirs are located in the Study Area: Vasona, Guadalupe, Almaden, Calero, Anderson, Coyote, Chesbro, and Uvas reservoirs.

In October 2006, SCVWD enacted the Water Resources Protection Ordinance. This ordinance established the policy by which, beginning on February 28, 2007, SCVWD will issue permits for modifications, entry, use, or access to SCVWD facilities or easements to a person or entity. This policy was developed and implemented based on the guidelines and standards for land use near streams developed by the Santa Clara Valley Water Resources Protection Collaborative (Collaborative). Local land use policies for development near streams also have been modified as a result of the Collaborative. The Collaborative was formed in 2003 to address the needs of flood management, drinking water quality and quantity, surface and groundwater quality and quantity, and habitat protection and enhancement throughout the County (SCVWD, 2006). With the enactment of this policy, SCVWD will be better equipped to protect the integrity of its facilities as they relate to the goals of cleaner, healthier, and more sustainable water resources.

SCVWD oversees a number of programs intended to protect water resources within its jurisdiction. Examples of these programs are included Table 10.1 below.

TABLE 10-1
SCVWD Water Programs

Program	Purpose
Clean, Safe Creeks and Natural Flood Protection Program	Expands SCVWD flood protection goals into a larger stream management program by broadening the scope of SCVWD activities and defining and implementing these activities in a manner which is tailored to the needs of each stream system.
Adopt-A-Creek	SCVWD issues permits to program partners who adopt a section of creek to clean where the SCVWD has fee ownership. The program provides an opportunity for citizens to participate in cleaning the creeks and improving the water quality in the Santa Clara Valley. In the Guadalupe River Watershed, several sections of creeks have been adopted.
Santa Clara Valley Urban Runoff Pollution Prevention Program	The Program is a multi-jurisdictional effort between the SCVWD, Santa Clara Valley's 13 cities, and the County. The Program was established in response to two water quality regulations affecting the San Francisco Bay: the Federal Clean Water Act and the San Francisco Bay RWQCB Basin Plan.

TABLE 10-1
SCVWD Water Programs

Program	Purpose
Stream Maintenance Program	To preserve their flood protecting characteristics, the SCVWD strives to maintain streams without jeopardizing the long-term health of stream ecosystems. The Stream Maintenance Program puts in place a number of policies and practices, including BMPs applicable to routine stream maintenance, that provide mitigation for potential water quality, vegetation, wildlife and fisheries, land use, and cultural resources impacts. Stream Maintenance Program includes Vegetation Management Program and Erosion Control and Sediment Removal Routine Maintenance Program. In 2009, SCVWD initiated a Stream Maintenance Program update process to review and revise the program manual, update the environmental compliance documentation, and renew necessary permits. The proposed update is intended to cover a 10 year planning horizon beginning in 2012.
Coyote Watershed Stream Stewardship Plan	Addresses flooding and environmental issues through an integrated approach to watershed management. SCVWD developed the Coyote Watershed Stream Stewardship Plan to provide a strategic approach for implementing the Ends Policy using a watershed management approach to provide stream stewardship within the Coyote watershed.
Recharge Program	The recharge program uses both runoff captured in local reservoirs and imported water delivered by the raw water conveyance system to recharge the basins through more than 300 acres of off-stream ponds and 30 creeks. Through its rigorous groundwater recharge activities, SCVWD works to keep the groundwater basins “full,” banking water locally to protect against drought or emergency outages.

Source: SCVWD

10.1.2 Surface Water Hydrology

Precipitation

The climate of the Santa Clara Valley is characterized by warm, dry summers and mild, moderately wet winters. Summer weather is dominated by sea breezes caused by differential heating between the interior valleys and the coast, while winter weather is dominated by storms from the northern Pacific Ocean that produce nearly all the annual rainfall. Records from precipitation gauges located near Los Gatos 7.5 miles southwest of downtown San José, in San José, and Santa Clara University 2.5 miles west of downtown San José date back approximately 100 years. The average annual precipitation varies from less than 14 inches near San Francisco Bay and 14 inches in San José to more than 44 inches near the crest of the Santa Cruz Mountains. The average annual precipitation for the Guadalupe River basin as a whole is about 20 inches. Ninety percent of the rainfall occurs in the late fall and winter months; January is usually the wettest month.

Precipitation in the southern part of Santa Clara County is described in the City of Gilroy General Plan (City of Gilroy, 2002a). The wet season occurs from late October through early April, although the largest historical storm events occur between December and February. Mean annual precipitation at 200 feet in Gilroy was 20 inches. An analysis of surrounding precipitation records showed that mean annual precipitation increased approximately one-inch per 200 feet, and was greatest on the western hills.

Watershed Hydrology

The major watersheds within the northern portion of the Study Area are those of the Guadalupe River and Coyote Creek. Portions of the upper Pajaro River watershed occur in the southern portion of the Study Area (see Figure 2-2). The Pajaro watershed includes the Llagas and Uvas watershed basins as well as portions of the Pacheco-Santa Ana, South Santa Clara Valley, and Pescadero watershed basins.

Guadalupe River Watershed. The Guadalupe River watershed headwaters originate on the west side of Santa Clara County in the Santa Cruz Mountains and encompass approximately 109,000 acres, 59,000 acres (54 percent) of which are in the Study Area. The Guadalupe River discharges to the southern terminus of San Francisco Bay via the Alviso Slough near the community of Alviso (Santa Clara Basin Watershed Management Initiative, 2001).

Los Gatos Creek is the largest tributary to the Guadalupe River and joins the river near downtown San José (Santa Clara Basin Watershed Management Initiative, 2001). Reservoirs in the Guadalupe River watershed include Almaden, Guadalupe, and Calero Reservoirs. All three reservoirs are relatively small; Calero Reservoir has a capacity of 9,934 acre-feet, while Guadalupe and Almaden have capacities of 3,415 and 1,586 acre-feet, respectively. Runoff is captured in the reservoirs in the winter months and stored for use in the summer months.

Water released from the reservoirs and the SCVWD's Almaden Valley pipeline maintains perennial stream habitat downstream on Guadalupe Creek to the Los Capitancillos percolation ponds and Guadalupe River. Lexington and Vasona Reservoirs regulate flows in Los Gatos Creek. Vasona Reservoir is the smallest reservoir maintained by SCVWD, at 400 acre-feet. Lexington Reservoir is not included in the Study Area.

Coyote Creek Watershed. The Coyote Creek Watershed is the largest watershed in Santa Clara County (206,000 acres, or approximately 40 percent of the Study Area) and is entirely contained within the Study Area except for the outflow to the Bay. The headwaters originate on the east side of the Study Area in the Diablo Range. The watershed is bounded by Coyote Creek to the west and the Diablo Range to the east. Coyote Creek is the longest creek in the County at approximately 42 miles. It originates in the Diablo Range at approximately 3,000 feet and flows southward then northward towards South San Francisco Bay (SCVWD, 2002b). Between its headwaters and Anderson Dam, Coyote Creek and its tributaries flow through mostly steep canyons or narrow valleys. Downstream of Anderson Dam, Coyote Creek flows through the flat Santa Clara Valley on a historically wide alluvial plain.

Coyote Creek enters Coyote Valley at its topographic divide with the Llagas Basin to the south. Coyote Creek flows northwesterly through Coyote Valley and the City of San José before entering San Francisco Bay in Milpitas. The major tributaries entering Coyote Creek include Fisher Creek, Upper Silver Creek, Lower Silver Creek, and Upper Penitencia Creek (SCVWD, 2002b). Flow in Coyote Creek is perennial, and in the summer is sustained with groundwater and urban runoff (SCVWD, 2002b). Many of the creeks draining into Coyote Creek are also perennial, but the smaller tributaries on the eastern side of the watershed are dry during the summer and fall (SCVWD, 2002b).

In the Coyote Watershed, the SCVWD operates two reservoirs, Anderson and Coyote, each of which regulate flow into Coyote Creek. Anderson Reservoir is the largest reservoir in Santa Clara County, with a capacity of 90,373 acre-feet. The Coyote Reservoir has a capacity

of 23,244 acre-feet. Cherry Flat Reservoir, operated by the City of San José, partially regulates the flows of Upper Penitencia Creek.

Pajaro River Watershed. The Pajaro River is the largest coastal stream between San Francisco Bay and the Salinas Watershed in Monterey County (RMC, 2005). Approximately 11.7 miles of the upper Pajaro River fall within the Study Area in southern Santa Clara County. The Pajaro River eventually enters the Pacific Ocean at Monterey Bay. Pacheco, Uvas, Llagas, and Pescadero Creeks are the primary tributaries to the Pajaro River in the Study Area and cover an approximately 230,000-acre area. The creeks in this watershed are the only ones in Santa Clara County that flow southward for their entire length (SCVWD, 2002c). All of the Llagas Watershed (65,365 acre) and all of the Uvas Watershed (55,916 acres) are within the Study Area. Most of the Pacheco Watershed (100,742 acre) and a small portion of the Santa Cruz Mountains Watershed (i.e., the watershed of Pescadero Creek) are also included in the Study Area (7,269 acres).

Channels in the Llagas Creek watershed have been modified substantially to convey flood flows. Some channels are natural, while others in the urban areas of Morgan Hill, San Martin, and Gilroy are highly modified and largely unvegetated (U.S. Dept. of Agriculture, 1982). The channels of Pacheco and Uvas Creeks remain largely unmodified by flood control projects. There are three reservoirs in the Pajaro Watershed within the Study Area: Uvas and Chesbro, owned by SCVWD, and the Pacheco Reservoir, owned by the private Pacheco Pass Water District. Uvas Reservoir impounds water along Uvas Creek and has a capacity of 9,835 acre-feet. Chesbro Reservoirs occurs along Llagas Creek and has a capacity of 7,945 acre-feet.

Hydrologic Modifications

Due to urbanization and water-supply projects throughout the Study Area, the natural hydrology of many streams and watersheds has been altered. Modification of natural flow patterns is the result of water storage and release from reservoirs and percolation ponds, increased runoff, channel modification, groundwater withdrawal, hydraulic structure placement, grazing, vegetation clearing, and urban development. The resulting stream hydrograph reduces peak winter flows and provides additional water during drier summer months. This alteration of the hydrograph is clearly evident in Coyote Creek. In the winter, Anderson Reservoir captures rainfall and releases winter flows that are reduced and less variable from the historic condition. During the dry season, reservoirs also release water in order to maintain flows during the summer months, increasing flows compared to historic conditions. The net result has been a "flattening" of the hydrograph and reduction in the historic seasonal variations in flows. Figure 10-1, showing Coyote Creek flows before and after construction of Anderson Dam, illustrates these changes.

Some smaller streams, even without dams and other structures, now have perennial flow in channels that historically would have been dry during the summer months. One cause of this change is increased runoff from urban development. In addition, smaller percolation ponds provide flow year-round in historically intermittent creeks. Water infiltrates ponds during the rainy season in order to maintain flows into the drier summer months.

Smaller streams in the upper Guadalupe, Coyote, and Pajaro watersheds are generally unimpaired. In some cases, small dams and diversions to stock ponds are located along these streams. Small dams in upper Uvas Creek watershed include Pickel Dam on Little Arthur Creek, and small flashboard dams on Bodfish Creek and Little Arthur Creek.

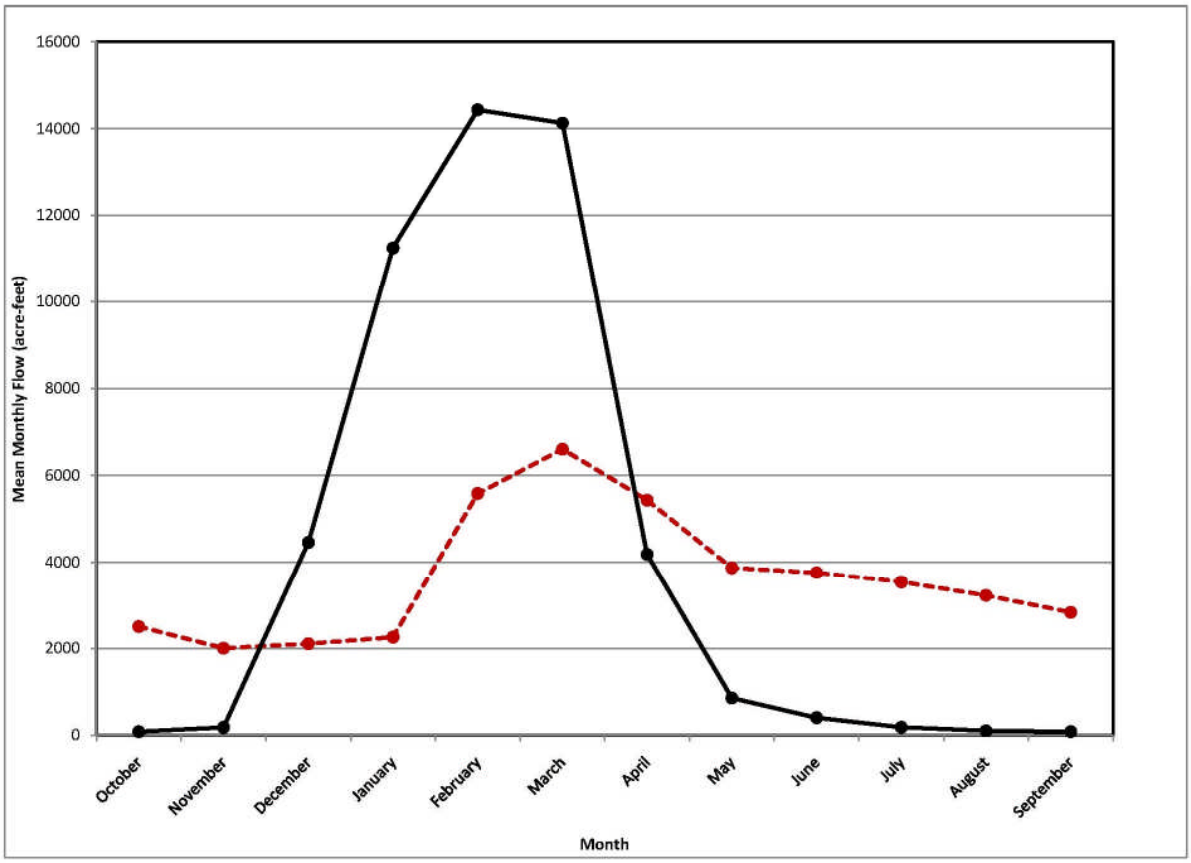


FIGURE 10-1

Typical Hydrograph – Mean Monthly Flow in Coyote Creek below Anderson Reservoir (pre- and post-dam construction)

Source is: California Department of Water Resources 2010. Data accessed: http://cdec.water.ca.gov/cgi-progs/queryCSV?station_id=cyo&sensor_num=66&dur_code=M&start_date=&end_date=&data_wish=View+CSV+Data]

10.1.3 Groundwater Hydrology

Intensive withdrawal of groundwater from the alluvial aquifers in the San José area between the early 1900s and mid-1960s caused a decline in groundwater levels and resulted in substantial land subsidence. For example, 12.7 feet of subsidence was measured in San José from 1916 to 1969 (Poland, 1969; Poland and Ireland, 1988). Subsidence was one important factor that led to increased flooding in the northern Santa Clara Valley in the twentieth century. Since 1967, recovery of the water table has been substantial because of increases in imported water by SCVWD, the use of percolation ponds and river systems to recharge the aquifer (in part with this imported water), and favorable local-water supply resulting in decreased withdrawal and increased recharge.

Currently, approximately half of all water used comes from groundwater. The County's three groundwater subbasins have vast storage capacity, estimated to be three times the capacity of all the SCVWD's 10 surface reservoirs combined. Percolation ponds provide holding areas where water can be stored for future release to recharge groundwater to compensate for the reduced rates of infiltration from urban development and other impermeable land uses. SCVWD releases locally conserved and imported water to

71 off-stream percolation ponds that range in size from less than 1 acre to more than 20 acres. Through local streams and percolation ponds, the SCVWD recharges the groundwater basin with about 157,000 acre-feet of water each year (SCVWD, 2002a). Groundwater recharge keeps some streams flowing year round, when under natural conditions, the streams would be dry during the summer into the early fall. Very little published information exists to present a current groundwater budget detailing inflows and outflows for the Santa Clara Valley basin (California Department of Water Resources, 2004).

Guadalupe Watershed

Nine percolation ponds are located in the Guadalupe watershed. Six of these ponds are charged from Los Gatos Creek, with the rest charged from the Guadalupe River or Guadalupe Creek (SCVWD, 2002a). Water is released from the reservoirs for diversion into the recharge ponds and to allow groundwater recharge through the streambeds. When the water released from the reservoirs exceeds the recharge capabilities of the recharge ponds and the streambeds, the surplus water flows down the Guadalupe River. Flows in the Guadalupe River are also indirectly affected by water imported from the Sacramento-San Joaquin River Delta and the Coyote Creek basin. The imported water is delivered to the reservoirs or directly to the recharge ponds via the SWP), the CVP, and Anderson Reservoir in the upper Coyote Creek basin.

Coyote Watershed

Percolation ponds have been maintained by the SCVWD throughout the Coyote watershed to actively promote aquifer recharge in order to minimize future subsidence and saltwater intrusion. These ponds of water are held over naturally occurring sandy gravel beds (Santa Clara Basin Watershed Management Initiative, 2001). The four main groundwater recharge areas in the Coyote Watershed are the Penitencia, Overfelt, Ford Road, and Coyote ponds. The Penitencia percolation ponds receive water from Upper Penitencia Creek and the South Bay Aqueduct (which, in turn, receive water from the Sacramento-San Joaquin Delta). The Overfelt ponds are also near the lower reaches of Penitencia Creek. The Ford Road and Coyote ponds receive water from Coyote Creek, Anderson Reservoir, and the CVP San Felipe Division. Flows into Coyote Creek are an instream source of recharge to the Coyote Creek groundwater basin between Anderson Reservoir and the Coyote Valley (SCVWD, 2002b).

Pajaro River Watershed

SCVWD maintains percolation ponds below Chesbro Dam along Llagas Creek (U.S. Dept. of Agriculture, 1982). Also located within this watershed is Soap Lake, a natural floodplain basin, approximately 9,000 acres in size, on the Pajaro River, lying between Santa Clara and San Benito Counties at the southern edge of the Santa Clara Valley. During significant rain events, Soap Lake is a floodplain that acts as a retention basin, capturing flows from the Pajaro River and draining slowly back into the river and the groundwater basin. During moderate floods, Soap Lake may extend just beyond San Felipe Lake in San Benito County. During 100-year events, Soap Lake may expand to several thousand acres, encompassing the lower reaches of Llagas Creek and Uvas Creek (RMC, 2005). A recent study has determined that Soap Lake is vital to reduce flooding risk in the lower Pajaro River in Monterey County and within the cities of Castroville and Watsonville (RMC, 2005).

10.1.4 Flooding

Runoff from streams and surrounding areas becomes less attenuated (i.e., flashier) as the density of urban development increases. Replacement of natural vegetation with impermeable urban surfaces such as asphalt, concrete, and roofs; and highly efficient drainage systems increases the volume of runoff and the peak flow rate for frequent events (SCVWD, 2001). The decreased infiltration and increased runoff associated with urbanization can cause the size of peak floods to increase (Santa Clara County Planning Department, 1969).The lack of channel capacity on several of the channels and creeks within the Study Area also has been potentially affected by local geology, regional seismology, tidal processes, subsidence, and rising sea levels.

Flooding due to increased runoff has changed historical stream morphology and flow patterns in the Study Area watersheds. While some of the stream channels in the upland areas are still natural, most of the tributaries within the valley floor area of the watershed have been significantly modified to optimize flood conveyance. Many types of channels have been constructed for controlling high flows, including earthen levees, trapezoidal concrete channels, floodwalls and culverts (Jones & Stokes, 2000). Design and operation of flood-conveyance elements were historically focused on conveying 100-year storm flows and to accommodate new development adjacent to these stream corridors (SCVWD, 2002a).

Channelization projects designed to increase hydraulic capacity often expanded channel dimensions and straightened channel meanders. The construction of channels to unnatural dimensions leads to increased sediment deposition as the stream attempts to re-create smaller, equilibrium dimensions. For example, the lower reaches of Coyote Creek and the Guadalupe River have been channelized and the streams are now contained between several miles of earthen levees.

Twenty percent of the Coyote Watershed is located within the Federal Emergency Management Agency (FEMA) one percent floodplain and homeowners must purchase flood insurance as a condition of home loans. All cities and towns in Santa Clara County participate in the National Flood Insurance Program, which provides federally backed flood insurance to communities that enact and enforce floodplain regulations. In addition, the local agencies of Santa Clara County also participate in the Community Rating System program, which rewards communities that participate in flood management and education over and beyond the minimum requirements. In response to the flooding events, approximately 407,000 feet, or 77 miles of creek channels along the valley floor have been modified for flood protection with the addition of earthen levees, trapezoidal concrete channels, floodwalls, culverts or concrete and rock lined channels. The older modifications provide limited opportunities for multi-objective purposes such as creation of riparian habitat, aquatic habitat, or recreation.

Local drainage is defined as the system of public and private streets, gutters, storm drain inlets, storm sewers, and outfall structures that convey local surface runoff. The local drainage facilities are owned, operated, and maintained by the cities, agencies, or property owners whose lands they drain. On some occasions, the elevations of the surrounding property and storm drain systems are below the flood-stage water surface elevation in the river. Local drainage water that would ordinarily enter the river during a storm is prevented from doing so because of the higher elevation of the river water surface. Flap

gates or backflow prevention devices are typically installed on the discharge points of each individual storm drain to prevent river water from flowing back into the system. The effect of these backflow devices on each system is ponding of water until the river water surface elevation recedes to the point that the stormwater can flow from the system to the river.

10.1.5 Surface Water Quality

All riverine systems within the Study Area have been altered significantly by human impacts including water diversions, channelization, flood control projects, loss of riparian vegetation, and increased rates of sedimentation. These impacts reduce habitat complexity and habitat quality, affecting such things as pool/riffle relationships, level of dissolved oxygen, and substrate composition. Loss of riparian vegetation results in decreased shading, increased water temperatures, reduced cover, and decreased input of nutrients (Santa Clara Basin Watershed Management Initiative, 2001). Trash and other pollutants that are washed into streams may degrade water quality to the point the aquatic life cannot persist.

Impaired waterways (i.e., those waterways that are not meeting their water quality objectives) are required to be listed under Section 303(d) of the Clean Water Act. The state is required to define Total Maximum Daily Loads (TMDLs) based on a calculation of the maximum amount of a pollutant that a waterbody can receive and still safely meet water quality standards. Study Area waterways listed on the 303(d) list are summarized in Table 10-2, along with each waterway's TMDL status.

TABLE 10-2
Study Area Waterways – 303(d) Listing Status and TMDL Development

Waterway	Watershed	Pollutants	TMDL Implementation
Alamitos Creek	Guadalupe	Mercury	Recently approved Guadalupe River Watershed Mercury TMDL requires erosion control, bank stabilization, and other remediation activities to achieve substantive compliance with numeric standards by December 31, 2028.
Calero Reservoir	Guadalupe	Mercury	
Guadalupe Creek	Guadalupe	Mercury	
Guadalupe Reservoir	Guadalupe	Mercury	
Guadalupe River	Guadalupe	Mercury	
Guadalupe River	Guadalupe	Diazinon	Approved TMDL for diazinon and pesticide-related toxicity in San Francisco Bay Area urban creeks focuses on using integrated pest management and similar programs to meet numeric toxicity standards.
Los Gatos Creek	Guadalupe	Diazinon	
Coyote Creek	Coyote	Diazinon	
San Felipe Creek	Coyote	Diazinon	
Anderson Reservoir	Coyote	Mercury	TMDL process not started…expected 2019.
Llagas Creek	Pajaro	Chloride, fecal coliform, low dissolved oxygen, pH, sodium, total dissolved solids	Fecal coliform TMDL recently approved, focusing on control of urban runoff from municipal storm sewer systems and domestic animal waste. Applies to other Pajaro River tributaries, including Uvas (Carnadero) Creek and Pescadero Creek. Process not started for other pollutants…expected 2021. Previously approved TMDLs for nitrate and sediment are currently being implemented. Nitrate TMDL focuses on monitoring runoff from croplands. Sediment TMDL focuses on complying with existing regulations and additional prohibitions on land disturbance.

TABLE 10-2
Study Area Waterways – 303(d) Listing Status and TMDL Development

Waterway	Watershed	Pollutants	TMDL Implementation
Pajaro River	Pajaro	Boron, fecal coliform	Fecal coliform TMDL recently approved (see Llagas Creek above). Process for boron TMDL not started …expected 2021. Previously approved TMDLs for nitrate and sediment are currently being implemented (see Llagas Creek above).

Sources: San Francisco Bay RWQCB and Central Coast RWQCB.

10.1.6 Groundwater Quality

While the quality of groundwater within the Santa Clara Valley is generally good, several common pollutants may compromise groundwater quality. These include nitrates, solvents, and perchlorate. Methyl tertiary butyl ether, a fuel additive banned in 1999 and phased out in 2003, has also been a source of well water contamination (SCVWD, 2008).

- Nitrate is a naturally occurring compound that is formed in the soil when nitrogen and oxygen combine. Small amounts of nitrate are normal, but excess amounts can pollute supplies of groundwater. Common sources of nitrogen in the soil are fertilizers, livestock waste, and septic systems. Excess nitrate in the soil is most often found in rural and agricultural areas. Some areas of the Llagas Groundwater Basin in southern Santa Clara County have higher than normal concentrations of nitrate. Nitrate travels easily through the soil, carried by rain or irrigation water into groundwater supplies. Wells that tap groundwater may be affected. Shallow wells, wells in sandy soil, or wells that are improperly constructed or maintained are more likely to have nitrate contamination.
- Solvents originate from uses such as dry cleaners, metal plating shops, printed circuit board manufacturing, semiconductor manufacturing, printing shops, painting, automotive maintenance, and other sources. The high density of dry cleaners and electronics manufacturing plants in the Santa Clara Valley, together with heavy industry and military facilities, resulted in a large number of solvent release sites impacting shallow groundwater. Released in pure form, solvents move through water and sink. Released to soil, solvents will migrate downward in liquid and vapor form, and dissolve into groundwater at the water table. Many chlorinated solvents are recalcitrant, due to their high affinity for soil organic matter and the slow rate at which they biodegrade. Consequently, solvent contamination tends to persist for decades, often forming large plumes of contaminated groundwater.
- In 2003, an investigation performed under the direction of state water officials detected a chemical called perchlorate in several water wells in South County. Perchlorate (ClO_4^-) is both a natural and a man-made salt. Perchlorate is primarily used as an oxidizer in solid fuels for rockets and missiles. Other uses include the production of highway safety flares, fireworks, matches, dyes, lubricating oils, air bag inflators, paints, electroplating and medical specialty tests.

SCVWD maintains the quality of groundwater through implementation of a number of clean up and prevention programs. Examples of these programs include Fuel Leaks Clean-up; Solvent Leaks Clean-up; Wellhead Standards Protection; and Stormwater Infiltration Device Control.

10.2 Methodology and Significance Criteria

Hydrology and water quality in the Study Area are carefully managed, in accordance with the regulatory framework described above, to meet various objectives. These objectives include preventing property damage from flooding (e.g., SCVWD operation and maintenance of dams and reservoirs in accordance with DSOD criteria, and SCVWD and USACE levee maintenance), providing storm drainage utilities, recharging groundwater, and protecting surface and groundwater quality. The alternatives were evaluated for consistency with these objectives, and for how meeting those objectives could be compromised by the various activities and conservation strategies.

Impacts would be significant if an alternative would result in:

- Their potential to violate water quality standards, provide substantial additional sources of polluted runoff, or otherwise degrade water quality;
- Their potential to substantially alter existing drainage patterns, or substantially increase the rate or amount of surface runoff, in a manner that would result in erosion or siltation on- or offsite;
- Their potential to expose people or structures to a significant risk of loss, injury, or death due to flooding.

10.3 No Action Alternative

10.3.1 Environmental Consequences/Environmental Effects

Under the No Action Alternative, activities such as implementation of the Local Partners' General Plans (including urban and rural land development) and construction and maintenance of infrastructure projects would continue to occur. These activities would continue to result in permanent and temporary impacts to drainage and stormwater quality, including the general categories of effects listed below.

- Increased stormwater runoff from urban and rural development because of increased impervious surfaces and municipal storm drainage infrastructure. Approximately 2,246 acres of natural land cover in the Study Area that drains to San Francisco Bay and approximately 3,386 acres of natural land cover in the Study Area that drains to Monterey Bay are expected to become impervious under the No Action Alternative, primarily as a result of urban and rural development (see Habitat Plan Table 4-8).
  - Increased runoff, especially during storm events, would result in greater levels of scour and/or incision of local creeks, increased sediment loads, alterations of downstream hydrology, and decreased groundwater recharge.
  - Urban runoff would increase the amount of pollutants such as grease, oil, and lawn pesticides that would be transported to local creeks, as well as increase stream temperatures.

- Transportation infrastructure development (mostly road improvements) would increase the amount of automotive waste (e.g., oil, grease, brake dust, tires) that would be transported to local creeks.
- Water infrastructure projects (e.g., flood protection, levee improvement, and similar types of projects with an instream "footprint") would disturb sediments and cause erosion in and around local creeks, increasing turbidity and resulting in similar water quality impacts.

These impacts are currently being mitigated through local standards for drainage and water quality control (e.g., County of Santa Clara Drainage Manual, Santa Clara Valley Urban Runoff Pollution Prevention Program, South County Stormwater Management Plan, State General Permit for Stormwater Discharges During Construction), and these programs are expected to be continually updated. Other requirements for mitigating drainage and water quality impacts would be based on project-by-project CEQA review. SCVWD would continue to implement extensive programs to improve overall water resources management in the Study Area, including the programs listed in Table 10-1 above. SCVWD also would undertake stream restoration activities throughout the Study Area, which typically include grading, excavating, and other activities involving the use of heavy equipment that could result in short-term impacts from erosion.

The SCVWD BMP Handbook, the Santa Clara Valley Urban Runoff Pollution Prevention Program, and other programs are expected to provide adequate mitigation for these short-term impacts. The SCVWD handbook provides general guidance for selecting and implementing BMPs to reduce pollutants in runoff in newly developed areas and redeveloped areas to waters of the state. The handbook also provides guidance on developing project-specific stormwater management plans including selection and implementation of BMPs for particular projects. Types of BMPs that may be applicable to future development projects in the Study Area include:

- Source Control BMPs: operational practices that prevent pollution by reducing potential pollutants at the source.
- Source Control BMPs for design: planning methods and concepts that should be taken into consideration by developers during project design.
- Treatment Control BMPs: methods of treatment to remove pollutants from stormwater.

The Urban Pollution Prevention Program Handbook provides guidance specific to project compliance with stormwater discharge requirements by recommending site design measures, source control measures, stormwater treatment BMPs, and measures to address vector control and pesticide reduction. All temporary impacts associated with construction activities on sites over 1 acre in size also would be minimized with preparation and implementation of SWPPPs, which would incorporate BMPs to prevent or minimize stormwater contamination and control sedimentation and erosion. SWPPPs would identify potential sources of stormwater pollution, describe practices to reduce pollutant loads, and identify BMPs that would allow the project to comply with the terms and conditions of the Construction General Permit. The continuing implementation of these and other stormwater management programs is expected to result in overall benefits in terms of improved flood

protection, maintenance of an adequate surface water and groundwater supply, and water quality protection.

It should be noted that some of the projects developed under the No Action Alternative are expected to have overall beneficial effects. For example, many projects under the SCVWD Clean, Safe Creeks and Flood Protection Plan would include environmentally sensitive design treatments such as levee setbacks and naturalized structural improvements to allow natural stream hydraulics. These long-term beneficial effects would help offset the temporary adverse effects from construction.

Instream flow requirements are expected to change in the Guadalupe River and Coyote Creek watersheds, and potentially for the Uvas Creek and Llagas Creek watersheds, as a result of new operating rules, including operating rules for instream diversion to groundwater recharge facilities. These new requirements are expected to alter local hydrology by reducing stream flows from reservoirs during periods of high inflow (to maintain cold water in the reservoir) and by increasing stream flow from reservoirs during periods of low inflows (to release cold water into downstream aquatic habitat). Flows would also continue to be affected by operation of groundwater recharge facilities, including facility modification, reoperation, and/or removal of off-channel recharge facilities (e.g., Ford Road, Church Avenue, Noble, and Mabury ponds). Flow changes are also likely as a result of new rules for dewatering reservoirs to conduct major dam repairs, which could cause substantial fluctuation of instream flows (i.e., extended periods of high flows downstream of the dams when the reservoirs are being dewatered, followed by rapid decreases in flows when the dewatering is complete). Hydrologic impacts associated with these new operating rules, however, are expected to be consistent with existing flood control and DSOD safety requirements.

In addition, mitigation for biological resources impacts also would occur under the No Action Alternative as a consequence of urbanization and infrastructure development. Under the No Action Alternative, mitigation requirements are expected to apply to many discretionary activities on a case-by-case basis, and include requirements for onsite habitat preservation as well as the acquisition and restoration of offsite habitat areas (including purchasing credits in conservation banks). These mitigation activities could simply maintain existing land uses (e.g., grazing) subject to conservation requirements, but could substantially change some existing land uses (e.g., conversion of farmlands to wetlands). Changing management on habitat preserves from grazing use to habitat use (often still including livestock grazing for vegetation management) is not expected to result in changes to hydrology or water quality. Converting farmlands to wetlands is expected to have beneficial hydrologic impacts as the wetlands can buffer peak runoff conditions. The process of grading the site to create wetland topography is an extensive earthmoving activity that could result in temporary impacts from erosion. The Santa Clara Valley Urban Runoff Pollution Prevention Program and other programs are expected to minimize these effects and provide adequate mitigation for these temporary impacts.

10.3.2 Cumulative Effects

Past actions such as mining and agriculture have changed natural hydrologic and water quality conditions as a result of constructing small dams and introducing new sources of pollution (e.g., sediment, mercury) to Study Area waterways. The result of these past

changes is the existing hydrologic and water quality conditions described in Section 10.1 above. Urbanization of the Study Area (primarily by converting agricultural lands) has resulted in additional changes. Urban land uses required more extensive hydrologic modifications – as described above, these included heavy groundwater pumping and the development of the major dams and reservoirs for water supply and flood control purposes, as well as the development of the urban stormwater system. Overreliance on groundwater pumping has been mitigated by the use of imported water and conjunctive management of surface and groundwater resources. In addition, continuing attention to flood control and water quality management has resulted in a regulatory framework that is intended to prevent further degradation and gradually improve water quality conditions (e.g., through implementation of TMDLs). Potentially significant impacts from recent and future activities would be at least partially mitigated by compliance with these programs. However, given the many sources of polluted runoff and the limited ability to control all non-point pollution sources, it is unclear if these regulatory mechanisms can fully mitigate the water quality impacts of urbanization and associated infrastructure development.

10.4 Proposed Action

10.4.1 Environmental Consequences/Environmental Effects

The Proposed Action incorporates Covered Activities such as urban and rural land development, and the construction and operation of various infrastructure projects for water, transportation, and other systems. These activities would result in permanent and temporary impacts to drainage and stormwater quality. However, because the Habitat Plan proposes aquatic conservation actions that are generally consistent with and help reinforce the existing regulatory framework for maintenance of hydrology and water quality conditions, impacts to hydrology and water quality as a result of these activities could be less than under the No Action Alternative.

The Habitat Plan proposes measures such as conditions for maintenance of hydrologic conditions and water quality during urban development (Condition 3, Maintain Hydrologic Conditions and Protect Water Quality and Condition 12, Wetland and Pond Avoidance and Minimization), instream capital and operations and maintenance projects (Condition 4, Stream Avoidance and Minimization for Instream Projects and Condition 5, Avoidance and Minimization Measures for Instream Operations and Maintenance), transportation projects (Condition 6, Design and Construction Requirements for Covered Transportation Projects), and road maintenance projects (Condition 8, Implement Avoidance and Minimization Measures for Rural Road Maintenance). These measures are generally consistent with and help reinforce the existing regulatory framework for maintenance of hydrology and water quality conditions.

The Habitat Plan proposes rural development design and construction requirements (Condition 7, Rural Development Design and Construction Requirements) that would provide hydrology and water quality protection over and above the existing regulatory framework. Condition 7 requires additional Building Permit review standards for the location of roads and other site features that could affect hydrology and water quality. In addition, Condition 7 requires minimization of stream crossings, stabilization of exposed soils, and use of low impact development features such as permeable pavement and

catchment basins. Application of Condition 7 to rural development would reduce hydrology and water quality impacts compared to the No Action Alternative.

In addition, stream and riparian setbacks (Condition 11, Stream and Riparian Setbacks) are expected to provide additional benefits by buffering streams from nearby disturbances. These buffers are expected to improve water quality by intercepting non-point source pollutants in surface and shallow subsurface water flow. Furthermore, under the Proposed Action, the Implementing Entity would preserve up to 618 acres of riparian land cover (including Central California alluvial sycamore woodland) and restore up to 353 acres of riparian habitat, depending on the level of impacts. Healthy riparian corridors are widely recognized for their ability to perform a variety of physical and biological functions, including water quality. These functions include stabilizing stream channels; providing erosion control by regulating sediment storage, transport, and distribution; providing organic matter (e.g., leaves and large woody debris) that is critical for aquatic organisms; serving as nutrient storage for the surrounding watershed; providing water temperature control through shading; reducing flood peaks; and serving as key recharge points for renewing groundwater supplies. Application of Condition 11, along with preservation and restoration actions required under the Proposed Action, would reduce water quality impacts compared to the No Action Alternative.

The Proposed Action also incorporates the Habitat Plan, including the acquisition of at least 33,205 acres of new reserves on natural and agricultural lands, the incorporation and enhancement of up to 13,291 acres of existing protected open space into the Reserve System, and a comprehensive reserve management program to benefit the Covered Species. Potential hydrology and water quality impacts resulting from implementation of the Reserve System would primarily occur during habitat restoration or pond creation activities. Earthmoving would be limited to parcels acquired for the Reserve System requiring restoration of wetland or riparian habitat, or creation of ponds. Earthmoving activities would typically include grading, excavating, and other activities involving the use of heavy equipment. Restoration and creation activities would typically include grading, excavating, and other activities involving the use of heavy equipment that could result in temporary impacts from erosion. Additional minor impacts could result from smaller construction projects on the Reserve System (e.g., trails, parking areas). The Santa Clara Valley Urban Runoff Pollution Prevention Program and other programs are expected to provide adequate mitigation for these temporary impacts.

In addition to restoration and creation actions on the Reserve System, the Habitat Plan also requires stream restoration activities throughout the Study Area (both on the Reserve System and in other areas). Up to 10.4 miles of stream restoration could be required depending on the amount of stream impacts from the Covered Activities. Stream restoration activities would typically include grading, excavating, and other activities involving the use of heavy equipment that could result in temporary impacts from erosion. The SCVWD BMP Handbook, the Santa Clara Valley Urban Runoff Pollution Prevention Program, and other programs are expected to provide adequate mitigation for these temporary impacts.

10.4.2 Cumulative Effects

As described above under the No Action Alternative, past activities have resulted in hydrology and water quality impacts. As a result of SCVWD programs as well as federal,

state, and local laws and regulations to protect water quality, most activities now contribute to the minimization of impacts to hydrology and water quality, and to the gradual improvement of water quality conditions in a manner that waterways would be unimpaired in the future. These laws and regulations would apply to other future projects, including three projects relevant to the analysis of cumulative effects

- Other conservation activities.
- Instream activities under the Three Creeks HCP or Stream Maintenance Program.
- High Speed Train.

There is no or limited potential for the other ongoing activities (see Section 4.1) or foreseeable future projects (see Section 4.2) to contribute to cumulative effects.

Other habitat conservation efforts are expected to result in similar types of hydrology and water quality impacts as the Proposed Action. As described above, restoration activities and management of preserves in upland areas are expected to affect hydrology and water quality conditions in a manner similar to existing ranching operations. Similar to the Proposed Action, large-scale restoration activities involving heavy equipment would be required to follow existing regulations for water quality control, including the Santa Clara Valley Urban Runoff Pollution Prevention Program. Therefore, cumulative effects are expected to be less than significant.

Instream activities are expected to occur under the Three Creeks HCP, as well as under the SCVWD Stream Maintenance Program. Individual stream restoration projects could result in cumulative hydrology and water quality impacts if implemented at the same time as and in close proximity to stream restoration actions under the Proposed Action. For these other actions, however, construction contractors are expected to implement erosion control measures in a similar manner as under the No Action Alternative. If individual instream actions implement these measures, no significant cumulative impacts are expected.

The High-Speed Train project is expected to require a substantial amount of land disturbance (e.g., tunnels, large areas of fill, bridge abutments), especially in areas where it does not follow the Union Pacific Coast Line route. Potential impacts to hydrology are expected in areas where the alignment crosses flood-prone areas (e.g., the proposed at-grade crossing of the Soap Lake floodplain). Construction contractors building the High Speed Train project are expected to implement erosion control measures in a similar manner as under the No Action Alternative, and therefore no significant cumulative impacts are expected.

10.4.3 Determination of Significance

Compared to the No Action Alternative, water quality impacts would be **beneficial**. Cumulative effects would be less than significant.

10.5 Alternative A

10.5.1 Environmental Consequences/Environmental Effects

Under Alternative A, the types of potential impacts would be the similar to the Proposed Action. Compared to the No Action Alternative, there is the potential for hydrology and water quality benefits from implementation of the Covered Activities pursuant to the Habitat Plan. In addition, there is the potential for hydrology and water quality impacts to occur during development of the Reserve System, as described above for the Proposed Action. For the same reasons as described under the Proposed Action, the existing regulatory programs are expected to provide adequate mitigation for these temporary impacts. The Reserve System would be smaller, however, under Alternative A so that extent of these potential impacts would be reduced compared to the Proposed Action. The potential for beneficial effects, as described above for the No Action Alternative, would be reduced because the conditions on Covered Activities (e.g., Condition 7, Condition 11) would only be implemented for 30 years and would not apply to activities that occur after Year 30 of the Permit Term.

10.5.2 Cumulative Effects

Same as the Proposed Action.

10.5.3 Determination of Significance

Same as the Proposed Action.

CHAPTER 11

Hazardous Materials

11.1 Environmental Setting/Affected Environment

This chapter discusses the current and historic uses, handling, and storage of hazardous materials within the Study Area and how these uses are regulated. Water quality is discussed in Chapter 10, Hydrology and Water Quality.

Hazardous materials include chemicals and other substances defined as hazardous by federal and state laws and regulations. In general, these materials include substances that, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may have harmful effects on public health or the environment during their use or when released to the environment. Hazardous materials also include waste chemicals and spilled materials.

11.1.1 Regulatory Setting

Federal, state, and local legislation regulate the proper use, disposal, and cleanup of hazardous materials.

Federal Regulations

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, also known as the Superfund Act) of 1980 (Public Law 86-510) is intended to protect the public and the environment from effects of prior hazardous waste disposal and new hazardous material spills. CERCLA provides funds to compensate victims and to decontaminate the environment. The Superfund Amendments and Reauthorization Act (SARA) of 1986 (Public Law 99-499) amends some provisions of CERCLA and provides for a Community Right-to-Know program.

The USEPA administers the Resource Conservation and Recovery Act (RCRA) of 1976 (Public Law 94-580), and the Hazardous and Solid Waste Amendments of 1984. This legislation provides the principle regulation for the storage, transportation, and disposal of both solid and hazardous waste, and exercises operational control over those who generate, treat, store, transport, or dispose of hazardous waste.

State Regulations

Various California State laws also govern hazardous materials and hazardous waste management. State hazardous waste regulations are primarily contained in the California Code of Regulations, Title 22, Division 4, Environmental Health. The Hazardous Waste Control Law lists hundreds of hazardous and potentially hazardous chemicals. This code also establishes criteria for identifying hazardous materials; regulates the storage, transport, and disposal of hazardous wastes and identifies hazardous wastes that cannot be disposed of on land.

The Department of Toxic Substances Control (DTSC) is the Lead Agency in California responsible for hazardous waste management. DTSC enforces the state's Hazardous Waste

Control Laws, issues permits to hazardous waste facilities, and mitigates contaminated hazardous waste sites. DTSC, through Division 20, Chapter 6.8 of the California Code of Regulations contains the water quality regulations pertinent to environmental contamination. The San Francisco and Central Coast RWQCBs and SCVWD administer these regulations in the Study Area.

Local Regulations

Most hazardous materials regulations originate with federal and state government. Regulation by the County and cities within the Study Area are generally limited to enforcing policies and procedures set forth in their General Plan, Zoning and Health Codes, and other development controls, each of which is intended to ensure that the public and the environment are shielded from dangerous material and activities. Where hazardous materials use must occur in proximity to other land uses, development standards can ensure that those materials are handled as safely as possible. Specific examples of local codes and ordinances intended to protect people and the environment from being harmed by hazardous materials include the Uniform Fire Code, the Uniform Building, Code, and the Hazardous Materials Storage Ordinance.

County Hazardous Waste Management Plans. In addition to local policies and development controls, hazardous materials are also addressed at the local level through the implementation of County Hazardous Waste Management Plans (CHWMPs). Required since the passage of AB 2948 (the "Tanner Bill") in September 1986, CHWMPs are intended to promote the evaluation of local hazardous waste management issues and needs, and to make policy and program recommendations to better protect public health and safety and the environment while maintaining the economic viability of the state. All of the cities in Santa Clara County joined the County in developing a CHWMP in order to create a comprehensive and coordinated countywide approach to hazardous waste management planning.

The County and cities have used the hazardous materials plan development process as an opportunity to educate materials users and the general public about a range of related issues. This process can also serve as an incentive for local governments to establish working groups that include representatives of business, agriculture, and environmental organizations along with hazardous materials suppliers, and operators of hazardous materials treatment and disposal facilities. The CHWMP is intended to compliment other local planning efforts through the adoption of consistent criteria for the approval or disapproval of proposals to site commercial off-site hazardous waste management facilities. The siting criteria address six areas of concern:

1. Protection of Residents of Santa Clara County
2. Assurance of the Structural Stability of the Facility
3. Protection of Water Quality and Resources
4. Protection of Air Quality
5. Protection of Environmentally Sensitive Areas
6. Protection of Social and Economic Goals

County Hazardous Materials Program. The County Hazardous Materials Program is part of the Hazardous Materials Compliance Division (HMCD) within Santa Clara County Department of Environmental Health (County of Santa Clara, 2009). As the Certified

Unified Program Agency (CUPA) for Santa Clara County, HMCD provides comprehensive environmental regulatory compliance inspection services to protect human health and the environment. Additionally, program personnel perform plan reviews and inspections associated with the construction, upgrading, and closure of hazardous materials storage facilities and equipment. By combining various state hazardous materials law into one program, the CUPA designation is intended to allow more local control over hazardous materials programs. State regulations require Santa Clara County's CUPAs to coordinate all aspects of the hazardous materials program with each other.

Other CUPAs within the Study Area include the City of Gilroy (Chemical Control Program) and the City of San José (Bureau of Fire Prevention, Hazardous Materials Division).

11.1.2 Historic and Current Uses of Hazardous Materials

Santa Clara County industries and agriculture use many types of hazardous materials, ranging from pesticides and herbicides, to fuels and solvents, to radioactive materials. These materials are generally contained in vessels engineered for safe storage. Numerous fuels, chemicals, and other hazardous materials are transported via roadways and railways. Pipelines also carry flammable and explosive gases and petroleum products throughout the County. Current and historic use of these substances has resulted in releases that have contaminated soils and groundwater in the County. The distribution of known sites within the Study Area is shown on Figure 11-1. In addition, historic mercury mining in the Guadalupe watershed (e.g., New Almaden Mine and vicinity) has resulted in extensive (but unknown) sediment contamination in area creeks and reservoirs.

Following a 1981 release of 60,000 gallons of waste solvents and water from a Silicon Valley electronics firm, the San Francisco Bay Regional Water Quality Control Board (RWQCB) conducted extensive surveys and found that a significant number of companies had solvent leaks or spills on their property. By 1988 the RWQCB was overseeing investigation of over 125 ground water solvent contamination cases. Over 350 cases of petroleum product contamination were also discovered in the County following subsequent investigations (Esau, et. al., 1988).

There are currently 23 Superfund sites listed in Santa Clara County (USEPA, 2007), two of which are within the Study Area (Figure 11-1):

- The **Fairchild Semiconductor Corporation Plant** [USEPA ID: CAD097012298] is located at 101 Bernal Road in southern San José. The site was added to the Superfund list in 1984. Volatile organic compounds, a byproduct of various solvents, were found in the groundwater and soil. Remedial activities have been ongoing since 1989, including treatment, stabilization, and removal of 45,390 cubic yards of soil and 13,585,000,000 gallons of groundwater. Remedial action was completed in 1992 and found to be of no risk to human health or the environment. The site has not yet been delisted (USEPA, 2007).
- The **Lorentz Barrel and Drum Company** [USEPA ID: CAD029295706] is located at 1515 South 10th Street in San José. The site was added to the Superfund in 1984 after dioxins/dibenzofurans, metals, organics, polychlorinated biphenyls, pesticides, and volatile organic compounds were found in debris, soils, and groundwater onsite. Remedial action occurred from 1987 through 1998 including treatment, stabilization, and

removal of 346 cubic yards of soil and 21,005 gallons of groundwater. The site was found to be of no further risk to human health or the environment. The site has not yet been delisted (USEPA, 2007b).

Other sites of interest in the Study Area include the United Technologies Corporation Pratt & Whitney Rocketdyne facility (USEPA ID: CAD001705235), the former Olin Corporation site, the Kirby Canyon Recycling and Disposal Facility (USEPA ID: CAD982351041), and the New Almaden Mining District.

The 5,113-acre United Technologies Corporation site is located at 600 Metcalf Road. This facility was used for the development, manufacturing, and testing of space and missile propulsion systems. Manufacturing operations ended in December 2004, but there is ongoing remediation activity for groundwater contamination under the supervision of DTSC and the RWQCB. The site will be considered "clean-closed" when groundwater monitoring shows that contaminant levels are below the established thresholds for three consecutive years.

The former Olin Corporation site is a 13-acre parcel located 425 Tennant Avenue in Morgan Hill. Potassium perchlorate was used onsite in the manufacturing of signal flares at the site from 1956 to 1996. Perchlorate contamination at the site occurred primarily from an unlined evaporation pond that received wastes from the cleaning of the ignition material mixing bowls, on-site incineration of cardboard flare coatings with residues on them, and accidental spills. The perchlorate leached through the soil into the groundwater over the 40 years of operation and created a ten-mile long plume of perchlorate. Under Cleanup and Abatement Orders issued by the Central Coast RWQCB, Olin was required to install treatment for the removal of perchlorate from residential wells in the area of San Martin and Morgan Hill, and subsequently to provide replacement water to well owners with perchlorate-contaminated wells. Remediation progress continues at the Olin site in Morgan Hill.

The Kirby Canyon Recycling and Disposal Facility (USEPA ID: CAD982351041), operated by Waste Management Inc., is located at 901 Coyote Creek Golf Drive, just east of U.S. Highway 101. The 827-acre site is located within the Coyote-7 Conservation Analysis Zone. The permitted disposal area (311 acres) receives municipal solid waste, green materials, construction/demolition debris, and other waste types, almost entirely from areas within Santa Clara County. Based on current information filed with the California Integrated Waste Management Board, the expected closure date is December 31, 2022 followed by a 30-year post-closure maintenance period (California Integrated Waste Management Board, 2009).[1] At this time, 255 acres of the site are dedicated to habitat enhancement for the Bay checkerspot butterfly and other species under the management of the Kirby Canyon Landfill Conservation Trust.

Legacy contamination from historic mercury mining in the New Almaden Mining District and other nearby areas continues to be an important environmental concern. On October 8, 2008, the San Francisco Bay RWQCB adopted a Total Maximum Daily Load

[1] A recent report for the City of San José indicates that the current trend of reducing the amount of waste sent to landfills could allow the landfill to remain open for a longer period of time as capacity remains available (City of San José, 2008).

(TMDL) for mercury in the Guadalupe watershed.[2] As part of this process, waste loads were allocated to several sectors including upstream mine sites and instream areas. Mercury mining waste from upstream mine sites is the target of the first phase of TMDL implementation, focusing on source control measures (e.g., erosion control). Planned activities also include projects to control mercury methylation and bioaccumulation in reservoirs and studies for the remediation of mine waste in Alamitos Creek. These activities are expected to be implemented through December 31, 2018. Additional activities for instream remediation and restoration will be implemented through December 31, 2028 (see Section 4.2.12). Comprehensive monitoring and special studies are required throughout the 20-year TMDL implementation period, primarily under SCVWD direction.

11.2 Methodology and Significance Criteria

The assessment of potential hazardous materials impacts is based on the anticipated changes in land cover over 50 years (corresponding to the Permit Term under the Proposed Action). Changes in land cover were assessed by overlaying anticipated urban, rural, and associated infrastructure development, operation, and maintenance (see Section 2.3.1) onto the existing land cover types using GIS. For all alternatives, land conversion is expected to occur as a result of urban development, instream capital projects, instream operation and maintenance activities, rural capital projects, rural operation and maintenance activities, and rural development. In addition, it is anticipated that additional lands will be preserved and/or restored as mitigation for these activities under the No Action Alternative. Although it is not possible to predict how much land would be preserved and/or restored (or where), it is likely that most would occur within the Study Area. For the Proposed Action and Alternative A, similar conservation activities would occur consistent with the Habitat Plan (or as modified under Alternative A). For all alternatives, the location of these activities (including likely conservation activities) was compared to known hazardous materials sites (Figure 11-1).

Impacts would be significant if an alternative would result in the following.

- Create a significant hazard to the public or the environment through disturbances that release hazardous materials into the environment.
- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous waste.

11.3 No Action Alternative

11.3.1 Environmental Consequences/Environmental Effects

Activities that would occur under the No Action Alternative include urban development, instream capital projects, instream operation and maintenance activities, rural capital projects, rural operation and maintenance activities, and rural development. Hazardous materials are typically used during construction of projects such as those anticipated. There

[2] The TMDL has also been approved by the SWRCB and the State Office of Administrative Law; however, the USEPA is the final approval authority for all TMDLs. The Guadalupe River Watershed Mercury TMDL is currently under consideration by the USEPA.

is potential for incidents involving the release of gasoline, diesel fuel, motor oil, hydraulic fluids and lubricants, paints, solvents adhesives and cleaning chemicals. In addition, waste motor oils, waste hydraulic fluids, discarded batteries, and waste solvents and adhesives are commonly generated during construction activities. Instream projects could mobilize sediment and introduce mercury into the aquatic environment (primarily in the Guadalupe River watershed). The most likely incidents involving construction related hazardous materials are generally associated with minor spills or drips. The risk of small fuel or oil spills is considered likely but would have a negligible impact on public health. All hazardous materials would be stored, handled, and disposed of according to manufacturers' recommendations, and any spills would be cleaned up in accordance with existing regulations. In addition, as described in Chapter 10, a Stormwater Pollution Prevention Plan (SWPPP) would be prepared for construction sites over 1 acre in size. The SWPPP would incorporate Best Management Practices for the transport, storage, use, and disposal of hazardous materials to prevent the release of hazardous materials into the environment.

Operation of the anticipated projects could also involve the use of hazardous materials or petroleum products. Proponents of these projects would be required to comply with all applicable federal, state, and local regulations relating to hazardous materials and petroleum products.

In addition, mitigation for biological resources impacts also would occur under the No Action Alternative as a consequence of urban and infrastructure development. Under the No Action Alternative, mitigation requirements are expected to apply to many discretionary activities on a case-by-case basis, and include the acquisition and restoration of offsite habitat areas (including purchasing credits in conservation banks). Therefore, the potential exists for impacts to occur (for example, release of hazardous materials into the environment during construction) on lands acquired as habitat reserves. Previous activities on these may have included the use of hazardous substances, such as agricultural chemical application, resulting in potential residual contamination. Hazardous waste sites associated with agricultural production activities may include storage facilities and agricultural ponds or pits that are contaminated with fertilizers, pesticides, herbicides, or insecticides; leaking underground storage tanks that contained petroleum products and other materials; leaking or abandoned pesticide storage containers; and/or drainage water that contains fertilizers and pesticides. It is expected that due diligence, such as a Phase I Environmental Site assessment or the equivalent, would be performed.

11.3.2 Cumulative Effects

Past activities have resulted in legacy contamination in the Study Area. This is a result of many activities, including mercury extraction at the New Almaden Mine and other nearby areas, industrialization of the northern part of the Study Area (including the Superfund sites shown on Figure 11-1 and other major sites), and the installation (and subsequent degradation) of many underground storage tanks for urban (e.g., gas stations) and agricultural uses. The need to address pollution from hazardous materials has resulted in a regulatory framework that is intended to limit further pollution; therefore, potentially significant impacts from legacy (and ongoing) sites that generate hazardous materials could be mitigated by compliance with these regulations.

11.4 Proposed Action

11.4.1 Environmental Consequences/Environmental Effects

Under the Proposed Action, the Covered Activities would be implemented, including the Habitat Plan conservation strategy. With regard to hazardous materials, the effects of implementing the Covered Activities associated with urbanization (i.e., urban development, instream capital projects, instream operation and maintenance activities, rural capital projects, rural operation and maintenance activities, and rural development) would be the same as described above for the No Action Alternative. Instead of habitat mitigation on a project-by-project basis, the Reserve System conservation strategy would result in acquisition of at least 33,205 acres, enhancement of up to 13,291 acres of existing open space lands, and protection of 100 stream miles. More acreage would be dedicated to habitat conservation under the Proposed Action than under the No Action Alternative, and therefore the potential for hazardous materials effects would be greater.

Previous activities on the Reserve System lands may have included the use of hazardous substances, resulting in potential residual contamination of these lands. Although there are no Superfund sites within the area where Reserve System acquisition and enhancement could occur, Figure 11-1 shows many other hazardous material sites within the area. In addition to larger, known sites (e.g., United Technologies Corporation facility), Figure 11-1 shows many small sites that may have contained leaking underground storage tanks and similar types of contamination, and other sites (currently undiscovered) could be present. Disturbance of these sites could create a significant hazard to the public or the environment. Because the acquisition of sites with known or potential hazardous materials could influence the Implementing Entity's ability to conduct effective management, due diligence would be performed prior to acquisition so that the Implementing Entity understands the potential limitations before committing resources to the property.

Activities within the Reserve System could result in hazardous materials related impacts. Activities with potential effects are those requiring ground disturbance, such as restoring and creating habitat and constructing recreational or management facilities. Also, the Habitat Plan calls for implementation of some activities outside of the Reserve System, primarily riverine and riparian restoration activities. Environmental media (such as soil, water, air, and vegetation) could potentially be adversely affected by hazardous materials released during ground-disturbing activities on the Reserve System or other areas (e.g., instream restoration areas), and these activities may expose project construction workers to hazardous materials. For example, pond creation could expose a previously unknown fuel storage tank, and stream restoration projects could mobilize sediments that contain mercury. Disturbance of these sites could create a significant hazard to the public or the environment.

The Implementing Entity could use potentially hazardous materials as part of Reserve System management. For example, herbicides and pesticides are expected to be used on parts of the Reserve System for vegetation or fuel management (e.g., Habitat Plan Conservation Action LM-14), but they would only be applied by certified personnel in accordance with label instructions. It is not anticipated that fuel tanks or other storage units will be used on the Reserve System, but any such use would follow all existing federal, state,

and local regulations as implemented by the applicable local agency (e.g., Santa Clara County Hazardous Materials Compliance Division). For these reasons, use of hazardous materials by the Implementing Entity is not expected create a hazard to the public or the environment.

Mitigation Measures

The following mitigation measures are required to reduce impacts from potential residual contamination of reserves and related exposure of construction workers and the public to such hazardous materials:

11-1: Prior to the incorporation of a reserve site or implementation of a stream or riparian restoration project, a Phase I Environmental Site Assessment shall be conducted in general accordance with the American Society for Testing and Materials Standard Practice E1527-05. The purpose of this Environmental Site Assessment is to identify, to the extent feasible pursuant to the American Society for Testing and Materials Standard, recognized environmental conditions in connection with the potential site. The term "recognized environmental condition" means the presence or likely presence of hazardous substances or petroleum products on the property under conditions that may indicate an existing release, a past release, or a material threat of release of these substances to the property. If the Phase 1 Environmental Site Assessment indicates the presence of a recognized environmental condition, the Implementing Entity shall consider the following options.

- Determine that the acquisition/project can proceed on the basis that the Habitat Plan goals and objectives can be met on the site even with the presence of a recognized environmental condition.
- Conduct a Phase II Environmental Site Assessment, including soil and groundwater testing, to further study the potential for contamination to limit the Implementing Entity's management activities.
- If the results of the Phase I (or Phase II) Environmental Site Assessment indicate that the Habitat Plan goals and objectives cannot be met on the site, the Implementing Entity should not acquire the site.

11-2: As part of each Reserve Management Plan or site restoration plan, a Contingency Plan shall be prepared to address the actions that would be taken during construction in the event that unexpected contaminated soil or groundwater is discovered. The Contingency Plan shall include health and safety considerations, handling and disposal of wastes, reporting requirements, and emergency procedures. The Contingency Plan shall include a requirement that if evidence of contaminated materials is encountered during construction, construction would cease immediately and applicable requirements of the Comprehensive Environmental Release Compensation and Liability Act and the California Code of Regulations Title 22 regarding the disposal of waste would be implemented.

Implementation of these measures would reduce impacts to less than significant.

11.4.2 Cumulative Effects

As described above under the No Action Alternative, past activities have resulted in legacy pollution throughout the Study Area. This significant cumulative effect is being addressed through ongoing remediation activities (e.g., Superfund program, DTSC site management activities, Guadalupe River Watershed Mercury TMDL) and extensive federal, state, and local regulations governing existing and new sites that store and use hazardous materials. The potential impacts associated with the Proposed Action (e.g., acquiring lands containing hazardous materials, unearthing hazardous materials during restoration and other Reserve System activities, and using hazardous materials as part of Reserve System management) are site-specific in nature, and are expected to comply with applicable regulations as described above.

Under the Proposed Action, cumulative effects would occur as a result of the following projects:

- Other conservation activities

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

The acquisition and management of other habitat areas would increase the area subject to disturbance (and potential disruption of hazardous materials). These activities, however, are expected to follow similar due diligence as prescribed above in Mitigation Measures 11-1 and 11-2 and are expected to follow all applicable rules and regulations governing the storage and use of hazardous materials. With the ongoing efforts to remediate past actions and to minimize the potential for new impacts, and with the Proposed Action and other projects addressing hazardous materials concerns on a site-specific basis, the Proposed Action is not expected to make a significant contribution to the existing significant cumulative effect.

11.4.3 Determination of Significance

Compared to the No Action Alternative, the Proposed Action would result in **less-than-significant** impacts with the implementation of Mitigation Measures 11-1 and 11-2, and a less than cumulatively considerable contribution to significant cumulative impacts.

11.5 Alternative A

11.5.1 Environmental Consequences/Environmental Effects

Under Alternative A, the types of potential impacts would be the similar to the Proposed Action. Compared to the No Action Alternative, there is the potential to acquire Reserve System lands with existing contamination that could be disturbed during habitat restoration and other reserve management activities, and the potential to introduce new hazardous materials (e.g., herbicides) into the environment. For the same reasons as described under the Proposed Action, disturbance of these sites could create a significant hazard to the public or the environment. Under Alternative A, the impacts can be reduced to less-than-significant with the implementation of Mitigation Measures 11-1 and 11-2.

The Reserve System would be smaller, however, under Alternative A so that extent of the potential impact would be reduced compared to the Proposed Action. Although the extent of the impacts would be less under Alternative A than under the Proposed Action, they remain potentially significant compared to the No Action Alternative.

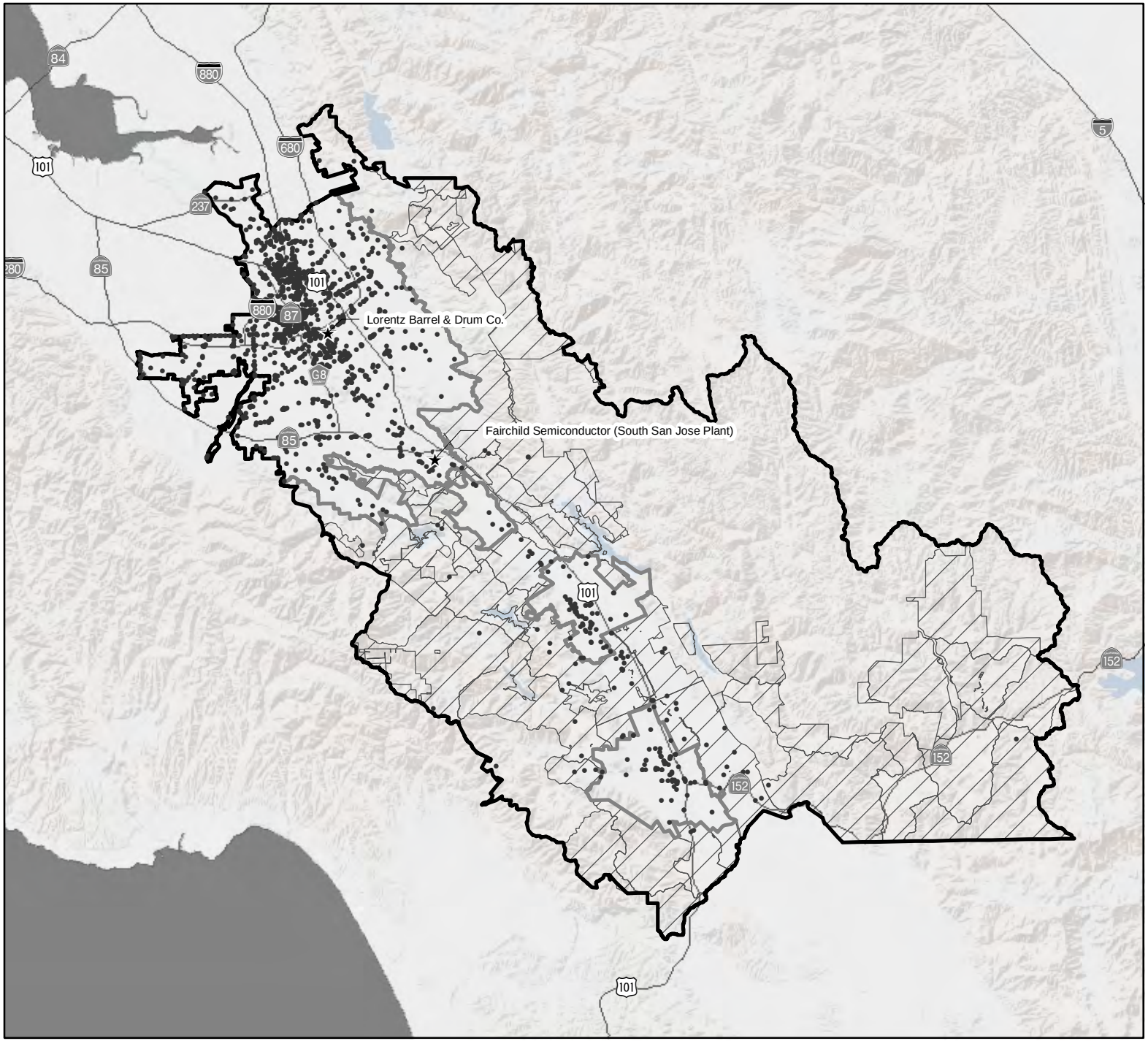
Mitigation Measures. Implement Mitigation Measures 11-1 and 11-2 described above.

11.5.2 Cumulative Effects

Same as Proposed Action.

11.5.3 Determination of Significance

Same as Proposed Action.



VICINITY MAP

LEGEND

- ★ EPA Superfund Sites
- • Hazardous Material Sites*
- Study Area
- Planning Limit of Urban Growth
- Potential Reserve Areas

* Source:
Hazardous Material Sites data results courtesy of the California State Water Resources Control Board (GeoTracker, 2009) and the California Department of Toxic Substances Control (Envirostor, 2006).

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0 3 6
Miles

FIGURE 11-1
Known Hazardous Materials Sites
Santa Clara Valley Habitat Plan EIR/EIS
Santa Clara County, California

CHAPTER 12

Socioeconomics and Environmental Justice

12.1 Environmental Setting/Affected Environment

This chapter addresses the existing socioeconomic resources and environmental justice populations within Santa Clara County. The discussion focuses on demographic characteristics such as population, housing, and employment.

12.1.1 Regulatory Setting

NEPA requires that "all agencies of the Federal Government:

- Utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision-making which may have an impact on man's environment.
- Identify and develop methods and procedures … which will insure that presently unquantified environmental amenities and values may be given appropriate consideration in decision-making along with economic and technical considerations."

Executive Order 12898, issued by President Clinton in 1994, requires that "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations…." In his memorandum transmitting Executive Order 12898 to federal agencies, President Clinton further specified that, "each Federal agency shall analyze the environmental effects, including human health, economic and social effects, of Federal actions, including effects on minority communities and low-income communities, when such analysis is required by the National Environmental Policy Act of 1969." Guidance on how to implement Executive Order 12898 and conduct an Environmental Justice analysis has been issued by the President's Council on Environmental Quality (CEQ, 1997).

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 proposed Habitat Plan and selection of alternative conservation actions. This outreach is described in Section 1.6 of this EIR/EIS.

12.1.2 Population

Population trends for Santa Clara County are summarized in Table 12-1. According to the California Department of Finance (DOF, 2012a), the population (as of January 1, 2012) was estimated at 1,730,132 and 86,354, respectively, for incorporated and unincorporated Santa Clara County. As shown in Table 12-1, the population in the incorporated part of Santa Clara

County has been increasing for the past decade while that in the unincorporated part has been declining (due in part because of annexations into incorporated areas). Between 1990 and 2000, the population of Santa Clara County increased by 12 percent. However, this growth was in the incorporated part of the County which saw a 14 percent increase in population. During the same period, the population in the unincorporated part declined by six percent. The increasing population trend observed for incorporated part of the County has continued into the 2000-2010 period with the population of Santa Clara County as a whole and the incorporated part of the County increasing by 12 and 13 percent, respectively.

TABLE 12-1
Historic and Current Population

Area	1990[a]	2000[a]	2012[b]
County of Santa Clara	1,497,577	1,682,585	1,816,486
Incorporated	1,391,404	1,582,772	1,730,132
Unincorporated	106,173	99,813	86,354
State of California	29,758,213	33,873,086	37,678,563

[a]1990 and 2000 U.S. Censuses

[b]DOF, 2012a

Source: US Census Bureau, 1990, 2000; DOF, 2012a.

It is predicted that the County's population will continue to grow, but at a slower rate than in the recent past. According to the Association of Bay Area Governments (2009), Santa Clara County's population is projected to reach 2,063,100 by 2020.

The Cities of Gilroy, Morgan Hill, and San José have a total population of 1,069,000, which is 59 percent of the County's population. The population of these cities is projected to reach 1,238,600 by 2020, which would be 60 percent of the projected County population, respectively (Association of Bay Area Governments, 2009).

12.1.3 Demographics

Table 12-2 shows the Census 2010 racial/ethnic percentage of Santa Clara County compared to that of the state. Racial minority population accounts for 53 percent of the population of Santa Clara County. Individuals who identified themselves as Hispanics (though Hispanic is not a race per Census definition, but an ethnic definition) account for 26.9 percent of the population.

TABLE 12-2
American Community Survey Racial/Ethnic Population Distribution

		Racial/Ethnic Percentage						
Area	Total Population	White	African American	Alaskan/ Native American	Asian	Native Hawaiian/ Other Pacific Islander	Two or More Races	Hispanic
Santa Clara County	1,781,642	47.0	2.6	0.7	32.0	0.4	4.9	26.9
State of California	37,253,956	57.6	6.2	1.0	13.0	0.4	4.9	37.6

Source: U.S. Census Bureau (2012)

Table 12-3 shows the percentage distribution of low-income population from the Census 2010 data for Santa Clara County and the state. Low-income population accounts for 8.9 percent of the population of Santa Clara County compared to 13.7 percent for the state.

TABLE 12-3
2010 Census Low-income Population Distribution

Area	Total Population*	Low-income Population	Percent Low-income (%)
Santa Clara County	1,781,642	158,566	8.9
State of California	37,253,956	5,103,792	13.7

*Population numbers are only those for whom poverty was determined and exclude full-time college students.

Source: U.S. Census Bureau (2012)

12.1.4 Housing

According to the California Department of Finance (DOF, 2012), as of January 1, 2012, there were 636,748 housing units in Santa Clara County. Of these housing units, 608,664 were in the incorporated part of the County while 28,084 were in the unincorporated part. The County had average vacancy rates (4.38 percent), well below the state (8.06 percent) and the federal housing shortage threshold level of 5.0 percent. Thus, housing is in short supply. As shown in Table 12-4, the average household size for Santa Clara County was the same as the State. Table 12-4 summarizes existing housing and household data for the Study Area, as of January 1, 2012.

TABLE 12-4
Existing Housing and Household Data for the Study Area, January 1, 2012

Area	Total Housing Units	Average Household Size	Vacancy Rate (%)
County of Santa Clara	636,748	2.934	4.38
Incorporated	608,664	2.931	4.33
Unincorporated	28,084	2.992	5.40
State of California	13,740,394	2.916	8.06

Source: DOF, 2012.

12.1.5 Employment

The civilian labor force in Santa Clara County was estimated at 910,600 in April, 2012 (EDD, 2012). The labor force in the incorporated and unincorporated part of the County was estimated at 839,200 and 71,400, respectively, in April, 2012. The annual unemployment rates in April 2012 were 7.2 percent for the incorporated and 8.2 percent for the unincorporated part of Santa Clara County. The County's unemployment rate was 8.2 percent, which was slightly less than the state (10.9 percent). Table 12-5 provides details about the civilian labor force.

TABLE 12-5
April 2012 Employment Data

Area	Civilian Labor Force	Employment	Unemployment	Unemployment Rate (%)
Santa Clara County	910,600	836,000	74,600	8.2
Incorporated	839,200	770,300	68,900	7.2
Unincorporated	71,400	65,700	5,700	8.2
State of California	18,842,600	16,475,700	2,007,000	10.9

Source: EDD, 2012

12.2 Methodology and Significance Criteria

Socioeconomic resources that are likely to be affected by the alternatives are employment and property taxes. Since socioeconomic data are typically reported at the county level, the impacts to these resources are also typically evaluated at the county level. The socioeconomic impact analysis involves the comparison of the changes in employment and property taxes under the alternatives to the employment and property tax levels under existing conditions.

Environmental justice impacts are evaluated on the basis established by Executive Order 12898 and the President's Council on Environmental Quality (CEQ, 1997). Definitions of minority and low income areas were established on the basis of the Council on Environmental Quality's (CEQ's) *Environmental Justice Guidance Under the Environmental Policy Act* of December 10, 1997. CEQ's *Guidance* states that "minority populations should be identified where either (a) the minority population of the affected area exceeds 50 percent or (b) the population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographical analysis." The CEQ further adds that "The selection of the appropriate unit of geographical analysis may be a governing body's jurisdiction, a neighborhood, a census tract, or other similar unit that is chosen so as not to artificially dilute or inflate the affected minority population."

The CEQ guidelines do not specifically state the percentage considered meaningful in the case of low income populations. For this study, the assumptions set forth in the CEQ guidelines for identifying and evaluating impacts on minority populations are used to identify and evaluate impacts on low income populations.

Thus, a significant environmental justice impact would occur if the alternatives were to result in a substantially disproportionate high and adverse effect on the human health or environment of minority and/or low-income populations.

12.3 No Action Alternative

12.3.1 Environmental Consequences/Environmental Effects

Under the No Action Alternative, activities associated with the urbanization of the Study Area, including infrastructure development, would still occur, resulting in conversion of land cover. As shown in Table 6-2, 6,044 acres of undeveloped land (much of it used for grazing) and 8,003 acres of agricultural land 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. Some of the activities (e.g., SCVWD water projects, VTA road projects) also would 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. Any site-specific effects would be evaluated on a case-by-case basis under CEQA (and, in some cases, NEPA) as they occur.

In addition, mitigation for biological resources impacts also would occur under the No Action Alternative as a consequence of urbanization and infrastructure development. Under the No Action Alternative, mitigation requirements are expected to apply to many discretionary activities on a case-by-case basis, and include requirements for onsite habitat preservation as well as the acquisition and restoration of offsite habitat areas (including purchasing credits in conservation banks). These mitigation activities could simply maintain existing land uses (e.g., grazing) subject to conservation requirements, but could substantially change some existing land uses. For example, farmland could be purchased and converted to wetlands. Changing management objectives on grazing land to include habitat enhancement (often using livestock for vegetation management) is expected to maintain employment and indirect tax revenues (e.g., from suppliers) at similar levels because the management and supply needs are similar.

Changing management objectives on farmland could have greater economic effects. Although some farmland could be maintained in agricultural production subject to conservation easements, other farmland could be converted to wetlands or other habitat use. In the case of a conservation bank, the level of construction required and the credits created by this action would have short-term economic value. In some cases, farm laborers would be replaced by restoration workers. Tax revenues could decline because economic output would be secondary to habitat preservation, but portions of farmlands can sometimes be managed in a way that is consistent with special status species preservation.

As shown in Table 12-2 the non-white population within Santa Clara County is 53 percent of the total population. The proportion of minority population exceeds the 50 percent threshold set by the CEQ guidelines. Because urbanization and infrastructure development would occur throughout the Study Area under the No Action Alternative, disproportionate effects to minority populations are not anticipated to occur when looking at the Study Area as a whole. There would be no environmental justice issues related to the presence of a low-income population because the low-income population within Santa Clara County (8.9 percent of the total population) is less than 50 percent threshold, and also less than the statewide proportion (13.7 percent).

12.3.2 Cumulative Effects

As described in Section 4.1.1.2, major portions of the Study Area have changed from undeveloped land to agricultural land to developed land, eventually reaching the current land use distribution (see Table 6-2). Social and economic conditions have adapted to changes in land use.

12.4 Proposed Action

12.4.1 Environmental Consequences/Environmental Effects

The Proposed Action incorporates Covered Activities such as urban and rural land development, and the construction and operation of various infrastructure projects for water, transportation, and other systems. Impacts to social and economic conditions as a result of these activities would be the same as described under the No Action Alternative.

The Proposed Action also incorporates the Habitat Plan, including the acquisition of at least 33,205 acres of new reserves on natural and agricultural lands and a comprehensive reserve management program to benefit the Covered Species. Most land acquisitions would occur in undeveloped lands, primarily grassland, chaparral and scrub, and oak and conifer woodland habitats. These areas are assumed to be used mostly for grazing.

For the reasons described under the No Action Alternative, changing management objectives on grazing land to include habitat enhancement is expected to maintain employment and indirect tax revenues (e.g., from suppliers) at similar levels. The loss of approximately 14 acres of farmland (see Chapter 7, Agriculture) would have economic effects, but these effects would be very minor because of the small amount of additional farmland conversion.

Overall social and economic benefits would result from conservation actions involving heavy construction, especially stream restoration projects, which would result in temporary increases in construction-related employment. Although smaller in scale, measures such as pond creation also would increase construction employment compared to the No Action Alternative. These benefits, however, are expected to be minor because the projects would be short-term and constructed gradually over 40 years. The benefits are expected to similar across all demographics in the Study Area, and would not disproportionately affect minority populations.

12.4.2 Cumulative Effects

Under the Proposed Action, cumulative effects would occur as a result of the following projects:

- Other conservation activities

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

Cumulative social and economic effects would result from other preservation activities, including acquisitions by The Nature Conservancy and the Open Space Authority. Most preserves would maintain existing land uses (e.g., grazing) subject to conservation

requirements, but mitigation banks (as discussed under the No Action Alternative) likely would convert farmland to habitat use. For similar reasons as described above, establishment of habitat preserves may result in minor adverse and beneficial social and economic impacts.

12.4.3 Determination of Significance

The Proposed Action would have minor adverse and beneficial changes to social and economic conditions, similar (not disproportionate) adverse and beneficial changes to minority populations, and an insubstantial contribution to cumulative impacts. Overall, impacts to social and economic conditions, including cumulative effects, would be **less-than-significant**.

12.5 Alternative A

12.5.1 Environmental Consequences/Environmental Effects

Alternative A incorporates Covered Activities such as urban and rural land development, and the construction and operation of various infrastructure projects for water, transportation, and other systems. Impacts to social and economic conditions and to minority populations as a result of these activities would be the same as described under the No Action Alternative. Under Alternative A, undeveloped lands would be preserved in perpetuity and managed consistent with reserve design and management objectives, similar to the Proposed Action. Overall, the smaller Reserve System under Alternative A is expected to result fewer potential impacts (adverse and beneficial) than the Proposed Action.

12.5.2 Cumulative Effects

Same as Proposed Action.

12.5.3 Determination of Significance

Same as Proposed Action.

CHAPTER 13

Cultural Resources

13.1 Environmental Setting/Affected Environment

This chapter presents the cultural resources setting of the Study Area. Cultural resources are districts, sites, buildings, structures, objects, and landscapes significant in American history, prehistory, architecture, archaeology, engineering, and culture. For the purposes of this analysis, cultural resources include existing and/or potential prehistoric and historic archaeological sites, historic buildings and structures, and Native American traditional cultural properties.

13.1.1 Regulatory Setting

This section describes the federal, state, and local plans, policies, and laws relevant to cultural resources in the Study Area.

Cultural resources are non -renewable scientific and educational resources and are protected by several federal and state statutes and other regulations (California Office of Historic Preservation, 1983), most notably by the National Historic Preservation Act (NHPA) of 1966 (36 CFR Part 800), the 1906 Federal Antiquities Act, and by the State of California's environmental regulations (California Environmental Quality Act [CEQA], Section 15064.5). Projects will be conducted in accordance with these and other regulations applicable to cultural resources (Table 13 -1).

TABLE 13 -1
Applicable Federal and State Cultural Resource Laws and Regulations

Regulation	Requirements/Applicability
Federal	
Antiquities Act of 1906	Protects cultural resources on federal lands; requires inventory, assessment of effects, and mitigation if appropriate.
National Historic Preservation Act	Section 106 of NHPA requires federal agencies, prior to implementing an "undertaking" (e.g., issuing a federal permit), to consider the effects of the undertaking on historic properties, defined as "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places." [36 CFR §800.16]). Section 106 also affords the Advisory Council on Historic Preservation (ACHP) and the State Historic Preservation Office (SHPO) a reasonable opportunity to comment on any undertaking that would adversely affect historic properties. Only historic properties are considered for protection.
State	
California Environment Quality Act Guidelines	Requires a review to determine if a project will have a significant effect on archaeological sites or a property of historic or cultural significance to a community or ethnic group eligible for inclusion in the California Register of Historical Resources (CRHR).

TABLE 13 -1
Applicable Federal and State Cultural Resource Laws and Regulations

Regulation	Requirements/Applicability
Health and Safety Code Section 7050.5	In the event that construction activities encounter Native American graves, the coroner would be required to call the Native American Heritage Commission (NAHC)
Public Resources Code Section 5097.98	In the event that construction activities encounter Native American graves, NAHC would assign the Most Likely Descendant
Public Resources Code Section 5097.5/5097.9	Regulates unauthorized disturbance or removal of fossil sites or remains on public lands retained by the state

In addition to the federal and state regulations listed in Table 13 -1, municipalities within the Study Area also act to preserve historic properties in accordance with the authorities and processes listed below:

- The Santa Clara County Historical Heritage Commission acts as an advisory body to the Board of Supervisors in the preservation, protection, enhancement, and perpetuation of resources of architectural, historical, and cultural merit within Santa Clara County. The Historical Heritage Commission is chartered under County Ordinance Code Division C17, Historic Preservation. Pursuant to Division C17, the County maintains an inventory of historic resources and designated landmarks, manages a permit program for alterations to designated landmarks, and provides incentives to preserve historic resources (e.g., Historic Heritage Grant Program).
- The City of San José Historic Landmarks Commission advises and makes recommendations to the City Council on the designation, acquisition, and preservation of historic landmarks and sites, artifacts, and other properties of historic significance and value. The Historic Landmarks Commission is chartered under Municipal Code Section 13.48. Pursuant to Section 13.48, the City maintains an inventory of historic resources, manages a permit program for alteration of properties listed on or eligible for listing on the City's Historic Resources Inventory, and helps with incentives to preserve historic resources.
- Preservation of historic resources in Morgan Hill is coordinated by the Planning Division in accordance with the City's Historic Resources Code (Chapter 18.75 of the Morgan Hill Municipal Code). The Historic Resources Code requires the inventory of historic properties and maintenance of a historic register, implementation of a process to evaluate impacts to historic properties during the land development and building permit review process, and management of a permit program for the alteration, demolition, or relocation of historical resources.
- The City of Gilroy Historic Heritage Commission advises the City Council and Planning Commission on issues relating to the identification, protection, retention, and preservation of historic sites and historic neighborhoods. Authority for historic preservation is provided by Section 27 of the City of Gilroy Zoning Ordinance, which provides for the establishment of historic site and historic neighborhood zoning overlay

districts for designated properties or groups of properties, and authorizes a design review process for development activities within these zoning districts.

13.1.2 Prehistoric Setting

Much of the following is synthesized from general descriptions of prehistoric habitation characteristics in the Santa Clara Valley region provided by King and Hickman (1973) and Hildebrandt and Mikkelsen (1993), in addition to detailed overviews of the San Francisco Bay and Central Valley archaeological regions by Eidsness (1986), Frederickson (1982), and Moratto (1984). Since the early 1970s, as a result of rapid population growth and the requirements of environmental legislation, numerous sites have been discovered within the general project area. These sites and corresponding research have led to a much greater understanding of the prehistory of the region.

Between 1912 and 1960, researchers from the University of California, including the University of California Archaeological Survey and the University of California Museum of Anthropology, recorded 43 sites in the Santa Clara Valley and many more around the Bay Area.

Prehistoric resources are physical properties that result from human activities that predate European contact with native peoples in America. Prehistoric archaeological sites may include villages, campsites, lithic or artifact scatters, fishing sites, roasting pits/hearths, milling features, rock art (petroglyphs/pictographs, intaglios), rock features, and burials. Most of the documented sites within Santa Clara Valley region have been found during investigations for development actions. A systematic intensive survey of the area has not been previously undertaken.

Based on the archaeological and ethnographic documentation, the area may contain several kinds of archaeological resources.

- Shell middens or refuse heaps associated with permanent settlement or camping sites.
- Fire pits or hearths associated with resource processing stations.
- Human remains and grave goods from burial grounds.
- Lithic material from tool -manufacturing loci.
- Bone and stone tools.
- Rock piles.

The Santa Cruz Mountains and Diablo Mountain Range created a sheltered valley. Located south of the San Francisco Bay, Santa Clara Valley offered shelter from the cold, damp climate of the San Francisco region and coastal areas west of the Santa Cruz Mountains, and probably constituted an inviting setting to the first human inhabitants. People are known to have inhabited the project area for at least 11,000 years prior to the arrival of Spanish explorers to California in the 16th century. Information on human occupation prior to 3000 B.C. is almost nonexistent in part because of the depositional environment and dramatic environmental changes that took place at this time.

Evidence suggests that Paleoindian (12,000 to 9,000 years before present [BP]) populations throughout California and elsewhere were small and the subsistence economies emphasized the capture of big game, including now extinct megafauna, such as mammoth and

mastodon. Although Paleoindian sites are rare in California, when found, they are often near areas containing pluvial lakes and marshes.

During the Archaic Period (9,000 to 4,000 BP), California prehistoric cultures, as elsewhere, lost their emphasis on large game hunting. Subsistence economies probably diversified somewhat; and Archaic people may have begun to use certain ecological zones, such as the coast littoral zone, more intensively than before. Advances in technology enabled more efficient use of certain plant foods, including grains and plants with hard seeds. Archaic sites are relatively rare throughout California. The earliest sites in the Bay Area are from the late Archaic Period (around 7,000 to 4,000 BP). These sites contain large projectile points, milling stones, and a lack of high -density shell deposits that indicate the early inhabitants of the project area relied on hunting and gathering of terrestrial foods (Moratto, 1984).

Population densities increased throughout the Pacific Period (4,000 to 150 BP). Consequently, California populations sought to produce more food from available land and to locate more dependable food supplies. The Pacific period saw the human occupation and specialized use of virtually all ecological niches in California. Populations became increasingly sedentary and settled in larger villages. Increasing social stratification, ceremonialism, and long -distance trading activity is evident in the archaeological record (Chartkoff and Chartkoff, 1984).

In the Bay Area, many villages were established by 4,000 BP. Village sites, commonly located near a stream, adjacent to resource -rich bayshore and marsh habitats, often had deep stratified deposits of shellfish and other remains from repeated occupations over time. Beginning around 1,700 BP, there was an increasing complexity in artifact assemblages that seems to reflect an intensified hunting, gathering, and fishing adaptation. The introduction of the bow and arrow, harpoon, and the use of clam disk beads as currency for trade are just a few indications that populations were larger and more densely settled (Moratto, 1984).

Fairly recent research performed by Hildebrandt and Mikkelsen (1993) has resulted in a general refinement of the chronological sequence for the project area for subsistence and settlement patterns for the prehistoric inhabitants of the region (Table 13 -2).

TABLE 13 -2
Hildebrandt and Mikkelsen (1993) Cultural Chronology

Period	Description
Early Period (4,500 -2,500 B.P.)	Characterized by a high degree of mobility and a wide array of faunal remains in the coast and inland areas.
Middle Period (2,500 -850 B.P.)	Identified by a lower degree of mobility with fewer marine shells, more structures and indications of year -round occupation, and a higher variety of tools.
Late Period (post 850 B.P.)	Characterized by a reduction in territorial base, a lack of marine shell, and more usage of local resources.

13.1.3 Ethnographic Setting

Inhabitants of the project area at the time of European contact were the Ohlone (as they presently refer to themselves) or Costanoan (from the Spanish “Costano” for coastal people).

The Ohlone is a linguistically defined group composed of several autonomous tribelets speaking eight different but related languages. The Ohlone languages, together with Miwok languages, compose the Utian language family of the Penutian stock. The Ohlone occupied the Coast Ranges surrounding the San Francisco and Monterey Bays and probably arrived in central California sometime after 1,500 years ago (Levy, 1978).

Levy (1978) estimates the Ohlone population at about 10,000 at the time of European contact. Aboriginally, the Ohlone were politically organized by tribelet, each having a designated territory. A tribelet consisted of one or more villages and camps in a territory designated by physiographic features. Tribelets generally had 100–250 members (Kroeber, 1925). The Spanish missionized the Ohlone people quickly and occupied nearly the entire coastal portion of the Ohlone territory in the latter part of the 18th century. Introduced diseases and lower birth rates drastically affected native population levels during this period. With mission secularization in 1821, Ohlone and other mission Indians left the missions to work in surrounding areas, mostly as manual laborers on ranchos. Today, descendants of the Ohlone still live in the area, and many are active in maintaining their traditions and advocating Native American causes.

13.1.4 Historic Setting

Santa Clara County was created February 18, 1850 and is an original California county. Between 1850 and 1853, a territory which at one time was located in Santa Clara was incorporated into Alameda County.

In 1542, Spanish explorers officially claimed alta (upper) California for the King of Spain. They called the Santa Clara Valley La Llanura de los Robles (The Plain of the Oaks). For almost 200 years, the Spanish left the Pacific Coast unattended. In the late 1700s, when the fur and mine trade drew English, Dutch, and Russian traders to the region, it attracted Spain's attention and desire to protect their territory.

The Spanish government sent military expeditions to present -day California to explore the region for harbors that could provide secure military bases, called presidios. The presidios were important for the colonization of an area and the protection of the settlers. Don Gaspar de Portola, the leader of the first expedition, found both Monterey and San Francisco Bays and crossed through Santa Clara Valley. The Guadalupe River became the central feature of the Spanish Colonial settlement in the valley. Portola was accompanied by Father Juan Crespi, whose objective was to assess the area's suitability for establishing a Franciscan mission. The mission system was created to convert the native peoples to Catholicism; the goal was to gain control of the native people and to create self -sufficient communities. The missions were the central economic units of the Spanish colonial system.

San José was California's first town. On November 29, 1777, on orders from the Spanish viceroy of Mexico, nine soldiers, five *pobladores* (settlers) with their families, and one cowboy were detailed to found the Pueblo de San José de Guadalupe, named in honor of St. Joseph.

Santa Clara valley's first mission and pueblo, Mission Santa Clara de Asís, was established January 12, 1777 along the banks of the river Spanish explorer's named Nuestra Senora de Guadalupe (Our Lady of Guadalupe). By 1820 the native population of the mission was 1,357. In 1827, they had their maximum population of 1,464 people, and claimed to own 5,024 head of livestock, 722 horses, and 12,060 sheep. The mission's old register of marriages

records 3,222 weddings from January 12, 1778 to August 15, 1863. From 1777 to 1874, the mission reported a total number of baptisms of 8,536 (Spearman, 1963).

Mexico won its independence from Spain in 1821 and soon discovered it could not keep the missions running as Spain had done. In 1828 Governor Echeandía formulated a plan for the secularization of all the California missions. In 1834, Mexico divided the Valley into smaller civic pueblos, some were granted to Mexican citizens helpful during their war for independence, and others were given to local settlers.

San José became the first Capital of the State of California and the first California Legislature convened there on December 15, 1849. A referendum was sent to the people, to determine where to permanently locate the Capital. Vallejo, San José and Monterey vied for the honor, and Vallejo initially won. After several more moves the capital was permanently established in Sacramento. The name Santa Clara was given to the county by the new state legislature in 1850. Other towns began to spring up in Santa Clara County after the gold rush.

The California Gold Rush, which started in January 1848, brought more American explorers to the Santa Clara Valley. California was admitted to the Union on September 9, 1850, naming San José as its first capital. The Valley's fertile soil provided perfect conditions for agriculture. In the 1850s grain crops flourished, followed by orchards of prunes, apricots, peaches, and pears. Acres of prized vineyards covered the Valley. It was during this time that local residents referred to the Santa Clara Valley as The Valley of Heart's Delight. Fruit processing developed into a major local industry and remained vital to the economy throughout the 1940s and 1950s.

Today Santa Clara Valley is known as Silicon Valley, and is the birthplace of the high technology revolution, with a population of nearly 1.7 million within its 1,312 square miles. The County of Santa Clara celebrated its 150th birthday in February 2000.

13.2 Methodology and Significance Criteria

Potential impacts to cultural resources were analyzed based on the review of local planning documents and processes, the proposed Habitat Plan, and standard professional practice. Local planning documents and processes provide a framework for considering how cultural resources are considered for urban development and infrastructure activities under all alternatives. Because the parcels to be acquired for the Reserve System could occur within an approximately 200,000 -acre area, it was infeasible to perform record searches and archaeological surveys for this EIR/EIS. Although the exact location of reserve units is unknown, they most likely will occur in suitable undeveloped areas within targeted Conservation Analysis Zones (see Figure 2 -1). Because these areas may contain prehistoric archeological resources, they are considered to be culturally sensitive.

In addition, Santa Clara County performed outreach efforts to the local Native American community, based on a contact list provided by the California Native American Heritage Commission. Letters were sent to nine Native American contacts on September 7, 2010, providing information about the Habitat Plan process and requesting information about Native American sites within and adjacent to the Study Area. The eleven individuals are also on the distribution list for this EIR/EIS (see Chapter 22).

Impacts would be significant if an alternative would result in the following:

- A substantial adverse change in the significance of a historical resource.
- Alteration of those characteristics of a property that may qualify the property for listing on the National Register of Historic Places.
- Effects that would diminish the integrity of a property listed or eligible for listing on the National Register of Historic Places.

13.3 No Action Alternative

13.3.1 Environmental Consequences/Environmental Effects

Under the No Action Alternative, activities such as implementation of the Local Partners' General Plans (including urban and rural land development) and construction and maintenance of infrastructure projects would continue to occur. Based on prior implementation of these activities pursuant to the local processes and other regulatory standards (e.g., National Historic Preservation Act), it is expected that impacts to cultural resources would continue to occur on a case -by -case basis. These impacts would be evaluated on a case -by -case basis pursuant to CEQA and, in some cases, NEPA, and potentially significant impacts would be identified and mitigated pursuant to the requirements of CEQA and other laws and regulations. The current framework for cultural resources review, however, may not fully mitigate for the loss of historic properties.

In addition, mitigation for biological resources impacts also would occur under the No Action Alternative as a consequence of urban and infrastructure development. Under the No Action Alternative, mitigation requirements are expected to apply to many discretionary activities on a case by case basis, and include the acquisition and restoration of offsite habitat areas (including purchasing credits in conservation banks). Therefore, the potential exists for impacts (for example, exposure, damage, or crushing of surface and buried artifacts) to occur to cultural resources on lands acquired as compensatory habitat. These activities are expected to be conducted in accordance with the regulatory processes described above in Section 13.1.1, including CEQA analysis and (where applicable) review by the Santa Clara County Historical Heritage Commission. These requirements provide an effective mechanism to ensure that potential impacts to historic properties are appropriately addressed and mitigated.

13.3.2 Cumulative Effects

Cultural resources in the Study Area have likely been altered considerably by mining, agriculture, land development, and other prior activities described in Section 4.1.1. It is likely that many historic properties have been lost. The response to this loss includes the enactment of laws to protect cultural resources (see Section 13.1.1 above). These laws prescribe actions such as detailed archaeological surveys and recordation of historic properties, and review of individual development actions by local commissions and municipal staff. In this manner, potentially significant impacts from recent (i.e., since enactment of the regulations) and future activities would be identified and mitigated.

13.4 Proposed Action

13.4.1 Environmental Consequences/Environmental Effects

The Proposed Action incorporates Covered Activities such as urban and rural land development, and the construction and operation of various infrastructure projects for water, transportation, and other systems. Impacts to cultural resources as a result of these activities would be the same as described under the No Action Alternative.

The Proposed Action also incorporates the Habitat Plan, including the acquisition of at least 33,205 acres of new reserves, enhancement of up to 13,291 acres of existing open space, protection of 100 miles of streams, and a comprehensive reserve management program to benefit the Covered Species. Potential impacts to cultural resources resulting from implementation of the Reserve System would result from major construction activities, which would primarily occur during habitat restoration or pond creation. Earthmoving activities would typically include grading, excavating, and other activities involving the use of heavy equipment. These activities could result in exposure, damage, or crushing of surface and buried artifacts. Other Reserve System construction activities would include construction of parking lots, staging areas, roads, and bridges.

In addition to restoration and creation actions on the Reserve System, the Habitat Plan also allows for some stream and riparian restoration activities to occur outside of the Reserve System (see Habitat Plan Section 5.2.5 for details). Up to 10.4 miles of stream restoration could be required depending on the amount of stream impacts from the Covered Activities. Restoration is expected to occur on up to 339 acres of degraded riparian habitat (willow riparian forest and scrub, mixed riparian forest and woodland) depending on the level of Covered Activity impacts. Up to 14 acres of central California sycamore alluvial woodland would be restored if all impacts occur. Stream and riparian restoration activities would typically include grading, excavating, and other activities involving the use of heavy equipment. These activities could result in exposure, damage, or crushing of surface and buried artifacts. Other ground -disturbing conservation actions that could occur both within and outside of the Reserve System include the construction of burrowing owl artificial burrows and the creation of up to two new Coyote ceanothus occurrences.[1] Because portions of the Study Area may contain culturally significant resources, this would be a potentially significant impact.

Mitigation Measure. Consistent with the requirements of the Habitat Plan (see Habitat Plan Section 8.3, Responsibilities of the Implementing Agency and Habitat Plan Section 8.6, Land Acquisition), the following mitigation measure is required prior to development of the Reserve System and prior to any offsite ground -disturbing activities (e.g., riparian or stream restoration, artificial burrow installation, plant occurrence creation) to ensure that cultural resources potentially occurring in these areas are properly evaluated and protected.

[1] The creation of artificial burrowing owl burrows may require the excavation of 10 ft. by 10 ft. holes, 3 feet deep.

13 -1: In consultation with the USFWS, the Implementing Entity will prepare a Cultural Resources Management Plan to ensure that implementation of the Habitat Plan would not result in significant impacts to historic properties. The plan would consist of the following:

- Establishment of an Area of Potential Effect for Habitat Plan implementation.
- A summary of known resources in the Area of Potential Effect that are currently listed in the National Register of Historic Places, California Register of Historic Places, or local historic registries.
- Identification of areas of cultural sensitivity in the Area of Potential Effect based on consultation with the Native American Heritage Commission (Sacred Lands file check) and potentially affected tribes (identified by the Native American Heritage Commission).
- Development of a Standard Mitigation Measures Agreement that establishes the mitigation and recordation measures to treat potential adverse effects of undertakings such as relocation of individual properties, recordation, data recovery, and curation.

Implementation of this measure would reduce impacts to less than significant.

In addition to meeting the requirements of Mitigation Measure 13 -1, all activities would be conducted in accordance with the regulatory processes described above in Section 13.1.1. For example, the Implementing Entity would be required to evaluate specific conservation actions and projects in accordance with CEQA, including the specific CEQA provisions for cultural resources impact assessment and mitigation. In addition, potential impacts to historic resources and locally designated landmarks resulting from conservation actions would be subject to review by the Santa Clara County Historical Heritage Commission.

13.4.2 Cumulative Effects

Under the Proposed Action, cumulative effects would occur as a result of the following activities:

- Other conservation activities.
- Instream activities under the Three Creeks HCP, mercury remediation projects, or Stream Maintenance Program.
- High Speed Train.

There is no or limited potential for the other ongoing activities (see Section 4.1) or foreseeable future projects (see Section 4.2) to contribute to cumulative effects.

As described above under the No Action Alternative, past activities have likely resulted in significant cultural resources impacts. As a result of laws enacted to protect cultural resources, most activities involving discretionary action now are required to perform detailed archaeological surveys and implement appropriate mitigation measures. These requirements would apply to actions by private landowners, including landowners who acquire property for habitat preservation (e.g., The Nature Conservancy), through local permit requirements

(e.g., grading permits). Because of the large amount of landholdings by private conservation organizations, there is a potential impact from restoration activities on private lands. Potential impacts associated with the Proposed Action are site -specific in nature, and would be undertaken consistent with the applicable regulations and processes described above.

The analysis of cumulative effects includes other projects with instream and riparian impacts, such as the SCVWD Stream Maintenance Program and various mercury remediation projects in the Guadalupe and other nearby watersheds. Because stream zones typically have a high level of cultural sensitivity, there is a potential for these projects to affect historic properties. However, because these programs are discretionary actions by public agencies, they are expected to be implemented in full compliance with cultural resources regulations. In this manner, impacts of these projects would be similar to the impacts of the Proposed Action – potential site -specific impacts that would be addressed by conducting detailed archaeological surveys and mitigating potentially significant impacts.

The High -Speed Train project is expected to require a substantial amount of land disturbance (e.g., tunnels, large areas of fill, bridge abutments), especially in areas where it does not follow the Union Pacific Coast Line route. Potential impacts to historic properties would be evaluated as part of site -specific environmental review. These potential impacts would occur within several of the Conservation Analysis Zones anticipated for Reserve System acquisition.

These cumulative projects are expected to be conducted in accordance with the regulatory processes described above in Section 13.1.1, and larger projects such as the Three Creeks HCP likely would establish program frameworks similar to Mitigation Measure 13 -1. These requirements provide an effective mechanism to ensure that potential impacts to historic properties are appropriately addressed and mitigated, but may not fully mitigate for the loss of historic properties.

13.4.3 Determination of Significance

Compared to the No Action Alternative, the Proposed Action would result in **less -than -significant** impacts with the implementation of Mitigation Measure 13 -1. Cumulative effects are potentially significant, but the Proposed Action would result in a less than cumulatively considerable contribution to a potentially significant cumulative impact.

13.5 Alternative A

13.5.1 Environmental Consequences/Environmental Effects

Under Alternative A, the types of potential impacts would be the similar to the Proposed Action. Compared to the No Action Alternative, there is the potential that cultural resources on lands acquired for the Alternative A Reserve System would be disturbed during habitat restoration and pond creation activities. The Reserve System would be smaller, however, under Alternative A so that extent of the potential impact would be reduced compared to the Proposed Action. For the same reasons as described under the Proposed Action, these impacts are expected to be less than significant with implementation of Mitigation Measure 13 -1 and the continued implementation of existing federal, state, and local regulations.

Mitigation Measure. Implement Mitigation Measure 13 -1 described above.

13.5.2 Cumulative Effects

Same as Proposed Action

13.5.3 Determination of Significance

Same as Proposed Action

CHAPTER 14

Transportation and Circulation

14.1 Environmental Setting/Affected Environment

This section provides an overview of the applicable transportation networks within the Study Area. Figure 14-1 shows the network of major roadways that traverse the Study Area.

14.1.1 Regulatory Setting

A number of different state, regional, and local agencies have jurisdiction over transportation and circulation within the Study Area. The State of California Department of Transportation (Caltrans) has authority over the state highway system, including mainline facilities and interchanges. Caltrans approves the planning and design of highway improvements, and performs operations and maintenance activities on state routes.

Regional county transportation planning and funding are under the jurisdiction of the Santa Clara Valley Transportation Authority (VTA). VTA is in the process of updating its long-range transportation plan, known as Valley Transportation Plan (VTP) 2035, and has adopted a draft list of regional capital projects (including transit, highway, local streets, and bicycle projects) based on input from local jurisdictions, agencies, and project sponsors. The VTA 2035 projects have been included in Transportation 2035, the regional transportation plan for the San Francisco Bay Area recently adopted by the Metropolitan Transportation Commission (MTC).

As part of its regional transportation planning role, VTA operates the public transit system in the Study Area (consisting of light rail and bus service), participates as part of the regional organization that operates Caltrain, and coordinates regional bikeway planning. VTA is leading the planning effort for major transit expansion projects, including the Silicon Valley Rapid Transit Project to extend BART into Santa Clara County. VTA also prepared the Santa Clara Countywide Bicycle Plan (VTA, 2008).

The County of Santa Clara has jurisdiction over the roadway system in the unincorporated parts of the Study Area (encompassing approximately 635 miles of roads), and coordinates with VTA on regional transportation planning actions including the South County Circulation Study (Santa Clara County, 2003). In addition, the County coordinates the expressway system, with 62 miles of access-controlled roadways in the San José area (Santa Clara County, 2008), and operates three general aviation facilities including South County Airport between Morgan Hill and Gilroy.

Individual cities in Santa Clara County have jurisdiction over their respective city streets and local bike paths, and coordinate with VTA on regional transportation planning. The City of San José also operates the Norman Y. Mineta San José International Airport.

14.1.2 Transportation System

This section describes major regional transportation features throughout the Study Area. Major transportation features are the primary linear features – road and railroads – within the Study Area. In addition, the major airports and the countywide bikeway and trail systems are described in this section. The section also describes minor roads that provide access to the Conservation Analysis Zones that are targeted for Reserve System Acquisition. This is to help focus the analysis on those areas of the Study Area where potential habitat acquisition and enhancement actions may occur.

Major Regional Transportation Features

This section discusses major transportation features of regional significance. These features include highways, expressways, major and minor arterials, local roadways, railways, airports, and bicycle and foot trails:

- **U.S. Highway 101**, running from far northern California to Los Angeles, is a ten-lane freeway in the northern part of the Study Area, narrowing to four-lane divided highway in the southern part of the Study Area. U.S. Highway 101 is also known as the South Valley Freeway south of San José. It is primarily at-grade within the Study Area.
- **San José Area Freeways:**
  - **I-280** is a north-south freeway extending from the U.S. Highway 101 interchange in the City of San José north to San Francisco.
  - **I-680** is a north-south freeway extending from the I-280/I-680/ U.S. Highway 101 interchange in the City of San José north to Solano County. I-680 includes four to five mixed-flow lanes per direction including carpool lanes north of the I-280/I-880/SR 17 interchange.
  - **I-880** is a north-south freeway extending from the City of San José at the I-280/I-880/SR 17 interchange that includes three to four mixed-flow lanes per direction.
  - **SR 237** is an east-west freeway connecting I-680 in Milpitas with U.S. Highway 101 and SR 85 in the Mountain View area. Within the Study Area, SR 237 is a six-lane freeway.
  - **SR 85** is a four lane north-south freeway extending through the City of San José from the SR 85/ U.S. Highway 101 interchange in the City of Mountain View to the SR 85/ U.S. Highway 101 interchange in south San José.
  - **SR 87** is a north-south freeway extending from the SR 85/SR 87 interchange to the U.S. Highway 101/SR 87 interchange. This facility includes three mixed-flow lanes per direction plus carpool lanes during peak periods, and is located entirely within the City of San José.
- **SR 130** is a small state highway that connects the San José area with Lick Observatory atop Mt. Hamilton. Within San José, SR 130 is known as Alum Rock Avenue, a four-lane arterial road. East of San José, SR 130 (now known as Mt. Hamilton Road) is a two-lane, winding mountain road to its eastern terminus at Mt. Hamilton. The roadway continues

east of Mt. Hamilton (as San Antonio Valley Road and Del Puerto Canyon Road), eventually reaching the Central Valley near Patterson.

- Within the City of San José, minor arterials form a grid-like core street network of large north-south and east-west roadways and transport a large amount of traffic within the city. City of San José minor arterials within the Study Area include: **1st Street, South 2nd Street, 3rd Street, 4th Street, Almaden Boulevard, Bailey Avenue, Julian Street, Market Street, and Zanker Road.**
- **Norman Y. Mineta San José International Airport (SJC)** is located approximately two miles north of downtown San José and is owned and operated by the City of San José. Approximately 10.7 million passengers per year travel through this airport on 13 airlines.
- **Reid-Hillview Airport (RHV)** is a general aviation facility located approximately four miles east of downtown San José and is owned and operated by the County of Santa Clara. Over 240,000 annual takeoffs and landings occur at this airport, and approximately 700 aircraft are based at the airport. The County has explored the idea of closing down the airport and selling the land for redevelopment; however, the County does not have any plans to change operations at this time.
- **Monterey Road** parallels U.S. Highway 101 throughout most of the Study Area (it was the old U.S. Highway 101 before construction of the modern South Valley Freeway). Monterey Road is a six-lane surface street in the north part of the Study Area, and a four-lane surface street south of San José until it ends just south of Gilroy. Portions of the road within San José are known as the "Monterey Highway" and include grade separations at major intersections.
- **Santa Teresa Boulevard**, located west of Monterey Road, also parallels U.S. Highway 101 throughout most of the Study Area. The alignment runs from urban San José to south of Gilroy, with plans to connect to the U.S. Highway 101/State Route (SR) 25 interchange. Several portions of the alignment in Morgan Hill have not yet been constructed. Although additional road construction is planned, the Santa Teresa "corridor" may shift to other streets in the Morgan Hill area (e.g., Butterfield Boulevard). Santa Teresa Boulevard ranges from a four- to six-lane surface street in developed areas to a two-lane rural roadway between Morgan Hill and Gilroy and south of Gilroy.
- The **Union Pacific Railroad Coast Line** route is primarily a freight line connecting routes in the Bay Area and Los Angeles. It parallels Monterey Road throughout most of the Study Area. The Coast Line also supports Amtrak (Coast Starlight route), and Caltrain service to Gilroy. The Coast Line is mostly a single-track route between San José and Gilroy, with double track segments currently under construction to help accommodate Caltrain service.
- **County Route G8** encompasses Watsonville Road, Uvas Road, and McKean Road, which are two-lane rural roads. The corridor is heavily used as an alternate route to U.S. Highway 101 to connect the Almaden Expressway in San José with the Gilroy area.
- Four existing roads in the eastern Santa Clara Valley **– Marcella Avenue, Center Avenue, Hill Road, and Peet Road –** are an important north-south transportation

corridor between southeastern Gilroy and northeastern Morgan Hill. All four roads are currently two-lane rural roads, but are expected to be developed into a continuous four-lane arterial.

- **Pacheco Pass Highway (SR 152)** is a heavily traveled road extending between the Santa Clara Valley area and the Central Valley. SR 152 is a two-lane highway within the Santa Clara Valley area, transitioning to a four-lane divided highway in the Pacheco Pass area with an interchange at Casa de Fruta and a new interchange under construction at SR 156.
- **Hecker Pass Road** is the westerly extension of SR 152, extending between Gilroy and Watsonville. It is a heavily traveled two-lane surface street (four lanes within the developed parts of Gilroy).
- The **South County Airport**, also known as San Martin Airport, is a general aviation facility in the San Martin area between Morgan Hill and Gilroy. It contains one 3,100-foot asphalt runway for small aircraft, ranging from single-engine piston aircraft to twin-engine turboprops and business jets (County of Santa Clara, 2006). It is operated by the County of Santa Clara, Roads and Airports Department.
- The **Santa Clara Countywide Trails Master Plan** is the guiding plan for the development and management of a regional trail system that is intended to provide (at buildout) up to 535 miles of off-street trail routes (County of Santa Clara, 1995). At the time the plan was adopted, approximately 105 miles of the system was in place. The Study Area contains existing and proposed regional, sub-regional, and connector trails. Proposed trails would be developed in cooperation with willing private landowners, and subject to a trail-specific master planning process. Specific trails are discussed in Section 9, Recreation.
- The **Santa Clara Countywide Bicycle Plan** is the guiding plan for the development and management of a regional bicycle system (VTA, 2008). The Countywide Bicycle Plan was developed to be consistent with the Countywide Trails Master Plan. Bicycle paths are mostly limited to the incorporated cities of San José, Morgan Hill, and Gilroy. Limited bike path options in the unincorporated County include the Coyote Creek Regional Bicycle Trail. The Countywide Bicycle Plan (as well as MTC's Regional Bicycle Plan for the San Francisco Bay Area – 2009 Update) focuses the expansion of north-south bike paths in the South County, including routes along Santa Teresa Boulevard and Monterey Road, and a southern expansion of the Coyote Creek Regional Bicycle Trail (proposed Eastern South Valley Corridor). The Countywide Bicycle Plan also includes five east-west bike routes in the South Valley area.

Local Transportation Features in Conservation Analysis Zones

Potentially affected local transportation features are described in this section based on their location with the proposed Conservation Analysis Zones, or the existing open space areas proposed for enhancement.

Alamada-1, Coyote-7, and Sierra Vista Preserve. The Alameda-1 and Coyote-7 Conservation Analysis Zones and the Open Space Authority's Sierra Vista Preserve are located in the mountains east of Milpitas, along the northern boundary of the Study Area. Access to these

areas is from Felter Road and Sierra Road, which serve rural residential and agricultural uses east of Milpitas and San José. Access to the Coyote-7 zone is also provided by Mt. Hamilton Road (SR 130). Access within both zones is provided by dirt roads.

Joseph D. Grant County Park. Access to proposed enhancement areas at Joseph D. Grant County Park would be provided by Mt. Hamilton Road (SR 130). Mt. Hamilton Road is a winding, two-lane road connecting the Alum Rock neighborhood of San José with Lick Observatory on Mt. Hamilton. Access within the park is provided by unpaved service roads.

Coyote-5 and Coyote-6. The Coyote-6 Conservation Analysis Zone abuts the eastern growth boundary of the City of San José, within the Silver Creek Hills. Although very close to urban areas, access to this zone is primarily limited to unpaved rural roads accessed from larger two-lane roads such as San Felipe Road and Metcalf Road. The Coyote-5 zone encompasses the Coyote Valley area (between San José and Morgan Hill), including foothills to the east and west. Access within the valley area is provided by U.S. Highway 101, Monterey Road, Santa Teresa Road (Hale Avenue), and numerous local streets serving existing rural residential areas. East of the valley, access is provided by the Kirby Canyon Recycling and Disposal Facility access road, and small unpaved roads. West of the valley, access is mostly provided by small unpaved roads.

Coyote-4. The Coyote-4 Conservation Analysis Zone is located in the mountains east of the Coyote-5 and Coyote-6 zones. The primary access is from Metcalf Road, a two-lane paved road with an interchange at U.S. Highway 101. Secondary access to the zone south of Metcalf Road is from small rural roads, including Shingle Valley Road, Las Animas Road, and by access roads within the large United Technologies Corporation facility.[1]. Most access within the zone, however, is provided by private dirt roads.

Anderson Lake County Park. Access to proposed enhancement areas at Anderson Lake County Park would be provided by Cochrane Road. Cochran Road is a four-lane arterial in Morgan Hill, with an interchange at U.S. Highway 101, serving residential areas in the northern part of Morgan Hill and providing public access to Anderson Lake County Park. Access to Anderson Lake County Park is also provided by the Coyote Creek Regional Bicycle Trail. Access within the park would be provided by unpaved service roads.

Guadalupe-1 and Guadalupe-3. The Guadalupe-1 and Guadalupe-3 Conservation Analysis Zones encompass portions of the Santa Teresa Hills and the area around Calero Reservoir. Access to the Guadalupe-1 zone is provided by several residential streets within the City of San José, including streets that currently provide access to Santa Teresa County Park. Access to the eastern portion of the Guadalupe-1 zone, including the northern portion of Tulare Hill, is by Santa Teresa Boulevard. Interior access is by dirt road.

Access to the western portion of the Guadalupe-3 zone is by Almaden Road, which is a two-lane collector roadway providing access between urban San José (via the Almaden Expressway) and rural residential areas in the New Almaden area. Access to the eastern portion of the Guadalupe-3 zone is by McKean Road, which also connects urban San José (via the Almaden Expressway) and rural residential areas near Calero County Park. Access

[1] The United Technologies Corporation Pratt & Whitney Rocketdyne is closed, with ongoing remediation activities. See Chapter 11, Hazardous Materials.

within the zone is provided by service roads in Calero County Park and by private dirt roads. McKean Road is the northerly extension of Uvas Road (described below), and part of County Route G8.

Santa Teresa County Park, Calero County Park, Rancho Cañada del Oro Preserve, and Almaden Quicksilver County Park. Access to Santa Teresa County Park, Calero County Park, Rancho Cañada del Oro Preserve, and Almaden Quicksilver County Park is generally provided by the same roads discussed above for the Guadalupe-1 and Guadalupe-3 Conservation Analysis Zones. Additional access to potential enhancement areas on Almaden Quicksilver County Park is provided by Hicks Road, a rural roadway connecting to Camden Avenue in southwestern San José. Additional access to potential enhancement areas on the south side of Calero County Park and the Open Space Authority's Rancho Cañada del Oro Preserve is provided by Casa Loma Road, a rural road providing access to rural residential and grazing areas west of McKean Road.

Llagas-2. The Llagas-2 Conservation Analysis Zone is a large rural area bisected by Uvas Road (the southerly extension of McKean Road). Uvas Road is a two-lane rural road (part of County Route G8) that provides access to rural residential areas between southern San José (Calero Reservoir area) and the area around Uvas Reservoir northwest of Gilroy. The southeastern portion of the Llagas-2 zone, which includes Chesbro Reservoir, includes additional access to rural residential areas via Willow Springs Road, Oak Glen Avenue, and Chesbro Lake Drive (all two-lane rural roads). Other than these roads, most of the Llagas-2 zone is accessible only via private dirt roads.

Llagas-3. The Llagas-3 Conservation Analysis Zone encompasses the valley floor and low foothills in the area surrounding and south of Morgan Hill, including the community of San Martin. The area is served by numerous existing roadways that provide access to agricultural and rural residential areas in zone. Major north-south transportation features are U.S. Highway 101, Monterey Road, Union Pacific Railroad, and Santa Teresa Boulevard. The valley floor consists of primary north-south roads (two-lane "avenues") paralleling Monterey Road, with very small perpendicular streets serving small groups of residences. There are very few large east-west streets. Low foothill areas west and east of the valley floor generally consist of small residential streets accessed by two-lane collector roads. In the western part of the Llagas-3 zone, collector roads include Watsonville Road, Sycamore Drive, West Edmundson Avenue, Oak Glen Avenue, and Llagas Road. In the eastern portion of the zone, collector roads include New Avenue.

The Llagas-3 zone also includes the South County Airport (described above).

Coyote Lake/Harvey Bear Ranch County Park and Palassou Ridge Preserve. Access to proposed enhancement areas at Coyote Lake/Harvey Bear Ranch County Park and the Open Space Authority's Palassou Ridge Preserve would be provided by East San Martin Avenue and Roop Road. East San Martin Avenue connects U.S. Highway 101 (via an interchange) and the eastern portion of San Martin to the northern part of the County Park near Coyote Dam. Roop Road and Gilroy Hot Springs Road connect the southeastern area of San Martin to the southern part of the County Park and the Palassou Ridge Preserve via New Avenue and Leavesley Road (which has an interchange on U.S. Highway 101). Access within these areas would be provided by unpaved service roads.

Llagas-4. The Llagas-4 Conservation Analysis Zone is in valley floor and low foothills east of Gilroy. In the northern half of the zone, the transportation environment is very similar to the Llagas-3 zone described above, with many of the same north-south roads (e.g., Santa Teresa Boulevard, Monterey Road, Union Pacific Railroad, and U.S. Highway 101). Day Road is the primary rural collector road in the northwestern part of the zone, serving rural residences on the outskirts of Gilroy. Rural collector roads in the northeast part of the zone include Leavesley Road, Roop Road, and Ferguson Road. Like the Llagas-3 zone, the northern part of the Llagas-4 zone is served by numerous existing roadways that provide access to agricultural and rural residential areas.

The southern part of the Llagas-4 Conservation Analysis Zone is mostly farmland, with primary access by SR 152 (Pacheco Pass Highway). Within the Llagas-4 zone, SR 152 is a heavily traveled two-lane road that provides access to agricultural and rural residential areas in the southern portion of the zone, together with smaller rural collectors such as Cañada Road and Bloomfield Avenue. SR 152 also supports regional traffic, extending between the Santa Clara Valley area and the Central Valley.

Uvas-1, Uvas-2, Uvas-5, and Uvas-6. The Uvas-1, Uvas-2, Uvas-5, and Uvas-6 Conservation Analysis Zones encompass the entire Uvas Creek watershed. The Uvas-1 zone is high in the watershed, accessible by Little Uvas Road and Croy Road, which are two-lane rural roadways off Uvas Road. Within the Uvas-1 zone, the ridgeline at the western edge of the Study Area is accessed by Loma Chiquita Road, and Summit Road, which are very small, lightly traveled, and mostly unpaved.

The Uvas-2 Conservation Analysis Zone includes both rural residential areas and remote, undeveloped areas high in the watershed. The primary road in the eastern (developed) portion of the zone is Watsonville Road, a two-lane rural collector. Smaller rural collectors off Watsonville Road include Burchell Road, Day Road, and Sycamore Drive. Uvas Road is a two-lane rural collector that runs from Watsonville Road to connect with McKean Road into southern San José. Areas west of Uvas Road are very remote, with limited access by private dirt roads.

Hecker Pass Highway is a major two-lane road connecting Gilroy and Watsonville, and is the westerly extension of SR 152 (Pacheco Pass Highway). The Uvas-5 Conservation Analysis Zone runs from Hecker Pass Highway south along the western side of Gilroy to the hills south of Gilroy (Castro Valley Ranch area). The northern part of the zone is accessible by Hecker Pass Highway and Watsonville Road, which serve rural residential uses in the area. Other than this northern area, however, most of the Uvas-5 zone is accessible only by private dirt roads or by Castro Valley Road, a small one-lane rural road.

The Uvas-6 Conservation Analysis Zone encompasses productive farmland in the very southern portion of the Study Area, above the confluence of Uvas (Carnadero) Creek and the Pajaro River. The zone contains several large transportation features, including the southern terminus of Santa Teresa Boulevard, U.S. Highway 101, two Union Pacific Railroad lines, and Bolsa Road (connecting U.S. Highway 101 with the Hollister area in San Benito County). In addition, the Uvas-6 zone also contains Bloomfield Avenue and rural collector roads serving farms in the area.

Pescadero-1. The Pescadero-1 Conservation Analysis Zone is very remote. It is partly accessible by Castro Valley Road and frontage roads along U.S. Highway 101, but mostly by private dirt roads.

Coyote-2, Pacheco-7, and Pacheco-8. The Coyote-2, Pacheco-7, and Pacheco-8 Conservation Analysis Zones are located in the mountains east of Gilroy. Of the three zones, Coyote-2 is the most remote with access by Gilroy Hot Springs Road and Cañada Road, both two-lane rural roads that provide access to grazing lands and to Rancho Cañada de los Osos Ecological Reserve. SR 152 runs along the southern edge of the Pacheco-8 zone. Access to the interior of the Pacheco-8 zone is provided by private dirt roads. SR 152 runs through the Pacheco-7 zone, and in this area is primarily a four-lane freeway with semi-controlled access (e.g., interchange at Casa de Fruta). Although there are several two-lane roads in the farmed area along Pacheco Creek, access to the interior of the Pacheco-8 zone is primarily by private dirt roads accessed from SR 152.

Pacheco-1 through Pacheco-6. The Pacheco-1 through Pacheco-6 Conservation Analysis Zones are extremely remote. Although they are traversed by SR 152, there are few access roads other then the southern entrance road to Henry W. Coe State Park. Limited access to the interior is provided by dirt roads that run along the ridge at the eastern Study Area boundary but access is generally by private dirt roads.

14.2 Methodology and Significance Criteria

Transportation impacts are usually evaluated in terms of temporary impacts (i.e., during construction) and permanent impacts (i.e., changes in traffic as a result of land use changes). Potential temporary and permanent transportation impacts for the No Action Alternative were analyzed based on the anticipated changes in land cover over 50 years (corresponding to the Permit Term under the Proposed Action). Changes in land cover were assessed by overlaying anticipated urban, rural, and associated infrastructure development, operation, and maintenance (see Section 2.3.1) onto the existing land cover types using GIS. For the Proposed Action and Alternative A, the analysis builds on the No Action Alternative analysis by comparing the expected Reserve System area (or as modified under Alternative A) with the location of existing transportation facilities (e.g., those shown on Figure 14-1). With the exception of portions of existing open space areas, the specific Reserve System sites are unknown. However, reserves are most likely to be located within the targeted Conservation Analysis Zones (see Section 14.1.2.2).

Impacts would be significant if an alternative would result in the following:

- A substantial increase in traffic compared to existing traffic volumes and the capacity of the existing road system.
- Safety hazards due to design features or incompatible uses (e.g., hazards to vehicular, pedestrian, and bicycle traffic) or inadequate emergency access.

14.3 No Action Alternative

14.3.1 Environmental Consequences/Environmental Effects

Under the No Action Alternative, the Habitat Plan would not be implemented. However, activities such as implementation of the Local Partners' General Plans (including urban and rural land development) and construction and O&M of infrastructure projects would continue to occur, similar to prior years, throughout the study period. These activities, especially urban and rural development, would introduce new vehicles onto the regional and local roadway systems, and increase demand for alternative forms of transportation (e.g., public transit). Impacts to the regional and local transportation system have been anticipated as part of regional transportation planning efforts (e.g., VTP 2035, South County Circulation Study), which take into account population growth consistent with local General Plans. Impacts to local roads from individual development projects would be addressed by local studies (e.g., CEQA review). Mitigation of traffic impacts is expected to occur as a result of regional projects implemented by VTA and the participating municipalities, and local projects implemented by developers or by the municipalities using development impacts fees.

Under the No Action Alternative, FESA and CESA compliance would be considered on a case-by-case basis. In general, FESA and CESA compliance for new urban development and other activities would consist of surveys for the presence or likely presence of listed species, consideration of potential measures to avoid or minimize impacts to listed species, and compensation of unavoidable impacts by various options such as onsite mitigation, offsite mitigation, or purchasing credits in a mitigation bank (potentially, but not necessarily, within Santa Clara County). Therefore, the potential exists for traffic impacts occurring on or adjacent to lands acquired as compensatory habitat during any habitat restoration activities (e.g., wetland restoration). Given the nature and extent of habitat restoration activities, it is expected that such impacts would be dispersed throughout the Study Area and that any concentration of traffic in disturbance areas would be short-term (i.e., during the restoration activities).

14.3.2 Cumulative Effects

Regional land development has produced the existing system of freeways, expressways, highways, local arterial roadways, and other streets. In order to manage the significant ongoing transportation effects of regional land development (e.g., traffic congestion), various agencies actively participate in planning transportation system improvements. Within the Study Area, these agencies include the cities of San José, Morgan Hill, and Gilroy for local roadway systems, Santa Clara County for roads in unincorporated areas, VTA to coordinate countywide transportation improvement projects, and MTC for San Francisco Bay Area regional transportation planning. This effort has resulted in the current plans for transportation improvements in the Study Area (e.g., VTP 2035, South County Circulation Study), and future plans will continue to be developed and implemented (e.g., recent updates to VTA and MTC plans have been on a five-year schedule). In addition, recent transportation plans have increasingly considered alternative forms of transportation, and regional efforts have supported projects such as regional rail (e.g., BART, Caltrain, Amtrak) and the VTA light rail system (operational since 1987 with continued plans for expansion).

VTA also adopted the Countywide Bikeway Plan, which is supported by a dedicated bicycle expenditure program and includes capital projects listed in MTC's Transportation 2035.

The continued implementation of this regional transportation planning process is an effective means of mitigating cumulative transportation impacts under the No Action Alternative.

14.4 Proposed Action

14.4.1 Environmental Consequences/Environmental Effects

The Proposed Action incorporates Covered Activities such as urban and rural land development, and the construction and operation of various infrastructure projects for water, transportation, and other systems. Transportation and circulation impacts as a result of these activities would be similar to those described under the No Action Alternative. The Proposed Action also incorporates the Habitat Plan conservation strategy, including the acquisition of at least 33,205 acres of new reserves, enhancement of up to 13,291 acres of existing open space to improve long-term management, protection of up to 100 miles of streams, and a comprehensive reserve management program to benefit the Covered Species and natural communities. Potential transportation and circulation impacts resulting from Reserve System management could occur during habitat restoration and creation activities, and during ongoing Reserve System operations.

Habitat restoration and creation activities include several types of stream restoration actions, riparian habitat improvement, wetland restoration, and pond creation. Under the Proposed Action, stream restoration would occur on a minimum of 1.0 mile of streams in the Study Area, and as much as 10.4 miles if all Covered Activity impacts occur. In addition, riparian restoration (including central California sycamore alluvial woodland) would occur on a minimum of 50 acres, and as much as 353 acres if all impacts occur. Stream restoration and riparian habitat improvement requirements would be met within 40 years of permit issuance, with interim deadlines at Years 15 and 30.

Stream restoration would require substantial physical alterations for activities such as removing concrete and rip-rap (e.g., STREAM-4) and reconfiguring stream channels (e.g., STREAM-5). These activities would require heavy equipment such as excavators, graders, bulldozers, and haul trucks. Depending on the size of the stream restoration project, several large construction vehicles could be operating at one project site. Riparian habitat improvement activities, including removing non-native vegetation and planting native vegetation (e.g., STREAM-2, STREAM-3), would require substantially less intensive heavy equipment use when implemented independently from stream restoration actions.

These activities could result in localized, temporary impacts to the local roadway and bikeway systems by introducing heavy equipment to residential areas and creating potential safety hazards. Although stream restoration and riparian habitat improvement activities could occur throughout the Study Area, the Habitat Plan identifies priority areas where these activities are mostly likely to occur (see Habitat Plan Section 5.3.6). Table 14-1 summarizes expected stream restoration activities, showing that traffic impacts would occur in various urban, suburban, and rural areas. The severity of traffic impacts would vary with the setting.

TABLE 14-1
Locations of Expected Stream Restoration Activities

Stream	Setting	Local Roads and Bikeways	Impacts
Los Gatos Creek	Campbell area	Various city streets, Los Gatos Creek trail	Consistent with city traffic, but inconsistent with bikeway
Thompson Creek	San José residential area	San Felipe Road, Silver Creek Valley trail	Inconsistent with suburban residential and bicycle traffic
Alamitos Creek	Rural areas in San José	Almaden Road, Los Alamitos-Calero Creek trail	Inconsistent with rural residential and bicycle traffic
Coyote Creek and Fisher Creek	Coyote Valley area	Monterey Road, Coyote Creek trail	Consistent with regional traffic, but inconsistent with bikeway
Little Arthur Creek	Rural residential and agricultural areas	Redwood Retreat Road	Inconsistent with rural residential traffic
Bodfish Creek	Rural residential and agricultural areas	Hecker Pass Road, Whitehurst Road	Inconsistent with rural residential traffic
Llagas Creek (above Chesbro Dam)	Grazing land	Uvas Road and private farm roads	Consistent with regional traffic on Uvas Road; no conflicts in remote areas
Uvas Creek (above Uvas Dam)	Rural residential and grazing land	Uvas Road, Little Uvas Road, Croy Road, private farm roads	Consistent with regional traffic on Uvas Road; inconsistent with rural residential traffic; no conflicts in remote areas
Uvas (Carnadero) Creek	Farmland	Bolsa Road	Consistent with traffic associated with cultivated farmland
Pajaro River	Farmland	Private farm roads	Consistent with traffic associated with cultivated farmland
Pacheco Creek	Farmland, grazing land	SR 152	Consistent with traffic associated with cultivated farmland

Source: ICF International, 2012

Because of the expected amount of heavy equipment use, transportation impacts associated with stream restoration activities are potentially significant in some areas.

Under the Proposed Action, restoration of perennial wetlands would occur on a minimum of 20 acres within the Study Area. If all Covered Activity impacts occur, restoration of a total of 45 acres of perennial wetlands plus an additional 30 acres of seasonal wetlands would occur. Wetland restoration would occur over the initial 40 years of the permit term. Wetland restoration could occur anywhere within the Study Area. Heavy equipment is expected to be required for site grading to create appropriate hydrologic conditions. It is anticipated that most of the wetland restoration projects anticipated under the Proposed Action could be accomplished with one or two graders and/or dozers, and possibly a small earthmover for larger projects. Mobilization of large construction equipment could introduce changed vehicle conditions on local access roads. However, because of the very low number of construction vehicles, and because wetland restoration would be dispersed throughout the Study Area and throughout 40 years' time, this impact would be less than significant.

Under the Proposed Action, pond creation would occur on a minimum of 20 acres within the Study Area, and potentially as much as 72 acres if all impacts occur. Conservation Action POND-10 requires pond creation to occur at up to 40 sites, at least 10 in the Santa

Cruz Mountains and 20 in the Diablo Range. Pond creation would occur over the initial 40 years of the permit term. Pond creation could occur anywhere within the Study Area, but is expected to occur primarily in grazing areas with existing livestock ponds. These areas are typically served by two-lane access roads with very light traffic and no existing bikeways. Pond creation is expected to require heavy equipment, possibly including one or two small earthmovers for larger pond excavations. Mobilizing construction equipment would be a changed condition on most of these local roadways compared to the No Action Alternative. Because of the very low number of construction vehicles, and because pond creation would be dispersed throughout 40 years in most of the Conservation Analysis Zones in the Santa Cruz Mountains and the Diablo Range, this impact would be less than significant.

Long-term traffic impacts could occur as a result of public access to individual reserves for recreational or educational purposes, where implemented pursuant to a reserve-specific recreation plan (see Chapter 6 of the Habitat Plan, *Condition 9 – Prepare and Implement a Recreation Plan*). Public access to the Reserve System is expected to be greater than public access under the No Action Alternative, primarily because the Reserve System would include private lands that are not currently accessible. Recreation Plans have not yet been prepared, but it is not expected that recreation use would result in a significant increase in traffic because heavy recreation use would not be allowed. Recreation use would be limited to uses compatible with the preservation and enhancement of natural communities, Covered Species, and biological diversity. This indicates that traffic levels above those expected under the No Action Alternative would be less than significant.

Long-term traffic impacts also could occur as a result of normal operations and maintenance activities on the Reserve System, including habitat enhancement, vegetation management, and monitoring activities. These activities are expected to include planting trees, seeding grassland areas, removing fences, adding or resizing culverts, transporting livestock, and mowing fuel breaks. The Habitat Plan indicates that up to 7 non-administrative staff will be needed for Reserve System maintenance, management, and monitoring activities. In terms of the amount of vehicle trips generated by these activities, routine Reserve System operations and maintenance activities are expected to result in similar traffic volumes as current farming and grazing activities. Impacts to rural roads would be similar to the No Action Alternative; therefore, there would be no impact.

Mitigation Measure: The following mitigation measure is required to reduce the potential traffic safety impacts of stream restoration projects:

14-1: Prior to initiating stream restoration activities in areas with primarily local residential traffic or with existing bikeways, the project proponent (Implementing Entity or SCVWD) shall prepare and implement a Temporary Traffic Control Plan to address construction-related traffic safety. The Temporary Traffic Control Plan shall be consistent with the California Manual on Uniform Traffic Control Devices (Part 6, Temporary Traffic Control). Areas requiring a Temporary Traffic Control Plan include, but are not limited to, these areas of anticipated stream restoration activity:

- Thompson Creek area in the City of San José.
- Alamitos Creek area in the City of San José.
- Little Arthur Creek and Bodfish Creek in the Uvas Creek watershed.
- Rural residential areas above Uvas Reservoir.

Implementation of this measure would reduce impacts to less than significant.

14.4.2 Cumulative Effects

Under the Proposed Action, cumulative effects would occur as a result of the following activities:

- Other conservation activities.
- Instream activities under the Three Creeks HCP, mercury remediation projects, or Stream Maintenance Program.
- High Speed Train.

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

Other habitat conservation efforts are expected to result in similar types of traffic impacts as the Proposed Action. As described above, restoration activities and management of preserves in upland areas are expected to affect traffic conditions in a manner similar to existing ranching operations.

Instream activities are expected to occur under the Three Creeks HCP (Stevens Creek Watershed), as well as under the SCVWD Stream Maintenance Program and as part of mercury remediation activities in the Guadalupe watershed. Individual projects could require the use of heavy construction equipment, which could result in cumulative traffic impacts if implemented at the same time as and in close proximity to stream restoration actions under the Proposed Action. For all of these actions, however, construction contractors are expected to implement temporary traffic control plans similar to the plans required under Mitigation Measure 14-1 above. This is a typical construction practice.

Development of the High Speed Train project is expected to have major transportation impacts in the Study Area, primarily on the valley floor where the project is mostly at-grade. Impacts include new rail crossings at existing roads (e.g., Bloomfield Avenue, valley segments of SR 152), increased traffic at existing crossings along the Union Pacific Railroad Coast Line, and changed traffic patterns at the proposed Gilroy station site near Railroad Avenue. Construction impacts also are likely to be substantial, especially with the large amount of tunneling and cut/fill areas along SR 152 across Pacheco Pass.

Impacts associated with the Proposed Action are primarily short-term impacts in suburban and rural residential areas associated with stream restoration projects. These activities are expected to be separated (in time as well as in space) from other construction activities, and all of the future projects are expected to follow standard practices for construction traffic safety (similar to Mitigation Measure 14-1).

14.4.3 Determination of Significance

Compared to the No Action Alternative, the Proposed Action would result in **less-than-significant** impacts and a less than cumulatively considerable contribution to potentially significant cumulative impacts with the implementation of Mitigation Measure 14-1.

14.5 Alternative A

14.5.1 Environmental Consequences/Environmental Effects

Under Alternative A, stream restoration, riparian habitat enhancement, wetland restoration, and pond creation would occur in a similar manner as under the Proposed Action, but to a reduced extent because of the smaller Reserve System. Stream restoration would require substantial physical alterations for activities such as removing concrete and rip-rap (e.g., STREAM-4) and reconfiguring stream channels (e.g., STREAM-5). These activities, which are expected to occur in many areas identified in Table 14-1, could result in localized, temporary impacts to the local roadway and bikeway systems by introducing heavy equipment to residential areas and creating potential safety hazards. Because of the expected amount of heavy equipment use, transportation impacts associated with stream restoration activities are potentially significant in some areas. Riparian habitat improvement activities would include removing non-native vegetation and planting native vegetation (e.g., STREAM-2, STREAM-3). Impacts from these activities are expected to occur in the same areas identified in Table 14-1, but the extent of the impact would be less because riparian habitat enhancement would require substantially less intensive heavy equipment use when implemented independently from stream restoration actions.

Impacts from wetland restoration and pond creation would be similar to but less than under the Proposed Action. For the reasons described for the Proposed Action, the temporary increase in traffic from wetland restoration and pond creation would be less than significant.

Impacts from public access to individual reserves for recreational or educational purposes would be similar to but less than under the Proposed Action. For the reasons described for the Proposed Action, the increase in traffic from use of the Reserve System for recreation or education purposes would be less than significant.

Impacts from Reserve System management would be similar to but less than under the Proposed Action. For the reasons described for the Proposed Action, there would be no traffic impacts associated with Reserve System management.

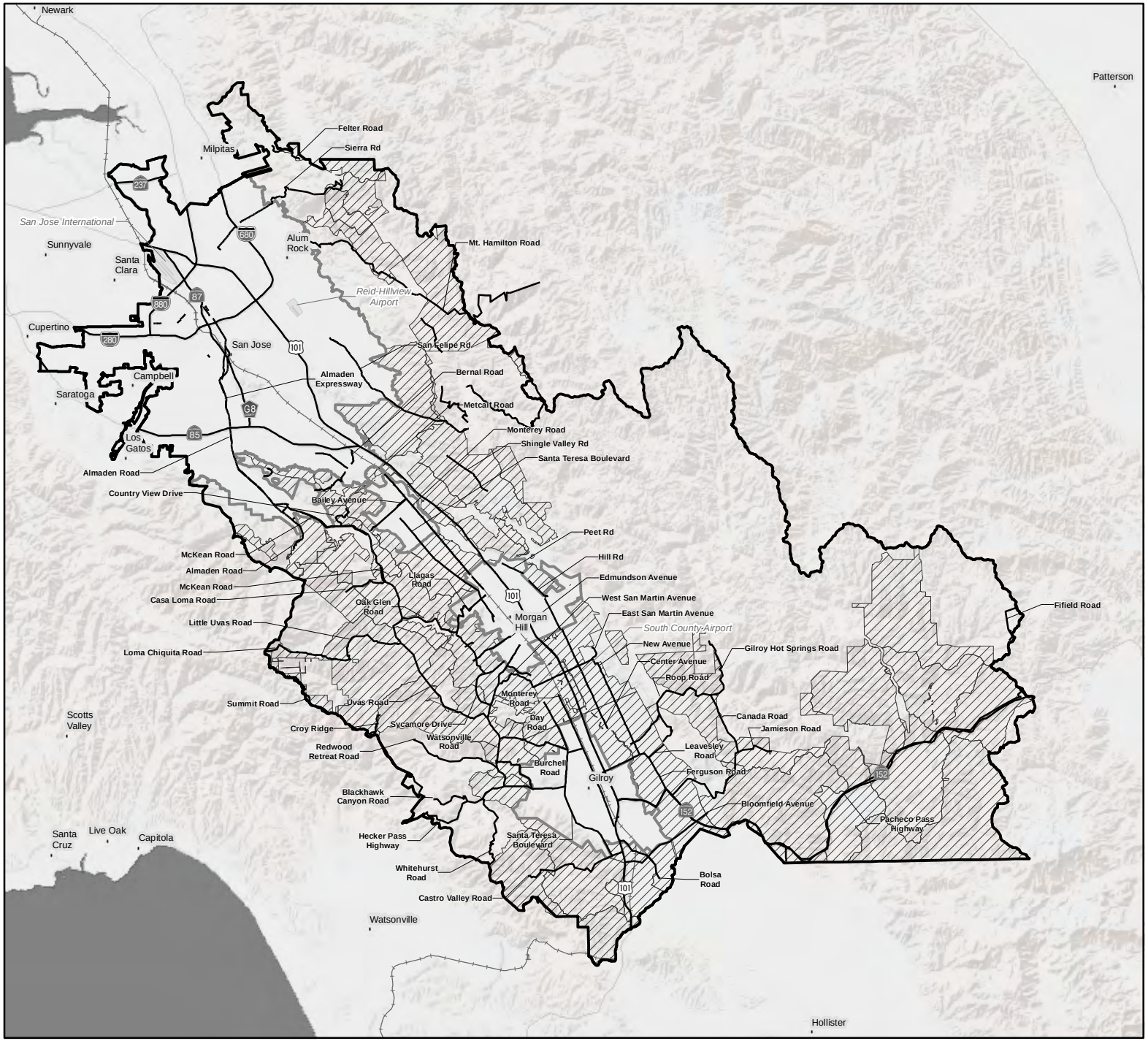
Mitigation Measure. Implement Mitigation Measure 14-1 described above.

14.5.2 Cumulative Effects

Same as the Proposed Action.

14.5.3 Determination of Significance

Same as the Proposed Action.



VICINITY MAP

LEGEND

- Cities
- Main Study Area Roads
- Major Railroad Lines
- Study Area
- Planning Limit of Urban Growth
- Potential Reserve Areas

FIGURE 14-1
Transportation System
Santa Clara Valley HP EIR/EIS (initial caps)
Santa Clara County, California

CHAPTER 15

Noise

15.1 Environmental Setting/Affected Environment

This chapter describes the environmental and regulatory settings for noise within the Study Area. Important noise terminology is defined on Table 15-1.

TABLE 15-1
Noise Terminology

Term	Definition
Sound	A vibratory disturbance created by a vibrating object that, when transmitted by pressure waves through a medium (e.g., air), is capable of being detected by a receiving mechanism such as the human ear or a microphone.
Noise	Any sound that is loud, unpleasant, unexpected, or otherwise undesirable.
Ambient Noise	The composite of noise from all sources near and far in a given environment exclusive of particular noise sources to be measured.
Decibel (dB)	A unitless measure of sound on a logarithmic scale that indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micro-Pascals (μPa).
A-weighted decibel (dBA)	The overall frequency-weighted sound level in dB that approximates the frequency response of the human ear.
Day-night level (DNL)	The energy of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring during the period from 10 p.m. to 7 a.m.
Community Noise Equivalent Level (CNEL)	The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added to the A-weighted sound levels occurring during the period from 7 p.m. to 10 p.m., and 10 dB added for the period from 10 p.m. to 7 a.m.
Maximum sound level (L_{max})	The maximum sound level measured during the measurement period.
Minimum sound level (L_{min})	The minimum sound level measured during the measurement period.
Equivalent sound level (L_{eq})	The equivalent steady-state sound level that, in a stated period of time, would contain the same acoustical energy.
Percentile-exceeded sound level (L_{xx})	The sound level exceeded “xx” percent of a specific time period. For example, L_{10} is the sound level exceeded 10 percent of the time.
Sensitive Receptors	Land uses where people reside or locations where the presence of unwanted noise could adversely affect the use of the land. Noise-sensitive land uses typically include residences, hospitals, schools, libraries, and certain types of recreational facilities. Noise-sensitive land uses occur throughout the inventory area.

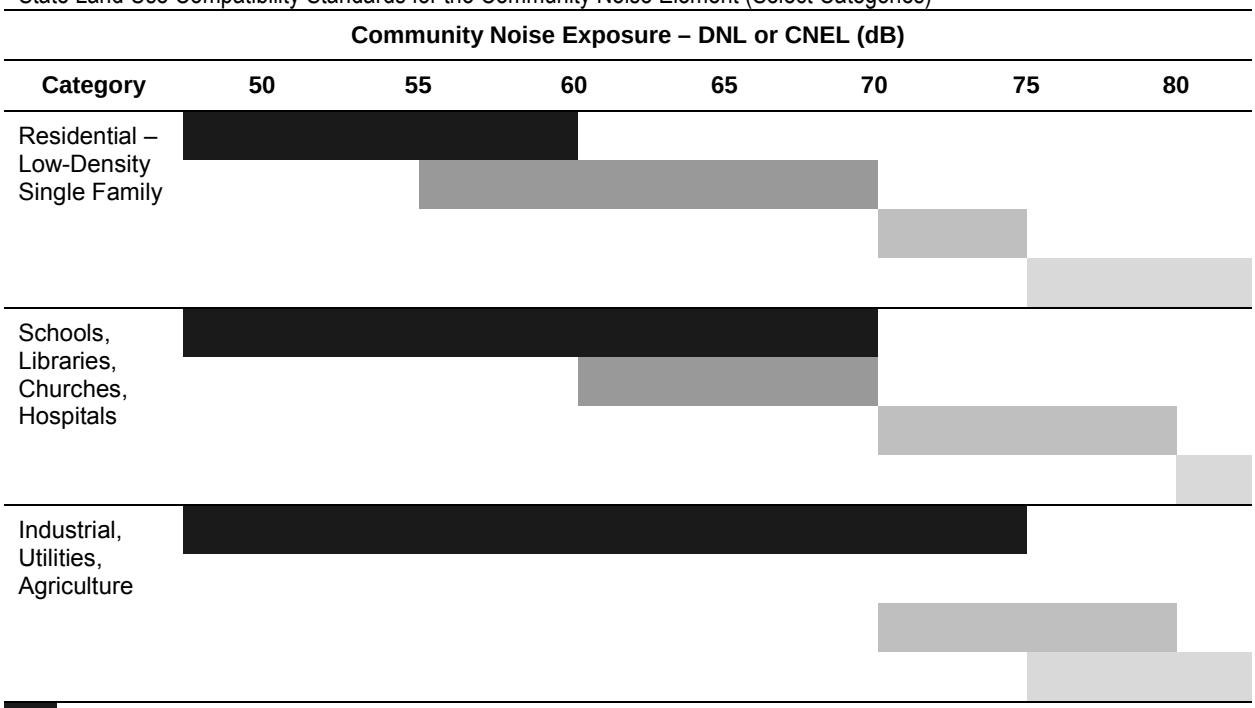
15.1.1 Regulatory Setting

The regulatory structure for noise in California includes state and local agencies. The municipal Local Partners also have regulations and goals pertaining to noise control.

State Regulations

Local governments are required to include a noise element in their general plans. California has developed guidelines for preparing a noise element in general plans and for evaluating the compatibility of various land uses with community noise exposure standards (State of California, 2003). Table 15-2 compares select land use categories with the state guidelines.

TABLE 15-2
State Land Use Compatibility Standards for the Community Noise Element (Select Categories)



	Normally Acceptable	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
	Conditionally Acceptable	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
	Normally Unacceptable	New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
	Clearly Unacceptable	New construction or development generally should not be undertaken.

Source: State of California, 2003.

County of Santa Clara

The County of Santa Clara strives to ensure an environment for all residents that is free from noise that jeopardizes public health and well being. The Santa Clara County General Plan, 1995-2010 developed standards for land use compatibility with noise. The standard for residential areas is 55 dB, with an interior noise level maximum of 45 dB (Santa Clara County, 1994). The County developed the following strategies and policies to ensure development complies with the established noise standards:

- Strategy #1: Prevent or Minimize Noise Conflicts
  - *C-HS 24* Environments for all residents of Santa Clara County free from noises that jeopardize their health and well-being should be provided through measures which promote noise and land use compatibility.
  - *C-HS 25* Noise impacts from public and private projects should be mitigated.
- Strategy #2: Provide Adequate Sound Buffers
  - *C-HS 26* New development in areas of noise impact (areas subject to sound levels of 55 DNL or greater) should be approved, denied, or conditioned so as to achieve a satisfactory noise level for those who will use or occupy the facility (as defined in "Noise Compatibility Standards for Land Use" and "Maximum Interior Noise Levels For Intermittent Noise").
- Strategy #3: Minimize Exposure to Airport Noise
  - *C-HS 27* Land uses approved by the County and the cities shall be consistent with the adopted policies of the County of Santa Clara Airport Land Use Commission Plan.

In addition to the noise provisions listed in the General Plan, County of Santa Clara Municipal Code includes a noise ordinance stating:

- Sections B11-152 and B11-153 establish noise standards and time designations for various land uses for interior and exterior noise.
- Section B11-154 prohibits creating noise disturbances that violate the provisions of Section B11-152 or B11-153 between the hours of 10:00 p.m. and 7:00 a.m. in residential or commercial real property areas.
- Noise disturbances included in this section include radios, television sets, musical instruments, loud speakers, similar devices that produce or reproduce sound, shouting, noise making devices, animals and birds, domestic power tools, and loading or unloading of materials.
- Operation time restrictions of between 7:00 p.m. and 7:00 a.m. weekdays and Saturdays (any time on Sundays) are established for construction/demolition.

Local Regulations

City of San José. As stated in the San José 2040 General Plan, the City's goal is to "minimize the impact of noise on people through noise reduction and suppression techniques, and

through appropriate land use policies." The City's General Plan has acceptable noise level objectives of 55 DNL as the long-range exterior noise quality level, 60 DNL as the short-range exterior noise quality level, 45 DNL as the interior noise quality level, and 76 DNL as the maximum exterior noise level necessary to avoid significant adverse health effects. To achieve the noise objectives, the City requires appropriate site and building design, building construction, and noise attenuation techniques for new development. The City monitors and reviews all appropriate state and federal standards as they pertain to the City's General Plan noise element.

The City of San José's Municipal Code contains a section regarding noise, but does not establish specific standards for noise. This Code does state that disturbing the peace is prohibited, in that "No person shall disturb the peace, quiet and comfort of any neighborhood by creating therein any disturbing or unreasonably loud noise" (Section 10.16.010), and designates what noises are considered disturbing (Section 10.16.020).

City of Morgan Hill. The City of Morgan Hill General Plan has developed two goals as part of its noise element:

- Prevention of noise from interfering with human activities or causing health problems
- Protection from noise associated with motor vehicles and railroad activity.

To achieve these goals the General Plan's policies require new development projects to be designed and constructed to meet the acceptable exterior noise levels, as follows: The maximum exterior noise level of 60 DNL, indoor noise levels should not exceed 45 DNL, and the maximum outdoor noise level for new residences near the railroad shall be 70 DNL; and roadway design, traffic signalization and other traffic planning techniques shall be used to reduce noise caused by speed or acceleration of vehicles.

The City of Morgan Hill's Noise Ordinance does not establish specific standards for noise. However the City's Municipal Code states that "it is unlawful and a misdemeanor for any person to make or continue, or cause to be made or continued, any loud, disturbing, unnecessary or unusual noise or any noise which annoys, disturbs, injures or endangers the comfort, health, repose, peace or safety of other persons within the City" (Section 8.28.020). In addition, construction activities are prohibited other than between the hours of 7:00 a.m. and 8:00 p.m. Monday through Friday, and between the hours of 9:00 a.m. and 6:00 p.m. on Saturday.

City of Gilroy. The City of Gilroy 2020 General Plan has established a primary goal of protecting residents from exposure to excessive noise and its effects through appropriate mitigation measures and responsive land use planning, especially with regard to noise-sensitive land uses such as schools, hospitals, and housing for seniors. The General Plan establishes several policies to achieve the goal, including establishing the following maximum outdoor and indoor noise levels (DNL): Residential 60 (outdoor) and 45 (indoor), Commercial 65 (outdoor) and 61 (indoor), and Industrial 76 (outdoor). In addition, the General Plan calls for the adoption of a noise ordinance to regulate noise-generating activities within the city limits.

The City of Gilroy's noise ordinance does not establish specific standards for noise. The City's Municipal Code states that "No person shall make any loud, boisterous, irritating,

penetrating or unusual noise…which disturbs another in any residence, hotel, apartment house, cabin, cottage, court, rooming house or any building or place regularly used for sleeping purposes in the City, between the hours of 10:00 p.m. and 7:00 a.m. of any day" (Section 16.31).

15.1.2 Existing Noise Sources

Noise sources can be divided into two categories: stationary sources and mobile sources. Stationary sources emanate from a single point, whereas mobile sources are those that can move around or cannot be attributed to a single point. Existing noise sources relevant to the analysis are described in this section.

Mobile noise sources in the Study Area include cars and trucks on roads and freeways, aircraft, and the nearby railroad.

Mobile Sources

Ambient noise from freeways, roads, railroads, and airports exists throughout the Study Area. The main freeway relevant to the analysis is U.S. Highway 101, which is the main source of ambient and mobile noise. Other transportation features relevant to the analysis are listed in Section 14.1.2.1, Major Regional Transportation Features.

Stationary Sources

There are many stationary sources located throughout the Study Area. These include the following:

- Commercial facilities (e.g., shopping centers, repair shops).
- Transportation facilities (e.g., rail yards).
- Public works facilities (e.g., pump stations).
- Mining operations.
- Athletic fields.

15.2 Methodology and Significance Criteria

Noise impacts are usually evaluated in terms of temporary impacts (i.e., during construction) and permanent impacts (i.e., during operation). Potential temporary and permanent noise impacts for the No Action Alternative were analyzed based on the anticipated changes in land cover over 50 years (corresponding to the Permit Term under the Proposed Action). Changes in land cover were assessed by overlaying anticipated urban, rural, and associated infrastructure development, operation, and maintenance (see Section 2.3.1) onto the existing land cover types using GIS. For the Proposed Action and Alternative A, the analysis builds on the No Action Alternative analysis by comparing the expected Reserve System area and potential stream restoration areas (or as modified under Alternative A) with the General Plan land use categories (see Figure 6-1), and General Plan and municipal code policies for noise control.

An alternative would have a significant impact if it results in the following:

- Exposure of persons to noise levels in excess of standards established in the local General Plan or Noise Ordinance.
- A substantial permanent increase in the ambient noise levels in the Study Area.
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above ambient levels.

15.3 No Action Alternative

15.3.1 Environmental Consequences/Environmental Effects

Activities that would occur under the No Action Alternative include urban development, instream capital projects, instream operation and maintenance activities, rural capital projects, rural operation and maintenance activities, and rural development. Noise impacts resulting from these activities are expected to include short-term effects from project construction (e.g., pile driving for bridge replacement, earth moving for large land developments) and long-term effects associated with road improvements and other types of projects with an operational noise component. Project-specific impacts would be analyzed during CEQA review of individual development projects. Noise mitigation is expected to be implemented on a project-by-project basis in a manner consistent with the local General Plans and Noise Ordinances.

In addition, mitigation for biological resources impacts also would occur under the No Action Alternative as a consequence of urban and infrastructure development. Under the No Action Alternative, mitigation requirements are expected to apply to many discretionary activities on a case-by-case basis, and include the acquisition and restoration of offsite habitat areas (including purchasing credits in conservation banks).Therefore, the potential exists for noise impacts occurring on or adjacent to lands acquired as compensatory habitat during any habitat restoration activities (e.g., stream or wetland restoration). Given the nature and extent of habitat restoration activities, it is expected that such impacts would be dispersed throughout the Study Area and over time as these activities occur. Any increase in noise above ambient conditions would be short-term (i.e., during the restoration activities). All projects are expected to follow General Plan and zoning ordinance requirements for noise mitigation.

15.3.2 Cumulative Effects

In response to the urbanization of the entire Study Area, local agencies have adopted land use policies and other regulations that have attempted to minimize adverse noise effects. Examples of these efforts include the regulations described above in Section 15.1.1. These planning efforts have provided a framework for addressing cumulative noise impacts, and as a result noise impacts from construction activities (as well as facility operations and other noise-generating land uses) are typically addressed on a case-by-case basis by noise studies. Noise studies include the influence of ambient sound, and in this manner account for cumulative noise conditions.

15.3.3 Determination of Significance

Noise impacts associated with urbanization of the Study Area and other activities under the No Action Alternative would continue to be addressed by the implementation of local regulations, and by noise studies that address individual project impacts on a case-by-case basis. For this reason, impacts would be **less than significant**.

15.4 Proposed Action

15.4.1 Environmental Consequences/Environmental Effects

The Proposed Action incorporates Covered Activities such as urban and rural land development, and the construction and operation of various infrastructure projects for water, transportation, and other systems. Noise impacts as a result of these activities would be the same as described under the No Action Alternative.

The Proposed Action also incorporates the Habitat Plan, including the acquisition of at least 33,205 acres of new reserves, enhancement of up to 13,291 acres of existing open space, and a comprehensive reserve management program to benefit the Covered Species. Potential noise impacts resulting from implementation of the Reserve System would result from major construction activities, which would primarily occur during habitat restoration or pond creation. Earthmoving activities would typically include grading, excavating, and other activities involving the use of heavy equipment. Because portions of the Reserve System may be located near residents or other sensitive receptors, this is a potentially significant impact. Other, less-intensive construction activities would occur on the Reserve System, including construction of parking lots, staging areas, roads, and bridges.

The Habitat Plan also requires stream and riparian restoration activities throughout the Study Area (both on the Reserve System and in other areas). Up to 10.4 miles of stream restoration could be required depending on the amount of stream impacts from the Covered Activities. Restoration is expected to occur on up to 339 acres of degraded riparian habitat (willow riparian forest and scrub, mixed riparian forest and woodland) depending on the level of Covered Activity impacts. Up to 14 acres of central California sycamore alluvial woodland would be restored if all impacts occur. Potential locations for major stream restoration activities and possible riparian habitat restoration projects are discussed in Chapter 14, Transportation and Circulation (see Table 14-1). Stream and riparian restoration activities would typically include grading, excavating, and other activities involving the use of heavy equipment. As shown on Table 14-1, these stream corridors are often in urban areas. Therefore, this is a potentially significant impact.

Potential noise impacts from stream and riparian restoration, pond creation, and other activities requiring the use of heavy equipment is a product of the noise levels from the equipment and the proximity to sensitive receptors. Maximum noise levels from heavy equipment are shown in Table 15-3. Noise levels are attenuated by distance, with a drop in noise levels of 6 dBA for each doubling of distance. This indicates that most noise levels above regulatory standards (at most 55 dBA based on local requirements) would be avoided at distances of greater than approximately 1,600 feet. In addition, it is important to note that these intensive restoration activities would occur over the course of the Permit Term (all must be completed by Year 40) – impacts would not be concentrated in place <u>or</u> time.

TABLE 15-3
Construction Equipment Noise Levels

Equipment	Typical Noise Level*
Backhoe and front end loader	80
Concrete mixer	85
Crane (mobile)	85
Drill rig	85
Dump truck	84
Excavator	85
Generator	82

*Noise level reported in dBA-L_{max}, 50 feet from the source.

Source: Federal Highway Administration, 2006

In addition to restoration and creation actions on the Reserve System, the Habitat Plan also includes various conservation actions and conditions that would generate noise. For example, vehicular travel throughout the Reserve System would occur in order to implement various monitoring requirements, maintain livestock herds, and perform vegetation management (see discussion in Chapter 14, Traffic). This is expected to be similar in extent to existing traffic associated with ranching operations. In addition, the Habitat Plan also requires activities such as installing staging areas and other trailhead facilities, drilling wells, planting trees, and similar activities. Because of the minor and short-term nature of these activities, this is a less-than-significant impact. There would be no long-term, permanent changes in noise levels.

Limited recreation would be allowed on Reserve System lands, which could result in additional noise. However recreation is not expected to be a significant source of new noise with the implementation of Habitat Plan Condition 9 (see Habitat Plan Section 6.4.6), which limits recreation to low-intensity activities.

Mitigation Measure: The following mitigation measure is required to reduce the potential noise impacts of stream restoration, pond creation, and other projects that require the use of earthmoving or similar heavy equipment:

15-1: Prior to initiating stream restoration, pond creation, or other projects that require the use of earthmoving or similar heavy equipment located within 1,600 feet of residential areas or other areas with sensitive receptors, the project proponent shall implement the following restrictions on construction activity.

- Prohibit construction activities other than between the hours of 7:00 a.m. and 7:00 p.m. Monday through Saturday.
- For certain categories of activities that cannot observe these hours (e.g., well drilling), notify all residents within 1,600 feet of the project site. The notification shall include the project schedule detailing periods of potential nighttime construction and a contact phone number.

- Require equipment to use the best available noise control techniques (e.g., improved mufflers, use of intake silencers, acoustical shields or shrouds).
- Locate stationary construction equipment (e.g., generators) as far as possible from sensitive receptors. If a noise level of 55 dBA or less cannot be maintained at the nearest sensitive receptor, the stationary equipment shall be enclosed within a temporary shed.

Implementation of this measure would reduce impacts to less than significant.

15.4.2 Cumulative Effects

Under the Proposed Action, cumulative effects would occur as a result of the following activities:

- Other conservation activities
- Instream activities under the Three Creeks HCP, mercury remediation projects, or Stream Maintenance Program
- High Speed Train

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

Other habitat conservation efforts are expected to result in similar types of noise impacts as the Proposed Action. Restoration activities and management of preserves in upland areas are expected to affect noise conditions in a manner similar to that described for the Proposed Action—wetland or riparian habitat restoration and pond creation could involve grading, excavating, and similar activities involving the use of heavy equipment in close proximity to sensitive receptors. This is a potentially significant cumulative impact if implemented at the same time as and in close proximity to similar projects under the Proposed Action. Although these other actions include the actions of private landowners such as The Nature Conservancy, local code requirements (e.g., noise ordinances regulating construction hours) would still apply.

Additional instream activities are expected to occur under the Three Creeks HCP (Stevens Creek Watershed), as well as under the SCVWD Stream Maintenance Program and as part of mercury remediation activities in the Guadalupe watershed. Individual projects could require the use of heavy construction equipment, which could result in cumulative noise impacts if implemented at the same time as and in close proximity to stream restoration actions under the Proposed Action. For these other actions, however, construction contractors are expected to implement temporary noise control measures similar to Mitigation Measure 15-1 above. This is a typical construction practice. If individual instream actions implement temporary noise control measures, no significant cumulative impacts are expected.

Operation of the High Speed Train project is expected to have significant noise impacts in the Study Area, primarily on the valley floor where the project is mostly at-grade. Construction impacts also are likely to be significant.

Impacts associated with the Proposed Action are expected to be short-term impacts in suburban and rural residential areas. These activities are expected to be separated from other construction activities (in time as well as in space) from other construction activities, and all of the future projects are expected to follow standard practices for noise attenuation (similar to Mitigation Measure 15-1).

15.4.3 Determination of Significance

Compared to the No Action Alternative, the Proposed Action would result in **less-than-significant** impacts a less than cumulatively considerable contribution to potentially significant cumulative effects with the implementation of Mitigation Measure 15-1.

15.5 Alternative A

15.5.1 Environmental Consequences/Environmental Effects

Under Alternative A, the types of potential impacts would be similar to the Proposed Action. Compared to the No Action Alternative, there is the potential for noise impacts to sensitive receptors located near lands acquired for the Alternative A Reserve System during habitat restoration and pond creation activities. For the same reasons as described under the Proposed Action, these are potentially significant impacts. Under Alternative A, the impacts can be reduced to less-than-significant with the implementation of Mitigation Measure 15-1.

The Reserve System would be smaller, however, under Alternative A so that extent of potential noise impacts would be reduced compared to the Proposed Action. Although the extent of the impacts would be less under Alternative A than under the Proposed Action, they remain potentially significant compared to the No Action Alternative.

Mitigation Measure. Implement Mitigation Measure 15-1 described above.

15.5.2 Cumulative Effects

Same as the Proposed Action.

15.5.3 Determination of Significance

Same as the Proposed Action.

CHAPTER 16

Air Quality and Greenhouse Gas Emissions

16.1 Environmental Setting/Affected Environment

This chapter describes the existing regional air quality conditions including criteria pollutants, toxic air contaminants, and greenhouse gases[1]. The information presented here is consistent with the Bay Area Air Quality Management District (AQMD) *CEQA Air Quality Guidelines* (AQMD, 2010a).

16.1.1 Regulatory Setting

The regulatory structure for air quality planning in California includes federal, state, and local agencies. These agencies either have actual regulatory authority or are responsible for the development and implementation of programs and plans designed to reduce air pollution levels.

Federal Regulations

Federal air quality policies are regulated through the Federal Clean Air Act (CAA). Pursuant to this Act, the USEPA has established National Ambient Air Quality Standards (NAAQS) for the following air pollutants (termed "criteria" pollutants): carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable particulate matter defined as particulate matter less than 10 microns in aerodynamic diameter (PM_{10}), fine particulate matter defined as particulate matter less than 2.5 microns in aerodynamic diameter ($PM_{2.5}$), and lead. The CAA was amended in 1977 to require each state to maintain a state implementation plan (SIP) for achieving compliance with the NAAQS. In 1990, the CAA was amended again to strengthen regulation of both stationary and motor vehicle emission sources. Conformity to the SIP is defined under the 1990 CAA amendments as conformity with the plan's purpose in eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of these standards. The federal CAA also requires the USEPA to designate areas (counties or air basins) as attainment or non-attainment with respect to each criteria pollutant, depending on whether the area meets the NAAQS. An area that is designated non-attainment means the area is not meeting the NAAQS and is subject to planning requirements to attain the standard. Air quality within the Study Area does not attain the federal standards for ozone and fine particulate matter (see Sections 16.1.2 and 16.1.3 below).

General Conformity

Under the conformity provisions of the CAA, no federal agency can approve a project unless the project has been demonstrated to conform to the applicable SIP. These conformity provisions were put in place to ensure that federal agencies would contribute to the efforts of attaining the NAAQS. USEPA has issued two types of conformity guidelines:

[1] Another air quality topic of concern is the deposit of atmospheric nitrogen in areas where it may act as a fertilizer and therefore disrupt plant communities – this is discussed in Chapter 5, Biological Resources.

transportation conformity rules that apply to transportation plans and projects, and general conformity rules that apply to all other federal actions.

A project is exempt from USEPA's General Conformity Rule (assumed to conform) if the total net project-related emissions are less than the *de minimis* thresholds established by the conformity rule.[2]

A project that produces emissions that exceed conformity *de minimus* thresholds is required to demonstrate conformity with the SIP through mitigation or other accepted practices. A conformity determination is only required for the alternative that is ultimately selected and approved.[3]

State Regulations

The California Air Resources Board (ARB) oversees California air quality policies and is responsible for preparing and submitting the SIP to the USEPA. The ARB established California ambient air quality standards (CAAQS) in 1969. These standards are generally more stringent and include more pollutants than the NAAQS. The California CAA was approved in 1988 and requires each local air district in the state to prepare an air quality plan to achieve compliance with the CAAQS. Similar to the USEPA, the ARB designates counties in California as attainment or non-attainment with respect to the CAAQS. Air quality within the Study Area does not attain the state standards for ozone and particulate matter (see Sections 16.1.2 and 16.1.3 below).

In addition to the ambient air quality standards for criteria pollutants, the Air Toxics "Hot Spots" Information and Assessment Act (Assembly Bill [AB] 2588) was enacted in September 1987. AB 2588 requires that toxic air emissions from stationary sources (facilities) be quantified and compiled into an inventory, that risk assessments be conducted according to methods developed by the Office of Environmental Health Hazard Assessment (OEHHA), and that the public be notified of significant risks posed by nearby facilities. Since the amendment of the statute in 1992 by enactment of Senate Bill (SB) 1731, facilities that pose a potentially significant health risks to the public are required to reduce their risks (ARB, 2007a).

The ARB has also recently promulgated new laws to address the potential effects of increasing atmospheric concentrations of carbon dioxide and other greenhouse gases. On September 20, 2006, California signed into law the California Global Warming Solutions Act of 2006 (AB 32, codified at Section 1, Division 25.5, Section 38500 et seq. of the California Health & Safety Code). This law requires ARB to design and implement emission limits, regulations, and other measures, such that statewide greenhouse gas emissions are reduced in a technologically feasible and cost-effective manner to 1990 levels by 2020 (representing a 25 percent reduction).

AB 32 does not directly amend other environmental laws, such as CEQA. Instead, it provides for creation of a greenhouse gas emissions program that will involve identification

[2] Within the Study Area, the applicable *de minimis* thresholds are 100 tons/year of ozone precursors, fine particulate matter ($PM_{2.5}$), or carbon monoxide.

[3] A conformity determination is a process that demonstrates how an action would conform to the applicable SIP. If the emissions cannot be reduced sufficiently, and if air dispersion modeling cannot demonstrate conformity, then either a plan for mitigating or a plan for offsetting the emissions would need to be pursued.

of sources, prioritization of sources for regulation based upon significance of source contribution to greenhouse gas emissions, and eventual regulation of those sources. These activities are ongoing. One of the ongoing programs is the establishment of regional greenhouse gas emission reduction targets and the adoption of sustainable community strategies. ARB recently adopted emission targets for metropolitan planning areas in California (including the San Francisco Bay Area). For the Bay Area, ARB is requiring a 7 percent reduction in greenhouse gas emissions by 2020, and a 15 percent reduction by 2035.[4] In response to ARB's emissions targets, the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC) are preparing a Sustainable Community Strategy that demonstrates how the regional targets will be met. Based on the cycle for updating the MTC Regional Transportation Plan, a Sustainable Community Strategy for the Bay Area is expected to be adopted in approximately 2013.

Local Regulations

The Study Area is within the jurisdiction of the Bay Area AQMD, which is the local agency charged with preparing, adopting and implementing mobile, stationary, and area air emission control measures and standards. Under the California CAA, the Bay Area AQMD is required to develop an air quality attainment plan for non-attainment criteria pollutants within the air district. The AQMD works in cooperation with ABAG and MTC to develop these plans. The current air quality plan is the Bay Area 2010 Clean Air Plan (AQMD, 2010b), which addresses ozone, particulate matter, toxic air contaminants, and greenhouse gases. The Bay Area 2010 Clean Air Plan is not a SIP document and does not respond to federal requirements for PM2.5 or ozone planning; rather, it includes control strategies intended to reduce emissions (AQMD, 2010b). The AQMD is required to prepare an air quality attainment plan for fine particulate matter ($PM_{2.5}$) by December 2012.

Actions within the Study Area are subject to AMQD prohibitory rules and regulations governing criteria pollutants, toxic air contaminants, and odorous compounds even though permits may not be required. Stationary sources, such as emergency generators, are required to have permits from the AQMD before constructing, changing, or operating the source.

In addition, the Bay Area AQMD recently updated its guidelines for CEQA compliance (BAAQMD, 2010a). The CEQA Air Quality Guidelines prescribe a multi-step process for evaluating land development projects subject to CEQA, including the following primary steps:

- Compare the size of the project to screening criteria to determine if a project is within a size limit that would normally meet the required emissions thresholds.
- For projects that do not meet the screening criteria, quantify emissions and compare to the required emission thresholds. Construction thresholds are established for criteria pollutants and toxic air contaminants. Operations thresholds are established for criteria pollutants, toxic air contaminants, greenhouse gases, and odors.
- For projects with emissions that fall below the thresholds, determine that the project would have less-than-significant impacts.

[4] The percentage reductions are measured as per capita greenhouse gas reductions from passenger vehicles relative to 2005 emission levels.

- For projects with emissions that exceed the thresholds, prescribe additional mitigation measures that would reduce emissions to below the thresholds, and determine that the project would have less-than-significant impacts with mitigation.
- For projects with emissions that cannot meet the thresholds even with the additional mitigation measures, determine that the project would have significant impacts.

Individual actions within the Study Area that are subject to CEQA review would be required to follow this process in order to determine each project's level of significance under CEQA.

16.1.2 Air Quality Pollutants of Concern

Criteria Pollutants

As stated above, AAQS have been established for the criteria pollutants. Table 16-1 provides a brief description of each compound, potential sources, and the related health effects as described in the Bay Area 2010 Clean Air Plan and the USEPA criteria pollutant summaries (USEPA, 2007a).

TABLE 16-1
Criteria Pollutants Defined

Criteria Pollutant	Definition
Carbon Monoxide (CO)	A colorless, odorless gas formed by incomplete combustion of fossil fuels. Motor vehicles are the single largest source of CO in the Bay Area. At high concentrations, CO reduces the oxygen-carrying capacity of the blood and can cause headaches, dizziness, and unconsciousness.
Ozone (O_3)	A photochemical oxidant that is formed when volatile organic compounds (VOCs) and oxides of nitrogen (NO_x) react in the presence of ultraviolet sunlight. The principal sources of NO_x and VOC, often termed ozone precursors, are combustion processes (including motor vehicle engines) and evaporation of solvents, paints, and fuels. Motor vehicles are the single largest source of ozone precursor emissions in the Bay Area. Exposure to ozone can cause eye irritation, aggravate respiratory diseases and damage lung tissue, as well as damage vegetation and reduce visibility.
Nitrogen Dioxide (NO_2)	A byproduct of combustion sources such as motor vehicle exhaust or stationary combustion sources. The principle form of nitrogen oxide produced by combustion is nitric oxide (NO), but NO reacts quickly to form NO_2, creating a mixture of NO and NO_2 commonly called NO_x. Nitrogen dioxide can irritate the lungs and lower resistance to respiratory infections such as influenza.
Sulfur dioxide (SO_2)	A colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. The major health concerns associated with exposure to high concentrations of SO_2 include effects on breathing, respiratory illness, alterations in pulmonary defenses, and aggravation of existing cardiovascular disease.
Fine particulate matter (PM_{10} and $PM_{2.5}$)	Includes a wide range of solid or liquid particles, including smoke, dust, aerosols, and metallic oxides. There are many sources of fine particulate emissions, including combustion, industrial processes, grading and construction, and motor vehicles. Health effects of particulate matter vary depending on a variety of factors, including the type and size of the particle. Research has demonstrated a correlation between high PM_{10} concentrations and increased mortality rates. Elevated PM_{10} concentrations can also aggravate chronic respiratory illness such as bronchitis and asthma.

Source: BAAQMD, 2010b; USEPA, 2007a

Toxic Air Contaminants

In addition to the criteria pollutants, toxic air contaminants are another group of pollutants of concern in the Bay Area. ARB lists 189 compounds as toxic air contaminants, including diesel PM_{10} and products from incomplete combustion, such as, benzene, 1-3 butadiene, and formaldehyde. There are many types of toxic air contaminants, with varying degrees of toxicity. Sources include industrial processes, commercial operations, diesel exhaust from stationary and mobiles sources, and motor vehicle exhaust. Health effects include cancer risk; lung, liver, and kidney disease, and/or acute risks such as eye or respiratory irritations (Bay Area AQMD, 2006, 2010b).

Greenhouse Gas Pollutants

Greenhouse gases, as outlined in AB 32 and defined on the USEPA website (USEPA, 2007b), are introduced and defined on Table 16-2.

TABLE 16-2
Greenhouse Gas Pollutants Defined

GHG Pollutant	Definition
Carbon Dioxide (CO_2)	A naturally occurring gas, and also a by-product of burning fossil fuels and biomass, as well as land-use changes and other industrial processes. It is the principal anthropogenic greenhouse gas that affects the Earth's radiative balance
Methane (CH_4)	A hydrocarbon that is a greenhouse gas with a global warming potential most recently estimated at 23 times that of CO_2. CH_4 is produced through anaerobic (without oxygen) decomposition of waste in landfills, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion.
Nitrous Oxide (NO)	A greenhouse gas with a global warming potential of 296 times that of CO_2. Major sources of nitrous oxide include soil cultivation practices, especially the use of commercial and organic fertilizers, fossil fuel combustion, nitric acid production, and biomass burning.
Hydrofluorocarbons (HFC)	Compounds containing only hydrogen, fluorine, chlorine, and carbon. HFCs have been introduced as a replacement for chlorofluorocarbons and deplete ozone, but are less potent than chlorofluorocarbons.
Perfluorocarbons (PFC)	Compounds containing only fluorine and carbon. Similar to HFCs, PFCs have been introduced as a replacement for chlorofluorocarbons. PFCs are also used in manufacturing and emitted as by-products of industrial processes. PFCs are powerful greenhouse gases.
Sulfur Hexafluoride (SF_6)	A colorless gas soluble in alcohol and ether, and slightly soluble in water. A very powerful greenhouse gas used primarily in electrical transmission and distribution systems, as well as, dielectrics in electronics.

Source: USEPA, 2007b

16.1.3 Existing Air Quality Conditions

The Bay Area AQMD operates a network of ambient monitoring stations within Santa Clara County. The pollutant concentrations throughout Santa Clara County for the past three years are presented in Table 16-3. Multiple stations measure O_3 and particulate matter (i.e., PM_{10} and $PM_{2.5}$), while CO and NO_2 were monitored at only one station within Santa Clara County. Therefore, a range of concentrations for ozone and particulate are provided for each year and the maximum CO and NO_2 levels measured at the individual station are listed for each year.

TABLE 16-3
Summary of Ambient Air Monitoring Data in Santa Clara County

Pollutant	Averaging Time	2005	2006	2007	2008
Ozone (ppm)	1 Hour	0.087 - 0.113	0.106 - 0.123	0.077 - 0.096	0.093-0.123
	8 Hour	0.067 - 0.087	0.078 - 0.105	0.065 – 0.073	0.076-0.079
Carbon Monoxide (ppm)	1 Hour	4.3	4.1	3.5	3.3
	8 Hour	3.1	2.9	2.7	2.5
Nitrogen Dioxide (ppm)	Annual Arithmetic Mean	0.019	0.018	0.017	0.017
	1 Hour	0.074	0.074	0.065	0.017
PM_{10} (µg/m^3)	Annual Arithmetic Mean	22.3 - 24.2	21.0	22.0 - 25.6	23.4
	24 Hour	54 - 71	73	69 - 78	57
$PM_{2.5}$ (µg/m^3)	Annual Arithmetic Mean	10.5 - 11.8	10.8	10.7	11.5
	24 Hour	50.6 - 54.6	64.4	21.5 - 57.5	25.5-41.9

Notes:

ppm = parts per million
µg/m^3 = micrograms per cubic meter

Source: Bay Area AQMD, 2008b

Ambient Air Quality Standards

Both state and federal air quality standards are based on a maximum concentration and an averaging time over which the concentration would be measured. Maximum concentrations are based on levels that may have an adverse effect to human health. The averaging times were based on whether the damage caused by the pollutant would occur during exposures to a high concentration for a short time (e.g., 1 hour), or to a relatively lower average concentration over a longer period (e.g., 8 hours, 24 hours, or annually). For some pollutants, there is more than one air quality standard, reflecting both short-term and long-term effects. Table 16-4 presents the CAAQS and NAAQS.

TABLE 16-4
Ambient Air Quality Standards

Pollutant	Averaging Time	California	National
O_3	1 hour	0.09 ppm (180 µg/m^3)	—
	8 hours	0.07 ppm (137 µg/m^3)	0.075 ppm (147 µg/m^3)
CO	8 hours	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)
	1 hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)
NO_2	Annual arithmetic mean	0.030 ppm (56 µg/m^3)	0.053 ppm (100 µg/m^3)
	1 hour	0.18 ppm (338 µg/m^3)	0.100 ppm (188 µg/m^3)
SO_2	Annual arithmetic mean	—	0.03 ppm (80 µg/m^3)
	24 hours	0.04 ppm (105 µg/m^3)	0.14 ppm (365 µg/m^3)
	3 hours	—	0.5 ppm (1300 µg/m^3) (Secondary standard)
	1 hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)

TABLE 16-4
Ambient Air Quality Standards

Pollutant	Averaging Time	California	National
PM_{10}	24 hours Annual arithmetic mean	50 µg/m^3 20 µg/m^3	150 µg/m^3 —
$PM_{2.5}$	Annual arithmetic mean 24 hours	12 µg/m^3 —	15 µg/m^3 35 µg/m^3
Sulfates	24 hours	25 µg/m^3	—
Lead	30 day average Calendar quarter Rolling 3-month average	1.5 µg/m^3 — —	— 1.5 µg/m^3 0.15 µg/m^3
Hydrogen sulfide	1 hour	0.03 ppm (42 µg/m^3)	—
Vinyl chloride	24 hours	0.010 ppm (26 µg/m^3)	—
Visibility-reducing particles	8 hours (10 a.m. to 6 p.m. PST)	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70 percent.	—

Note:
µg/m^3 = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter; ppm = parts per million

Reference: ARB, 2010c

Attainment Designation Status

The federal CAA requires USEPA to classify areas in the country as attainment or non-attainment, with respect to each criteria pollutant, depending on whether the areas meet the national standards. In addition, ARB makes area designations within California for state ambient air quality standards. The attainment status of each pollutant within the Bay Area AQMD for both the CAAQS and NAAQS are listed in Table 16-5.

TABLE 16-5
State and Federal Air Quality Designations for the Study Area

Pollutant	State Designation	Federal Designation
O_3	1-Hour: Non-attainment 8-Hour: Non-attainment	1-Hour: Not applicable 8-Hour: Non-attainment[a]
CO	1-Hour: Attainment 8-Hour: Attainment	1-Hour: Attainment 8-Hour: Attainment[b]
NO_2	1-Hour: Attainment Annual: NA	1-Hour: Unclassified[c] Annual: Attainment
SO_2	1-Hour: Attainment 24-Hour: Attainment Annual: NA	1-Hour: Unclassified[d] 24-Hour: Attainment Annual: Attainment
PM_{10}	24-Hour: Non-attainment Annual: Non-attainment	24-Hour: Unclassified Annual: NA
$PM_{2.5}$	24-Hour: NA Annual: Non-attainment	24-Hour: Non-attainment Annual: Attainment
Lead, Hydrogen Sulfide, and Sulfates	Attainment/Unclassified	Attainment/Unclassified

TABLE 16-5
State and Federal Air Quality Designations for the Study Area

[a]In June 2004, the Bay Area was designated as a marginal nonattainment area of the federal 8-hour ozone standard. USEPA lowered the federal 8-hour ozone standard from 0.80 to 0.75 PPM (i.e., 75 ppb) effective May 27, 2008. USEPA will issue final designations based upon the 0.75 ppm ozone standard by March 2011.

[b]In April 1998, the Bay Area was redesignated to attainment for the national 8-hour carbon monoxide standard. Areas that are redesignated to attainment are called maintenance areas.

[c]To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100ppm (effective January 22, 2010).

[d]To attain this standard, the 3-year average of the 99th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 75 ppb (effective June 2, 2010).

Note:

NA: Not Applicable, except where noted.

Source: Bay Area AQMD, 2010d and USEPA, 2010

16.1.4 Climate and Topography

The northwest-southeast oriented Santa Clara Valley is bounded by the Santa Cruz Mountains to the west, the Diablo Range to the east, the San Francisco Bay to the north and the convergence of the Gabilan Range and the Diablo Range to the south. Temperatures are warm in summer, under mostly clear skies, although a relatively large diurnal range results in cool nights. Winter temperatures are mild, except for very cool but generally frostless mornings. At the northern end of the Santa Clara Valley, the San José Airport mean maximum temperatures range from the high 70's to the low 80's during the summer to the high 50's-low 60's during the winter, and mean minimum temperatures range from the high 50's during the summer to the low 40's during the winter. Further inland where the moderating effect of the Bay is not as strong, temperature extremes are greater. Rainfall amounts are modest ranging from 13 inches in the lowlands to 20 inches in the hills (Bay Area AQMD, 2007c).

The wind patterns in the Valley are influenced greatly by the terrain, resulting in a prevailing flow roughly parallel to the Valley's northwest-southeast axis with a north-northwesterly sea breeze extending up the valley during the afternoon and early evening and a light south-southeasterly drainage sometimes observed during the late evening and early morning. In summer a convergence zone is sometimes observed in the southern end of the Valley between Gilroy and Morgan Hill, when air flowing from the Monterey Bay through the Pajaro Gap gets channeled northward into the south end of the Santa Clara Valley and meets with the prevailing north-northwesterlies. Speeds are greatest in the spring and summer, and least in the fall and winter seasons. Nighttime and early morning hours have light winds and are frequently calm in all seasons, while summer afternoon and evenings are quite breezy. Strong winds are rare, coming only with an occasional winter storm (Bay Area AQMD, 2007c).

The air pollution potential of the Santa Clara Valley is high. The Valley has a large population and the largest complex of mobile sources in the Bay Area, making it a major source of CO, particulate, and photochemical air pollutants. In addition, photochemical precursors, such as NOx and VOC, from San Francisco, San Mateo, and Alameda Counties can be carried along by the prevailing winds to the Santa Clara Valley making it an ozone receptor. Geographically, the valley tends to channel pollutants to the southeast with its northwest/southeast

orientation, and concentrate pollutants by its narrowing to the southeast. Meteorologically, on high-ozone low-inversion summer days, the pollutants can be recirculated by the prevailing northwesterlies in the afternoon and the light drainage flow in the late evening and early morning, increasing the impact of emissions significantly. On high particulate and CO days during the late fall and winter, clear, calm, and cold conditions associated with a strong surface based temperature inversion prevail (Bay Area AQMD, 2007c).

16.1.5 Sensitive Receptors

Sensitive receptors are facilities that house or attract children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants (Bay Area AQMD, 1999). Hospitals, schools, convalescent facilities, and residential areas are examples of sensitive receptors (Bay Area AQMD, 1999).

16.2 Methodology and Significance Criteria

Air quality impacts are usually evaluated in terms of temporary impacts (i.e., during construction) and permanent impacts (i.e., changes from facility operation or from traffic). Potential air quality impacts of the No Action Alternative were analyzed based on the anticipated changes in land cover over 50 years (corresponding to the Permit Term under the Proposed Action). Changes in land cover were assessed by overlaying anticipated urban, rural, and associated infrastructure development, operation, and maintenance (see Section 2.3.1) onto the existing land cover types using GIS. For the Proposed Action and Alternative A, the analysis builds on the No Action Alternative analysis by considering the extent of construction activities and the extent of new vehicle traffic associated with the Reserve System (based on the discussion in Chapter 14, Transportation).

An alternative would result in a significant air quality impact if it would do any of the following:

- Conflict with or obstruct implementation of the applicable air quality plan.
- Violate any ambient air quality standard or contribute substantially to an existing or projected air quality violation.
- Result in a cumulatively considerable net increase of any criteria pollutant for which a region is nonattainment.
- Expose sensitive receptors to substantial pollutant concentrations.
- Create objectionable odors affecting a substantial number of people.
- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant effect on the environment.
- Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

In addition to these criteria, a project with emissions that exceed the *de minimis* thresholds of the federal General Conformity Rule requires a general conformity analysis in accordance with the CAA.

16.3 No Action Alternative

16.3.1 Environmental Consequences/Environmental Effects

Under the No Action Alternative, activities associated with the urbanization of the Study Area, including infrastructure development, would still occur. Criteria pollutants, toxic air contaminants, and greenhouse gases would be generated as a consequence of land use changes and temporary (e.g., construction) activities.

In addition, mitigation for biological resources impacts also would occur under the No Action Alternative as a consequence of urbanization and infrastructure development. Under the No Action Alternative, mitigation requirements are expected to apply to many discretionary activities on a case-by-case basis, and include requirements for onsite habitat preservation as well as the acquisition and restoration of offsite habitat areas (including purchasing credits in conservation banks). These mitigation activities would most likely maintain existing land uses subject to conservation requirements, but could change some existing land uses as a result of large-scale habitat restoration activities such as wetland creation. These activities would result in temporary emissions of criteria pollutants, toxic air contaminants, and greenhouse gases.

Construction Emissions

The urbanization of the Study Area under the No Action Alternative would increase criteria pollutant, toxic air contaminant, and greenhouse gas emissions. 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) and particulate matter (PM_{10} and $PM_{2.5}$ including diesel particulates), and the greenhouse gas carbon dioxide. In response, the BAAQMD implements regulations and programs including controlling dust from earthmoving and other construction and demolition sources. In addition, several of the ozone measures in the Bay Area 2010 Air Quality Plan (e.g., local implementation of the Carl Moyer Program) are expected to contribute to reductions in particulate emissions. For construction activities, the Bay Area AQMD Air Quality Guidelines require all projects to follow at least the "basic" mitigation measures in Table 16-6, and the "additional" measures where the project would exceed the Bay Area AQMD significance thresholds. It is expected that emissions from construction of most projects would be mitigated through implementation of these control measures, but it is likely that larger projects would not be able to reduce construction emission to below the significance thresholds.

TABLE 16-6
Control Measures for Construction Emissions

Basic Construction Mitigation Measures Recommended for All Proposed Projects
• All exposed surfaces (e.g., parking areas, staging areas, graded areas, and unpaved access roads) shall be watered two times per day.
• All haul trucks transporting soil, sand, or other loose material offsite shall be covered.
• All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

TABLE 16-6
Control Measures for Construction Emissions

- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of the California Code of Regulations). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Bay Area AQMD phone number shall also be visible to ensure compliance with applicable regulations.

Additional Construction Mitigation Measures Recommended for Projects with Construction Emissions Above the Threshold

- All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.
- All excavation, grading and/or demolition shall be suspended when average wind speeds exceed 20 mph.
- Wind breaks (e.g., trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity.
- Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.
- The simultaneous occurrence of excavating, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surface at any one time.
- All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
- Site access to a distance of 100 feet from the paved road shall be treated with a 6 to 12 inch compacted layer of wood chips, mulch, or gravel.
- Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent.
- Minimize the idling time of diesel powered construction equipment to two minutes.
- The project shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet average of 20 percent NO_x reduction and 45 percent PM reduction compared to the most recent ARB fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available.
- Use low-emission coatings beyond the local requirements (i.e., AQMD Regulation 8, Rule 3: Architectural Coatings).
- Require that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of NO_x and PM.
- Require all contractors use equipment that meet ARB's most recent certification standard for off-road heavy duty diesel engines.

TABLE 16-6
Control Measures for Construction Emissions

Additional Construction Mitigation Measures for Greenhouse Gases
• The Lead Agency is encouraged to incorporate best management practices to reduce greenhouse gas emissions during construction, as applicable. Best management practices may include, but are not limited to: using alternative fueled (e.g., biodiesel, electric) construction vehicles/equipment of at least 15 percent of the fleet; using local building materials of at least 10 percent; and recycling or reusing at least 50 percent of construction waste or demolition materials.

Source: Bay Area AQMD, 2010a.

Criteria pollutant, toxic air contaminant, and greenhouse gas emissions would result from increased vehicle and equipment exhaust emissions associated with construction of habitat areas and related facilities. Habitat restoration activities, including stream restoration and pond creation, would generate additional pollution during earthmoving and other active construction phases. Construction emissions are expected to be within the levels included in the emissions inventory in the Bay Area 2010 Clean Air Plan. It is expected that fugitive dust emissions from heavy equipment use would be mitigated through implementation of the AQMD control measures for fugitive dust. Also, it is important to note that habitat restoration actions are expected to take place in small increments over many years.

Operation Emissions

The urbanization of the Study Area under the No Action Alternative would increase criteria pollutant, toxic air contaminant, and greenhouse gas emissions. Activities such as urban and rural development would generate ozone precursors (NO_x and ROG) and fine particulate matter. This could contribute to worsening the area's existing non-attainment status by increasing the sources of pollution, including vehicles, consumer products, solvents, domestic fuel combustion (e.g., water heaters, wood burning), commercial cooking, and industrial processes.

Overall ozone levels in the Bay Area, however, are expected to decrease over time. For example, the Bay Area AQMD predicts that Bay Area NO_x emissions would decrease from 521 tons per day to 357 tons per day by 2020. This decrease in emissions would be the result of extensive mitigation efforts at the federal, state, and local levels, including the following:

- Restrictions on the use of surface coatings and solvents.
- Restrictions on industrial processes, including an emissions cap-and-trade program for major new sources such as power plants.
- Continued implementation of smoking vehicle and vehicle buy-back programs.
- Continued implementation of the smog-check program.
- Support of improved transit service, including ferry service.
- Support of regional and intercity rail.
- Continued implementation of the Carl Moyer Program, which provides grants for the incremental cost of cleaner on-road, off-road, marine, and locomotive engines.

Projections of ozone levels are based on projections of municipal growth (the Bay Area 2010 Clean Air Plan was developed in partnership with ABAG), and therefore includes future land use conditions in incorporated and unincorporated Santa Clara County.[5] The control strategy for land use and development includes the following specific measures for how the Bay Area AQMD can participate in and influence local land use decisions:

- Transportation Control Measure D-3 – Local Land Use Strategies. The Bay Area AQMD intends to support and promote land use patterns, policies, and infrastructure investments that support higher-density, mixed-use residential and employment development near transit in order to facilitate walking, bicycling, and transit use. This would be accomplished through various mechanisms including grant funding.
- Land Use Measure 2 – Indirect Source Review. The Bay Area AQMD is considering an indirect source review rule to set air quality performance standards for new development that would encourage less auto-dependent development and reduce regional vehicle travel.
- Land Use Measure 3 – Updated CEQA Guidelines and Enhanced CEQA Review. The AQMD recently adopted the Air Quality Guidelines, and intends to strengthen its program for reviewing local CEQA documents for new development projects.
- Land Use Measure 4 – Land Use Guidance. The AQMD intends to continue providing support, in various forms, to local governments to help ensure that land use decisions improve air quality, reduce motor vehicle travel and emissions, and reduce population exposure to air pollutants.

In addition to these measures identified in the Bay Area 2010 Clean Air Plan, it is expected that potentially significant greenhouse gas impacts would be addressed pursuant to the Sustainable Community Strategy, when adopted. It is expected that emissions from many of the individual land development projects would not exceed the thresholds in the Bay Area AQMD Air Quality Guidelines, but it is likely that larger projects would not be able to reduce their emissions to below the significance thresholds.

Criteria pollutant emissions would result from increased vehicle and equipment exhaust emissions associated with maintenance of habitat areas and related facilities. Management of the reserve units would require vehicle travel, potentially with substantial use of unpaved roads. The level of vehicle use and associated emission is expected to be similar to existing vehicle use from management of grazing lands or irrigated agricultural areas.

16.3.2 Cumulative Effects

Past actions in the Study Area have contributed to regional and global air pollution. Mining and agricultural activities contributed to high levels of several criteria pollutants and toxic air contaminants, including ozone (e.g., from heavy equipment exhaust) and particulate matter (e.g., from dust and diesel exhaust). In addition, vehicle use, wildfires, and crop burning have emitted particulates and greenhouse gases. The reduction in mining activity and conversion of farmland to urban uses has reduced emissions from these sources, but

[5] The urban growth boundary in the Habitat Plan for Morgan Hill – the "planning limits of urban growth" – is slightly larger because the proposed 50-year Permit Term includes development in excess of the current General Plan.

with a corresponding increase in emissions from urban sources. Within the Study Area, the major sources of criteria pollutants and greenhouse gases now include on-road vehicle trips and other transportation sources (e.g., construction equipment) (BAAQMD 2010b).

With the adoption of the legal framework and regulations discussed above, criteria pollutant concentrations in the Study Area have decreased. Continued implementation of the Bay Area 2010 Clean Air Plan could decrease criteria pollutant concentrations to levels that would return the Bay Area to attainment status for both federal and state standards for criteria pollutants, reduce $PM_{2.5}$ and diesel particulate matter exposure, and reduce greenhouse gas emissions (Bay Area AQMD 2010b). The Bay Area AQMD is required to adopt a new implementation plan for fine particulate matter ($PM_{2.5}$) in 2012. The regulatory framework for control of greenhouse gases includes the thresholds identified in the Air Quality Guidelines and various control measures in the Bay Area 2010 Clean Air Plan, and in the future is expected to include compliance with the Global Warming Solutions Act and, after it has been adopted, the Sustainable Community Strategy.

16.4 Proposed Action

16.4.1 Environmental Consequences/Environmental Effects

The Proposed Action incorporates Covered Activities such as urban and rural land development, and the construction and operation of various infrastructure projects for water, transportation, and other systems. Air quality impacts as a result of these activities would be the same as described under the No Action Alternative. The Proposed Action also incorporates the Habitat Plan, including the acquisition of at least 33,205 acres of new reserves, incorporation of up to 13,291 acres of existing protected open space into the Reserve System, protection of 100 miles of streams, and a comprehensive reserve management program to benefit the Covered Species. Potential air quality impacts of these activities are described below.

Construction Emissions

The Habitat Plan requires various types of restoration activities to take place over the first 40 years of the permit term (e.g., stream restoration, pond creation). These construction activities would result in increased emissions of ozone precursors (NO_x and ROG), toxic air contaminants, and greenhouse gases from vehicle and equipment exhaust (see discussion of typical construction vehicle trips in Chapter 14). Fugitive dust (PM_{10}) also would be associated with ground disturbing activities. Because the timing and location of construction activities are unknown at this time, emissions of ozone precursors, exposure to toxic air contaminants, and emission of greenhouse gases have not been quantified. Construction emissions are expected to be within the levels included in the emissions inventory supporting the Bay Area 2010 Clean Air Plan and the measures presented in Table 16-6 would be implemented during construction. Therefore, construction equipment exhaust emissions are not expected to impede attainment or maintenance of the standards in the Bay Area.

Individual restoration activities would be required to follow the Bay Area AQMD Air Quality Guidelines, including the quantification of construction emissions and comparison to AQMD thresholds. Because of the small scale of these restoration activities (e.g., requiring

one or two pieces of heavy equipment), it is unlikely that the thresholds would be exceeded, and therefore construction activities are likely to be less than significant. All Reserve System construction activities would be required to implement at least the basic control measures described in Table 16-6 above.

Operation Emissions

Implementation of the Habitat Plan would not create new stationary sources of air emissions, or new land uses that would generate substantial operational emissions.[6] Operational emissions associated with the Reserve System established under the Proposed Action would result from vegetation management, maintenance of infrastructure, recreational use, and fire management activities. For example, operational emissions could result from exhaust emissions from mowing, fugitive dust from mowing or other vegetation management activities, or emissions associated with maintenance of infrastructure. Localized emissions may also result from prescribed burns. However, management activities are likely to occur over the entire Study Area and are not expected to be concentrated in any one area over any extended period of time. In addition, all reserve operations and maintenance activities would be required to comply with applicable Bay Area AQMD rules and regulations, and fire management plans would be coordinated with land management entities to assure adequate availability of burn permits from the AQMD. Prescribed burns would be required to comply with the AQMD's Regulation 5 requirements for Wildland Vegetation Management burning, including approval of a smoke management plan (with estimates of particulate emissions). Indirect operational emissions associated with recreational uses would result from minor increases in vehicle traffic over current traffic levels, potentially resulting in temporary, minor increases in vehicle emissions at currently unknown locations.

Direct emissions of greenhouse gases from vegetation management, maintenance, or recreational uses would result from fuel combustion in vehicles or equipment. In addition to greenhouse gas emissions discussed in the No Action Alternative, carbon bound in vegetation would also be released to the atmosphere as CO_2 emissions during prescribed burns. The overall fire risk, however, is expected to be similar to the No Action Alternative (see Chapter 18, Wildfires). Indirect greenhouse gas emissions would result from minor increases in electricity use for well pumps or buildings. These activities would be expected to have a negligible effect on greenhouse gas emissions.

The general conformity rule requires that total emissions of non-attainment and maintenance area criteria pollutants be considered in a conformity determination. Because the location(s) and timing of construction and operational activities is unknown at this time, it is not possible to quantify emissions to conduct a general conformity applicability analysis for the Proposed Action. Operational emissions associated with the Reserve System established under the Proposed Action would result from vegetation management, maintenance of infrastructure, recreational use, and fire management activities. For example, direct, intermittent operational emissions could result from exhaust emissions from mowing, fugitive dust from mowing or other vegetation management activities, or

[6] A small subset of the Covered Activities would require additional review and approval by the Wildlife Agencies to ensure that the Covered Activity is adequately defined and consistent with the Habitat Plan. Included in this subset of Covered Activities are major new point sources of nitrogen deposition that could adversely affect serpentine natural communities and associated Covered Species.

emissions associated with maintenance of infrastructure. Localized emissions may also result from prescribed burns. The net change in peak annual emissions between the Proposed Action and the No Action Alternative would result from Reserve System Management, including activities such as vegetation management, maintenance of infrastructure, recreational use, and fire management activities. Emissions from these minor, intermittent activities are not expected to exceed the general conformity *de minimis* thresholds for ozone, fine particulate matter, or carbon monoxide (each 100 tons per year). Therefore, it is expected that the Proposed Action would be exempt from general conformity (i.e., assumed to conform).

16.4.2 Cumulative Effects

Under the Proposed Action, cumulative effects would occur as a result of the following activities:

- Other conservation activities
- High Speed Train

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

As discussed above under the No Action Alternative, the legal framework and regulations for pollution control have caused a reduction in criteria pollutant concentrations in the Study Area. Continued implementation of the Bay Area 2010 Clean Air Plan is expected to decrease concentrations to levels that would return the Bay Area to attainment status for both federal and state standards for criteria pollutants, reduce $PM_{2.5}$ and diesel particulate matter exposure, and reduce greenhouse gas emissions (Bay Area AQMD, 2010b). The regulatory framework for control of greenhouse gases, however, is still being developed but is expected to include compliance with the Global Warming Solutions Act and, after it has been adopted, the Sustainable Community Strategy. The development and management of new habitat preserves (including the Reserve System), although not identified as a separate sector in Bay Area AQMD emissions inventories, is expected to occur in a manner consistent with this framework.

The High Speed Train project is expected to contribute to reductions in criteria pollutants and greenhouse gases by providing an alternative to automobile and air travel. Improving regional rail systems, including the High Speed Train project, is identified as a Transportation Control Measure (TCM A-2) in the Bay Area 2010 Air Quality Plan, and the High Speed Train project is identified as a greenhouse gas reduction measure in the AB 32 Scoping Plan. The project would contribute to projected reductions in emissions from vehicle trips and would help offset projected increases in emissions from commercial air traffic.

16.4.3 Determination of Significance

Construction impacts (including cumulative impacts) would be **less-than-significant** with the implementation of the measures summarized in Table 16-6. Compared to the No Action Alternative, operational impacts (including cumulative impacts) would be **less-than-significant**.

16.5 Alternative A

16.5.1 Environmental Consequences/Environmental Effects

Under Alternative A, the types of potential impacts would be the similar to the Proposed Action. Compared to the No Action Alternative, there is the potential for increased emissions of criteria pollutants and greenhouse gases during construction activities (e.g., stream restoration, pond creation) and during ongoing management of the Reserve System. The Reserve System would be smaller, however, under Alternative A so that extent of the potential impact would be reduced compared to the Proposed Action. For the same reasons as described under the Proposed Action, these impacts are expected to be less than significant.

16.5.2 Cumulative Effects

Same as the Proposed Action.

16.5.3 Determination of Significance

Same as the Proposed Action.

CHAPTER 17

Mineral Resources

17.1 Environmental Setting/Affected Environment

This chapter describes the mineral resources occurring in the Study Area and the regulatory structure protecting these resources.

17.1.1 Regulatory Setting

Surface Mining and Reclamation Act

The State of California Surface Mining and Reclamation Act of 1975 (SMARA) 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 classify lands throughout the state that contain regionally significant mineral resources (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 (California Department of Conservation, 2007).

Mineral resources classified under the Mineral Land Classification Project include metals; industrial minerals; and construction aggregate, which include 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 land-use plans and when making land-use decisions (California Department of Conservation, 2007).

Santa Clara County

The Santa Clara County General Plan includes the following central strategies to guide the protection of Santa Clara County's mineral resources (Santa Clara County, 2001).

1. Ensure Continued Availability of Mineral Resources.
2. Mitigate the Environmental Impacts of Extraction and Transport.
3. Reclaim Sites for Appropriate Subsequent Uses.

Table 17-1 summarizes specific policies established by the County to preserve mineral resources.

TABLE 17-1
Mineral Resource Preservation Goals and Policies in the Santa Clara County General Plan

Goal/Policy
C-RC 44. Local supplies of mineral resources should be recognized for their importance to the local, regional, and state economy. Strategies for preserving and managing mineral resources include: (a) ensuring continued availability of mineral resources to meet long term demand; (b) mitigation environmental impacts of extraction and transportation; and (c) reclaiming sites for appropriate subsequent land uses.
C-RC 44.1. The mineral resources maps that are contained within the State Department of Conservation, Division of Mines and Geology Open File Reports 88-19, 96-03, and 99-01, are incorporated by reference within the Santa Clara County General Plan.
C-RC 45. Current and future demand for mineral resources in Santa Clara County, particularly construction aggregates, should be ensured by the following means: (a) inventorying existing sites, identifying and properly designating potential new sites for protection measures; (b) preserving deposits and access routes; (c) increased use of recycled material; and (d) proper development of new quarry sites.
C-RC 46. Existing sites and access routes for regionally significant resources should be protected from incompatible land uses and development that would preclude or unnecessarily limit resource availability.
R-RC 70. When making land use decisions involving mineral resource areas of state or regional significance, decisions about alternative land uses should be carefully balanced against the importance of the mineral deposits to their market region as a whole.

The County of Santa Clara requires that Use Permits be obtained for all mining operations, and oversees surface mining and reclamation pursuant to SMARA and local standards.

17.1.2 Mineral Resources in the Study Area

As described above, SMARA places special emphasis on construction aggregate because it is the state's most important mineral commodity. Because much of the state's aggregate is used in urbanized and urbanizing areas, the California Geological Survey monitors the regional production of construction aggregate in comparison to estimated regional consumption in order to determine its availability. "Availability" is defined as the amount of aggregate available from permitted quarries compared to long-term (50-year) demand for construction aggregate. The Study Area is included with two of the state's production-consumption regions; data for these two regions is presented in Table 17-2.

TABLE 17-2
Availability of Construction Aggregate

Production-Consumption Region	Description of Region	Demand (million tons)	Supply (million tons)	Percentage
South San Francisco Bay	Contra Costa, Alameda, and San Mateo Counties. Bay portion of Santa Clara County.	1,244	458	37
Monterey Bay	Santa Cruz, Monterey, and San Benito Counties. Southern and eastern portions of Santa Clara County.	383	347	91

Source: Department of Conservation, 2006.

Figure 17-1 highlights the significant mineral resources found throughout the Study Area. Significant mineral resources are areas identified by the Mineral Lands Classification Project as Mineral Resource Zone 2 (MRZ-2) – "areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence." The Mineral Lands Classification Project recognizes that mineral resources are unlikely to be extracted from some of these MRZ-2 areas, and therefore further designates "sectors" as areas containing extractable deposits. Each individual sector is given an identifying letter (e.g., Sector X).

The sources of information for significant mineral resources are publications from the California Geological Survey – Open File Report 96-03 and Open File Report 99-01. As described in Table 17-1 above (see Policy C-RC 44.1), these reports are incorporated by reference into the Santa Clara County General Plan.[1] Notable mineral resources in the Study Area are as follows.[2]

- The Scott Creek deposits in the hills east of Milpitas—in unincorporated Santa Clara County—is a current producer of construction aggregate. The California Geologic Survey identifies this area as "Sector I" of the South San Francisco Bay Production-Consumption Region. Stone mining is expected to continue at the active Curtner Quarry, located near Milpitas, in unincorporated Santa Clara County, in accordance with SMARA regulations implemented by Santa Clara County. The Curtner Quarry has processed paving materials for the construction industry since the 1960s. An amendment to the reclamation plan for the quarry was approved in August of 2008. Mine reclamation pursuant to SMARA is expected to occur at other facilities in the area (e.g., Serpa Quarry).
- The Azevedo Quarry in the City of San José is a former producer of construction aggregate. The California Geologic Survey identifies this area as "Sector EE" of the South San Francisco Bay Production-Consumption Region. Most of the land within the mine site is fully reclaimed, and a minimal amount of additional reclamation work is needed on the remainder of the property. Since the facility operator is no longer in business, County staff are investigating whether it is necessary to use the financial assistance posted by the operator in order to complete reclamation of the site.
- Sand and gravel deposits along Uvas Creek near Santa Teresa Road are identified as "Sector D" in the California Geological Survey's Monterey Bay region. This area is designated for Parks and Recreation use in the Gilroy General Plan. Portions of an abandoned instream gravel mining operation along Uvas Creek are now the central part of the Uvas Creek Park Preserve.
- An area along Pacheco Creek, upstream from Casa de Fruta, is identified as "Sector U" in the California Geological Survey's Monterey Bay region. No active aggregate mines are located in this area at this time.

[1] Open File Report 88-19, which is referenced in Policy C-RC 44.1, does not contain any portions of the Study Area. The Division of Mines and Geology changed its pseudonym in 2002 to the California Geological Survey.

[2] This list of notable mineral resources includes only extractable deposits. Deposits not considered extractable – and not designated as a "sector" – are not described. These include the Llagas Creek and San Bruno Canyon deposits.

- Granite Construction Company currently operates an aggregate mining operation (Freeman Quarry) on 61 acres of greenstone deposits on the Castro Valley Ranch property, approximately 0.75 miles south of the U.S. Highway 101/S.R. 25 junction. Freeman Quarry was not originally identified as a "sector" under the Mineral Lands Classification Project, but was added as a newly classified MRZ-2 zone in the Monterey Bay region containing significant aggregate resources. The quarry amended its reclamation plan in 2008 to provide consistency between the drawings depicting the boundary of the reclamation area and the use permit area, thereby encompassing all areas of disturbance associated with mining operations.
- Greenstone deposits in the San Bruno Canyon area northwest of Morgan Hill were added as newly classified MRZ-2 zones in the Monterey Bay region, and at this time do not have a "sector" designation. In the late 1980s, a permit to mine the deposit was denied. The deposit has not been mined, and there are no pending permit applications.

In addition, Figure 17-1 also shows data from the Mineral Resources Data System of the U.S. Geological Survey. The Mineral Resources Data System describes metallic and other mineral resources that, in the Study Area, include metals such as mercury, chromium, and copper. Data is shown for mines in production at the time the data was entered. The Study Area also contains many past producers, prospects, and unknown mineral occurrences that are not shown on Figure 17-1.

17.2 Methodology and Significance Criteria

Potential impacts to mineral resources were assessed on the basis of a review of data from the California Geological Survey, local planning documents, and the proposed Habitat Plan. Mineral resource areas were overlaid on maps of the Study Area to determine potential effects. The analysis of the Proposed Action and Alternative A is focused on the areas targeted for Reserve System acquisition and enhancement, especially four of the resources discussed above in Section 17.1.2 that are outside of the planning limits of urban growth – Scott Creek deposits, Pacheco Creek alluvial deposits, Freeman Quarry, and San Bruno Canyon deposits.

Impacts would be significant if an alternative would result in the following:

- Loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
- Loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

17.3 No Action Alternative

17.3.1 Environmental Consequences/Environmental Effects

Urbanization of the Study Area is expected to continue under the No Action Alternative, including urban and rural land development and the development of associated infrastructure such as parks, trails, drainage, and transportation facilities. Outside of the

planning limits of urban growth, agriculture and other land uses are expected continue in a similar manner to current conditions.

Mineral resources would continue to be extracted at existing sites consistent with SMARA and local land use regulations. Mining could be restarted at existing sites, or permits could be issued for mineral extraction at new sites within the Study Area. For all sites, mine reclamation would occur consistent with SMARA and local land use regulations. Access to mineral resources would be maintained under the No Action Alternative, but to some degree access may be hindered by urbanization as resource-rich areas become designated for urban and related land uses. Based on information from the California Geologic Survey, the following describes how specific mineral resources sites in the Study Area may be affected by urbanization:

- Expansion of mining operations (Curtner Quarry) or the development of new mines in the Scott Creek deposit east of Milpitas is likely to be limited by the Milpitas city limits to the west and Ed Levin County Park to the east.
- Azevedo Quarry in the City of San José is in the process of completing reclamation activities. Continued industrial use at the site will occur consistent with the City of San José Communications Hill Specific Plan, but it is unlikely that mining operations will resume at this site.

Urbanization of the City of Gilroy is expected to preclude access to sand and gravel deposits along Uvas Creek near Santa Teresa Road. This area is designated for Parks and Recreation use in the Gilroy General Plan.

- Additional mining for construction aggregate could occur along Pacheco Creek, upstream from Casa de Fruta. This area is identified as Sector U in the California Geological Survey's Monterey Bay region. There is no active mining in this area. The possibility of new or expanded mining permits, however, may be remote because of the proximity of Pacheco Creek. Pacheco Creek is a natural watercourse in this area, with riparian habitat and potential spawning and rearing habitat for the threatened South Central California coast steelhead. As any proposed mining of the existing stream channel and floodplain deposits would likely entail adverse impacts of existing steelhead and riparian habitat, any approval by wildlife and regulatory agencies to conduct this mining would be very unlikely.
- Extraction of stone is expected to continue at the Freeman Quarry south of Gilroy. The 61-acre quarry is proposed to be expanded to a total size of 151 acres, including an additional 56 acres for mining and 34 acres for overburden placement. There are no existing or proposed urban uses in this area that would preclude continued operation or expansion of Freeman Quarry.
- No effects to the San Bruno Canyon deposits are expected. They are located outside of anticipated growth areas in Morgan Hill and the Coyote Valley. No permit applications to initiate mining activities in this area are on file or anticipated to be filed.

In addition, mitigation for biological resources impacts also would occur under the No Action Alternative as a consequence of urbanization and infrastructure development. Under the No Action Alternative, mitigation requirements are expected to apply to some

discretionary activities on a case-by-case basis, and include the acquisition and restoration of offsite habitat areas (including purchasing credits in conservation banks). The establishment of conservation banks and other types of habitat preserves under the No Action Alternative may occur in areas with significant mineral resources. If this occurs, deed restriction and other legal mechanisms would be required by the Wildlife Agencies that prohibit land uses that conflict with species conservation, which would likely include restrictions on mineral extraction. Therefore, access to mineral resources could be restricted by biological resources mitigation activities under the No Action Alternative. Given the extent of natural land cover in the Study Area, however, it is unlikely that the biological resources mitigation would preclude access to all areas where mineral resources may be present, and access to mineral resources would continue to be provided.

17.3.2 Cumulative Effects

Past activities in the area have included sand and gravel extraction and other mining activities, but most sand and gravel mines have been closed and remediated and few existing mines are being operated. Although there has been an overall downward trend in mining within the Study Area, mining would continue in existing quarries (e.g., Curtner and Freeman quarries) and the County of Santa Clara would continue to allow new and expanded mines within the Study Area. The No Action Alternative is not expected to substantially contribute to cumulative effects.

17.4 Proposed Action

17.4.1 Environmental Consequences/Environmental Effects

The Proposed Action incorporates Covered Activities such as urban and rural land development, and the construction and operation of various infrastructure projects for drainage, transportation, and other systems. Impacts to mineral resources as a result of these activities would be similar to the impacts described under the No Action Alternative.

In addition, the Proposed Action also incorporates the Habitat Plan conservation strategy, including the acquisition of at least 33,205 acres of new reserves on natural and agricultural lands, enhancement of up to 13,291 acres of existing open space, and a comprehensive reserve management program to benefit the Covered Species and natural communities. The Habitat Plan describes 35 conservation analysis zones throughout the Study Area, and prioritizes lands with the greatest conservation value. Below, we evaluate the effect of the Proposed Action on three significant mineral resource sites:

- Stream channel and floodplain deposits along Pacheco Creek just east of Casa de Fruta, within the Pacheco-7 conservation analysis zone. The location of Sector U along Pacheco Creek makes it incompatible with the Habitat Plan goals for the Pacheco-7 zone, which include protecting riparian woodland and streams. In addition, Pacheco Creek is identified as Linkage 17 in the Habitat Plan, providing a movement corridor along the creek and in adjacent riparian areas. As described under the No Action Alternative, however, the possibility of new or expanded mining permits may be remote because of the proximity of Pacheco Creek. For this reason, no conflict is anticipated.

- Freeman Quarry. Freeman Quarry is located mostly within Uvas-5 conservation analysis zone, which has a "high" conservation priority. The quarry is adjacent to an unnamed tributary of Tick Creek, which is a small tributary to lower Uvas Creek. The natural land cover acquisition requirement for Uvas-5 is 4,600 acres, which is 53 percent of the natural lands available in the Uvas-5 zone. This is the highest acreage and percentage acquisition requirement for any of the 35 conservation analysis zones. Expansion of Freeman Quarry is a Covered Activity (see Habitat Plan Section 2.3.7), and therefore expansion would be consistent with the Habitat Plan.
- San Bruno Canyon Deposits. These deposits are located in the lower foothills of the Santa Cruz Mountains, northwest of Morgan Hill. They are within the western portion of the Coyote-5 conservation analysis zone, which the Habitat Plan designates as "high" priority because of the amount of serpentine habitat present. Priority acquisition areas for Bay checkerspot butterfly are located approximately 1 mile north and south of the San Bruno Canyon deposits, but the deposits themselves do not contain serpentine habitat and are located in oak woodland and California annual grassland habitats. For this reason, no conflicts are anticipated.

Scott Creek deposits (including the existing Curtner Quarry) are located outside of the planning limits of urban growth, but are not within a conservation analysis zone that contains Reserve System land acquisition goals. Other mineral deposits (construction aggregate or other resources) are present in the area, and the potential for conflict may extend to more sites than the two described above. The acquisition of property for the Reserve System in other areas would preclude access to mineral resources on the acquired lands because large scale extraction of mineral resources would almost certainly conflict with reserve unit objectives. Given the extent of natural land cover in the Study Area, however, it is unlikely that the Reserve System would preclude access to all areas where mineral resources may be present. The conservation analysis zones on Figure 17-1 highlight approximately 200,000 acres of the 519,506-acre Study Area; within that area, a minimum of 33,205 acres of Reserve System lands (about 16.6 percent of the highlighted area) would be acquired. Access to mineral resources would continue to be provided.

17.4.2 Cumulative Effects

Under the Proposed Action, cumulative effects would occur as a result of the following projects.

- Other conservation activities

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

As described above under the No Action Alternative, there has been an overall downward trend in mining within the Study Area. Similar to the impacts of the Proposed Action described above, the continued acquisition of habitat lands by other organizations could restrict access to mineral resources because acquisition of property as a reserve is likely to be incompatible with the extraction of onsite mineral resources. Given the extent of natural land cover in the Study Area, however, it is unlikely that the Reserve System together with continued acquisitions by other conservation organizations would preclude access to all areas where mineral resources may be present.

17.4.3 Determination of Significance

Compared to the No Action Alternative, the Proposed Action would result in **less-than-significant** impacts and less-than-significant cumulative effects.

17.5 Alternative A

17.5.1 Environmental Consequences/Environmental Effects

Compared to the No Action Alternative, Alternative A incorporates a Reserve System including the acquisition of new reserves and the enhancement of existing open space areas. Areas prioritized for Reserve System acquisition and enhancement under Alternative A are expected to be similar to the Proposed Action, but the Reserve System would be smaller.

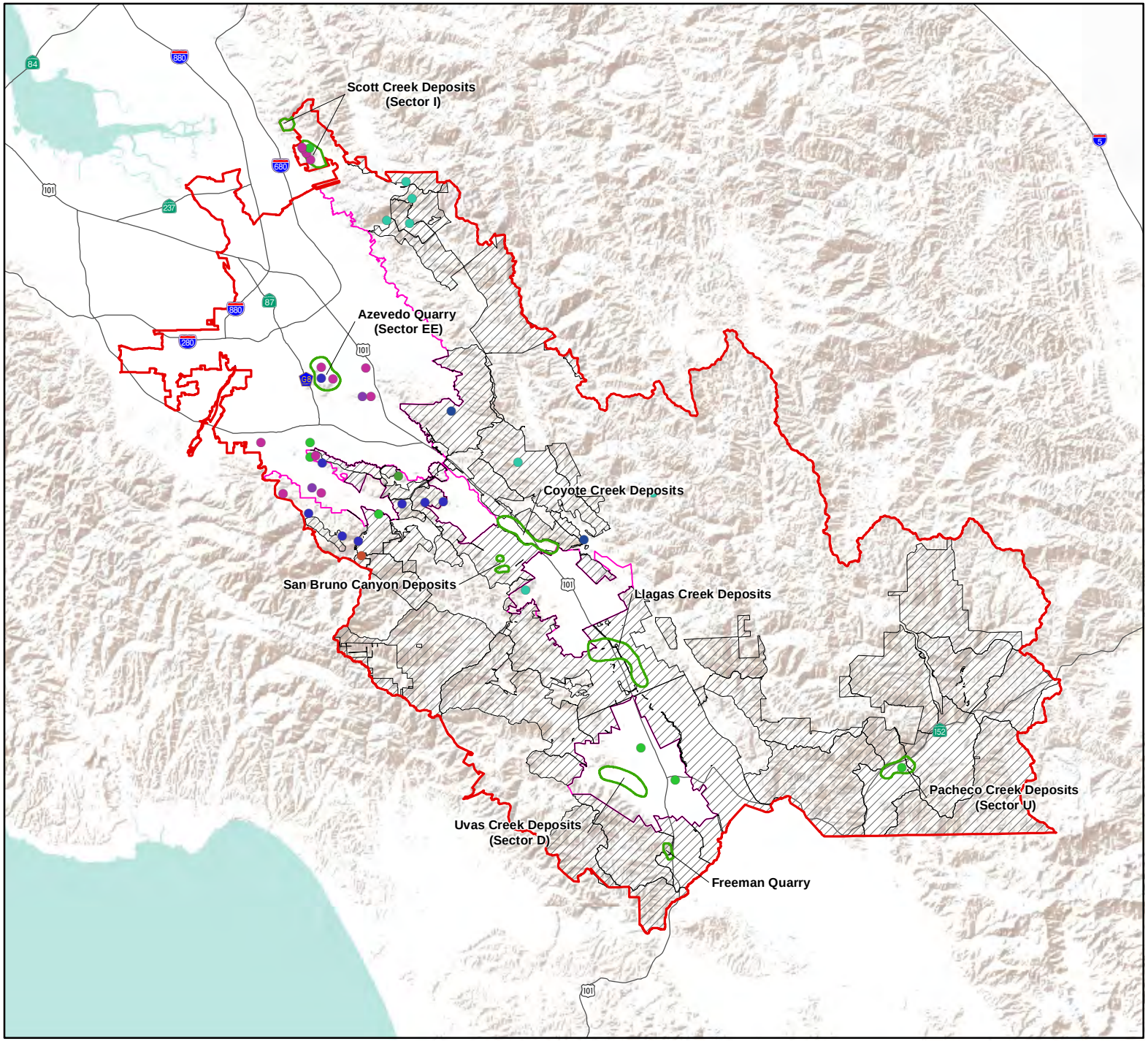
Expansion of Freeman Quarry would be a Covered Activity under Alternative A, and therefore would be no impact. Alternative A could be incompatible with potential access to stream channel and floodplain deposits along Pacheco Creek, but the possibility of new or expanded mining permits may be remote because of the proximity of Pacheco Creek. For this reason, no conflict is anticipated. No conflicts would occur with the San Bruno Canyon deposits because the deposits do not appear to be in an area of priority habitat. Other mineral deposits (construction aggregate or other resources) are present in the area, and the potential for conflict may extend to other sites in the Study Area. Given the extent of natural land cover in the Study Area, however, it is unlikely that the Alternative A Reserve System would preclude access to all areas where mineral resources may be present.

17.5.2 Cumulative Effects

Same as Proposed Action.

17.5.3 Determination of Significance

Same as Proposed Action.



VICINITY MAP

LEGEND

Mineral Resources

- Calcium
- Chromium
- Construction Aggregate
- Copper
- Magnesite
- Manganese
- Mercury
- Stone
- Mineral Resource Zone 2

Other Data

- Potential Reserve Areas
- Study Area
- Planning Limit of Urban Growth

N

0 3 6
Miles

FIGURE 17-1
Mineral Resources
Santa Clara Valley HP EIR/EIS
Santa Clara County, California

CHAPTER 18

Wildfires

18.1 Environmental Setting/Affected Environment

This chapter describes the environmental and regulatory setting for wildfires in the Study Area. For this EIR/EIS, wildfires are defined as fires that occur on undeveloped land cover such as grasslands, chaparral, and oak and conifer woodlands. Within the Study Area, wildfires are addressed at the state and local level. These agencies work together to develop and implement fire and resource management programs that promote safety and retain resources. Local fire services are discussed in Chapter 8, Public Services.

The California Department of Forestry and Fire Protection (Cal Fire) is responsible for fire protection for over 31 million acres of California's privately owned wildlands. Cal Fire conducts ongoing assessment of these lands pursuant to an extensive Resource Management Program. Cal Fire serves the Study Area from three battalions: Battalion 1 (Morgan Hill), Battalion 2 (San José), and Battalion 7 (South Santa Clara County).

The California Fire Plan is the state's road map for reducing the risk of wildfire (California Department of Forestry and Fire Protection, 2010a). The Fire Plan is a cooperative effort between Cal Fire and the State Board of Forestry and Fire Protection. In addition to the statewide fire plan, Individual Unit Fire Management Plans have been prepared to document assessments of the fire situations within smaller management areas. The Study Area is included in the Santa Clara Fire Management Plan (California Department of Forestry and Fire Protection, 2005), which covers the Santa Clara Unit, located between the east side of the San Francisco Bay and the western San Joaquin Valley. There are a total of 1.3 million acres under Cal Fire protection within the unit, and a combined population of 5.4 million people. The Santa Clara Unit Fire Management Plan documents the assessment of the fire situation, includes stakeholder contributions and priorities, and identifies strategic targets for pre-fire solutions as defined by the people who live and work with the local fire problem.

Vegetation types in the Santa Clara Unit range from annual grasses and brush in the eastern areas to large 80-plus year old brush fields and Coastal Redwood on the western edge of the unit. Due to their proximity to urban areas, these natural areas can provide fuel for the spread of wildfires onto adjacent, developed lands. With the current population levels in the unit and the intrusion of urban development into natural (wildland) areas, the Santa Clara Unit is working to be proactive about wildland fuels management (California Department of Forestry and Fire Protection, 2005). Cal Fire considers the undeveloped portions of the Study Area to be "moderate" to "high" probability for the occurrence of wildfires.

Within the Study Area, recent fire history for large fires (greater than 100 acres) indicates that there have been 30 large fires over the past 50 years ranging in size from 139 acres to 47,760 acres (the 2007 Lick Fire). Fire potential is typically greatest in summer and early fall, when there is dry vegetation and low humidity. Generally, the natural land cover types in

the Study Area are adapted to a more frequent historic fire regime, and would naturally recover from a fire.

18.2 Methodology and Significance Criteria

For the No Action Alternative, potential changes in risk from wildfires were estimated by comparing expected development activities with areas with natural land cover types (most of which are prone to wildfire risk). The analysis of the Proposed Action and Alternative A builds upon the No Action Alternative analysis by comparing the expected Reserve System area with the location of existing land uses. With the exception of portions of existing open space areas, the specific Reserve System sites are unknown. However, reserves are most likely to be located within the targeted Conservation Analysis Zones (see Figure 2-1). The evaluation included a review of relevant parts of the Habitat Plan (e.g., management objectives for the Reserve System) for the Proposed Action and Alternative A.

Impacts would be significant if an alternative would expose people or property to a significant risk of loss, injury, or death involving wildland fires.

18.3 No Action Alternative

18.3.1 Environmental Consequences/Environmental Effects

Under the No Action Alternative, the Habitat Plan would not be implemented. Activities such as urban and rural development consistent with local General Plans and construction and maintenance of water and transportation infrastructure projects would continue to occur, similar to prior years. Areas subject to wildfires (primarily natural land-cover types such as grassland, chaparral, and oak and conifer woodland) would be converted to urban development, rural development and associated infrastructure as shown in Table 18-1.

TABLE 18-1
Permanent Changes in Fire-Prone Land Cover Types under the No Action Alternative (acres)

Land Cover Type	Total in Study Area	Impacts from Urban Development and Rural Capital Projects	Impacts from Rural Development
Grassland	92,483	(1,573)	(860)
Chaparral/Scrub	37,960	(180)	(160)
Oak Woodland	156,930	(1,656)	(810)
Conifer Woodland	10,823	(84)	(31)
Total	**298,196**	**(3,493)**	**(1,861)**

Note:

( ) = Net loss of land cover type

Source: ICF International, 2012

Conversion of lands prone to wildfires to urban and rural capital project uses would remove the threat of wildfire on these lands – the lands would no longer have a natural cover that is prone to wildfire. Conversion of lands prone to wildfires to rural development would

increase exposure of people and property to risks from wildfires. Risks could be minimized if property owners follow recommended practices for reducing fire risk (e.g., fuel buffers).

As shown in Table 18-1, large amounts of fire-prone lands would remain in the Study Area. For the lands that remain undeveloped, the risk of wildfire could increase compared to current conditions because of increased encroachment of development and corresponding increases in wildfire ignitions. In addition, climate change is expected to increase wildfire frequency in the Study Area. Fire suppression, fuel reduction, and fire planning efforts would continue to be implemented by Cal Fire and local fire departments.

In addition, mitigation for biological resources impacts also would occur under the No Action Alternative as a consequence of urban and infrastructure development. Under the No Action Alternative, mitigation requirements are expected to apply to many discretionary activities on a case by case basis, and include the acquisition and restoration of offsite habitat areas (including purchasing credits in conservation banks). It is not possible to determine where and in what amounts compensatory habitat would be provided, but it is expected that most of the land that would be acquired likely would consist of natural land cover types that are prone to wildfires. Mitigation sites could be located in close proximity to developed areas, given an emphasis on habitat avoidance and minimization. For these mitigation areas, it is expected that the managers would implement measures to minimize wildfire threats, such as buffer zones, fuel reduction by mowing or grazing, or use of prescribed burns. It is also assumed that management of these areas would be coordinated with fire suppression agencies (e.g., Cal Fire, local fire departments).

18.3.2 Cumulative Effects

Estimates of annual acreage burned statewide prior to the arrival of European settlers range between 4.5 and 12 million acres, with 4.5-12 percent of the land area burning each year (California Department of Forestry and Fire Protection, 2010b). This changed with the implementation of fire suppression, which reduced the extent and frequency of small fires in areas used for grazing and timber production. Data suggests a trend toward increasing acres burned statewide, with the three largest fires since 1950 all occurring within the last 10 years (California Department of Forestry and Fire Protection, 2010a). Urbanization also introduced a human element as some wildfires are started accidentally (e.g., untended campfires, automotive exhaust systems) or deliberately. As a consequence, wildfires can be larger and more severe than under natural conditions.

The fire suppression structure described in Section 18.1 (for Cal Fire) and Section 8.1 (for local fire agencies) developed in response to these threats. Over time, simple fire suppression has evolved into a more sophisticated fire management approach that recognizes how more frequent, small fires can help minimize the risk of large, severe fires. These fire management approaches are expected to continue under the No Action Alternative, continuing to reduce fuel loads with the intent of gradually reducing the threat from large, severe fires.

18.4 Proposed Action

18.4.1 Environmental Consequences/Environmental Effects

Under the Proposed Action, the Covered Activities would be implemented, including the Habitat Plan conservation strategy. Potential impacts associated with Covered Activities such as urban and rural land development and the construction and operation of infrastructure projects would be the same as described above for the No Action Alternative. Instead of habitat mitigation on a project-by-project basis, however, the Reserve System conservation strategy would include the acquisition of at least 33,205 acres of undeveloped land and the enhancement of up to 13,291 acres of existing open space lands. The Reserve System would be managed consistent with the reserve design and management goals described in the Habitat Plan. Most of the acquisitions would occur in grasslands, chaparral, and oak and conifer woodlands. More acreage would be dedicated to habitat conservation under the Proposed Action than under the No Action Alternative because the Reserve System commitment in the Habitat Plan is expected to be greater than mitigation requirements based on impacts to listed species.

The Habitat Plan describes a balance between fire as a natural process and the need to protect public health and safety. The Habitat Plan recognizes the importance of fire in ecosystem processes, especially in natural communities such as chaparral and coastal scrub, where fire is thought to be important for regeneration. Conservation Actions CHAP-1, GRASS-2, OAK-1, and OAK-2 require the use of prescribed burns. The Habitat Plan also states that some wildfires should be allowed to burn naturally, subject to a clear decision system to determine when a wildfire will be left to burn and when it must be partially or wholly contained to prevent damage to structures, prevent injuries, prevent impacts to neighboring properties (including loss of forage and livestock), or cause excessive disturbance to natural communities. In addition, the Habitat Plan requires that fire suppression activities be conducted in an environmentally sensitive manner (i.e., with minimum impact).

The Reserve System would be managed in accordance with individual reserve unit management plans (required within 5 years of the first acquisition of each reserve unit), each addressing fire management and suppression based on site-specific conditions. Each reserve management plan is required to include the following:

- A map of fire access roads and gates.
- Identification of fuel load management methods, such as mowing, livestock grazing, and maintenance of unvegetated buffers, and criteria for their application.
- Criteria and procedures for prescribed fire for management purposes (burn plan).
- A description of fire-suppression criteria, procedures, resources, and responsibilities, including criteria for selecting fire-fighting water sources.
- A discussion of restoration/rehabilitation of vegetation following a fire.

The individual reserve management plans would be developed with input from Cal Fire and municipal fire departments. Minimizing fire risks from construction activities (e.g., restoration, pond creation) also would be part of these fire suppression criteria and

procedures. In addition, the Implementing Entity would negotiate a local operating agreement (required within 4 years of permit issuance) intended to ensure reserve unit management plans are followed (e.g., use of minimum impact suppression techniques).

The Habitat Plan requires that the Implementing Entity hire experienced staff or contract agents with expertise in controlled burns and low-impact firefighting techniques. All prescribed burns would be conducted by experienced personnel in accordance with established practices and in coordination with the appropriate fire control agencies and associated organizations.

In addition to active fuel management on the reserves, Condition 10 (Fuel Buffer) addresses wildfire risk related to adjacent urban and rural development. Consistent with state law for defensible space, Condition 10 requires that fuel buffers of at least 30 feet and up to 100 feet be maintained around new dwellings or structures (the applicable Covered Activities) in the Diablo Range or Santa Cruz Mountains, or in grassland, chaparral, oak woodland, or conifer woodland habitats. Defensible space standards also apply to any public or private structure that is located next to the Reserve System. Implementation of Condition 10 is expected to decrease the risk of wildfires originating from nearby development, and also protect urban development from wildfires on the Reserve System. These buffers are expected to positively contribute to the maintenance of public health and safety.

Based on these measures, it is expected that fire management on the Reserve System would be conducted in a manner that is consistent with public health and safety considerations and would not expose people or property to an increased risk of wildfire.

18.4.2 Cumulative Effects

Under the Proposed Action, cumulative effects would occur as a result of the following activities:

- Other conservation activities

There is no or limited potential for the other ongoing activities (see Section 4.1) or future projects (see Section 4.2) to contribute to cumulative effects.

Cumulative wildfire impacts are a result of the Proposed Action together with other similar types of habitat preservation and management programs, such as the ongoing acquisition of lands for the Mount Hamilton Project (by The Nature Conservancy) and acquisitions by the Open Space Authority, and for private conservation banks (e.g., the proposed Lucky Day mitigation bank near Gilroy). Although all of these other preserves are likely to be under Cal Fire jurisdiction for wildfire suppression, it is not expected that there would be a coordinated fire prevention and response plan. Overall, however, these various organizations are expected to use fire management approaches similar to those described above for the Proposed Action. In this manner, the Proposed Action and these other projects are expected, over time, to reduce the likelihood of large wildfires in the Study Area by implementing a suite of similar management actions (e.g., mowing, grazing, fire breaks, prescribed burns).

18.4.3 Determination of Significance

Because fire management would be conducted in a manner that is consistent with public health and safety considerations and would not expose people or property to an increased risk of wildfire, impacts (including cumulative impacts) would be **less-than-significant**.

18.5 Alternative A

18.5.1 Environmental Consequences/Environmental Effects

Under Alternative A, the Reserve System would be smaller than under the Proposed Action. Compared to the No Action Alternative, the impacts of a smaller Alternative A Reserve System would be similar to the impacts described above for the Proposed Action, but would be reduced in extent.

18.5.2 Cumulative Effects

Same as Proposed Action.

18.5.3 Determination of Significance

Same as Proposed Action.

CHAPTER 19

Other Required CEQA and NEPA Analysis

The terms and concepts used for CEQA and NEPA analysis are similar in many ways. Both laws establish a multi-step process for evaluation and preparation of an EIR or EIS, and each requires the preparation of a detailed environmental study. CEQA and NEPA analysis are often combined into similar sections as long as the requirements of each law can be fulfilled. The CEQA and NEPA processes have been combined to the extent possible for this analysis. Additional CEQA and/or NEPA requirements not addressed in previous chapters are discussed in this chapter.

19.1 Significant and Unavoidable Impacts

Based on the analysis in Chapters 5-18, there are no significant and unavoidable impacts associated with permit issuance and implementation of the action alternatives.

19.2 Short-Term Uses

In accordance with NEPA, Section 102 (40 U.S.C. 4332), an EIS must include a discussion between the short-term uses of the environment with the maintenance and enhancement of long-term productivity. Short-term impacts of the alternatives are associated with habitat restoration and creation activities, and were described in Chapters 5-18. Specific resources that could be affected by restoration and creation activities include biological resources, hydrology and water quality, hazardous materials, cultural resources, transportation, and noise.

The action alternatives would not detract from long-term environmental productivity. Although some activities from the Habitat Plan (under both the Proposed Action and Alternative A) would result some temporary and permanent loss of habitat as well as incidental take of some sensitive species, these activities would be undertaken in accordance with a comprehensive mechanism to avoid, minimize, and mitigate for impacts to Covered Species and Natural Communities.

19.3 Irreversible and Irretrievable Commitments of Resources (NEPA) and Significant Irreversible Environmental Changes (CEQA)

In accordance with NEPA, Section 102 (40 U.S.C. 4332), an EIS must explain which environmental impacts of the action are irreversible or would result in an irretrievable commitment of resources. CEQA requires an EIR to discuss uses of nonrenewable resources that would occur during the initial phases and the continued operation of a project (CEQA Guidelines sec. 15126.2(c)).

The action alternatives would result in a minor irreversible commitment of fossil fuel resources for habitat enhancement, restoration, and creation activities, as well as minor commitment of fossil fuels to perform surveys, manage administrative functions, and maintain and operate the Reserve System. These impacts would be minor.

19.4 Growth Inducement

State 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 growth either directly or indirectly in the surrounding environment. Furthermore, Section 15126.2(d) 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 in the Study Area. The Habitat Plan would not directly cause growth to occur, but rather would accommodate growth that is already planned in the local urban growth boundaries and by the Santa Clara County General Plan. The action alternatives would provide a streamlined mechanism for compliance by specific projects with FESA and CESA. An improved permitting process would not remove a barrier to growth, but would accommodate and streamline the approval of future development. This is an indirect growth-inducing effect.

19.5 Environmentally Preferable/ Superior Alternative

CEQA Guidelines (Section 15126.6(e)(2)) require that an environmentally superior alternative be identified among the alternatives considered. The environmentally superior alternative is generally defined as the alternative which would result in the least adverse environmental impacts to the project site and surrounding area. The environmentally preferable and superior alternative is the alternative that would result in the least damage to the environment. Based on the analysis presented in Chapters 5 through 18, the environmentally preferable/environmentally superior alternative is the Proposed Action. The Proposed Action would provide the most comprehensive approach to habitat conservation among the alternatives, with the greatest potential to provide long-term benefits to the Covered Species.

19.6 Executive Orders

19.6.1 Executive Order 11988—Floodplain Management

Executive Order 11988, Floodplain Management, requires federal agencies to prepare floodplain assessments for proposed projects 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 Proposed Action and Alternative A, the Implementing Entity would implement stream restoration actions within floodplains and active floodways. These actions are necessary in order to carry out the biological goals and objectives. SCVWD, one of the Implementing Entity member organizations, is responsible for flood protection in the Santa Clara Valley and would take appropriate precautions to ensure that stream restoration projects do not have adverse effects to floodplains (also see Chapter 10, Hydrology and Water Quality).

Portions of the Reserve System are likely to be located within floodplains, especially croplands and irrigated pastures that are anticipated to be acquired for the Reserve System. Because the lands would continue to be managed for agriculture consistent with biological goals and objectives, no floodplain impacts are expected (also see Chapter 10, Hydrology and Water Quality).

19.6.2 Executive Order 11990—Protection of Wetlands

Executive Order 11990, Protection of Wetlands, requires federal agencies to prepare wetland assessments for projects 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 proposed Habitat Plan has been designed to address impacts on wetlands. Specific biological goals and objectives for wetlands, ponds, and streams have been developed (see Habitat Plan Goal 8, Goal 10, and related objectives), and the conservation strategy includes a range of specific measures to avoid and mitigate for impacts to these resources (see Habitat Plan "STREAM, "LAND-WP," and "POND" conservation actions, and Habitat Plan Conditions 3, 4, 5, 11, and 12).

19.6.3 Executive Order 12898—Environmental Justice

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 12, Socioeconomics and Environmental Justice.

CHAPTER 20

Consultation and Coordination

This chapter provides an overview of consultation, coordination, scoping activities, and public involvement process.

20.1 Consultation and Requirements

20.1.1 Federal Endangered Species Act

Threatened and endangered species are listed under the provisions of Section 4 of the federal Endangered Species Act. The USFWS and NMFS ensure that activities undertaken by federal agencies and non-federal entities do not result in jeopardy of listed species or destruction or adverse modification of critical habitat under provisions in Sections 7 and 10 of FESA.

If federally listed species may be affected by a project, the federal action agency must consult with USFWS and/or NMFS to assess the consequences of its actions. USFWS is considering issuing a Section 10 incidental take permit, which would be a federal action triggering the Section 7 consultation requirement. As the federal action agency, USFWS will consult internally pursuant to Section 7.

Each biological opinion concludes with either a "jeopardy" or a "no-jeopardy" opinion by either agency. If critical habitat is involved, the biological opinion also makes a determination regarding the destruction or adverse modification of critical habitat. A jeopardy and/or adverse modification opinion concludes that the action would jeopardize the continued existence of a federally listed species and/or would destroy or adversely modify designated critical habitat. These types of opinions must suggest "reasonable and prudent alternatives" that would avoid jeopardy or adverse modification. If the USFWS issues a no-jeopardy opinion, the opinion may include "reasonable and prudent measures" to minimize adverse effects on listed species and an "incidental take statement" that specifies the allowable amount of take that may occur as a result of the action.

20.1.2 National Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (16 U.S. C. 470 *et seq.*) requires federal agencies to take into account the effects of their undertakings on properties eligible for inclusion in the National Register of Historic Places. An undertaking is defined as a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including those carried out on behalf of a federal agency; those carried out with federal financial assistance; those requiring a federal permit, license, or approval; and those subject to state or local regulation administered pursuant to a delegation or approval by a federal agency. The issuance of an incidental take or enhancement of survival permit is a federal undertaking subject to Section 106 of the NHPA. Although the issuance of an Incidental Take Permit is an undertaking as defined by NHPA, the USFWS has determined that the permit in and of

itself is not an undertaking that is the type of activity that has the potential to affect historic properties. When the Implementing Entity identifies site-specific projects that contain specific information – the type of activities and where on the ground they will occur – the USFWS at that time will review the plans and assess the level of work that may be necessary for ensuring compliance with Section 106 of the NHPA including consultation with the State Historic Preservation Officer (SHPO), federally recognized Native American Tribes, and other interested parties.

As presented in Chapter 13, Cultural Resources, the Proposed Action is expected to result in less-than-significant impacts to cultural resources with the implementation of Mitigation Measure 13-1.

20.1.3 Farmland Protection Policy Act

The Farmland Protection Policy Act (FPPA) of 1984 requires federal agencies to consider how their activities or responsibilities that involve financing or assisting construction of improvement projects, or acquiring, managing, or disposing of federal land and facilities may affect farmland. The FPPA does not apply to federal permitting (7 CFR §658.2[a][1][i]). As described in Chapter 7, Agriculture, Mitigation Measure 7-1 requires that the Implementing Entity ensure that at least one acre of farmland is preserved for each acre converted for habitat restoration purposes.

20.1.4 Clean Air Act

Federal air quality policies are regulated through the Federal Clean Air Act (CAA). Pursuant to this Act, the United States Environmental Protection Agency (USEPA) has established National Ambient Air Quality Standards (NAAQS) for the following air pollutants (termed "criteria" pollutants): carbon monoxide (CO), ozone (O3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable particulate matter defined as particulate matter less than 10 microns in aerodynamic diameter (PM_{10}), fine particulate matter defined as particulate matter less than 2.5 microns in aerodynamic diameter ($PM_{2.5}$), and lead.

The CAA was amended in 1977 to require each state to maintain a state implementation plan (SIP) for achieving compliance with the NAAQS. In 1990, the CAA was amended again to strengthen regulation of both stationary and motor vehicle emission sources.

Conformity to the SIP is defined under the 1990 CAA amendments as conformity with the plan's purpose in eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of these standards. The federal CAA also requires the USEPA to designate areas (counties or air basins) as attainment or non-attainment with respect to each criteria pollutant, depending on whether the area meets the NAAQS. An area that is designated non-attainment means the area is not meeting the NAAQS and is subject to planning requirements to attain the standard.

The federal CAA requires USEPA to classify areas in the country as attainment or non-attainment, with respect to each criteria pollutant, depending on whether the areas meet the national standards. In addition, ARB makes area designations within California for state ambient air quality standards. The attainment status within the BAAQMD for both the CAAQS and NAAQS is listed as a non-attainment area for ozone and fine particulate matter

($PM_{2.5}$). Based on the current non-attainment status of the area, the proposed Plan would conform to the SIP if its annual emissions were less than specific *de minimis* standards.

As described in Chapter 16, Air Quality and Greenhouse Gases, the Proposed Action and Alternative A, would not exceed *de minimis* thresholds for ozone precursors (NO_x and volatile organic compounds), fine particulate matter ($PM_{2.5}$), or carbon monoxide.

20.1.5 Migratory Bird Treaty Act

Migratory birds are protected by the USFWS under the provisions of the Migratory Bird Treaty Act (MBTA) of 1916 as amended (16 U.S.C. Chapter 7, 703-712) which governs the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests. The take of all migratory birds is governed by the MBTA's regulation of taking migratory birds for educational, scientific, and recreational purposes and requiring harvest to be limited to levels that prevent over utilization.

Executive Order (EO) 13186 (signed January 10, 2001) directs 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 (MOU) to promote the conservation of migratory bird populations. Protocols developed under the MOU must include the following agency responsibilities:

- Avoid and minimize, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions.
- Restore and enhance habitat of migratory birds, as practicable.
- Prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

The EO is designed to assist federal agencies in their efforts to comply with the MBTA; it does not constitute any legal authorization to take migratory birds. Take, under the MBTA, is defined as the action of, or an attempt to, pursue, hunt, shoot, capture, collect, or kill (Title 50, Code of Federal Regulations [CFR], Section 10.12). The definition includes "intentional" take (take that is the purpose of the activity in question) and "unintentional" take (take that results from, but is not the purpose of, the activity in question).

This guidance would be utilized in informal consultation on any such activities within the Study Area.

20.2 Scoping

Public involvement is an important component of NEPA. Public involvement ensures that at the end of the process there will be a more informed public aware of all facets of the proposed project. Pursuant to NEPA (40 Code of Federal Regulations 1501.7), there should be an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action.

Like NEPA, the California Environmental Quality Act (CEQA) states that "Many public agencies have found that early consultation solves many potential problems that would arise in more serious forms later in the review process" (State CEQA Guidelines,

Section 15083). Scoping can be used as a tool to streamline alternatives development, mitigation measures, and determination of significant effects. Furthermore, scoping can be an approach for bringing together affected stakeholders to resolve concerns and conflicting interests.

20.2.1 Lead and Cooperating Agencies

The Habitat Plan was prepared under the combined efforts of the following six Local Partners:

- County of Santa Clara
- City of San José
- City of Morgan Hill
- City of Gilroy
- Santa Clara Valley Water District
- Santa Clara Valley Transit Authority

CDFG is a CEQA Responsible and Trustee Agency. The USFWS is the federal Lead Agency pursuant to NEPA.

To comply with both CEQA and NEPA, the Local Partners and USFWS combined efforts to notify stakeholders, the public, agencies, and tribes of the proposed permits and intent to prepare a joint EIR/EIS. A 47-day scoping period was allotted—longer than the required 30-day period—to allow sufficient time to review project details and to provide input.

20.2.2 Public Notices

Public scoping began on September 6, 2007 with the publication of a Notice of Intent (NOI) in the Federal Register (pursuant to NEPA) and a Notice of Preparation (NOP) with the State Clearinghouse (pursuant to CEQA). The NOP was also published in the San José Mercury News, Morgan Hill Times, and Gilroy Dispatch newspapers; posted on the project Web site (www.scv-habitatplan.org) and the Sacramento Fish and Wildlife Office Web site (www.fws.gov/sacramento); and distributed to a mailing list of 543 recipients in and around Santa Clara County. The mailing list included participants from past planning projects in the area, from ongoing stakeholder meetings (discussed in Section 3.3.4), and from local and state agencies. A copy of both the NOI and the NOP are included in Appendix B.

The NOI and NOP notified the public of the proposed Habitat Plan, of the intent to prepare the EIR/EIS, and of the public meeting to be held on September 26, 2007. Details of the project, such as those summarized in Section 2.0, were provided to introduce the proposal to the public. Finally, these notices informed the public that written comments would be accepted for 47 days until October 22, 2007 and provided various ways to supply input to the planning process. The distributed NOP included a map of the Study Area and a list of the proposed covered species.

News Release

A media advisory was distributed to approximately 25 local media, including newspapers and radio and television broadcasters. Confirmatory calls and emails were sent the week of

the meeting to reporters at San José Mercury News, San Francisco Chronicle, Pinnacle News, Morgan Hill Times, and Gilroy Dispatch.

Web Site

A public Web site was created to keep the public informed and involved during the development of the Habitat Plan and the environmental review process. The Web site can be accessed at: www.scv-habitatplan.org. The Web site provides the public with background information on the Habitat Plan through documents, maps, photos, and a Frequently Asked Questions section. A link is dedicated to public involvement and includes a calendar, information on the liaison and stakeholder groups, public meetings, and a form to sign up for e-mail updates. The Web site also has a section dedicated to submitting questions and/or comments, which provides a quick and easy outlet for the public to get involved. All public meeting materials and press releases are provided on the site as well.

Media Coverage

Articles concerning the project and habitat conservation issues in the Study Area have been covered in the San Francisco Chronicle, Washington Post, Sunday Pinnacle, Mercury News, and Gilroy Dispatch since February 2007. The bay checkerspot butterfly has been the focus of several articles, which brings awareness to the need for conservation focus. Articles concerning the Habitat Plan and initiation of the EIR/EIS process began in October 2007. These articles are provided on the project Web site: www.scv-habitatplan.org.

Liaison Work Groups

Elected officials from each Local Partner's legislative body meet regularly as a Liaison Group to review and provide guidance on issues to be acted on by the elected bodies as well as issues of concern to the Local Partners' Management Team.

Stakeholder Work Groups

A stakeholder group was formed early in the process and consisted of approximately 25 members of the public who represented a wide variety of interests, experience, and communities. Participants include conservation organizations, business and development interests, landowners, agricultural interests, open-space land-management organizations, and the general public. The group convenes monthly to review plan components, policies, and to advise the management and liaison teams. A list of the stakeholders is included on the project Web site: www.scv-habitatplan.org.

20.2.3 Public Scoping Meeting

The public scoping meeting was held on September 26, 2007 at the Morgan Hill Community Center from 6:30 p.m. to 9:00 p.m. Thirty-eight participants signed in. The meeting was part of a larger stakeholder meeting. The scoping meeting started with a brief set of presentations including:

- The goals of the plan, presented by Donald Gage, Santa Clara County Supervisor, District 1.
- The purpose and organization of the meeting, presented by Joan Chaplick/MIG.

- NEPA/CEQA process and relationship to the Habitat Plan, presented by Matt Franck/CH2M HILL.
- Federal roles and responsibilities, presented by Cori Mustin/USFWS.
- HCP/NCCP process, presented by Darryl Boyd/City of San José.
- Plan development and content, presented by David Zippin/ICF International.
- State and local roles and responsibilities in the planning process, presented by Ken Schreiber/County of Santa Clara.

After the presenters were finished, questions were taken.

20.2.4 Public Comment Summary

A total of 126 individuals or groups submitted 25 letters; many of these were submitted in batches where numerous commenters submitted the same comment(s). Many of these letters included multiple comments. In addition to the written comments received, five individuals provided verbal comments at the scoping meeting held on September 26, 2007. Most of the comments pertain to the Habitat Plan, while some apply to both the plan and the EIR/EIS processes. Table 1-1 summarizes the key elements of the issues identified during scoping. Given the preliminary status of project development, comments were categorized with a general approach. The following 12 category types were used:

- Watershed Management - Issues concerning the watersheds and activities that affect these watersheds.
- Planning Process - Issues relating to CEQA/NEPA, policy, planning, agency responsibility, Habitat Plan purpose, etc.
- Mitigation - Mitigation measures suggested for or commented on for Habitat Plan.
- Water Resources and Hydrology - Issues concerning water flow (surface water and groundwater), sedimentation, water quality, fluvial geomorphology, etc.
- Habitat Management - Issues concerning actions that will be taken to protect and enhance habitats within the Study Area.
- Sensitive Species - Issues surrounding special-status species or species of concern.
- Flood Management - General flood management, flood concerns, or floodplain issues that may affect Covered Activities such as development.
- Land Management - Issues concerning how land within the Study Area will be managed.
- Erosion Control - Issues related to how erosion control will be maintained and the effects of erosion in the Study Area.
- Mining – Because there are several mines and mining areas in the Study Area, the effects on this industry were mentioned.

- Native American Issues - Issues related to local Native American tribes and their level of involvement in the decision-making process.
- Fire Control - Issues concerning how controlled fire and prescribed burns may be used in revitalizing natural areas, as well as how catastrophic fires may be prevented within the Study Area.

20.3 Habitat Plan and Draft EIR/EIS Public Review

On December 10, 2010, the USFWS published a Notice of Availability for the Draft Habitat Plan, Draft EIR/EIS, and Draft Implementing Agreement in the Federal Register. This started a public comment period of approximately 120 days, which concluded on April 15, 2011. Similarly, the Local Partners advertised the documents to stakeholders and the general public, including notices in local newspapers. Two public meetings were held during the comment period – February 9, 2010 in Morgan Hill, and February 15, 2011 in Palo Alto. Both meetings were from 6:30 – 8:30 p.m. Approximately 45 people attended the Morgan Hill meeting, and approximately 40 people attended the Palo Alto meeting. During the public review process, interested parties (agencies, other stakeholders, and the general public) submitted a total of 794 comments. Comments were submitted in 53 letters or other written correspondence (e.g., emails, comment cards), or verbally during the two public meetings. Comments are briefly summarized in Section 1.6.2. Complete public meeting summaries, including questions and comments (and responses to comments) are provided in Volume 2.

CHAPTER 21

List of Preparers

21.1 U.S. Fish and Wildlife Service

Cori Mustin, Senior Fish and Wildlife Biologist – NEPA Compliance, Biological Resources

John Robles, Fish and Wildlife Biologist – NEPA Compliance

21.2 California Department of Fish and Game

Dave Johnston, Biologist – CEQA Compliance, Biological Resources

21.3 Santa Clara County

Debbie Cauble, Valley Habitat Plan Lead Representative (2011-2012) – Local Plans and Policies

Rob Eastwood, Senior Planner – CEQA Compliance, Local Plans and Policies, Agriculture, Mineral Resources

Lisa Killough, Valley Habitat Plan Lead Representative – Local Plans and Policies

Jane Mark, Senior Park Planner – Local Plans and Policies, Recreation

Ken Schreiber, Program Manager – Habitat Plan Consistency

21.4 City of San José

Joe Horwedel, Director of Planning and Building Code Enforcement – Local Plans and Policies

21.5 City of Morgan Hill

Jim Rowe, Community Development and Planning – Local Plans and Policies

21.6 City of Gilroy

Stan Ketchum, Community Development and Planning – Local Plans and Policies

21.7 Santa Clara Valley Water District

Don Arnold, Biologist III – Biological Resources

Debra Caldon, Environmental Services Manager – CEQA Compliance

Terry Neudorf, Senior Environmental Planner – CEQA Compliance

21.8 Santa Clara Valley Transportation Authority

Ann Calnan, Environmental Planner – Local Plans and Policies

Tom Fitzwater, Director of Environmental Management – Local Plans and Policies

21.9 CH2M HILL

Matt Franck, Project Planner, B.S., University of California, Davis – NEPA and CEQA Compliance, Introduction, Proposed Action and Alternatives, Approach to the Analysis, Projects with Cumulative Effects, various other sections

Lyna Black, Project Planner, M.S., California State University, Chico – Hazardous Materials

Amy Clymo, Project Scientist, M.S, University of California, Davis – Air Quality

Clint Helton, Project Scientist, M.A., Brigham Young University – Cultural Resources

Greta Kirschenbaum, Associate Planner, M.A., University of California – various sections

René Langis, Senior Technologist, Ph.D., University of Québec – Biological Resources

David Lundgren, Associate Planner, B.S., University of Vermont – various sections

Shannon Scopes, GIS Analyst, B.S., University of Utah – GIS and Mapping

Leslie Tice, Project Planner, B.S., University of South Florida – Public Involvement

Fatuma Yusuf, Project Consultant, Ph.D., Washington State University—Socioeconomics, Environmental Justice

21.10 ICF International

Kathryn Gaffney – Habitat Plan Consistency

David Zippin – Habitat Plan Consistency

CHAPTER 22

Document Recipients

Elected Officials

Federal

Senator Dianne Feinstein
Senator Barbara Boxer
Representative Anna Eshoo
Representative Mike Honda
Representative Zoe Lofgren
Representative Jerry McNerney
Representative Sam Farr
Representative Pete Stark

State

Governor Jerry Brown
Senator Elaine Alquist
Senator Sam Blakeslee
Senator Ellen Corbett
Senator Joe Simitian
Assembly Member Jim Beall Jr.
Assembly Member Luis Alejo
Assembly Member Nora Campos
Assembly Member Paul Fong
Assembly Member Bill Monning
Assembly Member Rich Gordon
Assembly Member Bob Wieckowski

County of Santa Clara

Michael Wasserman, Board of Supervisors
Ken Yeager, Board of Supervisors

Santa Clara County Water District

Don Gage, Board of Directors
Brian Schmidt, Board of Directors

Valley Transportation Authority

Ash Kalra, Board of Directors

Santa Clara County Open Space Authority

Sequoia Hall, Board of Directors
Virginia Holtz, Board of Directors

City of San José

Chuck Reed, Mayor
Kansen Chu, Councilmember

City of Morgan Hill

Steve Tate, Mayor

City of Gilroy

Al Pinheiro, Mayor
Cat Tucker, Councilmember

Federal Agencies

Susan Moore, U.S. Fish and Wildlife Service
Cay Goude, U.S. Fish and Wildlife Service

Tribal Interests

Rosemary Chambra, Muwekma Ohlone Indian Tribe of the SF Bay Area
Andrew Galvan, The Ohlone Indian Tribe
Ramona Garibay, Trina Marine Ruano Family
Jakki Kehl
Edward Ketchum, Amah Mustun Tribal Band
Valentin Lopez, Amah Mustun Tribal Band
Larry Myers, Native American Heritage Commission
Ann Marie Sayers, Indian Canyon Mustun Band of Costanoan
Debbie Pilas-Treadway, Native American Heritage Commission
Michelle Zimmer, Amah Mustun Tribal Band
Irene Zwierlein, Amah Mustun Tribal Band

State Agencies

Brenda Johnson, California Department of Fish and Game
Scott Wilson, California Department of Fish and Game

Local Agencies

County of Santa Clara

Sylvia Gallegos, Deputy County Executive
Debbie Cauble, Office of the County Executive
Lizanne Reynolds, County Counsel
Robb Courtney, Director of Parks and Recreation
Nash Gonzalez, Director of Planning and Development
Michael Murdter, Director of Roads and Airports

City of Gilroy

Tom Haglund, City Administrator
Kristi Abrams, Community Development Director
Stan Ketchum, PlannerAndy Farber, City Attorney
Linda Callon, City Attorney

City of Milpitas

James Lindsay, Planning and Neighborhood Services Director

City of Morgan Hill

J. Edward Tewes, City Manager
Leslie Little, Assistant City Manager
Jim Rowe, Planner
Danny Wan, City Attorney

City of Mountain View

Martin Alkire, Principal Planner

City of Palo Alto

Curtis Williams, Director of Planning and Community Environment

City of San José

Joe Horwedel, Director of Department of PBCE
Richard Doyle, City Attorney

City of Santa Clara

Kevin Riley, Director of Planning and Inspection

City of Sunnyvale

Hanson Hom, Community Development Director

Santa Clara Valley Water District

Jim Fielder, Chief Operating Officer, Water Supply
Debra Caldon, Assistant Operating Officer
Don Arnold, Ecological Services Unit Manager
Ed Yates, Counsel

Santa Clara Valley Transportation Authority (VTA)

Tom Fitzwater, Environmental Planning Manager
Kathy Paul, Attorney

Santa Clara County Open Space Authority

Andrea Mackensie, General Manager

County of San Mateo

Jim Eggemeyer, Planning and Building Director

City of East Palo Alto

Brent Butler, Planning Director

County of Alameda

Albert Lopez, Planning Director

City of Fremont

Jeff Schwob, Planning Director

City of Newark

Clay Colvin, Planning Manager

Libraries

Almaden Branch Library
6445 Camden Avenue
San José, CA 95120

Dr. Martin Luther King, Jr. Library
150 E. San Fernando Street
San José, CA 95112

Central Park Library
2635 Homestead Road
Santa Clara, CA 95051

Gilroy Library
7387 Rosanna Street
Gilroy, California 95020-6193

Morgan Hill Library
660 West Main Avenue
Morgan Hill, California 95037

City of Palo Alto Main Library
1233 Newell Road
Palo Alto, CA 94303

Fremont Main Library
2400 Stevenson Boulevard
Fremont, CA 94538

Persons Representing Organizations

Nancy Bernardi, Guadalupe-Coyote RCD
Chris Borello, South Bay Realty
Jack Bohan, County of Santa Clara Planning Commission
Kevin Bryant, California Native Plant Society
Joanna Callenbach, YCS Investments
David Collier, Sierra Club
Tim DeGraff, WRA
Craig Edgerton, Silicon Valley Land Conservancy
Justin Fields, Santa Clara County Cattlemen's Association
Jan Hintermeister, Santa Clara Parks and Recreation Commission
Virginia Holtz, League of Women Voters
Rick Hopkins, Home Builders Association of Northern California
Shana Jones, California Department of Forestry and Fire Protection
Don Long, Public
Bob Power, Santa Clara Valley Audubon Society
Abby Ramsden, The Nature Conservancy
Kenn Reiller, Pajaro Watershed Council
Dana Riggs, WRA
Sam Rohde, CHEER
Ted Sanchez, CHEER
Brian Schmidt, Committee for Green Foothills
Ginny Short, Coachella and Palmas Preserves
Jennifer Scheer, Santa Clara County Farm Bureau
Carolyn Tognetti, Save Open Space Gilroy

General Public

Alma Afaro
Francisco Alejo
Joe Alfaro
Keith Anderson
Carly Andradi
Lisa Apoca
Irma Batrez
Nita Batres
Ron Batrez
Rudy Batrez
Jack Bohan
John Bothelio
Bob Brem
Sandy Brem
Lanny Brown
Joan Buchanan
Carl Carpio
Jacque Carrasco
Val Casilla
Carol Castro
Charlotte Caudle
Jose Chapa
Irene Chavirria
Kathleen Clark
Michael Daley
Charlene DellaMaggione
Melissa Driscoll
Raquel Duenas
Mahlon Ezeoha
Clyde Fernandez
Maria Elena Fernandez
Nancy Fernandez
Lisa Flores
Roxana Flores
John Franks
Armondo Garcia
Daniel Garcia
Debra Garcia
Herman Garcia
Debbie Hernandez
Tom Herzog
Ron Hornstra
Angie Huynh
Eva Juarez Henry Juarez
Ivana Kalcich
Robert Kaufman
Pat Kilcic
Robin Kilcic
David Lee
Joyce Lemax
Jorge Lopez
Bob Loveland
Desiree Mares
Pricilla Mark
Jeff Martin
Colin McDonald
Peter Mirassou
Rafael Mora
Keith Morales
Rachel Munoz
Martha Nevarez
Denice Olivera
Tony Padron
Somira Peeh
Rebekah Pope
Amir Pourshahidi
David Powell
Kathy Powell
Michael Powell
Matt Pruitt
Eudulia Ramirez
Larry Rede
Paul Rede
Jim Reed
Marcia Reed
Diana Rios
Raul Rivas
Michael Rodriguez
Ben Romero
Debra Romero
Elisa Ruiz
Hank Ruiz Jr.
Omega Ruiz
Becky Sanchez
Martha Sanchez
Beatrice Santiago
M.D. Saphos
Joseph Scott
Celia Sigala
Linda Spence
Sherri Stuart
Janice Sunzeri
Annie Tenasella
Alex Torres
Undine Tsai
Araceli Valarde
Alice Valdez
Bobby Vasquez
Janice Vasquez
Raul Vega
Mario Velarde
Yolonda Velasco
Dave Vilchez Jr.
Pam Vilchis
Eleanor Villarreal
Freddy Villarreal
Nicole Villarreal
Michelle Wexler
Shannon Wiggins
David Wistman
Nancy Ybarra

Draft EIR/EIS Commenters

Rob Wood, Associate Government Program Analyst, Native American Heritage Commission

Terrance Grindall, Community Development Director, City of Newark

Jan Webb

Robert W. Briggs, Executive Officer, Central Coast Regional Water Quality Control Board

Noel Eberhardt, South Bay Soaring Society

Toni Gregorio-Bunch

Neela Srinivasan

Angus Teter

Sara Greer

Chuck Hammerstad, Conservation Committee Chair, Flycasters Inc. of San José

Tori Ballif

Tim Filice, Glen-Loma Group

Jim Hoey, Hecker Pass Property Owners Group

Gordon Jacoby

John Telfer

Grey Hayes, PhD

Kathleen Goforth, Environmental Review Office Manager, U.S. Environmental Protection Agency

Dean Stanford

Jennifer Williams, Santa Clara County Farm Bureau

Kyle Wolfe, President, Santa Clara County Cattlemen's Association

Tim Chiala, President, Santa Clara County Farm Bureau

Sheila Barry, Bay Area Natural Resources/Livestock Advisor, University of California Cooperative Extension

Ken and Lana Bone

Mary Wilson, President, Friends of Edgewood

Sequoia Hall, Board of Directors Chair, Santa Clara County Open Space Authority

James B. Rowe, Planning Manager, City of Morgan Hill

Jae Pasari, PhD Candidate, UC Santa Cruz

Noor Tietze, PhD., Santa Clara County Vector Control District

Anita Marlin

Kathleen Swindle

Paul Campos, Senior Vice President and General Counsel, Building Industry Association of the Bay Area

Crisand Giles, Executive Director – South Bay, Building Industry Association of the Bay Area

Kevin Bryant, Past President, California Native Plant Society, Santa Clara Valley Chapter

Margo Bradish, Cox, Castle & Nicholson, LLP (for Cisco Systems)

Eileen McLaughlin, Shoreline Watch for San José, Citizen's Committee to Complete the Refuge

Brian Schmidt, Legislative Advocate – Santa Clara County, Committee for Green Foothills

Randall Single, Greenberg Taurig (for Coyote Valley Research Park)

Julie Phillips, WCT Program Leader, De Anza Wildlife Corridor Technician Program

Meg Giberson, Vice President, Guadalupe-Coyote Resource Conservation District

Jan Hintermeister

Libby Lucas

Joshua McCluskey

David Rubcic

Kristin Sullivan, De Anza College

Shani Kleinhaus, Environmental Advocate, Santa Clara County Audubon Society

Joanna Callenbach, YCS Investments

George Chiala, SCCHS Committee Chair, South County Catholic High School

Joseph Horwedel, Planning Director, City of San José

Valentine Lopez, Chairman, Amah Mutsun Tribal Band

Marc Klemencic, Chief Operating Officer, Santa Clara Valley Water District

Stuart Weiss, PhD., Chief Scientist, Creekside Center for Earth Observation

CHAPTER 23

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Appendix A
Glossary

APPENDIX A

Glossary

Biological Opinion. The document stating the opinion of the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service as to whether or not a federal action is likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. A biological opinion is one of the decision documents of a consultation under Section 7 of the Federal Endangered Species Act.

City Limits. The official jurisdictional boundary of a city.

Conservation Strategy. The overall unified approach for achieving biological goals and objectives, expressed as the collection of all conservation activities in the Habitat Plan (and under Alternative A). Most of the conservation strategy is provided in Habitat Plan Chapter 5 (Conservation Strategy) and Chapter 6 (Conditions on Covered Activities).

Covered Activities. The categories of activities proposed for incidental take coverage in the Habitat Plan (and under Alternative A). The list of Covered Activities includes urban development, instream capital projects, instream operations and maintenance projects, rural capital projects, rural operations and maintenance projects, and rural development projects. Covered Activities also includes activities to implement the Habitat Plan conservation strategy, such as development and management of the system of Habitat Reserves and stream restoration activities.

Covered Species. The 18 species for which incidental take coverage would be provided under the Habitat Plan (and under Alternative A).

Critical Habitat. An area designated by the U.S. Fish and Wildlife Service or by the National Marine Fisheries Service pursuant to the Federal Endangered Species Act. Critical habitat areas are specific geographic areas that may or may not be occupied by listed species, that have been determined to be essential for the conservation and management of listed species, and that have been formally described and designated in the Federal Register.

Effect. The environmental consequence of an activity or project. Same as "impact."

Enhancement. The improvement of an existing terrestrial vegetation community or aquatic habitat by changing ecological factors such as native species richness, species diversity, overall vegetative cover, and wildlife habitat function. Habitat enhancement will occur on all lands in the Reserve System.

Habitat Creation. The process of creating new pond habitat in the Reserve System in area that do not currently contain ponds.

Impact. The environmental consequence of an activity or project. Same as "effect."

Implementing Entity. The organization that will be responsible for fully implementing the Habitat Plan under the Proposed Action or Alternative A.

Land Cover. The dominant feature of the land surface, used to define changes in habitat conditions under the No Action Alternative, Proposed Action, and Alternative A.

Listed Species. A species that has been designated as "endangered" or "threatened" pursuant to the Federal Endangered Species Act or California Endangered Species Act.

Local Partners. The jurisdictions that have prepared the Habitat Plan: Santa Clara County, City of San José, City of Morgan Hill, City of Gilroy, Santa Clara Valley Water District, and Santa Clara Valley Transportation Authority.

Mitigation. Actions or project design features that reduce environmental impacts by avoiding, minimizing, or compensating for adverse effects.

Participating Special Entity. A public agency such as a water, school, irrigation, transportation, or other special district that is not subject to the jurisdiction of the Local Partners but that can request and receive coverage under the Habitat Plan.

Permit Area. The area for which incidental take coverage can be authorized for Covered Activities in accordance with the Habitat Plan. There would be two Permit Areas – one for the western burrowing owl and one for the other species addressed in the Habitat Plan.

Planning Limits of Urban Growth. The areas delineated by the municipal Local Partners (City of San José, City of Morgan Hill, City of Gilroy) to show the anticipated extent of urban development. Based on existing local plans, but developed specifically for the Habitat Plan.

Recovery. Restoration of listed species to a point at which the protections of the Federal or State Endangered Species Acts are no longer required.

Restoration. The establishment of a vegetation community or aquatic habitat in areas where they existed historically, but no longer occur because of the loss of one or more required ecological factors or as a result of past disturbance.

Reserve System. All preserve areas acquired and/or managed by under the Habitat Plan (or under Alternative A).

Special-Status Species. Plants and animals that are legally protected under the Federal Endangered Species Act and California Endangered Species Act (i.e., listed species) or under other regulations, and species that are considered sufficiently rare by the scientific community to qualify for such listing.

Take (Federal Endangered Species Act). To harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.

Take (California Endangered Species Act). To hunt, pursue, catch, capture, or kill, or to attempt to hunt, pursue, catch, capture, or kill.

Study Area. The geographic area considered in the Habitat Plan (519,506 acres).

Wildlife Agencies. The U.S. Fish and Wildlife Service and California Department of Fish and Game.

Appendix B
Scoping Materials

Notice of Preparation

Santa Clara Valley
Habitat Conservation Plan/Natural Community Conservation Plan

DATE: September 7, 2007

Notice of Preparation (NOP) to prepare an Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the Issuance of Incidental Take Permits Associated with the Santa Clara Valley Habitat Plan – A Conservation Legacy.

INTRODUCTION

Pursuant to the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA), the Santa Clara Valley Habitat Plan Local Partners (Cities of Gilroy, Morgan Hill and San Jose, County of Santa Clara, Santa Clara Valley Water District, and Santa Clara Valley Transportation Authority) and the U.S. Fish and Wildlife Service plan to prepare an EIR/EIS on the Santa Clara Valley Habitat Conservation Plan/Natural Communities Conservation Plan, named the Santa Clara Valley Habitat Plan – A Conservation Legacy. The Plan Area is located within Santa Clara County, covering approximately 520,000 acres generally coinciding with the Coyote and Pajaro watersheds as well as a significant portion of the Guadalupe watershed [see FIGURE 1]. The Local Partners intend to request Endangered Species Act (ESA) permits for 30 species that are listed as federal or State threatened or endangered species or identified as Federal or State species of concern. [see TABLE 1]. The permits are needed to authorize take of listed species that could occur as a result of implementation activities covered under the Plan (see Proposed Implementation Activities below).

SANTA CLARA VALLEY HABITAT PLAN – A CONSERVATION LEGACY

Project Description

The purpose of the Santa Clara Valley habitat Plan is to protect and enhance ecological diversity and function in the greater portion of Santa Clara County, while allowing appropriate and compatible growth and development in accordance with applicable laws. The Plan is both a habitat conservation plan (HCP) intended to fulfill the requirements of the ESA and a natural community conservation plan (NCCP) to fulfill the requirements of the California Natural Community Conservation Planning Act (NCCP Act). As an NCCP, the Plan not only addresses impact mitigation, but will also contribute to the recovery and delisting of listed species and help preclude the need to list additional species in the future.

Covered Species

Currently, 30 species are proposed for coverage under the Plan. Table 1 lists those species and their current status. Species may be added or deleted during the course of Plan development based on further analysis, new information, agency consultation, and public comment.

Plan Area

The Plan Area includes approximately 520,000 acres within Santa Clara County. This area generally covers the southeastern portion of the County including portions of the Santa Cruz Mountains to the west, the central portion of the Santa Clara Valley, and portions of the Diablo Range to the east, and generally coinciding with the Coyote and Pajaro watersheds as well as a significant portion of the Guadalupe watershed. A majority of the Plan Area is unincorporated, but includes all of the Cities of

Gilroy and Morgan Hill and all of San Jose except the Bayland areas. The Plan Area encompasses a diversity of land uses, including a variety of urban and suburban development types, agriculture uses and ranchlands, rural residential, recreation, and public and private open space. It also contains diverse natural community types, including variety of grasslands, serpentine, oak woodlands, mixed riparian forests, scrub/chaparral, marshes and other areas.

Proposed Implementation Activities
Because the Plan is still under development, the list of covered activities has not been finalized. Activities under the following covered activity categories are currently under consideration by the Local Partners and Service for coverage under the Plan. The covered activity categories include:

- Urban development.
- In-stream capital projects.
- In-stream operations and maintenance.
- Rural capital projects
- Rural operation and maintenance (outside streams).
- Rural residential development.
- Conservation Strategy implementation (activities within the Reserve System).

The Coyote Valley Specific Plan (CVSP), and Fisheries and Aquatic Habitat Collaborative Effort (FAHCE) will be excluded from the take permit under this Plan. The CVSP and FAHCE projects would obtain any necessary take authorization in a separate consultation with the State and Federal Wildlife Agencies. During Plan development, there may be other projects also identified as excluded from the Plan.

Mitigation
Under the Plan, the effects of covered activities are expected to be minimized and mitigated through participation in a conservation strategy, and conditions on covered activities, which will be fully described in the Plan. The focus of a conservation strategy is to provide long-term protection of covered species by protecting biological communities in the Plan area. Because the Plan is also a Natural Community Conservation Plan, it will also contribute to the recovery of the listed covered species and to the conservation of non-listed species to try to prevent their listing in the future.

The conservation strategy stems from the biological goals and objectives developed for the Plan. A series of conservation actions are under consideration by the Local Partners and the State and Federal Wildlife Agencies that will accomplish the following goals and objectives:

- Creation of a Reserve System that will preserve between approximately 30,000 and 58,000 acres of land for the benefit of covered species, natural communities, biological diversity, and ecosystem function.
- Protection and management of aquatic resources in the plan area, particularly native fish–bearing streams, inside and outside the Reserve System.
- Preservation of major local and regional connections between key habitat areas and between existing protected areas.
- Establishment of a framework for long-term management of the Reserve System and streams outside the Reserve System to enhance populations of covered species and maintain biological diversity.

- Incorporation of up to approximately 98,000 acres of existing protected areas into the Reserve System to enhance their long-term management.
- Restoration of approximately 1,250 acres of valley oak woodland, riparian woodland, wetlands, and ponds to offset losses of these land cover types and contribute to species recovery.
- Also, as required by ESA and California Endangered Species Act (CESA), the Plan includes measures to avoid and minimize take of covered species, which are under consideration by the Local Partners, and the Fish and Wildlife Service as conditions on covered activities.

ENVIRONMENTAL IMPACT REPORT/ENVIRONMENTAL IMPACT STATEMENT
The Local Partners and Fish and Wildlife Service will prepare a joint document in compliance with NEPA and CEQA. The Local Partners will be responsible for the scope and content of the document for CEQA purposes, and the Service will be responsible for the scope and content of the document for NEPA purposes. The EIR/EIS will consider the proposed action (issuance of ESA permits), and a reasonable range of alternatives. A detailed description of the proposed action and alternatives will be included in the EIR/EIS. It is anticipated that several alternatives will be developed, which may vary by the level of conservation, impacts caused by the proposed activities, permit area, covered species, or a combination of these factors. The EIR/EIS will also identify potentially significant impacts on biological resources, land use, air quality, water quality, mineral resources, water resources, economics, and other environmental issues that could occur directly or indirectly with implementation of the proposed action and alternatives. For all potentially significant impacts, the EIR/EIS will identify mitigation measures where feasible to reduce these impacts to a level below significance.

PUBLIC MEETING
A public meeting is scheduled to provide an overview of the proposed action and obtain feedback. The meeting will be held on:

Wednesday, September 26, 2007
7.00 to 9.00 p.m.

The public meetings will be held at:

Morgan Hill Community and Cultural Center,
El Toro Room,
17000 Monterey Road (at East Dunne Avenue)
Morgan Hill, CA

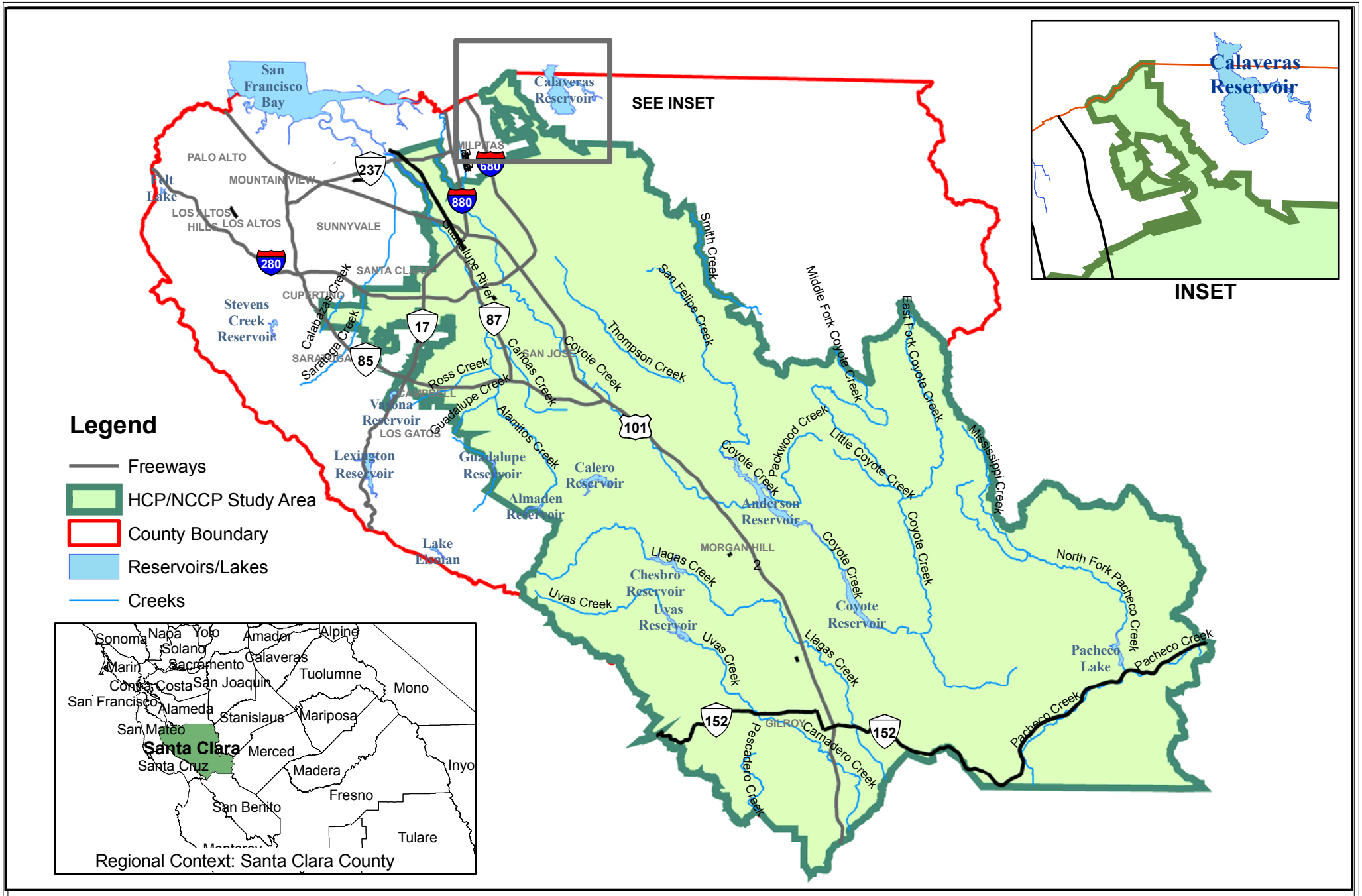
SUBMITTING COMMENTS
Written comments from interested parties regarding the scope of the EIR/EIS are invited to ensure that the full range of environmental issues related to the proposed action are identified and evaluated. All comments received, including names and addresses, will become part of the official administrative record and will be made available to the public. Information, written comments, or questions related to the preparation of the EIR/EIS should be received on or before October 22, 2007. Written comments should be directed to the contact below:

Ken Schreiber, Habitat Plan Program Manager
County of Santa Clara
70 West Hedding Street, East Wing, 7th Floor
San Jose, CA 95110
(408) 299-5789

For additional information regarding the Santa Clara Valley Habitat Plan, please visit the Santa Clara Valley Habitat Plan website: www.scv-habitatplan.org

SUPPLEMENTARY INFORMATION

Persons needing reasonable accommodations in order to attend and participate in the public meeting should contact Ken Schreiber at (408) 299-5789 as soon as possible. In order to allow sufficient time to process requests, please call no later than one week before the public meeting.



Santa Clara Valley HCP/NCCP Study Area Boundary

While the GIS data used to create this map is deemed reliable, it should be only used for planning purposes and the Local Partners assume no liability

FIGURE 1
Page 5 of 10

Species	Status[a]		Criteria[b]				Recommended Covered Status[c]	Notes
	State/ CNPS	Federal	Range	Status	Impact	Data		
Invertebrates								
Bay checkerspot butterfly *Euphydryas editha bayensis*	—	FT	Y	Y	Y	Y	Y	Study area contains almost all known populations and habitat of species throughout range
Fish								
Pacific lamprey *Lampetra tridentata*	—	—	Y	Y	Y	Y	Y	Petition for federal listing; recently rejected but may be resubmitted
South-Central California Coastal steelhead *Oncorhynchus mykiss*	CSC	FT	Y	Y	Y	Y	Y	Occurs in Pajaro River and tributaries; suitable habitat occurs above Uvas Dam (CNDDB 2005)
Central California Coastal steelhead *Oncorhynchus mykiss*	—	FT	Y	Y	Y	Y	Y	Occurs in Coyote Creek and tributaries (CNDDB 2005)
Central valley fall-run Chinook salmon *Onchorhynchus tshawytscha*	CSC	SOC	Y	Y ?	Y	Y	Y	Occurs in Guadalupe River; species was federal candidate but listing was not warranted per 1999 decision; NOAA considers population in study area to be of hatchery stock and not part of the listed ESU; due to increasing population numbers listing of this species is may be unlikely
Amphibians and Reptiles								
California tiger salamander *Ambystoma californiense*	CSC	FT	Y	Y	Y	Y	Y	Known to occur in multiple locations in study area (CNDDB 2005)
California red-legged frog *Rana aurora draytoni*	CSC	FT	Y	Y	Y	Y	Y	Known to occur in multiple locations in study area (CNDDB 2005)
Foothill yellow-legged frog *Rana boylii*	CSC	—	Y	Y	Y	Y	Y	Known from study area

Species	Status[a]		Criteria[b]				Recommended Covered Status[c]	Notes
	State/ CNPS	Federal	Range	Status	Impact	Data		
Western pond turtle *Clemmys marmorata*	CSC	—	Y	Y	Y	Y	Y	Known to occur in study area (CNDDB 2005); likelihood of listing within the permit term is low to moderate
Birds								
Golden eagle *Aquila chrysaetos*	FP	BGPA, MBTA	Y	Y	Y	Y	Y	Take of individuals and nests not allowed; recommended as a covered species to address loss of habitat in case species is state or federally listed
Western burrowing owl *Athene cunicularia hypugea*	CSC	MBTA	Y	Y	Y	Y	Y	Known to occur in study area (CNDDB 2005); could become listed during permit term. Species is protected under MBTA; take of individuals not allowed
Least Bell's vireo *Vireo bellii pusillus*	SE	FE, MBTA	Y	Y	Y	Y	Y	Recent breeding records from Llagas Creek area (CNDDB 2005). Suitable habitat present on Uvas Creek, on Pajaro River, and around Coyote Reservoir (D. Padley pers. comm.). Species is listed under MBTA but Special Purpose Permit can be acquired for take of individuals
Tricolored blackbird *Agelaius tricolor*	CSC	MBTA	Y	Y	Y	Y	Y	Known to breed in region (CNDDB 2005); high likelihood of occurring in study area. Species is protected under MBTA; take of individuals not allowed
Mammals								
Pacific Townsend's (=western) big-eared bat *Corynorhinus townsendii townsendii*	CSC	—	Y	Y	Y	Y	Y	Species could become listed during permit term due to population declines throughout most of range
San Joaquin kit fox *Vulpes macrotis mutica*	ST	FE	Y	Y	Y	Y	Y	Known to occur occasionally at edges of study area (two records from 1975, Aug. 2002 record in Henry Coe State Park; CNDDB 2005)

Species	Status[a] State/ CNPS	Status[a] Federal	Criteria[b] Range	Criteria[b] Status	Criteria[b] Impact	Criteria[b] Data	Recommended Covered Status[c]	Notes
Plants								
Big scale balsamroot *Balsamorhiza macrolepis* var. *macrolepis*	1B	—	Y	Y	Y	Y	Y	Two occurrences in Santa Clara Valley (CNDDB 2005)
Chaparral harebell *Campanula exigua*	1B	—	Y	Y	Y	Y	Y	One occurrence along Coyote Creek (CNDDB 2005)
Tiburon Indian paintbrush *Castilleja affinis* ssp.. *neglecta*	ST/ 1B	FE	Y	Y	Y	Y	Y	Two occurrences west of Anderson Reservoir on Coyote Ridge
Coyote ceanothus *Ceanothus ferrisae*	1B	FE	Y	Y	Y	Y	Y	Study area includes all known populations and habitat of species throughout range
Mount Hamilton thistle *Cirsium fontinale* var. *campylon*	1B	—	Y	Y	Y	Y	Y	30 occurrences in study area (CNDDB 2005)
San Francisco collinsia *Collinsia multicolor*	1B	—	Y	Y	Y?	Y	Y	Occurrence in Almaden Quicksilver County Park
Santa Clara Valley dudleya *Dudleya setchellii*	1B	FE	Y	Y	Y	Y	Y	Study area includes all known populations and habitat of species throughout range (CNDDB 2005)
Fragrant fritillary *Fritillaria liliacea*	1B	—	Y	Y	Y	Y	Y	Eight occurrences on east side of Santa Clara Valley (CNDDB 2005)
Loma Prieta hoita *Hoita strobilina*	1B	—	Y	Y	Y	Y	Y	Seven occurrences in study area (CNDDB 2005)
Smooth lessingia *Lessingia micradenia* var. *glabrata*	1B	—	Y	Y	Y	Y	Y	Study area includes all known populations and habitat of species throughout range (CNDDB 2005)
Hall's bush mallow *Malacothamnus hallii*	1B	—	Y	Y	Y	Y	Y	13 occurrences in study area (CNDDB 2005)

Species	Status[a]		Criteria[b]				Recommended Covered Status[c]	Notes
	State/ CNPS	Federal	Range	Status	Impact	Data		
Robust monardella *Monardella villosa* ssp. *globosa*	1B	—	Y	Y	Y	Y	Y	Occurs in Uvas County Park and adjacent Santa Clara Valley Open Space Authority land; may also occur in Henry Coe State Park
Rock sanicle *Sanicula saxatilis*	SR/ 1B		Y	Y	Y?	Y	Y	One occurrence in Henry Coe State Park (CNDDB 2005); also known from Mt. Hamilton on University of California and private land just outside study area; impacts from covered activities uncertain; elevational range of species (2,000'-3,850') within elevational range of study area (up to 3,777')
Metcalf Canyon jewelflower *Streptanthus albidus* subsp. *albidus*	1B	FE	Y	Y	Y	Y	Y	12 occurrences, mostly in Santa Clara Valley (CNDDB 2005)
Most beautiful jewelflower *Streptanthus albidus* subsp. *peramoenus*	1B	—	Y	Y	Y	Y	Y	24 occurrences in study area (CNDDB 2005)

Species	Status[a]		Criteria[b]				Recommended Covered Status[c]	Notes
	State/ CNPS	Federal	Range	Status	Impact	Data		

Notes

a. **Status**

State Status

FP Fully Protected

SE State listed as endangered

ST State listed as threatened

SR State listed as rare

CSC California special concern species (July 2005 list)

Federal Status

BGPA Bald Eagle and Golden Eagle Protection Act

MBTA Migratory Bird Treaty Act

FE Federally endangered

FT Federally threatened

FC Candidate for federal listing

FPT Federally proposed for threatened listing

FPD Federally proposed for delisting

FD Federally delisted

SOC Species of Concern (National Marine Fisheries Service designation)

California Native Plant Society Ranking

1A Presumed extinct in California

1B Rare or endangered in California and elsewhere

2 Rare or endangered in California, more common elsewhere

3 Plants about which more information is needed

b. **Criteria**

Range: The species is known to occur or is likely to occur within the HCP/NCCP study area, based on credible evidence, or the species is not currently known in the study area but is expected in the study area during the permit term (e.g., through range expansion or reintroduction to historic range).

Status: The species is either:

- listed under the federal ESA as threatened or endangered, or proposed for listing;
- listed under CESA as threatened or endangered or a candidate for such listing, or listed under the Native Plant Protection Act as rare; or
- expected to be listed under ESA or CESA within the permit term. Potential for listing during the permit term is based on current listing status, consultation with experts and Wildlife Agency staff, evaluation of species population trends and threats, and best professional judgment.

Impact: The species or its habitat would be adversely affected by covered activities or projects that may result in take of the species.

Data: Sufficient data exist on the species' life history, habitat requirements, and occurrence in the study area to adequately evaluate impacts on the species and to develop conservation measures to mitigate these impacts to levels specified by regulatory standards.

Species proposed for coverage in the Plan were limited to those species for which impacts from covered activities were likely, in order to provide take authorization for the highest priority species. However, many other special-status species are expected to benefit from the Plan, as described in Chapter 5.

c. **Recommended Covered Status**

Y recommended as covered species in Santa Clara Valley HCP/NCCP

N not recommended for coverage in Santa Clara Valley HCP/NCCP

Notice of Intent (NOI) to Prepare EIS/R

Component 5: Long-term monitoring.

Public Comment

Comments we receive will help us identify key concerns and issues to be evaluated in the EIS. Opportunities for public participation will occur throughout the process. Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment, including your personal identifying information, may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Dated: August 30, 2007.

Kenneth McDermond,

Acting Manager, California/Nevada Operations, Sacramento, California.

[FR Doc. E7–17587 Filed 9–5–07; 8:45 am]

BILLING CODE 4310–55–P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

Habitat Conservation Plan for the Santa Clara Valley, Santa Clara County, CA

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of intent to prepare an Environmental Impact Statement/ Environmental Impact Report (EIS/EIR) and notice of public meeting.

SUMMARY: Pursuant to the National Environmental Policy Act (NEPA), we, the Fish and Wildlife Service (Service), advise the public that we intend to gather information necessary to prepare, in coordination with Santa Clara County, a joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) on the Habitat Conservation Plan for the Santa Clara Valley (Plan). The Plan is being prepared under Section 10(a)(1)(B) of the Federal Endangered Species Act of 1973, as amended, (Act). Santa Clara County (County) is facilitating preparation of the Plan with local partners and is the lead agency under the California Environmental Quality Act (CEQA). The County in accordance with CEQA is publishing a similar notice. The County and their local partners intend to apply for a 50-year incidental take permit from the Service and from the National Marine Fisheries Service (NMFS). These permits are needed to authorize the incidental take of threatened and endangered species that could result from activities covered under the Plan.

We provide this notice to (1) describe the proposed action and possible alternatives; (2) advise other Federal and State agencies, affected Tribes, and the public of our intent to prepare an EIS/EIR; (3) announce the initiation of a public scoping period; and (4) obtain suggestions and information on the scope of issues and alternatives to be included in the EIS/EIR.

DATES: Submit written comments on or before October 22, 2007. One public scoping meeting will be held on Wednesday, September 26, 2007, from 7 p.m. to 9 p.m. The public scoping meeting will be combined with a pre-scheduled community meeting for the Plan.

ADDRESSES: The public meeting will be held at the Morgan Hill Community and Cultural Center, 17000 Monterey Road, Morgan Hill, CA 95037. Submit written comments to Lori Rinek, Chief, Conservation Planning and Recovery Division, Fish and Wildlife Service, Sacramento Fish and Wildlife Office, 2800 Cottage Way, Room W–2605, Sacramento, CA 95825. Comments may also be sent by facsimile to (916) 414–6713.

FOR FURTHER INFORMATION CONTACT: Cori Mustin, Senior Fish and Wildlife Biologist, Sacramento Fish and Wildlife Office at (916) 414–6600.

SUPPLEMENTARY INFORMATION:

Reasonable Accommodation

Persons needing reasonable accommodations in order to attend and participate in the public meeting should contact Cori Mustin at (916) 414–6600 as soon as possible. In order to allow sufficient time to process requests, please call no later than one week before the public meeting. Information regarding this proposed action is available in alternative formats upon request.

Background

The Plan is both a habitat conservation plan (HCP), intended to fulfill the requirements of the Endangered Species Act, and a natural community conservation plan (NCCP), to fulfill the requirements of the California Natural Community Conservation Planning Act (NCCP Act). The Plan is being prepared under the combined efforts of eight local and state agencies: Santa Clara County, the City of San José, the City of Morgan Hill, the City of Gilroy, the Santa Clara Valley Water District (SCVWD), the Santa Clara Valley Transportation Authority (VTA), the Santa Clara County Open Space Authority, and the California Department of Parks and Recreation, collectively referred to as the Local Partners. Furthermore, efforts have included coordination with the California Department of Fish and Game (CDFG) as a CEQA Responsible and Trustee Agency and the National Oceanic and Atmospheric Administration, NMFS is a Cooperating Agency under NEPA.

Species proposed for coverage in the Plan are species that are currently listed as federally threatened or endangered or have the potential to become listed during the life of this Plan and have some likelihood to occur within the project area. Should any of these unlisted covered wildlife species become listed under the Act during the term of the permit, take authorization for those species would become effective upon listing. The Plan will provide long-term conservation and management of these species. Species may be added or deleted during the course of the development of the Plan based on further analysis, new information, agency consultation, and public comment. The Plan addresses 30 listed and non-listed species: 15 wildlife species and 15 plant species. Federally listed species proposed for coverage under the Plan include: the bay checkerspot butterfly (*Euphydryas editha bayensis*), south-central California coastal steelhead (*Oncorhynchus mykiss*), central California coastal steelhead (*O. mykiss*), central valley fall-run Chinook salmon (*O. tshawytscha*), California tiger salamander (*Ambystoma californiense*), California red-legged frog (*Rana aurora draytonii*), least Bell's vireo (*Vireo bellii pusillus*), San Joaquin kit fox (*Vulpes macrotis mutica*), Tiburon Indian paintbrush (*Castilleja affinis* ssp. *neglecta*), coyote ceanothus (*Ceanothus ferrisae*), Santa Clara Valley dudleya (*Dudleya setchellii*), and Metcalf Canyon jewelflower (*Streptanthus albidus* ssp. *albidus*). The unlisted species proposed for coverage under the Plan include: Pacific lamprey (*Lampetra tridentata*), foothill yellow-legged frog (*Rana boylii*), western pond turtle (*Clemmys marmorata*), golden eagle (*Aquila chrysaetos*), western burrowing owl (*Athene cunicularia hypugaea*), tricolored blackbird (*Agelaius tricolor*), Pacific Townsend's [=western] big-eared bat (*Corynorhinus townsendii townsendii*), big scale balsamroot (*Balsamorhiza macrolepis*), chaparral harebell (*Campanula exigua*), Mount Hamilton thistle (*Cirsium fontinale* var. *campylon*), San Francisco collinsia (*Collinsia multicolor*), fragrant fritillary

Appendix C
Special-Status Species

Santa Clara Valley Habitat Plan EIR/EIS - Species List

PREPARED FOR: Ken Schreiber/Santa Clara County
Cori Mustin/U.S. Fish and Wildlife Service

PREPARED BY: Rene Langis/CH2M HILL
Matt Franck/CH2M HILL

DATE: May 18, 2012

This memorandum summarizes the planning processes and criteria used in identifying plant and animal species to be evaluated in the Environmental Impact Report/ Environmental Impact Statement (EIR/EIS) for the Santa Clara Valley Habitat Conservation Plan/Natural Communities Conservation Plan (Habitat Plan). Table 1 presents the complete list of species considered and the reasoning for inclusion or elimination.[1] The list of species that will be evaluated in the EIR/EIS includes all species proposed for coverage under the Habitat Plan as well as other special-status species that could be adversely affected by actions within the Study Area (including implementation of the conservation strategy).

The following sections summarize the species selection processes and criteria used to identify species proposed to be covered in the Habitat Plan, and describe the process followed to determine the additional species to be addressed in the EIR/EIS. The results are summarized in Table 1, including the rationale for inclusion or elimination in the EIR/EIS. In summary, the following 19 species are recommended for additional analysis.

- bigscale balsamroot
- chaparral harebell
- Congdon's tarplant
- San Francisco collinsia Hall's bush mallow
- Santa Cruz Mountains beardtongue
- Opler's longhorn moth
- Pacific lamprey
- central California coastal steelhead
- south-central California coastal steelhead
- Central Valley fall-run Chinook salmon
- Monterey roach
- California whipsnake
- golden eagle
- bank swallow
- pallid bat
- Pacific Townsend's (=western) big-eared bat
- San Francisco dusky-footed woodrat
- American badger

Species Covered by the Proposed Habitat Plan

ICF International, in coordination with the Local Partners, Wildlife Agencies, and Science Advisors, developed criteria to determine which species would be included for coverage under the proposed Habitat Plan. For each special-status species with the potential to occur in the Study Area, information was gathered on its status, population trends, distribution,

[1] Table 1 is presented in phylogenetic order based on the species being considered: plants – invertebrates – fish – amphibians – reptiles – birds – mammals. Within each group, species are in alphabetical order by genus.

threats, conservation, and management. To be covered, a species had to meet all four of the following criteria related to range, status, impact and data.

Range: The species is known to occur or is likely to occur within the Habitat Plan Study Area, based on credible evidence, or the species is not currently known in the Study Area but is expected to occur in the Study Area during the permit term (e.g., through range expansion or reintroduction to historic range).

Status: The species meets at least one of the following statutory criteria:

- Listed under the federal Endangered Species Act (FESA) as threatened, endangered, or proposed for listing.
- Listed under the California Endangered Species Act (CESA) as threatened, endangered, or a candidate for such listing.
- Listed under the Native Plant Protection Act as rare.
- Expected to be listed under FESA or CESA within the permit term (assumed to be 50 years). Potential for listing during the permit term is based on current listing status, consultation with experts and Wildlife Agency staff, evaluation of species population trends and threats, and best professional judgment of the biologists working on the Habitat Plan.

Impact: The species or its habitat would be adversely affected by project-defined Covered Activities that may result in take of the species.

Data: Sufficient data on the species' life history, habitat requirements, and occurrence in the Study Area are available to adequately evaluate impacts on the species and to develop conservation actions to mitigate these impacts to levels specified by regulatory standards.

Based on these criteria, 18 special-status species were proposed for coverage under the Habitat Plan. These species will be analyzed in the EIR/EIS.

Species Evaluated in the EIR/EIS

A similar approach to that used by ICF International was used to compile a list of species for consideration in the EIR/EIS using California Natural Diversity Database (CNDDB) records, U.S. Fish and Wildlife Service (USFWS) species lists, and the California Native Plant Society (CNPS) species lists for the Study Area (Figure 1).

Plants

Consideration of plant species for analysis was based on data maintained by the CNPS Rare Plant Program. A list of candidate plants was developed by searching the CNPS Inventory of Rare and Endangered Plants (an online database) for plants occurring in Santa Clara County with status listings as follows:

- CNPS List 1B.1: Rare, threatened, or endangered in California and elsewhere. Seriously endangered in California.
- CNPS List 1B.2: Rare, threatened, or endangered in California and elsewhere. Fairly endangered in California.
- CNPS List 2.1: Rare, threatened, or endangered in California but common elsewhere. Seriously endangered in California.
- CNPS List 2.2: Rare, threatened, or endangered in California but common elsewhere. Fairly endangered in California.

To further screen the candidate species, a list of U.S. Geological Survey 7.5 minute (1:24,000) quadrangles was compiled for the Study Area. The relevant quadrangles, 27 in all, are shown on Figure 1. The list generated by CNPS online database search was then filtered to exclude plants that were not listed as "occurrences" within any of the 27 quadrangles. In addition, plants strongly associated with salt marshes were excluded, consistent with the Habitat Plan. The final list, containing 44 plants, is included in Table 1 below.

Of the 44 plants considered, nine are addressed in the Habitat Plan as Covered Species. For the other 35 plants on the list, specific occurrence information was obtained from the CalFlora database, an electronic inventory operated by a non-profit organization. Calflora provided additional information on where the plants might occur, which was used to determine the likelihood that the plants might be affected by actions within the Study Area. Six plant species were selected for additional consideration in the EIR/EIS for the reasons explained in Table 1.

Fish and Wildlife

Consideration of fish and wildlife species to be included in the analysis was based on lists of endangered and threatened species obtained from the USFWS and on CNDDB data maintained by the California Department of Fish and Game (CDFG). The 27 U.S. Geological Survey topographic maps were used for both data searches. A USFWS list of endangered and threatened species was generated for this area using an online search tool maintained by the USFWS Region 8 field office in Sacramento. This query generated 32 species and eight critical habitat areas for consideration. Seven species were plants (and two critical habitat units), which are discussed above. Five fish species and one associated critical habitat unit did not occur in the Study Area. In addition, two species strongly associated with salt marshes were excluded, consistent with the Habitat Plan. The remaining 18 species (five of which are proposed Covered Species) are discussed in Table 1.

The CNDDB was used to examine the potential for other special-status species to occur in the Study Area in addition to the 18 federally listed species discussed above. Other special-status species include Species of Special Concern, which is a category used by CDFG

to address species that may be threatened or endangered but are not yet listed, are experiencing serious population declines, or have naturally small populations that make them susceptible to risk. Species of Special Concern are typically evaluated in environmental documents prepared under the California Environmental Quality Act. The CNDDB was queried for the area covered by the 27 quadrangles, which resulted in the addition of 23 fish and wildlife species for consideration. All 23 species are discussed in Table 1.

Queries of the USFWS online species list and the CNDDB resulted in the consideration of a total of 41 fish and wildlife species for evaluation in the EIR/EIS. Of the 41 species considered, nine are addressed in the Habitat Plan as Covered Species. Of the other 32 species on the list, 13 species were selected for additional consideration in the EIR/EIS for the reasons explained in Table 1.

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TABLE 1
Wildlife and Plant Species to be Evaluated in the Santa Clara Valley Habitat Plan EIR/EIS

Scientific Name	Common Name	Federal Status	State Status	CNPS Status	Covered in Habitat Plan	Analyzed in EIR/EIS	Rationale
Plants							
Amsinckia lunaris	bent-flowered fiddleneck	-	-	1B.2	N	N	Found in coastal bluff scrub, cismontane woodland, and valley and foothill grassland. Recorded on 35 quadrangles in California – only one (Lick Observatory) within the Study Area. Specimen from Kinkaid Road, near Mt. Hamilton Road. Little threat from Covered Activities.
Arctostaphylos andersonii	Santa Cruz manzanita	-	-	1B.2	N	N	Found in broadleafed upland forest, chaparral, and North Coast coniferous forest (openings and edges). One occurrence in Study Area (near Uvas Reservoir) and one occurrence just outside the Study Area (near Uvas Canyon County Park). Recommended for inclusion by Science Advisors (may benefit from plan implementation). However, there appears to be a limited threat from implementation of the Covered Activities.
Astragalus tener var. *tener*	alkali milk-vetch	-	-	1B.2	N	N	Found in playas, valley and foothill grassland (adobe clay), and alkaline vernal pools. Recorded on 35 quadrangles in California – only one (Milpitas) that includes portions of the Study Area. Specimen is from Alviso area, outside of the Study Area. Outside of primary range.
Atriplex joaquiniana	San Joaquin spearscale	-	-	1B.2	N	N	Found in chenopod scrub, meadows and seeps, playas, and valley and foothill grassland. Recorded on 42 quadrangles in California, but only two (Milpitas and San Felipe) within the Study Area. Specimens (by Jepson) from San Felipe Lake area.
Balsamorhiza macrolepis var. *macrolepis*	bigscale balsamroot	-	-	1B.2	N	Y	Occurs primarily in the mountains bordering the northern Central Valley of California, within California annual grassland, serpentine bunchgrass grassland, and mixed oak woodland and forest. Only one known occurrence within the Study Area: at Coyote Lake – Harvey Bear County Park at the north end of the Silver Creek Hills, adjacent to urban areas.

TABLE 1
Wildlife and Plant Species to be Evaluated in the Santa Clara Valley Habitat Plan EIR/EIS

Scientific Name	Common Name	Federal Status	State Status	CNPS Status	Covered in Habitat Plan	Analyzed in EIR/EIS	Rationale
California macrophylla	round-leaved filaree	-	-	1B.1	N	N	Found in cismontane woodland, and valley and foothill grasslands. Recorded on 92 quadrangles in California – only one (San José East) within the Study Area (in urbanized area near U.S. Highway 101/East Capitol Expressway interchange).
Caliyptridium parryi var. *hesseae*	Santa Cruz Mountains pussypaws	-	-	1B.1	N	N	Found in chaparral and cismontane woodland. Recorded on 12 quadrangles in California, including three (Loma Prieta, Mount Stakes, and Isabel Valley) that includes portions of the Study Area. Records, however, are from outside the Study Area (e.g., Isabel and San Antonio Valleys). Little threat from Covered Activities.
Campanula exigua	chaparral harebell	-	-	1B.2	N	Y	Chaparral harebell is native to California, occurring in open, rocky sites in mixed serpentine chaparral or blue oak woodland at elevations ranging from 900 to 4,100 feet. The only known occurrence of chaparral harebell in the Study Area is located in the Furtado Open Space area, northeast of Alum Rock Park (approximately 15 individuals).
Castilleja affinis ssp. *neglecta*	Tiburon indian paintbrush	FE	ST	1B.2	Y	Y	Covered Species.
Castilleja rubincundula ssp. *rubicundula*	pink creamsacs	-	-	1B.2	N	N	Found in chaparral, cismontane woodland, meadows and seeps, and valley and foothill grassland. Recorded in 20 quadrangles in California, including one (Chittenden) within the Study Area. Only one recorded occurrence within the Study Area.
Ceanothus ferrisae	Coyote ceanothus	FE	-	1B.1	Y	Y	Covered Species.

TABLE 1
Wildlife and Plant Species to be Evaluated in the Santa Clara Valley Habitat Plan EIR/EIS

Scientific Name	Common Name	Federal Status	State Status	CNPS Status	Covered in Habitat Plan	Analyzed in EIR/EIS	Rationale
Centromadia parryi ssp. *congdonii*	Congdon's tarplant	-	-	1B.2	N	Y	Found in valley and foothill grassland (alkaline). Recorded in three locations in the Study Area – below Calero Reservoir and in two locations in urban San José (near Los Gatos Creek and near U.S. Highway 101/East Capitol Expressway interchange).
Chorizanthe robusta var. *robusta*	robust spineflower	FE	-	1B.1	N	N	Found in chaparral, cismontane woodland, coastal dunes, and coastal scrub (sandy or gravelly). Recorded in 18 quadrangles in California, including Watsonville East, Los Gatos, and San José West. Two recorded occurrences within the Study Area.
Cirsium fontinale var. *campylon*	Mount Hamilton thistle	-	-	1B.2	Y	Y	Covered Species.
Collinsia multicolor	San Francisco collinsia	-	-	1B.2	N	Y	Found in various land cover types, primarily areas in coast live oak forest and woodland. Known to occur in Study Area at Anderson Reservoir. Covered Activity impacts are likely but species could not be covered because a recovery standard could not be achieved.
Coreopsis hamiltonii	Mt. Hamilton coreopsis	-	-	1B.2	N	N	Found in cismontane woodland (rocky). Recorded specimens in Henry W. Coe State Park. Recorded elsewhere near Study Area (e.g., mountains west of Isabel Valley). Little threat from Covered Activities.
Delphinium californicum ssp. *interius*	Hospital Canyon larkspur	-	-	1B.2	N	N	Found in chaparral (rocky) and cismontane woodland (wet). Recorded in the Mt. Hamilton Range near the Study Area. Little threat from Covered Activities.
Dirca occidentalis	western leatherwood	-	-	1B.2	N	N	Found in chaparral and several upland and riparian forest types. Riparian areas. Reported observations in Santa Clara County, but outside of the Study Area (Palo Alto foothills).
Dudleya setchellii	Santa Clara Valley dudleya	FE	-	1B.1	Y	Y	Covered Species.

TABLE 1
Wildlife and Plant Species to be Evaluated in the Santa Clara Valley Habitat Plan EIR/EIS

Scientific Name	Common Name	Federal Status	State Status	CNPS Status	Covered in Habitat Plan	Analyzed in EIR/EIS	Rationale
Eriastrum tracyi	Tracy's eriastrum	-	Rare	1B.2	N	N	Found in chaparral and cismontane woodland. Recorded in the Mt. Hamilton Range near the Study Area. Little threat from Covered Activities.
Eryngium aristulatum var. *hooveri*	Hoover's button-celery	-	-	1B.2	N	N	Found in vernal pools. Occurrences near but not within the Study Area (e.g., San Felipe Lake area). Little threat from Covered Activities. If vernal pools are found in the Study Area, the species will benefit from existing vernal pool protections.
Fritillaria falcate	talus fritillary	-	-	1B.2	N	N	Found in chaparral, cismontane woodlands, and lower montane coniferous forest (often talus). Strict endemic to serpentine soils. Recorded specimens in far northeastern Santa Clara County, outside of Study Area. Little threat from Covered Activities.
Fritillaria liliacea	fragrant fritillary	-	-	1B.2	Y	Y	Covered Species.
Hoita strobilina	Loma Prieta hoita	-	-	1B.1	Y	Y	Covered Species.
Lasthenia conjugens	Contra Costa goldfields	FE	-	1B.1	N	N	Recorded in 24 quadrangles in California, including Milpitas, San José East and Newark, within the Study Area. Only one occurrence in the Study Area.
Legenere limosa	legenere	-	-	1B.1	N	N	Found in vernal pools. Recorded observation east of San Martin. There are no documented vernal pools in Santa Clara County, except for those at the Lucky Day Mitigation Bank in Gilroy. Little threat from Covered Activities. Species will benefit from vernal pool protections.
Lessingia micradenia var. *glabrata*	smooth lessingia	-	-	1B.2	Y	Y	Covered Species.

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Lomatium observatorium	Mt. Hamilton lomatium	-	-	1B.2	N	N	Found in cismontane woodland. Known from fewer than five occurrences, most within Santa Clara County in the Mt. Hamilton Range. One occurrence within Study Area in Joseph D. Grant County Park. Little threat from Covered Activities.
Malacothamnus arcuatus	arcuate bush mallow	-	-	1B.2	N	N	Based on taxonomic changes, this subspecies is no longer recognized.
Malacothamnus hallii	Hall's bush mallow	-	-	1B.2	N	Y	Hall's bush mallow is native to California, occurring in serpentine bunchgrass grasslands at elevations between 0 and 2,500 feet. Hall's bush mallow is known to occur at 20 locations on public and private lands within the Study Area. Recent studies suggest that Halls' bush mallow may not be a unique species.
Meconella oregana	Oregon meconella	-	-	1B.1	N	N	Found in coastal prairie and coastal scrub. Known from five occurrences in California. One occurrence within Santa Clara County, outside of the Study Area (Isabel Valley). Little threat from Covered Activities.
Monardella villosa ssp. *globosa*	robust monardella	-	-	1B.2	N	N	Originally proposed as a Covered Species, but removed based on taxonomic changes.
Penstemon rattanii var. *kleei*	Santa Cruz Mountains beardtongue	-	-	1B.2	N	Y	Found in chaparral and in lower montane and North Coast coniferous forests. Recorded in two locations in Santa Clara County (just downstream of Uvas Reservoir and in the Santa Teresa Hills).
Pentachaeta exilis ssp. *aeolica*	San Benito pentachaeta	-	-	1B.2	N	N	Species found in cismontane woodland, and valley and foothill grasslands. One occurrence within Santa Clara County, outside of the Study Area (Isabel Valley). Little threat from Covered Activities.

TABLE 1
Wildlife and Plant Species to be Evaluated in the Santa Clara Valley Habitat Plan EIR/EIS

Scientific Name	Common Name	Federal Status	State Status	CNPS Status	Covered in Habitat Plan	Analyzed in EIR/EIS	Rationale
Phacelia phacelioides	Mt. Diablo phacelia	-	-	1B.2	N	N	Species found in chaparral and cismontane woodland. Documented occurrences within Santa Clara County in the Mt. Hamilton Range. One occurrence within Study Area in Joseph D. Grant County Park. Little threat from Covered Activities.
Plagiobothrys glaber	hairless popcorn-flower	-	-	1A	N	N	Found in meadows and seeps (alkaline) and marshes and swamps (coastal salt). Recorded in 10 quadrangles in California, include 5 within the Study Area: San Felipe, Los Gatos, San José West, San José East, and Newark. Three occurrences in the Study Area.
Plagiobothrys uncinatus	hooked popcorn-flower		-	1B.2	N	N	Species found in chaparral, cismontane woodland, and valley and foothill grasslands. One occurrence within Santa Clara County, outside of the Study Area (Isabel Valley). Little threat from Covered Activities.
Sanicula saxatilis	rock sanicle	-	Rare	1B.2	N	N	Grows in remote areas in mountainous terrain, including one known Study Area occurrence in Henry W. Coe State Park. Originally proposed as a Covered Species, but removed because of the limited nexus between the Covered Activities and threats to the species, and because State Parks is not participating in the plan.
Senecio aphanactis	chaparral ragwort	-	-	2.2	N	N	Found in chaparral and cismontane woodland. Recorded on 37 quadrangles in California – only one (San José East) within the Study Area (in urbanized area near U.S. Highway 101/East Capitol Expressway interchange). Little threat from Covered Activities.
Streptanthus albidus subsp. *albidus*	Metcalf Canyon jewelflower	FE	-	1B.1	Y	Y	Covered Species.

TABLE 1
Wildlife and Plant Species to be Evaluated in the Santa Clara Valley Habitat Plan EIR/EIS

Scientific Name	Common Name	Federal Status	State Status	CNPS Status	Covered in Habitat Plan	Analyzed in EIR/EIS	Rationale
Streptanthus albidus subsp. *peramoenus*	most beautiful jewelflower	-	-	1B.2	Y	Y	Covered Species.
Trifolium amoenum	showy Indian clover	FE	-	1B.1	N	N	Found in coastal bluff scrub and valley and foothill grassland (sometimes serpentinite). Recorded in 15 quadrangles in California, only one of which is in the Study Area (Gilroy). Only one occurrence within the Study Area.
Trifolium depauperatum var. *diversifolium*	saline clover	-	-	1B.2	N	N	Found in marshes and swamps, valley and foothill grassland, and vernal pools. Recorded on 22 quadrangles in California – near, but not within, Study Area.
Tropidocarpum capparideum	caper-fruited tropidocarpum	-	-	1B.1	N	N	Sound in valley and foothill grassland (alkaline hills). Recorded in 14 quadrangles in California, including Palo Alto and Cupertino. Only one occurrence in the Study Area.
Invertebrates							
Adela oplerella	Opler's longhorn moth	-	-	-	N	Y	Found throughout the Study Area in serpentine grasslands (six CNNDB occurrences). Expected to benefit from Bay checkerspot butterfly conservation actions, but Recovery Plan indicates that additional conservation actions are necessary.
Branchinecta conservation	Conservancy fairy shrimp	FE	-	-	N	N	The Study Area is outside of the known range. There are no CNDDB records for this species in the Study Area.
Branchinecta lynchi	vernal pool fairy shrimp	FT	-	-	N	N	The Study Area is outside of the known range. There are no CNDDB records for this species in the Study Area.
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	FT	-	-	N	N	The Study Area is outside of the known range. There are no CNDDB records for this species in the Study Area.
Euphydryas editha bayensis	Bay checkerspot butterfly	FT	-	-	Y	Y	Covered Species. Listing status proposed to be changed to "endangered."

TABLE 1
Wildlife and Plant Species to be Evaluated in the Santa Clara Valley Habitat Plan EIR/EIS

Scientific Name	Common Name	Federal Status	State Status	CNPS Status	Covered in Habitat Plan	Analyzed in EIR/EIS	Rationale
Lepidurus packardi	vernal pool tadpole shrimp	FE	-	-	N	N	The Study Area is outside of the known range. There are no CNDDB records for this species in the Study Area.
Microcina homi	Hom's micro-blind harvestman	-	-	-	N	N	Found in the Study Area in serpentine grasslands (five CNNDB occurrences). Expected to benefit from Bay checkerspot butterfly conservation actions.
Microcina jungi	Jung's micro-blind harvestman	-	-	-	N	N	Found in the Study Area in serpentine grasslands (one CNNDB occurrence). Expected to benefit from Bay checkerspot butterfly conservation actions.
Speyeria adiaste	unsilvered fritillary	-	-	-	N	N	Found in a limited range that potentially includes the Study Area. Study Area includes several habitat types that support its host plant (*Viola* spp.).
Fish							
Lampetra tridentata	Pacific lamprey	-	-	-	N	Y	Although there are very few observations, lampreys are known or likely to occur in streams throughout the Study Area. Could be affected by Covered Activities with impacts to aquatic habitat.
Lavinia symmetricus subditus	Monterey roach	-	Watch	-	N	Y	Occurs in Pajaro, Salinas, and San Lorenzo Rivers. May experience adverse effects from Covered Activities.
Oncorhynchus kisutch	central California coast Coho salmon	FE	SE	-	N	N	Study Area is outside of the Central California Coast evolutionarily significant unit.
Oncorhynchus mykiss	central California coastal steelhead	FT	-	-	N	Y	Known or likely to occur in the Guadalupe River and Coyote Creek watersheds. Could be affected by Covered Activities with impacts to aquatic habitat.

TABLE 1
Wildlife and Plant Species to be Evaluated in the Santa Clara Valley Habitat Plan EIR/EIS

Scientific Name	Common Name	Federal Status	State Status	CNPS Status	Covered in Habitat Plan	Analyzed in EIR/EIS	Rationale
Oncorhynchus mykiss	south-central California coastal steelhead	FT	CSC	-	N	Y	Known to occur in the Uvas Creek and Pescadero Creek watershed, and likely to occur (although in limited numbers) in the Llagas Creek and Pacheco Creek watershed. Could be affected by Covered Activities with impacts to aquatic habitat.
Oncorhynchus tshawytscha	Central Valley fall-run Chinook salmon	SC	CSC	-	N	Y	Although there is no evidence of historic occurrence, recent information clearly shows occurrences in the Guadalupe River and Coyote Creek watersheds. Could be affected by Covered Activities with impacts to aquatic habitat.
Amphibians							
Ambystoma californiense	California tiger salamander	FT	CSC	-	Y	Y	Covered Species.
Rana aurora draytonii	California red-legged frog	FT	CSC	-	Y	Y	Covered Species.
Rana boylii	foothill yellow-legged frog	-	CSC	-	Y	Y	Covered Species.
Reptiles							
Clemmys marmorata	western pond turtle	-	CSC	-	Y	Y	Covered Species.
Gambelia silus	blunt-nosed leopard lizard	FE	SE	-	N	N	The Study Area is outside of the known range. There are no CNDDB records for this species in the Study Area.

TABLE 1
Wildlife and Plant Species to be Evaluated in the Santa Clara Valley Habitat Plan EIR/EIS

Scientific Name	Common Name	Federal Status	State Status	CNPS Status	Covered in Habitat Plan	Analyzed in EIR/EIS	Rationale
Masticophus lateralis	California whipsnake [= striped racer]	-	-	-	N	Y	Likely occurs in chaparral habitat throughout Santa Clara County. Genetic information suggests that the California whipsnake population may include the Alameda whipsnake, which is a state and federally listed (threatened) species. One critical habitat unit of the Alameda whipsnake encompasses portion of Santa Clara County, but outside of the Study Area (Ohlone Regional Wilderness).
Phrynosoma coronatum	coast horned lizard	-	CSC	-	N	N	Occupies a variety of habitats. CNDDB reports four occurrences in Study Area. Little threat from Covered Activities.
Thamnophis gigas	giant garter snake	FT	ST	-	N	N	The Study Area is outside of the known range. There are no CNDDB records for this species in the Study Area.
Birds							
Accipiter cooperii	Cooper's hawk	-	Watch	-	N	N	Fairly common in Study Area, although CNDDB records only two occurrences. Nests are protected by existing regulations.
Agelaius tricolor	tricolored blackbird	-	CSC	-	Y	Y	Covered Species.
Aquila chrysaetos	golden eagle	-	FP	-	N	Y	Study Area is within species range, and Covered Activity impacts are likely. Species was removed from coverage because impacts would have been limited to habitat and no nesting trees would have been affected.
Ardea Herodias	great blue heron	-	-	-	N	N	CNDDB records two occurrences in Study Area. Rookeries are protected by existing regulations.
Athene cunicularia	burrowing owl	-	CSC	-	Y	Y	Covered Species.

TABLE 1
Wildlife and Plant Species to be Evaluated in the Santa Clara Valley Habitat Plan EIR/EIS

Scientific Name	Common Name	Federal Status	State Status	CNPS Status	Covered in Habitat Plan	Analyzed in EIR/EIS	Rationale
Brachyramphus marmoratus	marbled murrelet	FT	SE	-	N	N	Critical habitat is located near the county line west of the Study Area (e.g., along SR 9). There are no CNDDB records for this species in the Study Area. Little threat from Covered Activities.
Charadrius alexandrinus nivosus	western snowy plover	FT	-	-	N	N	Listing applies only to Pacific Coast population that nests adjacent to tidal waters.
Circus cyaneus	northern harrier	-	CSC	-	N	N	Fairly common in Study Area, especially in winter, although CNDDB records only one occurrence. Nests are protected by existing regulations.
Cypseloides niger	black swift	-	CSC	-	N	N	Very rare in Study Area (CNDDB records one occurrence). Little threat from Covered Activities.
Elanus leucurus	white-tailed kite	-	FP	-	N	N	Fairly common in Study Area, although CNDDB records only four occurrences. Nests are protected by existing regulations.
Falco mexicanus	prairie falcon	-	Watch	-	N	N	Rare in Study Area (CNDDB records four occurrences). Nests are protected by existing regulations.
Falco peregrinnus anatum	American peregrine falcon	FD	SE FP	-	N	N	Rare in Study Area (CNDDB records four occurrences). Nests are protected by existing regulations. Ongoing monitoring is required as part of federal delisting.
Laterallus jamaicensis coturniculus	California black rail	-	ST FP	-	N	N	The Study Area includes suitable habitat for this species. The species is not currently known from the Study Area; and recent discoveries of small occurrences, outside if its traditional range, does not warrant consideration in the EIR/EIS.

TABLE 1
Wildlife and Plant Species to be Evaluated in the Santa Clara Valley Habitat Plan EIR/EIS

Scientific Name	Common Name	Federal Status	State Status	CNPS Status	Covered in Habitat Plan	Analyzed in EIR/EIS	Rationale
Riparia riparia	bank swallow	-	ST	-	N	Y	May breed in Study Area; historic breeding record from 1931; currently known only as a rare migrant through area, but breeds in nearby Salinas Valley. Science Advisors state that "this species is unlikely to be affected by the plan," but species could be sensitive to stream improvement projects that block access to banks.
Sterna antillarum browni	California least tern	FE	SE	-	N	N	The Study Area is outside of the known range. There are no CNDDB records for this species in the Study Area.
Vireo bellii pusillus	least Bell's vireo	FE	SE	-	Y	Y	Covered Species.
Mammals							
Antrozous pallidus	pallid bat	-	CSC	-	N	Y	Has year-round range within Study Area, with four CNDDB records. Utilizes sparsely vegetated grasslands such as those found in the Study Area; some of these areas are likely to be protected under the Habitat Plan. "High" priority by Western Bat Working Group.
Corynorhinus townsendii townsendii	Pacific Townsend's (=western) big-eared bat	-	CSC	-	N	Y	Within range of species, and Covered Activity impacts are likely. Species was dropped from the covered species list because there is no known occupied breeding habitat within the study area and impacts would have been limited to unoccupied potential breeding habitat and potential foraging habitat.
Lasiurus cinereus	hoary bat	-	-	-	N	N	One of the most widespread North American bats. A tree-associated species found in wooded areas throughout California and is a breeding resident in the Study Area. CNDDB records four occurrences. "Medium" priority by Western Bat Working Group.
Myotis yumanensis	Yuma myotis	-	-	-	N	N	CNDDB records only one occurrence within the Study Area. "Medium" priority by Western Bat Working Group.

TABLE 1
Wildlife and Plant Species to be Evaluated in the Santa Clara Valley Habitat Plan EIR/EIS

Scientific Name	Common Name	Federal Status	State Status	CNPS Status	Covered in Habitat Plan	Analyzed in EIR/EIS	Rationale
Neotoma fuscipes annectens	San Francisco dusky-footed woodrat	-	CSC	-	N	Y	Occurs only in the hills west of Santa Clara Valley and in the Santa Cruz Mountains in a variety of forest and woodland types. CNDDB records four occurrences in the Study Area. CDFG requested that dusky-footed woodrats be considered.
Taxidea taxus	American badger	-	CSC	-	N	Y	Widely distributed in California, but uncommon throughout its range. CNDDB records four occurrences in the Study Area. Science Advisors recommended consideration as a "planning species."
Vulpes macrotis mutica	San Joaquin kit fox	FE	ST	-	Y	Y	Covered Species.

State Status

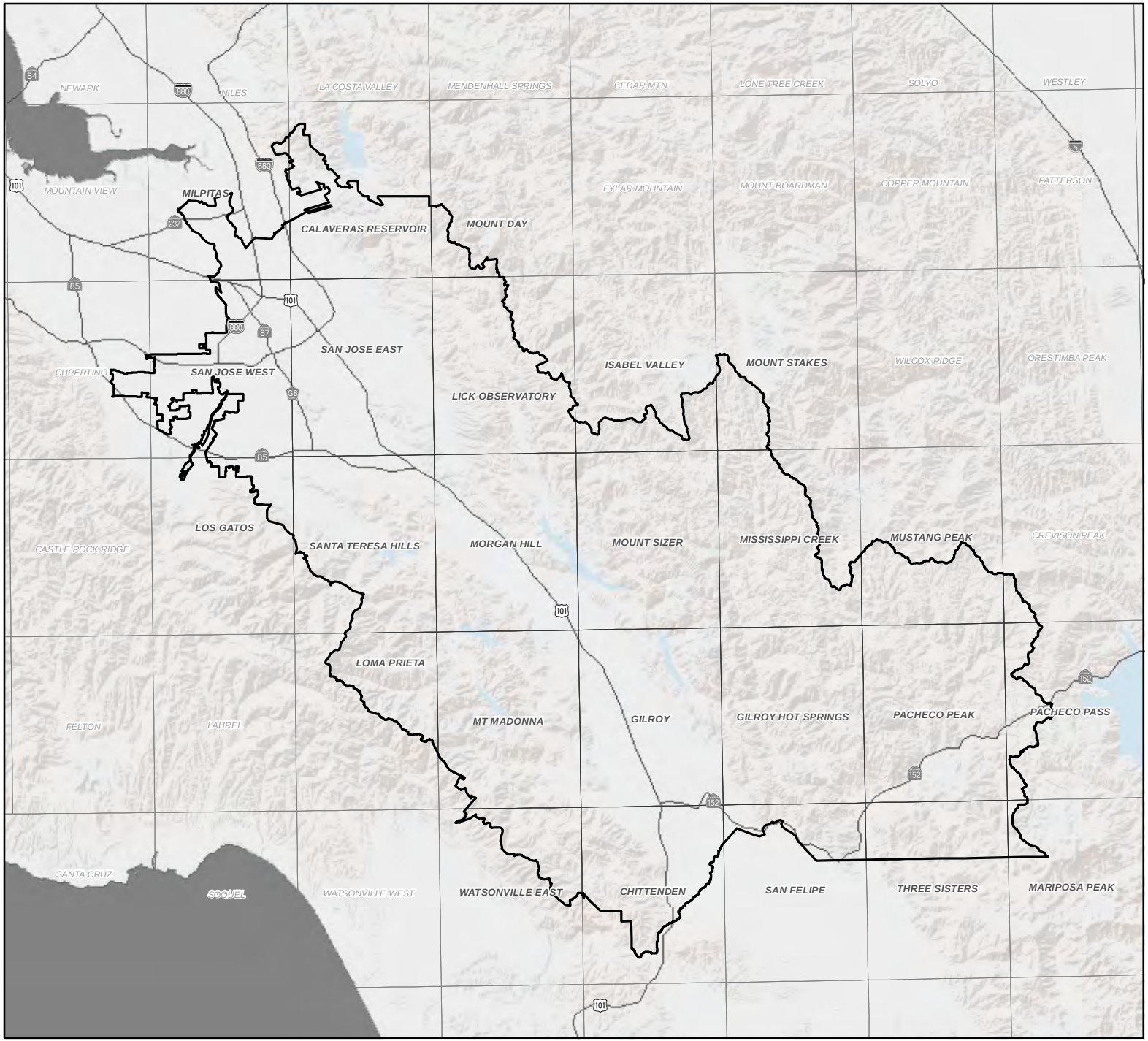
FP	Fully Protected
SE	State listed as endangered
ST	State listed as threatened
Rare	State listed as rare
CSC	California species of special concern
Watch	CDFG Watch List

Federal Status

FE	Federally listed as endangered
FT	Federally listed as threatened
FD	Federally delisted
SC	Species of Concern

California Native Plant Society

1A	Presumed extinct in California.
1B.1	Rare, threatened, or endangered in CA and elsewhere. Seriously endangered in California.
1B.2	Rare, threatened, or endangered in CA and elsewhere. Fairly endangered in California.
2.2	Rare, threatened, or endangered in CA, but common elsewhere. Fairly endangered in California.



VICINITY MAP

LEGEND

- Study Area
- USGS 24k Quads (Within Study Area)

N

0 3 6
Miles

FIGURE 1
Topographic Map Names
Santa Clara Valley HP EIR/EIS
Santa Clara County, California