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DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT

Integrated Pest Management Program

State Clearinghouse No. 2019100325

PREPARED FOR:

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Draft
Program Environmental Impact Report
for the
Integrated Pest Management Program
State Clearinghouse No. 2019100325

Prepared for
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LIST OF ABBREVIATIONS

AB 52	Assembly Bill 52
ATV	all-terrain vehicle
Authority	Santa Clara Valley Open Space Authority
BAAQMD	Bay Area Air Quality Management District
BCA	biological control agent
BMP	best management practices
Board	Board of Forestry and Fire Protection
CAL FIRE	California Department of Forestry and Fire Protection
Cal/OSHA	California Occupational Safety and Health Administration
CalEPA	California EPA
Caltrans	California Department of Transportation
CCR	California Code of Regulations
CDFA	California Department of Food and Agriculture
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CNDDDB	California Natural Diversity Database
CRLF	California-red legged frog
CUPA	Certified Unified Program Agencies
CWA	Clean Water Act
dbh	diameter at breast height
DE	diatomaceous earth
District	Midpeninsula Regional Open Space District
DPR	California Department of Pesticide Regulation
DPS	Distinct Population Segment
DTSC	California Department of Toxic Substances Control
EIR	environmental impact report
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
EPM	environmental protection measure
ESA	federal Endangered Species Act

FCG	California Fish and Game Code
FHSZ	fire hazard severity zones
FIFRA	Federal Insecticide, Fungicide, and Rodenticides Act
FRA	Federal Responsibility Areas
GAMA	Groundwater Ambient Monitoring and Assessment
GHG	greenhouse gas
GIS	geographic information system
HAZWOPER	Hazardous Waste Operations and Emergency Response
HMSO	Hazardous Materials Storage Ordinance
HWCA	Hazardous Waste Control Act
IGR	insect growth regulator
IPM Program	Integrated Pest Management Program
IPM	Integrated Pest Management
LRA	Local Responsibility Area
LUST	leaking underground storage tank
MBTA	Migratory Bird Treaty Act
MCL	maximum contaminant levels
MLD	most likely descendant
MMRP	mitigation monitoring and reporting program
NAHC	Native American Heritage Commission
NDMA	nitrosodimentylamine
NHPA	National Historic Preservation Act
NMFS	National Oceanic and Atmospheric Administration, National Marine Fisheries Service
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NRHP	National Register of Historic Places
NWIC	Northwest Information Center
OEHHA	Office of Environmental Health Hazard Assessment
OSHA	Occupational Safety and Health Administration

PCA	Pest Control Advisor
PCE	primary constituent element
PEIR	Program Environmental Impact Report
PPE	Personal Protective Equipment
PPM	part per million
PRC	Public Resource Code
RCRA	Resource Conservation and Recovery Act
ROW	rights-of-way
RUP	restricted use pesticide”
RWQCB	regional water quality control boards
SB 18	Senate Bill
SCCFD	Santa Clara County Fire Department
SCCFSC	Santa Clara County Fire Safe Council
SCVWD	Santa Clara Valley Water District
Secretary’s Standards	<i>Secretary of the Interior’s Standards for the Treatment of Historic Properties</i>
SFBAAB	San Francisco Bay Area Air Basin
SLF	Sacred Lands File
SR	State Route
SRA	State Responsibility Area
SWRCB	State Water Resources Control Board
TMDL	total maximum daily load
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	Underground Storage Tank
VMT	vehicle miles traveled
VOC	volatile organic compounds
WDR	waste discharge requirements
WPS	Worker Protection Standard
WUI	wildland-urban interface

EXECUTIVE SUMMARY

ES.1 INTRODUCTION

This document is the Draft Program Environmental Impact Report (PEIR) for the Santa Clara Valley Open Space Authority's (Authority) proposed Integrated Pest Management (IPM) Program.

This summary is provided in accordance with California Environmental Quality Act Guidelines (State CEQA Guidelines) Section 15123. As stated in Section 15123(a), "an EIR [environmental impact report] shall contain a brief summary of the proposed action and its consequences. The language of the summary should be as clear and simple as reasonably practical." As required by the State CEQA Guidelines, this chapter includes (1) a brief summary of the IPM Program, (2) each significant effect and proposed mitigation measures (Table ES-1), (3) a discussion of the areas of controversy and issues to be resolved that are known to the Authority associated with the IPM Program, and (4) identification of the alternatives evaluated and the environmentally superior alternative. Section 15126 of the State CEQA Guidelines also requires discussion of significant irreversible environmental changes and growth-inducing impacts of a proposed project; these topics are also discussed in this summary.

ES.2 SUMMARY OF THE IPM PROGRAM

The Authority is the Lead Agency for the IPM Program PEIR. The Authority proposes to implement an IPM Program to comprehensively direct pest management on 14 of the Authority's open space preserves (IPM Program Area) within Santa Clara County (refer to Figure 2-1) The IPM Program is intended to describe comprehensive guidelines and procedures for the careful management of pests throughout the IPM Program Area while protecting natural resources and public health.

Currently, the Authority implements manual, mechanical, and chemical treatments for vegetation and animal pest management near roads and trails, recreational facilities, structures, and sensitive habitats. The IPM Program would expand upon the types, frequency, and geographic extent of existing IPM activities conducted by the Authority. Under the IPM Program, the Authority would increase the number of manual, mechanical, and chemical treatment projects occurring simultaneously. Specific treatment activities that would occur under the IPM Program include:

- ▶ **Manual Treatments:** prevention, sanitation, pulling, digging, hoeing, physical barriers/exclusion, covering/tarping, crop rotation, soil sterilization, mulching, weedmats, release of biocontrol insects, trapping, giggering, shooting, and electrical currents.
- ▶ **Mechanical Treatments:** the use of motorized equipment for activities including mowing/cutting, cultivation, discing, girdling/frilling/drilling, and green flaming.
- ▶ **Chemical Treatments:** use of pesticides, including herbicides, insecticides, one rodenticide, and one fumigant. Herbicides would be applied through cut-stump, spray (by hand or via a boom on an all-terrain vehicle [ATV]), and wick application methods. Insecticide baits would be used in structures and buildings in tamper-proof bait stations and sprays would be used as a last resort and target specific individuals or populations (e.g., problem wasp nests). Rodenticides are not currently used by the Authority and would be used as a last resort to control pest infestations that create threats to human health or safety after other non-chemical treatment options are exhausted. Tenting and fumigation would be used as a last resort to treat termite infestations within affected buildings and structures. The entire fumigation process, including the handling of the fumigant, would be implemented by a certified applicator.

A detailed description of the IPM treatment types covered under the IPM Program and typical conditions (i.e., management category) in which they would be used are provided in Chapter 2, "Program Description."

ES.2.1 IPM Program Objectives

The overall goal of the IPM Program is to effectively manage pests in the Authority's open space preserves and facilities, while protecting human health and environmental quality. Specific objectives of the proposed IPM Program include the following:

- ▶ develop and implement site-specific pest management strategies that are effective in controlling targeted pests while avoiding damage to natural resources, promoting visitor safety and enjoyment, and protecting human health;
- ▶ keep the interested public informed about treatment strategies, upcoming projects, and environmental and public health protection measures;
- ▶ inhibit the establishment of new invasive species on Authority preserves, such as new invasive plants in natural areas, rangelands, and agricultural properties;
- ▶ maintain an inventory of invasive species infestations, monitor treatment effectiveness, and incorporate relevant monitoring results into future treatment applications;
- ▶ implement an adaptive management framework to promote the long-term effectiveness of pest management activities; and
- ▶ develop and implement an IPM Manual to standardize pest management and IPM procedures.

To achieve these objectives, the Authority has prepared an IPM Program Guidance Manual (Appendix B) to facilitate the design and implementation of pest management strategies that are effective in controlling target pests, cost-effective, safe for human health, and protective of natural resources, including native species, special-status species, and water quality. The main components of the IPM Program are identifying the target species and understanding their life cycle, assessing distribution and abundance of pests, setting thresholds for targeted control, assessing site conditions to identify appropriate treatments, using the most benign suite of control methods to target the most vulnerable stage in a pest's life cycle, and preventing pest problems through early detection and rapid response programs.

ES.3 SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Pursuant to State CEQA Guidelines Section 15382, a significant effect on the environment is defined as "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance." Chapter 3 of this Draft PEIR describes in detail the significant environmental impacts that would result from implementation of the proposed IPM Program and Chapter 4 provides a detailed discussion of potential cumulative impacts. Table ES-1, presented at the end of this chapter, provides a summary of the environmental impacts discussed throughout Chapter 3 of this PEIR. Table ES-1 provides the level of significance of the impact before mitigation, proposed mitigation measures to reduce the impact, and the level of significance of the impact after implementation of the mitigation measures.

ES.3.1 Significant-and-Unavoidable Impacts

Detailed mitigation measures to be implemented by the Authority are identified in Chapter 3 of this Draft PEIR, which are intended to mitigate the IPM Program's significant and potentially significant effects to the extent feasible. These mitigation measures are summarized in Table ES-1. After implementation of the proposed mitigation measures, all of the significant or potentially significant adverse effects associated with the IPM Program would be reduced to a less-than-significant level. No significant and unavoidable impacts would occur with implementation of the IPM Program.

ES.4 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

Pursuant to Section 15126.2(d) of the State CEQA Guidelines, an EIR must consider any significant irreversible environmental changes that would be caused by a proposed project, should it be implemented. Section 15126.2(d) states: Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as a highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified. A project would result in potentially significant irreversible environmental changes if:

- ▶ the primary and secondary impacts would generally commit future generations to similar uses;
- ▶ the project would involve uses in which irreversible damage could result from any potential environmental accidents associated with the project;
- ▶ the project would involve a large commitment of nonrenewable resources; or
- ▶ the proposed consumption of resources is not justified (e.g. the project involves the wasteful use of energy).

The Authority conserves the natural environment by protecting open spaces, natural areas, and working farms and ranches for future generations through establishing preserves. The IPM Program would guide pest management activities on existing Authority owned and protected preserves and does not propose new types of land uses or new development or infrastructure. Therefore, implementation of the IPM Program would not alter land uses thereby committing future generations to similar uses.

The IPM Program would involve the use of vehicle fuels, oils, lubricants, and pesticides. As discussed in Section 3.4, "Hazards and Hazardous Materials," the Authority would comply with all laws, regulations, and policies relevant to the use, transport, storage, and disposal of hazardous materials to minimize potential health and environmental risks. Additionally, the Authority would incorporate environmental protection measures (EPMs) in the IPM Program to further minimize the potential for impacts to human health and the environment from pesticide use. These EPMs include requirements to minimize spills, properly dispose of pesticide containers, triple rinse pesticide containers, lawfully store and handle pesticides, and dispose of unused pesticides and pesticide containers to adequately safeguard human, fish, and wildlife health and prevent soil and water contamination. Therefore, the potential for environmental accidents to occur resulting in irreversible damage from equipment and pesticide use under the IPM Program would be low.

The IPM Program would result in the commitment of nonrenewable energy resources in the form of fossil fuels for equipment and vehicle use. However, few pieces of mechanical equipment would be utilized during pest management activities and only one or two additional staff are projected to be hired to implement to IPM Program, which would not result in a substantial increase in energy consumption for worker commute. The use of nonrenewable energy resources to implement IPM treatments would be relatively minor and represent only a small portion of the resources available in the region. Furthermore, the minimal consumption of nonrenewable resources associated with the IPM Program would be justified by the benefits that the IPM Program would provide in avoiding pest damage to natural resources, promoting visitor safety and enjoyment, protecting human health, and improving the overall condition of IPM Program Area preserves.

ES.5 GROWTH INDUCING IMPACTS OF THE PROGRAM

State CEQA Guidelines Section 21100(b)(5) specifies that growth-inducing impacts of a project must be addressed in an EIR. Section 15126.2(e) states that a proposed project is growth-inducing if it could "foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment." Included in the definition are projects that would remove obstacles to population growth. Examples of growth-inducing actions include developing water or wastewater treatment facilities, schools, or other types of services in

previously unserved areas; extending transportation routes into previously undeveloped areas; and establishing major new employment opportunities.

A project can induce growth directly, indirectly, or both. Direct growth inducement would result if a project involved construction of new housing. Indirect growth inducement would result, for instance, if implementing a project resulted in any of the following:

- ▶ substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises);
- ▶ substantial short-term employment opportunities (e.g., construction employment) that indirectly stimulates the need for additional housing and services to support the new temporary employment demand; and/or
- ▶ removal of an obstacle to additional growth and development, such as removing a constraint on a required public utility or service (e.g., construction of a major sewer line with excess capacity through an undeveloped area).

The IPM Program would guide pest management activities on existing Authority preserves. No new housing is proposed; thus, the program would not result in direct growth inducement. Only one to two additional staff are projected to be hired to implement the IPM Program, which would not be considered a substantial new permanent or short-term increase in employment. No new facilities, infrastructure, or services are proposed under the IPM Program, and no alterations to existing land uses would occur. Thus, the IPM Program would not result in the extension or expansion of public utilities, establish an essential public service, provide new access to a remote area, change the zoning, or result in any other actions that would remove obstacles to growth. Therefore, implementation of the IPM Program would not result in direct or indirect growth inducement.

ES.6 ALTERNATIVES TO THE PROPOSED PROGRAM

The following provides brief descriptions of the alternatives evaluated in this Draft PEIR:

- ▶ **Alternative 1: No Project Alternative** assumes that the Authority would continue to implement manual, mechanical, and chemical IPM activities at the same rate and geographic extent as under existing conditions. The IPM manual would not be approved and the comprehensive IPM Program would not be implemented.
- ▶ **Alternative 2: Limited IPM Treatments on Natural Lands Alternative** would prohibit the use of spray herbicides and invasive animal treatment activities on natural lands. Instead, only invasive vegetation would be treated through wicking and cut-stump application of herbicides and manual and mechanical treatments, including pulling, digging, scraping, cutting/mowing, weed whipping, brush cutting, girdling/frilling/drilling, and green flaming. IPM activities on recreational facilities, agricultural lands, and buildings and structures would be the same as those described under the IPM Program.
- ▶ **Alternative 3: No Alterations to Buildings Alternative** would prohibit physical building and structure alterations to exclude pests, such as covering openings with plywood or concrete, installing one-way hinged doors, or building retrofits. The Authority would implement all other IPM treatment activities proposed for use in buildings and structures under the IPM Program, including sanitation, pruning of vegetation, use of sticky or snap traps, habitat modifications, and the use of pesticides. All IPM activities on recreational facilities, agricultural lands, and natural lands would be the same as those described under the IPM Program.

ES.7 AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

Section 15123(b) of the State CEQA Guidelines requires the summary section of a Draft PEIR to identify areas of controversy known to the Lead Agency, including issues raised by agencies and the public. The Authority issued a Notice of Preparation (NOP) on October 17, 2019 to responsible and trustee agencies, interested parties, and organizations, as well as private organizations and individuals that may have an interest in the project. A public scoping meeting was held on October 29, 2019. The purpose of the NOP and the public scoping meeting was to provide notification that a PEIR for was being prepared for the project and to solicit input on the scope and content

of the environmental document. The NOP and public comments received during the scoping period are included in Appendix A of this Draft PEIR. Key environmental concerns and issues that were expressed during the scoping process included the following:

- ▶ Use of RoundUp and other herbicides,
- ▶ potential impacts on biological and aquatic resources during pest management activities,
- ▶ potential impacts on cultural and tribal cultural resources during pest management activities, and
- ▶ incorporation of best management practices in the IPM Program.

These issues are addressed in this Draft PEIR.

Table ES-1 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
LTS = Less than significant PS = Potentially significant LTSM = Less than significant with mitigation			
Aesthetics			
Impact 3.2-1: Potential to Adversely Affect Scenic Vistas or Substantially Degrade the Existing Visual Character or Quality of Public Views IPM Program treatment activities would consist of manual, mechanical, and chemical treatments targeted for select sites within the IPM Program Area, including structures and buildings, recreational facilities, agricultural lands, and natural lands. Treatments could result in temporary effects to visual quality by the presence of trapping devices, tenting and fumigating buildings and structures, and mechanical equipment in the IPM Program Area. However, IPM treatments would be temporary and short-term, would help re-establish native vegetation patterns, and would not dominate long range or panoramic views. IPM Program treatments would not result in adverse effects on scenic vistas or substantially degrade the visual character or quality of the site and its surrounding. Therefore, this impact would be less than significant.	LTS	No mitigation is required	LTS
Biological Resources			
Impact 3.3-1: Potential to Substantially Affect Special-Status Plants Implementation of the IPM Program on agricultural lands and within structures and buildings would not result in any adverse effects on special-status plants due a lack of suitable habitat in those areas. Implementation of the IPM Program in the vicinity of structures and buildings for ground squirrel control and on recreation facilities and natural lands has the potential to result in adverse effects on special-status plants if present; however, implementation of EPMs would avoid and minimize impacts to special-status plants through pre-treatment surveys and avoidance buffers around identified special-status plants. Therefore, the impact would be less than significant.	LTS	No mitigation is required	LTS
Impact 3.3-2: Potential to Substantially Affect Special-Status Wildlife Species Implementation of IPM Program activities may result in the injury, mortality, or disruption of reproduction of special-status invertebrates, special-status fishes, special-status amphibians, special-status reptiles, special-status birds, special-status mammals, and loss of nests of common raptors and other nesting birds. After considering the implementation of applicable EPMs, the impact to special-status wildlife species would be potentially significant.	PS	Mitigation Measure 3.3-2a: Avoid Loss of Bay Checkerspot Butterfly and Host Plants ► The Authority will obtain take coverage for Bay checkerspot butterfly under the Habitat Plan for covered activities (i.e., manual and mechanical treatments). The Authority will implement all applicable permit conditions required by the Habitat Plan to avoid and minimize injury, death, disturbance, or habitat degradation for this special-status species. If take coverage is not obtained for manual and mechanical activities, the Authority will implement the following measures:	LTSM

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
LTS = Less than significant PS = Potentially significant LTSM = Less than significant with mitigation			
		<ul style="list-style-type: none"> ▪ EPM BIO-2 and EPM BIO-4 shall be implemented for Bay checkerspot butterfly host plant species (dwarf plantain and purple owl's clover). Per these EPMs, the Authority will conduct pre-treatment surveys for dwarf plantain and purple owl's clover and flag and/or map and avoid all occurrences during manual and mechanical treatments. When the host plants are dormant, only manual and mechanical treatment activities that do not affect seeds or underground parts shall be used within 15 feet of dwarf plantain and purple owl's clover occurrences. ▶ If pyrethrin-type spray insecticides are proposed for use (e.g., on a wasps' nest) within Bay checkerspot butterfly suitable habitat, they shall be applied by a qualified biologist with experience identifying Bay checkerspot butterfly. Prior to any application, a visual survey will be conducted within 15 feet of the application site. If dwarf plantain and purple owl's clover are observed within 15 feet of a target wasps' nest, no pyrethrin-type spray insecticides will be used unless it is confirmed no Bay checkerspot butterfly eggs or larvae are present, and only immediately following the absence determination. If adult Bay checkerspot butterflies are found during the survey, no pyrethrin-type spray insecticides will be used until the butterflies have left the 15-foot buffer on their own. ▶ If broadcast spraying (i.e., from a boom on an ATV) of herbicides is proposed for use within Bay checkerspot butterfly suitable habitat, EPM BIO-2 through EPM BIO-5 will be implemented. These measures will require identification, flagging, and avoidance of dwarf plantain and purple owl's clover and prohibit the broadcast spraying of non-selective herbicides (i.e., herbicides that injure all plant species that are directly exposed to the herbicide) within 15 feet of dwarf plantain and purple owl's clover. Non-selective herbicides will only be broadcast sprayed in suitable habitat if it is applied during the dormant period of dwarf plantain and purple owl's clover (July through February) and does not damage seeds or underground parts. <p>Mitigation Measure 3.3-2b: Avoid Loss of Crotch Bumble Bee Nest Colonies</p> <ul style="list-style-type: none"> ▶ To avoid direct disturbance of Crotch bumble bee nest colonies, if ground disturbing treatments (e.g., digging, scraping, hoeing, installation of exclusion fencing for feral pigs or bullfrogs), use of weedmats, or pyrethrin-type insecticide treatments are proposed in Crotch bumble bee suitable habitat during the period when nest colonies may be present (March through 	LTSM

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
LTS = Less than significant PS = Potentially significant LTSM = Less than significant with mitigation			
		<p>September), prior to implementing treatments, the Authority will conduct field surveys within treatment sites for the presence of the species.</p> <ul style="list-style-type: none"> ▪ Surveys to determine occupancy of suitable habitat by Crotch bumble bee will occur within 1 year prior to treatment implementation and at four evenly spaced sampling periods within the flight season (March through September). Surveys will follow the general procedures in the USFWS' Survey Protocols for the Rusty Patched Bumble Bee (<i>Bombus affinis</i>) (USFWS 2018). Surveys will use non-lethal netting methods for one (1) person-hour per 3 acres of the treatment site or until 150 bumble bees are sighted, whichever comes first. If no Crotch bumble bees are detected, then no further survey of that treatment area or further mitigation is required. Alternatively, the Authority may assume presence within suitable habitat, and apply only the additional measure below. ▪ If Crotch bumble bees are detected within the treatment area, or presence is assumed, and ground disturbing treatments (e.g., digging, scraping, hoeing, installation of exclusion fencing for feral pigs or bullfrogs), weed mats, or use of pyrethrin-type spray insecticides are planned; a pre-treatment survey will occur within 30 days of the treatment to identify the location of active nest colonies. ▪ Crotch bumble bee nest colonies detected within the treatment area will be flagged and no ground disturbing treatments, weed mats, or pyrethrin-type spray insecticides will be used within 15 feet of the colony during March through September, or until the colony is no longer active (i.e., no bees are seen flying in or out of the nest for three consecutive days). Air space shall be maintained between the active nest colony and nectar resources to facilitate foraging. <p>► To avoid loss of Crotch bumble bee nest colonies through removal of floral resources, within occupied habitat (presence can be assumed or follow survey requirements above to determine occupancy), mechanical vegetation removal and spraying of non-selective herbicide treatments will be conducted such that the entirety of floral resources are not removed during the period when colonies may be present (March through September), and untreated portions of occupied habitat are retained adjacent to treatment areas to provide floral resources and refuge for Crotch bumble bees.</p>	

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
LTS = Less than significant PS = Potentially significant LTSM = Less than significant with mitigation			
		<p>▶ If in the future Crotch bumble bee is listed under the CESA and take is not covered under the Valley Habitat Plan, the Authority will consult with CDFW to determine additional measures that may be required to avoid take of individuals, or will apply for an Incidental Take Permit. Additional measures may include, but are not limited to, further limitations on the use of pyrethrin-type spray insecticides and mechanical treatment during the flight season, and limitations on ground disturbing treatments in overwintering habitat. If agreement is reached, the Authority shall implement all measures developed in consultation with CDFW.</p> <p>Mitigation Measure 3.3-2c: Avoid Injury or Loss of Special-Status Fishes</p> <p>▶ The Authority will not conduct trapping, shooting, gigging, or electroshocking during the spawning season for Monterey roach (March through June) within suitable habitat (i.e., perennial streams). Shooting, trapping, gigging, and electroshocking of aquatic species will only be conducted by a qualified biologist with experience identifying special-status fishes.</p> <p>Mitigation Measure 3.3-2d: Avoid Impacts to California Tiger Salamander and California Red-Legged Frog</p> <p>▶ The Authority will obtain take coverage for California tiger salamander and California red-legged frog for covered IPM activities (i.e., manual and mechanical treatments). The Authority will implement all applicable permit conditions required by the Habitat Plan to avoid and minimize injury, death, disturbance, or habitat degradation for these special-status species. If take coverage is not obtained for manual and mechanical activities, the Authority will implement the following measures:</p> <ul style="list-style-type: none"> ▪ Conduct field surveys within treatment sites to determine the presence of suitable California tiger salamander and California red-legged frog habitat. ▪ Prohibit burrow ripping for ground squirrel control where suitable California tiger salamander upland habitat is present to avoid harming individual California tiger salamanders that may be present in empty burrows. ▪ Prohibit mechanical and chemical treatments in suitable California tiger salamander upland habitat during the wet season (generally October 15 through May), and within 24 hours of rainfall. Only manual IPM 	<p>LTSM</p> <p>LTSM</p>

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
LTS = Less than significant PS = Potentially significant LTSM = Less than significant with mitigation			
		<p>treatment activities shall be conducted in suitable upland habitat during the wet season to avoid injury or mortality of these species during overland movement.</p> <ul style="list-style-type: none"> ▪ Prior to conducting IPM treatments in California tiger salamander or California red-legged frog suitable habitat that could result in incidental injury or death of individuals as determined by a qualified biologist (e.g., mechanical treatments that use large, ground disturbing equipment such as tractor-operated mowers), and within 14 days of treatment, pre-treatment clearance surveys shall be conducted. If individuals of either species are found within a treatment site during pre-treatment clearance surveys, monitoring shall be conducted during the treatment (with the exception of pond draining as discussed below). If California tiger salamander or California red-legged frog individuals are found within a treatment site while work is occurring, work shall stop until the individuals are no longer at risk of incidental injury or death from the implementation of the treatment or have left the treatment area without assistance. ▪ Pond draining shall not occur during the breeding period for California tiger salamander or California red-legged frog (generally October 15 through May). In addition, prior to draining any pond, protocol surveys will be conducted by a qualified biologist. Draining of the pond shall only proceed once surveys confirm that no California tiger salamanders, California red-legged frogs, or egg masses are present. ▶ Prior to the use of herbicides, the Authority will conduct field surveys within treatment sites for the presence of suitable aquatic and upland habitat for California tiger salamander and California red-legged frog. If suitable aquatic or upland habitat is identified, the Authority will implement the following measures: <ul style="list-style-type: none"> ▪ No broadcast spraying of herbicides will occur within 50 feet of suitable California tiger salamander or California red-legged frog aquatic habitat and no application of herbicides by any method will occur within 15 feet of California tiger salamander or California red-legged frog aquatic habitat. 	

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
LTS = Less than significant PS = Potentially significant LTSM = Less than significant with mitigation			
		<ul style="list-style-type: none"> ▪ Within 50 feet of suitable California tiger salamander or California red-legged frog upland habitat, no broadcast spraying of herbicides (i.e., boom on an ATV) will occur during the wet season (generally October 15 through May), or within 24 hours of rainfall, to avoid direct exposure to California tiger salamander or California red-legged frog. Targeted, handheld application of herbicides may occur outside of this window within 50 feet of California red-legged frog upland habitat or California tiger salamander upland habitat by staff trained to identify and avoid any potential burrows and burrow openings. ▪ When using herbicides that contain the active ingredients that are subject to the herbicide injunction for California red-legged frog (Center for Biological Diversity v. U.S. Environmental Protection Agency [2006] Case No.: 02-1580-JSW) the requirements of that injunction shall apply (see EPM BIO-8). ▪ Alternatively, if it is not feasible to meet the objectives of the IPM Program under these requirements for herbicide use, the Authority will consult USFWS and/or CDFW before implementation of herbicide application to develop measures to avoid the injury, death, or disturbance of California tiger salamander and California red-legged frog. These measures may include, but are not limited to, limitations on the types of herbicides used and restrictions on the timing of use. If agreement is reached, the Authority shall implement all measures developed in consultation with the agencies. <p>Mitigation Measure 3.3-2e: Avoid Impacts to Foothill Yellow-Legged Frog</p> <ul style="list-style-type: none"> ▶ the Authority will obtain take coverage for foothill yellow-legged frog for all IPM activities under the Habitat Plan (all activities including chemical treatments are covered by the Habitat Plan for foothill yellow-legged frog). The Authority will implement all applicable permit conditions required by the Habitat Plan to avoid and minimize injury, death, disturbance, or habitat degradation for this special-status species. If take coverage is not obtained, the Authority will implement the following the following measures: <ul style="list-style-type: none"> ▪ Conduct field surveys within treatment sites for the presence of suitable foothill yellow-legged frog habitat. 	LTSM

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
LTS = Less than significant PS = Potentially significant LTSM = Less than significant with mitigation			
		<ul style="list-style-type: none"> ▪ The Authority will not broadcast spray herbicides within 50 feet of suitable aquatic or upland habitat and no application of herbicides by any method will occur within 15 feet of suitable aquatic habitat of foothill yellow-legged frog. Alternatively, if it is not feasible to meet the objectives of the IPM Program under these requirements for herbicide use, the Authority will consult CDFW to develop measures to avoid incidental injury or death of the species. These measures may include but are not limited to, limitations on the types of herbicides used and timing of use. If agreement is reached, the Authority shall implement all measures developed in consultation with CDFW. ▪ Prior to conducting IPM treatments in foothill yellow-legged frog suitable habitat that could result in incidental injury or death of individuals as determined by a qualified biologist (e.g., mechanical treatments that use large, ground disturbing equipment such as tractor-operated mowers), and within 14 days of treatment, pre-treatment clearance surveys shall be conducted. If individuals are found within a treatment site during pre-treatment surveys, monitoring shall be conducted during treatment. If foothill yellow-legged frogs are found within a treatment site while work is occurring, work shall stop until the individual is no longer at risk of incidental injury or death from the implementation of the treatment, or until the individual is moved outside of the treatment site by a qualified biologist. <p>Mitigation Measure 3.3-2f. Preconstruction Surveys and Avoidance of California Giant Salamander, Coast Range Newt, and Santa Cruz Black Salamander</p> <ul style="list-style-type: none"> ▶ Prior to conducting IPM treatments in California giant salamander, coast range newt, and Santa Cruz black salamander suitable habitat that could result in incidental injury or death of individuals (e.g., mechanical treatments that use large, ground disturbing equipment such as tractor-operated mowers) as determined by a qualified biologist, and within 14 days of treatment, pre-treatment clearance surveys shall be conducted. ▶ If individuals of these species are found within a treatment site during pre-treatment clearance surveys, monitoring shall be conducted during treatment. If California giant salamander, coast range newt, or Santa Cruz black salamander are found within the treatment site while work is occurring, work shall stop until the individual is no longer at risk of incidental injury or death 	LTSM

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
LTS = Less than significant PS = Potentially significant LTSM = Less than significant with mitigation			
		<p>from the implementation of the treatment, or until the individual is moved outside of the treatment site by a qualified biologist.</p> <p>Mitigation Measure 3.3-2g: Avoid Impacts from Aquatic-based IPM Treatments to Special Status Amphibians</p> <ul style="list-style-type: none"> ▶ Exclusion fencing, trapping, gigging, shooting, and electroshocking in aquatic environments shall be conducted by a qualified biologist with experience in the identification of amphibian species and possessing the appropriate federal and state permits to handle listed species. Inadvertently trapped or shocked special-status amphibians will be released immediately upon discovery. <p>Mitigation 3.3-2h: Avoid Injury or Loss of Special-Status Reptiles</p> <ul style="list-style-type: none"> ▶ The Authority will obtain take coverage for western pond turtle under the Habitat Plan. The Authority will implement all applicable permit conditions that may be required by the Habitat Plan to avoid and minimize impacts to western pond turtle. ▶ For special-status reptiles that are not covered by the Habitat Plan (and for western pond turtle if Habitat Plan take coverage is not obtained), the Authority will implement the following avoidance and minimization measures prior to conducting IPM treatment activities that have the potential to injure or harm special-status reptiles: <ul style="list-style-type: none"> ▪ Conduct assessment of treatment sites for the presence of suitable special-status reptile habitat. Prior to scraping/grubbing, ripping, mechanical treatments, or tree removal within suitable habitat for special-status reptiles, and within 30 days of treatment, the Authority will survey the treatment site for the presence of special-status reptiles (and western pond turtle nests, if applicable). If special-status reptiles are found within the treatment site, monitoring for special-status reptiles will be conducted during the treatment and work will stop if a special-status reptile is at risk of injury until it is no longer at risk. Special-status reptiles (except for Alameda whipsnake) may be moved outside of the treatment area by a qualified biologist. Any western pond turtle nests will be flagged and avoided (if applicable). ▪ Prior to conducting IPM treatment activities within occupied habitat for Alameda whipsnake, the Authority shall consult USFWS on any activities that may result in injury, death, or disturbance of the species to develop 	<p>LTSM</p> <p>LTSM</p>

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
LTS = Less than significant PS = Potentially significant LTSM = Less than significant with mitigation			
		<p>measures to avoid these impacts. Additional measures may include but are not limited to surveys, monitoring, and seasonal restrictions on use of pesticides and other treatments. If avoidance is not feasible then the Authority will not conduct IPM treatment activities that would cause impacts to Alameda whipsnake.</p> <ul style="list-style-type: none"> ▪ Shooting, trapping, gigging, and electroshocking of aquatic species, and trapping of rattlesnakes, will be conducted by a qualified biologist with experience in the identification of special-status reptile species. Inadvertently trapped special-status reptiles will be released immediately upon discovery. Trapping for rattlesnakes shall not be conducted within the range of Alameda whipsnake. <p>Mitigation 3.3-2i: Avoid Loss of Special-Status Birds, Nests, and Nesting Colonies</p> <ul style="list-style-type: none"> ▶ The Authority will obtain take coverage for least Bell's vireo under the Habitat Plan for covered activities (i.e., manual and mechanical treatments). The Authority will implement all applicable permit conditions that may be required by the Habitat Plan to avoid and minimize impacts to least Bell's vireo. In occupied habitat for least Bell's vireo (or in suitable habitat if occupancy is not known), the Authority will not use chemical treatments without prior consultation with USFWS. ▶ The Authority will obtain take coverage for tricolored blackbird and burrowing owl under the Habitat Plan. The Authority will implement all applicable permit conditions required by the Habitat Plan. ▶ If take coverage under the Habitat Plan is not obtained for covered special-status birds before covered activities are implemented, the Authority will implement the following avoidance and minimization measures: <ul style="list-style-type: none"> ▪ Treatment activities within 250 feet of riparian habitat suitable for least Bell's vireo nesting will occur outside of the least Bell's vireo breeding season (defined as March 15 through September 15) to the extent feasible. If work must occur within 250 feet of riparian habitat within the breeding season, a qualified biologist will conduct visual and audio surveys for nesting least Bell's vireo according to the Least Bell's Vireo Survey Guidelines (USFWS 2001) or as approved by USFWS. Vocalization recordings will not be used. In the event that least Bell's vireo territory or active nests are confirmed during the surveys, the biologist will establish 	LTSM

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
LTS = Less than significant PS = Potentially significant LTSM = Less than significant with mitigation			
		<p>an avoidance buffer zone between the territory edge and investigation activities at a distance recommended by USFWS. The Authority will periodically monitor active territories and maintain the territory avoidance buffer zone until nestlings have fledged and are no longer reliant on the nest or parental care for survival or until the nest is abandoned (as determined by a qualified biologist).</p> <ul style="list-style-type: none"> ▪ Prior to conducting treatments in burrowing owl habitat, the Authority will conduct a survey of the treatment site for burrowing owl burrows. If an active burrow is identified near a treatment site and work cannot be conducted outside of the nesting season (February 1 to August 31), a qualified biologist will establish an avoidance buffer that extends 150 to 1,500 feet around the burrow, depending on nesting stage and level of disturbance. If burrowing owls are present at the treatment site during the non-breeding season (September 1 through January 31), a qualified biologist will establish an avoidance buffer that extends a minimum of 150 feet around the burrow. ▪ IPM Program activities that occur within 250 feet of suitable tricolored blackbird nesting colony habitat will be conducted outside of the breeding season (March 15 through September 31). If work must occur within 250 feet of suitable tricolored blackbird nesting colony habitat during breeding season, then a protocol survey for tricolored blackbird nests will be conducted. If a nesting colony is present, then no IPM activities will occur within 250 feet of the colony until the colony has dispersed. Vegetation that has been documented to be used for nesting by tricolored blackbird shall not be removed for a period of 5-years following the use of the vegetation for nesting. <p>▶ Within Swainson’s hawk nesting habitat, the Authority will survey for active nests prior to the implementation of any IPM Program activities. If nests are identified, IPM Program activities would be prohibited within 0.25 mile of the active nest during nesting season (March 1 - September 15). This buffer may be adjusted as appropriate by a qualified biologist in consultation with CDFW. If removal of a Swainson’s hawk nest tree is required, the Authority shall conduct removal of the tree outside of the active nesting season in coordination with CDFW.</p>	

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
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		<ul style="list-style-type: none"> ▶ For all other special-status bird species, the Authority will apply EPM BIO-6 and EPM BIO-7 to trapping, giggering, shooting, and electroshocking activities for bullfrog and invasive fish removal. This would require that trapping, giggering, shooting, and electroshocking activities for bull frog and invasive fish removal occur outside of the nesting season, or requires a nesting bird survey if activities would occur within the nesting season and non-disturbance buffers would be implemented. ▶ Brown-headed cowbird trapping shall be conducted by a qualified biologist with experience in the identification of bird species. Inadvertently trapped special-status birds will be released immediately upon discovery. Prior to initiating trapping, the Authority will consult CDFW and USFWS regarding trapping within 250 feet of special-status bird species habitat. <p>Mitigation Measure 3.3-2j: Avoid Injury and Loss of San Joaquin Kitfox</p> <ul style="list-style-type: none"> ▶ The Authority will obtain take coverage for San Joaquin kitfox under the Habitat Plan for covered activities (i.e., manual and mechanical treatments). The Authority will implement all applicable permit conditions required by the Habitat Plan. ▶ Prior to the application of pesticides within suitable habitat for San Joaquin kitfox, the Authority will consult with USFWS to determine the appropriate measures to avoid injury, death, or disturbance to the species due to pesticides. The Authority will implement all conservation measures developed with USFWS such as restrictions on pesticide use. ▶ If take coverage under the Habitat Plan is not obtained before IPM Program activities are implemented within suitable habitat for San Joaquin kitfox, the Authority will implement the following avoidance and minimization measures: <ul style="list-style-type: none"> ▪ Prior to implementing IPM Program activities that could disturb San Joaquin kitfox dens, such as mowing, grubbing/clearing, and tree removal within suitable habitat for San Joaquin kitfox, the Authority will survey for dens within a buffer of 200 feet around treatment sites. If potential dens are found during surveys, a non-disturbance buffer of not less than 100 feet will be maintained around the den site for the duration of treatment activities. If a natal den is discovered within 200 feet of a treatment site, all activity shall cease, and the Authority will contact the 	LTSM

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
LTS = Less than significant PS = Potentially significant LTSM = Less than significant with mitigation			
		<p>USFWS and CDFW to consult about potential avoidance measures before activities can occur (USFWS 2011).</p> <ul style="list-style-type: none"> ▪ No trapping of feral pets would occur within suitable habitat for San Joaquin kitfox, unless the Authority conducts surveys and determines that the suitable habitat is unoccupied in consultation with USFWS. <p>Mitigation Measure 3.3-2k: Avoid Injury and Loss of American Badger and Ringtail</p> <ul style="list-style-type: none"> ▶ No more than 14-days prior to implementation of IPM Program activities that could disturb American badger and ringtail dens, such as herbicide application, mowing, grubbing/clearing, and tree removal within suitable habitat, a qualified biologist shall conduct pre-treatment surveys within 100 feet of treatment project sites for potential American badger and ringtail dens. ▶ If any potentially occupied American badger dens are located during surveys, no work shall be performed within a 50-foot buffer around each den during the non-breeding season or within a 100-foot buffer around dens during the period when pups are potentially in the den (February 15 through July 1). ▶ If any potentially occupied ringtail dens (e.g., brush piles, appropriately sized burrows, hollow logs, hollow trees) are located during surveys, the same buffers as described for American badger during non-breeding and breeding season (May 1 through June 30) shall be implemented. ▶ Feral pet trapping within suitable habitat for American badger shall be conducted by a qualified biologist with experience in the identification of American badger. Inadvertently trapped special-status species, including American Bader, will be released immediately upon discovery. ▶ Feral pet trapping within suitable habitat for ringtail shall be conducted by a qualified biologist with experience in the identification of ringtail. Inadvertently trapped special-status species, including ringtail, will be released immediately upon discovery. Prior to initiating trapping in suitable ringtail habitat, the Authority will consult CDFW to confirm trapping methods are sufficient in avoiding potential injury to ringtail. <p>Mitigation Measure 3.3-2l: Avoid Injury and Loss of Mountain Lion</p> <ul style="list-style-type: none"> ▶ The Authority shall conduct desktop analyses (e.g., review of land cover, slope, distance from development), coordination with local experts studying or tracking the species (if available), and field habitat surveys to determine the presence of nursery habitat suitable for mountain lion within preserves where 	<p>LTSM</p> <p>LTSM</p>

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
LTS = Less than significant PS = Potentially significant LTSM = Less than significant with mitigation			
		<p>treatments may occur. The desktop analysis shall be updated as habitat conditions or species occurrence information changes.</p> <ul style="list-style-type: none"> ▶ Where the desktop analysis determines that suitable nursery habitat is present, the Authority will conduct focused surveys of the treatment area and a 2,000-foot buffer for the presence of potential mountain lion nurseries. Surveys will be conducted within 7 days before commencement of treatment activities by a qualified wildlife biologist with familiarity with mountain lion and experience using survey methods for the species. Potential mountain lion dens will include caves, large natural cavities within rocky areas, or thickets deemed appropriate for use by mountain lions based on size and other characteristics (e.g., proximity to human development, surrounding habitat, and coordination with local experts to determine known locations of female mountain lions). The qualified wildlife biologist will survey for signs of mountain lion (e.g., tracks, scat, prey items such as a fresh kill) in the vicinity of potential nursery habitat to help determine whether the area may contain a mountain lion nursery. If signs of a mountain lion nursery are observed, further investigation will be required to determine if a mountain lion nursery is present (see below). ▶ If signs of a mountain lion nursery are found during surveys, further investigation will be required to determine if a mountain lion nursery is present. No treatment will occur in the area while further investigation is occurring. Survey methods will include the use of trail cameras, track plates, hair snares, and/or other noninvasive methods, as well as coordination with local experts tracking the species (if available). Surveys using these noninvasive methods will be conducted for three days and three nights to determine whether a nursery may be present. ▶ If a nursery is known to occur in the area or further signs of a nursery are detected (e.g., lactating adult females or kittens on camera, repeated detections of an adult female in the area, growls or calls from kittens), the Authority will implement a no-disturbance buffer of at least 2,000 feet (Wilmers et al. 2013) for a minimum of 10 weeks. Treatment activities will not occur within this buffer during this time to avoid disturbance, injury, or mortality of mountain lion. ▶ Feral pet trapping within suitable habitat for mountain lion shall be conducted by a qualified biologist with experience in the identification of mountain lion 	

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
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		<p>cubs. Inadvertently trapped special-status species, including mountain lion individuals, will be released immediately upon discovery. Prior to initiating trapping in suitable mountain lion habitat, the Authority will consult CDFW to confirm trapping methods are sufficient in avoiding potential injury to mountain lion individuals.</p> <p>Mitigation 3.3-2m: Minimize Loss of San Francisco Dusky-Footed Woodrat Nests</p> <ul style="list-style-type: none"> ▶ The Authority will survey for the presence of San Francisco dusky-footed woodrat nests within areas proposed for mechanical vegetation removal. The locations of nests shall be recorded, and nests flagged for avoidance by treatment activities. ▶ The Authority will consult with CDFW in areas where vegetation treatments would result in destruction or removal of a nest. Management actions shall be determined in consultation with CDFW and may include the live capture and relocation of woodrats to suitable adjacent habitats and the dismantling of nests. If consultation determines that nest dismantling may occur, nests shall be dismantled by hand under the supervision of a biologist. If young are encountered during the dismantling process, the material shall be placed back on the nest, and the nest shall remain undisturbed for two to three weeks to give the young enough time to mature and leave the nest on their own accord. After two to three weeks, the empty nest may be dismantled. Nest material shall be moved to suitable adjacent areas within suitable habitat that shall not be disturbed. As woodrats exhibit high site fidelity, buildings with previous woodrat nests shall be regularly inspected for potential intrusion to prevent infestation. <p>Mitigation 3.3-2n: Avoid Loss of Special-Status Bat Roosts</p> <ul style="list-style-type: none"> ▶ If exclusion of bats or fumigation is necessary in buildings and structures during the nursery season (April through August), a qualified biologist will conduct surveys for roosting bats. Surveys shall consist of daytime pedestrian surveys to look for visual signs of bats (e.g., guano), and if determined necessary, evening emergence surveys to note the presence or absence of bats. If evidence of bat roosting is found, the number and species of roosting bats will be determined. When special-status bat roosting sites are located in buildings, exclusion of bats and fumigation shall occur outside of the April through August nursery season. 	<p>LTSM</p> <p>LTSM</p>

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
LTS = Less than significant PS = Potentially significant LTSM = Less than significant with mitigation			
		<ul style="list-style-type: none"> ▶ The Authority shall not remove trees greater than 16 inches diameter at breast height (dbh) during the April through August nursery season, unless a qualified biologist conducts surveys for roosting bats where suitable large trees are to be removed. Surveys will consist of daytime pedestrian surveys to look for visual signs of bats (e.g., guano), and if determined necessary, evening emergence surveys to note the presence or absence of bats. If evidence of special-status roosting bats is found, removal of trees where potential special-status bat roosts are identified shall occur outside of the nursery season. If no evidence of special-status bat roosts is found, then the Authority may move forward with tree removal. 	
<p>Impact 3.3-3: Potential to Substantially Affect Riparian Habitat or Other Sensitive Natural Communities Identified by CDFW or USFWS</p> <p>Implementation of the IPM Program may occur within or adjacent to riparian and other sensitive natural communities. However, manual and mechanical IPM Program treatments that would be implemented for the removal of invasive plants and animals would not substantially affect riparian habitat or other sensitive natural communities due the limited size and short duration of disturbances. These activities would not change the community type or habitat function of a community, and the areas that would be treated would not be so large such that a significant reduction in acreage of these communities would result. Furthermore, the Authority would implement EPMs that would prohibit ground disturbing mechanical treatments and all chemical treatments within 15 feet of aquatic resources, and prohibit the broadcast spraying of herbicides within 50 feet of aquatic features (unless the compound is specifically registered for aquatic use) (EPM BIO-1). this would reduce impacts where riparian vegetation is present. Also, measures minimizing the potential for herbicide drift or runoff into surrounding areas would be implemented (EPM HAZ-5), which would reduce the potential for herbicides to enter non-target areas such as riparian areas and other sensitive natural communities. Therefore, the impact would be less than significant.</p>	LTS	No mitigation is required	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<p>LTS = Less than significant PS = Potentially significant LTSM = Less than significant with mitigation</p>			
<p>Impact 3.3-4: Potential to Substantially Affect State or Federally Protected Wetlands or Other Waters</p> <p>IPM Program treatments that are conducted near aquatic resources may result in runoff of sediment and pesticides to potentially protected wetlands and other waters. In addition, aquatic invasive animal control under the IPM Program would result in temporary fill and dewatering of potentially protected state and federal wetlands and other waters. However, the Authority would implement EPMs that require pre-treatment surveys for aquatic resources, prohibit ground disturbing mechanical treatments or any chemical treatments within 15 feet of aquatic resources, and prohibit the broadcast spraying of herbicides within 50 feet of aquatic features (unless the compound is specifically registered for aquatic use) (EPM BIO-1); require specific methods for safe handling of all pesticides and to minimize accidental spills (EPM HAZ-4); and limit herbicide applications during high winds or precipitation to minimize the potential for herbicide drift or off-site runoff (EPM HAZ-5). These EPMs would minimize the potential for water quality effects from manual, mechanical, and chemical treatments and no substantial degradation would occur. In addition, prior to conducting aquatic invasive animal control, the Authority would obtain all necessary permits prior to conducting activities within any state or federally protected waters, including a Clean Water Act Section 404 permit and Section 401 water quality certification. For permitted activities occurring in protected waters, the Authority would be required to meet a standard of no net loss of amount or function of wetlands or other waters. Therefore, the IPM Program would not substantially affect protected wetlands or other waters and the impact would be less than significant.</p>	LTS	No mitigation is required	LTS
<p>Impact 3.3-5: Potential to Conflict with Local Policies or Ordinances Protecting Biological Resources</p> <p>Portions of the IPM Program Area are within San Jose, Morgan Hill, and Santa Clara County and various policies and ordinances protection biological resources would apply to the IPM Program. The potential for adverse effects to special-status species, sensitive communities and riparian habitats, and protected waters are addressed in Impact 3.3-1, 3.3-2, and 3.3-3 respectively. Because the IPM Program would not result in any significant and unavoidable effects to any of these resources, it would be consistent with the protections required by each jurisdiction. Furthermore, although each jurisdiction has ordinances specific to tree removal because tree removal under the IPM Program would be limited to hazard trees on</p>	LTS	No mitigation is required	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<p>LTS = Less than significant PS = Potentially significant LTSM = Less than significant with mitigation</p>			
<p>Authority-owned public lands, it would be exempt from the Santa Clara County tree ordinance, and the San Jose and Morgan Hill ordinances do not apply to public lands. For these reasons there would be no conflicts with local policies or ordinances protecting biological resources and the impact would be less than significant.</p>			
<p>Impact 3.3-6: Potential to Conflict with the Provisions of the Santa Clara Valley Habitat Plan The IPM Program Area falls within the Plan Area for the Habitat Plan, which is a habitat conservation plan and a natural community conservation plan. The implementation of the IPM Program would not result in loss of open space or substantially adversely affect riparian or sensitive natural communities that would cause a conflict with the Habitat Plan. The EPMS and mitigation measures described throughout this section would minimize and avoid impacts to sensitive biological resources during IPM Program implementation. Furthermore, by maintaining open space preserves within the IPM Program Area, the Authority is conserving high quality habitat and natural ecosystems consistent with the objectives of the Habitat Plan. Therefore, IPM Program would not conflict with the provisions of the Habitat Plan and the impact would be less than significant.</p>	LTS	No mitigation is required	LTS
<p>Cultural and Tribal Cultural Resources</p>			
<p>Impact 3.6-1: Potential to Cause a Substantial Adverse Change in the Significance of a Historic Resource There are multiple previously recorded historic period resources within the IPM Program Area, and additional historic period resources may be present that have not been previously recorded. The IPM Program includes treatment activities that could alter existing buildings and structures within the IPM Program Area, such as through installing barriers to prevent pest entry and conducting building retrofits. Buildings and structures within the IPM Program receiving these treatments could be eligible for listing in the CRHR and therefore considered historic. Incorporating barriers or building retrofits to historic buildings or structures could change their historical significance. Therefore, this would be a potentially significant impact.</p>	PS	<p>Mitigation 3.6-1: Built-Environment Survey Before implementation of IPM treatment activities that could alter historic-age buildings or structures (50 years or older), the structures shall be surveyed by a qualified architectural historian who meets the Secretary’s Standards. The structure will be evaluated for eligibility for listing on the CRHR. If the structure is evaluated and deemed not eligible for listing on the CRHR, IPM Program treatment activities may proceed. If structures are determined to be eligible for the CRHR, IPM Program activities will follow the Secretary’s Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, or the Secretary’s Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings. If the Authority is unable to implement the Secretary’s Standards, then no building alterations to structures deemed eligible for listing on the CRHR shall occur.</p>	LTSM

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
LTS = Less than significant PS = Potentially significant LTSM = Less than significant with mitigation			
		archaeological resource), the archaeologist shall develop, and the Authority shall implement, appropriate procedures to protect the integrity of the resource and ensure that no additional resources are affected. Procedures could include but would not necessarily be limited to preservation in place (which shall be the preferred manner of mitigating impacts to archaeological sites), archival research, subsurface testing, or contiguous block unit excavation and data recovery (when it is the only feasible mitigation, and pursuant to a data recovery plan).	
Impact 3.6-3: Potential to Disturb Human Remains The records search conducted for the IPM Program noted the presence of a burial site within the IPM Program Area and ground-disturbing IPM treatment activities could uncover previously unknown human remains. If human remains are discovered during IPM treatments, the Authority would comply with California Health and Safety Code Sections 7050.5 and 7052 and California Public Resources Code Section 5097 regarding the treatment of human remains. Therefore, the impact would be less than significant.	LTS	No mitigation is required	LTS
Impact 3.6-4: Potential to Cause a Substantial Adverse Change in the Significance of a Tribal Cultural Resource Although no Native American tribes requested consultation pursuant to AB 52, the SLF search conducted by the NAHC for the IPM Program returned positive results and Native American tribes have previously inhabited portions of the IPM Program Area; therefore, there is a potential for tribal cultural resources to be present in the IPM Program Area. Ground-disturbing manual and mechanical activities proposed under the IPM Program could result in the inadvertent discovery or damage of unknown tribal cultural resources, if present. This would be a potentially significant impact.	PS	Mitigation Measure 3.6-2a: Records Search and Survey Before Ground Disturbance for Archaeological Resources Mitigation Measure 3.6-2b: Halt Ground Disturbance Upon Discovery of Subsurface Archaeological Features	LTSM LTSM
Hazards and Hazardous Materials			
Impact 3.4-1: Potential to Create a Health or Environmental Hazard Through the Use of Vehicle Fuels, Oils, and Lubricants and the Application of Chemicals in IPM Treatments Mechanical treatments proposed under the IPM Program would require the use of equipment and vehicles, which need fuel, oil, and lubricants to operate. Chemical treatments proposed under the IPM Program would involve the use of pesticides (i.e., herbicides, insecticides, rodenticides, and fumigants), which would be applied in targeted locations for invasive plant and pest control. These hazardous materials	LTS	No mitigation is required	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<p>LTS = Less than significant PS = Potentially significant LTSM = Less than significant with mitigation</p>			
<p>have the potential to enter the environment and adversely affect human health or sensitive ecosystems through leaks, accidental spills, or improper handling or use. The Authority would comply with laws, regulations, and policies relevant to the use, transport, storage, and disposal of hazardous materials to minimize potential health risks. EPA oversees pesticide use to minimize health and safety risks for workers through the WPS. Additional requirements for pesticide use are enforced by Cal/OSHA, which provides safety standards for workplaces. DPR administers the California Pesticide Regulatory Program, which regulates the sale and use of pesticides in the state. EPMs HAZ-4 through HAZ-6 have also been incorporated into the IPM Program to further minimize the potential for impacts to human health and the environment from pesticide use. These EPMs include requirements to minimize spills, properly dispose of pesticide containers, triple rinse pesticide containers, lawfully store and handle pesticides, and dispose of unused pesticides and pesticide containers to adequately safeguard human, fish, and wildlife health and prevent soil and water contamination. With implementation of existing laws and regulations and the proposed EPMs, the potential to create a health or environmental hazard associated with use, transport, storage, and disposal of pesticides and other hazardous materials under the IPM Program would be less than significant.</p>			
<p>Impact 3.4-2: Potential to Expose the Public or Environment to Significant Hazards from Disturbance to Known Hazardous Materials Sites Ground disturbing manual and mechanical IPM treatments have the potential to expose workers, the public, and the environment to risks associated with existing hazardous materials if present within soils in the treatment areas. Treatment activities would typically occur in undeveloped areas, which are unlikely to contain hazardous materials. However, there is one known active hazardous materials site in the IPM Program Area, the Wright Mine in Rancho Canada del Oro Open Space Preserve. Disturbance of contaminated soils could result in the exposure of the public and environment to health hazards from existing hazardous materials, if present. Therefore, this impact is potentially significant.</p>	<p>PS</p>	<p>Mitigation Measure 3.4-2: Identify and Avoid Known Hazardous Waste Sites Prior to the start of IPM treatment activities requiring soil disturbance in the vicinity of the abandoned Wright Mine, the Authority shall mark/flag the Wright Mine, including a 100-foot buffer around the mine area, and no soil disturbing IPM treatment activities will occur within 100 feet of the site boundaries. If it is determined through coordination with the Central Coast RWQCB, the lead agency responsible for the site, that no potential or known contamination is located on the site, the treatment may proceed as planned.</p>	<p>LTSM</p>

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
LTS = Less than significant PS = Potentially significant LTSM = Less than significant with mitigation			
Hydrology and Water Quality			
<p>Impact 3.5-1: Potential to Violate Water Quality Standards or Waste Discharge Requirements, Substantially Degrade Surface or Ground Water Quality, or Conflict with or Obstruct the Implementation of a Water Quality Control Plan Through Manual or Mechanical IPM Treatment Activities</p> <p>The proposed IPM Program includes manual and mechanical treatment activities for invasive plant and wildlife control in the IPM Program Area. Manual treatment activities would generally not result in substantial ground disturbance that could result in adverse effects to water quality. Certain treatments, such as mulching and application of weedmats, would use organic materials and fabrics or plastics. Although mulches are made of organic materials, weedmats could result in an introduction of inorganic materials to water bodies, if in the immediate vicinity. Mechanical IPM treatments, such as mowing/cutting and cultivation, could disturb soils and contribute to runoff into surface waters. In addition, mechanical equipment uses gasoline, diesel fuel, and oils, which have the potential to leak or spill and enter nearby water bodies in runoff. EPMs would be implemented to minimize the potential impacts to water quality, including requiring surveys and for aquatic habitat and prohibiting mechanical equipment use within 15 feet of aquatic resources (EPM BIO-1), and requiring daily equipment checks for leaking equipment when in use and prompt removal if a leak is found (EPM HAZ-1). Recognizing the environmental protections of the EPMs, potential impacts to water quality and associated conflicts with the San Francisco Bay and Central Coast RWQCBs' Basin Plans from manual and mechanical IPM treatment activities would be less than significant.</p>	LTS	No mitigation is required	LTS
<p>Impact 3.5-2: Potential to Violate Water Quality Standards or Waste Discharge Requirements, Substantially Degrade Surface or Ground Water Quality, or Conflict with or Obstruct the Implementation of a Water Quality Control Plan Through Chemical IPM Treatment Activities</p> <p>Chemical IPM treatment activities under the proposed IPM Program would include the use of insecticides, a rodenticide, herbicides, and a fumigant. These chemicals have the potential to contaminate surface or groundwater quality if used in close proximity to surface waters, spilled, or used under the wrong conditions. Because the fumigant and the majority of the insecticides and rodenticides would be used in structures and buildings and delivered through tamper proof bait stations, the</p>	LTS	No mitigation is required	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<p>LTS = Less than significant PS = Potentially significant LTSM = Less than significant with mitigation</p>			
<p>likelihood of these entering the environment and degrading water quality is low. The proposed IPM Program would address concerns related to the use of herbicides by ensuring that herbicides are applied according to the manufacturer’s label directions and consistent with EPMs HAZ-4, HAZ-5, and BIO-1 which protect surface and groundwaters, control drift, and ensure proper storage, handling, and cleanup. Because these protective measures would be implemented into treatment design, risk of substantial degradation to water quality and associated conflicts with San Francisco Bay and Central Coast RWQCBs’ Basin Plans from herbicide use would be reduced such that this impact would be less than significant.</p>			
<p>Impact 3.5-3: Potential to Release Substantial Pollutants due to Flooding The IPM Program Area has the potential to be inundated in the areas near creeks in the event of a flood. However, quantities of pollutants would not be substantially increased over existing levels and present in the IPM Program Area because potentially hazardous materials would only be stored in designated locations that are currently used for materials storage; equipment would be inspected daily for leaks to prevent gasoline, diesel fuel, lubricating oils, or grease from entering the environment (EPM HAZ-1); and only pesticides registered for aquatic use would be used within 50 feet of aquatic resources or within 100 feet of aquatic resources when precipitation is forecasted within 24 hours (EPM HAZ-5 and BIO-1). Furthermore, the Santa Clara County General Plan indicates that there is only a one percent chance of a flood occurring each year that would be capable of creating substantial flooding along creeks (Santa Clara County 1994); therefore, the risk of a flood that could inundate the IPM Program Area is low. Lastly, IPM activities would only increase by a few additional treatments over current levels under the IPM Program, which would not result in a substantial increase in the presence of potential pollutants in the IPM Program Area. Therefore, this impact would be less than significant.</p>	LTS	No mitigation is required	LTS
<p>Recreation</p>			
<p>Impact 3.7-1: Potential to Increase the Use of Existing Parks or Other Recreation Facilities Resulting in Physical Deterioration of the Facility The IPM Program proposes to implement various pest control treatment activities on recreational facilities within the IPM Program Area. Mechanical and chemical treatment activities could result in temporary disruptions to recreational uses and access when conducted in public preserves within the IPM Program Area due to</p>	LTS	No mitigation is required	LTS

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<p>LTS = Less than significant PS = Potentially significant LTSM = Less than significant with mitigation</p>			
<p>closures from heavy equipment use or use of herbicides. Recreational users of IPM Program Area preserves may elect to visit alternative regional recreational facilities during closures; however, disruptions to recreational uses would be temporary, lasting between one day and one week, and would typically be confined to one small area of a larger preserve. Therefore, when occurring in an IPM Program Area preserve that is open to the public, other areas of the preserve would likely remain open to recreation. Furthermore, only three of the 14 preserves in the IPM Program Area are open to the public. Because the IPM Program would be implemented across the preserves, the rate at which activities requiring public closures would be minimal. Furthermore, in the long-term, pest control treatment activities would likely benefit public recreation by reducing the presence of nuisance pests, such as poison oak and wasps. The IPM Program would not result in a substantial increase in the use of existing parks or recreation facilities and would not result in the physical deterioration of recreational facilities. Therefore, this impact would be less than significant.</p>			
<p>Wildfire</p>			
<p>Impact 3.8-1: Potential to Substantially Exacerbate Fire Risk and Expose People to Wildfire Pollutants or Uncontrolled Spread of a Wildfire Pest management activities implemented under the IPM Program could result in accidental wildfire ignition risks from the use of vehicles and mechanical equipment in the IPM Program Area, and from the implementation of green flaming to treat vegetation on agricultural lands. However, several EPMs would be implemented to reduce the risk of wildfire ignition from treatment activities by properly maintaining all diesel- and gasoline-powered equipment (EPM HAZ-1), requiring spark arrestors (EPM HAZ-2), and prohibiting smoking in vegetated areas (EPM HAZ-3). Green flaming would be conducted on wet days when fire risk is low, and truck-mounted or backpack water tanks would be on-site during implementation. Furthermore, several fire departments are located in close proximity to the IPM Program Area and would be expected to adequately respond in the event of a wildfire to prevent substantial uncontrolled spread. Implementation of the IPM Program is expected to increase the number of simultaneous IPM treatment activities by a few additional treatments over current levels within the IPM Program Area, which would not be a substantial increase in treatment activities and their associated wildfire ignition risks. Additionally, the IPM</p>	<p>LTS</p>	<p>No mitigation is required</p>	<p>LTS</p>

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
<p>LTS = Less than significant PS = Potentially significant LTSM = Less than significant with mitigation</p>			
<p>Program does not include any new housing or other new land uses where the public would congregate; there would be no new occupants that could be exposed to pollutant concentrations from a wildfire or the uncontrolled spread of as wildfire as a result of the IPM Program. In the long-term, the IPM Program is expected to reduce wildfire risk by removing invasive and nuisance vegetation. Therefore, with implementation of EPMs; availability of fire protection services in the IPM Program Area; and anticipated fire risk reduction outcomes of the IPM Program; the IPM Program would not substantially exacerbate fire risk and expose people to the uncontrolled spread of wildfire or wildfire related pollutants. This impact would be less than significant.</p>			
<p>Impact 3.8-2: Potential to Expose People or Structures to Substantial Risks Related to Post-Fire Landslides or Debris Flow As discussed in Impact 3.8-1, the IPM Program would not substantially exacerbate fire risk, and thus would not result in a substantial increase in post-fire flooding and landslide due to an increase in wildfire risk itself. Ground disturbing manual and mechanical IPM activities have the potential to destabilize soils, which could increase the risk of post-fire landslides or debris flow if IPM treatments occur on steep slopes. However, manual and mechanical treatment activities would not typically occur on steep slopes and may be replaced with spraying of herbicides when treatment is deemed necessary, which would not result in ground disturbance and associated slope instability. Ground disturbing mechanical activities such as cultivation and discing would be used to prepare soils for crop production on agricultural lands, which are generally flat and not susceptible to landslides or debris flow. In addition, the IPM Program Area includes undeveloped lands where few buildings and structures are located, and it does not include new housing or any other growth-inducing features. Therefore, it would not place additional people or structures in the IPM Program Area. The IPM Program would not expose people or structures to substantial risks from post-fire landslides or flooding and this impact would be less than significant.</p>	LTS	No mitigation is required	LTS

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1 INTRODUCTION

This Draft Program Environmental Impact Report (PEIR) evaluates the environmental impacts of the proposed Integrated Pest Management (IPM) Program. The Santa Clara Valley Open Space Authority (Authority) is the lead agency for approval of the proposed IPM Program. This Draft EIR has been prepared in accordance with the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations [CCR] Section 15000 et seq). This chapter of the Draft PEIR provides information on the following:

- ▶ a summary description of the program requiring environmental analysis;
- ▶ type, purpose, and intended uses of the Draft PEIR;
- ▶ scope of the Draft PEIR;
- ▶ agency roles and responsibilities; and
- ▶ standard terminology.

1.1 PROGRAM REQUIRING ENVIRONMENTAL ANALYSIS

The following is a summary of the IPM Program. For further information on the proposed IPM Program, see Chapter 2, "Program Description."

The Authority proposes to implement an IPM Program to comprehensively direct pest management on Authority open space preserves. Most pests are invasive species that are not native to the region and were introduced deliberately or by accident through human activities; thus, the terms "pest" and "invasive" are used interchangeably throughout this document. The IPM Program is intended to formalize guidelines and procedures for the careful management of pests throughout the Authority's preserves, while protecting natural resources and public health. Specific objectives of the proposed IPM Program include the following:

- ▶ Develop and implement site-specific pest management strategies that are effective in controlling targeted pests while avoiding damage to natural resources, promoting visitor safety and enjoyment, and protecting human health.
- ▶ Keep the interested public informed about treatment strategies, upcoming projects, and environmental and public health protection measures.
- ▶ Inhibit the establishment of new invasive species on Authority preserves, such as new invasive plants in natural areas, rangelands, and agricultural properties.
- ▶ Maintain an inventory of invasive species infestations, monitor treatment effectiveness, and incorporate relevant monitoring results into future treatment applications.
- ▶ Implement an adaptive management framework to promote the long-term effectiveness of pest management activities.
- ▶ Develop and implement an IPM Program Guidance Manual (IPM Manual) to standardize pest management and IPM procedures.

To achieve these objectives, the Authority is preparing an IPM Manual to facilitate the design and guide the implementation of pest management strategies that are effective in controlling target pests; cost-effective; safe for human health; and protective of natural resources, including native species, special-status species, and water quality. The IPM Manual was developed based on a review of existing scientific literature and reports documenting best approaches to effective pest management, as well as pest management approaches that have been successfully implemented by the Authority and other local agencies over the past several decades. The overall framework of the

IPM Program includes identifying the target species and understanding their life cycle, assessing distribution and abundance of pests, setting thresholds for targeted control, assessing site conditions to identify appropriate treatments using the most benign suite of control methods to target the most vulnerable stage in a pest's life cycle, and preventing pest problems through early detection and rapid response programs.

1.2 PURPOSE AND INTENDED USES OF THIS DRAFT PEIR

According to CEQA, preparation of an environmental impact report (EIR) is required whenever it can be fairly argued, based on substantial evidence, that a proposed project may result in a significant environmental impact. An EIR is an informational document used to inform public-agency decision makers and the general public about the significant and potentially significant environmental impacts of a project, identify feasible ways to minimize the significant impacts, and describe a reasonable range of alternatives to the project that could feasibly attain most of the basic objectives of the project while substantially lessening or avoiding any of the significant environmental impacts. Public agencies are required to consider the information presented in the EIR when determining whether to approve a project.

This Draft PEIR has been prepared to meet the requirements of a Program EIR as defined by State CEQA Guidelines Section 15168(c) for streamlining later activities. According to Section 15168 of the State CEQA Guidelines, a Program EIR may be prepared on a series of actions that can be characterized as one large project and are related to, among other things, the issuance of general criteria to govern the conduct of a continuing program or individual activities carried out under the same authorizing statutory or regulatory authority, and having generally similar environmental effects that can be mitigated in similar ways.

The Authority must evaluate the later activities associated with the IPM Program to determine whether such activities have been covered in this PEIR. Such evaluations must ascertain whether these future pest management activities are consistent with the activities contained in the IPM Program and would have effects that were examined in the PEIR. If the Authority finds that the impacts were covered in the Draft PEIR and no new or substantially more severe significant effects could occur and substantially different mitigation measures would be required for a later pest management activity, the activity can be found to be within the scope of this PEIR. In this circumstance, no additional CEQA documentation would need to be prepared or publicly circulated (State CEQA Guidelines Section 15168[c][2] and [4]). A checklist or similar documentation would be used to substantiate the "within-the-scope" finding would provide the substantial evidence required to reach that conclusion. For the IPM Program, this documentation would be completion of a Within-the-Scope Checklist. The Authority may act on the proposed later pest management activity using this documentation and the Draft PEIR for CEQA compliance purposes. If the later pest management activity is found to be within the scope of this PEIR and the project is approved, the Authority would file a Notice of Determination.

1.3 SCOPE OF THIS DRAFT PEIR

Under the CEQA statute and the State CEQA Guidelines, a lead agency may limit an EIR's discussion of environmental effects when such effects are not potentially significant (PRC Section 21002.1[e]; State CEQA Guidelines Sections 15128, 15143). Information used to determine which impacts would be potentially significant was derived from review of the IPM Program; review of applicable planning documents and CEQA documentation; review of similar pest management programs; comments received during a public scoping meeting held on October 29, 2019; and comments received on the Notice of Preparation (NOP) (see Appendix A of this Draft PEIR).

The NOP was distributed on October 17, 2019 to responsible and trustee agencies, interested parties, and organizations, as well as private organizations and individuals that may have an interest in the IPM Program. The purpose of the NOP and the scoping meeting was to provide notification that a PEIR for the IPM Program was being prepared and to solicit input on the scope and content of the environmental document. Further information on the NOP and scoping process is provided below in Section 1.5, "Public Review Process." As a result of the review of existing information and the scoping process, it was determined that the following environmental topics listed below

should be evaluated fully in this Draft PEIR, as well as other CEQA-mandated issues (e.g., cumulative impacts, growth-inducing impacts, significant unavoidable impacts, alternatives):

- ▶ aesthetics,
- ▶ cultural and tribal cultural resources,
- ▶ biological resources,
- ▶ hazards and hazardous materials,
- ▶ hydrology and water quality,
- ▶ recreation, and
- ▶ wildfire.

1.4 AGENCY ROLES AND RESPONSIBILITIES

1.4.1 Lead Agency

The Authority is the lead agency responsible for approving and carrying out the IPM Program and for implementing the requirements of CEQA. After the Draft PEIR public-review process is complete, the Authority will determine whether to certify the PEIR (see State CEQA Guidelines Sections 15090) and approve the IPM Program.

1.4.2 Trustee and Responsible Agencies

A trustee agency is a State agency that has jurisdiction by law over natural resources that are held in trust for the people of the State of California. The only trustee agency that has jurisdiction over resources potentially affected by the project is the California Department of Fish and Wildlife.

Responsible agencies are public agencies, other than the lead agency, that have discretionary-approval responsibility for reviewing, carrying out, or approving elements of a project. Responsible agencies should participate in the lead agency's CEQA process, review the lead agency's CEQA document, and use the document when making a decision on project elements. It is anticipated that responsible agencies could include the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Santa Clara Valley Habitat Agency, Santa Clara County Agricultural Commissioner, and the San Francisco Bay and Central Coast Regional Water Quality Control Boards. Potential permits and approvals required are disclosed in Table 2-4 of the Draft PEIR.

1.5 PUBLIC REVIEW PROCESS

As identified above in Section 1.3, "Scope of this Draft PEIR," in accordance with CEQA regulations, a NOP was distributed on October 17, 2019. The NOP was available at the Authority office, located at 33 Las Colinas Lane in the City of San Jose, and online at www.openspaceauthority.org/IPM. The NOP, responses to the NOP, and input received at the public scoping meeting are included in Appendix A of this Draft PEIR.

This Draft PEIR is being circulated for public review and comment for a period of 45 days. The public review and comment period begins on March 31, 2021 and closes on May 17, 2021. During this period, comments from the general public as well as organizations and agencies on environmental issues may be submitted to the Authority. Comments can be mailed to Galli Basson, Resource Management Specialist, at 33 Las Colinas Lane, San Jose, CA 95119 or emailed to gbasson@openspaceauthority.org. All comments must be received by 5:00 p.m. on May 17, 2021.

A public meeting will be held on the Draft PEIR on April 20, 2021, at 6:00 p.m. online via live stream due to the COVID-19 pandemic and restrictions placed on in-person gatherings. Oral and written comments will be received at the public meeting. Upon completion of the public review and comment period, a Final PEIR will be prepared that will

include both written and oral comments on the Draft PEIR received during the public-review period, responses to those comments, and any revisions to the Draft PEIR made in response to public comments. The Draft PEIR and Final PEIR will comprise the PEIR for the IPM Program.

Before adopting the IPM Program, the lead agency is required to certify that the PEIR has been completed in compliance with CEQA, that the decision-making body reviewed and considered the information in the PEIR, and that the PEIR reflects the independent judgment of the lead agency.

1.6 DRAFT PEIR ORGANIZATION

This Draft PEIR is organized into chapters, as identified and briefly described below. Chapters are further divided into sections (e.g., Chapter 3, “Environmental Impacts and Mitigation Measures” and Section 3.3, “Biological Resources”):

The “Executive Summary”: This chapter introduces the IPM Program; provides a summary of the environmental review process, effects found not to be significant, and key environmental issues; evaluates growth-inducing impacts and irreversible and irretrievable commitment of resources; lists significant impacts and mitigation measures to reduce significant impacts to less-than-significant levels; and discloses any significant and unavoidable adverse impacts.

Chapter 1, “Introduction”: This chapter provides a description of the lead, trustee, and responsible agencies, the legal authority and purpose for the document, and the public review process.

Chapter 2, “Program Description”: This chapter describes the location, background, and goals and objectives for the IPM Program. It also describes the various pest management and treatment methods in detail. The anticipated permits and approvals that are anticipated to implement the IPM Program are summarized. Lastly, the chapter lists the environmental protection measures that would be incorporated into the design of treatments under the IPM Program as part of the program description to avoid or minimize environmental impacts and help achieve compliance with applicable laws and regulations.

Chapter 3, “Environmental Impacts and Mitigation Measures”: The sections within this chapter evaluate the expected environmental impacts generated by the IPM Program, arranged by subject area (e.g., aesthetics, hazards and hazardous materials). Within each subsection of Chapter 3, the regulatory background, existing conditions, analysis methodology, and thresholds of significance are described. The anticipated changes to the existing conditions after implementation of the IPM Program are then evaluated for each subject area. For any significant or potentially significant impact that would result from IPM Program implementation, mitigation measures are presented and the level of impact significance after mitigation is identified. Environmental impacts are numbered sequentially within each section (e.g., Impact 3.2-1, Impact 3.2-2, etc.). Any required mitigation measures are numbered to correspond to the impact numbering. Accordingly, the mitigation measure for Impact 3.2-2 would be Mitigation Measure 3.2-2.

Chapter 4, “Cumulative Impacts”: This chapter evaluates potential impacts that would result from implementation of the IPM Program together with other past, present, and probable future projects.

Chapter 5, “Alternatives”: This chapter evaluates alternatives to the IPM Program, including alternatives considered but eliminated from further consideration, the No Program Alternative, and two other alternatives. The environmentally superior alternative is identified.

Chapter 6, “Report Preparers”: This chapter identifies the preparers of this document.

Chapter 7, “References”: This chapter identifies the organizations and persons consulted during preparation of this Draft PEIR and the documents and individuals used as sources for the analysis.

1.7 STANDARD TERMINOLOGY

This Draft PEIR uses the following standard terminology:

“No impact” means no change from existing conditions (no mitigation is needed).

“Potentially significant impact” means an impact that might cause a substantial adverse change in the environment (mitigation is recommended because potentially significant impacts are treated as significant).

“Significant impact” means an impact that would cause a substantial adverse change in the physical environment (mitigation is recommended).

“Significant and unavoidable impact” means an impact that would cause a substantial adverse change in the physical environment and that cannot be avoided, even with the implementation of all feasible mitigation.

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2 PROGRAM DESCRIPTION

The Santa Clara Valley Open Space Authority (Authority) proposes to implement an Integrated Pest Management Program (IPM Program) to comprehensively direct pest management on Authority-owned open space lands. The IPM Program is intended to describe comprehensive guidelines and procedures for the careful pest management throughout the Authority's preserves while protecting natural resources and public health. The Authority has prepared an IPM Program Guidance Manual (IPM Manual, Appendix B), which would be used to implement pest management actions adopted in the IPM Program. The IPM Manual presents an objective evaluation tool and process for the Authority to effectively and efficiently make IPM Program decisions while providing for safe recreational use of the preserves and protecting natural and cultural resources.

The proposed IPM Program, as described by the IPM Manual, is the subject of this Program Environmental Impact Report (PEIR), which is prepared pursuant to the California Environmental Quality Act (CEQA) and State CEQA Guidelines.

2.1 INTEGRATED PEST MANAGEMENT PROGRAM OVERVIEW

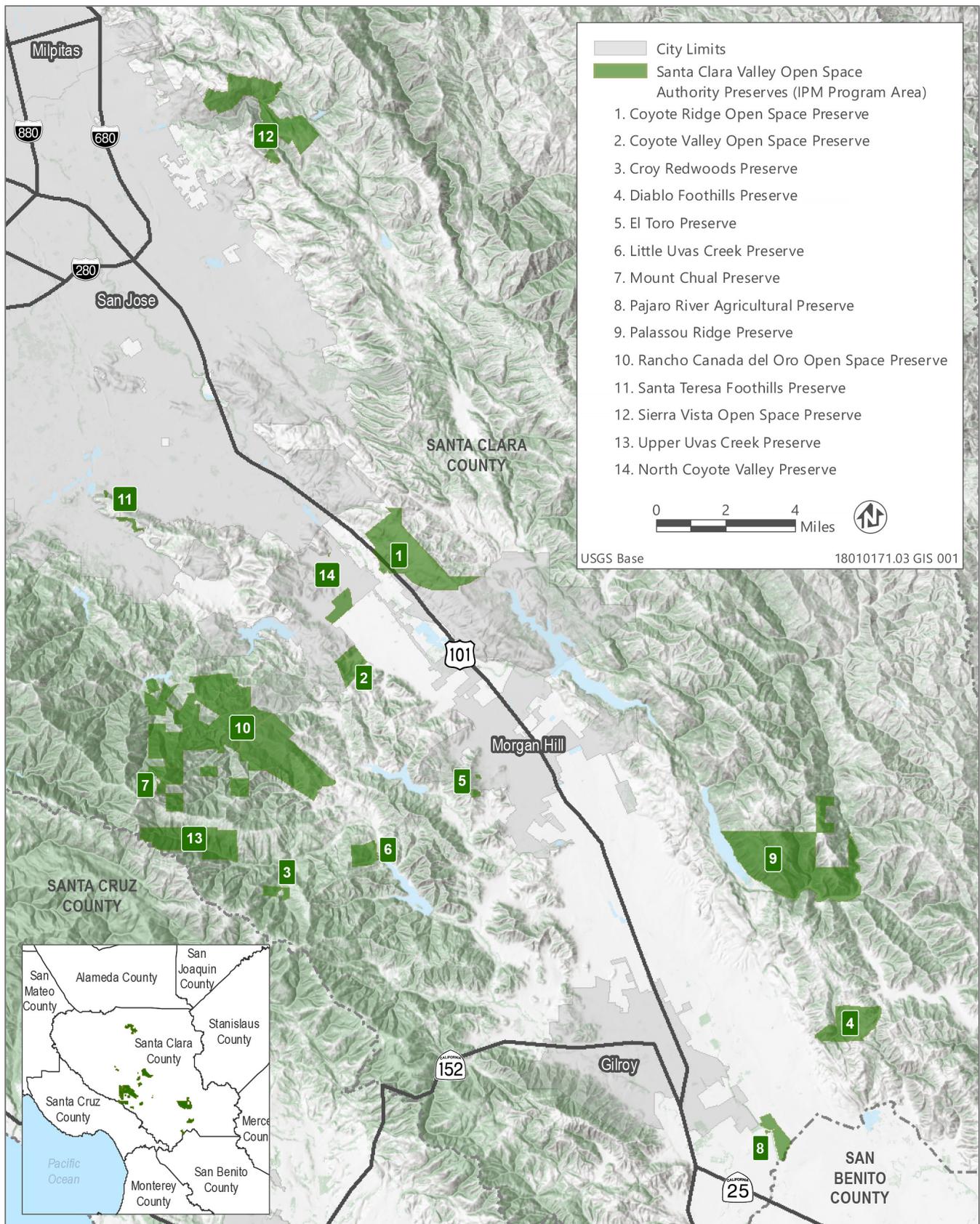
The IPM Manual was developed to facilitate the design and implementation of pest management strategies that are effective in controlling the target pests, cost-effective, safe for human health, and protective of natural resources including native species, special-status species, and water quality. The IPM Manual is designed to inform the decision-making process in the management of the Authority's open space preserves.

Most pests are invasive species that are not native to the region and were introduced deliberately or by accident through human activities. As described in greater detail in Sections 3 through 7 of the IPM Manual (Appendix B), invasive plants, animals, and pathogens can negatively impact native species through a variety of mechanisms, alter natural ecosystem processes, create fire hazards, and degrade recreational opportunities within the Authority's lands. Though native plants and animals are critical components of the natural ecosystems that the Authority protects, certain species can have negative impacts on natural lands and are also considered pests. Accordingly, the terms "pest" and "invasive" are used interchangeably throughout this document. Examples of native plant and animal species that are regarded as pests by the Authority include rodents that colonize buildings, stinging insects that establish around picnic areas, and plants with spines or oils (e.g., poison oak) that can cause allergic reactions along trail corridors.

The IPM Program Area includes the 14 open space preserves owned and managed by the Authority and excludes privately-owned land over which the Authority holds conservation easements or that the Authority manages on behalf of other agencies or non-profits. Refer to Figure 2-1 for an overview of the regional vicinity of the IPM Program Area and for an overview of the preserves included in the IPM Program Area.

The IPM Manual was developed based on review of existing scientific literature and plans documenting best approaches to effective pest management, as well as pest management approaches that have been successfully implemented by the Authority over the past several decades. There are six main components of the IPM Program:

1. Identifying a target species and understanding its life cycle and ecology;
2. monitoring and assessing the pest's distribution and abundance to gauge its impacts;
3. setting thresholds for targeted control to limit the pest's impacts while avoiding unnecessary and potentially costly treatments;
4. assessing site conditions to identify appropriate control treatments;
5. using the most benign, effective suite of control methods, by targeting the most vulnerable stage in a pest's life cycle and using biological, cultural, physical/mechanical, and chemical management tools; and
6. preventing pest problems through implementation of best management practices, early detection, and rapid response programs, among other prevention approaches.



Source: Data received from the Authority in 2019 and 2021

Figure 2-1 IPM Program Area

The factors used to design specific prescriptions and the resulting treatments vary depending on the type of targeted pest and the environment in which it occurs. Given the varied landscapes in which pests could occur, and that pest management techniques are rapidly evolving through scientific research and technical innovations, the IPM Manual outlines approaches for different IPM management categories, which include natural lands, agricultural lands, recreational facilities, and buildings and structures.

A variety of methods can be used to manage pest plants and animals. The IPM Program evaluated herein includes manual, mechanical, and chemical control methods, which are described in greater detail in Section 2.7.1, "IPM Treatment Types." The IPM Manual also includes cultural control techniques as another pest management approach, such as grazing and prescribed burning. The Authority previously developed separate grazing policies and completed specific grazing plans and associated evaluations for its preserves; therefore, grazing is not described in detail in the IPM Manual and is not evaluated in this PEIR. Fuel management techniques, such as prescribed burning, will be described and evaluated in future separate Authority long-range planning and environmental compliance documents specific to fire fuel management. Therefore, fuel management techniques are also not evaluated in this PEIR.

The costs and benefits of each treatment approach often depend on the specific circumstances of the pest infestation, including the ecology and impacts of the pest species, its population size and distribution, and its location with respect to other conservation values (e.g., special-status species) and human facilities and activities (e.g., public access facilities and trails). As a result, it is not feasible to prescribe one treatment for each type of pest; instead, the IPM Manual outlines an approach to determining the appropriate treatment based on the relevant factors that influence its effectiveness, efficiency, and risks. Importantly, the IPM Program approach incorporates an adaptive framework designed to achieve the Authority's land management goals over time by providing opportunities to integrate newly developed scientific techniques and the lessons learned from monitoring treatments over time.

As part of implementation, the Authority would develop a priority system to rank pest control projects, develop an early detection and rapid response program, and conduct regional pest management research and monitoring to stay apprised of recent innovations in pest control science, pest control methods, and pests that are detected near Authority preserves but may not yet be problematic. An annual IPM Work Plan would be developed to describe, prioritize, and direct the upcoming year's activity, before initiating treatments. Pest management activities would be reviewed and approved, and priorities would be set through the development and approval of the annual IPM Work Plan. Any new pest management activities not included in the annual IPM Work Plan would be reviewed on an individual basis throughout the year. In addition, an annual IPM Program Report would be developed at the end of each year. It would summarize the IPM Program work completed in the previous year, evaluate the IPM Program's progress in meeting overall goals by monitoring the effectiveness of treatments, and would include any recommended modifications to the IPM Program to be included the following year, which would facilitate adaptive management of the program.

2.2 PROCESS FOR CHANGES TO THE IPM PROGRAM

As described above, the IPM Program would employ adaptive management that responds to annual pest conditions on Authority Preserves, as well as research-based changes in IPM techniques and equipment. Each year Authority staff would select IPM treatment project sites for implementation, through preparation of an Annual IPM Work Plan, based on current conditions. In some cases, new pests may require treatment or new treatment methods may be discovered. Each year Authority staff would determine the IPM activities that need to be implemented and review those activities against those included in the IPM Manual and evaluated in this PEIR. In certain instances, the Authority would determine if new activities are not evaluated under this PEIR and the IPM Manual. Examples include new IPM activities that are substantially different from the activities described herein; new preserves are acquired by the Authority that require substantially different IPM treatment activities (e.g., because of differences in the sensitive resources or pests that are present), or new chemicals with different active ingredients from those described herein are proposed for use. The Authority may be required to amend the IPM Manual and prepare appropriate subsequent or supplemental environmental documents.

Regarding chemical treatments, the list of approved pesticides (refer to Table 2-3) is intended to change over time as the science of pest control advances and more effective, safer, and less harmful pesticides are developed; as manufacturers update, discontinue, or substitute products; and as the Authority's target pests change over time. The process for updating the list of approved pesticides is described in detail in the IPM Manual (Appendix B) and summarized below.

- ▶ **Product Eliminations:** In instances where products on the list are no longer available from the manufacturer, are found to be ineffective against the Authority's target pests, or if new risks are discovered that were not previously known or evaluated by the Authority (see Appendix HAZ-1), a product may be eliminated from the List of Approved Pesticides. This type of change would require an update to the list of approved pesticides but would not require additional environmental review.
- ▶ **Product Substitutions:** When manufacturers substitute a product or change a product name or formulation, but the active ingredient stays the same, the new product can be substituted for the old product on the list of approved pesticides. In general, this type of change to the list would not trigger a change in condition or result in the need for additional environmental documentation. However, this change would require an update to the Authority's list of approved pesticides. The substitution would be reviewed in light of the analysis in the PEIR, however, revisions to the PEIR would only be required if the substitution results in a substantive change in human health exposure, environmental fate, or toxicity. Public circulation of an EIR supplement or revised EIR would only be required if the substitution led to a new significant environmental impact or a substantial increase in an identified significant environmental impact.
- ▶ **Product Additions:** In instances where new products with new active ingredients not evaluated in this PEIR are found to be safer, more effective, and/or less costly than the chemicals evaluated herein, the Authority may elect to add new pesticides. This type of change would require additional toxicological review, and depending on the results, may also require additional environmental documentation. The addition would be reviewed in light of the analysis in the PEIR, however, revisions to the PEIR would only be required if the added compound results in a substantive change in human health exposure, environmental fate, or toxicity. Public circulation of an EIR supplement or revised EIR would only be required if use of the additional compound led to a new significant environmental impact or a substantial increase in an identified significant environmental impact.

Based on the process described above, Authority staff would determine whether any chemical product substitutions or additions would be required and would consult with appropriate technical experts and Pest Control Advisors (PCAs) to determine whether any change would occur with respect to human health exposure, environmental fate, or toxicity compared to that evaluated in this PEIR. If it is determined that the potential effects related to the new chemical are covered by this PEIR, the Authority would note this for its records, update the IPM Manual, and no further analysis would be required. If it is determined that proposed additions or substitutions are not covered in this PEIR, then the Authority would complete the appropriate additional environmental documentation and seek discretionary consideration before use of the chemicals. This process of evaluation and potential later environmental documentation would be the same for other IPM Program changes, such as the incorporation of new preserves or development of new pest control techniques.

2.3 GEOGRAPHIC EXTENT OF THE PROGRAM

The Authority has preserved over 25,000 acres of open space, natural areas, watersheds, and wildlife habitat in the cities of Campbell, Milpitas, Morgan Hill, San Jose, and Santa Clara and the unincorporated areas of Santa Clara County. Some of these lands are Authority-owned and -managed preserves. On other privately-owned lands, the Authority holds easements, but the lands are managed by private property owners, other agencies, or non-profit organizations.

The IPM Program Area includes the 14 open space preserves currently owned and managed by the Authority, totaling 16,446 acres (refer to Figure 2-1). Of the Authority preserves, three are currently open to the public. The preserves included in the IPM Program are described in Table 2-1 below. The IPM Program would also be applied to new open

space land acquired by the Authority to add or expand preserves in the future. As described above in Section 2.2, "Process for Changes to the IPM Program," the Authority would evaluate the conditions of newly acquired preserves to determine if the potential effects that could occur are examined in this PEIR. If it is determined that the potential effects associated with the newly acquired preserve are covered by this PEIR, the Authority would note this for its records, update the IPM Manual, and no further analysis would be required. If it is determined that environmental effects specific to the additional preserve land are not covered in this PEIR, then the Authority would complete the appropriate additional environmental documentation and seek discretionary consideration before applying IPM techniques.

Table 2-1 Authority-Owned and Managed Preserves Included in the IPM Program Area

Preserve # from Figure 2-1	Preserve Name	Acres	Public Access Status
1	Coyote Ridge	1,832	Closed
2	Coyote Valley	348	Open
3	Croy Redwoods	116	Closed
4	Diablo Foothills	834	Closed
5	El Toro Preserve	39	Closed
6	Mount Chual	552	Closed
7	Pajaro River Agricultural Preserve	284	Closed
8	Palassou Ridge	3,524	Closed
9	Rancho Canada del Oro	5,538	Open
10	Santa Teresa Foothills	62	Closed
11	Sierra Vista	1,590	Open
12	Upper Uvas	1,216	Closed
13	Little Uvas	276	Closed
14	North Coyote Valley	235	Closed

Note: Acreages are rounded to the nearest one.

Source: Data compiled by Authority and Ascent Environmental in 2019 and 2021

2.4 POLICY AND PLANNING CONTEXT FOR THE IPM PROGRAM

The Authority's IPM Policy guides Authority staff in preventing and managing pests in its open space preserves. It was developed with input from the Citizen's Advisory Committee and partner agencies and organizations. The policy does not apply to privately-owned land over which the Authority holds conservation easements. The IPM Program would be consistent with the IPM Policy, which is as follows:

- ▶ **IPM Policy 1:** Develop pest management strategies and priorities to:
 - Manage invasive species in natural areas and set priorities for their control to maximize the benefits for sensitive native communities and species and loss of biodiversity.
 - Manage pests on agricultural properties to support existing uses, while also protecting human health and surrounding natural resources.
 - Manage pests and potential human interactions in recreational facilities to minimize conflict, ensure visitor safety and enjoyment, and protect the surrounding natural resources.
 - Manage pests in buildings to support existing uses, while also protecting human health and surrounding natural resources.

- ▶ **IPM Policy 2:** Take appropriate actions to prevent the establishment of new invasive species to Authority lands, especially new invasive plants in natural areas, rangelands, and agricultural properties.
 - Develop and implement best management practices to reduce the risk of invasion of exotic species into open space preserves, as part of steps to manage facilities, recreation, and vegetation, including through conservation grazing.
 - Implement an early detection rapid response program, which includes routinely inspecting areas that are most susceptible to invasion.
 - Focus on preservation of habitat with intact native vegetation and target populations of invasive species before they are widespread.
 - Stay abreast of regional invasive plant species issues and their management by coordinating with partners and neighboring landowners.
 - Promote visitor and staff education to prevent the spread of invasive species.
- ▶ **IPM Policy 3:** Manage and monitor invasive species through an adaptive management framework that includes the following measures designed to promote long-term effectiveness, including:
 - Develop and maintain an inventory of invasive species on Authority lands.
 - Prioritize treatment of invasive species based on the benefits of treatment for sensitive species, as well as the risk posed by failure to control them, the ability of treatment to enhance other conservation values, including working lands, scenic values, and cultural resources, and their feasibility.
 - Prescribe site-specific strategies for control that provide the best combination of protecting Authority resources, human health, and non-target organisms that are efficient and cost effective in controlling the target species, and that reflect the species' biology and life-cycle.
 - Use the most appropriate method(s) to control invasive species including by integrating multiple management techniques such as grazing, manual removal, and mowing. Where pesticides are necessary, apply according to the label using all safety precautions and take all measures needed to protect the environment, health, and safety of visitors, employees, neighbors, and the surrounding natural areas including water and soil resources.
 - Monitor treatment effectiveness and adapt control techniques based on results as well as the latest research on invasive species ecology and management, and new methods and tools.
 - Plan for repeat treatments as needed based on species regenerative capabilities.
 - Coordinate and cooperate with adjacent landowners, neighbors, and other responsible agencies to control species regionally, wherever feasible.
 - Use prevention techniques such as early detection rapid response, training, use of volunteers, and BMPs.
- ▶ **IPM Policy 4:** Develop and implement a Guidance Manual to standardize pest management and IPM procedures.
 - Evaluate the general types of pests and also individual species that will be subject to management, based on an assessment of their impacts on the ability of the Authority to achieve its mission;
 - Develop goals for management of types of pests, and criteria for assigning species or suites of species to the goals based on the costs and benefits of control;
 - Identify a suite of alternative management techniques that are cost-effective and safe;
 - Develop a framework for prioritizing management, given that resources are inherently limited; and
 - Identify best management practices to be implemented during pest management, to limit impacts to non-target species, other natural resources, and human health and safety, and facilitate environmental review of the IPM program (i.e., under CEQA).

2.5 OBJECTIVES OF THE IPM PROGRAM

The State CEQA Guidelines call for the identification of objectives sought by a proposed project (CEQA Guidelines Section 15124[b]). A statement of objectives helps convey the reasons for considering approval of the proposed IPM Program, including its intended benefits, and guides the development of a reasonable range of alternatives to evaluate in the PEIR.

The overall goal of the IPM Program is to effectively manage pests in the Authority's open space preserves and facilities, while protecting human health and environmental quality. Specific objectives of the proposed IPM Program include the following:

- ▶ develop and implement site-specific pest management strategies that are effective in controlling targeted pests while avoiding damage to natural resources, promoting visitor safety and enjoyment, and protecting human health;
- ▶ keep the interested public informed about treatment strategies, upcoming projects, and environmental and public health protection measures;
- ▶ inhibit the establishment of new invasive species on Authority preserves, such as new invasive plants in natural areas, rangelands, and agricultural properties;
- ▶ maintain an inventory of invasive species infestations, monitor treatment effectiveness, and incorporate relevant monitoring results into future treatment applications;
- ▶ implement an adaptive management framework to promote the long-term effectiveness of pest management activities; and
- ▶ develop and implement an IPM Manual to standardize pest management and IPM procedures.

2.6 EXISTING AUTHORITY IPM ACTIVITIES

The Authority conducts IPM activities under existing conditions with less frequency and geographic coverage than is proposed under the IPM Program. Currently, the Authority implements manual, mechanical, and chemical treatments for vegetation and animal pest management near roads and trails, recreational facilities, structures, and sensitive habitats across Authority preserves. Vegetation management consists of mowing approximately 60 acres per year, including along roads and trails primarily with weed whips, hedgers, chainsaws, pole saws, chippers, tractor-operated mowers, small rider mower, and walk behind flail. Areas of high use are brushed more frequently. Trails are weed whipped twice per year (spring/summer), and roads are mowed once per year (late summer). If the region experiences a year with unusually high precipitation, this is done one more time (i.e., weed whip trails three times and mow roads twice). Additional vegetation treatments are generally done by hand pulling or cutting, digging, ploughing, discing, mulching, or hoeing. Pest management consists of snap traps for rodents, sticky boxes for insects, wasp nest removal, and shooting/harassment of wild pigs.

Chemical spraying of herbicides is conducted across approximately 40 acres each year; application is by hand with a backpack sprayer, or by all-terrain vehicle (ATV) or truck with a downward facing boom. The Authority owns 10 backpack sprayers, two truck mounted sprayers, four ATV sprayers, and one rope wick (a long handheld tube with a rope at the end used to wipe herbicides onto target species). Herbicides that are currently being used by the Authority consist of Glyphosate (Roundup Pro), Capstone, Envoy, Milestone, Telar, Transline, Vista, and WeedZap. The Authority also uses insecticides as a last resort to treat problem insect or rodent infestations. The Authority follows all herbicide label directions and adheres to all federal, state, and local laws and regulations controlling pesticide use.

Typically, up to 20 treatment activities are conducted simultaneously across the Authority's preserves, and each activity requires one to three Authority staff members to implement. Equipment and materials needed for IPM activities (e.g., mowers, fuels, herbicides) are stored at the Authority's administrative office in the city of San Jose, as well as two field offices within the IPM Program Area. One field office consists of a two barn structures located within the southeastern corner of the Rancho Canada del Oro Preserve, and the other is a barn structure located within the Sierra Vista Preserve.

2.7 PROPOSED IPM PROGRAM TREATMENT ACTIVITIES

The IPM Program would expand upon the types, frequency, and geographic extent of existing IPM activities conducted by the Authority and includes additional treatment types and methods. The Authority would also implement increased early detection and rapid response, mapping, and post treatment monitoring.

The IPM Manual outlines IPM management categories to help determine the appropriate treatment types and methods for a particular landscape and situation. The IPM management categories consist of: 1) structures and buildings, 2) recreational facilities, 3) agricultural lands, and 4) natural lands. The treatment types include a variety of manual, mechanical, and chemical treatments with varying types of application methods. The Authority anticipates that with implementation of the IPM Program, one to two additional staff may be hired, and the number of annual treatment activities occurring simultaneously could increase by approximately 20 percent (i.e., up to four additional IPM treatment activities would occur). Generally, individual IPM treatment activities (or treatment projects) would occur over one day to one week.

The IPM Program outlines various treatment types and associated methods for each of the management categories. The treatment types, methods of application, and underlying purposes are summarized in Table 2-2 below. It is important to note that the Authority would implement the treatments in an integrated manner, so while a specific treatment type is identified for a management category in Table 2-2, other treatment types identified for a treatment site may be implemented on a year-to-year basis according to the site conditions observed.

The IPM treatment options are tailored to each of the Authority's IPM management categories because each category represents not only a different purpose, but also a different type of environment. In general, the first two management categories (i.e., buildings/structures and recreational facilities) represent conditions that have been altered to a greater degree by development or for visitor use, so they are more frequently occupied or visited by visitors and/or staff, and are where the Authority has greater concerns for human safety. The last two categories (i.e., agricultural lands and natural lands) would be applied in the landscape, either altered by agricultural practices or occupied by natural habitat.

2.7.1 IPM Treatment Types

For each IPM management category under the IPM Program, the treatment type (e.g., manual, mechanical, chemical control) and treatment timing would be site-specific and based on various factors (i.e., infestation size and density, the life cycle of the pest, the type and sensitivity of the site to be treated, the potential for the presence of special-status species habitat to occur in proximity to the treatment site, access restrictions, weather, and the availability of labor). A general description of the treatment types covered under the IPM Program and typical conditions for implementing the treatment are described below as well as in the IPM Manual (Appendix B).

Table 2-2 IPM Program Treatment Activities and Methods

IPM Management Category	Treatment Type	Treatment Method	Method of Application	Purpose
Structures and Buildings	Manual	Prevention, sanitation	— — —	Structural pests, stray wildlife and pets
		Habitat modification, physical barriers/exclusion	Remove brush piles, fill/cover entry points, destroy old burrows using tractor and ripping bar, install curtain wall of concrete	Structural pests, stray wildlife and pets
		Trapping	sticky, electric, snap or box traps, live box or cage traps	Structural pests, stray wildlife and pets
	Chemical	Insecticidal Soap Spray	Targeted spray	Structural pests
		Diatomaceous earth	Dusting	Structural pests
		Boric Acid	Bait container, dusting	Structural pests
		Hydroprene	Targeted spray, bait container, foam	Structural pests
		Indoxacarb	Bait container	Structural pests
		Fipronil	Bait container	Structural pests
		Cholecalciferol	Tamper-proof bait container	Vertebrate pests
		Sulphuryl fluoride	Tenting and fumigating structures	Structural pests
Recreational Facilities	Manual	Digging/clearing	Pickaxe, hoe, other hand tools	Fire risk reduction near utilities
		Prevention, sanitation	— — —	Stinging insects, mosquitos, ticks, rattlesnakes
		Habitat modification, physical barriers/exclusion	Remove rock and brush piles, fill/cover entry points, nest removal (water jets/digging)	Stinging insects, mosquitos, rattlesnakes, stray wildlife and pets
		Trapping	water/lure, carbon dioxide, tongs/funnel, live box or cage traps	Stinging insects, ticks, stray wildlife and pets
	Mechanical	Mowing/cutting	Weed whips, hedgers, chainsaws, pole saws, chippers, tractor operated mowers	Roads, trails, parking lots, gates, fences, stiles, special events
		Cutting/limbing	Chainsaws, chippers	Hazard and downed tree removal
	Chemical	Pyrethrin	Targeted spray	Stinging insects
		Glyphosate (Roundup ProMax)	Spray application (backpack or boom on ATV)	Problem vegetation near roads, trails, parking lots, utilities
		Imazpyr	Spray application (backpack or boom on ATV)	Problem vegetation near roads, trails, parking lots, utilities
	Agricultural Lands	Manual	Pulling, mulching, hoeing, weedmats	Hoe and other hand tools
Prevention			— — —	Invasive plant and animal control
Mechanical		Mowing/cutting, cultivation, green flaming, discing	Mowers, tillers, tractors, brushcutters, brushrakes, flame equipment	Invasive plants

IPM Management Category	Treatment Type	Treatment Method	Method of Application	Purpose
Natural Lands	Manual	Digging, hand pulling, scraping, mulching	Weed wrenches, shovel, hoe, hand saw, clippers, other hand tools	Invasive plant control
		Tarping/solarizing	---	Invasive plant control
		Prevention	---	Invasive plant and animal control
		Habitat modifications, physical barriers/exclusion	---	Invasive animal control
		Biocontrol insects	---	Invasive plant control
		Trapping, giggering, shooting, electrical currents	---	Invasive animal control
	Mechanical	Cutting/mowing/weed whipping	Mowers, brushcutters, weed whacker	Invasive plant control
		Girdling/drilling	Chainsaws, drills	Invasive plant control
		Flaming	Propane burner	Invasive plant control
	Chemical	Glyphosate (Round-Up Pro)	Cut-stump, spray (backpack or boom on ATV), wicking	Invasive plant control
		Capstone	Cut-stump, spray (backpack or boom on ATV), wicking	Invasive plant control
		Envoy	Cut-stump, spray (backpack or boom on ATV), wicking	Invasive plant control
		Milestone	Cut-stump, spray (backpack or boom on ATV), wicking	Invasive plant control
		Telar	Cut-stump, spray (backpack or boom on ATV), wicking	Invasive plant control
		Transline	Cut-stump, spray (backpack or boom on ATV), wicking	Invasive plant control
		Vista XRT	Cut-stump, spray (backpack or boom on ATV), wicking	Invasive plant control
		Weed Zap	Cut-stump, spray (backpack or boom on ATV), wicking	Invasive plant control
		Dimension	Cut-stump, spray (backpack or boom on ATV), wicking	Invasive plant control
Gallery		Cut-stump, spray (backpack or boom on ATV), wicking	Invasive plant control	
2-D4		Cut-stump, spray (backpack or boom on ATV), wicking	Invasive plant control	
Scythe		Spray (backpack or boom on ATV)	Invasive plant control	

Source: Adapted from Appendix B

MANUAL TREATMENTS

Manual control treatments consist of prevention, sanitation, pulling, digging, hoeing, physical barriers/exclusion, covering/tarping, crop rotation, soil sterilization, mulching, weedmats, release of biocontrol insects, trapping, giggering, shooting, and electrical currents. Some of these actions have limited physical environmental disturbances compared to the more active pulling, digging, and use of electrical currents described below (e.g., prevention [installing educational signs], and sanitation [picking up trash and crumbs]) and are not discussed in detail herein. In addition, covering/tarping, crop rotation, and soil sterilization are considered cultural control methods that would be covered by site-specific agricultural management plans and implemented by the agricultural tenant; therefore, these methods are not described or evaluated in this PEIR. Refer to Chapter 3 through 7 of the IPM Manual for a full description of the manual treatments proposed under the IPM Program.

Manual treatments are effective for the removal of small pest populations, individual occurrences, and pest populations that occur near special-status species and their habitat or sensitive natural communities. Additionally, they are often used as a follow-up vegetation treatment in areas where larger invasive plant populations have been sprayed with an herbicide. The following is a summary of the general types of manual treatments proposed under the IPM Program that are evaluated in this PEIR.

- ▶ *Pull:* Depending on the size of the plants, the stem of the target plant would be grasped by hand or with the assistance of a weed wrench and the entire plant including the roots would be pulled out of the ground. A weed wrench is a lever-type tool that is used to pull up invasive plants that are between 1 and 6 feet tall with roots that penetrate more than a few inches into the soil; usually shrubs such as French broom (*Genista monspessulana*) are ideal candidates for a weed wrench. Pulling is not suitable in areas where there is steep terrain, where the operator cannot gain a firm stance, or where the activity may lead to disruptive erosion.
- ▶ *Dig:* For small infestations, this would be completed by using a shovel, Pulaski, or similar hand-operated digging tool to loosen the soil around the roots of a plant several inches below the surface and then lifting out the entire plant. The amount of root that must be removed varies by species.
- ▶ *Mulching:* Applying straw, shredded bark, wood chips, or similar materials to the soil surface. Mulches work by eliminating light availability to small weeds. The larger the weed, the deeper the mulch needs to be for effective control. Mulches have the added benefit of also conserving soil moisture and reducing soil erosion. Many organic types of mulch ultimately decompose into necessary plant nutrients for the following growing season.
- ▶ *Hoeing:* This is a method of removing weeds using a handheld hoe or disc by scraping the top few inches of soil to slice, pull, or bury target weeds.
- ▶ *Weedmats:* Weedmats are made of fabric or plastic and are applied to an area to stop the supply of sunlight to weeds, thereby killing them.
- ▶ *Physical Barrier/Exclusion:* Exclusion and physical barriers are typically used as a temporary preventative tool to keep target invasive animals from leaving a treatment site or wildlife from entering a treatment site while other control methods are applied. Examples include exclusionary fencing and concrete walls.
- ▶ *Biological Control Agent:* Release of a biological control agent (BCA), typically an insect, that targets specific invasive species. BCAs would only be used when an approved BCA is available and no rare native plants could be impacted. The use of BCAs requires following a series of steps to evaluate the safety and efficacy of a proposed release. After host specificity studies and risk assessments have been conducted and approved, permitted BCAs are reared in large numbers and released at field sites. BCAs would be transported by vehicle in containers (jars) and released manually.
- ▶ *Trapping:* Various types of traps are set to capture target invasive animals or populations, such as feral pigs, rodents, and American bullfrogs. Trap types vary in size and application and include snap traps, box traps, live/cage traps, and submerged funnel traps. Trapping requires daily monitoring to release non-target species. No trapping would occur within habitat for the federal Endangered Species Act (ESA) listed central California coast steelhead or south central California coast steelhead.

- ▶ *Gigging/Shooting*: Gigging is the targeted spearing of invasive fish or frogs with barbed tines mounted on a long pole. Shooting is implemented with small caliber rifles and lead-free ammunition to eliminate or haze individual invasive animals, such as frogs or feral pigs. No gigging/shooting would occur within habitat for the ESA listed central California coast steelhead or south central California coast steelhead.
- ▶ *Electrical Currents*: Electrical currents are used to temporarily disable frogs and non-native fish. Twelve-volt DC electroshockers are typically mounted on small boats or backpacks, and then the electroshock current is applied to the surface of a pond. This treatment is non-specific, and would affect all aquatic species within the range of the electroshocking 'wand.' Electroshocking is not lethal, rather it shocks the affected individuals which then float to the surface where they can be netted or otherwise collected. This treatment method, therefore, must be followed by another treatment method such as hand removal or gigging. No electrical currents would be used within habitat for the ESA listed central California coast steelhead or south central California coast steelhead.

MECHANICAL TREATMENTS

Mechanical control treatments include the use of motorized equipment for activities including mowing/cutting, cultivation, discing, girdling/frilling/drilling, and flaming. Mechanical treatments can be effective for the removal of small to moderate sized pest populations. The following is a summary of the general types of manual treatments proposed under the IPM Program.

- ▶ *Mow/Cut*: Motorized cutting machines are used to mow weeds based on the size of the weed infestation. Most species would require repeated cutting throughout the growing season (generally late spring through mid-summer) or they could re-sprout from their base and continue to grow, flower, and produce seed. Mowing is carefully timed according to the phenology of each plant species to minimize the amount of re-sprouting and to avoid spreading ripe seed. Mowing is a temporary measure that controls reproductive spread and can eventually reduce populations of annual plants, but other subsequent treatments (e.g., pulling, herbicide) would be necessary to eradicate perennial plants. Mowing cannot be used on steep slopes, saturated soils, or in locations with desirable native plants unless the timing of the mowing can be selected to affect only target plants.
- ▶ *Cultivation*: Loosening and breaking up of soil to kill weeds by digging them out, burying them, breaking them apart, or drying them out. Small row-crop tractors would be used for cultivating agricultural lands (i.e., row crops) to remove invasive plants and weeds.
- ▶ *Discing*: A motorized machine with a cutting implement attached that is used to till soil where crops are to be planted or chop up unwanted weeds or crop remainders.
- ▶ *Girdle/Drill*: These techniques disrupt the connection between the roots and the leaves of a tree by cutting or chopping away the outer bark and/or the inner bark or cambium, which will slowly kill the tree. Tools typically used for this treatment include an axe, chainsaw, or drill. Often these techniques are coupled with herbicide application.
- ▶ *Green Flaming*: Specially designed small, hand-held propane torches would be used in small areas to kill dense and newly emerged green seedlings. Green flaming would usually be conducted during light rains or on wet days when forest litter or grassland thatch is not likely to catch fire and additional precautions are implemented at the time of use including bringing truck-mounted or backpack water tanks, and operating with more than one person on site. This method works well on newly emerged broom seedlings.

CHEMICAL TREATMENTS

A list of pesticides (i.e., herbicides, insecticides, a rodenticide, and a fumigant) have been selected to support the IPM Program. Because herbicides, insecticides, and rodenticides have a potential to inadvertently affect non-target plants and wildlife (e.g., offsite herbicide transport via wind or precipitation, accidental consumption of rodenticide by non-target wildlife), a toxicological analysis was conducted for the use of each compound and is included in Appendix HAZ-1. Each candidate chemical (active ingredient or product of the proposed herbicides, insecticides, and rodenticide) was reviewed and evaluated for its reported fate and transport in the environment and toxicity to humans and non-target wildlife and vegetation in Appendix HAZ-1.

Grouped by pesticide category (i.e., herbicides, rodenticide, insecticides, and fumigant), Table 2-3 provides the Authority's proposed pesticide list and includes active ingredient, product formulations, and pesticide purpose. This list of pesticides is intended only for use on the pests in properties and buildings and lands owned and managed by the Authority. Refer to Table 2-2 for the methods of chemical application associated with each IPM management category.

Table 2-3 Pesticides Selected to Support the IPM Program

Pesticide Category	Active Ingredient	Product Formulations (Manufacturer)	Purpose
Herbicides	Glyphosate	Roundup (Monsanto or Scotts Miracle-Gro)	Nonselective post-emergent broad-spectrum weed control
	Pelargonic Acid	Scythe (Dow AgroSciences)	Broad-spectrum control of many annual, biennial, and perennial broadleaf weeds
	Aminopyralid/Triclopyr	Milestone (Dow AgroSciences) Capstone (Dow AgroSciences)	Nonselective post-emergent broad-spectrum weed control
	Clopyralid	Transline (Dow AgroSciences)	Selective broadleaf weed control
	Imazapyr	Polaris (Nufarm), Stalker (BASF)	Nonselective pre- and post-emergent broad-spectrum weed control
	Clethodim	Envoy Plus (Valent)	Selective post-emergent grass weed control
	Chlorsulfuron	Telar XP (Du Pont)	Pre- and post-emergent broadleaf weed control
	Fluroxypyr 1-methylheptyl ester	Vista XRT (Dow AgroSciences)	Broadleaf annual and perennial weeds, and certain woody plants and vines
	Essential oils	WeedZap (JHBiotech)	All natural non-selective broadleaf weed control
	Dithiopyr	Dimension (Dow AgroSciences)	Pre-emergent grasses and broadleaf weed control
	Isoxaben	Gallery (Dow AgroSciences)	Pre-emergent broadleaf weed control
	Dimethylamine salt	2,4-D	Broadleaf weeds and brush control
Rodenticide	Cholecalciferol	Cholecalciferol baits	Rodent pest control (e.g., rats, mice)
Insecticides	Pyrethrin	Wasp-Freeze (BASF)	Wasp and hornet control
	Insecticidal Soap Spray	Garden Safe	Ant control
	Indoxacarb	Advion Gel Baits (DuPont)	Structural pest control (e.g., ants, cockroaches)
	Hydroprene	Gentrol Point Source (Wellmark International)	Pest control (e.g., cockroaches, beetles, moths)
	Fipronil	Maxforce Bait Stations (Bayer)	Ant control
	Boric Acid (Sodium tetraborate decahydrate)	Prescription Treatment Baits (BASF), Terro Ant Killer II (Terro)	Ant and cockroach control
	Diatomaceous earth	Diatomaceous earth	Structural pest control (e.g., ants, cockroaches)
Fumigant	Sulfuryl fluoride	Vikane, Zythor, or Master Fume	Structural pest control (e.g., termites)

Source: Appendix B and Appendix HAZ-1.

Careful and judicious use of pesticides would be an essential component of the Authority's proposed IPM Program, in which the most effective, least toxic treatment options are used to control pests. Insecticide baits would only be used in structures and buildings in tamper-proof bait stations and sprays would be used as a last resort and target specific individuals or populations (e.g., problem wasp nests). Rodenticides and fumigants are not currently used by the Authority, and would be used as a last resort to control pest infestations that create threats to human health or safety after other non-chemical treatment options are exhausted. If deemed necessary, rodenticides would only be used in structures and buildings in tamper-proof anchored bait containers to avoid non-target species interactions.

For pest treatment of a structure, fumigants may be used, if necessary. They would only be applied by certified applicators and the treated structure would be securely sealed with a tent to trap the gas inside. Fumigation would take up to three days to complete, and signs warning of the fumigation would be posted to prevent people from entering the structure. Air monitoring would be conducted prior to allowing anyone inside the treated structure to make sure fumigant levels are below U.S. Environmental Protection Agency (EPA) established limits.

Specific to herbicides, while non-chemical strategies would be employed when feasible, herbicides would be used when there is no other available reasonable means to control invasive plant populations and reduce the impacts on biodiversity and other conservation values on Authority's lands in a variety of circumstances including when:

- ▶ invasive plant occurrences cover a large area that would be infeasible to treat by other means;
- ▶ controlling invasive herbs and vines that can re-establish from roots and other structures left in the ground following removal is needed;
- ▶ controlling invasive shrubs and trees that will resprout following cutting is needed, if they are not treated with herbicide; and
- ▶ it is the safest alternative for staff when there are steep slopes or access constraints.

The Authority would evaluate herbicide characteristics, including information on the herbicide label and available information about the effectiveness of the herbicides at controlling target species, when selecting an herbicide. In general, herbicides will be used that are effective against the invasive plants, not likely to drift, leach to groundwater or wash into streams, are nontoxic to people and other organisms, will not persist in the environment, and are easy to apply. Each situation will be evaluated on a case-by-case basis, to minimize negative impacts to the environment.

Consistent with types of chemical application methods currently used on Authority lands, the following methods would be used under the proposed IPM Program to apply herbicides:

- ▶ *Cut-stump application:* Under this treatment, the woody plant would be cut close to the ground at a 90-degree or 45-degree angle with a chainsaw or pole saw. Debris would be removed from the cut stump and herbicide immediately applied to the circle of living cells. Cut-stump application would be used to selectively eliminate woody trees and shrubs. Woody plants tend to resprout frequently when cut unless treated with an herbicide.
- ▶ *Spray application:* Depending on the size of the infestation, herbicides would be applied with a backpack sprayer or, for larger areas, a tank mounted on an ATV. All methods of spraying under the IPM Program would be selective, that is, the operator (who is trained in identifying plants) would be in direct control of the sprayer, would point the spray tip directly at the target weed or pest, and would manually turn the spray equipment on and off to control the amount and direction of spray.
- ▶ *Wick application:* Under this treatment, herbicide would be applied to the target plant using a rope wick applicator for selective treatment. This method generally results in less potential for herbicide drift than spraying, although care must be taken that the applicator does not drip or overlap onto non-target plants. This method works best on plants that form a basal rosette of leaves.

As required by regulations of the California Department of Pesticide Regulation, the Authority or its contractors would continue to report all pesticide use on a monthly basis to the Santa Clara County Agriculture Department; would obtain pest control recommendations from a licensed PCA on an annual basis; would renew the Authority's Operator Identification with the County Agriculture Department; and would require key employees to obtain either a

Qualified Applicator License or a Qualified Applicator Certificate before using pesticides. Additional environmental protection measures, described in Section 2.9, would be implemented to minimize the potential for pesticide-related impacts to human health or the environment.

2.8 SPECIFIC IPM TREATMENTS BY MANAGEMENT CATEGORY

For all management categories, the Authority would prioritize preventative control techniques to minimize the need for more active pest control, such as the use of pesticides (i.e., herbicides, insecticides, and rodenticides) or mechanical treatments. Preventative control techniques would include sanitation, physical barriers and site modifications to prevent access, pest-resistant material selection to prevent animal pest infestation, early detection and rapid response, and staff and public education to prevent the spread of invasive plants. These techniques are low to no impact and are described in detail in Chapter 6 of the IPM Manual for all of the target pests in each management category (see Appendix B). The following sections describe the active pest control treatments, including manual, mechanical, and chemical controls that have a potential to result in environmental impacts and are thus evaluated for use in this PEIR.

2.8.1 IPM on Natural Lands

Natural areas make up the majority of Authority lands, and typically experience minimal levels of human use, aside from designated recreation areas. The purpose of IPM in natural areas is to preserve and restore natural resources while also maintaining safe and enjoyable human access for visitors and staff.

IPM in the Authority's natural areas focuses primarily on the control of pests that threaten the long-term viability of natural resources on Authority preserves. The Authority's goal is to maintain the long-term stability and resiliency of its natural areas. Pests that are commonly encountered on natural areas include invasive plants and invasive animals, including regulated species (i.e., plants and wildlife that are regulated under state and federal law or California Code) and feral pets. The Authority spends the majority of its IPM management efforts in natural areas on control of invasive plants. Given that the treatment options differ widely between invasive plants and animals, they are discussed in detail separately below.

MANAGING INVASIVE PLANTS ON NATURAL LANDS

The presence of invasive plants on Authority preserves creates a major challenge to achieving the conservation values of the Authority. If not well managed, invasive plant species can displace native plants and reduce native biodiversity, disrupt natural ecosystem processes, increase fire risk, and interfere with conservation grazing. Refer to Chapter 3 of the IPM Manual for a summary of all of the invasive plant species that have been found in Authority preserves.

Successful, long-term management of invasive plants requires careful planning to address the myriad factors that influence the effectiveness of invasive plant control treatments, limit their impacts on non-target species, restore native plants in treated areas, and prevent establishment of new occurrences. The Authority first employs prevention techniques, such as coordination with neighboring landowners, public engagement, and implementation of an early detection and rapid response program to prevent the establishment of new invasive plant occurrences (refer to Chapter 3 of Appendix B). A variety of treatment types can be used to control invasive plants on natural lands (refer to Table 2-2); those evaluated in this PEIR include manual, mechanical, and chemical treatment methods.

Manual and Mechanical Treatment Options for Invasive Plants on Natural Lands

Manual and mechanical treatment options for natural lands include the following: pulling, digging, scraping, cutting/mowing, weed whipping, brush cutting, girdling/frilling/drilling, and green flaming. These treatment types are described in detail in Section 2.7.1, "IPM Treatment Types," above.

Chemical Treatment Options for Natural Lands

Chemical control of annual and biennial weeds includes two strategies to treat different life stages: 1) post-emergent (i.e., direct application of herbicide to eliminate the plant), and 2) pre-emergent (i.e., treatment to prevent the germination of seeds). Herbicides are also classified as either selective or non-selective. Selective herbicides control plants in specific plant families or life stages, while allowing other plants to survive uninjured. Utilizing selective herbicides can be a powerful tool in balancing active management with protecting desirable, native vegetation types. Non-selective herbicides and application methods injure all plant species that are directly exposed to treatment, so should be directed only to the target species. Selectivity may be based on either the chemistry of the herbicide, but can change with the timing of the application. All of the herbicides listed in Table 2-3 above could be used to control invasive plants on natural lands. Application methods would include cut-stump, spray, and wick and are described in Section 2.7.1, "IPM Treatment Types," above. Refer to Appendix HAZ-1 for specific information and evaluation for each of the herbicides proposed for use under the IPM Program.

MANAGING INVASIVE ANIMALS ON NATURAL LANDS

Invasive animals pose another threat to the Authority's natural areas. Once established in a preserve, invasive animals compete for valuable resources and disturb the sensitive balance of natural food webs. Bullfrogs and wild pigs are examples of invasive introduced animals found in Authority preserves that physically displace or consume the native plants and wildlife that normally inhabit natural areas, or otherwise alter natural processes. Invasive animals known to occur on Authority preserves includes non-native fish and turtles, American bullfrogs, feral pigs and pets, and brown-headed cowbirds.

Invasive animal management in natural areas first focuses on modifying the behavior of humans or the habitat to moderate or eliminate invasive animal pest problems. After these prevention actions are exhausted, invasive animal populations will be managed to a defined tolerance level. Tolerance levels focus on reducing the pest population down to a level that does not cause substantial harm to natural resources; does not cause severe economic harm and does not cause disruption of natural processes or severe displacement of native species. A variety of physical methods can be used to control invasive animals on natural lands (refer to Table 2-2); those evaluated in this PEIR are further described below.

Manual Treatment Options for Invasive Animals on Natural Lands

Non-Native Fish

- ▶ *Habitat modification (pond draining)*. The Authority would temporarily drain a man-made pond where non-native fish are known to occur. To control these populations, ponds are typically drained for sufficient time to eliminate all non-native fish species, then refilled. Many non-native fish species are managed by the California Department of Fish and Wildlife (CDFW), thus special permits are required and would be obtained before pond draining.

Non-Native Turtles

- ▶ *Trapping and habitat modification (pond draining)*. The Authority would attempt to trap non-native turtles and remove them in compliance with CDFW regulations when they share habitat with protected, native species. Traps are designed specific to the target species and meant to capture the turtles without harm. Traps would be checked daily for release and documentation of any native species and removal of any non-native species. A qualified biologist would determine if any native species are present in the trapping area and would consult with CDFW and the U.S. Fish and Wildlife Service (USFWS) if special-status species are present. In special cases, ponds would be drained for sufficient time to collect and eliminate non-native amphibian species as described below for bullfrogs.

American Bullfrogs (Bullfrogs)

Bullfrogs are classified by CDFW as a game amphibian and are regulated by state fishing regulations. A special permit will be required from CDFW prior to targeting bullfrogs and if special-status species are present, a qualified biologist will need to be present.

- ▶ *Habitat modification (pond draining)*. Pond draining is one of the most common methods used for bullfrog control in California, especially where protected species may be present such as the native California red-legged frog. American bullfrogs need a perennial water source to complete their life cycle. In contrast, California red-legged frogs and California tiger salamanders only need water during their breeding cycle. The USFWS California red-legged frog Recovery Plan recommends draining ponds that contain both bullfrog and California red-legged frog species every year to reduce the habitat suitability for bullfrogs.
- ▶ *Physical barriers (fencing)*. Exclusionary fencing to keep bullfrogs from entering non-infested wetlands is a temporary tool that would be used while other control methods are applied concurrently. Fencing is not considered a long-term solution because it disrupts movement of other wildlife, can entrap non-target wildlife species, and may disrupt the natural processes of the wetlands. Exclusionary fences are useful during pond draining to limit the potential for dispersal of bullfrogs out of the treatment area. Exclusionary fencing may also be used in conjunction with funnel traps to collect bullfrogs as they attempt to disperse from drying ponds.
- ▶ *Trapping*. Submerged funnel traps and floating cage traps can be used to control different life stages of bullfrogs. Funnel traps designed for catching baitfish can be used to live capture bullfrog tadpoles. Floating cage traps have been successfully used to catch adult frogs. Though trapping is a recently-developed treatment method for bullfrogs, it may be effective especially where other sensitive amphibian species are present to which impacts must be avoided.
- ▶ *Gigging or shooting*. Gigging or shooting bullfrogs would be implemented with small caliber air rifles and lead-free ammunition to eliminate individual adult bullfrogs. Gigging is the targeted spearing of fish or frogs with barbed tines mounted on a long pole. Both gigging and shooting are effective and humane methods for selective removal of target adult bullfrogs. However, this treatment method alone will rarely eradicate bullfrogs from the target area because only a portion of adults are usually found, and it does not control eggs or larval stages. Egg masses can also be collected to remove additional life stages at the appropriate time of year.
- ▶ *Electrical currents*. Use of electrical currents (electroshocking) to temporarily disable frogs in netting and gigging operations have proved to be effective in some control programs. Electroshockers would be mounted either on small boats or on backpacks, then the electroshock current would be applied to the surface of the wetland. This treatment is non-specific and will affect all aquatic species within the range of the electroshocking 'wand'. Electroshocking is non-lethal, rather it shocks and lifts the affected individuals to the surface where they can be netted or otherwise collected. This treatment method, therefore, must be followed by another treatment method such as hand removal or gigging. Even with follow-up control of individuals found by electroshocking, this treatment method alone will rarely eradicate bullfrogs from the target area because only a portion of adults are usually found, and it does not control eggs or larval stages.

Feral Pigs

The Authority would work with CDFW to develop a management program to capture feral pigs using baited traps and humane termination (i.e., immediately fatal firearm shot). Permitting would be arranged through a memorandum of understanding for pig depredation across all properties or through a pig depredation permit on a case by case basis. As part of this effort, the Authority would coordinate with other regional land management agencies that are controlling feral pig populations.

- ▶ *Physical barriers (fencing)*. Exclusion of pigs with pig-proof fencing can be effective in preventing high value areas from being invaded by pigs. Fencing must be maintained annually to be effective. Pig-proof fencing is usually very expensive to install and maintain, and also has the possibility of restricting the movement of native animal species. It is an effective strategy for protecting extremely high value natural areas, agricultural lands, or archeological sites.
- ▶ *Trapping*. Trapping is the most effective means for regulating wild pig populations on a small landscape scale. Cage traps function by attracting single or multiple pigs into traps with bait through a one-way or guillotine trap door. Since pigs have large home ranges and they can disperse over large landscapes, the trapper would scout large landscapes or use a network of camera-traps to identify locations where pigs are actively travelling and feeding. Pre-baiting increases the effectiveness of live-catch traps.

- ▶ *Shooting.* Shooting (either hunting or professional depredation) is the most common method for feral pig control throughout California and could be used by the Authority. Permitted depredation hunting with the assistance of tracking dogs or using nighttime vision aids and thermal imaging can increase the effectiveness of managing populations. Shooting methods would only employ lead-free, copper-based ammunition to reduce non-target mortality to pig carcass scavengers. Shooting would not be used in Authority preserves open to the public.

Brown-headed Cowbird

Prior to removing eggs or trapping, permits from CDFW and USFWS would be obtained. CDFW allows control of brown-headed cowbird to reduce nest parasitism on special-status species through a special letter of authorization and a scientific collecting permit. USFWS would be contacted for information for federal permitting requirements.

- ▶ *Egg removal/addling.* Removing cowbird eggs from the host nest or addling them by shaking would be used to limit cowbird impacts on hosts, using adhesive tape. These methods are cost effective and practical where small, remote populations of hosts and/or cowbirds exist. Addling may be preferable to removing eggs since some host species may desert their nest if eggs are removed. However, if the host eggs have already been damaged it may be better for the host to desert this clutch and re-nest. Necessary permits from CDFW would be obtained.
- ▶ *Trapping.* Trapping is the predominant method used for cowbird population control. Trapping would require daily monitoring to supply fresh water and food for captured birds and to release non-target species. Necessary permits from CDFW would be obtained.

Feral Pets

- ▶ *Trapping.* The Authority would utilize catch pole or otherwise trap dogs, cats, turtles, rabbits and other domesticated animals found escaped or released in Authority preserves and return them to their owners, or turn them over to local animal control departments or animal shelters.

2.8.2 IPM for Agricultural Lands

The Authority currently has one agricultural preserve with row crops (the Pajaro River Agricultural Preserve) and may acquire other agricultural properties in the future. The purpose of IPM on agricultural properties is to manage pests to maintain the specific land uses (e.g., crop production), while also providing natural resource protection and visitor access. Agricultural pests that may be encountered include weeds, pathogens and insects in croplands; and rodents in farm field and buildings. For agricultural lands leased to other parties, site-specific management needs would be determined by lessees and the Authority in individual Agricultural Management Plans based on assessment of farm and field conditions, type of crops, and anticipated crop yields.

The Authority has a separate grazing program and policy for rangelands that addresses how the Authority uses grazing as a management tool to conserve biodiversity while protecting water quality, cultural resources, scenic values, and recreational opportunities. Therefore, management of rangelands is not included in this PEIR. The following section describes the manual and mechanical control treatment options (refer to Table 2-2) for pests on agricultural lands that are evaluated in this PEIR.

MANUAL AND MECHANICAL TREATMENT OPTIONS FOR PEST IN AGRICULTURAL LANDS

Manual and mechanical treatment options for controlling pests on agricultural lands that are evaluated in this PEIR include pulling, mulching, hoeing, weedmats, mowing, green flaming, discing, and cultivation. Additional methods, such as covering/tarping, crop rotation, and soil sterilization are included in the IPM Manual; however, as described in Section 2.7.1, "IPM Treatment Types," these are cultural control methods that would be covered by site-specific agricultural management plans and implemented by the tenant; therefore, these methods not described in detail in this PEIR. Refer to Chapter 3 through 7 of the IPM Manual for a full description of all treatment options proposed under the IPM Program. Refer to Section 2.7.1, "IPM Treatment Types," for descriptions of pulling, mulching, hoeing, weedmats, mowing, green flaming, discing, and cultivation.

2.8.3 IPM in Buildings and Structures

Authority properties include buildings such as the administrative office located in San Jose, and numerous structures such as barns, uninhabited houses, and sheds in the preserves. Certain animals and plants may be incompatible with human use of these structures or may harm the building itself. For example, rodents, ants, bats, and similar structural pest species are typically controlled in buildings when their population numbers may result in structural damage or health risks to humans. The purpose of pest control in Authority buildings is to manage pests for human health and safety and preserve the intended uses of the building structure.

As described above, the IPM Program would first use prevention, sanitation, and maintenance as the primary structural pest control treatment options to eliminate pest problems. Despite efforts to prevent pests from becoming a nuisance, pests may still establish themselves in Authority buildings, requiring more active pest control. Active pest management options would begin with natural pest controls (such as diatomaceous earth) before using chemical-based compounds, unless there is an immediate threat to human health or safety. Each situation would be assessed by Authority staff based on the pest, level of threat, and location. Active pest control would be used as a last resort, and only for specific pests, as described in more detail below under “Chemical Treatment Options in Buildings.”

MANUAL, MECHANICAL, AND CHEMICAL TREATMENT OPTIONS FOR BUILDINGS AND STRUCTURES

Manual and mechanical treatment options for pest management related to buildings and structures involves prevention (e.g., keeping the inside of buildings clean and free of food), physical controls (e.g., filling cracks, pruning vegetation, using sticky or snap traps), habitat modifications (e.g., preventing entry through exclusion techniques, moving habitat/nests, destroying burrows), and chemical control (e.g., use of insecticides, rodenticides, or fumigants). Structural pest infestations that pose an immediate threat to human health or public safety would warrant the use of herbicides, insecticides, rodenticides, or fumigants if non-chemical control would not effectively address the infestation. Chemical controls used would be the least harmful, most efficient treatment methods for controlling structural pests. Descriptions of treatment options by pest species that have the potential to result in adverse impacts to the environment are provided below.

Ants/Insects

- ▶ *Diatomaceous Earth*. Diatomaceous earth (DE) is a silica-based, naturally occurring mineral product that works as a generalist insect pesticide. It is composed of the fossilized silica cases of marine diatoms that have been mined from ancient marine sediments. The dusts are considered non-toxic although care should be taken to not inhale large amounts of dust during application as all mineral and wood dusts are considered hazardous in extremely large amounts. Food-grade DE is available to mix directly in human and pet foods to manage pests that occur in bulk food storage. DE works by mechanically abrading an insect’s exoskeleton that leads to dehydration and eventual death of the insect. DE is non-selective so it must be used only in specific areas where the target pests travel. The dusts are not eaten – so must be applied in areas where they will make contact with the bodies of insect pests. For ant control, it is often applied to cracks and crevices and may also be used in conjunction with caulks and foams to fill problem areas.
- ▶ *Insecticidal Soap Spray*. Insecticidal soaps are specially designed mixes of fatty acids that are made to penetrate an insect’s covering and dissolve its cell membranes causing dehydration and mortality. Generally, the soaps are formulated to not dissolve plant cell membranes so are safe to apply directly to plants. Insecticidal soaps are not effective on all insects, but soft bodied insects, such as Homopterans, are highly susceptible. When used for ant control, soaps are most effective in controlling the Homopteran insects on plants that attract and sustain ant colonies.
- ▶ *Boric Acid Bait*. Boric acid is a naturally occurring compound found in many fruits and vegetables, but at concentrated doses it can be an effective stomach poison for insects. Baits use low concentrations of boric acid – sodium tetraborate decahydrate – in the range of 0.5 – 5 percent to allow for ants to ingest the bait and take it back to the colony to share with other workers before there is a lethal effect. Higher concentrations risk killing the individual before it has time to take the bait back to the colony.

- ▶ *Fipronil*. Fipronil is a broad-spectrum insecticide common in household cockroach/ant baits and flea sprays for pets. When used as an ant bait, it is toxic to insects through ingestion where it blocks chloride channels in the central nervous system; resulting in excess neuronal stimulation and death of the target insect pest. It has higher binding affinity in insect receptor sites versus mammalian receptors so it is considered highly selective for insects and safe to use in human environments. It is considered one of the most effective baits for colony control of Argentine ants in situations when boric acid-based baits are less effective. Fipronil is relatively quick-acting compared to other natural pesticides. Only small amounts of bait are necessary to control ants compared to knockdown sprays, which must be applied more widely in the environment to be effective. Small amounts of fipronil will be used as a last-resort option when extremely high populations of ants must be controlled quickly.
- ▶ *Sulfuryl Fluoride*. Sulfuryl fluoride is a colorless and odorless gas that is the primary active ingredient in fumigants intended for pest control in buildings and structures. It is used by filling the airspace within a structure and placing a tent over the structure to securely trap the gas inside. The gas penetrates cracks, crevices, fabrics, and pores in wood within the structure to eliminate pests, such as drywood termites. After fumigation, the tent is removed, the structure is aerated, and the applicator conducts air monitoring to make sure sulfuryl fluoride levels do not exceed the EPA limit of 1 part per million (ppm). Residual sulfuryl fluoride released from structures after tent removal rapidly spreads out in the air; contact with sulfuryl fluoride at high levels for long periods of time is not anticipated and it is low in toxicity to wild mammals if inhaled at expected exposure levels (Bond et. al., 2017; NPIC 2019).

Cockroaches

- ▶ *DE*. Same as described above for ants and insects.
- ▶ *Boric Acid Dusts*. Same as described above for ants and insects, except boric acid dust would be used to control cockroach infestations. The dusts (when kept dry) have a long service life and provide control for many years after application. They are practically non-detectable to cockroaches, so unlike many other chemical products that cockroaches can detect and avoid, they offer one of the more effective methods for cockroach control. Boric acid dusts are highly effective for cockroach control when applied to cracks and crevices where cockroaches are known to occur. The dust is relatively slow acting that take up to 10 to 15 days to achieve effective elimination of problem insects so it should generally be used in compliment with a baiting program to achieve full control of cockroach outbreaks.
- ▶ *Hydroprene*. Hydroprene is a synthetic insect growth regulator (IGR) that mimics juvenile insect hormones to regulate insect pest populations. Although they do not poison an insect directly to cause a lethal effect, they do interrupt the development cycle of juvenile cockroaches so they do not ever reach a reproductive stage. This mode of action can be important to reducing adult populations by preventing young insects from reaching adulthood and breeding. For this same reason, hydroprene is considered highly specific to insect pests and has low toxicity for birds and mammals, species that do not possess these same types of growth hormones. IGRs are not an ideal stand-alone control, but they are effective when used in combination with other methods to reduce populations of troublesome insects.
- ▶ *Fipronil*. Same as described above for ants and insects.
- ▶ *Indoxacarb insecticidal baits*. Indoxacarb is a synthetic, non-systemic insecticide effective on chewing and sucking insects. When used as cockroach bait, it is toxic to insects through ingestion where it blocks sodium channels in the central nervous system resulting in paralysis and elimination of the target insect pest. It replaces more hazardous organophosphate insecticides while still providing a fast acting, quick knockdown pest control option. Indoxacarb is a quick acting insecticide and offers exceptional German cockroach control potential. This product is recommended for last-resort options in challenging cockroach pest control scenarios.

Mice/Rodents

All woodrats found on Authority lands are the San Francisco Dusky-footed woodrat (*Neotoma fuscipes annectens*) which is a CDFW Species of Special Concern. Control of woodrats, as with all native species, would first focus on prevention instead of physical or chemical control.

- ▶ *Snap Traps (mice and rats)*. Basic hardware store mouse and rat traps offer one of the most effective means for mouse population control. When uncontrolled populations are present, snap traps can be used to “knockdown” large populations and then maintained to keep the population under control. Time would be invested in determining where rodents are active and then setting traps in appropriate locations. Roof and Norway rats are known to be trap shy, thus pre-baiting is essential to allow rats to associate rat traps with feeding stations, a process that can take several weeks.
- ▶ *Box Traps (mice)*. Several types of box traps are available that are capable of trapping multiple individual mice per trapping event. These traps operate on the principal that mice are attracted to small openings and are naturally inquisitive. These traps are most successful for house mouse control. Traps would be inspected on a daily basis so live trapped mice can be humanely dispatched.
- ▶ *Habitat Modification (woodrats)*: If they appear to be a constant source of infestation, woodrat nests within 100 feet of buildings will be moved, only after consultation with CDFW.
- ▶ *Acute Rodenticide – Cholecalciferol (Vitamin D3)*. Cholecalciferol is a natural form of Vitamin D that is industrially synthesized from lanolin (sheep’s wool) to produce human dietary supplements and rodent poison. In very high doses, it causes mobilization of calcium from the bone matrix to blood plasma, causing hypercalcemia and death. It is especially toxic to rodents and a single dose of toxicant acts as an acute poison. It is the only current rodenticide in California labeled for organic food production. It is considered a low risk for secondary poisoning in wildlife but can be a hazard to non-target pets that directly consume the bait. Rodenticides would only be used as a last resort in tamper-proof anchored containers.

Skunks/Opossums/Raccoons

- ▶ *Habitat Modification*. Larger openings, such as under decks and porches, would be fully enclosed with plywood, concrete, or wire mesh to prevent animals from making dens under structures. If animals are already denning in the areas, one-way, hinged doors would be used to allow them out but preventing them from returning. The Authority would confirm there are no juvenile animals in the den before using one-way doors.
- ▶ *Live Box/Cage Traps*. All skunks, opossum, and raccoons are easily trapped with live box or cage traps. Trap design varies but solid wall traps are preferred for skunks to shield the trapper from skunk spray during the control operation. The use of live trapping methods requires daily monitoring and helps to ensure that non-target animals can be released unharmed. Current CDFW trapping regulations requires that trapped animals are either released immediately or euthanized, live animals may not be relocated without a permit from CDFW.

Ground Squirrels

- ▶ *Habitat Modification*. If deemed necessary, old burrows would be destroyed by deep ripping them to a depth of at least 20 inches, using a tractor and ripping bar(s). Simply filling in burrows with soil does not prevent reinvasion as ground squirrels easily find and reopen old burrows. If this method is used, appropriate permits would be obtained to avoid impacts to sensitive species.
- ▶ *Acute Rodenticide – Cholecalciferol (Vitamin D3)*. Chemical control of ground squirrels would not be considered except under very unusual circumstances (i.e., human health and safety considerations). The Authority does not currently use rodenticides and would only use them in the future as a last resort. In the unlikely event that chemical control of ground squirrels is deemed necessary, rodenticides would only be used in tamper-proof anchored containers.

Bats

- ▶ *Prevention/Habitat Modification*. The Authority would carefully assess where bats are entering structures and modify the building to exclude future entry, and screening or netting would be installed in obvious roof/gable areas where bats can roost. One-way trap doors to allow bats to escape roost areas after exclusionary methods are completed would be installed.

Feral Domestic Pets

- ▶ *Prevention/Habitat Modification.* Feral domestic pets can be relics of old structures. If the Authority inherits older buildings/infrastructure that support feral pets, wildlife exclusion features would be installed. In some rare cases, the Authority may consider retrofitting structures so they can no longer support animals.
- ▶ *Live Box/Cage Traps.* Feral cats are effectively captured using live box or cage traps. Because feral domestic pets may be private property, Authority staff would conduct all trapping in conjunction with local animal control departments and/or animal shelters. The use of live trapping methods requires daily monitoring and helps to ensure that non-target animals can be released unharmed.

2.8.4 IPM for Recreational Facilities and Vegetative Rights-of-Way

Recreational facilities and vegetative rights-of-way (ROW) within Authority preserves are areas where public use is most likely to occur. Recreational facilities include parking lots, roads and trail, bridges, gates, bathrooms, and picnic areas. In these areas, pests can become a nuisance to the public and are referred to as nuisance pests. Nuisance pests include species that commonly occur on Authority lands, such as stinging insects, but whose presence can be incompatible when their proximity or behavior conflict with human use of buildings and recreational facilities in the preserves. Nuisance pests in and around recreational facilities and vegetative ROW include plants, insects, and wildlife, such as mosquitos, ticks, wasps, rattlesnakes, and poison oak. Managing nuisance pests involves preventative measures, such as managing the facility so that extra resources attracting the pest are no longer found (i.e., controlling trash in picnic areas). In some cases, manual and mechanical treatments or chemical control may be required to effectively minimize a pest problem within or near recreational facilities and vegetative ROW. The manual, mechanical, and chemical treatment options for recreational facilities are described below.

MANUAL AND MECHANICAL TREATMENT OPTIONS FOR RECREATIONAL FACILITIES AND VEGETATIVE ROW

The following summarizes manual and mechanical control treatment options for recreational facilities and vegetative ROW.

Vegetative ROW Treatments

- ▶ *Mechanical mowing.* Mechanical mowing would be used to prevent vegetation from impeding roads and trails, and from encroaching on or near parking lots, gates, and stiles. Equipment includes weed whips, hedgers, chainsaws, poles saws, chippers, and tractor-operated mowers. The frequency of brushing depends on the use of the road/trail, weather conditions, and location. Areas of high use or where access is needed for safety would be brushed more frequently than remote locations.
- ▶ *Tree removal.* Hazard and downed trees would be limbed or removed if they present a fall hazard across a public facility such as a trail, are blocking roads, trail, or parking lots, or are otherwise hazardous to visitors, staff, or contractors. The trees may be dead or alive. Stumps of live trees may be treated with herbicide to prevent re-growth.
- ▶ *Scraping/grubbing.* Grubbing to bare mineral dirt would be conducted around utility poles and boxes to reduce the risk of fire.

Social Wasps

- ▶ *Habitat modification/digging.* Problem wasp nests would be physically removed with water jets or by digging them out of underground locations.

Rattlesnakes

- ▶ *Habitat modification.* Eliminate hiding places for snakes by trailheads, trail ROW, and parking areas by mowing brush, removing rock and brush piles near high use areas, and filling cracks and holes in publicly accessible buildings.
- ▶ *Trapping.* In certain areas (especially in structures and recreational facilities where humans gather and there is potential for snakebites), the Authority may elect to capture and relocate, or eliminate single problem snakes.

CHEMICAL TREATMENT OPTIONS FOR RECREATIONAL FACILITIES AND VEGETATIVE ROW

Vegetative ROW Treatments

- ▶ Chemical treatment is typically not used for ROW clearing unless perennial plants require permanent treatment (e.g., poison oak can be eliminated from specific locations with spot application of herbicides), are near paved surfaces, are around utility poles, or to reduce the risk of fire spread from ROW into natural lands by clearing the area of vegetation. Chemicals proposed for use to treat vegetative ROW include glyphosate (Roundup ProMax) and Imazpyr (Polaris), which would be applied via spray using a backpack or boom on an ATV or truck.

Mosquitos

- ▶ Where chemical control is determined to be the only viable treatment option for a specific concern to human health and safety around a recreational facility, the Authority will contact the Santa Clara County Vector Control District for assistance.

Social Wasps

- ▶ *Pyrethrin Aerosol Sprays.* Pyrethrin-type aerosol sprays containing d-trans allethrin and phenothrin would only be used where immediate threats exist to human health and safety. These aerosol sprays are extremely effective at immediately eliminating single, problem wasp nests. The pyrethrin-type sprays work as a contact neuro-poison that results in near immediate mortality of any insect. The sprays offer a relatively safe and effective means for Authority staff to respond to immediate threats of wasp nests. Contact pyrethrins are completely non-selective, so care must be taken to target only the pest wasp and not to impact other beneficial insects.

2.9 ENVIRONMENTAL PROTECTION MEASURES

The Santa Clara Valley Habitat Plan (Habitat Plan) is a habitat conservation plan and natural community conservation plan that provides take coverage under the federal Endangered Species Act and the California Endangered Species Act for several listed species for certain covered activities within the geographic scope of the Habitat Plan. The geographic scope of the Habitat Plan incorporates a large portion of Santa Clara County and contains the majority of the IPM Program Area. Species covered by the Habitat Plan include species listed as threatened and endangered under the ESA and CESA, as well as other special-status species, many of which occur within IPM Program Area preserves (refer to Table 3.2-1 in Section 3.2, Biological Resources). The Authority would seek take coverage under the Habitat Plan for IPM Program treatment activities that could result in take, with the exception of take of federally listed species from the application of the pesticides because the Habitat Plan does not provide for take coverage for that situation. Where take coverage for IPM Program activities is provided, the Authority would comply with the specific Habitat Plan minimization and avoidance measures that are required specific to each activity and each species. In addition, the specific environmental protection measures (EPMs) would be incorporated into the design of treatments under the IPM Program to avoid and minimize environmental impacts and help achieve compliance with applicable laws and regulations. Some of the biological resource EPMs specific to avoiding take may be satisfied through take coverage under the Habitat Plan and compliance with the specific Habitat Plan avoidance and minimization measures. The Authority will document which IPM Program activities and special-status species are provided take coverage under the Habitat Plan as well as the associated measures they are required to implement.

2.9.1 Air Quality Environmental Protection Measures

- ▶ **EPM AQ-1 Minimize Air Pollutant Emissions:** The Authority would implement applicable measures from the Bay Area Air Quality Management District's *Basic Construction Mitigation Measures*, for IPM activities that would involve vehicle use on unpaved roadways and the use of heavy mechanical equipment. These measures would include, but are not limited to, the following:
 - All vehicle speeds on unpaved roads will be limited to 15 mph.

- Idling times will 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 California Code of Regulations). Clear signage will be provided for Authority staff and contractors.
- All equipment will be maintained and properly tuned in accordance with manufacturer's specifications. All equipment will be checked by a certified mechanic and determined to be running in proper condition prior to operation.

2.9.2 Biological Resource Environmental Protection Measures

- ▶ **EPM BIO-1 Pre-treatment Survey and Buffers for Aquatic Habitat:** All terrestrial treatment areas will be surveyed for the presence of lakes, ponds, streams, drainages, seeps, springs, saturated soils, or similar features that hold water at the time of treatment or typically become inundated during winter rains. Surveys will occur prior to the initial treatment within a treatment area, and the extent of aquatic features will be reverified prior to implementing treatments in subsequent years. The Authority will not conduct any ground disturbing mechanical treatments or any chemical treatments within 15 feet of any aquatic features, and broadcast spraying of herbicides will be prohibited within 50 feet of aquatic features (unless the compound is specifically registered for aquatic use). Refer to EPM BIO-8 for additional restrictions on the use of specific chemicals near California-red legged frog (CRLF) habitats, including aquatic features.
- ▶ **EPM BIO-2 Pre-treatment Surveys and Flagging for Special-Status Plants:** All treatment areas will be surveyed prior to IPM treatments to determine the potential presence of special-status plants. Special-status plants within a treatment area will be mapped and/or flagged and avoided.
- ▶ **EPM BIO-3 Limited Herbicide Use Near Special-Status Plants:** Within 15 feet of special-status plants, the Authority will not broadcast spray (i.e., boom spray from an ATV) any herbicides that could have an adverse effect on the special-status plant species present (e.g., non-selective herbicides that injure all plant species they come in contact with).
- ▶ **EPM BIO-4 Treatment Timing for Special-Status Plants:** Many special-status plants are annual plants, which persist over the summer, are dormant through the winter, with seeds that germinate in the early spring. When annual special-status plants are dormant (prior to germination), only treatments that do not affect seeds or underground parts may be used within 15 feet of them.
- ▶ **EPM BIO-5 Salvage Rare Plants Propagules:** Seed or other propagules of rare plants will be collected before treatments, as feasible, and utilized in restoration post-treatment if needed.
- ▶ **EPM BIO-6 Avoid Nesting Bird Season:** To avoid impacts to nesting birds, invasive plant control treatments will be conducted outside of the bird nesting period, so treatments would not generally occur between February 1 – August 31, if they may adversely affect native bird nests.
- ▶ **EPM BIO-7 Avoid Nesting Birds:** If invasive plant control work must be conducted during the nesting bird season (February 1 – August 31), a nesting bird survey will be conducted within 14 days of treatment. The survey will encompass the area within a 250-foot radius for raptors, and 50-foot-radius for other birds. If nesting birds are identified, work within these buffer areas will be postponed until the young have fledged or the nest is otherwise abandoned.
- ▶ **EPM BIO-8 Herbicide Restrictions for California Red-Legged Frog:** Application of herbicides by the Authority with active ingredients that are subject to the CRLF Injunction (Center for Biological Diversity v. U.S. Environmental Protection Agency [2006] Case No.: 02-1580-JSW) would be prohibited within 60 feet of CRLF critical habitats, upland habitats, and aquatic features.
- ▶ **EPM BIO-9 Avoid Monarch Butterfly Overwintering Sites:** Although it is unlikely that monarch butterfly overwintering sites will occur within treatment areas, to avoid potential impacts to overwintering monarchs, the Authority will survey for overwintering colonies where treatment areas occur within suitable overwintering habitat (e.g., conifer stands and eucalyptus stands) during the overwintering season (October through March) within 14

days before starting treatment. If overwintering colonies are identified, the site will be flagged and treatments that may disturb the colony (e.g., mechanical treatments or chemical treatments) will not occur within the site while the colony is present.

- ▶ **EPM BIO-10 Pre-treatment Surveys and Flagging for Monarch Butterfly Host Plants:** All treatment areas will be surveyed prior to IPM treatments to determine the potential presence of the monarch butterfly host plant milkweed (*Asclepias* spp.). Milkweed plants within a treatment area will be mapped and/or flagged and avoided.
- ▶ **EPM BIO-11 Limited Herbicide Use Near Monarch Butterfly Host Plants:** Within 15 feet of monarch host plants, the Authority will not broadcast spray (i.e., boom spray from an ATV) any herbicides that could have an adverse effect on the monarch butterfly host plants. (e.g., non-selective herbicides that injure all plant species they come in contact with).

2.9.3 Hazardous Material and Public Health and Safety Environmental Protection Measures

- ▶ **EPM HAZ-1 Maintain All Equipment:** The Authority will maintain all diesel- and gasoline-powered equipment per manufacturer's specifications, and in compliance with all state and federal emissions requirements. Maintenance records will be available for verification. Before the start of treatment activities, the Authority (or contractor) will inspect all equipment for leaks and inspect everyday thereafter until equipment is removed from the site. Any equipment found leaking will be promptly removed.
- ▶ **EPM HAZ-2 Require Spark Arrestors:** The Authority will require all mechanized hand tools to have federal- or state-approved spark arrestors.
- ▶ **EPM HAZ-3 Prohibit Smoking in Vegetated Areas:** The Authority will require that smoking is only permitted in designated smoking areas barren or cleared to mineral soil at least 3 feet in diameter (PRC Section 4423.4), if smoking is permitted at all.
- ▶ **EPM HAZ-4 Pesticide Handling and Mixing:** The following EPMs will be implemented by the Authority when handling or mixing pesticides.
 - Authority staff will comply with all federal, State, and local pesticide use laws and regulations.
 - As a precaution against spilling, spray tanks will not be left unattended during filling. All pesticide spray equipment will be properly cleaned.
 - Where possible, rinsate will be used as part of the water in the sprayer tank and applied to treatment areas.
 - All pesticide containers will be triple rinsed, and the rinsate will be used as water in the sprayer tank and applied to treatment areas.
 - When a pesticide container is marked as recyclable, Authority staff will deliver the triple rinsed pesticide containers to the appropriate herbicide container collection site.
 - All unused pesticides would be properly discarded at a local "safe send" collection.
 - Pesticides and pesticide containers will be lawfully stored, handled, and disposed of in accordance with the label and in a manner that would safeguard human, fish, and wildlife health and prevent soil and water contamination.
 - Authority staff will consider the water quality parameters (e.g., pH, hardness) that are important to ensure the greatest efficacy when specified on the pesticide label.
 - All pesticide spills will be addressed immediately.

- **EPM HAZ-5 Pesticide Application:** The following EPMs will be implemented by the Authority when applying pesticides.
- Authority staff will comply with all federal, State, and local pesticide use laws and regulations. For example, Authority staff will use application equipment and apply rates for the specific pest(s) identified on the pesticide label.
 - Before each treatment season and before mixing or applying any product for the first time each season, all applicators will review the product label.
 - Applicators will follow all label recommendations regarding buffer zones around wetlands and waters, where applicable.
 - Only herbicides registered for aquatic use will be broadcast sprayed within 50 feet of aquatic resources, and no pesticides would be used within 15 feet of aquatic resources (i.e., surface waters, wetlands, seasonal streams, or locations where groundwater is present at the soil surface).
 - Applicators will use low impact herbicide application techniques (e.g., spot treatment and cut stump applications) rather than spray applications (e.g., boom sprayer or other larger tank wand applications), wherever practical.
 - Applicators will use low volume rather than high volume spray applications when the low impact methods described above are not feasible or practical to maximize herbicide effectiveness and ensure correct and uniform application rates.
 - Applicators will use and adjust spray equipment to apply the coarsest and largest droplet size with optimal coverage of the target species to reduce the potential for drift.
 - Applicators will use drift reduction technologies such as low-drift nozzles, where possible.
 - Spraying will occur during low and consistent direction wind conditions (average less than 7 mph; preferably 3-5 mph) and moderate temperatures (less than 85 degrees Fahrenheit) to prevent unintended drift.
 - Applicators will avoid spraying during inversion conditions (often associated with calm or very low wind conditions) that can cause large-scale herbicide drift to non-target areas.
 - Equipment will be calibrated regularly to ensure that the proper rate of pesticide is applied to the target area or species.
 - Spray applications will be made at the lowest height for uniform coverage of target pests to minimize or eliminate potential drift.
 - If windy conditions frequently occur during afternoons, spraying (especially boom treatments) will be conducted during early morning hours.
 - Herbicide applications will not be conducted on days with greater than 30 percent forecast for rain within six hours, except for pesticides that are rapidly rain fast or need rain to activate the product to minimize or eliminate potential runoff. Within 100 feet of aquatic resources (surface waters, wetlands, seasonal streams, or locations where groundwater is present at the soil surface) this rain-free window will be increased to 24 hours.
 - Applicators will use environmentally safe drift retardant adjuvants during spray applications, especially adjacent to sensitive areas.
 - Applicators will use a non-toxic dye to aid in identifying treated target areas and any areas of overspray or drift. Dye would also aid in detecting equipment leaks. If a leak is discovered, application would stop immediately and the sprayer would not be used until repairs are made.
 - When drift cannot be sufficiently reduced through altering equipment set up and application techniques, buffer zones in addition to those described above will be identified to protect sensitive areas downwind of applications.
 - When an application is required adjacent to a sensitive habitat area, it will only occur when the wind is blowing in the opposite direction of the sensitive area.
 - To eliminate unnecessary pesticide applications, Authority staff will examine the target area for the presence of expected pests before applying a pesticide product.

- Authority staff will consider the timing of a pesticide application to ensure that native plants are protected (e.g., senescence) while effectively treating invasive plants.
 - Application equipment (e.g., backpack sprayer, transport vehicles) will be thoroughly cleaned and Personal Protective Equipment (PPE) removed and properly disposed of after treatments.
- **EPM HAZ-6 Notification of Pesticide Use in the Vicinity of Public Areas:** Signage will be posted at each pedestrian entry point notifying the public of upcoming and recent pesticide application locations, and footpaths and trails will be closed to the public during pesticide application. Signs will be posted before the start of treatment and notification would remain in place for at least 72 hours after treatment ceases.

2.10 POTENTIAL PERMITS AND APPROVALS REQUIRED

Table 2-4 discloses the potential permits and approvals that could be required to implement the IPM Program, depending on the resources encountered in the Authority's preserves.

Table 2-4 Potential Permits and Approvals Required for IPM Program Activities

Permit	Agency	Purpose
Section 404 Permit (Nationwide or Regional General Permit)	U.S. Army Corps of Engineers	Minimize and mitigate impacts to wetlands, waters of the U.S. and aquatic resources.
Section 10 Incidental Take Permit or Section 7 Consultation (if a federal agency is involved)	U.S. Fish and Wildlife Service	To minimize impacts to special-status species listed under FESA (*only required for activities that would result in "take" of FESA listed species if take coverage through the Santa Clara Valley HCP is not obtained*).
Section 10(a)(1)(A) Recovery Permit	U.S. Fish and Wildlife Service	Avoid and minimize impacts on federally listed species by specific management actions (*may be required for individuals performing non-native turtle and bullfrog removal by methods not covered under sport fishing regulations*).
Section 1602 Fish and Game Code Lake and Streambed Alteration Agreement	California Department of Fish and Wildlife	Minimize impacts to any river, stream, or lake and activities that may affect fish and wildlife resources.
Section 2081 Incidental Take Permit	California Department of Fish and Wildlife	To minimize impacts to special-status species listed under CESA (*only required for activities that would result in "take" of CESA listed species if take coverage through the Santa Clara Valley HCP is not obtained*).
Section 4181 Fish and Game Code Depredation Permit to Take Wild Pigs	California Department of Fish and Wildlife	Authorization to capture or kill feral pigs to reduce damage caused by these invasive animals.
Section 650 Fish and Game Code Scientific Collection Permit	California Department of Fish and Wildlife	Authorization to collect brown-headed cowbirds. Also, authorization to collect bullfrogs and non-native turtles by methods not covered under sport fishing regulations.
Request for Coverage under the Santa Clara Valley HCP	Santa Clara Valley Habitat Agency	Provides take authorization for listed species from U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife.
Restricted Materials Use Permit	Santa Clara County Agricultural Commissioner	Minimize adverse effects associated with using restricted use pesticides.
Section 401 Water Quality Certification	San Francisco Bay and Central Coast Regional Water Quality Control Boards	Minimize impacts to water quality in combination with the Section 404 permit and potentially related to other potential sources of sediment or pollutants entering waters of the state.

Notes: CESA = California Endangered Species Act, ESA = Federal Endangered Species Act, HCP = Habitat Conservation Plan

Source: Compiled by Ascent Environmental in 2019

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3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

3.1 APPROACH TO THE ENVIRONMENTAL ANALYSIS

This Draft Program Environmental Impact Report (PEIR) evaluates and discloses the environmental impacts associated with implementation of the Integrated Pest Management (IPM) Program, in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Section 21000, et seq.) and the State CEQA Guidelines (California Code of Regulation, Title 14, Chapter 3, Section 1500, et seq.). The Executive Summary includes an analysis of the program's growth inducing impacts, as required by Section 21100(b)(5) of CEQA. Sections 3.2 through 3.8 of this Draft PEIR present a discussion of regulatory background, existing conditions, environmental impacts associated with implementation of the IPM Program, mitigation measures to reduce potentially significant impacts, and residual level of significance (i.e., after application of mitigation, including impacts that would remain significant and unavoidable after application of all feasible mitigation measures) for each environmental topic required by the State CEQA Guidelines. Issues evaluated in these sections were also identified for review in the Notice of Preparation prepared for the IPM Program (see Appendix A of this Draft PEIR). Chapter 4 of this Draft PEIR, "Cumulative Impacts," presents an analysis of the IPM Program's impacts considered together with other past, present, and probable future projects producing related impacts, as required by Section 15130 of the State CEQA Guidelines. Chapter 5, "Alternatives," presents a reasonable range of alternatives and evaluates the environmental effects of those alternatives relative to the proposed IPM Program, as required by Section 15126.6 of the State CEQA Guidelines.

Sections 3.2 through 3.8 of this Draft PEIR each include the following subsections.

Regulatory Setting: This subsection presents information on the laws, regulations, plans, and policies that relate to the environmental topic being discussed. Regulations originating from the federal, state, and local levels are each discussed as appropriate.

Environmental Setting: This subsection presents the existing environmental conditions in the IPM Program Area and in the surrounding area as appropriate, at the time that the Notice of Preparation was published, in accordance with State CEQA Guidelines Section 15125. The discussions of the environmental setting focus on information relevant to the issue under evaluation. The extent of the environmental setting area evaluated (i.e., the study area) differs among resources, depending on the locations where impacts would be expected. For example, air quality impacts are assessed for the air basin, whereas aesthetic impacts only need to be assessed for the IPM Program Area vicinity where IPM treatments and associated visual changes could occur.

Environmental Impacts and Mitigation Measures: This subsection presents thresholds of significance for evaluating potential impacts and discusses the potential for adverse effects to the environment from implementation of the IPM Program, including areas beyond the IPM Program Area boundaries, in accordance with State CEQA Guidelines Section 15126.2. The methodology for the impact analysis is described, including technical studies upon which the analyses rely. The thresholds of significance are defined and thresholds for which the IPM Program would have no significant impacts are disclosed and dismissed from further evaluation. IPM Program impacts and mitigation measures are numbered sequentially in each subsection (Impact 3.2-1, Impact 3.2-2, Impact 3.2-3, etc.). A summary impact statement precedes a more detailed discussion of the environmental impact. The discussion includes the analysis, rationale, and substantial evidence upon which conclusions are drawn. The determination of level of significance of the impact is defined in bold text. A "less-than-significant" impact is one that would not result in a substantial adverse change in the physical environment. A "potentially significant" impact or "significant" impact is one that would result in a substantial adverse change in the physical environment; both are treated the same under CEQA in terms of procedural requirements and the need to identify feasible mitigation. Mitigation measures are identified, as feasible, to avoid, minimize, rectify, reduce, or compensate for significant or potentially significant impacts, in accordance with the State CEQA Guidelines Section 15126.4. Unless otherwise noted, the mitigation measures presented are recommended in the Draft PEIR for consideration by the Authority to adopt as conditions of approval.

Where an existing law, regulation, or permit specifies mandatory and prescriptive actions about how to fulfill the regulatory requirement as part of the project's definition, leaving little discretion in its implementation, and would avoid an impact or maintain it at a less-than-significant level, the environmental protection afforded by the regulation is considered before determining impact significance. Where existing laws or regulations specify a mandatory permit process for future projects, performance standards without prescriptive actions to accomplish them, or other requirements that allow substantial discretion in how they are accomplished, or have a substantial compensatory component, the level of significance is determined before applying the influence of the regulatory requirements. In this circumstance, the impact would be potentially significant or significant, and the regulatory requirements would be included as a mitigation measure.

This subsection also describes whether mitigation measures would reduce IPM Program impacts to less-than-significant levels. Significant-and-unavoidable impacts are identified as appropriate in accordance with State CEQA Guidelines Section 15126.2(b). Significant-and-unavoidable impacts are also summarized in the Executive Summary.

References: The full references associated with the parenthetical references found throughout Sections 3.1 through 3.8 can be found in Chapter 7, "References," organized by section number.

3.1.1 Effects Found Not to Be Significant

The discussion of potential effects on the physical environment in PEIR Sections 3.2 through 3.8 is focused on those impacts that may be significant or potentially significant. CEQA allows a lead agency to limit the detail of discussion of the environmental effects that are not significant or potentially significant (PRC Section 21100, California Code of Regulations Sections 15126.2[a] and 15128 of the State CEQA Guidelines). Implementation of the IPM Program would have no significant impacts to several environmental topic areas; these resources, and a brief explanation as to why no significant impact would occur, are summarized below.

AIR QUALITY AND GREENHOUSE GAS EMISSIONS

The IPM Program Area is in the San Francisco Bay Area Air Basin (SFBAAB) and is within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). BAAQMD attains and maintains air quality conditions in the SFBAAB through a comprehensive program that includes the preparation of plans and programs for the attainment of ambient-air quality standards and to address climate change, adoption and enforcement of rules and regulations, and issuance of permits for stationary sources.

The IPM Program is a pest management program that does not include new construction activities or the establishment of any new stationary sources of criteria air pollutant and greenhouse gas (GHG) emissions. Pest management activities implemented under the IPM Program may involve the use of small power tools; mechanical equipment such as weed whips, chainsaws, tractors, and mowers; ATVs for herbicide application; and vehicles for worker commute, which would generate temporary and periodic exhaust emissions of criteria air pollutants and GHGs. Pest management activities that involve travel on unpaved roads or ground disturbance, such as digging, discing, and scraping/grubbing could result in fugitive dust emissions. The hand tools and small power tools proposed for use generate zero to small amounts of air pollutants and GHG emissions. Larger equipment such as tractors or ATVs, which generate greater emissions, would be used infrequently, and it is anticipated that the IPM Program would be implemented using the Authority's existing vehicles and equipment and would not require the purchase of additional mechanical equipment. As discussed in Section 2.7, "Proposed IPM Program Treatment Activities," IPM activities would generally be short in duration, involve minimal pieces of emissions-generating equipment, and require only one to three Authority staff members to implement. Currently, up to 20 treatment activities are conducted simultaneously across the Authority's preserves. Implementation of the IPM Program would be reasonably expected to increase the number of simultaneous treatment activities by four treatments within the IPM Program Area. Thus, a substantial increase in emissions generating activities or fugitive dust over existing conditions would not occur. Furthermore, the Authority would implement environmental protection measure AQ-1

(EPM AQ-1) to comply with all applicable BAAQMD *Basic Construction Mitigation Measures* to reduce fugitive dust emissions and limit equipment idling time to 5 minutes to minimize exhaust emissions of air pollutants and GHGs.

Green flaming, a specialized method for controlling infestations of new invasive plant seedlings, would also be implemented occasionally under the IPM Program. The use of hand torches for green flaming would emit small quantities criteria air pollutants and GHGs. BAAQMD Regulation 5 forbids open burning within the air district with certain exceptions. Section 5-110.3 of the regulation provides an exemption for the type of green flaming proposed under the IPM Program, because actual combustion would be short-term and limited to when the torch is in use. Furthermore, because implementation of the IPM Program is to increase the number of simultaneous treatment activities by up to four treatments within the IPM Program Area, a substantial increase in emissions generating activities, including green flaming, would not occur. Thus, no significant air quality or GHG impacts would occur due to green flaming.

For these reasons, implementation of the IPM Program would not result in a cumulatively considerable net increase in criteria air pollutant or GHG emissions, nor would it expose sensitive receptors to substantial air pollutant concentrations or odors. Additionally, the IPM Program does not include new housing and only one to two new staff would be hired, thus, no substantial population growth would occur. Consequently, the IPM Program would not conflict with or obstruct implementation of BAAQMD's air quality planning efforts. Therefore, no significant air quality or GHG impacts would occur. These issues are not evaluated further in this Draft PEIR.

AGRICULTURAL AND FORESTRY RESOURCES

The IPM Program Area includes two agricultural preserves. The Pajaro River Agricultural Preserve supports row crops, contains parcels under Williamson Act contracts, and is mapped by the California Department of Conservation as Prime Farmland (Santa Clara County n.d.; DOC 2016a; DOC 2016b). The North Coyote Valley Open Space Preserve contains areas mapped by the California Department of Conservation as Grazing Land and Farmland of Local Importance (DOC 2016a; DOC 2016b). The IPM Program Area does not include any lands zoned as timberland and no timberland production activities are currently undertaken on Authority lands (Santa Clara County 2016). However, as shown in Table 3.3-2, "Land Cover Types in the IPM Program Area by Preserve," the IPM Program Area contains substantial acres of forested lands, including Blue Oak-Foothill Pine Woodland, Blue Oak Forest/Woodland, California Bay Forest, Central Coast Riparian Forests, Coast Live Oak Forest/Woodland, Douglas Fir Forest, Montane Hardwoods, Redwood Forest, Serpentine Hardwoods, and Valley Oak Forest/Woodland.

The purpose of the IPM Program is to manage pests to maintain the specific land uses (e.g., crop production), while also providing natural resource protection. Although the Authority would conduct pest management activities within farmlands and forested lands in the IPM Program Area, these activities would be implemented to promote the long-term viability of these lands and no land use conversions would occur. Therefore, pest management activities under the IPM Program would not result in conversion of important Farmland to non-agricultural uses nor cause other changes that would result in the conversion of important Farmland. Similarly, the IPM Program would not result in the loss of forest land or convert forest land to non-forest use. Therefore, no significant impacts to farmlands or forested lands would occur. This issue is not evaluated further in this Draft PEIR.

ENERGY

Pest management activities under the IPM Program would involve the use of small power tools; mechanical equipment such as weed whips, chainsaws, tractors, and mowers; ATVs for herbicide application; and vehicles for worker commute. The temporary use of energy (i.e., diesel fuel and gasoline) is required to operate these types of equipment and vehicles during pest management activities. As discussed in Section 2.7, "Proposed IPM Program Treatment Activities," IPM activities would generally be short in duration, involve minimal pieces of mechanical equipment, and require only one to three Authority staff members to implement. The Authority anticipates that with implementation of the IPM Program, one to two additional staff may be hired, and the number of treatment activities occurring simultaneously would be reasonably expected to increase by up to four treatments within the IPM Program Area.

This would be a small increase in energy consumption over existing operations and maintenance activities. This small increase in energy consumption required to implement the IPM Program would not be wasteful or inefficient because implementation of the IPM Program would benefit the public and the environment by removing invasive and nuisance pests from the IPM Program Area, thereby enhancing safety for public recreational uses of the preserves as well as native vegetation and habitats. Therefore, no inefficient, wasteful, or unnecessary consumption of energy would occur. This issue is not evaluated further in this Draft PEIR.

GEOLOGY AND SOILS

The IPM Program Area includes seismically active areas that could experience significant ground shaking or result in fault rupture, seismic-related ground failures, and/or landsliding; as well as areas with unstable soils, expansive soils, and erosive soils (Santa Clara County 2012).

The IPM Program provides comprehensive guidelines and procedures for the careful management of pests throughout the Authority's preserves while protecting natural resources and public health. The IPM Program does not include the construction of any new structures, cut, fill, or other grading activities that could be subject to seismic hazards, unstable geological conditions, or expansive soils. In addition, major ground-disturbing work on steep hillsides (that could potentially induce landslides) would not occur. Although some pest management activities such as grubbing and removal of targeted invasive plant species could potentially expose soil to increased erosion, the IPM Manual specifies selection of appropriate treatment types for site-specific conditions and includes restoration measures where invasive plant control has rendered the soil vulnerable to erosion (Appendix B). Lastly, the IPM Program does not include any new structures or features that would cause growth in the IPM Program Area, thereby exposing more people to potential geologic hazards. Therefore, no significant impacts regarding geological hazards or soil erosion would occur. This issue is not evaluated further in this Draft PEIR.

LAND USE AND PLANNING

Land use and planning impacts would occur if the IPM Program would physically divide an established community (e.g., a freeway dividing a populated residential community) or if it would conflict with a land use policy adopted for the purpose of avoiding an environmental effect. The IPM Program is program for managing pests on Authority preserves and would not involve the construction of new development or infrastructure that would physically divide a community.

The Santa Clara County General Plan Land Use Map designates the IPM Program Area as Agriculture; Hillsides; Ranchlands; Regional Parks, Existing; and Other Public Open Space Lands (Santa Clara County 2016). These designations fall under the "Resource Conservation Area" designation, which is intended to encourage land uses and densities appropriate to rural unincorporated areas that also preserve rural character; conserve natural, scenic, and cultural resources; protect public health and safety from natural and man-made hazards; preserve agriculture and prime agricultural soils; protect watersheds and water quality; enhance air quality; and minimize the demand for and cost of public services and facilities (Santa Clara County 1994). The Authority's mission is to conserve the natural environment, support agriculture, and connect people to nature, by protecting open spaces, natural areas, and working farms and ranches. The IPM Program was designed to be consistent with the Authority's mission and with the Authority's IPM Policy (see Section 2.4, "Policy and Planning Context for the IPM Program") and would not change any existing land uses. Thus, the IPM Program would be consistent with local land use plans and would not conflict with any land use policies adopted for the purpose of avoiding an environmental effect. No significant impacts regarding land use would occur and this issue is not evaluated further in this Draft PEIR.

MINERAL RESOURCES

No locally important mineral resource recovery sites are located within the IPM Program area. A portion of the Coyote Ridge Open Space Preserve is classified as MRZ-3, which is an area that contains mineral deposits, but their significance cannot be determined (DOC 1987; Kohler-Antablin 1999). The IPM Program would not result in land use

changes, zoning changes, or development which would prevent recovery of minerals within Authority lands or adjacent sites. Therefore, no significant impacts regarding mineral resources would occur, and this issue is not evaluated further in this Draft PEIR.

NOISE

Noise-sensitive receptors in the IPM Program Area include recreational visitors on Authority lands and occupied residences adjacent to Authority lands. The majority of the IPM Program Area preserves are closed to the public and located within rural areas where sensitive receptors are sparse. The Coyote Valley Open Space Preserve, Rancho Canada del Oro Open Space Preserve, and Sierra Vista Open Space Preserve are currently open to the public, and there are low-density residential developments adjacent to the Santa Teresa Foothills Open Space Preserve and El Toro Open Space Preserve. As discussed in Section 3.4, "Hazards and Hazardous Materials," the IPM Program Area is not located in any airport land use plans and no airports are present within 2 miles of the IPM Program Area. Furthermore, the IPM Program would not result in additional residences or population growth in the IPM Program Area, thus the IPM Program would not result in the exposure of more people to noise residing or working in the project area.

Pest management activities under the IPM Program would use mechanical equipment and vehicles such as chainsaws, weed whips, tractors, and ATVs within the IPM Program Area, which would generate noise and limited amounts of vibration. However, the Authority anticipates that implementation of the IPM Program could result in four additional treatment activities occurring simultaneously within the IPM Program Area. Given this slight increase in IPM activities that would occur relative to existing conditions, the IPM Program would not result in a substantial increase in noise levels or vibration over existing levels. Additionally, all IPM activities would occur during daytime hours when people are less sensitive to noise impacts and would be spread out across the 16,446-acre IPM Program Area. Therefore, no significant impacts related to noise or vibration would occur from implementation of the IPM Program and these issues are not evaluated further in this Draft PEIR.

POPULATION AND HOUSING

A project can have impacts related to population and housing if it fosters economic or population growth, directly or indirectly, in a project area or surrounding environment that induces growth, or by displacing existing housing that must be replaced elsewhere. Substantial growth inducement can result from projects that include the construction of new residences or the removal of an obstacle to growth, such as expansion of a wastewater treatment plant, extending transportation routes into previously undeveloped areas; or establishing major new employment opportunities. The IPM Program would guide pest management activities on existing Authority preserves. No new housing or infrastructure are proposed as a part of the IPM Program. Only one to two additional staff are projected to be hired to implement the IPM Program, which would not be considered a substantial increase in employment. Furthermore, the IPM Program would not displace housing or people such that replacement housing would be required to be constructed elsewhere. Therefore, no significant impacts to population or housing would occur from implementation of the IPM Program and this issue is not evaluated further in this Draft PEIR.

PUBLIC SERVICES AND UTILITIES

As discussed above in "Population and Housing," the IPM Program would guide pest management activities on existing Authority preserves and no new housing or infrastructure are proposed. Only one to two additional staff are projected to be hired to implement the IPM Program, which would not be considered a substantial increase in employment. Therefore, the IPM Program would not result in increased demand for public services and no significant impacts from the provision of new or physically altered public services would occur from implementation of the IPM Program. In addition, given that the IPM Program would not result in population growth, no additional water supply or wastewater treatment services would be needed. Implementation of the IPM Program would also not be anticipated to result in any substantial change in the level of solid waste generated on or from the IPM Program Area.

Therefore, the IPM Program would not affect permitted capacity of local or regional solid waste disposal services nor would it affect existing levels of compliance with federal, state, and local statutes and regulations regarding solid waste. These issues are not evaluated further in this Draft PEIR.

TRANSPORTATION

Section 15064.3 was added to the State CEQA Guidelines and became effective December 28, 2018 as part of a comprehensive guidelines update. The section addresses the determination of significance for transportation impacts, which requires that the analysis be based on vehicle miles traveled (VMT) instead of a congestion metric (such as level-of-service). Pursuant to State CEQA Guidelines Section 15064.3(c), this change in analysis may be implemented now and is mandated to be addressed beginning July 1, 2020. Because the IPM Program and associated IPM Manual guide long-term management of the IPM Program Area, VMT is used in this analysis. The Technical Advisory on Evaluating Transportation Impacts (OPR 2018) notes that projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than-significant transportation impact, absent substantial evidence indicating otherwise (OPR 2018). Therefore, for the purposes of this analysis, if the IPM Program as a whole (i.e., the net increase in IPM activities resulting from implementation of the program) would not generate 110 or more daily vehicle trips, it would not require a transportation analysis study and would also be assumed, using OPR guidance, to result in a less than significant VMT impact.

The IPM Program would expand upon the types, frequency, and geographic extent of existing IPM activities conducted by the Authority and includes additional treatment types and methods. The Authority anticipates that with implementation of the IPM Program, one to two additional staff may be hired, and the number of treatment activities occurring simultaneously would be reasonably be expected to increase by four treatments within the IPM Program Area. Currently, up to 20 treatment activities are conducted simultaneously across the Authority's preserves, and each activity requires one to three Authority staff members to implement. Implementation of the IPM Program could result in four additional treatment activities occurring simultaneously within the IPM Program area. Conservatively assuming that each new treatment activity would include three staff members, and that each staff member would commute to and from the treatment site alone and generate two daily trips, the IPM Program would result in approximately 24 new daily trips. Therefore, the IPM Program would generate far fewer than 110 daily vehicle trips during implementation of the IPM Program. Consistent with OPR guidance, no significant VMT impact would occur with implementation of the IPM Program.

In addition, the IPM Program would not affect existing transit, roadways, bicycle, or pedestrian facilities, nor would it alter the level of emergency access. No oversized equipment would be used requiring special transport precautions on local streets, roads, or highways. No changes to access points or roadway design would occur with implementation of the IPM Program. Thus, the IPM Program would not increase hazards due to a design feature or incompatible uses. No significant impacts related to transportation would occur from implementation of the IPM Program and this issue is not evaluated further in this Draft PEIR.

3.2 AESTHETICS

This section provides a description of existing visual conditions, meaning the physical features that make up the visible landscape, in the IPM Program Area and provides an assessment of changes to those conditions that would occur from IPM Program implementation. The effects of the IPM Program on the visual environment are generally defined in terms of the IPM Program activities' physical characteristics and potential visibility, the extent to which implementation of the IPM Program would change the perceived visual character and quality of the environment, and the expected level of sensitivity that the viewing public may have where implementation of the IPM Program could alter existing views. The "Analysis Methodology" discussion below provides further detail on the approach used in this evaluation.

There were no comments received on the Notice of Preparation related to aesthetics.

3.2.1 Regulatory Setting

FEDERAL

No federal plans, policies, regulations, or laws related to aesthetics, light, and glare are applicable to the IPM Program.

STATE

California Scenic Highway Program

California's Scenic Highway Program was created by the California Legislature in 1963 and is managed by the California Department of Transportation (Caltrans). The goal of this program is to preserve and protect scenic highway corridors from changes that would affect the aesthetic value of the land adjacent to highways. A highway may be designated "scenic" depending on how much of the natural landscape travelers can see, the scenic quality of the landscape, and the extent to which development intrudes on travelers' enjoyment of the view. Caltrans maintains a list of eligible highways and officially designated scenic highways in California.

LOCAL

Santa Clara County General Plan

The Parks/Recreation and Resource Conservation chapters of the Santa Clara County General Plan (Santa Clara County 1994) provide strategies, policies, and implementation recommendations to protect parks, open space, trails, and scenic highways within the county. The following aesthetic related policies are relevant to the IPM Program:

- ▶ **C-PR 37/R-PR 39** The natural scenery along many of Santa Clara County's highways should be protected from land uses and other activities which would diminish its aesthetic beauty.
- ▶ **C-PR 39/R-PR 41** The visual integrity of the scenic gateways to the South County (Pacheco Pass, Hecker Pass, Route 101 south of Gilroy, and a Coyote greenbelt area north of Morgan Hill) should be protected.
- ▶ **C-RC 1** Natural and heritage resources shall be protected and conserved for their ecological, functional, economic, aesthetic, and recreational values.
- ▶ **C-RC 57/R-RC 95** The scenic and aesthetic qualities of both the natural and built environments should be preserved and enhanced for their importance to the overall quality of life for Santa Clara County.

City of Morgan Hill General Plan

The IPM Program Area includes the El Toro preserve which is located within the jurisdiction of the city of Morgan Hill. The Natural Resources and Environment Element of the City of Morgan Hill General Plan (City of Morgan Hill 2017) provides strategies, policies, and implementation recommendations to protect open space, hillsides, and scenic highways within the city. The following aesthetic related policies are relevant to the IPM Program:

- ▶ **NRE-1.1 Natural Features.** Preserve outstanding natural features, such as the skyline of a prominent hill and rock outcroppings.
- ▶ **NRE-2.2 El Toro Mountain as Landmark Feature.** Retain the City's unique identity by preserving its landmark natural feature, El Toro Mountain.
- ▶ **NRE-6.4 Tree Preservation and Protection.** Preserve and protect mature, healthy trees whenever feasible, particularly native trees, historically significant trees, and other trees which are of significant size or of significant aesthetic value to the immediate vicinity or to the community as a whole.

City of San Jose General Plan

The IPM Program Area includes Coyote Ridge, Coyote Valley, Rancho Canada del Oro, Santa Teresa Foothills, and Sierra Vista preserves which are located within the city of San Jose. There are no policies in the Envision San Jose 2040 General Plan pertaining to visual resources that are applicable to the IPM Program (City of San Jose 2018).

3.2.2 Environmental Setting

VIEWER SENSITIVITY

The sensitivity of the viewer, or viewer concern, is based on such factors as: the visibility of resources in the landscape, proximity of the viewers to the visual resource, elevation of the viewers in relation to the visual resource, frequency and duration of views, numbers of viewers, and types and expectations of individuals and viewer groups. Viewer groups are differentiated by physical factors that modify perception. For parks, a distinction can be made between three basic groups, passers-by (motorists and passengers in cars or buses), recreationists (walkers/users of the recreation sites), and residents (those home occupants who can view a park from nearby areas). These groups are further differentiated by the activities they are engaged in. Activities such as commuting or working can distract the observer from the visual environment. On the other hand, activities such as walking, biking, or other forms of recreation can heighten awareness of scenic surroundings. Once overall visual sensitivity is established (based on existing visual quality, viewer exposure, and viewer concern), these factors are then considered together with the level of expected change in basic visual attributes such as form, line, color, and texture.

The primary viewer groups with views of the IPM Program Area include recreationists using public areas of the IPM Program Area preserves or surrounding trails with views of the IPM Program Area, as well as motorists and residents surrounding the IPM Program Area. Coyote Valley, Rancho Canada Del Oro, and Sierra Vista Open Space Preserves are the only preserves in the IPM Program Area that are open to the public at all times. These viewers tend to experience long duration views (high exposure) of the local landscape, because they are likely walking or running at a moderate pace along trails. Also, walkers and nature appreciators often pause at vista points and have high expectations for a scenic experience. Residents also experience long duration views (high exposure) and have high awareness of the visual character and quality of their views because they typically experience the same view for an extended period of time (as long as they live in a residence). Therefore, recreational and residential viewers of the IPM Program Area tend to have high sensitivity to visual quality and change. Motorists tend to experience short duration views when driving along roadways due to the speed they are traveling. Commuting motorists tend to have low to moderate expectations for scenic views because their focus being primarily on the road. In the vicinity of the IPM Program Area, motorists may be touring or recreation-bound travelers and may have moderate to high expectations for scenic views. Therefore, motorists with views of the IPM Program Area have moderate sensitivity to visual quality and change.

REGIONAL VISUAL CHARACTER

The distinctive Santa Clara Valley is bordered by the Santa Cruz Mountains on the west, composed of lush evergreen forests, and the oak chaparral of the Diablo Range to the east. The Santa Clara Valley consists of a combination of dense, compact urban areas surrounded by scenic rural areas and mountain ranges that serve as a scenic backdrop. The Valley's farms and orchards, rolling grasslands and oak savannas, and dramatic ridges that rise abruptly from the Valley floor, give unique definition to the region and help establish its sense of place (Authority 2014:66). The region's visual and scenic resources are further improved by natural rivers and streams, wetlands near the Bay's edge, large expanses of open space and undeveloped areas, and urban parks and architecture of distinction. These resources provide a strong contrast to the expanse of homes, business, and roadways in the urban areas of the county (Santa Clara County 1994:H-40).

VISUAL CHARACTER AND QUALITY OF THE IPM PROGRAM AREA

The IPM Program Area includes 14 of the Authority's open space preserves, all of which are within Santa Clara County. Representative photographs (Viewpoints #1 through #5) of IPM Program Area preserves are shown in Figure 3.2-1. Almost half of the IPM Program Area preserves are located in the Santa Cruz Mountains, including Croy Redwoods, El Toro, Little Uvas Creek, Upper Uvas Creek, and Mount Chual Open Space Preserves, and Rancho Canada del Oro Open Space Preserve is in the Santa Cruz Mountain foothills. Visual character is defined by the visually consistent and appealing rolling hillsides (as shown in Figure 3.2-1, Viewpoint #1) and intermittent peaks of the Santa Cruz Mountain range with varying combinations of large redwood forests, woodlands, chaparral vegetation, grasslands, and water features such as creeks and ponds. Given their protected status as open space preserves, these landscapes are visually intact and unified with minimal urban or humanmade visual intrusions.

Public areas of the preserves (e.g., Rancho Canada del Oro) also provide high quality views of the surrounding landscape, including the Diablo Mountain Range and Mt. Hamilton. Accordingly, these natural landscapes exhibit high visual quality. Of these IPM Program Area preserves in the Santa Cruz Mountains, only the Rancho Canada del Oro Open Space Preserve is currently open to the public; however, docent led hikes are provided at Little Uvas Creek Open Space Preserve. Views of the IPM Program Area preserves within the Santa Cruz Mountains, particularly those that are elevated, are available from surrounding urban areas, roadways, vista points, as well as from within public areas of the preserves themselves. Therefore, viewer groups with potential views of these preserves include residents, motorists, and recreationists.

The Coyote Ridge Open Space Preserve (as shown in Figure 3.2-1, Viewpoint #2), Diablo Foothills Preserve, Sierra Vista Open Space Preserve (as shown in Figure 3.2-1, Viewpoint #3), and Palassou Ridge Preserve are each located in the Diablo Mountain Range. The visual character of these sites consists of rolling hillsides and grasslands which provide colorful and visually appealing wildflowers in the spring. The 5,513-acre Crews Fire burned through the Diablo Foothills Preserve in July 2020 (Midpeninsula Regional Open Space District 2020). Many of the oak trees survived the fire and native grasses are regrowing (Authority 2021). The visual change from the Crews Fire was minimal, and Diablo Foothills Preserve's current visual character consists of the rolling hillsides and grasslands characteristic of the Diablo Mountain Range, similar to that of Coyote Ridge Open Space Preserve and Sierra Vista Open Space Preserve. Given their protected status as open space preserves, these landscapes are visually intact and unified with minimal urban or humanmade visual intrusions. These features, as well as the intact landscape and vistas these preserves provide, result in a high visual quality.

Of the IPM Program Area preserves in the Diablo Mountain Range, only the Sierra Vista Open Space Preserve is currently open to the public; however, docent led hikes are provided at the other preserves. Recreationists have views of these preserves during docent-led hikes and public access weekends, and from select adjacent public parks. Motorists and residents of the surrounding area also experience views of the preserves while traveling roadways or from vantage points within residential and urban areas.

The remaining preserves included in the IPM Program Area are located in the Santa Clara Valley. Coyote Valley Open Space Preserve (as shown in Figure 3.2-1, Viewpoint #4), Santa Teresa Foothills Open Space Preserve, and North Coyote Valley Open Space Preserve are located near San Jose, and the Pajaro River Agricultural Preserve (as shown in Figure 3.2-1, Viewpoint #5) is located in the southern portion of the valley, near Gilroy. The visual character of these preserves is defined by vast valley vistas with backdrops of the surrounding ridgetops. Uninterrupted views of valley floors, linear row crops, meadows with rock outcroppings, and rolling hillsides provide high visual quality. The Coyote Valley Open Space Preserve is open to the public, resulting in high viewership from recreationists. Although closed to the public, the Santa Teresa Foothills Open Space Preserve is in San Jose's urban area and prominent outcroppings result in high visibility from nearby residential neighborhoods. The Pajaro River Agricultural Preserve and the North Coyote Valley Open Space Preserve are visible to motorists travelling on the adjacent roadways and may be visible from vistas in the surrounding mountains.



Source: Photo provided by Santa Clara Valley Open Space Authority in 2019

Viewpoint #1: Rancho Cañada del Oro Open Space Preserve



Source: Photo provided by Santa Clara Valley Open Space Authority in 2019

Viewpoint #2: Coyote Ridge Open Space Preserve as seen from the Valley floor



Source: Photo provided by Santa Clara Valley Open Space Authority in 2019

Viewpoint #3: Sierra Vista Open Space Preserve



Source: Photo provided by Santa Clara Valley Open Space Authority in 2019

Viewpoint #4: Coyote Valley Open Space Preserve



Source: Photo provided by Santa Clara Valley Open Space Authority in 2019

Viewpoint #5: Pajaro River Agricultural Preserve

Figure 3.2-1 Representative Viewpoints

SCENIC HIGHWAYS

Two officially designated state scenic highways, State Route (SR) 35 and SR 9, are located in Santa Clara County. SR 35 is officially designated as it travels south from SR 92, in San Mateo County, through Santa Clara County to the Santa Cruz County line, where it transitions to an eligible state scenic highway until its intersection with SR 17. SR 9 is an officially designated state scenic highway as it travels east from the Santa Cruz county line to the Los Gatos city line, where it transitions to an eligible state scenic highway until its intersection with SR 17 (Caltrans 2017). No existing IPM Program Area preserves are visible from the designated scenic portions of SR 35 and SR 9 due to the distance from the preserves, the steep topography of the Santa Cruz Mountains, and thick vegetation.

Several additional highways eligible for scenic highway designation are located in the vicinity of IPM Program Area preserves, and several Santa Clara County designated scenic routes travel within or in close proximity to IPM Program Area preserves.

LIGHT AND GLARE CONDITIONS

Existing sources of light and glare in the vicinity of the IPM Program area include street lighting, cars (e.g., headlights and reflective surfaces), and nearby residential areas (e.g., lighting and reflective surfaces). However, the majority of the IPM Program Area preserves are in rural, undeveloped portions of the county and overall, adjacent light and glare is minimal in the IPM Program Area.

The IPM Program Area preserves are only open during daylight hours and no lighting is provided within the IPM Program Area. Although mostly undeveloped, there are structures made with reflective surfaces such as glass and metal present in the IPM Program Area; and equipment and vehicles are currently used in the IPM Program Area. Accordingly, some daytime glare may be produced intermittently in portions of the IPM Program Area.

3.2.3 Environmental Impacts and Mitigation Measures

METHODOLOGY

The aesthetics and visual resource impact analysis is based on an evaluation of the potential changes to existing visual character and quality of the IPM Program Area as a result of IPM Program implementation. To determine the existing visual quality of the IPM Program Area (described above), consideration was given to:

- ▶ the visual features or resources that comprise and define the visual character of the viewshed (i.e., the physiographic area composed of land, water, biotic, and cultural elements that may be visible and that has inherent scenic qualities and/or aesthetic values as determined by those who view it.);
- ▶ the overall visual character and quality of the IPM Program Area as defined by the identified visual features or resources;
- ▶ primary viewer groups and relative viewer exposure; and
- ▶ viewer sensitivity, or the relative importance of views to people who are members of the viewing public.

A substantial adverse effect would occur if viewers with high levels of overall visual sensitivity (i.e., high viewer concern and visual exposure, in settings of high existing visual quality) encounter diminished scenic quality, substantial visual change, or scenic view obstruction as a result of the IPM Program.

THRESHOLDS OF SIGNIFICANCE

An impact to aesthetics and visual resources is considered significant if implementation of the IPM Program would do any of the following:

- ▶ have a substantial adverse effect on a scenic vista;

- ▶ damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
- ▶ substantially degrade the existing visual character or quality of public views of the site and its surroundings;
- ▶ create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

ISSUES NOT DISCUSSED FURTHER

Although two officially designated state scenic highways are located in the vicinity of the IPM Program in Santa Clara County, they do not provide views of the IPM Program Area because of distance, intervening topography, and thick vegetation. Implementation of the IPM Program would not damage scenic resources within a state scenic highway, or substantially alter views from a state scenic highway. This topic is not discussed further.

The IPM Program would not result in the construction or installation of new buildings, lighting facilities, or other potential sources of light and glare. Although vehicles and equipment would be present within IPM Program Area preserves during IPM treatments, Authority vehicles and equipment are already in use throughout the IPM Program Area and no substantial change would occur resulting in new sources of potential glare. Furthermore, IPM Program activities would only occur during daytime hours and no nighttime lighting would be required. No substantial sources of new light or glare would occur with implementation of the IPM Program and this topic is not discussed further.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.2-1: Potential to Adversely Affect Scenic Vistas or Substantially Degrade the Existing Visual Character or Quality of Public Views

IPM Program treatment activities would consist of manual, mechanical, and chemical treatments targeted for select sites within the IPM Program Area, including structures and buildings, recreational facilities, agricultural lands, and natural lands. Treatments could result in temporary effects to visual quality by the presence of trapping devices, tenting and fumigating buildings and structures, and mechanical equipment in the IPM Program Area. However, IPM treatments would be temporary and short-term, would help re-establish native vegetation patterns, and would not dominate long range or panoramic views. IPM Program treatments would not result in adverse effects on scenic vistas or substantially degrade the visual character or quality of the site and its surrounding. Therefore, this impact would be **less than significant**.

The IPM Program includes manual, mechanical, and chemical treatments at open space preserves owned and maintained by the Authority. As shown in Table 2-2 in Chapter 2, "Program Description," different combinations of IPM treatment activities would be applied according to the following IPM management categories: structures and buildings, recreational areas, agricultural lands, and natural lands. Each IPM management category and IPM treatment activity have varying levels of potential public visibility, which are evaluated by management category in detail below.

Structures and Buildings

Structures and buildings within the IPM Program Area include an administrative office, barns, one habited house, uninhabited houses, and sheds. Manual, mechanical, and chemical treatments are proposed in structures and buildings within the IPM Program Area, which include prevention and sanitation (e.g., picking up trash); habitat modifications, such as removing brush piles, covering building entry points, and destroying old burrows using a small tractor; use of baited insecticides and in cases when human health is at risk, rodenticides; animal trapping using sticky, electric, box, or cage traps; and tenting buildings/structures to fumigate structural pests. IPM treatments in structures and buildings would be site-specific, resulting in no visible long-term change to structures, and no substantial changes to the landscape surrounding buildings would occur. Therefore, the treatments would not adversely affect long-range views, such as from a scenic vista or from residences surrounding a preserve. The primary viewer group that could notice visual changes as a result of IPM treatments in structures and buildings would be recreational visitors in public areas of the IPM Program Area in the immediate vicinity of a structure or building undergoing outdoor treatment or termite

fumigation. As previously described, recreationists typically have high sensitivity to visual changes. Of the manual and chemical activities proposed in buildings and structures, only the use of equipment or large trapping devices and tenting used during termite fumigation would be visible to recreators in the short-term, which would conflict with the natural setting of IPM Program Area preserves. However, the use of equipment, large traps, and tenting for termite fumigation would be site-specific and temporary, typically lasting up to one week at each treatment site for activities requiring mechanical equipment and traps, and up to three days for termite fumigation tenting, and would only be visible when occurring in publicly accessible portions of the three IPM Program Area preserves. In addition, the Authority currently uses vehicles and equipment within the IPM Program Area; implementation of the IPM Program would not significantly increase the quantity or visibility of equipment or vehicles in the IPM Program Area. In the long-term, prevention and sanitation, habitat modifications, use of baited insecticides and rodenticides, animal trapping, and tenting for termite fumigation would not significantly change the visual character or quality of the landscape. Therefore, substantial degradation to the existing visual character or quality of public views would not occur as a result of IPM Program treatments to structures and buildings.

Recreational Areas

Recreational areas consist of trails, picnic areas, and associated amenities such as parking lots, roads, bridges, gates, and bathrooms, which are all typically open to the public. Manual, mechanical, and chemical treatments are proposed to manage and control nuisance pests and vegetation within recreational areas and vegetative rights-of-way. Manual treatments would include prevention and sanitation, such as the removal of trash; digging and clearing with the use of hand tools for fire risk reduction near utilities; habitat modification, such as removal of rock, brush piles and nests to control stinging insects, mosquitos, rattlesnakes, and other stray wildlife and pests; and wildlife trapping using a variety of methods including cage traps. Mechanical treatments would include mowing, cutting, and limbing using weed whips, tractor operated mowers, chainsaws, chippers, and other similar mechanical equipment. Chemical treatments would only be used when necessary, such as permanent treatment for perennial plants (i.e. poison oak) or when determined to be the only viable treatment option to address human health and safety concerns.

Recreational areas experience the highest levels of public use, and therefore, have high viewer sensitivity. Treatment activities requiring the use of large equipment or traps could be visible to recreationists when occurring within public access areas. Mechanical equipment and traps would contrast with the natural landscape and would temporarily disrupt the natural character and visual quality of the preserves. However, these activities and the presence of equipment would be short-term, typically lasting up to one week at each treatment site, and would not dominate a view because they would be limited small areas. In addition, the Authority currently uses vehicles and equipment within recreational areas of the IPM Program Area; implementation of the IPM Program would not significantly increase the quantity or visibility of equipment or vehicles. In the long-term, removal of nuisance and invasive vegetation could improve the overall visual quality of recreational areas by improving habitat conditions, allowing native vegetation to re-establish, or opening up viewsheds from removal of nuisance vegetation. Treatment activities would not be visibly dominant in long-range views from scenic vistas or surrounding residences and would not change the long-term visual character or quality of the IPM Program Area. Therefore, substantial degradation to the existing visual character or quality of public views would not occur as a result of IPM Program treatments to recreational areas.

Agricultural Lands

The IPM Program Area currently includes one active agricultural preserve with row crops, the Pajaro River Agricultural Preserve, and the North Coyote Valley Preserve has been previously cultivated and used for agricultural uses. The IPM Program proposes manual and mechanical treatments to cultivate soils and manage pests to maintain specific agricultural land uses while providing natural resource protection and visitor access. Manual treatments would include pulling, mulching, hoeing, and weedmats to remove invasive plants through the use of hand tools. Mechanical treatments would include mowing, cutting, cultivation, discing, and green flaming and would require mechanical equipment such as mowers and tractors. Agriculture preserves are not open to the public for recreation access; therefore, viewers would primarily include motorists using adjacent roadways. Agricultural equipment is already in use in agricultural preserves, and its presence would be temporary and consistent with the agricultural character of the preserve. In the long-term, the visual character and quality agricultural preserves would not change

substantially as row crop production and other agricultural uses would continue, as shown in Figure 3.2-1 Viewpoint #5. Therefore, substantial degradation to the existing visual character or quality of public views would not occur as a result of IPM Program treatments to agricultural lands.

Natural Lands

Natural areas make up the majority of Authority lands, and typically experience minimal levels of human use, aside from designated recreation areas located within the three preserves that are open to the public. Manual, mechanical, and chemical treatment options are proposed to control invasive plant and animal populations and to preserve and restore natural resources. Manual and mechanical treatment options to control invasive plants include pulling, digging, scraping, cutting/mowing, weed whipping, brush cutting, girdling/frilling/drilling, and green flaming. Manual treatment options to control invasive animals include habitat modification, trapping, physical barriers, gassing/shooting, and electrical currents. Chemical treatment options include herbicide applications to control invasive plants. Although natural lands experience minimal levels of human use, these areas may be visible from surrounding areas, including scenic vistas. The presence of large equipment would contrast with the natural landscape and would temporarily disrupt the natural character and visual quality of the preserves. However, IPM activities and the presence of equipment would be short-term, typically lasting up to one week at each treatment project site, and would not dominate a viewshed because they would be limited to small areas and primarily only be visible from long range, panoramic views. In addition, the Authority currently uses vehicles and equipment within natural lands in the IPM Program Area; implementation of the IPM Program would not significantly increase the quantity or visibility of equipment or vehicles. In the long-term, removal of invasive vegetation could improve the overall visual quality of natural lands by improving habitat conditions and allowing native vegetation to re-establish. Therefore, substantial degradation to the existing visual character or quality of public views would not occur as a result of IPM Program treatments to natural lands.

Summary

IPM treatment activities would require the use of equipment and vehicles which would be visible to recreationists, motorists, and residents depending on the location of the treatment project site. However, IPM treatments would be site-specific and temporary, and would use the same types of equipment as are currently used in the IPM Program. IPM treatment activities would preserve natural resources, improve public access, and would help to re-establish native vegetation patterns. Therefore, treatment activities proposed under the IPM Program are expected to provide long-term benefits to the visual character and quality of the IPM Program Area. Because the IPM program would not result in adverse effects on scenic vistas or substantially degrade the visual character or quality of public views of the site and its surroundings, this impact would be **less than significant**.

3.3 BIOLOGICAL RESOURCES

This section identifies common and sensitive biological resources that could be present in the IPM Program Area and evaluates the potential for adverse effects as a result of IPM Program implementation. This evaluation is based on a review of biological resources within the IPM Program Area through interpretation of aerial photographs, assembly of vegetation data, and searches of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDDB) and other relevant databases and documents.

Public comments on the Notice of Preparation related to biological resources included concerns about potential impacts to aquatic resources and inquiries regarding what types of permits would be required. Comments also suggested that IPM Program activities should be planned to avoid bird nesting and migration seasons. Potential impacts to aquatic resources are addressed under Impact 3.3-3 and Impact 3.3-4 and potential impacts on nesting and migrating birds are addressed under Impact 3.3-2. The thresholds of significance used for the analysis of potential impacts to aquatic resources and nesting birds are provided in Section 3.3.3, "Environmental Impacts and Mitigation Measures."

3.3.1 Regulatory Setting

FEDERAL

Federal Endangered Species Act

Pursuant to the federal Endangered Species Act (ESA) (16 U.S.C. Section 1531 et seq.), the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) regulate the taking of species listed in the ESA as threatened or endangered. In general, persons subject to ESA (including private parties) are prohibited from "taking" endangered or threatened fish and wildlife species on private property, and from "taking" endangered or threatened plants in areas under federal jurisdiction or in violation of state law. Under Section 9 of the ESA, the definition of "take" is to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." USFWS has also interpreted the definition of "harm" to include significant habitat modification that could result in take.

Two sections of the ESA address incidental take. Section 10 regulates incidental take if a non-federal agency is the lead agency for an action that results in take and no other federal agencies are involved in permitting the action. However, if a project would result in take of a federally-listed species and federal discretionary action (even if a non-federal agency is the overall lead agency) is involved (i.e., a federal agency must issue a permit), the involved federal agency consults with USFWS or NMFS under Section 7 of the ESA.

Clean Water Act

Section 404 of the Clean Water Act (CWA) requires project proponents to obtain a permit from the U.S. Army Corps of Engineers (USACE) before performing any activity that involves any discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the United States include navigable waters of the United States, interstate waters, tidally influenced waters, and all other waters where the use, degradation, or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. Many surface waters and wetlands in California meet the criteria for waters of the United States.

In accordance with Section 401 of the CWA, projects that apply for a USACE permit for discharge of dredged or fill material must obtain water quality certification from the appropriate regional water quality control board (RWQCB) indicating that the action would uphold state water quality standards. The San Francisco Bay and Central Coast RWQCBs have jurisdiction over the IPM Program Area.

Bald and Golden Eagle Protection Act

Under the Bald and Golden Eagle Protection Act, it is illegal to take bald or golden eagles, including their parts, nests, or eggs unless authorized. "Take" is defined as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." Disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause (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. In addition to immediate impacts, this definition also addresses impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death, or nest abandonment.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA), first enacted in 1918, provides for protection of international migratory birds and authorizes the Secretary of the Interior to regulate the taking of migratory birds. The MBTA provides that it is unlawful, except as permitted by regulations, to pursue, take, or kill any migratory bird, or any part, nest, or egg of any such bird. Under the MBTA, "take" is defined as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or any attempt to carry out these activities." A take does not include habitat destruction or alteration, as long as there is not a direct taking of birds, nests, eggs, or parts thereof. The current list of species protected by the MBTA can be found in Title 50 of the Code of Federal Regulations (CFR), Section 10.13 (50 CFR 10.13). The list includes nearly all birds native to the United States.

STATE

California Endangered Species Act

Pursuant to the California Endangered Species Act (CESA), a permit from CDFW is required for projects that could result in the "take" of a plant or animal species that is listed by the state as threatened or endangered. Under CESA, "take" is defined as an activity that would directly or indirectly kill an individual of a species, but does not include "harm" or "harass," as does the federal definition. As a result, the threshold for take is higher under CESA than under the federal ESA. Authorization for take of state-listed species can be obtained through a California Fish and Game Code Section 2081 incidental take permit.

California Fish and Game Code Sections 3503 and 3503.5—Protection of Bird Nests and Raptors

Section 3503 of the Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 of the California Fish and Game Code states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders *Falconiformes* and *Strigiformes*), including their nests or eggs. Typical violations include destruction of active nests as a result of tree removal or disturbance caused by project construction or other activities that cause the adults to abandon the nest, resulting in loss of eggs and/or young.

Fully Protected Species under the California Fish and Game Code

Protection of fully protected species is described in Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code. These statutes prohibit take or possession of fully protected species and do not provide for authorization of incidental take.

Native Plant Protection Act

The Native Plant Protection Act (NPPA) (California Fish and Game Code Section 1900 et seq.) allows the California Fish and Game Commission to designate plants as rare or endangered. Sixty-four species, subspecies, and varieties of plants are protected as rare under the NPPA. The act prohibits take of endangered or rare native plants but includes exceptions for agricultural and nursery operations; for emergencies; and, after proper notification of CDFW, for vegetation removal from canals, roads, and other building sites, changes in land use, and other situations.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Act requires that each of the nine RWQCBs prepare and periodically update basin plans for water quality control. Each basin plan sets forth water quality standards for surface water and groundwater and actions to control nonpoint and point sources of pollution to achieve and maintain these standards. Basin plans offer an opportunity to protect wetlands through the establishment of water quality objectives. The RWQCB's jurisdiction includes waters of the United States, as well as areas that meet the definition of "waters of the state." "Waters of the state" is defined as any surface water or groundwater, including saline waters, within the boundaries of the state. The RWQCB has the discretion to take jurisdiction over areas not federally protected under CWA Section 404 provided they meet the definition of waters of the state and the State Water Resources Control Board published a new set of procedures for discharges of dredged or fill material into waters of the state on March 22, 2019. Mitigation requiring no net loss of wetlands functions and values of waters of the state typically is required by the RWQCB.

The State Water Resources Control Board has adopted the following definition of wetlands:

An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater or shallow surface water or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes the area lacks vegetation.

California Fish and Game Code Section 1602—Streambed Alteration

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources are subject to regulation by CDFW under Section 1602 of the California Fish and Game Code. Under Section 1602, it is unlawful for any person, governmental agency, or public utility to do the following without first notifying CDFW:

- ▶ substantially divert or obstruct the natural flow of, or substantially change or use any material from, the bed, channel, or bank of any river, stream, or lake; or
- ▶ deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

The regulatory definition of a stream is a body of water that flows at least periodically or intermittently through a bed or channel that has banks and supports fish or other aquatic life. This definition includes watercourses with a surface or subsurface flow that supports or has supported riparian vegetation. CDFW's regulatory authority within altered or artificial waterways is based on the value of those waterways to fish and wildlife. A CDFW streambed alteration agreement must be obtained for any action that would result in an impact on a river, stream, or lake.

LOCAL

Santa Clara County General Plan

The following biological resource related policies from the Resource Conservation Chapter of the Santa Clara County General Plan (Santa Clara County 1994) are relevant to the proposed IPM Program:

- ▶ **R-RC 14:** Use and disposal of agricultural chemicals, such as fertilizers, pesticides and herbicides, shall be managed to minimize the threat of water pollution.
- ▶ **R-RC 19:** Habitat types and biodiversity within Santa Clara County and the region should be maintained and enhanced for their ecological, functional, aesthetic, educational, medicinal, and recreational importance.
- ▶ **R-RC 31:** Natural streams, riparian areas, and freshwater marshes shall be left in their natural state providing for percolation and water quality, fisheries, wildlife habitat, aesthetic relief, and educational or recreational uses that are environmentally compatible. Streams which may still provide spawning areas for anadromous fish species should be protected from pollution and development impacts which would degrade the quality of the stream environment.

- ▶ **R-RC 32:** Riparian and freshwater habitats shall be protected through the following general means:
 - a. setback of development from the top of the bank;
 - b. regulation of tree and vegetation removal;
 - c. reducing or eliminating use of herbicides, pesticides, and fertilizers by public agencies;
 - d. control and design of grading, road construction, and bridges to minimize environmental impacts and avoid alteration of the streambed and stream banks (freeway bridges and arch culverts, for example); and
 - e. protection of endemic, native vegetation.

Santa Clara Valley Habitat Plan

The Santa Clara Valley Habitat Plan (Habitat Plan) is a habitat conservation plan and natural community conservation plan that provides incidental take coverage under ESA and CESA for several listed species for certain covered activities within the geographic scope of the Habitat Plan. The geographic scope of the Habitat Plan incorporates a large portion of Santa Clara County and contains the majority of the IPM Program Area. Species covered by the Habitat Plan include species listed as threatened and endangered under the ESA and CESA, as well as other special-status species (Table 3.3-1). Covered activities include enhancement of habitat, eradication of invasive plant and animal species, and integrated pest management projects. The use of herbicides and rodenticides is a covered activity for non-listed species and CESA-listed species, but is not a covered activity for ESA-listed species. Therefore, the Habitat Plan does not provide for take coverage for federally listed species from the use of pesticides. The Authority may seek take coverage under the Habitat Plan for all IPM Program treatment activities that could result in take of CESA listed species, and for non-pesticide activities that could result in take of ESA listed species (Santa Clara County et al. 2012).

Table 3.3-1 Santa Clara Valley Habitat Plan Covered Species

Covered Plants	Federal Status	State Status	Other Status
Tiburon paintbrush (<i>Castilleja affinis</i> var. <i>neglecta</i>)	Endangered	Threatened	CRPR - 1B.2
Coyote ceanothus (<i>Ceanothus ferrisiae</i>)	Endangered	—	CRPR - 1B.1
Mount Hamilton thistle (<i>Cirsium fontinale</i> var. <i>campylon</i>)	—	—	CRPR - 1B.2
Santa Clara Valley dudleya (<i>Dudleya abramsii</i> ssp. <i>Setchellii</i>)	Endangered	—	CRPR - 1B.1
fragrant fritillary (<i>Fritillaria liliacea</i>)	—	—	CRPR - 1B.2
Loma Prieta hoita (<i>Hoita strobilina</i>)	—	—	CRPR - 1B.1
smooth lessingia (<i>Lessingia micradenia</i> var. <i>glabrata</i>)	—	—	CRPR - 1B.2
Metcalf Canyon jewelflower (<i>Streptanthus albidus</i> ssp. <i>albidus</i>)	Endangered	—	CRPR - 1B.1
most beautiful jewelflower (<i>Streptanthus albidus</i> ssp. <i>peramoenus</i>)	—	—	CRPR - 1B.2
Covered Wildlife			
Bay checkerspot butterfly (<i>Euphydryas editha bayensis</i>)	Threatened	—	—
California tiger-salamander (<i>Ambystoma californiense</i>)	Threatened	Threatened	—
California red-legged frog (<i>Rana draytonii</i>)	Threatened	Species of Special Concern	—

Covered Plants	Federal Status	State Status	Other Status
foothill yellow-legged frog (<i>Rana boylei</i>)	—	Candidate Endangered	—
western Pond turtle (<i>Actinemys marmorata</i>)	—	Species of Special Concern	—
western burrowing owl (<i>Athene cunicularia</i>)	—	Species of Special Concern	—
least Bell's vireo (<i>Vireo bellii pusillus</i>)	Endangered	Endangered	—
tri-colored blackbird (<i>Agelaius tricolor</i>)	—	Threatened	—
San Joaquin kit fox (<i>Vulpes macrotis mutica</i>)	Endangered	Threatened	—

Note: CRPR = California Rare Plant Rank

California Rare Plant Ranks:

- 1B Plant species considered rare or endangered in California and elsewhere (protected under CEQA, but not legally protected under ESA or CESA)
- 2 Plant species considered rare or endangered in California but more common elsewhere (protected under CEQA, but not legally protected under ESA or CESA)

Threat Ranks

- 0.1-Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
- 0.2-Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

Source: Santa Clara County et al. 2012

City of Morgan Hill General Plan

The following goals and policies related to biological resources from the City of Morgan Hill General Plan (City of Morgan Hill 2017) are relevant to the proposed IPM Program:

GOAL NRE-6 Protection of native plants, animals, and sensitive habitats.

- ▶ **Policy NRE-6.2 Habitat Conservation Plan.** Support the implementation of the Santa Clara Valley Habitat Plan to protect wildlife, rare and endangered plants and animals, and sensitive habitats from loss and destruction.
- ▶ **Policy NRE-6.4 Tree Preservation and Protection.** Preserve and protect mature, healthy trees whenever feasible, particularly native trees, historically significant trees, and other trees which are of significant size or of significant aesthetic value to the immediate vicinity or to the community as a whole.

City of San Jose General Plan

The following biological resource goals and policies from the Envision San Jose 2040 General Plan (City of San Jose 2018) are relevant to the proposed IPM Program:

GOAL ER-1-Grassland, Oak Woodlands, Chaparral and Coast Scrub. Preserve, protect and restore the ecological integrity and scenic characteristics of grasslands, oak woodlands, chaparral and coastal scrub in hillside areas.

- ▶ **Policy ER-1.3** Cooperate with other agencies in the preservation and management of native hillside vegetation.
- ▶ **Policy ER-1.5** Preserve and protect oak woodlands, and individual oak trees. Any loss of oak woodland and/or native oak trees must be fully mitigated.
- ▶ **Policy ER-1.6** Preserve, protect, and manage serpentine grasslands and serpentine chaparral, particularly those supporting sensitive serpentine bunchgrass communities providing habitat for sensitive plant and animal species. Development will not be permitted on serpentine grasslands or chaparral supporting state or federal candidate or listed threatened or endangered plant or animal species. Appropriately managed grazing is encouraged on serpentine grasslands.

GOAL ER-2-Riparian Corridors. Preserve, protect, and restore the City’s riparian resources in an environmentally responsible manner to protect them for habitat value and recreational purposes.

- ▶ **Policy ER-2.2** Ensure that a 100-foot setback from riparian habitat is the standard to be achieved in all but a limited number of instances, only where no significant environmental impacts would occur.
- ▶ **Policy ER-2.5** Restore riparian habitat through native plant restoration and removal of nonnative/invasive plants along riparian corridors and adjacent areas.

GOAL ER-4-Special-Status Plants and Animals. Preserve, manage, and restore habitat suitable for special-status species, including threatened and endangered species.

- ▶ **Policy ER-4.1** Preserve and restore, to the greatest extent feasible, habitat areas that support special-status species. Avoid development in such habitats unless no feasible alternatives exist and mitigation is provided of equivalent value.
- ▶ **Policy ER-4.3** Prohibit planting of invasive non-native plant species in natural habitats that support special-status species.

GOAL ER-5-Migratory Birds. Protect migratory birds from injury or mortality.

- ▶ **Policy ER-5.1** Avoid implementing activities that result in the loss of active native birds’ nests, including both direct loss and indirect loss through abandonment, of native birds. Avoidance of activities that could result in impacts to nests during the breeding season or maintenance of buffers between such activities and active nests would avoid such impacts.

3.3.2 Environmental Setting

The IPM Program Area is located in central and southern Santa Clara County. The area extends from the crest of the Santa Cruz Mountains in the west to the Diablo Range in the east, and from Alum Rock Creek in the north to the San Benito County line in the south. The preserves within the IPM Program Area contain a wide variety of habitat types, including redwood forest, oak woodlands, serpentine grasslands, and agricultural fields, which are described in detail below. Information on surface waters within the IPM Program Area is provided in Section 3.5, Hydrology and Water Quality.”

LAND COVER AND COMMON WILDLIFE

The land cover types and acreages within the IPM Program Area are shown in Table 3.3-2. This information is based on the boundaries of Authority managed preserves within the IPM Program Area and vegetation data provided by the Authority.

Table 3.3-2 Land Cover Types in the IPM Program Area

Land Cover Type	Area of Land Cover Type (acres)
Barren/Rock	8
Blue Oak- Foothill Pine Woodland	124
Blue Oak Forest / Woodland	555
California Bay Forest	1,383
Central Coast Riparian Forests	97
Chamise Chaparral	1,762
Coast Live Oak Forest / Woodland	3,771
Coastal Scrub	186
Cultivated	490
Douglas Fir Forest	18

Land Cover Type	Area of Land Cover Type (acres)
Hot Grasslands	24
Mixed Montane Chaparral	451
Moderate Grasslands	774
Montane Hardwoods	1,115
Redwood Forest	203
Rural Residential	48
Semi-Desert Scrub / Desert Scrub	672
Serpentine Grassland	1,532
Serpentine Hardwoods	395
Serpentine Leather-Oak Chaparral	30
Serpentine Riparian	13
Serpentine Scrub	46
Urban	11
Valley Oak Forest / Woodland	38
Warm Grasslands	2,689
Water	1

Note: Acreages are rounded to the nearest whole number

Source: Compiled by Ascent 2021

As shown in Table 3.3-2, the IPM Program Area preserves are primarily made up of forests, woodlands, grasslands, and chaparral. Accordingly, the preserves within the IPM Program contain habitat for many common wildlife species. Common birds that may be present within the IPM Program Area include California quail (*Callipepla californica*), California scrub-jay (*Aphelocoma californica*), white-crowned sparrow (*Zonotrichia leucophry*), dark-eyed junco (*Junco hyemalis*), and red-tailed hawk (*Buteo jamaicensis*). Many common amphibians and reptiles may be found within the IPM Program Area, including pacific gophersnake (*Pituophis catenifer catenifer*), coast range fence lizard (*Sceloporus occidentalis bocourtii*), California slender salamander (*Batrachoseps attenuates*), and sierran treefrog (*Pseudacris sierra*). Mammals that commonly occur within the IPM Program Area include mule deer (*Odocoileus hemionus*), coyote (*Canis latrans*), and striped skunk (*Mephitis mephitis*).

SENSITIVE BIOLOGICAL RESOURCES

Special-Status Species

Special-status species are legally protected or otherwise considered sensitive by federal, state, or local resource agencies. Special-status species are species, subspecies, or varieties that fall into one or more of the following categories, regardless of their legal or protection status:

- ▶ species listed or proposed for listing as threatened or endangered under ESA (50 CFR 17.12 for listed plants, 50 CFR 17.11 for listed animals, and various notices in the Federal Register for proposed species) or candidates for possible future listing as threatened or endangered under ESA (75 CFR 69222);
- ▶ species listed or candidates for listing by the State of California as threatened or endangered under CESA (14 CCR Section 670.5);
- ▶ species identified by CDFW as Species of Special Concern;
- ▶ species listed as Fully Protected under the California Fish and Game Code (FGC) (Section 3511 for birds, Section 4700 for mammals, Section 5050 for reptiles and amphibians, and Section 5515 for fish);

- ▶ plants listed as rare under the California Native Plant Protection Act (FGC Section 1900 et seq.);
- ▶ species ranked by the Western Bat Working Group as ‘high’ or ‘medium’ on the Regional Priority Matrix;
- ▶ species afforded protection under local or regional plans, policies, or ordinances;
- ▶ plants considered by CDFW to be “rare, threatened or endangered in California” (California Rare Plant Ranks of 1A, presumed extinct in California and either rare or extinct elsewhere; 1B, considered rare or endangered in California and elsewhere; 2A, presumed extinct in California but common elsewhere; and 2B, considered rare or endangered in California but more common elsewhere). Note that while these rankings do not afford the same type of legal protection as ESA or CESA, the uniqueness of these species requires special consideration under Section 15380 of the State CEQA Guidelines (14 CCR Section 15000 et seq.); or
- ▶ taxa (i.e., taxonomic category or group) that otherwise meet the definition of rare or endangered under Section 15380 of the State CEQA Guidelines (14 CCR Section 15000 et seq.).

The term “California species of special concern” is applied by CDFW to animals not listed under ESA or CESA, but that are declining at a rate that could result in listing, or that historically occurred in low numbers and known threats to their persistence currently exist. CDFW’s fully protected status was California’s first attempt to identify and protect animals that were rare or facing extinction. Most species listed as fully protected were eventually listed as threatened or endangered under CESA; however, some species remain listed as fully protected but do not have simultaneous listing under CESA. Fully protected species may not be taken or possessed at any time and no take permits can be issued for these species except for scientific research purposes or for relocation to protect livestock.

Based on a review of the CNPS Inventory of Rare and Endangered Plants and CDFW’s CNDDDB, there are 44 special-status botanical species, three special status invertebrates, four special-status fish, 10 special-status amphibians and reptiles, 13 special-status birds, and nine special-status mammals that are known to occur or could occur in the IPM Program Area (CNDDDB 2021 and CNPS 2021). Refer to Appendix C for the full list of special-status species known to occur within the IPM Program Area region and the potential for each species to occur within the IPM Program Area.

Sensitive Natural Communities

Sensitive natural communities include those that are of special concern to resource agencies or are afforded specific consideration through CEQA or other federal or state laws. Sensitive natural communities may be of special concern to regulatory agencies and conservation organizations for a variety of reasons, including their locally or regionally declining status, or because they provide important habitat to common and special-status species. Many of these communities are tracked in CDFW’s CNDDDB. Sensitive natural communities known to occur within the IPM Program Area are shown in Table 3.3-3.

Table 3.3-3 Sensitive Natural Communities within the IPM Program Area

Sensitive Communities	Acres within IPM Program Area
Coastal Scrub	186
Valley Oak Forest / Woodland	38
Central Coast Riparian Forests	97
Serpentine Grassland	1,532
Serpentine Scrub	46
Serpentine Leather-Oak Chaparral	30
Serpentine Hardwoods	395
Serpentine Riparian	13
Total	2,337

Note: Acreages are rounded to the nearest whole number

Source: Data compiled by Ascent 2021

Critical Habitat

Critical habitat for an endangered or threatened species is made up of specific areas that contain features essential to the conservation of the species and that may require special management and protection. Critical Habitat exists within and adjacent to the IPM Program Area for the following species: Bay checkerspot butterfly (*Euphydryas editha bayensis*), Central California Coast Steelhead Distinct Population Segment (DPS) (*Oncorhynchus mykiss irideus*), South Central California Coast Steelhead DPS (*O. mykiss irideus*), California red-legged frog (*Rana draytonii*), and California tiger salamander (*Ambystoma californiense*) (USFWS 2019; NOAA 2019a; NOAA 2019b).

3.3.3 Environmental Impacts and Mitigation Measures

METHODOLOGY

Evaluation of potential biological resource impacts is based on review of aerial photographs, vegetation data, relevant databases including CNPS and CNDDDB, the Santa Clara Valley Habitat Plan (Santa Clara County et al. 2012), and other relevant documents. In determining the level of significance of impacts, the analysis assumes that the IPM Program would comply with relevant federal, state, and local laws, ordinances, and regulations and accounts for the influence of relevant EPMs, which are incorporated into IPM treatment design.

THRESHOLDS OF SIGNIFICANCE

An impact on biological resources is considered significant if implementation of the IPM Program would do any of the following:

- ▶ have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS;
- ▶ have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFW or USFWS;
- ▶ have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- ▶ interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- ▶ conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and/or
- ▶ conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

ISSUES NOT DISCUSSED FURTHER

Wildlife Movement

The treatment methods that would be applied to implement the IPM Program (i.e., manual treatments, mechanical treatments, chemical treatments) would not modify or remove habitats within the IPM Program Area to the extent that these habitats would be unsuitable for use for the movement by wildlife or use as nursery sites. In addition, the IPM Program does not include the construction of any permanent barriers that could obstruct wildlife movement. Accordingly, there would not be a substantial adverse effect on the movement of resident or migratory species though the IPM Program Area or impediment of the use of native wildlife nursery sites. Therefore, this issue is not discussed further in this PEIR.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.3-1: Potential to Substantially Affect Special-Status Plants

Implementation of the IPM Program on agricultural lands and within structures and buildings would not result in any adverse effects on special-status plants due a lack of suitable habitat in those areas. Implementation of the IPM Program in the vicinity of structures and buildings for ground squirrel control and on recreation facilities and natural lands has the potential to result in adverse effects on special-status plants if present; however, implementation of EPMs would avoid and minimize impacts to special-status plants through pre-treatment surveys and avoidance buffers around identified special-status plants. Therefore, the impact would be **less than significant**.

There are 44 special-status plants that could occur or are known to occur within the IPM Program Area (Appendix C, "Special-Status Species"). Although, the removal of invasive plants may benefit special-status plants in the long term by removing competition with these species, the IPM Program would implement manual, mechanical, and chemical treatments within IPM Program Area preserves, which could result in adverse effects on special-status plants if present within IPM treatment areas.

Agricultural Lands, Structures, and Buildings

Implementation of the IPM Program on agricultural lands and within structures and buildings would not result in any adverse effects on special-status plant species individuals or habitat, because no suitable habitat exists within these areas. While special-status plant species habitat is not present within structures and buildings, IPM treatments for ground squirrels in the vicinity of structures and buildings may occur within suitable habitat for special-status plants. The ripping of burrows using a tractor could damage individual special-status plants should they occur within the treatment site, reducing the population and distribution of these rare species. However, several EPMs would be implemented to minimize and avoid impacts to special-status plants, including pre-treatment surveys for special-status plants and flagging or mapping all identified occurrences and avoiding them (EPM BIO-2), prohibiting broadcast spraying of non-selective herbicides within 15 feet of special-status plants (EPM BIO-3), restricting the timing of IPM treatments near special-status plants to avoid damage and limiting treatments to those that do not affect seeds or underground parts (EPM BIO-4), and collecting seeds and other propagules of special-status plants prior to IPM treatments for post-treatment restoration if needed (EPM BIO-5). Therefore, no substantial effects to special-status plants would occur from the implementation of the IPM Program.

Recreation Facilities and Natural Lands

Special-status plants and habitat may occur within recreational facilities (e.g., along road and trail margins) and on natural lands where IPM Program activities would take place. Manual, mechanical, and herbicide treatments for nuisance and invasive plants may damage or kill special-status plants should they occur within a treatment site. Manual and mechanical treatments could damage special-status plants while digging, clearing, or mowing in areas where special-status plants are present. Herbicide treatments could damage special-status plants if the herbicide reaches a special-status plant through drift or leaching/transport. Damage or death of individuals could reduce the population and distribution of these rare species, which would be a substantial adverse effect. However, several EPMs would be implemented to minimize and avoid impacts to special-status plants, including pre-treatment surveys for special-status plants and flagging or mapping all identified occurrences and avoiding them (EPM BIO-2), prohibiting broadcast spraying of non-selective herbicides within 15 feet of special-status plants (EPM BIO-3), restricting the timing of IPM treatments near special-status plants and limiting treatments to those that do not affect seeds or underground parts (EPM BIO-4), and collecting seeds and other propagules of special-status plants prior to IPM treatments for post-treatment restoration if needed (EPM BIO-5). In addition, EPM HAZ-4 requires specific methods for handling of all pesticides (e.g., proper storage, disposal, and spill prevention techniques) and EPM HAZ-5 requires specific methods for pesticide application to minimize offsite transport (e.g., specific weather parameters to reduce potential drift and leaching/transport). The damage or killing of special-status plants through manual, mechanical, and chemical treatments would be avoided and minimized through the implementation of these EPMs by requiring pre-treatment surveys, avoidance and treatment limitations within 15 feet of special-status plants, and specific weather parameters for herbicide use. Furthermore, in the long-term, the IPM Program may result in beneficial

impacts to special-status species by removing detrimental pest species. Therefore, adverse effects to special-status plants from the IPM Program within recreational facilities and natural lands would not be substantial.

Special-Status Plants Impact Summary

Implementation of the IPM Program on agricultural lands and within structures and buildings would not result in any adverse effects on special-status plants due a lack of suitable habitat in those areas. Implementation of the IPM Program in the vicinity of structures and buildings for ground squirrel control and on recreation facilities and natural lands has the potential to result in adverse effects on special-status plants; however, as discussed above, implementation of EPMs would avoid and minimize impacts to special-status plants through surveys. Therefore, the impact from IPM Program implementation to special-status plants would be **less than significant**.

Impact 3.3-2: Potential to Substantially Affect Special-Status Wildlife Species

Implementation of IPM Program activities may result in the injury, mortality, or disruption of reproduction of special-status invertebrates, special-status fishes, special-status amphibians, special-status reptiles, special-status birds, special-status mammals, and loss of nests of common raptors and other nesting birds. After considering the implementation of applicable EPMs, the impact to special-status wildlife species would be **potentially significant**.

There are three special status invertebrates, four special-status fish, 10 special-status amphibians and reptiles, 13 special-status birds, and nine special-status mammals that are known to occur or could occur in the IPM Program Area (Appendix C, "Special-Status Species"). The IPM Program would result in a long-term benefit to special-status wildlife occurring in the IPM Program Area by removing invasive animals that may compete with special-status species and invasive plants that may reduce habitat suitability. However, to accomplish its goals, the IPM Program would implement manual, mechanical, and chemical treatments, which could result in adverse effects on special-status wildlife species if present within IPM treatment areas.

Bay Checkerspot Butterfly

Bay checkerspot is listed under the ESA as threatened. Habitat for the species occurs entirely within serpentine land covers, which are present within the IPM Program Area (see Table 3.3-2). The Bay checkerspot butterfly has two larval host plants, dwarf plantain (*Plantago erecta*) and purple owl's clover (*Castilleja densiflora* or *C. exserta*). Host plants are a primary constituent element (PCE) of critical habitat for the Bay checkerspot butterfly (66 FR, 21450). The IPM Program would implement manual, mechanical, and chemical treatments to manage pests within IPM Program Area preserves, which could result in adverse effects on Bay checkerspot butterfly if it or its habitat is present within IPM treatment areas.

Agricultural Lands, Structures and Buildings

Implementation of the IPM Program on agricultural lands and within structures and buildings would not result in any adverse effects on Bay checkerspot butterfly individuals or habitat, because no suitable habitat or PCEs of critical habitat exists within these areas. However, IPM treatments for ground squirrels in the vicinity of structures and buildings may occur within suitable habitat for Bay checkerspot butterfly. The ripping of burrows using a tractor could result in damage or death of Bay checkerspot butterfly host plants. Damage or death of host plants would reduce the available habitat for Bay checkerspot butterfly and potentially kill individual larva and eggs. This would have a substantial negative effect on the ability of the species to reproduce and maintain populations within the IPM Program Area.

Recreation Facilities and Natural Lands

Implementation of the IPM Program within recreational facilities (e.g., along road and trail margins) and on natural lands may occur within Bay checkerspot butterfly habitat and critical habitat for the species. Manual and mechanical invasive plant treatments such as mowing, grubbing/scraping, and tree removal may damage or kill host plants within a treatment site should they occur. Spraying of herbicides and pyrethrin-type insecticides could also damage or kill host plants, Bay checkerspot butterflies, or host plant pollinators if present within or immediately adjacent to a treatment area. Damage or death of host plants would reduce the available habitat for Bay checkerspot butterfly and

potentially kill individual larva and eggs. This would have a substantial effect on the ability of the species to reproduce and maintain populations within the IPM Program Area. The Authority would implement EPM HAZ-4 and EPM HAZ-5, which require specific measures related to pesticide handling and application to minimize the potential for pesticide drift, offsite pesticide transport, and pesticide spills. These would help to minimize indirect impacts to Bay checkerspot butterflies from pesticide use. However, these EPMs would not sufficiently avoid effects because occurrences of host plants and Bay checkerspot butterfly may not be known and therefore may be inadvertently disturbed, injured, or killed during manual, mechanical, and chemical treatments.

Bay Checkerspot Butterfly Impact Summary

Implementation of the IPM Program on agricultural lands and within buildings and structures would not result in adverse effects on Bay checkerspot butterfly due a lack of suitable habitat in those areas. Implementation of the IPM Program in the vicinity of structures and buildings for ground squirrel control and manual, mechanical, and chemical treatments under the IPM Program within recreational facilities and natural lands has the potential to result in substantial adverse effects on Bay checkerspot butterfly and individual Bay checkerspot butterflies may be inadvertently disturbed, injured, or killed by removing host plants and applying pesticides. Therefore, the impact to Bay checkerspot butterfly and its critical habitat in the vicinity of structures and buildings and within recreational facilities and natural lands would be **potentially significant**.

Mitigation Measure 3.3-2a: Avoid Loss of Bay Checkerspot Butterfly and Host Plants

- ▶ The Authority will obtain take coverage for Bay checkerspot butterfly under the Habitat Plan for covered activities (i.e., manual and mechanical treatments). The Authority will implement all applicable permit conditions required by the Habitat Plan to avoid and minimize injury, death, disturbance, or habitat degradation for this special-status species. If take coverage is not obtained for manual and mechanical activities, the Authority will implement the following measures:
 - EPM BIO-2 and EPM BIO-4 shall be implemented for Bay checkerspot butterfly host plant species (dwarf plantain and purple owl's clover). Per these EPMs, the Authority will conduct pre-treatment surveys for dwarf plantain and purple owl's clover and flag and/or map and avoid all occurrences during manual and mechanical treatments. When the host plants are dormant, only manual and mechanical treatment activities that do not affect seeds or underground parts shall be used within 15 feet of dwarf plantain and purple owl's clover occurrences.
- ▶ If pyrethrin-type spray insecticides are proposed for use (e.g., on a wasps' nest) within Bay checkerspot butterfly suitable habitat, they shall be applied by a qualified biologist with experience identifying Bay checkerspot butterfly. Prior to any application, a visual survey will be conducted within 15 feet of the application site. If dwarf plantain and purple owl's clover are observed within 15 feet of a target wasps' nest, no pyrethrin-type spray insecticides will be used unless it is confirmed no Bay checkerspot butterfly eggs or larvae are present, and only immediately following the absence determination. If adult Bay checkerspot butterflies are found during the survey, no pyrethrin-type spray insecticides will be used until the butterflies have left the 15-foot buffer on their own.
- ▶ If broadcast spraying (i.e., from a boom on an ATV) of herbicides is proposed for use within Bay checkerspot butterfly suitable habitat, EPM BIO-2 through EPM BIO-5 will be implemented. These measures will require identification, flagging, and avoidance of dwarf plantain and purple owl's clover and prohibit the broadcast spraying of non-selective herbicides (i.e., herbicides that injure all plant species that are directly exposed to the herbicide) within 15 feet of dwarf plantain and purple owl's clover. Non-selective herbicides will only be broadcast sprayed in suitable habitat if it is applied during the dormant period of dwarf plantain and purple owl's clover (July through February) and does not damage seeds or underground parts.

Significance after Mitigation

Implementation of Mitigation Measure 3.3-2a would avoid adverse effects on Bay checkerspot butterfly and its habitat by restricting the spraying of non-selective herbicides near Bay checkerspot butterfly host plants within suitable Bay checkerspot butterfly habitat. In addition, for mechanical and manual activities, the Authority will either obtain take coverage under the Habitat Plan and implement all required measures (e.g., locate activities as far away

from high-quality serpentine habitat as feasible), or if take coverage is not obtained, the Authority will conduct pre-treatment surveys for host plants within suitable habitat, map and avoid all occurrences, use manual and mechanical treatments that avoid damage to host plants, avoid use of insecticides within 15 feet of host plants when butterflies are present, and limit the broadcast spraying of non-selective herbicides within 15 feet of host plants to the dormant period. These restrictions will avoid damage or removal of host plants and injury or mortality of Bay checkerspot butterfly. Therefore, with implementation of Mitigation Measure 3.3-2a, the impact to Bay checkerspot butterfly would be **less than significant after mitigation**.

Crotch Bumble Bee

Crotch bumble bees (*Bombus crotchii*) have been recently recorded within Santa Clara County in the vicinity of the IPM Program Area (CNDDDB 2021). The decline of native bees prompted the California Fish and Game Commission in 2019 to designate four bumble bee species, including Crotch bumble bee, as candidate species under CESA, granting them protection until its status is decided. In November 2020, the County of Sacramento Superior Court ruled that insects are not eligible for listing under CESA (County of Sacramento 2020). Although this recent court decision sets aside the listing decision of Crotch bumble bee as a candidate species and its interim protection, the species nonetheless meets the criteria of endangered, rare, or threatened species, as defined in Section 15380 of the State CEQA Guidelines (14 CCR Section 15000 et seq.) due to its limited range and declining numbers. Therefore, it is considered a special-status species in this PEIR.

There have been few studies of the ecology and habitat requirements of Crotch bumble bee; however, general aspects of its biology are known. Crotch bumble bee is a colonial nesting species that nests underground and may be found in grasslands, chaparral, and scrub habitats with adequate flowering plants for nectar (i.e., suitable habitat) within the IPM Program Area. The species may use abandoned rodent burrows and similar features within suitable habitat for nest colonies. Solitary queens may overwinter under leaf litter or in small cavities a few centimeters into loose soil. The flight season for Crotch bumble bee queens is from late February to late October, peaking in early April and July. The flight season for workers and males is from late March through September when the colony is active. Crotch bumble bees are generalist foragers that feed from open flowers with short corollas (Xerces 2018).

Agricultural Lands, Structures and Buildings

Implementation of the IPM Program within structures and buildings would not result in adverse effects to Crotch bumble bee because there is no suitable habitat for the species in these areas. IPM treatments for ground squirrels that occur around structures and buildings that are located within grassland, scrub, or chaparral habitat may result in impacts to Crotch bumble bee. If the ripping of burrows occurs between October and March, the inadvertent killing of individual overwintering queens could occur. However, due to the limited area of impact and the small number of potential queens affected, this loss of individual queens would not likely result in a substantial negative effect on the ability of the species to reproduce and maintain local populations.

Ripping of burrows could also result in the direct damage or destruction to Crotch bumble bee nest colonies if this activity occurs around structures and buildings that are located within grassland, scrub, or chaparral habitat when nests are present (March through September). The loss of a colony would result in the potential loss of many young queens and males and could have a substantial negative effect on the ability of the species to reproduce and maintain local populations, thereby restricting the range of the species.

Suitable habitat for Crotch bumble bee may also occur along the margins of active agriculture fields that contain suitable nectar sources or rodent burrows and other underground cavities for nests. Suitable habitat is not likely to occur where active agricultural practices (e.g., tilling, discing) are conducted because the soil is consistently disturbed, and no substantial nectar sources or rodent burrows would be present. If ground disturbing treatment activities (e.g., hoeing, discing) are proposed on field margins with suitable habitat when nests are present (March through September), it could result in the direct destruction of Crotch bumble bee nest colonies. In addition, the use of weedmats on suitable habitat along field margins could trap bees resulting in loss of the colony, also resulting in colony destruction.

Recreation Facilities and Natural Lands

IPM Program activities would occur within recreational facilities (e.g., the margins of trails, roads, and picnic areas) and natural lands that may be suitable habitat for Crotch bumble bee. Ground disturbing treatments (e.g., digging, scraping, installation of exclusion fencing for feral pigs and bullfrogs), mechanical treatments using vehicles (e.g., ATVs and mowers), and pyrethrin-type insecticide applications that occur in suitable habitat between October and March could result in the killing of individual overwintering queens if any are located within the treatment area. However, due to the limited area of impact and the small number of potential queens affected, this loss of individual queens would not likely result in a substantial negative effect on the ability of the species to reproduce and maintain local populations.

Ground disturbing treatments (e.g., digging, scraping, installation of exclusion fencing for feral pigs and bullfrogs) and pyrethrin-type insecticide application that occur where recreational facilities and natural lands contain suitable habitats during the period when nests are present (March through September) could result in the direct damage or destruction to Crotch bumble bee nest colonies. The loss of nests would have a substantial negative effect on the ability of the species to reproduce and maintain local populations, thereby restricting the range of the species.

The application of non-selective herbicides and mechanical vegetation removal (e.g., mowing, weed whipping) conducted within recreational facilities would likely only impact a small area of floral resources; therefore, these treatments would not result in a substantial loss of floral resources or subsequent loss of nest colonies. However, in natural lands that contain suitable habitat, mechanical treatments and the spray application of non-selective herbicides that occur during the time that nest colonies are active (March through September) could inadvertently impact a large area of nectar sources for Crotch bumble bee, which could substantially reduce the available nectar sources around the colony to the extent that they are insufficient to support the colony, which could result in the loss of the nest. This would be a substantial negative effect on the ability of the species to reproduce and maintain local populations, thereby restricting the range of the species. The Authority would implement EPM HAZ-4 and EPM HAZ-5, which require specific measures related to pesticide handling and application to minimize the potential for pesticide drift, offsite pesticide transport, and pesticide spills. These would help to minimize impacts to Crotch bumble bee nectar sources from pesticide use. However, these EPMs would not sufficiently avoid the potential for substantial adverse effects from pesticide application on flowering plants that provide nectar resources for nest colonies.

Crotch Bumble Bee Impact Summary

Implementation of the IPM Program could result in direct impacts to Crotch bumble bee nest colonies, if present, from ground squirrel burrow removal adjacent to structures located within grassland, scrub, or chaparral habitat; ground disturbing treatments and use of weed mats within the margins of agricultural fields; and ground disturbing treatments and pyrethrin-type insecticide application within recreation facilities and natural lands occurring from March through September within suitable habitat. In addition, substantial adverse effects to nest colonies could occur indirectly through the spray application of non-selective herbicides and mechanical vegetation removal (e.g., mowing, weed whipping) on natural lands, if conducted in suitable habitat from March through September, due to a substantial reduction of nectar resources. Therefore, the impact to Crotch bumble bee would be **potentially significant**.

Mitigation Measure 3.3-2b: Avoid Loss of Crotch Bumble Bee Nest Colonies

- ▶ To avoid direct disturbance of Crotch bumble bee nest colonies, if ground disturbing treatments (e.g., digging, scraping, hoeing, installation of exclusion fencing for feral pigs or bullfrogs), use of weedmats, or pyrethrin-type insecticide treatments are proposed in Crotch bumble bee suitable habitat during the period when nest colonies may be present (March through September), prior to implementing treatments, the Authority will conduct field surveys within treatment sites for the presence of the species.
 - Surveys to determine occupancy of suitable habitat by Crotch bumble bee will occur within 1 year prior to treatment implementation and at four evenly spaced sampling periods within the flight season (March through September). Surveys will follow the general procedures in the USFWS' Survey Protocols for the Rusty Patched Bumble Bee (*Bombus affinis*) (USFWS 2018). Surveys will use non-lethal netting methods for one (1) person-hour per 3 acres of the treatment site or until 150 bumble bees are sighted, whichever comes first. If no Crotch bumble bees are detected, then no further survey of that treatment area or further mitigation is

required. Alternatively, the Authority may assume presence within suitable habitat, and apply only the additional measure below.

- If Crotch bumble bees are detected within the treatment area, or presence is assumed, and ground disturbing treatments (e.g., digging, scraping, hoeing, installation of exclusion fencing for feral pigs or bullfrogs), weed mats, or use of pyrethrin-type spray insecticides are planned; a pre-treatment survey will occur within 30 days of the treatment to identify the location of active nest colonies.
- Crotch bumble bee nest colonies detected within the treatment area will be flagged and no ground disturbing treatments, weed mats, or pyrethrin-type spray insecticides will be used within 15 feet of the colony during March through September, or until the colony is no longer active (i.e., no bees are seen flying in or out of the nest for three consecutive days). Air space shall be maintained between the active nest colony and nectar resources to facilitate foraging.
- ▶ To avoid loss of Crotch bumble bee nest colonies through removal of floral resources, within occupied habitat (presence can be assumed or follow survey requirements above to determine occupancy), mechanical vegetation removal and spraying of non-selective herbicide treatments will be conducted such that the entirety of floral resources are not removed during the period when colonies may be present (March through September), and untreated portions of occupied habitat are retained adjacent to treatment areas to provide floral resources and refuge for Crotch bumble bees.
- ▶ If in the future Crotch bumble bee is listed under the CESA and take is not covered under the Valley Habitat Plan, the Authority will consult with CDFW to determine additional measures that may be required to avoid take of individuals, or will apply for an Incidental Take Permit. Additional measures may include, but are not limited to, further limitations on the use of pyrethrin-type spray insecticides and mechanical treatment during the flight season, and limitations on ground disturbing treatments in overwintering habitat. If agreement is reached, the Authority shall implement all measures developed in consultation with CDFW.

Significance after Mitigation

Implementation of Mitigation Measure 3.3-2b: would avoid adverse effects on the Crotch bumble bee by avoiding the disturbance and destruction of nest colonies through surveys and avoidance, and prohibiting ground disturbing treatments and pyrethrin-type insecticide application in the vicinity of the nest during the season when colonies are active. This measure would also preserve adequate nectar resources around active colonies during the flight period to support reproduction. Therefore, with implementation of Mitigation Measure 3.3-2b, the impact to Crotch bumble bee would be **less than significant with mitigation**.

Monarch Butterfly

The western population of monarch butterfly (*Danaus plexippus*) overwinters within wind protected eucalyptus, Monterey pine, and cypress groves along the coast. These overwintering roosts are typically located within 1.5 miles from the ocean or bays; therefore, these overwintering roosts are not likely to occur within any of the preserves included in the IPM Program Area, which are located 10 miles or more from the coast. However, individual monarch butterflies, larvae, and host plants have been recorded within the IPM Program Area (Western Monarch and Milkweed Mapper 2021a).

Adult monarch butterflies require a diversity of nectar resources for feeding during migration and breeding, and milkweed host plants (*Asclepias* spp.) to complete its lifecycle (USFWS 2020a). During the spring and summer, adult females lay eggs on milkweed host plants, which are the only food source for larvae. Typically, a single egg is laid on an individual host plant (Western Monarch and Milkweed Mapper 2021b). Monarch butterflies may forage in various habitats throughout the IPM Program Area, while milkweed host plants may occur in grasslands, woodlands, and wetlands. Due to documented decreases in overwintering populations, the USFWS determined that the listing of monarch as threatened or endangered was warranted, but precluded by work on other higher priority species (USFWS 2020b). Staff from the USFWS reached out to the Authority, the Habitat Agency, and other land managers in early 2021 recommending that for CEQA and NEPA projects where suitable grassland habitat is present, milkweed host plants be flagged and avoided, and restoration of these areas should occur to avoid the extinction of the

species. Because the monarch became a candidate for listing under the ESA and the USFWS specifically recommended land managers to take measures to avoid the extinction of the monarch butterfly, it is considered a special-status species in this PEIR and EPMs were developed to minimize impacts to the species and its habitat.

Agricultural Lands, Structures and Buildings

Implementation of the IPM Program on agricultural lands and within structures and buildings would not result in adverse effects on monarch butterfly individuals or habitat, because no suitable overwintering or breeding habitat exists within these areas. However, IPM treatments for ground squirrels may occur around structures and buildings that are within suitable habitat for monarch butterfly host plants. The ripping of burrows using a tractor could inadvertently damage these plants if they occur in the vicinity of a burrow. Also, mechanical vegetation removal (e.g., mowing) occurring along the margins of agricultural fields could damage or kill monarch host plants, if present. Damage or death of host plants would slightly reduce the available breeding habitat for monarch butterfly and could potentially kill individual larva and eggs. The Authority would implement EPM BIO-10, which requires pre-treatment surveys for and avoidance of monarch butterfly host plants. Therefore, IPM treatments on agricultural lands and around structures and buildings would not have a substantial negative effect on the ability of monarch butterfly to reproduce or maintain populations in the IPM Program Area.

Recreation Facilities and Natural Lands

While woodland and forested habitat is present on natural lands and adjacent to recreational facilities (e.g., along road and trail margins) within the IPM Program Area, the distance from the coast makes it unlikely that monarch butterfly overwintering roosts will occur. Therefore, IPM treatments are not likely to have an adverse effect on overwintering roosts. However, manual and mechanical invasive plant treatments may damage or kill monarch butterfly host plants should they occur within a treatment site. Spraying of herbicides could also damage or kill host plants if present within or immediately adjacent to a treatment area. Damage or death of host plants would reduce the available habitat for monarch butterfly and could potentially kill individual larva and eggs, if present. The Authority will implement EPM BIO-9, EPM BIO-10 and EPM BIO-11 to avoid and minimize impacts on monarchs, which require surveys for and avoidance of overwintering sites should they occur, surveys for and avoidance of host plants, and prohibit broadcast spraying of non-selective herbicides within 15 feet of monarch host plants. The Authority would also implement EPM HAZ-4 and EPM HAZ-5, which require specific measures related to pesticide handling and application to minimize the potential for pesticide drift, offsite pesticide transport, and pesticide spills. These would help to avoid and minimize indirect impacts to monarch butterflies and their host plants from spraying of herbicides.

Monarch Butterfly Impact Summary

Implementation of ground squirrel burrow removal adjacent to structures; mechanical vegetation removal within the margins of agricultural fields; and manual and mechanical vegetation removal and spraying of herbicides within recreation facilities and natural lands may result in the direct loss of individual monarchs or eggs/larvae, or monarch butterfly host plants. However, the loss of individual host plants, larva, and eggs would not have a substantial adverse effect on the local population of monarch butterfly because a large proportion of available breeding habitat would remain unaffected in the IPM Program Area and because the loss of individual monarch butterflies would not substantially reduce the number or restrict the range of the species. In addition, the authority would implement EPMs that reduce potential impacts to monarch butterflies and their host plants by requiring the avoidance of overwintering sites if ever present, pre-treatment surveys for and avoidance of host plants, and limitations regarding herbicide use within 15 feet of host plants. Therefore, the impact to monarch butterfly would be **less than significant**.

Special-Status Fish

Trapping, electroshocking, gigning, and shooting for pest animal removal under the IPM Program would typically occur within ponds; however, it could also occur within perennial rivers and streams that is habitat for the Monterey roach (*Lavinia symmetricus subditus*), a CDFW species of special concern. As described in Chapter 2, "Program Description," the Authority would not conduct any IPM treatments within central California coast steelhead or south central California coast steelhead habitat. Manual and mechanical invasive plant treatments within the Pajaro River Agricultural Preserve may occur adjacent to critical habitat (or PCEs of critical habitat) for the ESA listed south central California coast steelhead, while manual, mechanical, and chemical IPM Program activities within the Sierra Vista

Open Space Preserve may occur adjacent to critical habitat (or PCEs of critical habitat) for the central California coast steelhead (Santa Clara County et al. 2012; 70 FR 52488). Monterey hitch (*Lavinia exilicauda harengus*) is a CDFW species of special concern that occurs in the Pajaro River, lower Uvas Creek, and lower Llagas Creek. The portion of the IPM Program Area that overlaps with habitat for Monterey hitch also overlaps with that of south central California coast steelhead, and as described above no treatments will occur within this habitat. However, treatments within the Pajaro River Agricultural Preserve may occur adjacent to habitat for Monterey hitch.

Structures and Buildings

Implementation of the IPM program within structures and buildings would not result in any direct adverse effects on special-status fish individuals or habitat, because no suitable habitat or PCE of critical habitat exists within these areas. The ripping of ground squirrel burrows in the vicinity of structures and buildings could result in runoff of sediments to special-status fish habitat that could degrade water quality. Degradation of water quality can reduce or inhibit spawning and foraging by special-status fishes in affected waters. In addition, water quality is a PCE for central California coast steelhead, and a reduction in water quality within special-status fish habitat or critical habitat would be a substantial adverse effect. However, EPM BIO-1 requires a pre-treatment surveys for aquatic resources and prohibits ground disturbing mechanical treatments or any chemical treatments within 15 feet of aquatic resources. The implementation of EPM BIO-1 would avoid and minimize the likelihood of sediment runoff entering special-status fish habitat and critical habitat; therefore, no substantial adverse effects to special status fish would occur from implementation of ground squirrel control.

Recreation Facilities and Natural Lands

IPM Program activities would occur within recreational facilities (e.g., trails, roads, and picnic areas) and natural lands that may be directly adjacent to Monterey roach and central California coast steelhead habitat, as well as critical habitat for central California coast steelhead. Invasive plant treatments such as tree removal, grubbing, mowing, use of herbicides, and use of pyrethrin-type insecticides adjacent to special-status fish habitat could result in runoff of sediment and pesticides that would degrade water quality. Degradation of water quality can reduce or inhibit spawning and foraging by special-status fishes in affected waters. In addition, water quality is a PCE for central California coast steelhead, and a reduction in water quality within special-status fish habitat or critical habitat would be a substantial adverse effect. However, the IPM Program would implement EPMs to reduce potential adverse effects to aquatic resources. EPM HAZ-4 requires specific methods for handling of all pesticides to minimize accidental spills. EPM HAZ-5 requires measures to reduce pesticide drift, precipitation related runoff, and other measures to reduce the potential for pesticides to enter non-target areas. EPM BIO-1 requires pre-treatment surveys for aquatic resources, prohibits ground disturbing mechanical treatments and all chemical treatments within 15 feet of aquatic resources, and prohibits broadcast spraying of herbicides within 50 feet of aquatic resources (unless the compound is specifically registered for aquatic use). Implementation of these EPMs as a part of the IPM Program would avoid and minimize the likelihood of sediment and pesticide runoff, and pesticide drift to enter special-status fish habitat and critical habitat; therefore, no substantial adverse effects to special status fish would occur from implementation of the IPM Program on recreational facilities and natural lands.

Trapping, electroshocking, gigging, and shooting are proposed treatment methods for animal pest control on natural lands. These treatments would typically occur in ponds; however, they could also occur within perennial streams that are habitat for Monterey roach. Trapping, gigging, shooting, and electroshocking in perennial streams may result in accidental injury or mortality of Monterey roach. While unlikely, traps set for target species could ensnare roaches if not designed to let small fishes pass through, and gigging and shooting that targets bullfrogs could inadvertently hit roaches if they are present where this activity occurs. Electroshocking to remove non-native fishes is a non-lethal removal technique; however, injury or mortality of roaches may occur if any individuals are subject to electroshocking and accidentally removed. Adverse effects from these activities (e.g., injury or mortality to individual Monterey roaches) would not be substantial because loss of individual Monterey roaches would not substantially reduce the number or restrict the range of the species. However, gigging, shooting, and use of electroshockers during the spawning season (March through June) for Monterey roach could result in disruption of spawning behaviors and reduction in reproductive output. Disruption of Monterey roach spawning would be a potentially substantial adverse effect.

Agricultural Lands

Manual and mechanical treatment activities (e.g., hoeing, mowing, discing, and use of weedmats) may occur within agricultural lands that are adjacent to habitat for special-status fish and critical habitat for south central California coast steelhead. As discussed for recreational facilities, manual and mechanical IPM Program treatments have the potential to result in runoff and sedimentation into suitable special-status fish habitat and critical habitat for south central California coast steelhead. However, implementation of EPM BIO-1 requires pre-treatment surveys for aquatic resources and prohibits ground disturbing mechanical treatments within 15 feet of aquatic resources. Furthermore, agricultural activities already occur on agricultural preserves and implementation of the IPM Program is expected to increase IPM treatment activities by up to a few additional treatments over current levels, which would not substantially increase the generation of sediments and runoff. Therefore, no substantial adverse effects on special-status fish habitat or critical habitat for south central California coast steelhead would occur on agricultural lands.

Special-Status Fish Impact Summary

Implementation of the IPM Program within structures and buildings would not result in adverse effects on special-status fishes or critical habitat due a lack of suitable habitat in those areas. Implementation of manual and mechanical treatments under the IPM Program would not substantially increase activities over existing conditions, no ground disturbing mechanical treatments or chemical treatments would occur within 15 feet of aquatic resources, and no broadcast spraying of herbicides would occur within 50 feet of aquatic resources (unless the compound is specifically registered for aquatic use). However, manual removal of non-native fishes, bullfrogs, and turtles in the IPM Program Area may result in disruption of spawning for Monterey roach; therefore, the impact would be **potentially significant** for that species.

Mitigation Measure 3.3-2c: Avoid Injury or Loss of Special-Status Fishes

- ▶ The Authority will not conduct trapping, shooting, gigging, or electroshocking during the spawning season for Monterey roach (March through June) within suitable habitat (i.e., perennial streams). Shooting, trapping, gigging, and electroshocking of aquatic species will only be conducted by a qualified biologist with experience identifying special-status fishes.

Significance after Mitigation

The implementation of Mitigation Measure 3.3-2b would avoid and minimize adverse effects on special-status fishes from the implementation of the IPM Program by prohibiting activities that could disrupt of Monterey roach spawning activities and by requiring a qualified biologist able to identify Monterey roach to implement IPM activities that would occur within perennial streams. Therefore, Mitigation Measure 3.3-2b would reduce the impact to special status fishes to **less than significant after mitigation**.

Special-Status Amphibians

There are several special-status amphibians that are known to occur or could occur within the IPM Program Area (refer to Appendix C, "Special-Status Species"). These special-status amphibians include the California red-legged frog (listed under ESA); California tiger salamander (listed under ESA and CESA); foothill yellow-legged frog (*Rana boylei*) (candidate for listing under CESA); and the California giant salamander (*Dicamptodon ensatus*), coast range newt (*Taricha torosa*), and Santa Cruz black salamander (*Aneides niger*) (all CDFW species of special concern). In addition, the IPM Program Area contains critical habitat for the California tiger salamander (70 FR 49380) and California red-legged frog (75 FR 12816). PCEs for critical habitat may also be present in the IPM Program Area.

Structures and Buildings

Implementation of the IPM Program within structures and buildings would not result in any adverse effects on special-status amphibians, because no suitable habitat or PCEs of critical habitat exists within these areas. If structures and buildings are located within suitable upland habitat or critical habitat, then the ripping of ground squirrel burrows adjacent to buildings and structures may have an adverse effect special-status amphibians. Ground squirrel burrows are used by California tiger salamander and California red-legged frog as upland refugia. Should burrows be occupied by California tiger salamander or California red-legged frog when ripping of the burrows are implemented this would result in burrow collapse, entombing and killing individuals. In addition, should the ripping of ground

squirrel burrows occur adjacent to aquatic habitat for special-status amphibians, runoff of sediments could occur and degrade water quality. However, EPM BIO-1 requires pre-treatment surveys for aquatic resources, prohibits ground disturbing mechanical treatments and all chemical treatments within 15 feet of aquatic resources. Implementation of EPM BIO-1 as part of the IPM Program would minimize the potential for water quality degradation that could adversely affect special-status amphibian habitat; however, there is a potential to harm special-status amphibians from the ripping of ground squirrel burrows.

Recreation Facilities and Natural Lands

IPM Program treatment activities would occur within recreational facilities (e.g., trails, roads, bridges) and natural lands that may be within upland habitat for special-status amphibians, while other recreational facilities (e.g., picnic areas and parking lots) are not suitable habitat for these species, but may be directly adjacent to suitable upland and aquatic habitat. Generally, manual, mechanical, and chemical treatment activities for invasive plant control are not likely to substantially effect the suitability of upland habitat for special-status amphibians due to the acreage of vegetation affected relative to the acreage available for these species within the IPM Program Area. However, spraying of herbicides or insecticides, and manual and mechanical activities such as mowing, grubbing, tree removal, trapping, gigging/shooting, and electroshocking that occur within upland or aquatic habitat could result in the incidental injury or death of special-status amphibians, or runoff of sediment and herbicides that could degrade water quality.

To avoid and minimize adverse effects on special-status amphibians, the Authority would implement EPM HAZ-4 which requires specific methods for handling of all pesticides to minimize accidental spills; EPM HAZ-5 which includes measures to reduce pesticide drift, precipitation related runoff, and other measures to reduce the potential for pesticides to enter non-target areas; and EPM BIO-1 which requires pre-treatment surveys for aquatic resources, prohibits ground disturbing mechanical treatments and all chemical treatments within 15 feet of aquatic resources, and prohibits the broadcast spraying of herbicides within 50 feet of aquatic features (unless the compound is specifically registered for aquatic use). In addition, EPM BIO-8 would also be implemented, which would limit herbicide use in California red-legged frog habitat in accordance with the California red legged frog injunction (Center for Biological Diversity v. U.S. Environmental Protection Agency (2006) Case No.: 02-1580-JSW). Where occupied California red-legged frog habitat is habitat for other special-status species, this 60-foot buffer will avoid impacts to those species as well. Implementation of these EPMs as part of the IPM Program would avoid and minimize the likelihood of adverse effects on special-status amphibians from mechanical and chemical treatments; however, there is a potential to harm special-status amphibians from treatments that would occur within aquatic habitat (i.e., trapping, gigging/shooting, and electroshocking).

Agricultural Lands

Agricultural lands within the IPM Program Area may contain suitable upland habitat for special-status amphibians along the margins of existing agricultural fields and suitable aquatic habitat in adjacent streams. IPM Program activities that would occur on agricultural lands (e. g., hoeing, mowing, disking, and use of weedmats) would not likely have a substantial effect on habitat within these areas due to the existing disturbance from agricultural operations and required pre-treatment surveys and disturbance buffers around aquatic resources (EPM BIO-1). To avoid and minimize impacts to California red-legged frog, the authority would implement EPM BIO-8, which limits chemical treatments within a 60-foot buffer of California red-legged frog habitat. However, the manual and mechanical IPM Program activities proposed for agricultural lands could result in incidental injury or death of special-status amphibians if these species are present when these activities occur.

Special-Status Amphibian Impact Summary

Implementation of the IPM Program within structures and buildings would not result in adverse effects on special-status amphibians or critical habitat due a lack of habitat in those areas; however, ground squirrel control adjacent to buildings and structures could result in incidental injury or death of special-status amphibians. On natural and recreational lands, trapping, gigging, shooting, electroshocking, manual, mechanical, and chemical treatments also have the potential to result in incidental injury or death of special-status amphibians. Implementation of IPM

treatments on agricultural lands may result in incidental injury or death of special-status amphibian individuals, if present when these activities occur. Therefore, the impact would be **potentially significant**.

Mitigation Measure 3.3-2d: Avoid Impacts to California Tiger Salamander and California Red-Legged Frog

- ▶ The Authority will obtain take coverage for California tiger salamander and California red-legged frog for covered IPM activities (i.e., manual and mechanical treatments). The Authority will implement all applicable permit conditions required by the Habitat Plan to avoid and minimize injury, death, disturbance, or habitat degradation for these special-status species. If take coverage is not obtained for manual and mechanical activities, the Authority will implement the following measures:
 - Conduct field surveys within treatment sites to determine the presence of suitable California tiger salamander and California red-legged frog habitat.
 - Prohibit burrow ripping for ground squirrel control where suitable California tiger salamander upland habitat is present to avoid harming individual California tiger salamanders that may be present in empty burrows.
 - Prohibit mechanical and chemical treatments in suitable California tiger salamander upland habitat during the wet season (generally October 15 through May), and within 24 hours of rainfall. Only manual IPM treatment activities shall be conducted in suitable upland habitat during the wet season to avoid injury or mortality of these species during overland movement.
 - Prior to conducting IPM treatments in California tiger salamander or California red-legged frog suitable habitat that could result in incidental injury or death of individuals as determined by a qualified biologist (e.g., mechanical treatments that use large, ground disturbing equipment such as tractor-operated mowers), and within 14 days of treatment, pre-treatment clearance surveys shall be conducted. If individuals of either species are found within a treatment site during pre-treatment clearance surveys, monitoring shall be conducted during the treatment (with the exception of pond draining as discussed below). If California tiger salamander or California red-legged frog individuals are found within a treatment site while work is occurring, work shall stop until the individuals are no longer at risk of incidental injury or death from the implementation of the treatment or have left the treatment area without assistance.
 - Pond draining shall not occur during the breeding period for California tiger salamander or California red-legged frog (generally October 15 through May). In addition, prior to draining any pond, protocol surveys will be conducted by a qualified biologist. Draining of the pond shall only proceed once surveys confirm that no California tiger salamanders, California red-legged frogs, or egg masses are present.
- ▶ Prior to the use of herbicides, the Authority will conduct field surveys within treatment sites for the presence of suitable aquatic and upland habitat for California tiger salamander and California red-legged frog. If suitable aquatic or upland habitat is identified, the Authority will implement the following measures:
 - No broadcast spraying of herbicides will occur within 50 feet of suitable California tiger salamander or California red-legged frog aquatic habitat and no application of herbicides by any method will occur within 15 feet of California tiger salamander or California red-legged frog aquatic habitat.
 - Within 50 feet of suitable California tiger salamander or California red-legged frog upland habitat, no broadcast spraying of herbicides (i.e., boom on an ATV) will occur during the wet season (generally October 15 through May), or within 24 hours of rainfall, to avoid direct exposure to California tiger salamander or California red-legged frog. Targeted, handheld application of herbicides may occur outside of this window within 50 feet of California red-legged frog upland habitat or California tiger salamander upland habitat by staff trained to identify and avoid any potential burrows and burrow openings.
 - When using herbicides that contain the active ingredients that are subject to the herbicide injunction for California red-legged frog (Center for Biological Diversity v. U.S. Environmental Protection Agency [2006] Case No.: 02-1580-JSW) the requirements of that injunction shall apply (see EPM BIO-8).

- Alternatively, if it is not feasible to meet the objectives of the IPM Program under these requirements for herbicide use, the Authority will consult USFWS and/or CDFW before implementation of herbicide application to develop measures to avoid the injury, death, or disturbance of California tiger salamander and California red-legged frog. These measures may include, but are not limited to, limitations on the types of herbicides used and restrictions on the timing of use. If agreement is reached, the Authority shall implement all measures developed in consultation with the agencies.

Mitigation Measure 3.3-2e: Avoid Impacts to Foothill Yellow-Legged Frog

- ▶ the Authority will obtain take coverage for foothill yellow-legged frog for all IPM activities under the Habitat Plan (all activities including chemical treatments are covered by the Habitat Plan for foothill yellow-legged frog). The Authority will implement all applicable permit conditions required by the Habitat Plan to avoid and minimize injury, death, disturbance, or habitat degradation for this special-status species. If take coverage is not obtained, the Authority will implement the following the following measures:
 - Conduct field surveys within treatment sites for the presence of suitable foothill yellow-legged frog habitat.
 - The Authority will not broadcast spray herbicides within 50 feet of suitable aquatic or upland habitat and no application of herbicides by any method will occur within 15 feet of suitable aquatic habitat of foothill yellow-legged frog. Alternatively, if it is not feasible to meet the objectives of the IPM Program under these requirements for herbicide use, the Authority will consult CDFW to develop measures to avoid incidental injury or death of the species. These measures may include but are not limited to, limitations on the types of herbicides used and timing of use. If agreement is reached, the Authority shall implement all measures developed in consultation with CDFW.
 - Prior to conducting IPM treatments in foothill yellow-legged frog suitable habitat that could result in incidental injury or death of individuals as determined by a qualified biologist (e.g., mechanical treatments that use large, ground disturbing equipment such as tractor-operated mowers), and within 14 days of treatment, pre-treatment clearance surveys shall be conducted. If individuals are found within a treatment site during pre-treatment surveys, monitoring shall be conducted during treatment. If foothill yellow-legged frogs are found within a treatment site while work is occurring, work shall stop until the individual is no longer at risk of incidental injury or death from the implementation of the treatment, or until the individual is moved outside of the treatment site by a qualified biologist.

Mitigation Measure 3.3-2f: Preconstruction Surveys and Avoidance of California Giant Salamander, Coast Range Newt, and Santa Cruz Black Salamander

- ▶ Prior to conducting IPM treatments in California giant salamander, coast range newt, and Santa Cruz black salamander suitable habitat that could result in incidental injury or death of individuals (e.g., mechanical treatments that use large, ground disturbing equipment such as tractor-operated mowers) as determined by a qualified biologist, and within 14 days of treatment, pre-treatment clearance surveys shall be conducted.
- ▶ If individuals of these species are found within a treatment site during pre-treatment clearance surveys, monitoring shall be conducted during treatment. If California giant salamander, coast range newt, or Santa Cruz black salamander are found within the treatment site while work is occurring, work shall stop until the individual is no longer at risk of incidental injury or death from the implementation of the treatment, or until the individual is moved outside of the treatment site by a qualified biologist.

Mitigation Measure 3.3-2g: Avoid Impacts from Aquatic-based IPM Treatments to Special Status Amphibians

- ▶ Exclusion fencing, trapping, giggering, shooting, and electroshocking in aquatic environments shall be conducted by a qualified biologist with experience in the identification of amphibian species and possessing the appropriate federal and state permits to handle listed species. Inadvertently trapped or shocked special-status amphibians will be released immediately upon discovery.

Significance after Mitigation

Implementation of Mitigation Measures 3.3-2d through 3.3-2f would minimize effects on special-status amphibians by avoiding impacts from chemical treatments; obtaining take coverage under the Habitat Plan for covered species and activities and following all permit requirements to minimize impacts to covered special-status amphibians; implementing measures (e.g., surveys, seasonal restrictions, and monitoring) to avoid and minimize impacts if take coverage under the Habitat Plan is not obtained; and monitoring treatments in occupied habitat to avoid harm to individuals. In addition, only a qualified biologist will conduct animal pest removal in aquatic environments. Therefore, Mitigation Measures 3.3-2d through 3.3-2f would reduce the impacts to special-status amphibians and critical habitat to **less than significant after mitigation**.

Special-Status Reptiles

There are several special-status reptiles that are known to occur or could occur on one or more preserves within the IPM Program Area (refer to Appendix C, "Special-Status Species"). These special-status reptiles are Alameda whipsnake (*Masticophis lateralis euryxanthus*) (listed under ESA), coast horned lizard (*Phrynosoma blainvillii*), Northern California legless lizard (*Anniella pulchra*), and western pond turtle (*Actinemys marmorata*) (all CDFW species of special concern).

Structures and Buildings

Implementation of the IPM Program within structures and buildings would not result in any adverse effects on special-status reptile habitat, because no suitable habitat exists within these areas. If structures and buildings are located within suitable habitat, then the ripping of ground squirrel burrows adjacent to buildings and structures could affect special-status reptiles, particularly if occupied by special-status reptiles. In addition, should the ripping of ground squirrel burrows occur near aquatic habitat for western pond turtle, runoff of sediments could degrade water quality. However, EPM BIO-1 requires pre-treatment surveys for aquatic resources, prohibits ground disturbing mechanical treatments and all chemical treatments within 15 feet of aquatic resources, and prohibits the broadcast spraying of herbicides within 50 feet of aquatic features (unless the compound is specifically registered for aquatic use). This EPM would minimize impacts to aquatic habitat; however, individual special-status reptiles could be harmed if present during ripping of burrows.

Recreation Facilities and Natural Lands

IPM Program treatment activities would occur within recreational facilities and natural lands that may provide upland habitat for special-status reptiles. Manual, mechanical, and chemical treatment activities for invasive plant control are not likely to have a substantial adverse effect on the suitability of upland habitat for special-status reptiles due to the size of treatment areas relative to available habitat for these species within the IPM Program Area. IPM treatment activities such as tree removal, grubbing/scraping, mechanical equipment use, and use of spray pesticides could result in direct injury or mortality of special-status reptiles if conducted in upland habitat or indirect injury or mortality to western pond turtle if conducted near aquatic habitat due to potential water quality degradation. In addition, trapping, giggering, shooting, and electroshocking within suitable aquatic habitat could result in the incidental injury or death of western pond turtle, if present. However, the Authority would implement several EPMs which would reduce potential impacts to special-status reptiles. The Authority would follow specific methods for handling of all pesticides to minimize spills (EPM HAZ-4); follow specific guidelines regarding pesticide use to minimize potential drift and off-site runoff (EPM HAZ-5); and the Authority would conduct pre-treatment surveys for aquatic resources, prohibit ground disturbing mechanical treatments and all chemical treatments within 15 feet of any aquatic features, and prohibit broadcast spraying of herbicides within 50 feet of aquatic habitat (unless the compound is specifically registered for aquatic use) (EPM BIO-1). Implementation of these EPMs would minimize the likelihood of indirect effects to special-status reptile aquatic habitat from IPM treatment activities; however, there is a potential for impacts to special-status reptiles in upland habitats from all treatment activities and from trapping, giggering, shooting, and electroshocking within suitable aquatic habitat.

Agricultural Lands

While special-status reptiles are not anticipated to occur on agricultural lands within the IPM Program Area, western pond turtle may be present on the margins of agricultural lands within approximately 0.3 mile of suitable aquatic

habitat. Mechanical IPM treatment activities could result in indirect injury or mortality to western pond turtle if conducted near aquatic habitat due to potential water quality degradation. However, as previously described, EPM BIO-1 requires pre-treatment surveys for aquatic resources, prohibits ground disturbing mechanical treatments and all chemical treatments within 15 feet of aquatic resources, and prohibits the broadcast spraying of herbicides within 50 feet of aquatic features (unless the compound is specifically registered for aquatic use). These restrictions would minimize the potential for indirect impacts to western pond turtle habitat. While unlikely, mechanical treatments could result in disturbance to western pond turtle nests and associated incidental injury or death of individuals could occur if present during treatments.

Special-Status Reptile Impact Summary

Implementation of the IPM Program within structures and buildings would not result in substantial adverse effects on special-status reptiles due to a lack of suitable habitat in those areas. However, the ripping of ground squirrel burrows adjacent to structures and buildings could result in incidental injury or death of special status reptiles. Trapping, giggering, shooting, electroshocking, manual, mechanical, and chemical treatments within recreational and natural lands could result in incidental injury or death of special-status reptiles. Implementation of mechanical treatments under the IPM Program within agricultural lands may result in the disturbance of nests and incidental injury or death of individuals is present when treatments occur. Therefore, the impacts to special-status reptiles would be **potentially significant**.

Mitigation 3.3-2h: Avoid Injury or Loss of Special-Status Reptiles

- ▶ The Authority will obtain take coverage for western pond turtle under the Habitat Plan. The Authority will implement all applicable permit conditions that may be required by the Habitat Plan to avoid and minimize impacts to western pond turtle.
- ▶ For special-status reptiles that are not covered by the Habitat Plan (and for western pond turtle if Habitat Plan take coverage is not obtained), the Authority will implement the following avoidance and minimization measures prior to conducting IPM treatment activities that have the potential to injure or harm special-status reptiles:
 - Conduct assessment of treatment sites for the presence of suitable special-status reptile habitat. Prior to scraping/grubbing, ripping, mechanical treatments, or tree removal within suitable habitat for special-status reptiles, and within 30 days of treatment, the Authority will survey the treatment site for the presence of special-status reptiles (and western pond turtle nests, if applicable). If special-status reptiles are found within the treatment site, monitoring for special-status reptiles will be conducted during the treatment and work will stop if a special-status reptile is at risk of injury until it is no longer at risk. Special-status reptiles (except for Alameda whipsnake) may be moved outside of the treatment area by a qualified biologist. Any western pond turtle nests will be flagged and avoided (if applicable).
 - Prior to conducting IPM treatment activities within occupied habitat for Alameda whipsnake, the Authority shall consult USFWS on any activities that may result in injury, death, or disturbance of the species to develop measures to avoid these impacts. Additional measures may include but are not limited to surveys, monitoring, and seasonal restrictions on use of pesticides and other treatments. If avoidance is not feasible then the Authority will not conduct IPM treatment activities that would cause impacts to Alameda whipsnake.
 - Shooting, trapping, giggering, and electroshocking of aquatic species, and trapping of rattlesnakes, will be conducted by a qualified biologist with experience in the identification of special-status reptile species. Inadvertently trapped special-status reptiles will be released immediately upon discovery. Trapping for rattlesnakes shall not be conducted within the range of Alameda whipsnake.

Significance after Mitigation

The implementation of Mitigation Measure 3.3-2h would avoid and minimize adverse effects on special-status reptiles by requiring surveys in suitable habitat, monitoring during treatment activities, work stoppage if individuals are present, and requiring qualified biologists with experience in identifying special-status reptiles to perform shooting, trapping, giggering, and electroshocking treatments. In addition, if the Authority does not obtain take coverage under the Habitat Plan for western pond turtle prior to implementing treatments that have the potential to

harm them, the Authority would implement specific measures to minimize impacts on western pond turtle and their nests. Therefore, the impact to special-status reptiles would be **less than significant after mitigation**.

Special-Status Birds and Nests of Common Birds and Raptors

Special-status birds that could occur or are known to occur within the IPM Program Area are the ESA and CESA listed least Bell's vireo (*Vireo bellii pusillus*); the CESA listed bank swallow (*Riparia riparia*), Swainson's hawk (*Buteo swainsoni*), and tricolored blackbird (*Agelaius tricolor*); CDFW fully protected American peregrine falcon (*Falco peregrinus anatum*), bald eagle (*Haliaeetus leucocephalus*), golden eagle (*Aquila chrysaetos*), and white-tailed kite (*Elanus leucurus*); and the CDFW species of special concern burrowing owl (*Athene cunicularia*), grasshopper sparrow (*Ammodramus savannarum*), loggerhead shrike (*Lanius ludovicianus*), purple martin (*Progne subis*), and yellow-breasted chat (*Icteria virens*). The IPM Program Area includes nesting and foraging habitat for all of these species with the exception of American peregrine falcon, for which foraging habitat is present but not the cliffs and tall buildings required for nesting. Therefore, impacts to nests of American peregrine falcon from IPM program implementation are not anticipated.

Common birds and raptors are not special-status birds by definition; however, the nests of all raptors and common nesting birds are protected by Section 3503 and Section 3503.5 of the Fish and Game Code which makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any common bird and to take, possess, or destroy raptors including their nests or eggs. The potential for IPM activities to adversely affect the nests of common bird species (including raptors) would be similar to the potential to adversely affect the nests of special-status birds; therefore, these species are analyzed together.

Structures and Buildings

Implementation of the IPM program within or adjacent to structures and buildings would not result in any adverse effects on special-status birds, because no suitable habitat exists within structures and buildings, and there is unlikely to be suitable nesting habitat adjacent to structures and buildings where ground squirrel control would be implemented. While structures and buildings may provide nesting habitat for certain common bird species (e.g., barn swallow (*Hirundo rustica*), nest removal would not occur under the IPM Program. In addition, the IPM Program is expected to increase treatment activities by a few additional treatment projects, which would not result in a substantial change to the existing activities that occur in and around structures and buildings. For these reasons, it is unlikely that treatment activities under the IPM Program would disturb common bird nests.

Recreation Facilities, Agricultural Lands, and Natural Lands

IPM Program treatment activities would occur within recreational facilities, agricultural lands, and natural lands that may provide suitable habitat for special-status birds (except for American peregrine falcon as noted above). In general, manual, mechanical, and chemical treatment activities for invasive plant control are not likely to have a substantial effect on the suitability of foraging or nesting habitat for special-status birds due to the size of treatment areas relative to available habitat for these species within the IPM Program Area. However, Himalayan blackberry (*Rubus armeniacus*) is identified as a target invasive species in the IPM Manual, which provides habitat for tricolored blackbird nesting colonies. Removal of Himalayan blackberry thickets that are documented to provide habitat for tricolored blackbird colonies could adversely affect the species. In addition, vegetation treatments such as cutting/mowing, grubbing/clearing, herbicide application, and tree removal may result in loss of nests through direct removal or disturbance. Activities such as trapping, gassing, shooting, and electroshocking to control bullfrogs, and invasive fish may also result in the disturbance of nests. Lastly, the trapping of brown-headed cowbirds on natural lands may result in the unintentional capture and injury of special-status birds.

The Authority would implement EPMs to reduce adverse effects on nesting and special-status birds. EPM BIO-6 requires that invasive plant removal be conducted outside of bird nesting season (February 1 – August 31) if activities may adversely affect native bird nests. In the event that vegetation removal must occur during nesting bird season, EPM BIO-7 requires a nesting bird survey within 14 days of treatment that encompasses the area within a 250-foot radius for raptors, and a 50-foot-radius for other birds. If nesting birds are identified, work within these buffer areas will be postponed until the young have fledged or the nest is otherwise abandoned.

Special-Status Birds and Nests of Common Birds and Raptors Impact Summary

Implementation of the IPM Program within structures and buildings would not result in substantial adverse effects on special-status birds due a lack of suitable habitat in those areas. While structures and buildings may provide nesting habitat for common bird species, no nest removal or substantial disturbances would occur. Implementation of the IPM Program within recreation facilities, agricultural lands, and natural lands may result in the removal or disturbance of special-status birds or common bird nests (including raptors). EPMs would reduce the potential impacts by limiting treatments to outside of bird nesting season and requiring nest surveys and buffers be placed around nests to avoid disturbance. However, while sufficient to avoid substantial adverse effects on common raptors, other common nesting birds, and most special-status bird species, the buffers outlined EPM BIO-7 do not meet CDFW and/or USFWS standards for avoiding impacts to the nests of Swainson's hawk (CDFW 1994), burrowing owl (CDFW 2012), or least Bell's vireo. In addition, the EPMs would not prevent the loss of habitat where tricolor blackbird colonies are known to occur. Furthermore, brown-headed cowbird trapping could result in the incidental injury or death of special-status birds. Therefore, impacts to special-status birds would be **potentially significant**.

Mitigation 3.3-2i: Avoid Loss of Special-Status Birds, Nests, and Nesting Colonies

- ▶ The Authority will obtain take coverage for least Bell's vireo under the Habitat Plan for covered activities (i.e., manual and mechanical treatments). The Authority will implement all applicable permit conditions that may be required by the Habitat Plan to avoid and minimize impacts to least Bell's vireo. In occupied habitat for least Bell's vireo (or in suitable habitat if occupancy is not known), the Authority will not use chemical treatments without prior consultation with USFWS.
- ▶ The Authority will obtain take coverage for tricolored blackbird and burrowing owl under the Habitat Plan. The Authority will implement all applicable permit conditions required by the Habitat Plan.
- ▶ If take coverage under the Habitat Plan is not obtained for covered special-status birds before covered activities are implemented, the Authority will implement the following avoidance and minimization measures:
 - Treatment activities within 250 feet of riparian habitat suitable for least Bell's vireo nesting will occur outside of the least Bell's vireo breeding season (defined as March 15 through September 15) to the extent feasible. If work must occur within 250 feet of riparian habitat within the breeding season, a qualified biologist will conduct visual and audio surveys for nesting least Bell's vireo according to the Least Bell's Vireo Survey Guidelines (USFWS 2001) or as approved by USFWS. Vocalization recordings will not be used. In the event that least Bell's vireo territory or active nests are confirmed during the surveys, the biologist will establish an avoidance buffer zone between the territory edge and investigation activities at a distance recommended by USFWS. The Authority will periodically monitor active territories and maintain the territory avoidance buffer zone until nestlings have fledged and are no longer reliant on the nest or parental care for survival or until the nest is abandoned (as determined by a qualified biologist).
 - Prior to conducting treatments in burrowing owl habitat, the Authority will conduct a survey of the treatment site for burrowing owl burrows. If an active burrow is identified near a treatment site and work cannot be conducted outside of the nesting season (February 1 to August 31), a qualified biologist will establish an avoidance buffer that extends 150 to 1,500 feet around the burrow, depending on nesting stage and level of disturbance. If burrowing owls are present at the treatment site during the non-breeding season (September 1 through January 31), a qualified biologist will establish an avoidance buffer that extends a minimum of 150 feet around the burrow.
 - IPM Program activities that occur within 250 feet of suitable tricolored blackbird nesting colony habitat will be conducted outside of the breeding season (March 15 through September 31). If work must occur within 250 feet of suitable tricolored blackbird nesting colony habitat during breeding season, then a protocol survey for tricolored blackbird nests will be conducted. If a nesting colony is present, then no IPM activities will occur within 250 feet of the colony until the colony has dispersed. Vegetation that has been documented to be used for nesting by tricolored blackbird shall not be removed for a period of 5-years following the use of the vegetation for nesting.

- ▶ Within Swainson's hawk nesting habitat, the Authority will survey for active nests prior to the implementation of any IPM Program activities. If nests are identified, IPM Program activities would be prohibited within 0.25 mile of the active nest during nesting season (March 1 - September 15). This buffer may be adjusted as appropriate by a qualified biologist in consultation with CDFW. If removal of a Swainson's hawk nest tree is required, the Authority shall conduct removal of the tree outside of the active nesting season in coordination with CDFW.
- ▶ For all other special-status bird species, the Authority will apply EPM BIO-6 and EPM BIO-7 to trapping, giggering, shooting, and electroshocking activities for bullfrog and invasive fish removal. This would require that trapping, giggering, shooting, and electroshocking activities for bull frog and invasive fish removal occur outside of the nesting season, or requires a nesting bird survey if activities would occur within the nesting season and non-disturbance buffers would be implemented.
- ▶ Brown-headed cowbird trapping shall be conducted by a qualified biologist with experience in the identification of bird species. Inadvertently trapped special-status birds will be released immediately upon discovery. Prior to initiating trapping, the Authority will consult CDFW and USFWS regarding trapping within 250 feet of special-status bird species habitat.

Significance after Mitigation

Implementation of Mitigation Measures 3.3-2i would avoid and minimize effects to special-status and common raptors and other nesting birds by prohibiting spraying of pesticides in occupied least bell's vireo habitat, requiring pre-treatment surveys, avoiding treatments during nesting season or establishing non-disturbance buffers during nesting season, and requiring qualified biologists to conduct brown-headed cowbird trapping in consultation with CDFW and USFWS when near special-status bird habitat. Therefore, the impact to special-status birds and common raptors and other nesting birds would be **less than significant after mitigation**.

San Joaquin Kitfox, Mountain Lion, Ringtail, and American Badger

The IPM Program Area contains suitable habitat for the ESA and CESA listed San Joaquin kitfox (*Vulpes macrotis mutica*), the CESA candidate threatened Southern California/Central Coast evolutionary significant unit of the mountain lion (*Puma concolor*), the CDFW fully protected ringtail (*Bassariscus astutus*), and CDFW species of special concern American badger (*Taxidea taxus*). These species are known to occur or are likely to occur within the IPM Program Area and may be affected by IPM Program activities.

Structures and Buildings

Implementation of the IPM program within and adjacent to structures and buildings would not result in any adverse effects on San Joaquin kitfox, ringtail, mountain lion, or American badger because no suitable habitat exists within structures and buildings and the level of disturbance adjacent to structures and buildings make denning for these species unlikely. Also, pesticides would be used in anchored traps within the structures and are not likely to produce secondary toxicity (refer to Appendix HAZ-1).

Recreation Facilities, Agricultural Lands, and Natural Lands

IPM Program activities would occur within recreational facilities, agricultural lands, and natural lands that provide habitat for San Joaquin kitfox and American badger, and recreational facilities and natural lands that provide habitat for ringtail and mountain lion. IPM Program treatment activities for invasive plant control are not likely to have a substantial adverse effect on the suitability of habitat for San Joaquin kitfox, mountain lion, ringtail, and American badger due to the small size of the areas that would be treated relative to the abundant available habitat for these species within the IPM Program Area. Additionally, implementation of the IPM Program would not convert natural habitat to development or other uses, or otherwise constrain the movement of these species. However, manual, mechanical, and chemical IPM treatments, such as spraying of herbicides, mowing, grubbing/clearing, and tree removal may result in disturbance of San Joaquin kitfox, mountain lion, ringtail, and American badger dens if present. If disturbance of dens occurs during denning, this may result in incidental injury or death of young.

As described in Chapter 2, "Program Description," the Authority would consult with CDFW to develop a management plan for feral pigs that would reduce the likelihood of unintended trapping of San Joaquin kitfox, mountain lion,

ringtail, or American badger. With CDFW consultation, the management plan for feral pigs is not likely to result in injury or death of these species. However, although the likelihood would be reduced with CDFW consultation, trapping of feral pets within recreational facilities could result in the unintended trapping of San Joaquin kitfox, mountain lion, ringtail, or American badger, which could result in incidental injury or death of individuals.

San Joaquin Kitfox, Mountain Lion, Ringtail, and American Badger Impact Summary

Implementation of the IPM Program within structures and buildings would not result in substantial adverse effects on San Joaquin kitfox, mountain lion, ringtail, and American badger due to a lack of suitable habitat and a lack of secondary toxicity of the pesticides used in these areas. Implementation of the IPM Program within recreation facilities, agricultural lands, and natural lands would not substantially reduce the suitability of habitat but may result in disturbance of dens that could result in loss of young. In addition, the trapping of feral pets could result in the incidental injury or death of San Joaquin kitfox, ringtail, mountain lion, and American badger. Therefore, the impact would be **potentially significant**.

Mitigation Measure 3.3-2j: Avoid Injury and Loss of San Joaquin Kitfox

- ▶ The Authority will obtain take coverage for San Joaquin kitfox under the Habitat Plan for covered activities (i.e., manual and mechanical treatments). The Authority will implement all applicable permit conditions required by the Habitat Plan.
- ▶ Prior to the application of pesticides within suitable habitat for San Joaquin kitfox, the Authority will consult with USFWS to determine the appropriate measures to avoid injury, death, or disturbance to the species due to pesticides. The Authority will implement all conservation measures developed with USFWS such as restrictions on pesticide use.
- ▶ If take coverage under the Habitat Plan is not obtained before IPM Program activities are implemented within suitable habitat for San Joaquin kitfox, the Authority will implement the following avoidance and minimization measures:
 - Prior to implementing IPM Program activities that could disturb San Joaquin kitfox dens, such as mowing, grubbing/clearing, and tree removal within suitable habitat for San Joaquin kitfox, the Authority will survey for dens within a buffer of 200 feet around treatment sites. If potential dens are found during surveys, a non-disturbance buffer of not less than 100 feet will be maintained around the den site for the duration of treatment activities. If a natal den is discovered within 200 feet of a treatment site, all activity shall cease, and the Authority will contact the USFWS and CDFW to consult about potential avoidance measures before activities can occur (USFWS 2011).
 - No trapping of feral pets would occur within suitable habitat for San Joaquin kitfox, unless the Authority conducts surveys and determines that the suitable habitat is unoccupied in consultation with USFWS.

Mitigation Measure 3.3-2k: Avoid Injury and Loss of American Badger and Ringtail

- ▶ No more than 14-days prior to implementation of IPM Program activities that could disturb American badger and ringtail dens, such as herbicide application, mowing, grubbing/clearing, and tree removal within suitable habitat, a qualified biologist shall conduct pre-treatment surveys within 100 feet of treatment project sites for potential American badger and ringtail dens.
- ▶ If any potentially occupied American badger dens are located during surveys, no work shall be performed within a 50-foot buffer around each den during the non-breeding season or within a 100-foot buffer around dens during the period when pups are potentially in the den (February 15 through July 1).
- ▶ If any potentially occupied ringtail dens (e.g., brush piles, appropriately sized burrows, hollow logs, hollow trees) are located during surveys, the same buffers as described for American badger during non-breeding and breeding season (May 1 through June 30) shall be implemented.

- ▶ Feral pet trapping within suitable habitat for American badger shall be conducted by a qualified biologist with experience in the identification of American badger. Inadvertently trapped special-status species, including American Badger, will be released immediately upon discovery.
- ▶ Feral pet trapping within suitable habitat for ringtail shall be conducted by a qualified biologist with experience in the identification of ringtail. Inadvertently trapped special-status species, including ringtail, will be released immediately upon discovery. Prior to initiating trapping in suitable ringtail habitat, the Authority will consult CDFW to confirm trapping methods are sufficient in avoiding potential injury to ringtail.

Mitigation Measure 3.3-2l: Avoid Injury and Loss of Mountain Lion

- ▶ The Authority shall conduct desktop analyses (e.g., review of land cover, slope, distance from development), coordination with local experts studying or tracking the species (if available), and field habitat surveys to determine the presence of nursery habitat suitable for mountain lion within preserves where treatments may occur. The desktop analysis shall be updated as habitat conditions or species occurrence information changes.
- ▶ Where the desktop analysis determines that suitable nursery habitat is present, the Authority will conduct focused surveys of the treatment area and a 2,000-foot buffer for the presence of potential mountain lion nurseries. Surveys will be conducted within 7 days before commencement of treatment activities by a qualified wildlife biologist with familiarity with mountain lion and experience using survey methods for the species. Potential mountain lion dens will include caves, large natural cavities within rocky areas, or thickets deemed appropriate for use by mountain lions based on size and other characteristics (e.g., proximity to human development, surrounding habitat, and coordination with local experts to determine known locations of female mountain lions). The qualified wildlife biologist will survey for signs of mountain lion (e.g., tracks, scat, prey items such as a fresh kill) in the vicinity of potential nursery habitat to help determine whether the area may contain a mountain lion nursery. If signs of a mountain lion nursery are observed, further investigation will be required to determine if a mountain lion nursery is present (see below).
- ▶ If signs of a mountain lion nursery are found during surveys, further investigation will be required to determine if a mountain lion nursery is present. No treatment will occur in the area while further investigation is occurring. Survey methods will include the use of trail cameras, track plates, hair snares, and/or other noninvasive methods, as well as coordination with local experts tracking the species (if available). Surveys using these noninvasive methods will be conducted for three days and three nights to determine whether a nursery may be present.
- ▶ If a nursery is known to occur in the area or further signs of a nursery are detected (e.g., lactating adult females or kittens on camera, repeated detections of an adult female in the area, growls or calls from kittens), the Authority will implement a no-disturbance buffer of at least 2,000 feet (Wilmers et al. 2013) for a minimum of 10 weeks. Treatment activities will not occur within this buffer during this time to avoid disturbance, injury, or mortality of mountain lion.
- ▶ Feral pet trapping within suitable habitat for mountain lion shall be conducted by a qualified biologist with experience in the identification of mountain lion cubs. Inadvertently trapped special-status species, including mountain lion individuals, will be released immediately upon discovery. Prior to initiating trapping in suitable mountain lion habitat, the Authority will consult CDFW to confirm trapping methods are sufficient in avoiding potential injury to mountain lion individuals.

Significance after Mitigation

Mitigation Measures 3.3-2j through 3.3-2l require the implementation of avoidance measures for San Joaquin kitfox, ringtail, mountain lion, and American badger, such as pre-treatment surveys and buffers around potentially occupied dens. Therefore, Mitigation Measures 3.3-2j through 3.3-2l would reduce the impact to San Joaquin kitfox, mountain lion, ringtail, and American badger to **less than significant after mitigation**.

San Francisco Dusky-Footed Woodrat

San Francisco dusky-footed woodrat is a CDFW species of special concern that in natural settings builds nests of sticks and other similar materials that may be used by multiple generations of woodrats. The species may also nest and cache food in buildings opportunistically where they can be considered pests.

Structures and Buildings

The IPM Program would target rodents that have occupied existing structures and buildings, including the San Francisco dusky-footed woodrat. Due to the relative abundance of suitable habitat within the IPM Program Area, excluding woodrats from Authority managed structures and buildings would not substantially affect the species.

The IPM Program includes the use of fumigants and rodenticides to treat insects and rodents within structures, if necessary. If San Francisco dusky-footed woodrats are present in the structure at the time fumigation occurs, they would be exposed to the fumigant at high levels and may be injured or killed. In addition, the use of rodenticides would injure or kill San Francisco dusky-footed woodrats that consume the compound. The loss of individual woodrats within structures and buildings under the IPM Program would not be a substantial adverse effect on the species because the species has a high reproductive rate (2-3 pups per litter and up to 5 litters a year [CWHR 2008]) and the use of fumigation and rodenticides would be limited and infrequent, which would minimize the number of woodrats affected.

As described in Chapter 2, "Program Description," the IPM Program also proposes to remove San Francisco dusky-footed woodrat nests that occur adjacent to buildings and structures if the nest is thought to be a constant source of infestation. This activity would only occur after consultation with CDFW and implementation of conservation measures required by CDFW, such as live capture and relocation of woodrats to suitable adjacent habitats and the dismantling of nests by hand under the supervision of a biologist. Because any nest removal would be required to implement conservation measures as directed by CDFW, the removal of nests would not substantially affect the species.

Recreation Facilities, Agricultural Lands, and Natural Lands

IPM Program treatment activities would occur within recreational facilities and natural lands that may provide suitable habitat for San Francisco dusky-footed woodrat. The unmaintained margins of agricultural lands may also provide marginal habitat for woodrats. IPM Program treatment activities for invasive plant control are not likely to have a substantial adverse effect on the suitability of habitat for San Francisco dusky-footed woodrat due to the abundance of available habitat for the species within the IPM Program Area.

Mechanical vegetation treatments, such as mowing/cutting and tree removal within suitable habitat may result in inadvertent removal of San Francisco dusky-footed nests. San Francisco dusky-footed woodrat nests may be reused by multiple generations and competition for existing nests may be substantial (CWHR 2008). Woodrat nests are assumed to be limited in number and the removal of nests could adversely affect the species.

San Francisco Dusky-Footed Woodrat Impact Summary

The use of fumigation and rodenticides to control pest infestations within buildings and structures is not anticipated to result in substantial effects on San Francisco dusky-footed woodrat due the limited application of these compounds and the high reproductive rate of the species. However, implementation of mechanical treatments in recreational facilities, agricultural lands, and natural lands may result the inadvertent destruction of San Francisco dusky-footed woodrat nests. Therefore, the impact would be **potentially significant**.

Mitigation 3.3-2m: Minimize Loss of San Francisco Dusky-Footed Woodrat Nests

- ▶ The Authority will survey for the presence of San Francisco dusky-footed woodrat nests within areas proposed for mechanical vegetation removal. The locations of nests shall be recorded, and nests flagged for avoidance by treatment activities.
- ▶ The Authority will consult with CDFW in areas where vegetation treatments would result in destruction or removal of a nest. Management actions shall be determined in consultation with CDFW and may include the live capture and relocation of woodrats to suitable adjacent habitats and the dismantling of nests. If consultation determines that nest dismantling may occur, nests shall be dismantled by hand under the supervision of a biologist. If young

are encountered during the dismantling process, the material shall be placed back on the nest, and the nest shall remain undisturbed for two to three weeks to give the young enough time to mature and leave the nest on their own accord. After two to three weeks, the empty nest may be dismantled. Nest material shall be moved to suitable adjacent areas within suitable habitat that shall not be disturbed. As woodrats exhibit high site fidelity, buildings with previous woodrat nests shall be regularly inspected for potential intrusion to prevent infestation.

Significance after Mitigation

The implementation of Mitigation Measure 3.3-2m would avoid adverse effects on San Francisco dusky-footed woodrat from the implementation of mechanical vegetation removal under the IPM Program by conducting surveys for woodrat nests prior to treatments, flagging nests, and avoiding nests when present in a treatment project site. Therefore, the impact to San Francisco dusky-footed woodrat would be **less than significant after mitigation**.

Special-Status Bats

There are several special-status bat species that may roost in the IPM Program Area. The hoary bat (*Lasiurus cinereus*) is a Western Bat Working Group medium priority species that roosts in the foliage of large trees. The long-eared myotis (*Myotis evotis*) is also a Western Bat Working Group medium priority species and may roost in building and structures, or large trees and snags within the IPM Program Area. The pallid bat (*Antrozous pallidus*) and Townsend's big-eared bat (*Corynorhinus townsendii*) are CDFW species of special concern that may also roost in buildings and structures within the IPM Program Area, although Townsend's big-eared bat and pallid bat are highly sensitive to disturbance and unlikely to roost in buildings that are actively used by the Authority.

Structures and Buildings

The IPM Program would target bats in structures and buildings where there is a potential threat to human health or safety. As described in the IPM Manual (Appendix B), the Authority would modify buildings to exclude bat entries and screen potential bat roosting areas, and the Authority would install one-way door to allow bats to escape but not enter after exclusionary methods are completed; and no trapping or chemical control techniques would be used. Furthermore, it is unlikely that special-status bats would use Authority structures and buildings due to existing human presence. In addition, habitat other than structures and buildings (e.g., large trees) is available for hoary bat and long-eared myotis within the IPM Program Area. However, if an active nursery roost is present in a structure or building when work is performed to exclude bats, this could result in loss of young special-status bats. The IPM Program also includes the use of fumigation to treat insects within structures, when necessary. If an active nursery roost is present in a structure or building when fumigation occurs, special-status bats and young would be exposed to the fumigant at high levels and may be injured or killed.

Recreation Facilities, Agricultural Lands, and Natural Lands

IPM Program treatment activities on recreational facilities, agricultural lands, and natural lands are not likely to have a substantial adverse effect on the suitability of foraging or roosting habitat for special-status bats due to the quantity of available habitat for these species within the IPM Program Area. However, tree removal that is undertaken within recreational facilities as part of the IPM Program may result in the inadvertent destruction of active roosts of hoary bat and long-eared myotis. If an active roost is present when tree removal work is performed, this would likely result in loss of special-status bat adults and young.

Special-Status Bats Impact Summary

IPM Program treatment activities on natural and agricultural lands are not anticipated to substantially effect special-status bats or suitable habitat. However, the use of fumigation and exclusion techniques for bats within structures and buildings, and tree removal within recreational facilities during the nursery season may result in loss of active nursery roosts, which would be a **potentially significant** impact.

Mitigation 3.3-2n: Avoid Loss of Special-Status Bat Roosts

- ▶ If exclusion of bats or fumigation is necessary in buildings and structures during the nursery season (April through August), a qualified biologist will conduct surveys for roosting bats. Surveys shall consist of daytime pedestrian surveys to look for visual signs of bats (e.g., guano), and if determined necessary, evening emergence surveys to

note the presence or absence of bats. If evidence of bat roosting is found, the number and species of roosting bats will be determined. When special-status bat roosting sites are located in buildings, exclusion of bats and fumigation shall occur outside of the April through August nursery season.

- ▶ The Authority shall not remove trees greater than 16 inches diameter at breast height (dbh) during the April through August nursery season, unless a qualified biologist conducts surveys for roosting bats where suitable large trees are to be removed. Surveys will consist of daytime pedestrian surveys to look for visual signs of bats (e.g., guano), and if determined necessary, evening emergence surveys to note the presence or absence of bats. If evidence of special-status roosting bats is found, removal of trees where potential special-status bat roosts are identified shall occur outside of the nursery season. If no evidence of special-status bat roosts is found, then the Authority may move forward with tree removal.

Significance after Mitigation

The implementation of Mitigation Measure 3.3-2n would avoid adverse effects to special-status bats from the implementation of the IPM Program by conducting surveys for special-status bat roosts and restricting activities that would injure, kill, remove, or exclude bats from roosts during the nursery season. Therefore, the impact to special-status bats would be **less than significant after mitigation**.

Impact 3.3-3: Potential to Substantially Affect Riparian Habitat or Other Sensitive Natural Communities Identified by CDFW or USFWS

Implementation of the IPM Program may occur within or adjacent to riparian and other sensitive natural communities. However, manual and mechanical IPM Program treatments that would be implemented for the removal of invasive plants and animals would not substantially affect riparian habitat or other sensitive natural communities due to the limited size and short duration of disturbances. These activities would not change the community type or habitat function of a community, and the areas that would be treated would not be so large such that a significant reduction in acreage of these communities would result. Furthermore, the Authority would implement EPMs that would prohibit ground disturbing mechanical treatments and all chemical treatments within 15 feet of aquatic resources, and prohibit the broadcast spraying of herbicides within 50 feet of aquatic features (unless the compound is specifically registered for aquatic use) (EPM BIO-1). This would reduce impacts where riparian vegetation is present. Also, measures minimizing the potential for herbicide drift or runoff into surrounding areas would be implemented (EPM HAZ-5), which would reduce the potential for herbicides to enter non-target areas such as riparian areas and other sensitive natural communities. Therefore, the impact would be **less than significant**.

Riparian habitat or other sensitive natural communities (Table 3.3-3) are present within natural lands and adjacent to structures and buildings, recreational facilities, and agricultural lands within the IPM Program Area. Vegetation removal and ground disturbing IPM activities could damage riparian habitat or other sensitive natural communities if present in a treatment area. However, manual, mechanical, and herbicide treatment activities for invasive plant control within sensitive natural communities would not have a substantial adverse effect, because the removal of invasive plants would not change the community type or habitat function of the community, and the small area of treatment would not result in a substantial reduction in acreage of these communities. Furthermore, invasive plant treatments under the IPM Program may result in habitat improvement within sensitive communities through the removal of invasive plants that compete with native vegetation for resources.

Implementation of invasive animal treatments such as trapping, destroying ground squirrel burrows, gassing, and shooting may occur within other sensitive natural communities and could result in damage to the habitat through trampling, or in the case of burrow destruction, through ground disturbance. However, the trampling of vegetation would be temporary, and the actual disturbance would be limited to the footprint of the traps and presence of staff. Burrow destruction would be used as a last resort adjacent to structures and buildings to control problem squirrels and ground disturbance would be limited. Given the small footprints associated with these activities, invasive animal treatments would not change a community type or function or result in a substantial reduction in acreage of these communities.

Herbicide use adjacent to riparian habitat or other sensitive natural communities could also result in indirect effects on due to unintended off-site runoff or herbicide drift. However, the Authority would implement EPM BIO-1, which prohibits ground disturbing mechanical treatments and all chemical treatments within 15 feet of aquatic resources, and prohibits the broadcast spraying of herbicides within 50 feet of aquatic features (unless the compound is specifically registered for aquatic use); EPM HAZ-4, which requires specific methods for handling of all pesticides to minimize spills; and EPM HAZ-5, which includes specific weather parameters and other measures to avoid pesticide drift and runoff (i.e., restrictions related to wind speeds and precipitation). Therefore, implementation of the IPM Program would not have a substantial adverse effect on riparian habitat or other sensitive natural communities because sensitive community acreage and function would not be lost and EPMs would be implemented to avoid and minimize potential indirect effects from herbicide use. Therefore, the impact would be **less than significant**.

Impact 3.3-4: Potential to Substantially Affect State or Federally Protected Wetlands or Other Waters

IPM Program treatments that are conducted near aquatic resources may result in runoff of sediment and pesticides to potentially protected wetlands and other waters. In addition, aquatic invasive animal control under the IPM Program would result in temporary fill and dewatering of potentially protected state and federal wetlands and other waters. However, the Authority would implement EPMs that require pre-treatment surveys for aquatic resources, prohibit ground disturbing mechanical treatments or any chemical treatments within 15 feet of aquatic resources, and prohibit the broadcast spraying of herbicides within 50 feet of aquatic features (unless the compound is specifically registered for aquatic use) (EPM BIO-1); require specific methods for safe handling of all pesticides and to minimize accidental spills (EPM HAZ-4); and limit herbicide applications during high winds or precipitation to minimize the potential for herbicide drift or off-site runoff (EPM HAZ-5). These EPMs would minimize the potential for water quality effects from manual, mechanical, and chemical treatments and no substantial degradation would occur. In addition, prior to conducting aquatic invasive animal control, the Authority would obtain all necessary permits prior to conducting activities within any state or federally protected waters, including a Clean Water Act Section 404 permit and Section 401 water quality certification. For permitted activities occurring in protected waters, the Authority would be required to meet a standard of no net loss of amount or function of wetlands or other waters. Therefore, the IPM Program would not substantially affect protected wetlands or other waters and the impact would be **less than significant**.

IPM Program treatment activities could occur in the vicinity of wetlands and other waters, and aquatic invasive animal treatments, such as removing bullfrogs, exotic turtles, and non-native fishes would occur within waters that may be state or federally protected. Manual, mechanical, and herbicide treatment activities for invasive plant control adjacent to state and federally protected waters could result in the runoff of sediment and herbicides or herbicide drift, which could reduce water quality. However, the Authority would implement EPM BIO-1, which requires pre-treatment surveys for aquatic resources, prohibits ground disturbing mechanical treatments or any chemical treatments within 15 feet of any aquatic features, and prohibits broadcast spraying of herbicides within 50 feet of aquatic features (unless the compound is specifically registered for aquatic use). In addition, EPM HAZ-4 requires specific methods for safe handling of all pesticides and to minimize accidental spills, and EPM HAZ-5 limits herbicide applications during high winds or precipitation to minimize the potential for herbicide drift or off-site runoff. These EPMs would minimize the potential for water quality effects from manual, mechanical, and chemical invasive plant treatment and no substantial degradation would occur.

Manual invasive animal removal such as trapping, gigning, and shooting may occur within federally protected wetlands or other waters; however, the adverse effects of these activities would be temporary, and fill would be limited to the footprint of the traps. The IPM Program may also seasonally drain stock ponds for bullfrog control. The ponds would not be permanently drained, and the process would not result in a loss of state or federally protected wetlands or waters. However, implementation of these treatments may result in the temporary fill or dewatering of state or federally protected wetlands and other waters. The Authority would obtain all necessary permits prior to conducting activities within any state or federally protected waters, including a Clean Water Act Section 404 permit and Section 401 water quality certification. For permitted activities occurring in protected waters, the Authority would be required to meet a

standard of no net loss of amount or function of wetlands or other waters. Therefore, with implementation of EPMs and permitting requirements, the impacts to wetlands and waters would be **less than significant**.

Impact 3.3-5: Potential to Conflict with Local Policies or Ordinances Protecting Biological Resources

Portions of the IPM Program Area are within San Jose, Morgan Hill, and Santa Clara County and various policies and ordinances protection biological resources would apply to the IPM Program. The potential for adverse effects to special-status species, sensitive communities and riparian habitats, and protected waters are addressed in Impact 3.3-1, 3.3-2, and 3.3-3 respectively. Because the IPM Program would not result in any significant and unavoidable effects to any of these resources, it would be consistent with the protections required by each jurisdiction. Furthermore, although each jurisdiction has ordinances specific to tree removal because tree removal under the IPM Program would be limited to hazard trees on Authority-owned public lands, it would be exempt from the Santa Clara County tree ordinance, and the San Jose and Morgan Hill ordinances do not apply to public lands. For these reasons there would be no conflicts with local policies or ordinances protecting biological resources and the impact would be **less than significant**.

Portions of the IPM Program Area are within San Jose, Morgan Hill, and Santa Clara County and thus, relevant policies protecting biological resources would apply to the IPM Program. Each jurisdictions' general plan contains provisions for the protection of special-status species, sensitive communities and riparian habitats, and waters (refer to Section 3.3.1 above). The potential for adverse effects on these resources are addressed in Impact 3.3-1, 3.3-2, and 3.3-3 respectively. Because the IPM Program would not result in any significant and unavoidable effects to any of these resources, it would be consistent with the protections required by each jurisdiction.

Each jurisdiction also has specific policies related to tree removal that would apply to tree removal under the IPM Program. Section C16 of the Santa Clara County Ordinance Code defines a "protected tree" as a tree with a trunk diameter of 12 inches or more at 4.5 feet above ground level in certain areas of the County. In addition, all trees within County right-of-way require a permit for removal. Exceptions to the County permit process are provided for hazard trees. Within San Jose, a tree removal permit is required for removal of trees on private property, while Morgan Hill requires a permit for removal of trees on any city or private property. All trees proposed for removal under the IPM Program would be hazard trees (i.e., trees that present a fall hazards within public areas; are blocking roads, trail, or parking lots; or are otherwise hazardous to visitors, staff, or contractors) and are therefore exempt from the county's tree ordinance. In addition, hazard tree removal under the IPM Program would occur on lands owned by the Authority (i.e., public lands); therefore, the tree removal ordinances in the cities of San Jose and Morgan Hill would not apply. For these reasons, implementation of the IPM Program would not conflict with any local policies or ordinances and the impact would be **less than significant**.

Impact 3.3-6: Potential to Conflict with the Provisions of the Santa Clara Valley Habitat Plan

The IPM Program Area falls within the Plan Area for the Habitat Plan, which is a habitat conservation plan and a natural community conservation plan. The implementation of the IPM Program would not result in loss of open space or substantially adversely affect riparian or sensitive natural communities that would cause a conflict with the Habitat Plan. The EPMs and mitigation measures described throughout this section would minimize and avoid impacts to sensitive biological resources during IPM Program implementation. Furthermore, by maintaining open space preserves within the IPM Program Area, the Authority is conserving high quality habitat and natural ecosystems consistent with the objectives of the Habitat Plan. Therefore, IPM Program would not conflict with the provisions of the Habitat Plan and the impact would be **less than significant**.

The IPM Program Area falls within the Plan Area for the Habitat Plan, which is a habitat conservation plan and a natural community conservation plan (Santa Clara County et al. 2012). Preserves within the IPM Program Area provide habitat for species covered by the Habitat Plan, and the Coyote Ridge Open Space Preserve is part of the reserve system for the Habitat Plan. The objectives of the Habitat Plan include providing comprehensive species, natural community, landscape, and ecosystem conservation in the Plan Area; contributing to the recovery of endangered

species; protecting and enhancing biological and ecological diversity; establishing a regional system of habitat reserves to preserve, enhance, restore, manage, and monitor native species and the habitats and ecosystems upon which they depend; and enhancing and restoring stream and riparian systems for native fish and other species (Santa Clara County et al. 2012).

Implementation of the IPM Program would not result in a reduction of open space preserves or interfere with the establishment of habitat reserves, because no development or permanent conversion of open space to other uses would occur. Furthermore, the IPM Program is intended to comprehensively direct pest management strategies within the IPM Program Area that are effective in controlling the target pests, while also being cost-effective, safe for human health, and protective of natural resources including native species, special-status species, and water quality. In addition, the EPMs that would be implemented as part of the IPM Program together with the mitigation measures described throughout this section would avoid and minimize adverse effects to sensitive and protected biological resources, including endangered species. Lastly, by maintaining open space preserves within the IPM Program Area, the Authority is conserving high quality habitat and natural ecosystems consistent with the objectives of the Habitat Plan. For these reasons, implementation of the IPM Program would not conflict with the provisions of the Habitat Plan and the impact would be **less than significant**.

3.4 HAZARDS AND HAZARDOUS MATERIALS

This section describes and evaluates the potential health, safety, and environmental impacts related to hazards and hazardous materials that could result from IPM Program implementation. This section describes existing hazards and safety concerns within the IPM Program Area and the nature of potential impacts that could occur as a result of the proposed IPM treatments. The evaluation of the pesticides proposed for use is based, in part, on the Technical Pesticide Toxicity Evaluation, which is included as Appendix HAZ-1 of this PEIR.

Public comments on the Notice of Preparation related to hazards and hazardous materials included concern over the use of pesticides and keeping the public informed of treatment strategies, upcoming projects, and public health protection measures. Evaluation of the use of pesticides under the IPM Program and associated environmental protection measures (EPMs) are provided in Section 3.4.3, "Environmental Impacts and Mitigation Measures." As discussed in Section 2.5, "Objectives of the IPM Program," one of the main objectives of the IPM Program is to keep the interested public informed about treatment strategies, upcoming projects, and environmental and public health protection measures. EPMs that have been incorporated into the IPM Program specific to hazardous materials and protecting public health and safety are described in Section 2.9, "Environmental Protection Measures," of this PEIR.

3.4.1 Regulatory Setting

FEDERAL

Various federal laws address the proper handling, use, storage, and disposal of hazardous materials, as well as require measures to prevent or mitigate injury to health and the environment released. The U.S. Environmental Protection Agency (EPA) is the agency primarily responsible for enforcement and implementation of federal laws and regulations pertaining to hazardous materials. Applicable federal regulations pertaining to hazardous materials are contained mainly in Code of Federal Regulations (CFR) Titles 29, 40, and 49. Hazardous materials, as defined in the CFR, are listed in 49 CFR 172.101. Management of hazardous materials is governed by the following laws:

- ▶ The Resource Conservation and Recovery Act of 1976 (42 USC 6901 et seq.)
- ▶ The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (also called the Superfund Act or CERCLA) (42 USC 9601 et seq.).
- ▶ The Superfund Amendments and Reauthorization Act of 1986 (Public Law 99-499; USC Title 42, Chapter 116)

These laws and associated regulations include specific requirements for facilities that generate, use, store, treat, and/or dispose of hazardous materials, which are applicable primarily to the Authority's use of pesticides. These regulations, and others related to hazardous materials, are discussed in more detail below.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) establishes a framework for national programs to achieve environmentally sound management of both hazardous and non-hazardous wastes. RCRA was designed to protect human health and the environment, reduce/eliminate the generation of hazardous waste, and conserve energy and natural resources. RCRA also promotes resource recovery techniques. A waste would legally be considered hazardous if it is classified as ignitable, corrosive, reactive, or toxic. Under RCRA, EPA regulates hazardous waste from the time that the waste is generated until its final disposal ("cradle to grave"). The Hazardous and Solid Waste Amendments of 1984 both expanded the scope of RCRA and increased the level of detail in many of its provisions. The Hazardous Waste Management subchapter of the RCRA deals with a variety of issues regarding the management of hazardous materials, including the export of hazardous waste, state programs, inspections of hazardous waste disposal facilities, enforcement, and the identification and listing of hazardous waste. Under RCRA regulations, commercial chemical products such as pesticides would become "solid wastes" (and thus, potentially, hazardous wastes) at the point where a

project proponent decides to discard them, if the pesticide product is listed in 40 CFR 261.31 or 261.33, or exhibits a hazardous waste characteristic identified in 40 CFR 261.21 through 261.24 (Cornell University 2017).

Comprehensive Environmental Response, Compensation, and Liability Act and Superfund Amendments and Reauthorization Act

Hazardous substances are a subclass of hazardous materials. They are regulated under the CERCLA and SARA. Under CERCLA, EPA has authority to seek out the parties responsible for releases of hazardous substances and ensure their cooperation in site remediation. CERCLA also provides federal funding (the "Superfund") for remediation. SARA Title III, the Emergency Planning and Community Right-to-Know Act (EPCRA), requires companies to declare potential toxic hazards to ensure that local communities plan ahead for chemical emergencies. EPA maintains a National Priority List of uncontrolled or abandoned hazardous waste sites identified for priority remediation under the Superfund program. EPA also maintains the Comprehensive Environmental Response, Compensation, and Liability Information System database that contains information on hazardous waste sites, potentially hazardous waste sites, and remedial activities across the nation.

For releases of hazardous substances, the federal government has established Superfund Reportable Quantities (RQs). CERCLA would apply to the IPM Program if a hazardous materials release were to occur during treatment activities above an established RQ for the substance.

Occupational Safety and Health Act of 1970

Enacted in 1970, the Occupational Safety and Health Act established the federal Occupational Safety and Health Administration (OSHA) to ensure healthy working conditions in the U.S. There are approximately 2,100 OSHA inspectors, who, along with other experts and support staff, establish and enforce protective standards in the workplace. California, under an agreement with OSHA, operates an occupational safety and health program in accordance with Section 18 of the Occupational Safety and Health Act of 1970. The program applies to all public and private sector places of employment in the State, with the exception of federal employees, the U.S. Postal Service, private sector employers on Native American lands, maritime activities on the navigable waterways of the U.S., private contractors working on land designated as exclusive Federal jurisdiction, and employers that require Federal security clearances.

The OSHA Hazard Communication Standard (29 CFR Section 1910.1200) requires that workers be informed of the hazards associated with the materials they handle. For instance, manufacturers must appropriately label containers, Material Safety Data Sheets must be available in the workplace, and employers must properly train workers. Workers at hazardous waste sites must receive specialized training and medical supervision according to the Hazardous Waste Operations and Emergency Response (HAZWOPER) regulations (29 CFR Section 1910.120).

Implementation IPM treatment activities under the IPM Program would require compliance with these federal and State safety standards and practices regarding workplace safety and providing a safe and healthy environment for workers.

Federal Insecticide, Fungicide, and Rodenticides Act

The Federal Insecticide, Fungicide, and Rodenticides Act (FIFRA) provides the basis for regulation, sale, distribution, and use of pesticides in the United States. FIFRA authorizes EPA to review and register pesticides for specified uses. EPA also has the authority to suspend or cancel the registration of a pesticide if subsequent information shows that continued use would pose unreasonable risks. FIFRA has been amended by the Pesticide Registration Improvement Act of 2003, which provides for the enhanced review of covered pesticide products, to authorize fees for certain pesticide products, and to extend and improve the collection of maintenance fees.

As a part of the federal registration process, EPA classifies each pesticide product as a "general use pesticide" or "restricted use pesticide" (RUP) based on the potential for the product to cause unreasonable adverse effects on human health or the environment. Only certified pesticide applicators or those under the supervision of a certified pesticide applicator may use a RUP. Certification is a statement by the certifying agency that the applicator is competent and authorized to use or supervise the use of restricted pesticides (EPA 2018a).

Individuals applying any type of pesticide must do so consistent with this federal law as well as state and tribal laws and regulations. In general, states have the primary authority within the state for compliance monitoring and enforcement for the use of pesticides in violation of labeling requirements. The equivalent regulations at the state level are described below in under "State." FIFRA requirements, as enforced by the state (such as adhering to herbicide labels and application instructions), would apply to the use of pesticides under the IPM Program.

Worker Protection Standard

EPA oversees pesticide use through the Worker Protection Standard (WPS). The WPS is a regulation for agricultural pesticides which is aimed at reducing the risk of pesticide poisonings and injuries among agricultural workers and pesticide handlers. WPS protects employees on farms, forests, nurseries, and greenhouses from occupational exposure to agricultural pesticides. The WPS contains requirements for pesticide safety training, notification of pesticide applications, use of personal protective equipment, restricted-entry intervals after pesticide application, decontamination supplies, and emergency medical assistance. The regulation covers two types of workers:

- ▶ Pesticide handlers: those who mix, load, or apply agricultural pesticides; clean or repair pesticide application equipment; or assist with the application of pesticides in any way.
- ▶ Agricultural workers: those who perform tasks related to the cultivation and harvesting of plants on farms or in greenhouses, nurseries, or forests.

The WPS requirements would apply to the use of pesticides proposed under the IPM Program to protect the health of pesticide handlers and applicators.

STATE

California Hazardous Waste Control Act

The California Hazardous Waste Control Act (HWCA) regulates the generation, treatment, storage, and disposal of hazardous waste (California Health and Safety Code Section 2510 et seq.). Hazardous waste is any material or substance that is discarded, relinquished, disposed of, or burned, or for which there is no intended use or reuse, and the material or substance causes or significantly contributes to an increase in mortality or illness; or the material or substance poses a substantial present or potential hazard to human health or the environment. These materials or substances include spent solvents and paints (oil and latex), used oil, used oil filters, used acids and corrosives, and unwanted or expired products (e.g., pesticides, aerosol cans, cleaners). If the original material or substance is labeled Danger, Warning, Toxic, Caution, Poison, Flammable, Corrosive or Reactive, the waste is very likely to be hazardous. The state program is similar to, but more stringent than, the federal program under RCRA. The regulations list materials that may be hazardous and establish criteria for their identification, packaging, and disposal.

The HWCA would apply to any IPM Program activities that require storage or disposal of hazardous waste (primarily pesticide use).

California Department of Toxic Substances Control

The California Department of Toxic Substances Control (DTSC), a division of the California EPA (CalEPA), has primary regulatory responsibility over hazardous materials in California, working in conjunction with EPA to enforce and implement hazardous materials laws and regulations. DTSC can delegate enforcement responsibilities to local jurisdictions.

The hazardous waste management program enforced by DTSC was created by the HWCA (California Health and Safety Code Section 25100 et seq.), which is implemented by regulations described in the CCR Title 26. The state program is similar to, but more stringent than, the federal program under RCRA. The regulations list materials that may be hazardous and establish criteria for their identification, packaging, and disposal. Environmental health standards for management of hazardous waste are contained in CCR Title 22, Division 4.5. In addition, as required by California Government Code Section 65962.5, DTSC maintains a Hazardous Waste and Substances Site List on EnviroStor, an online database that contains hazardous material sites that meet the criteria to be on the Cortese List.

Hazardous material sites listed on EnviroStor include federal and state response sites, voluntary, school, and military cleanups and corrective actions, and permitted sites.

California's Secretary for Environmental Protection has established a unified hazardous waste and hazardous materials management regulatory program (Unified Program) as required by Senate Bill 1082 (1993). The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities for the following environmental programs:

- ▶ hazardous waste generator and hazardous waste on-site treatment programs;
- ▶ Underground Storage Tank (UST) program;
- ▶ hazardous materials release response plans and inventories;
- ▶ California Accidental Release Prevention Program;
- ▶ Aboveground Petroleum Storage Act requirements for spill prevention, control, and countermeasure plans; and
- ▶ California Uniform Fire Code hazardous material management plans and inventories.

The six environmental programs within the Unified Program are implemented at the local level by local agencies—Certified Unified Program Agencies (CUPAs). CUPAs carry out the responsibilities previously handled by approximately 1,300 State and local agencies, providing a central permitting and regulatory agency for permits, reporting, and compliance enforcement.

DTSC regulations would be applicable to the IPM Program if herbicides or other substances proposed for use qualify as a hazardous substance (some pesticides and herbicides become hazardous waste when discarded and, accordingly, must be disposed of as a hazardous waste).

The Safe Drinking Water and Toxic Enforcement Act

This Safe Drinking Water and Toxic Enforcement Act (Proposition 65), passed as a ballot initiative in 1986, requires the state to annually publish a list of chemicals known to the state to cause cancer or reproductive toxicity so that the public and workers are informed about exposures to potentially harmful compounds. CalEPA's Office of Environmental Health Hazard Assessment (OEHHA) administers the act and evaluates additions of new substances to the list. Proposition 65 requires companies to notify the public about chemicals in the products they sell or release into the environment, such as through warning labels on products or signs in affected areas and prohibits them from knowingly releasing significant amounts of listed chemicals into drinking water sources. For pesticide use in a workplace setting, Proposition 65 requirements are met through compliance with California Department of Pesticide Regulation (DPR) regulations, further described below under "California Pesticide Regulatory Program."

California Pesticide Regulatory Program

DPR regulates the sale and use of pesticides in California. DPR is responsible for reviewing the toxic effects of pesticide formulations and determining whether a pesticide is suitable for use in California through a registration process. Although DPR cannot require manufacturers to make changes in labels, it can refuse to register products in California unless manufacturers address unmitigated hazards by amending the pesticide label. Consequently, many pesticide labels that are already approved by EPA also contain California-specific requirements. Pesticide labels defining the registered applications and uses of a chemical are mandated by EPA as a condition of registration. The label includes instructions telling users how to make sure the product is applied only to intended target pests and includes precautions the applicator should take to protect human health and the environment. For example, product labels may contain such measures as restrictions in certain land uses and weather (i.e., wind speed) parameters.

DPR also designates pesticides that can impair human health or pose hazards to the environment as "restricted materials" (similar to RUPs classification by EPA). Pesticides designated as restricted materials (state or federal) have additional use requirements which may include some or all of the following: (1) applicator certification from DPR or the applicable CAC, (2) enhanced supervision requirements for uncertified applicators, (3) a restricted materials permit from the CAC, and (4) additional requirements established by regulation. DPR usually designates restricted

materials on the basis of active ingredient, concentration, container size, or use patterns on the labeling. The goal is to allow determination of the status by examining the product container and its labeling (DPR 2018).

Title 3, CCR section 6450, et. seq. further restricts the use of certain pesticides or active ingredients. These restrictions apply to all pesticide applications approved through the restricted materials permit process (through the applicable CAC). Regulatory restrictions may include the amount of pesticide that can be applied; methods of application; where the pesticide can be applied; or additional personal protective equipment that must be worn or used. The permit application process provides CACs with the opportunity to discuss the additional use restrictions with the property operator or pest control business well in advance of the actual application. Unlike permit conditions that are established by the CAC, regulatory use requirements are state regulations and are not attached to the permit (DPR 2018).

All pesticide use under the IPM Program would be required to comply with DPR regulations, such as adhering to pesticide labels and application directions, wearing personal protective equipment, and obtaining a restricted material permit if herbicides designated as 'restricted materials' are proposed for use.

State Water Resources Control Board and Regional Water Quality Control Boards

The State Water Resource Control Board (SWRCB) and nine regional water quality control boards (RWQCBs) are responsible for ensuring implementation and compliance with the provisions of the federal Clean Water Act and the State Porter-Cologne Act. The Porter-Cologne Act of 1969 is California's statutory authority for the protection of water quality. Along with the SWRCB and RWQCBs, water quality protection is the responsibility of numerous water supply and wastewater management agencies, as well as city and county governments, and requires the coordinated efforts of these various entities. These entities and water quality protection are discussed in more detail in Section 3.5, "Hydrology and Water Quality," and would be applicable to any IPM activities under the IPM Program that could directly or indirectly affect water quality.

The SWRCB maintains GeoTracker, an online database used to track and archive compliance data from authorized or unauthorized discharges of waste to land, or unauthorized releases of hazardous substances from USTs. GeoTracker was initially developed in 2000 pursuant to a mandate by the California State Legislature (Assembly Bill 592 and Senate Bill 1189) to investigate the feasibility of establishing a statewide geographic information system (GIS) for leaking underground storage tank (LUST) sites (SWRCB 2020). The GeoTracker database tracks regulatory data for designated Cortese List sites including LUST cleanup sites, solid waste disposal sites, and active Cease and Desist Orders and Cleanup and Abatement Orders (CalEPA 2021).

California Division of Occupational Health and Safety Administration

The California Occupational Safety and Health Administration (Cal/OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations within the state. Cal/OSHA standards are typically more stringent than federal OSHA regulations and are presented in Title 8 of the CCR. Standards for workers dealing with hazardous materials include practices for all industries (General Industry Safety Orders); specific practices are described for construction, hazardous waste operations, and emergency response. Cal/OSHA conducts on-site evaluations and issues notices of violation to enforce necessary improvements to health and safety practices.

Implementation of IPM activities under the IPM Program would require compliance with the Cal/OSHA safety standards and practices regarding workplace safety and providing a safe and healthy environment for workers.

LOCAL

Santa Clara County General Plan

The Santa Clara County General Plan (Santa Clara County 1994) contains strategies and policies regarding hazards and hazardous materials that are applicable to the IPM Program. These policies include:

Strategy 1: Manage Hazardous Materials Safely and Efficiently.

- ▶ **Policy C-HS 14:** All feasible measures to safely and effectively manage hazardous materials and site hazardous materials treatment facilities should be used, including complying with all federal and state mandates.

- ▶ **Policy C-HS 15:** To achieve a more effective, efficient and economical regulatory environment, all feasible means to simplify and coordinate locally implemented hazardous materials management regulations should be considered.

City of Morgan Hill General Plan

The City of Morgan Hill General Plan (City of Morgan Hill 2017) provides detailed goals, policies, and actions to guide the city's decisions through 2035. The Natural Resources and Environment Element and the Safety Services and Infrastructure Element provide hazards and hazardous materials goals and policies relevant to the IPM Program. These include:

- ▶ **Policy SSI-4.3:** Use and Handling Requirements. Continue a program of regular inspections and monitoring to ensure compliance with local, State, and federal regulations, in order to reduce the risks associated with the use and handling of hazardous materials and wastes. (South County Joint Area Plan 9.00).
- ▶ **Policy SSI-4.5:** Storage and Usage. Regularly inspect activities that store and/or use hazardous materials, including above-ground and underground storage tanks and related equipment, to ensure compliance with the City's Hazardous Materials Storage Ordinance (HMSO). (South County Joint Area Plan 9.02).
- ▶ **Policy SSI-4.9:** Leaking Equipment. Require Vehicles and other equipment that may threaten the quality of water from leaking fuel tanks or oil spills to be removed from the site and/or repaired. (South County Joint Area Plan 9.07).

City of San Jose General Plan

The Envision San Jose 2040 General Plan (City of San Jose 2018) includes several goals and policies related to hazards and hazardous materials that are relevant to the IPM Program, including:

GOAL EC-6 – Hazardous Materials: Protect the community from the risks inherent in the transport, distribution, use, storage, and disposal of hazardous materials.

- ▶ **Policy EC-6.1:** Require all users and producers of hazardous materials and wastes to clearly identify and inventory the hazardous materials that they store, use or transport in conformance with local, state and federal laws, regulations and guidelines.
- ▶ **Policy EC-6.2:** Require proper storage and use of hazardous materials and wastes to prevent leakage, potential explosions, fires, or the escape of harmful gases, and to prevent individually innocuous materials from combining to form hazardous substances, especially at the time of disposal by businesses and residences. Require proper disposal of hazardous materials and wastes at licensed facilities.
- ▶ **Policy EC-6.3:** Provide information to the public on the proper disposal of products by households and small businesses with practical pollution prevention options for the use, recycling, and disposal of products containing hazardous substances under City and County of Santa Clara programs for Household Hazardous Waste Disposal.

3.4.2 Environmental Setting

DEFINITIONS

California Health and Safety Code Section 25501 defines *hazardous materials* as any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

A *hazardous chemical* is any chemical whose presence or use poses a physical or health hazard. The federal OSHA Laboratory Standard defines it as a chemical for which there is significant evidence, based on at least one study conducted in accordance with established scientific principles, that it may cause acute or chronic health effects to

exposed employees. The term health hazard includes chemicals that are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins (affecting the liver), nephrotoxins (affecting kidneys), neurotoxins (affecting brain and nervous system), agents that affect the hematopoietic (blood) system, and agents that damage lungs, skin, eyes, or mucous membranes.

Potential Existing Hazards and Contamination

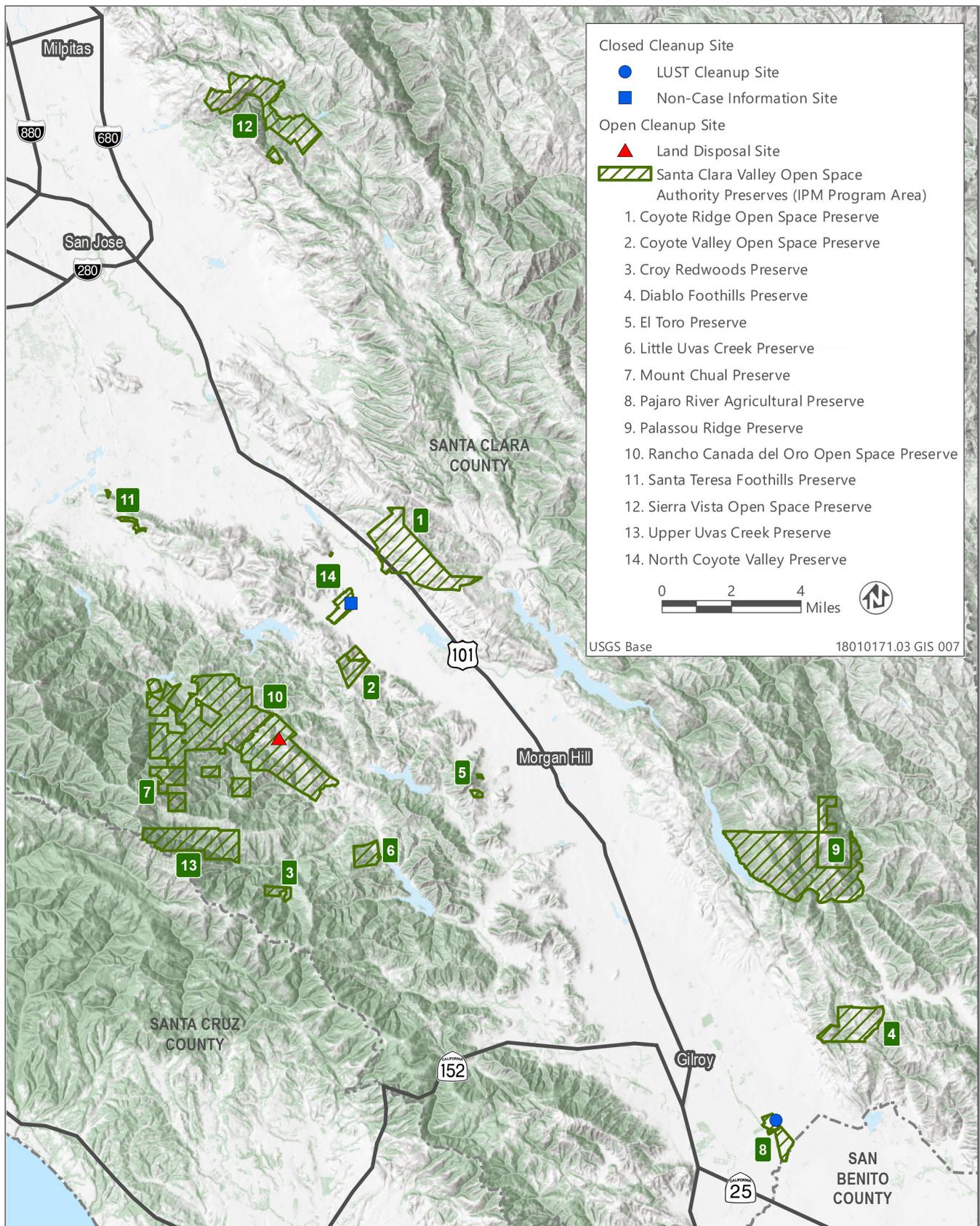
Hazardous materials, if present in soils, can be disturbed and dispersed by ground disturbing pest management activities. Soil contamination generally occurs in areas that are or have been previously developed, especially with industrial-type uses. Soil contamination can also occur in areas where pesticides have been historically applied, as well as in areas that have historically been mined or used for defense activities (e.g., an air force base). Contamination can also be associated with leaking utilities (e.g., leaking petroleum or gas pipelines, or leaking transformers on utility poles), or accidental spills. As described in Section 2.6, "Existing Authority IPM Activities," spraying of herbicides is currently conducted across Authority preserves on approximately 40 acres each year; application is by hand with a backpack sprayer, or by all-terrain vehicle (ATV) with a downward facing boom. Common household hazardous materials such as fuels, oils, lubricants, solvents, and detergents are also currently used by Authority staff for equipment and vehicle use and maintenance and stored at two field offices in the IPM Program Area.

As discussed above in Section 3.4.1, "Regulatory Setting," regulatory databases listing hazardous materials sites provided by numerous federal, state, and local agencies are consolidated in the "Cortese List" pursuant to Government Code Section 65962.5. Cortese List sites can be queried using the DTSC's EnviroStor database and the SWRCB's GeoTracker database. These databases identify sites with suspected and confirmed releases of hazardous materials to the subsurface soil and/or groundwater. The statuses of these sites change as identification, monitoring, and clean-up of hazardous materials progress. Typically, a site is closed once it has been demonstrated that existing site uses combined with the levels of identified contamination on-site present no significant risk to human health or the environment. No hazardous material sites listed in the DTSC's EnviroStor database are present in the IPM Program Area, however three hazardous material sites listed in the SWRCB's GeoTracker database are within the IPM Program Area, as shown in Figure 3.4-1.

One closed LUST site is present in the North Coyote Valley Open Space Preserve (SWRCB 2021a). The site consisted of a 550-gallon underground gasoline tank out of operation since 1949. The gasoline tank was removed from the site in 1988, and the Santa Clara Valley Water District (SCVWD) determined that no further remediation was required due to the low concentration of contaminants in the soil. The SWRCB determined that LUST cleanup was complete, and the case has been closed since 1990 (SCVWD 1990).

A site designated as "Non-case Information" is located on the Pajaro River Agriculture Preserve (SWRCB 2021c). The "non-case Information" designation is used for sites that either have no unauthorized release, had a release to the environment with minimal impact, or are currently evaluated for impacts and may result with the activation of a new case (SWRCB n.d.). This site previously consisted of a 1,000-gallon UST. The UST was removed from the property in 2016, and while petroleum hydrocarbon contamination was reported in soil, the soil contamination concentration was below the relevant environmental screening criteria. The SWRCB determined that no additional cleanup action was required due to the low concentration of petroleum hydrocarbon in the soil, and the site was closed as of 2016 (SWRCB 2021c).

An open but inactive land disposal site, the abandoned Wright Mine, is located in the Rancho Canada del Oro Open Space Preserve. This site was mined for mercury and owned by the Mayfair Packing Company (Hudson Institute of Mineralogy n.d.). Potential contaminants of concern for the sediments and soil surrounding the abandoned mine include chromium and mercury (SWRCB 2021b). The SWRCB determined that cleanup for the site was inactive as of 2003, and the Central Coast RWQCB is now the lead agency responsible for the site. The open and inactive designation indicates that the site has ceased accepting waste but has not been formally closed or is still within the post closure monitoring period, and the site does not pose a significant threat to water quality and does not have groundwater monitoring (SWRCB n.d.). No additional information is currently available for this site and the presence of contamination in soils is possible.



Source: DTSC 2021, SWRCB 2021d

Figure 3.4-1 Existing Hazardous Materials Sites within the IPM Program Area

No other designated hazardous material sites are present in within the IPM Program Area. However, some portions of the IPM Program Area that are not officially designated as hazardous material sites may contain limited remnant contamination from previous agricultural or pesticide use; contamination from nearby urban areas; or may have been exposed to leaks from pipelines, transformers, or utility poles.

Pesticides/Herbicides

Background Information

A pesticide is any substance intended to control, destroy, repel, or attract a pest. The process of registering a pesticide is a scientific, legal, and administrative procedure through which EPA examines:

- ▶ the ingredients of a pesticide;
- ▶ the particular site or crop where it is to be used;
- ▶ the amount, frequency, and timing of its use; and
- ▶ storage and disposal practices.

In evaluating a pesticide registration application, EPA assesses a wide variety of potential human health and environmental effects associated with use of the product. The company that is seeking EPA-registration for the pesticide must provide data from studies that comply with EPA testing guidelines. EPA then develops risk assessments that evaluate the potential for (1) harm to humans, wildlife, fish, and plants, including endangered species and non-target organisms, and (2) contamination of surface or ground water from leaching, runoff, and spray drift (EPA 2018b). Risk assessment is crucial to the process of making decisions about pesticides, both new and existing. New pesticides must be evaluated before they can be used, and existing pesticides must be re-evaluated periodically to check that they continue to meet the appropriate safety standards (EPA 2017). EPA also evaluates and approves the language that appears on each pesticide label to ensure the directions for use and safety measures are appropriate to address potential risks. Following label directions is required by law and is necessary to ensure safe use (EPA 2018b).

EPA and individual states register and license pesticides in the U.S. under the authority of FIFRA (EPA 2018b). California state laws that regulate pesticide use, which are enforced by DPR, are more restrictive than federal regulations and most other states. For example, pre-registration and registration requirements in California are more stringent than in other parts of the U.S. DPR reviews the studies submitted to EPA and evaluates their findings, as well as state laws, to determine if additional label requirements or studies are needed.

Current Pesticide Use

As described in Section 2.6, "Existing Authority IPM Activities," the Authority uses pesticides under existing conditions, although with less frequency and geographic coverage than is proposed under the IPM Program. This includes spraying of herbicides over approximately 40 acres each year (by hand with a backpack sprayer or by ATV with a downward facing boom), and the use of insecticides and rodenticides as needed for pest management. Equipment and materials needed for IPM activities including pesticides, fuels, and oils are stored at the Authority's administrative office in the city of San Jose, as well as two field offices within the IPM Program Area. Refer to Section 2.6 for more information on current IPM treatments conducted by the Authority, including the use of pesticides.

The Authority complies with all federal and state laws regarding the transport, storage, and disposal of pesticides, and specific recommendations provided on the pesticide label. More information on federal and state regulations related to pesticide use is provided above in Section 3.4.1, "Regulatory Setting."

Human Health Risks and Toxicity

As with all potentially toxic substances, whether exposure to a pesticide causes harm depends on the dose, how someone is exposed, how sensitive an individual may be to the toxin, and the toxicity of the pesticide involved. People can be exposed to pesticides in three ways: breathing (inhalation exposure), getting it in the mouth or digestive tract (oral exposure), and contact with the skin or eyes (dermal exposure). Inhalation exposure can happen if someone breathes air containing pesticide as a vapor, as an aerosol, or on small particles like dust. Oral exposure

happens when someone eats food or drinks water containing pesticides. Dermal exposure happens when someone's skin is exposed to pesticides. This can cause irritation or burns. In more serious cases, skin can absorb the pesticide into the body, causing other health effects. Some pesticides evaporate more easily than others, so they are more likely to be inhaled. Some break down quickly on surfaces; others last longer. A pesticide applied as a liquid spray may drift more easily than dry granules, depending on meteorological conditions. A dry pesticide plowed into the soil can encounter groundwater but is not as likely to drift through the air. All these factors affect the potential risk of human exposure and are considered when DPR makes rules for pesticide use (DPR 2014).

Sensitive Receptors

Pesticides affect people differently. Children may be more sensitive to some pesticides than adults. Compared to adults, they breathe in more air and eat more food relative to their body size, increasing their exposure. Also, their developing bodies may not break down some chemicals as effectively as adults. People of any age with asthma or other chronic diseases may be more likely than healthy individuals to get sick after pesticide exposure. Some individuals are also more sensitive to the odor or other irritant effects of certain pesticides. However, people in the greatest danger of pesticide exposure are those whose exposure is highest, such as workers who mix or apply pesticides (DPR 2014).

Potential sensitive receptors in the IPM Program Area include recreationists that visit three of the 14 preserves that are open to the public (Sierra Vista Open Space Preserve, Rancho Canada del Oro Open Space Preserve, and Coyote Valley Open Space Preserve) to hike, run, and walk their dogs. Other sensitive receptors are visitors that participate in docent-led hikes to several of the preserves that are typically closed to the public and occupied residences adjacent to the IPM Program Area. Low-density residential developments are located adjacent to the Santa Teresa Foothills Open Space Preserve and El Toro Open Space Preserve.

3.4.3 Environmental Impacts and Mitigation Measures

METHODOLOGY

The following reports and data sources were reviewed for this analysis:

- ▶ available literature, including documents published by federal, state and local agencies;
- ▶ review of Cortese List Data Resources provided by CalEPA, including the SWRCB's GeoTracker database and the DTSC's EnviroStor database; and
- ▶ Technical Pesticide Toxicity Evaluation prepared by Bill Williams, PhD (2019); refer to Appendix HAZ-1.

Potential hazards and hazardous materials effects resulting from implementation of the IPM Program were evaluated using the information gathered from these sources to help determine whether any significant risks to public health, safety, or the environment would occur.

THRESHOLDS OF SIGNIFICANCE

An impact related to hazards and hazardous materials is considered significant if implementation of the IPM Program would do any of the following:

- ▶ create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- ▶ create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment;
- ▶ emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- ▶ be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment;

- ▶ for a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area;
- ▶ impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan;
- ▶ expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

ISSUES NOT DISCUSSED FURTHER

Although the IPM Program Area covers a large geographic area near urban communities, there are no schools located within one-quarter mile of the IPM Program Area preserves. Therefore, the IPM Program would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. Impacts specifically associated with schools are not discussed further.

The IPM Program Area is not located in any airport land use plans and no airports are present within 2 miles of the IPM Program Area. Therefore, the IPM Program would not result in a safety hazard or excessive noise for people residing or working in the project area and this issue is not discussed further in this PEIR.

Implementation of the IPM Program would not alter potential emergency evacuation routes or impair an adopted emergency plan, as no alterations to roadways would occur and IPM treatment activities would be temporary and occur off road and within Authority owned preserves. Thus, the IPM Program would not have any significant impacts on adopted emergency response or emergency evacuation plans. This issue is not discussed further in this PEIR.

The exposure of people or structures to risks from wildland fires is addressed in Section 3.8, "Wildfire." Potential impacts to the environment, including to special-status species and watercourses, from the transportation, use, and storage of hazardous materials are addressed in Section 3.3, "Biological Resources" and Section 3.5, "Hydrology and Water Quality."

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.4-1: Potential to Create a Health or Environmental Hazard Through the Use of Vehicle Fuels, Oils, and Lubricants and the Application of Chemicals in IPM Treatments

Mechanical treatments proposed under the IPM Program would require the use of equipment and vehicles, which need fuel, oil, and lubricants to operate. Chemical treatments proposed under the IPM Program would involve the use of pesticides (i.e., herbicides, insecticides, rodenticides, and fumigants), which would be applied in targeted locations for invasive plant and pest control. These hazardous materials have the potential to enter the environment and adversely affect human health or sensitive ecosystems through leaks, accidental spills, or improper handling or use. The Authority would comply with laws, regulations, and policies relevant to the use, transport, storage, and disposal of hazardous materials to minimize potential health risks. EPA oversees pesticide use to minimize health and safety risks for workers through the WPS. Additional requirements for pesticide use are enforced by Cal/OSHA, which provides safety standards for workplaces. DPR administers the California Pesticide Regulatory Program, which regulates the sale and use of pesticides in the state. EPMs HAZ-4 through HAZ-6 have also been incorporated into the IPM Program to further minimize the potential for impacts to human health and the environment from pesticide use. These EPMs include requirements to minimize spills, properly dispose of pesticide containers, triple rinse pesticide containers, lawfully store and handle pesticides, and dispose of unused pesticides and pesticide containers to adequately safeguard human, fish, and wildlife health and prevent soil and water contamination. With implementation of existing laws and regulations and the proposed EPMs, the potential to create a health or environmental hazard associated with use, transport, storage, and disposal of pesticides and other hazardous materials under the IPM Program would be **less than significant**.

Implementation of mechanical treatments under the IPM Program would require the routine use and storage of small quantities of common household hazardous materials such as fuels, oils, and lubricants. These hazardous materials would be stored at Authority-owned offices and buildings, two of which are within the IPM Program Area and are currently used to store equipment and materials (e.g., fuels, oils, and herbicides). Equipment would be fueled, lubricated, and serviced at fueling stations and repair facilities within the region, but not within preserves, which would minimize the potential to release fuels, oils, or lubricants, except if equipment or vehicles are leaking or an accidental spill occurs. The Authority has incorporated EPM HAZ-1 into the IPM Program, which would require the Authority to maintain all diesel- and gasoline-powered equipment per manufacturer’s specifications and to inspect all equipment for leaks every day when equipment is in use for a treatment. This EPM would minimize leaks and thus the risk of contamination entering the environment. In addition, fuels, oils, and lubricants are currently in use by equipment within the IPM Program Area. With implementation of the IPM Program, IPM treatments using common household hazardous materials would not increase sufficiently to result in a significant change in the risk of leaks or accidents. The Authority would continue to comply with laws, regulations, and policies relevant to hazardous materials. Although implementation of the IPM Program would slightly increase the storage and use of household hazardous materials in the IPM Program Area, with implementation of EPM HAZ-1 and adherence to relevant regulations, no significant change in the risk of health or environmental hazards would occur.

Chemical treatments under the IPM Program would involve the use of pesticides (i.e., herbicides, insecticides, rodenticides, and fumigants), which would be applied using targeted application methods for invasive plant, pest insect, and other pest control. As described in Appendix HAZ-1 of this PEIR, the toxicity of a pesticide is determined and documented through laboratory and field tests involving target and non-target organisms that experience exposure to that compound. The factor most influencing potential adverse (toxic) effects is the degree of the exposure to the compound, which is based on the amount of the compound that reaches an organism’s tissues (i.e., the dose). Several other factors are involved in an exposure, such as the duration over which the dose is received, the target tissue or physiological function affected, and the sensitivity of the organism to the compound. Table 3.4-1 provides a list of the pesticides proposed for use, the formulation and common name of each, and potential for human toxicity. Refer to Appendix HAZ-1 for detailed evaluations of each herbicide, insecticide, and rodenticide compound proposed for use under the IPM Program, including methods of transport and application, along with their potential to risk significant harm to humans and ecological resources. As shown in Table 3.4-1, the pesticides proposed for use under the IPM Program either pose very low toxicity to humans, or can result in acute skin and eye irritation with slight toxicity.

Table 3.4-1 Human Toxicity of Chemicals Proposed for Use under the IPM Program

Chemical	Formulation	Human Toxicity
Glyphosate (Roundup) (Roundup Pro) (RoundupProMax)	Isopropylamine salt, potassium salt, dimethylamine salt & diammonium salt	Overall low toxicity if ingested. Skin and eye irritation possible. No evidence of neurotoxicity, immunotoxicity, or acute toxicity. Reproductive toxicity at very high doses. Recent claims of carcinogenicity (class 2A) based on animal studies. Substantial evidence finds human carcinogenicity unlikely. Very low toxicity via oral and dermal routes. Possible endocrine-disruptor.
Aminopyralid/Triclopyr (Capstone)	Triisopropanolamine salt	Very low toxicity if swallowed. No adverse effects are anticipated from single inhalation exposure to mist. Essentially non-irritating to skin and to eyes. Did not cause allergic skin reactions when tested in guinea pigs. Did not cause cancer in laboratory animals. Did not cause birth defects or any other fetal effects in laboratory animals. Did not interfere with reproduction in animal studies.
Clopyralid (Lontrel) (Cody) (Alligare) (Confront) (Thistledown)	Monoethanolamine salt 3,6-dichloro pyridinecarboxylic acid	Very low toxicity if ingested. Clopyralid is classified by EPA as not likely to be a human carcinogen. Clopyralid caused birth defects in laboratory animal studies at high doses that were severely toxic to the mother. No birth defects were observed in animals given clopyralid at doses several times greater than those expected during normal exposure. Not mutagenic.

Chemical	Formulation	Human Toxicity
Imazapyr (Polaris)	2-[4,5- dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol- 2-yl]-3-pyridinecarboxylic acid	Practically non-toxic if ingested. Chronic mammalian reproduction study indicated no evidence of adverse reproductive effects. The chronic estimated level of concern for mammals was not exceeded for any of the registered uses. The chronic risk for mammals is low following all exposure routes to imazapyr. No evidence of carcinogenicity, neurotoxicity, or immunotoxicity after exposures to Imazapyr.
Clethodim (ENVOY Plus)	2-[1-[[[3-chloro-2-propenyl)oxy]imino]propyl]-5-[2-(ethylthio)propyl]-3-hydroxy-2-cyclohexen-1-one	Clethodim has low toxicity for oral and dermal toxicity and skin irritation. Inhalation toxicity is considered very low toxicity. No treatment related increases in neoplasms were observed in any study. Clethodim is neither neurotoxic nor immunotoxic.
Chlorsulfuron (TELAR)	2-Chloro-N-[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)aminocarbonyl]benzenesulfonamide	Chlorsulfuron has very low toxicity if ingested. There is no evidence of mutagenicity, carcinogenicity, reproductive or developmental (teratological) effects after exposure to chlorsulfuron. There is some potential for eye and skin irritant, but is not a dermal sensitizer. Very high levels of exposure to chlorsulfuron showed effects on embryo-fetal development in animals, but only at levels equal to or above those causing maternal toxicity.
Fluroxypyr (Vista XRT) (Solvent naphtha) (N-Methyl-2-pyrrolidone)	1-methylheptyl ester	Fluroxypyr has very low acute oral toxicity if ingested. The acute dermal toxicity is very low to none. No Acute inhalation toxicity and no respiratory irritation have been reported. It is not likely to be carcinogenic to humans.
Pelargonic Acid (Scythe)	1-nonanoic acid	The acute toxicity of pelargonic acid to humans is very low, except for moderate, but reversible, eye irritation (Category 2). Oral acute toxicity is very low (Category 4) and dermal and inhalation toxicities are ranked by EPA as Category 3. Exposure to concentrated solutions of pelargonic acid causes skin and eye irritation. It is a natural component of many foods which suggests that it is not toxic at doses that are likely to occur in the diet.
Weed Zap (Essential oils)	N/A	Weed Zap has very low toxicity to humans if ingested. Weed Zap is classified by EPA as very low to non-toxic. It is not a human carcinogen and not mutagenic. Weed Zap has no documented adverse effects in animal studies. No birth defects were observed in animals given Weed Zap at doses several times greater than those expected during normal exposure.
Dithiopyr (Dimension)	3,5-dimethyl 2-(difluoromethyl)-4-isobutyl-6-(trifluoromethyl)pyridine-3,5-dicarbothioate.	Dithiopyr has low acute toxicity to mammals and humans if ingested. Dithiopyr is not known to have mutagenic or carcinogenic effects. It is a very low toxicity chemical for humans by all routes of exposure.
Isoxaben (Gallery)	(N-[3-(1-ethyl-1-methylpropyl)-5-isoxazolyl]-2,6-dimethoxybenzamide and isomers)	Very low toxicity to humans, non-irritating to eyes or skin. Slight increase in liver tumors possible birth defects in rabbits. No evidence of mutagenicity or reproductive toxicity.
Cholecalciferol (Vitamin D3)	Cholecalciferol baits	Cholecalciferol was developed to be acutely toxic to rodents. All routes of exposure are high toxicity, including oral, dermal, and inhalation. Based on the recommended and typical methods of use, however, actual potential toxicity to humans is low as the characteristics of formulation and mode of delivery are designed to minimize potential uptake of the chemical when used as a rodent bait.

Chemical	Formulation	Human Toxicity
Wasp-Freeze (Pyrethrin/Pyrethroids)	Cyclopropanecarboxylic acid, 2-methyl-4-oxo-3-(2-propynyl) cyclopent-2-enyl-cis, trans-chrysinthemate	Very low toxicity if ingested. Acute toxicity varies by the type of pyrethroid as there are numerous variations and combinations of products containing the base chemical. Minor effects on the nervous system have been observed. No other significant effects have been reported. Some animal studies suggest that low level exposures may result in reproductive and immunological effects. Available data indicate that pyrethrin may be of some carcinogenic concern to humans. Wasp-freeze application would be targeted to wasp nests only. Because the application is quick and targeted, it is unlikely to be encountered or pose any significant health risks to humans.
Garden Safe (Insecticidal Soap Spray)	Potassium laureate, potassium myristate, potassium oleate, and potassium ricinoleate.	Soap salts have low oral and dermal toxicity. At excessive exposures, they may be irritating to the skin and eyes. These products are generally considered safe by the FDA. EPA classifies soap salts as very low toxicity for acute effects.
Indoxacarb (Advion Gel Baits)	(S)-methyl 7-chloro-2,5-dihydro-2-dihydro-2-[[[(methoxycarbonyl) 4-(trifluoromethoxy) pehenyl]amino]carbonyl]1,2-e][1,3,4]paxadoazome-4a(3H)-carboxylate	Indoxacarb is classified as a moderate toxicity oral toxicant. It is listed as very low toxicity for dermal and inhalation toxicity. It is a moderate eye irritant. There is no evidence that indoxacarb is carcinogenic or mutagenic. However, Indoxacarb would be applied as gel baits in buildings and structures and thus is unlikely to be encountered or pose any significant health risks to humans.
Gentrol Point Source (Hydroprene)	Ethyl(2E,4E,7S)-3,7,11-trimethyl-2,4-dodecadenate	Hydroprene is listed as very low toxicity oral toxicant and low toxicity for dermal and inhalation routes of exposure. Slight to moderate toxicity to mammals. No evidence of mutagenicity, teratogenicity, or reproductive effects.
Sulphuryl fluoride (Vikane) (Termafume)	Sulfuryl difluoride	Sulphuryl fluoride is listed as a RUP by EPA. While sulphuryl fluoride is only slightly toxic via inhalation, it is considered an acute hazard because it is an odorless, colorless gas.

FDA = Federal Drug Administration

Source: NPIC 2000 and Appendix HAZ-1 of this PEIR; see citations therein.

Sulphuryl fluoride, the fumigant that would be used for termite fumigation, can be an acute hazard because it is a colorless, odorless gas. However, termite fumigation would only be used on structures within the IPM Program Area as a last resort to control termite infestations, and fumigation would not be a regular occurrence on Authority lands. The fumigation process, including the handling of sulphuryl fluoride, would be implemented by certified applicators and the treated structure would be securely sealed with a tent to trap the gas inside. Sulphuryl fluoride is only slightly toxic when inhaled; however, it is listed as a RUP by EPA, because it is a colorless and odorless gas, but it does not cause skin or eye irritation at the concentrations required for successful termite fumigation. To prevent potential exposure, certified applicators would introduce trace amounts of a warning agent, chloropicrin, into the structure. Chloropicrin has a strong odor, causes respiratory and eye irritation, and dissipates at a slower rate than sulphuryl fluoride. Signs warning of the fumigation would be posted outside of the treated building and the entire building would be tented to prevent people from entering the structure during fumigation. Before anyone is allowed back into a treated structure, air monitoring inside of the treated structure would be conducted to make sure residual concentrations of the fumigant are below EPA established limits (NPIC 2000). The exposure of humans and nontarget organisms to residues of sulphuryl fluoride is not anticipated due to the aeration process, the quick speed at which residual gas dissipates in the air, and air monitoring requirements of EPA after fumigation is complete (EPA 1993).

Rodenticides would be used as part of the IPM Program as a last resort to control pest infestations that create threats to human health or safety after other non-chemical treatment options are exhausted. If deemed necessary, rodenticides would only be used in structures and buildings in tamper-proof anchored bait containers to avoid non-target species interactions. Therefore, human or environmental exposure to rodenticides would be low and would not result in significant health or environmental hazards. Similarly, the Authority uses insecticides as a last resort to treat problem insects or rodent infestations, and are delivered through tamper proof bait stations in structures and

buildings or by quick, targeted spray by hand (e.g., to a problem wasp nest). Therefore, the use of insecticides would also be unlikely to result in significant risks to health or the environment.

Human exposure could occur to workers or the public through handling of herbicides or, when ground-sprayed by hand from backpacks or by a downward-directed boom mounted on an ATV. The risk of herbicide drift from hand or boom application is low because the compounds would be applied in a precisely targeted manner, close to the ground; however, if wind speeds rise the potential for wind-driven drift cannot be dismissed. Consequently, the Authority would implement EPM HAZ-5, which prohibits herbicide application during precipitation or when winds exceed 7 miles per hour. Workers who mix, load, transport, and apply pesticides are normally considered to have the greatest potential for exposure, because of the nature of their work and are, therefore, at highest risk. Worker exposure to pesticides can occur from accidental splashes or spills of chemicals, leakages, or faulty spraying equipment. The potential for worker exposure would be minimized by following the instructions on how to use the herbicide, use of proper PPE, and washing hands after pesticide handling or before eating. Exposure of the general population to herbicides occurs mainly through eating food and drinking water contaminated with herbicides, or when living close to a location where herbicides are used (Damalas and Eleftherohorinos 2011). No chemical treatments would occur on Pajaro River Agricultural Preserve, the Authority's only preserve with row crops, therefore public exposure through food consumption would not occur. In addition, as described in Section 3.5, "Hydrology and Water Quality," pesticide use has the potential to contaminate surface or groundwater quality if used in close proximity to surface waters, spilled, or used under the wrong conditions. Pesticides used for the IPM Program would be applied according to the manufacturer's label directions and consistent with EPMs HAZ-4 and HAZ-5 which protect surface and groundwaters, control drift, and ensure proper storage, handling, and cleanup. Potential public exposure through drinking water contamination would be minimal.

In addition, as discussed above under Section 3.4.1, "Regulatory Setting," EPA oversees pesticide use and health and safety of workers through the WPS. The WPS is a pesticide regulation that is aimed at reducing the risk of pesticide poisonings and injuries among workers and pesticide handlers. The WPS contains requirements for pesticide safety training, notification of pesticide applications, use of PPE, restricted-entry intervals after pesticide application, decontamination supplies, and emergency medical assistance. In addition, Cal/OSHA has safety standards and practices regarding workplace safety and providing a safe and healthy environment for workers, and the California Pesticide Regulatory Program regulates the sale and use of pesticides in California. DPR is responsible for reviewing the toxic effects of pesticide formulations and determining whether a pesticide is suitable for use in California through a registration process (EPA 2017). The label of each pesticide includes instructions telling users how to make sure the product is applied only to intended target pests and includes precautions the applicator should take to protect human health and the environment. These include weather conditions, such as maximum wind speed to avoid pesticide drift and avoidance of precipitation to minimize unintended runoff (EPA 2016). RCRA, HWCA, and the DTSC include regulations applicable to the packaging, storage, and disposal of specific hazardous materials. Some pesticides become hazardous waste when discarded and, accordingly, must be disposed at authorized hazardous waste sites. The Authority would adhere to all relevant regulations related to the use, storage, and transport of pesticides and other hazardous materials to ensure that upset and accident conditions involving use, transport, and handling of hazardous substances would be significantly reduced. Compliance with all laws, regulations, and herbicide label instructions, along with proper PPE and relevant EPMs, would prevent significant risks related to human exposure or environmental risk from the use of pesticides.

Furthermore, many of the pesticides proposed for use under the IPM Program are currently being applied within the IPM Program Area. Implementation of the IPM Program would increase the number of simultaneous treatment activities by a few additional treatments over current levels in the IPM Program Area, which would not substantially change the amount pesticide compounds applied to the IPM Program Area. Furthermore, several EPMs have been incorporated into the IPM Program to further minimize potential health risks from pesticide use (EPM HAZ-4 through HAZ-6). EPM HAZ-4 requires that the Authority implement several pesticide handling and mixing measures, such as not leaving spray tanks unattended when filling, addressing any pesticide spills immediately, disposing pesticide containers properly, triple rinsing of pesticide containers, as well as lawful storage, handling, and disposal of pesticides and pesticide containers. EPM HAZ-5 requires the implementation of several measures related to pesticide

application, including reviewing and adhering to pesticide labels; using low impact application techniques and drift reduction techniques, such as spot treatments and drift retardants; and prohibiting application during precipitation or winds over 7 miles per hour. EPM HAZ-6 would require notification of pesticide use in the vicinity of public areas.

Adherence to existing laws and regulations and implementation of EPMs would provide a foundation for assuring effective, yet relatively safe, use of pesticides and other common household hazardous materials. Therefore, the impact associated with use, transport, storage, and disposal of hazardous materials under the IPM Program would be **less than significant**.

Impact 3.4-2: Potential to Expose the Public or Environment to Significant Hazards from Disturbance to Known Hazardous Materials Sites

Ground disturbing manual and mechanical IPM treatments have the potential to expose workers, the public, and the environment to risks associated with existing hazardous materials if present within soils in the treatment areas. Treatment activities would typically occur in undeveloped areas, which are unlikely to contain hazardous materials. However, there is one known active hazardous materials site in the IPM Program Area, the Wright Mine in Rancho Canada del Oro Open Space Preserve. Disturbance of contaminated soils could result in the exposure of the public and environment to health hazards from existing hazardous materials, if present. Therefore, this impact is **potentially significant**.

Treatment activities would occur in undeveloped, open space preserves, which are unlikely to contain hazardous materials. However, as shown in Figure 3.4-1, three hazardous materials sites are present within the IPM Program Area. Two of the sites have been remediated and cleanup actions are complete; therefore, no risks associated with ground disturbing IPM treatments in those areas are anticipated. Another site, the abandoned Wright Mine located within the Rancho Canada del Oro Open Space Preserve, is an open case and there is a potential for chromium and mercury contamination in the sediments and soil surrounding the abandoned mine site (SWRCB 2021b). If ground disturbing IPM treatments occur in the vicinity of the abandoned mine, hazardous materials could be accidentally released into the environment if present. If released, hazardous materials could enter waterways via runoff or expose the public to harmful effects through inhalation or dermal exposure. Therefore, ground disturbing IPM treatments in the vicinity of the abandoned Wright Mine in the Rancho Canada del Oro Open Space Preserve have the potential to expose people (e.g., workers or the public) or the environment to significant health hazards if hazardous materials are present, and this impact would be **potentially significant**.

Mitigation Measure 3.4-2: Identify and Avoid Known Hazardous Waste Sites

Prior to the start of IPM treatment activities requiring soil disturbance in the vicinity of the abandoned Wright Mine, the Authority shall mark/flag the Wright Mine, including a 100-foot buffer around the mine area, and no soil disturbing IPM treatment activities will occur within 100 feet of the site boundaries. If it is determined through coordination with the Central Coast RWQCB, the lead agency responsible for the site, that no potential or known contamination is located on the site, the treatment may proceed as planned.

Significance after Mitigation

Mitigation Measure 3.4-2 requires that the Authority flag the one known hazardous material site in the IPM Program Area prior to ground disturbing treatments in the vicinity of the site, and prohibits ground disturbing IPM activities within 100 feet of the site. Alternatively, if the Authority determines that there is no potential for contamination at the site in coordination with the Central Coast RWQCB, then no flagging would be necessary and ground disturbing treatments could occur. Because the hazardous waste site would be flagged and avoided, unless it is determined that no hazardous materials are present in soils, no exposure-related risks associated with the disturbance of a hazardous waste site to the public or environment would occur. Therefore, the potential to expose people (e.g., workers or the public) or the environment to significant health hazards would be **less than significant after mitigation**.

3.5 HYDROLOGY AND WATER QUALITY

This section summarizes the regulatory context and specific policies related to hydrology and water quality, describes the existing hydrologic conditions of the IPM Program Area, and evaluates potential hydrological and water quality impacts from implementation of the proposed IPM Program.

There were no comments received on the Notice of Preparation related to hydrology and water quality.

3.5.1 Regulatory Setting

FEDERAL

Clean Water Act

The Clean Water Act (CWA) consists of the Federal Water Pollution Control Act of 1972 and subsequent amendments. The CWA provides for the restoration and maintenance of the physical, chemical, and biological integrity of the nation's waters. Various elements of the CWA address water quality, which are discussed below.

Section 404

Section 404 of the CWA prohibits the discharge of fill material into waters of the United States, including many wetlands, except as permitted under separate regulations by the U.S. Army Corps of Engineers (USACE) and the U.S. Environmental Protection Agency (EPA). To discharge dredged or fill material into waters of the United States, including wetlands that come within the definition of that term, Section 404 requires projects to receive authorization from the Secretary of the Army, acting through the USACE. Waters of the U.S. are generally defined as "...waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; territorial seas and tributaries to such waters."

Section 402

Section 402 of the CWA establishes the National Pollutant Discharge Elimination System (NPDES) permit program to regulate discharges of pollutants into waters of the United States. A NPDES permit sets specific discharge limits for point sources discharging pollutants into waters of the United States and establishes monitoring and reporting requirements, as well as special conditions. Two types of nonpoint source discharges are controlled by the NPDES program: discharges caused by general construction activities and the general quality of stormwater in municipal stormwater systems. The goal of the NPDES nonpoint source regulations is to improve the quality of stormwater discharged to receiving waters to the maximum extent practicable. Regional Water Quality Control Boards (RWQCBs) in California are responsible for implementing the NPDES permit system (see the discussion of state regulations below).

Section 401

Under 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 for the discharge. The certification must be obtained from the state in which the discharge would originate or, if appropriate, from the interstate water pollution control agency with jurisdiction over the affected waters at the point where 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) must also comply with CWA Section 401. Water quality certification requires evaluation of potential impacts in light of water quality standards and CWA Section 404 criteria governing discharge of dredged and fill materials into waters of the United States. The federal government delegates water pollution control authority under CWA Section 401 to the states (and in California, ultimately to the RWQCBs).

Section 303

Section 303(d) of the CWA requires states to develop lists of water bodies that do not attain water quality objectives after implementation of required levels of treatment by point source dischargers (municipalities and industries). Section 303(d) requires that the state develop a total maximum daily load (TMDL) for each of the listed pollutants. The TMDL is the amount of the pollutant that the water body can receive and still be in compliance with water quality objectives. The TMDL is also a plan to reduce loading of a specific pollutant from various sources to achieve compliance with water quality objectives. The EPA must either approve a TMDL prepared by the state or disapprove the state's TMDL and issue its own. NPDES permit limits for listed pollutants must be consistent with the waste load allocation prescribed in the TMDL. After implementation of the TMDL, it is anticipated that the problems that led to placement of a given pollutant on the Section 303(d) list would be remediated.

Federal Antidegradation Policy

The Federal Antidegradation Policy was enacted to provide protection to high-quality water resources of national importance. It directs states to develop and adopt statewide antidegradation policies that include protecting existing instream water uses and maintaining a level of water quality necessary to protect those existing uses and the water quality of high-quality waters. In the EPA's CWA regulations regarding water quality standards (40 CFR Chapter 1, Section 131.12[a][3]), the criteria for requiring an antidegradation standard includes the following conditions:

- ▶ Existing instream water uses and a level of water quality necessary to maintain those uses shall be maintained and protected.
- ▶ Water quality will be maintained and protected in waters that exceed water quality levels necessary for supporting fish, wildlife, and recreational activities, and water quality, unless the State deems that water quality levels can be lowered to accommodate important economic or social development. In these cases, water quality levels can only be lowered to levels that support all existing uses.
- ▶ Where high quality waters constitute an outstanding National resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

STATE

State Water Resources Control Board

In California, the State Water Resources Control Board (SWRCB) has broad authority over water quality control issues for the state. SWRCB is responsible for developing statewide water quality policy and exercises the powers delegated to the state by the federal government under the CWA. Other state agencies with jurisdiction over water quality regulation in California include the California Department of Public Health Services (formerly Department of Health Services) (for drinking water regulations), the California Department of Pesticide Regulation, the California Department of Fish and Wildlife (CDFW) (formerly Department of Fish and Game), and the Office of Environmental Health and Hazard Assessment. Regional authority for planning, permitting, and enforcement is delegated to the nine RWQCBs. The regional boards are required to formulate and adopt water quality control plans for all areas in the region and establish water quality objectives in the plans.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act requires that each of the nine RWQCBs prepare and periodically update basin plans for water quality control. Each basin plan sets forth water quality standards for surface water and groundwater and actions to control nonpoint and point sources of pollution to achieve and maintain these standards. Basin plans offer an opportunity to protect wetlands through the establishment of water quality objectives. The RWQCB's jurisdiction includes waters of the United States, as well as areas that meet the definition of "waters of the state." "Waters of the state" is defined as any surface water or groundwater, including saline waters, within the boundaries of the state. The RWQCB has the discretion to take jurisdiction over areas not federally protected under CWA Section 404 provided they meet the definition of waters of the state and the State Water Resources Control

Board published a new set of procedures for discharges of dredged or fill material into waters of the state on March 22, 2019. Mitigation requiring no net loss of wetlands functions and values of waters of the state typically is required by the RWQCB.

The San Francisco Bay and Central Coast RWQCBs have jurisdiction over the IPM Program Area (SWRCB 2020). The San Francisco Bay RWQCB's jurisdiction encompasses most of the preserves in the northern and southeastern portion of the IPM Program Area while the Central Coast RWQCB's jurisdiction encompasses the southernmost preserves (see Table 3.5-1). In addition to being responsible for preparing and updating the basin plan, the San Francisco Bay and Central Coast RWQCBs administer the adoption of waste discharge requirements (WDRs), manage groundwater quality, and approve projects within their boundaries under the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (General Permit).

Table 3.5-1 Regional Water Quality Control Board Jurisdiction

Preserve	Regional Water Quality Control Board Jurisdiction
Coyote Ridge	San Francisco Bay RWQCB
Coyote Valley	San Francisco Bay and Central Coast RWQCB
Croy Redwoods	Central Coast RWQCB
Diablo Foothills	San Francisco Bay and Central Coast RWQCB
El Toro Preserve	Central Coast RWQCB
Mount Chual	San Francisco Bay and Central Coast RWQCB
Pajaro River Agricultural Preserve	Central Coast RWQCB
Palassou Ridge	San Francisco Bay RWQCB
Rancho Canada del Oro	San Francisco Bay and Central Coast RWQCB
Santa Teresa Foothills	San Francisco Bay RWQCB
Sierra Vista	San Francisco Bay RWQCB
Upper Uvas	Central Coast RWQCB
Little Uvas	Central Coast RWQCB
North Coyote Valley	San Francisco Bay RWQCB

Source: SWRCB 2020

State Nondegradation Policy

In 1968, as required under the federal antidegradation policy described previously, SWRCB adopted a nondegradation policy aimed at maintaining high quality for waters in California. The nondegradation policy states that the disposal of wastes into state waters shall be regulated to achieve the highest water quality consistent with maximum benefit to the people of the state and to promote the peace, health, safety, and welfare of the people of the state. The policy states:

- a) Where the existing quality of water is better than required under existing water quality control plans, such quality would be maintained until it has been demonstrated that any change would be consistent with maximum benefit to the people of the state and would not unreasonably affect present and anticipated beneficial uses of such water.
- b) Any activity which produces waste or increases the volume or concentration of waste and which discharges to existing high-quality waters would be required to meet waste discharge requirements.

California Fish and Game Code Section 1602 (Lake and Streambed Alteration)

CDFW is responsible for conserving, protecting, and managing California's fish, wildlife, and native plant resources. Fish and Game Code Section 1602 states that an entity must notify CDFW prior to substantially diverting or obstructing the natural flow of, or substantially changing or using any material from the bed, channel, or bank of, any river, stream, or lake, or depositing or disposing of debris, waste, or other material containing crumbled, flaked, or

ground pavement where it may pass into any river, stream, or lake. If CDFW determines that the proposed activity may substantially adversely affect an existing fish or wildlife resource, CDFW will issue a Lake or Streambed Alteration Agreement for that activity, that includes reasonable measures necessary to protect the resource, and the entity must conduct the activity in accordance with the Agreement.

Safe Drinking Water Act

As mandated by the Safe Drinking Water Act (Public Law 93-523), passed in 1974, EPA regulates contaminants of concern to domestic water supply. Such contaminants are defined as those that pose a public health threat or that alter the aesthetic acceptability of the water. These types of contaminants are regulated by EPA primary and secondary maximum contaminant levels (MCLs). MCLs and the process for setting these standards are reviewed triennially. Amendments to the Safe Drinking Water Act enacted in 1986 established an accelerated schedule for setting drinking water MCLs. EPA has delegated to the California Department of Public Health Services the responsibility for California's drinking water program. California Department of Public Health Services is accountable to EPA for program implementation and for adoption of standards and regulations that are at least as stringent as those developed by EPA. Title 22 of the California Code of Regulations (Article 16, Section 64449) defines secondary drinking water standards, which are established primarily for reasons of consumer acceptance (i.e., taste) rather than for health issues.

LOCAL

Santa Clara County General Plan

The Santa Clara County General Plan (Santa Clara County 1994) contains the goals, strategies, policies, and implementing actions that guide in the overall land use development of the County. The hydrology and water quality goals and policies relevant to the IPM Program include:

- ▶ **Policy C-RC 18:** Water quality countywide should be maintained and improved where necessary to ensure the safety of water supply resources for the population and the preservation of important water environments and habitat areas.
- ▶ **Policy C-RC 19:** The strategies for maintaining and improving water quality on a countywide basis, in addition to ongoing point source regulation, should include:
 - a. effective non-point source pollution control;
 - b. restoration of wetlands, riparian areas, and other habitats which serve to improve Bay water quality; and
 - c. comprehensive Watershed Management Plans and "best management practices" (BMPs).
- ▶ **Policy C-RC 20:** Adequate safeguards for water resources and habitats should be developed and enforced to avoid or minimize water pollution of various kinds, including:
 - a. erosion and sedimentation;
 - b. organic matter and wastes;
 - c. pesticides and herbicides;
 - d. effluent from inadequately functioning septic systems;
 - e. effluent from municipal wastewater treatment plants;
 - f. chemicals used in industrial and commercial activities and processes;
 - g. industrial wastewater discharges;
 - h. hazardous wastes; and
 - i. non-point source pollution.

City of Morgan Hill General Plan

The City of Morgan Hill's General Plan (City of Morgan Hill 2017) provides detailed goals, policies, and actions to guide the city's decisions over the next two decades. The Natural Resources and Environment Element provides hydrology and water quality related goals relevant to the IPM Program. These include:

- ▶ **Policy NRE-8.1:** Contamination from Toxic Chemicals. Protect water quality from contamination, and monitor it to assure that present policies and regulations are adequate. Prohibit such uses as waste facilities, septic systems, and industries using toxic chemicals where polluting substances may come in contact with groundwater, floodwaters, and creeks or reservoir waters. (South County Joint Area Plan 8.00)
- ▶ **Policy NRE-8.7:** Aquifer Protection. In order to provide greater protection of the aquifers which supply drinking water to the South County, give special consideration to the management of contaminants (e.g., hazardous materials, sanitary effluents) in groundwater recharge areas where no protective aquitard layer exists. (South County Joint Area Plan 8.13)
- ▶ **Policy NRE-8.8:** Water Quality Compliance. Implement Best Management Practices to improve water quality, in conformance with the South Santa Clara County and City of Morgan Hill Total Maximum Daily Load (TMDL) Monitoring Plan for the Pajaro River Watershed and findings in subsequent annual status updates, as required for compliance with community standards and applicable State and federal provisions.

City of San Jose General Plan

The Envision San Jose 2040 General Plan (City of San Jose 2018) establishes the vision and strategies for future anticipated growth in the city through year 2040. Chapter 3, "Environmental Leadership," of the General Plan incorporates strategies and policies related to hydrology and water quality that are applicable to the IPM Program, including:

- ▶ **Policy ER-8.1:** Manage stormwater runoff in compliance with the City's Post-Construction Urban Runoff (6-29) and Hydromodification Management (8-14) Policies.
- ▶ **Policy ER-9.6:** Protect groundwater recharge areas, particularly creeks and riparian corridors.

3.5.2 Environmental Setting

TOPOGRAPHY AND CLIMATE

Several of the preserves within the IPM Program Area are located within the eastern portion of the Santa Cruz Mountains, which are situated on the San Francisco Peninsula, or within the Diablo Mountain Range, east of Gilroy, Morgan Hill, Los Gatos, and Sunnyvale. Other preserves are located on the Santa Clara Valley floor. Thus, the general topography of much of the IPM Program Area consists of steep slopes within mountainous areas and flat valleys in the foothills and valley floor. Rainfall within the general vicinity of the IPM Program Area typically occurs between November and April, with seasonal rainfall totals varying greatly from 3 to 6 inches depending upon topography, exposure, and elevation. Typically, most rainfall is received in February and the months with the least rainy days are June, July, and August (U.S. Climate Data 2019).

HYDROLOGY AND DRAINAGE

Surface Waters

Surface waters occur as streams, lakes, or ponds, or are found in floodplains, wetlands, and other collection sites. Watersheds are land or "basins" within which all precipitation within a given watershed drains to via creeks or streams. The preserves within the IPM Program Area are located within two major watersheds, the Coyote Watershed and the Pajaro Watershed (refer to Figure 3.5-1). The extensive open spaces within the IPM Program Area provide an undeveloped, vegetated setting with little impervious surface that allows rain and other surface runoff to percolate into the ground.

Several surface waters, primarily creeks, are located within IPM Program Area preserves. These surface waters, the IPM Program Area preserve in which they are located, and the watershed in which occur are listed in Table 3.5-2. They are also shown on Figure 3.5-2, along with reservoirs and additional unnamed tributaries and drainages that occur in the vicinity of the IPM Program Area.

Table 3.5-2 Surface Waters in the IPM Program Area

Existing Surface Waters	Location in the IPM Program Area	Watershed
Coyote Canal	Coyote Ridge Open Space Preserve	Coyote
Coyote Creek	Coyote Ridge Open Space Preserve and Palassou Ridge Open Space Preserve	Coyote
Metcalf Creek	Coyote Ridge Open Space Preserve	Coyote
Fisher Creek	Coyote Valley Open Space Preserve and North Coyote Valley Open Space Preserve	Coyote
Croy Creek	Croy Redwoods Open Space Preserve	Pajaro
San Ysidro Creek	Diablo Foothills Open Space Preserve	Pajaro
Llagas Creek	Mount Chual Open Space Preserve and Rancho Canada del Oro Open Space Preserve	Pajaro
Twin Falls Creek	Mount Chual Open Space Preserve and Rancho Canada del Oro Open Space Preserve	Pajaro
Jones Creek	Pajaro River Agricultural Preserve	Pajaro
Pajaro River	Pajaro River Agricultural Preserve	Pajaro
Bear Creek	Palassou Ridge Open Space Preserve	Coyote
Canada de los Osos Creek	Palassou Ridge Open Space Preserve	Coyote
Dexter Canyon Creek	Palassou Ridge Open Space Preserve	Coyote
Baldy Ryan Canyon Creek	Rancho Canada del Oro Open Space Preserve	Pajaro
Barrett Canyon Creek	Rancho Canada del Oro Open Space Preserve	Coyote
Cherry Canyon Creek	Rancho Canada del Oro Open Space Preserve	Coyote
Edson Canyon Creek	Rancho Canada del Oro Open Space Preserve	Pajaro
Larabee Gulch Creek	Rancho Canada del Oro Open Space Preserve	Coyote
Limekiln Canyon Creek	Rancho Canada del Oro Open Space Preserve	Pajaro
Coyote Alamos Canal	Santa Teresa Foothills Open Space Preserve	Coyote
Arroyo Aguague Creek	Sierra Vista Open Space Preserve	Coyote
Upper Penitencia Creek	Sierra Vista Open Space Preserve	Coyote
Uvas-Carnadero Creek	Upper Uvas Creek Open Space Preserve	Pajaro
Little Uvas Creek	Upper Uvas Creek Open Space Preserve	Pajaro
Swanson Canyon Creek	Upper Uvas Creek Open Space Preserve	Pajaro

Source: SCVWD 2017 and USGS 2017

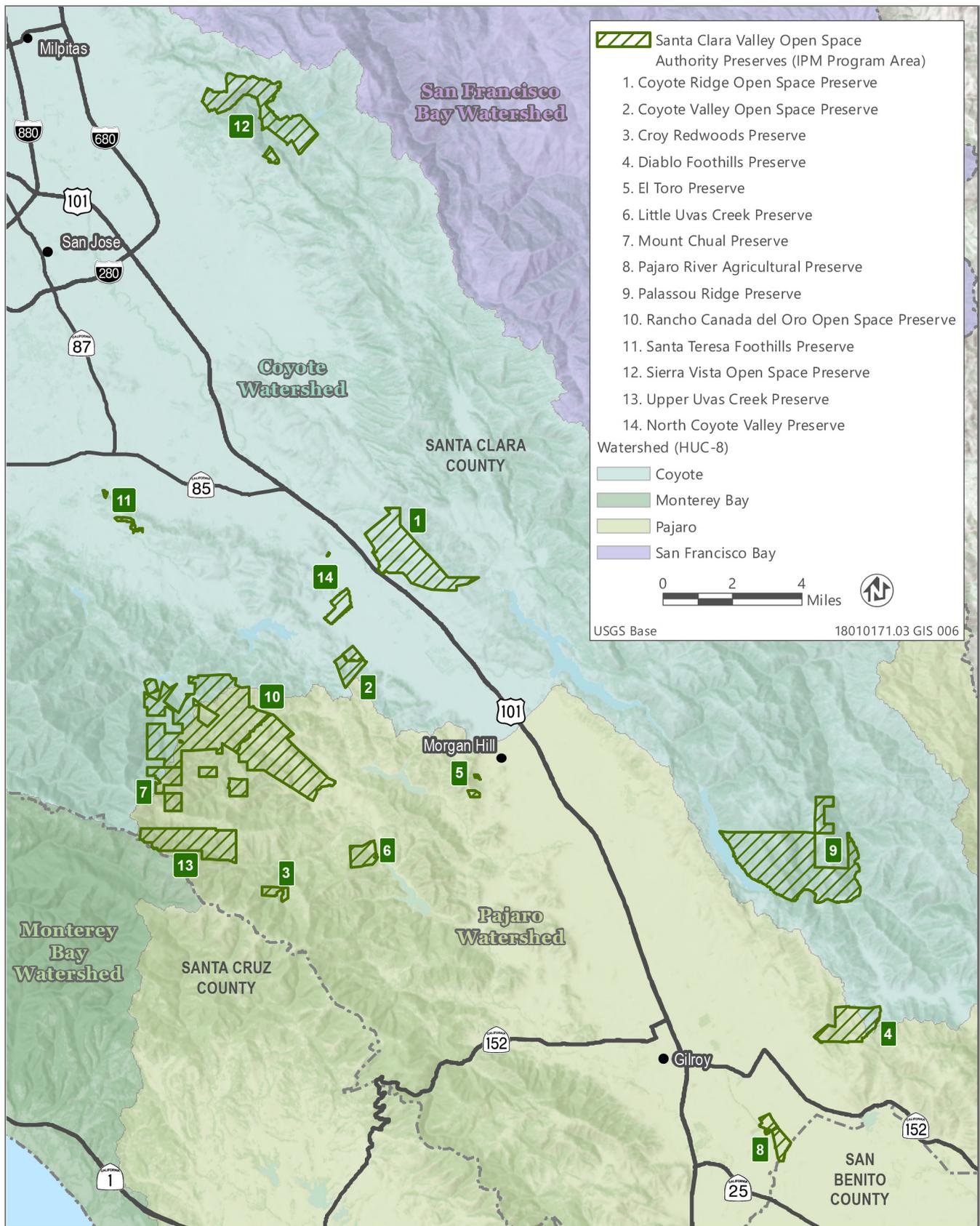
Groundwater

The majority of runoff from snowmelt and rainfall flows down streams into low gradient valleys and either percolates into the ground or is discharged to the sea. This percolating flow is stored in alluvial groundwater basins. Three of the IPM Program Area preserves are at least partially underlain by designated groundwater basins. These groundwater basins and the IPM Program Area preserves under which they occur are listed in Table 3.5-3 and are shown in Figure 3.5-3.

Table 3.5-3 Existing Groundwater Basins in the IPM Program Area

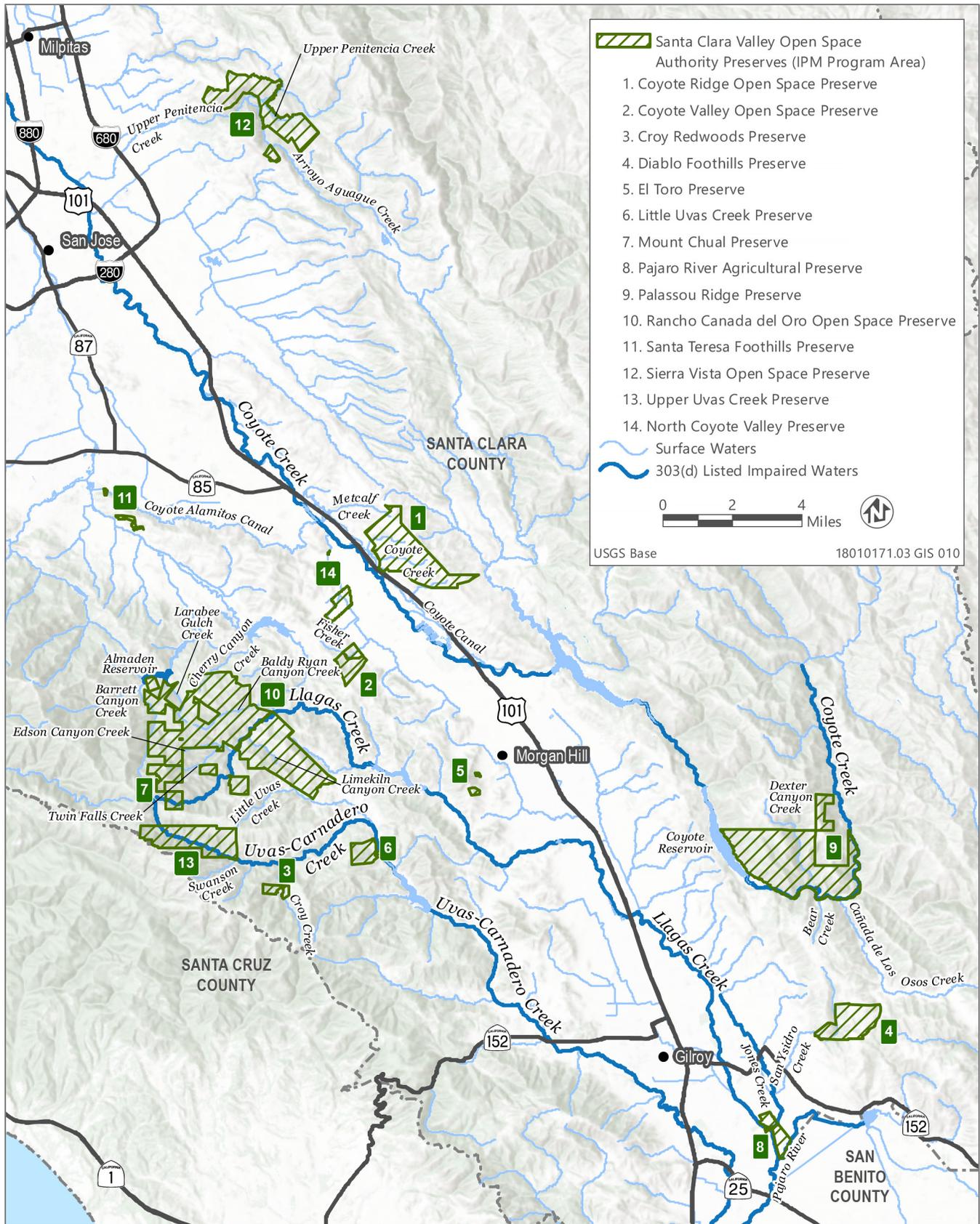
Existing Groundwater Basins	Location in the IPM Program Area
Gilroy-Hollister Valley Groundwater Basin	Pajaro River Agricultural Preserve (El Toro Open Space Preserve is immediately adjacent)
Santa Clara Valley Groundwater Basin	Coyote Ridge Open Space Preserve and North Coyote Valley Open Space Preserve (Coyote Valley and Santa Teresa Foothills Open Space Preserves are immediately adjacent)

Source: DWR 2018



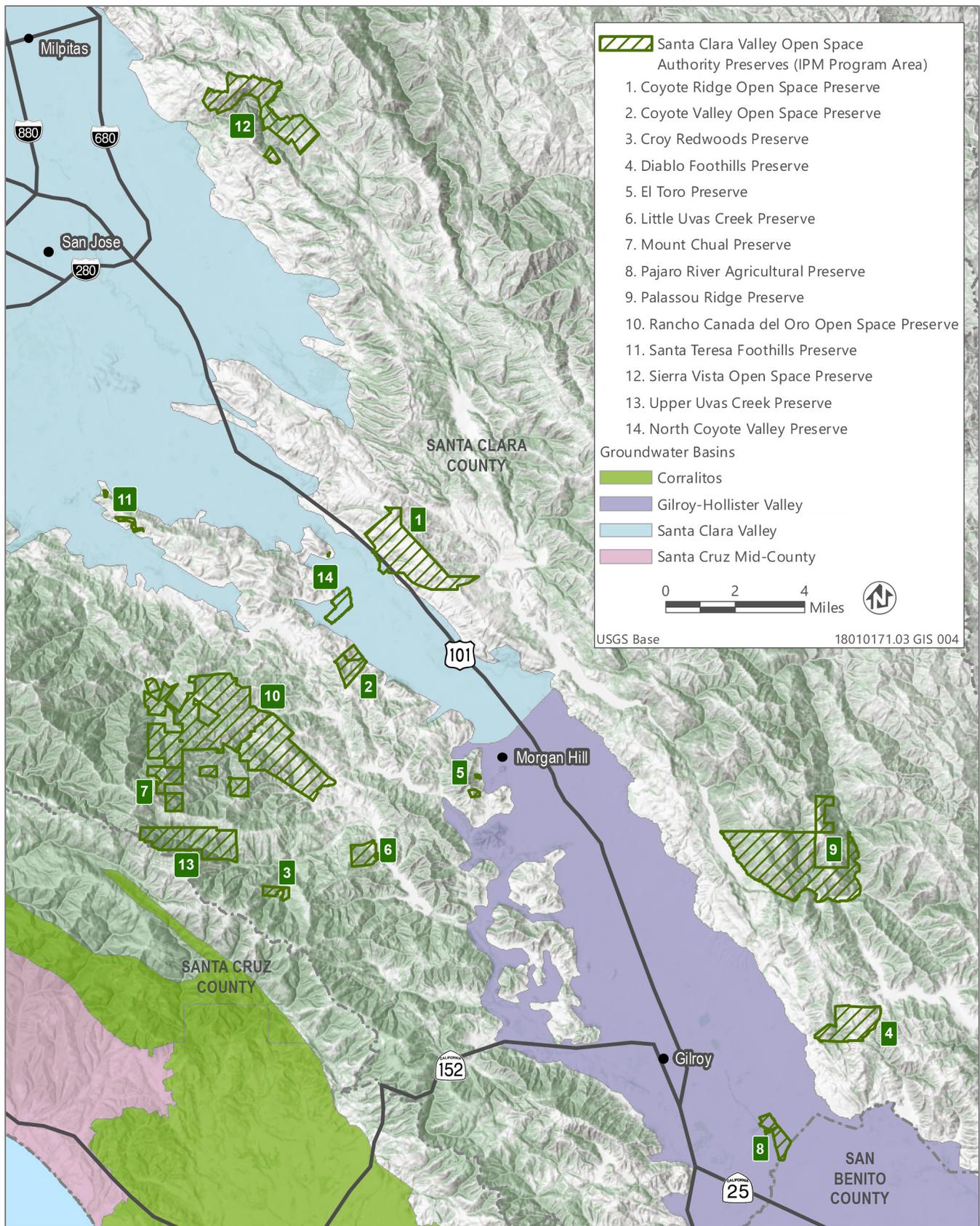
Source: USGS 2017

Figure 3.5-1 Watersheds in the IPM Program Area



Source: EPA 2015 and SCVWD 2017

Figure 3.5-2 Surface Waters and Impaired Water Bodies in the IPM Program Area



Source: DWR 2018

Figure 3.5-3 Groundwater Basins in the IPM Program Area

WATER QUALITY

Surface Water Quality

Impaired water bodies are surface waters that are not meeting water quality standards established by the EPA (303(d) list). Six creeks designated under Section 303(d) of the Clean Water Act as impaired because of the presence of certain pollutants are within 500 feet of IPM Program Area preserves, and three pass through the IPM Program Area (refer to Figure 3.5-2). The creeks that are designated as impaired in the IPM Program Area along with the reason for their listing are included in Table 3.5-4.

Table 3.5-4 Impaired Water Bodies within the IPM Program Area

Impaired Water Bodies	Reason For Listing	Proximity to the IPM Program Area
Llagas Creek	Water temperature and pH issues due to unknown sources	Passes through the Rancho Canada del Oro Open Space Preserve, Mount Chual Preserve, and Upper Uvas Creek Preserve
Coyote Creek	Diazinon, trash, and toxicity issues from unknown sources	Passes through Palassou Ridge Preserve
Uvas-Carnadero Creek	Water temperature and pH issues due to unknown sources	Passes through Little Uvas Creek Preserve, Upper Uvas Creek Preserve
Pajaro River	<ul style="list-style-type: none"> ▶ Boron, chlordane, chloride, chromium, dichlorodiphenyldichloroethane (DDD), dichlorodiphenyldichloroethylene (DDE), dichlorodiphenyltrichloroethane (DDT), dieldrin, Escherichia coli (E. coli), dissolved oxygen, polychlorinated biphenyls (PCBs), sodium, toxicity, turbidity, and pH issues from unknown sources ▶ Chlorpyrifos and diazinon contamination from agriculture ▶ Fecal coliform contamination from collection system failure, domestic animals/livestock, and urban runoff/storm sewers ▶ Nitrate contamination from agriculture, domestic animals/livestock, and natural sources ▶ Sedimentation/siltation issues from agriculture, domestic animals/livestock, grazing-related sources, habitat modification, highway/road/bridge construction, hydromodification, land development, logging road construction/maintenance, urban runoff/storm sewers 	50 ft southeast of the Pajaro River Agriculture Preserve
Almaden Reservoir	Mercury contamination due to unknown sources	50 ft north of the Rancho Canada del Oro Open Space Preserve
Jones Creek/ Furlong Creek	<ul style="list-style-type: none"> ▶ E. coli, nitrate, and turbidity issues from unknown sources ▶ Fecal coliform collection system failure, domestic animals/livestock, urban runoff/storm sewers 	25 ft north and south of the two segments of the Pajaro River Agriculture Preserve

Source: SWRCB 2017a; 2017b

Groundwater Quality

Groundwater quality can be affected by many things, but the chief controls on the characteristics of groundwater quality are the source and chemical composition of recharge water, properties of the host sediment, and history of discharge or leakage of pollutants. As discussed above, the Gilroy-Hollister Valley Groundwater Basin and the Santa Clara Valley Groundwater Basin underlay small portions of the IPM Program Area. The quality of groundwater within the Gilroy-Hollister Valley Groundwater Basin is characterized as highly mineralized with marginal water quality for drinking and agricultural purposes. The mineralized water quality is typical of other relatively small Coast Range groundwater basins and reflects the geologic formations in the Central Coast watersheds (e.g., marine sediments)

and the relatively low permeability of groundwater basin sediments, which leads to long contact time with groundwater (San Benito County Water District 2019).

Groundwater in the Santa Clara Groundwater Basin is typically of very good quality, although some areas in the shallow aquifers adjacent to salt ponds and tidal creeks near San Francisco Bay have been affected by salt water intrusion (SCVWD 2016a). The Priority Basin Project of the Groundwater Ambient Monitoring and Assessment (GAMA) study was conducted for the 620-square mile San Francisco Bay study unit, which includes the Santa Clara Valley groundwater basin. This study tested raw water samples for a variety of organic and inorganic constituents. Fourteen volatile organic compounds (VOCs) and six pesticides were detected in the wells sampled; however, all detections of VOCs and pesticides in study area wells were below health-based thresholds, and most were less than one-tenth of the threshold values (USGS 2009).

FLOOD HAZARDS

The Pacific Ocean is located approximately 8.8 miles east of the nearest IPM Program Area preserve and is separated by the Santa Cruz Mountain Range. Thus, a tsunami would not be capable of reaching IPM Program Area preserves. According to Santa Clara County's General Plan, flood hazard areas within the county are located within the city of San Jose and in areas near existing creeks and streams (Santa Clara County 1994). As shown in Table 3.5-2 and Figure 3.5-2, many creeks occur in the IPM Program Area.

A seiche occurs when strong wind events or rapid changes in atmospheric pressure push water from one end of a body of water to the other (NOAA 2019). These typically occur in large bodies of water such as lakes or reservoirs. Three reservoirs are located adjacent to IPM Program Area preserves: the 635-acre Coyote Reservoir located immediately west of a portion of the Palassou Ridge Open Space Preserve; the 62-acre Almaden Reservoir located immediately north of portions of the Rancho Canada del Oro Open Space Preserve; and the 1,271-acre Anderson Reservoir located southeast of Coyote Ridge Open Space Preserve and east of North Coyote Valley Open Space Preserve. The Coyote Reservoir has been determined to be capable of producing a seiche (DOC 1973). While no information regarding seiche potential on the Almaden Reservoir is available, it has been designated a high hazard dam due to the number of people living in the potential flood zone downstream. The Santa Clara Valley Water District (SCVWD) is currently working to improve the seismic safety of the reservoir (SCVWD 2019a).

The majority of the North Coyote Valley Open Space Preserve is within the inundation area for the Anderson Dam (2016b). SCVWD is implementing the Anderson Dam Seismic Retrofit Project to retrofit and strengthen the dam against potential earthquake damage and dam failure (SCVWD 2018). Efforts to retrofit the Anderson Dam began in 2014 and are expected to be complete in 2031. The project includes seismically retrofitting the dam embankment; replacing the existing outlet pipe that runs below the dam; replacing a major section of the concrete spillway and raising the wall height 9 feet; and increasing the height of the dam crest by 7 feet to provide more freeboard for runoff from larger storms (SCVWD 2018).

3.5.3 Environmental Impacts and Mitigation Measures

METHODOLOGY

Evaluation of potential hydrologic and water quality impacts is based on a review of existing documents and studies that address water resources in the vicinity of the IPM Program Area. Information obtained from these sources was reviewed and summarized to describe existing conditions and to identify potential environmental effects, based on the standards of significance presented in this section. In determining the level of significance, the analysis assumes that the IPM Program would comply with relevant federal, state, and local laws, ordinances, and regulations and account for the influence of relevant EPMs, which are incorporated into IPM treatment design.

THRESHOLDS OF SIGNIFICANCE

An impact on hydrology or water quality is considered significant if implementation of the IPM Program would do any of the following:

- ▶ violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality;
- ▶ substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
- ▶ substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would:
 - result in substantial erosion or siltation on- or off-site;
 - result in flooding on-site or off-site;
 - create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
 - impede or redirect flood flows;
- ▶ in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; and/or
- ▶ conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

ISSUES NOT DISCUSSED FURTHER

Implementation of the IPM Program would not create any impervious surfaces, so no interference with groundwater recharge would occur. Implementation of the IPM Program would also not decrease groundwater supplies through extraction, because it would not include activities or the construction of facilities that would draw on groundwater. Therefore, issues related to groundwater supplies and groundwater management are not discussed further.

Mechanical treatments that could disturb large areas of soil, such as discing and cultivation, could alter existing drainage patterns if conducted in areas such as near a stream or river where drainage typically occurs. However, discing and cultivation would only occur in agricultural preserves where land has been previously disturbed by agricultural cultivation; therefore, discing and cultivating these areas would not result in alterations of natural drainage patterns. No other IPM treatment activities would disturb soils to an extent that could alter existing drainage (e.g., digging by hand, cutting vegetation). Therefore, no related impacts, such as erosion and siltation, on or offsite flooding, contributing additional runoff to stormwater drainage systems, or impeding or redirecting flood flows would occur. Therefore, these issues are not discussed further.

The IPM Program is not located within a tsunami hazard zone. In the unlikely event of a seiche at the Coyote Reservoir, it would only inundate the margins of the reservoir and given that steep slopes rise quickly in the direction of the Palassou Open Space Preserve, substantial inundation would not occur (DOC 1973). Flood inundation in the event of a dam failure has been mapped for the Almaden Reservoir and indicates that flood waters would move northeast and away from the Rancho Canada del Oro Open Space Preserve and toward the city of San Jose (SCVWD 2019b). Furthermore, given that the Almaden Reservoir is a relatively small body of water at 62 surface acres, the likelihood of a large seiche capable of inundating areas outside of the margins of the reservoir is extremely low. The North Coyote Valley Open Space Preserve is within the inundation area for the Anderson Dam; however, the preserve is small relative to the overall size of the total IPM Program Area (less than 2 percent of the overall Program Area) and no substantial quantities of hazardous materials would be used on the preserve and risks associated with release of pollutants from inundation are minimal. In addition, SCVWD is currently retrofitting the dam to prevent dam failure, as a result, the potential for inundation from dam failure or a seiche will likely be further minimized. Accordingly, no substantial inundation of the IPM Program Area by dam failure, a seiche, or tsunami would result, and these issues are not discussed further.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.5-1: Potential to Violate Water Quality Standards or Waste Discharge Requirements, Substantially Degrade Surface or Ground Water Quality, or Conflict with or Obstruct the Implementation of a Water Quality Control Plan Through Manual or Mechanical IPM Treatment Activities

The proposed IPM Program includes manual and mechanical treatment activities for invasive plant and wildlife control in the IPM Program Area. Manual treatment activities would generally not result in substantial ground disturbance that could result in adverse effects to water quality. Certain treatments, such as mulching and application of weedmats, would use organic materials and fabrics or plastics. Although mulches are made of organic materials, weedmats could result in an introduction of inorganic materials to water bodies, if in the immediate vicinity. Mechanical IPM treatments, such as mowing/cutting and cultivation, could disturb soils and contribute to runoff into surface waters. In addition, mechanical equipment uses gasoline, diesel fuel, and oils, which have the potential to leak or spill and enter nearby water bodies in runoff. EPMs would be implemented to minimize the potential impacts to water quality, including requiring surveys for aquatic habitat and prohibiting mechanical equipment use within 15 feet of aquatic resources (EPM BIO-1), and requiring daily equipment checks for leaking equipment when in use and prompt removal if a leak is found (EPM HAZ-1). Recognizing the environmental protections of the EPMs, potential impacts to water quality and associated conflicts with the San Francisco Bay and Central Coast RWQCBs' Basin Plans from manual and mechanical IPM treatment activities would be **less than significant**.

Manual treatments under the IPM Program include prevention, sanitation, pulling, digging, hoeing, physical barriers/exclusion, covering/tarping, crop rotation, soil sterilization, mulching, weedmats, release of biocontrol insects, trapping, giggering, shooting, and electrical currents. Most of these activities would have very limited potential to degrade water quality as they would be done by hand and not substantially disturb soils or leave any new material in the environment. Activities such as mulching and application of weedmats use materials such as straw, wood chips, fabrics, or plastics that could enter nearby water bodies through wind or runoff. Mulches are made up of organic materials and thus would not result in substantial degradation of water quality; however, weedmats are made up of non-organic fabrics, plastics, or rubbers. These materials, if they enter surface waters, could degrade water quality. However, weedmats are typically interwoven solid sheets of material that are designed to persist as a solid sheet when used to minimize weed growth. The likelihood of a weedmat contributing significant pieces of material into the environment is extremely low.

Mechanical treatments under the IPM Program involve the use of motorized equipment, including mowing/cutting, cultivation, discing, girdling/frilling/drilling, and green flaming. Vegetation removal activities within the IPM Program Area could loosen and disturb soils, remove ground surface litter in some areas exposing the soil surface and facilitating erosion, and compact soils so that they are not able to infiltrate or filter runoff. Some activities, such as cultivation or discing, would loosen soils at depths several inches below the soil surface. Rain of sufficient intensity and duration could dislodge soil particles, generate runoff, and cause localized erosion which could enter nearby water bodies. Mechanical treatments could also result in water quality impacts if gasoline, diesel fuel, lubricating oils, or grease that are used to operate machinery enter the environment and end up in waterbodies through runoff. EPM BIO-1 requires pre-treatment surveys for aquatic habitat and prohibits ground disturbing mechanical treatments within 15 feet of aquatic features. This buffer would help to filter and slow runoff from adjacent treatment areas, allow infiltration of stormwater into the ground, and trap sediment that could otherwise be carried into surface waters. In addition, per EPM HAZ-1, all mechanical equipment would be maintained per manufacturer's specification and in compliance with all state and federal requirements. The Authority (or contractors) would be required to inspect all equipment for leaks every day that equipment is in use, and any equipment found leaking would be promptly removed from a given treatment site. Therefore, the risk of substantial degradation to water quality and associated conflicts with the Basin Plan from manual and mechanical treatments would be avoided and minimized through EPMs and this impact would be **less than significant**.

Impact 3.5-2: Potential to Violate Water Quality Standards or Waste Discharge Requirements, Substantially Degrade Surface or Ground Water Quality, or Conflict with or Obstruct the Implementation of a Water Quality Control Plan Through Chemical IPM Treatment Activities

Chemical IPM treatment activities under the proposed IPM Program would include the use of insecticides, a rodenticide, herbicides, and a fumigant. These chemicals have the potential to contaminate surface or groundwater quality if used in close proximity to surface waters, spilled, or used under the wrong conditions. Because the fumigant and the majority of the insecticides and rodenticides would be used in structures and buildings and delivered through tamper proof bait stations, the likelihood of these entering the environment and degrading water quality is low. The proposed IPM Program would address concerns related to the use of herbicides by ensuring that herbicides are applied according to the manufacturer's label directions and consistent with EPMs HAZ-4, HAZ-5, and BIO-1 which protect surface and groundwaters, control drift, and ensure proper storage, handling, and cleanup. Because these protective measures would be implemented into treatment design, risk of substantial degradation to water quality and associated conflicts with San Francisco Bay and Central Coast RWQCBs' Basin Plans from herbicide use would be reduced such that this impact would be **less than significant**.

Chemical treatments under the IPM Program would include the use of herbicides, insecticides, rodenticides, and fumigants, and are summarized in Table 2-3 in Chapter 2, "Program Description." As described in Section 2.7.1, "IPM Treatment Types," careful and judicious use of pesticides are an essential component of the proposed IPM Program, in which the most effective, least toxic treatment options would be used to control pests. The potential for pesticides to adversely affect water quality varies by pesticide type.

Insecticides, Rodenticides, and Fumigants

Insecticide baits would be used in structures and buildings in tamper-proof bait stations and sprays would be used as a last resort and target specific individuals or populations (e.g., problem wasp nests). Rodenticides are not currently used by the Authority and would also be used as a last resort to control pest infestations that create threats to human health or safety after other non-chemical treatment options are exhausted. If deemed necessary, rodenticides would only be used in structures and buildings in tamper-proof anchored bait containers to avoid non-target species interactions. Because most of the insecticides and rodenticides would be used in structures and buildings and delivered through tamper proof bait stations, and sprays would be used as a last resort to target specific individuals (such as a wasp's nest), the likelihood of these entering the environment and degrading water quality is extremely low.

Fumigation would be used to control termite infestations within affected structures, if necessary. The entire fumigation process, including the handling of the fumigant, would be implemented by certified applicators and the treated structure would be securely sealed with a tent to trap the gas inside during and following application. After fumigation is complete, the tenting would be removed from the structure to air out the building. The fumigant is a gas that dissipates quickly in air and would not leach into groundwater during this process. Therefore, the potential for the fumigant to enter the environment and degrade water quality would be extremely low.

Herbicides

In general, the use of herbicides could move off-site through runoff, leaching, drift, and misapplication or spills. Surface water can be affected by any of these means, but only leaching has the potential to degrade groundwater. Site conditions, chemical characteristics, and application technique are other factors that can influence how likely an herbicide is to degrade water quality. The first line of protection for water quality is the herbicide product label. Not all herbicides act the same way in the environment; some are active for only a short time while others may persist for years, they also have varying degrees of water solubility and soil sorption. Additionally, each herbicide may have several formulations for specific uses. Because of this complexity, each herbicide product carries a legally enforceable label which provides critical information about product use. Before an herbicide can be registered for sale, EPA requires extensive scientific data on the potential health and environmental effects. EPA evaluates the data and ensures that that label describes a set of conditions, directions, and precautions that define how and where the

product can be safely used. Following the directives of the product label greatly reduces the potential for herbicides to be applied in a way that contaminates water resources.

The potential for herbicide leaching and runoff contamination is dependent on the available water in the soil, the soils permeability, the proximity to surface or groundwater, and the length of time that the herbicide remains active in the environment. Herbicides applied near aquatic resources, to wet soil, areas of shallow groundwater, or applied when significant precipitation is expected are more likely to be problematic. EMP HAZ-5 requires that no herbicide be applied during precipitation or if precipitation is forecasted within 6 hours, except for herbicides that are specially formulated for use in wet conditions. This rain-free window is extended to 24 hours within 100 feet of aquatic resources (i.e., surface waters, wetlands, seasonal streams, or locations where groundwater is present at the soil surface). Some formulations may require longer precipitation-free windows, as required by the label. In addition, EPM BIO-1 and HAZ-5 prohibit the use of broadcast spraying of herbicides within 50 feet of any aquatic resources, except for herbicides registered for use in aquatic systems. EPM BIO-1 and HAZ-5 further prohibit the use of all other chemical treatments within 15 feet of aquatic features. EPM BIO-8 expands on EPM BIO-1 and HAZ-5 by prohibiting herbicide application within 60 feet of aquatic areas designated as California red-legged frog critical habitat. These precautions would limit the potential for herbicides to leach into groundwater, contaminate stormwater runoff, or be carried into surface waters.

Herbicides can reach water through drift, the airborne movement of herbicides beyond the treatment area. The risk of drift is affected by the application technique and weather conditions. Aerial or boom applications are most likely to reach surface waters through drift because the herbicide must settle through the air to reach the treatment area. Spot and localized treatments are less likely to drift because these applications are targeted at specific plants and less herbicide is applied. The proposed IPM Program does not include aerial application of herbicides. Broadcast applications of herbicide using a boom applicator attached to an all-terrain vehicle (ATV) could take place along roadways and large infestations that are accessible by ATV. EPM HAZ-5 prohibits spray applications of herbicides when wind speeds are 7 miles per hour or greater, when temperatures exceed 85 degrees Fahrenheit, and requires applicators to use low impact and low volume spray applications with the largest and coarsest droplet size to minimize drift. These protections would reduce the potential for spray applications to drift from a treatment area and reach surface waters.

Although the protections described above would prevent impacts to water quality during herbicide application, the accidental misapplication or spill of an herbicide could degrade water quality. EPM HAZ-4 requires that Authority staff comply with all federal, state, and local pesticide laws and regulations; prohibits spray tanks from being left unattended during filling to minimize spills; requires that all herbicides and herbicide containers are lawfully stored, handled, and disposed of in accordance with the specific pesticide label and in a manner that would prevent water contamination; and requires any pesticide spills to be cleaned up immediately. Additionally, as described in Section 2.7.1, "IPM Treatment Types," the Authority would evaluate herbicide characteristics and choose the least toxic treatment option that will effectively control the invasive plant, thereby reducing the quantity of high-risk chemicals used in the IPM Program Area. These protections would ensure proper handling of herbicides and reduce the potential for misapplication or spill of treatment chemicals.

Conclusion

The IPM Program includes the use of pesticides, which have the potential to contaminate surface or groundwater quality if applied near waters, misapplied, spilled, or used under the wrong conditions. The fumigant and the majority of the insecticides and rodenticides would be used in structures and buildings and would be contained, either by tenting or through tamper proof bait stations. Additionally, spray insecticides would be used as a last resort to target specific individuals (such as a wasp's nest). Therefore, the likelihood of these pesticides entering the environment and degrading water quality is extremely low. The IPM Program would address concerns related to the use of herbicides by ensuring that herbicides are applied according to the manufacturer's label directions and consistent with EPMs that protect surface and groundwaters, control drift, and ensure proper storage, handling, and cleanup. With these measures in place, the risk of substantial degradation to water quality and associated conflicts with the San Francisco Bay or Central Coast RWQCB's Basin Plans for the chemical IPM treatment activities would be reduced, and this impact would be **less than significant**.

Impact 3.5-3: Potential to Release Substantial Pollutants due to Flooding

The IPM Program Area has the potential to be inundated in the areas near creeks in the event of a flood. However, quantities of pollutants would not be substantially increased over existing levels and present in the IPM Program Area because potentially hazardous materials would only be stored in designated locations that are currently used for materials storage; equipment would be inspected daily for leaks to prevent gasoline, diesel fuel, lubricating oils, or grease from entering the environment (EPM HAZ-1); and only pesticides registered for aquatic use would be used within 50 feet of aquatic resources or within 100 feet of aquatic resources when precipitation is forecasted within 24 hours (EPM HAZ-5 and BIO-1). Furthermore, the Santa Clara County General Plan indicates that there is only a one percent chance of a flood occurring each year that would be capable of creating substantial flooding along creeks (Santa Clara County 1994); therefore, the risk of a flood that could inundate the IPM Program Area is low. Lastly, IPM activities would only increase by a few additional treatments over current levels under the IPM Program, which would not result in a substantial increase in the presence of potential pollutants in the IPM Program Area. Therefore, this impact would be **less than significant**.

Certain areas of the IPM Program Area could be inundated due to flooding in and around creeks, which could release pollutants if present. The Authority would only store potentially hazardous materials or other potential pollutants within a few designated structures in the IPM Program Area including the Authority's field offices on the Rancho Canada del Oro Open Space Preserve and Sierra Vista Open Space Preserve, which are currently used for hazardous material storage for existing IPM activities. Furthermore, as discussed above in Impact 3.5-1, the Authority (or contractors) would be required to inspect all equipment for leaks every day that equipment is in use, and any equipment found leaking would be promptly removed from a given treatment site per EPM HAZ-1. Therefore, no substantial quantities of gasoline, diesel fuel, lubricating oils, or grease that are used to operate machinery would be present in the IPM Program Area.

As described above in Impact 3.5-2, pesticides would be used in the IPM Program Area, including the use of insecticides and rodenticides in and around buildings and structures, and a fumigant would be used, if needed, to treat termite infestations within affected structures. Herbicides would be used to treat invasive vegetation. Given that herbicides could be used broadly throughout the IPM Program, there is a potential for release if a flood were to occur along a creek in the IPM Program Area. However, per EPM BIO-1 and HAZ-5, only broadcast spraying of herbicides registered for aquatic use would be used within 50 feet of aquatic resources, including creeks and streams. Furthermore, no herbicides would be used within 100 feet of streams when rain is forecasted within 24 hours per EPM HAZ-5, which would minimize the presence of herbicides in areas adjacent to existing streams particularly when flooding is more likely (i.e., during precipitation events). In addition, the Santa Clara County General Plan indicates that there is only a one percent chance of a flood occurring each year that would be capable of creating flooding along creeks in the county (Santa Clara County 1994); therefore, the risk of flooding and associated inundation of the IPM Program Area is low. Furthermore, IPM treatment activities would only increase by a few additional simultaneous treatments under the IPM Program, which would not result in a substantial increase in the presence of potential pollutants in the IPM Program Area. Therefore, this impact would be **less than significant**.

3.6 CULTURAL AND TRIBAL CULTURAL RESOURCES

This section evaluates the effects of the proposed IPM Program on cultural and tribal cultural resources. The following analysis considers known and unknown cultural and tribal cultural resources, and the how the proposed IPM Program could affect those resources. This section also provides background and context on cultural and tribal cultural resource concepts and regulations.

One comment letter regarding cultural resources was received in response to the Notice of Preparation (see Appendix A). The Native American Heritage Commission (NAHC) requested Assembly Bill 52 (AB 52) and Senate Bill 18 (SB 18) compliance information. Details about AB 52 compliance associated with the IPM Program is described below in Section 3.6.2, "Environmental Setting." SB 18 does not apply to the IPM Program because there are no general plan amendments required under the IPM Program (which is the trigger for SB 18 compliance).

3.6.1 Regulatory Setting

FEDERAL

Section 106 of the National Historic Preservation Act

Federal protection of resources is legislated by (a) the National Historic Preservation Act (NHPA) of 1966 as amended by 16 U.S. Code 470, (b) the Archaeological Resource Protection Act of 1979, and (c) the Advisory Council on Historical Preservation. These laws and organizations maintain processes for determination of the effects on historical properties eligible for listing in the National Register of Historic Places (NRHP).

Section 106 of the NHPA and accompanying regulations (36 Code of Federal Regulations [CFR] Part 800) constitute the main federal regulatory framework guiding cultural resources investigations and require consideration of effects on properties that are listed in, or may be eligible for listing in the NRHP. The NRHP is the nation's master inventory of known historic resources. It is administered by the National Park Service and includes listings of buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, and cultural districts that are considered significant at the national, state, or local level.

The formal criteria (36 CFR 60.4) for determining NRHP eligibility are as follows:

1. The property is at least 50 years old (however, properties under 50 years of age that are of exceptional importance or are contributors to a district can also be included in the NRHP);
2. It retains integrity of location, design, setting, materials, workmanship, feeling, and associations; and
3. It possesses at least one of the following characteristics:

Criterion A Association with events that have made a significant contribution to the broad patterns of history (events).

Criterion B Association with the lives of persons significant in the past (persons).

Criterion C Distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant, distinguishable entity whose components may lack individual distinction (architecture).

Criterion D Has yielded, or may be likely to yield, information important to prehistory or history (information potential).

Listing in the NRHP does not entail specific protection or assistance for a property but it does guarantee recognition in planning for federal or federally-assisted projects, eligibility for federal tax benefits, and qualification for federal historic preservation assistance. Additionally, project effects on properties listed in the NRHP must be evaluated under CEQA.

Secretary of the Interior's Standards

The *Secretary of the Interior's Standards for the Treatment of Historic Properties* (Secretary's Standards) provide guidance for working with historic properties and are used by lead agencies to evaluate proposed rehabilitative work on historic properties. The Secretary's Standards are a useful analytic tool for understanding and describing the potential impacts of proposed changes to historic resources. Projects that comply with the Secretary's Standards benefit from a regulatory presumption that they would not result in a significant impact to a historic resource. In 1992 the Secretary's Standards were revised so they could be applied to all types of historic resources, including landscapes. They were reduced to four sets of treatments to guide work on historic properties: preservation, rehabilitation, restoration, and reconstruction. The four distinct treatments are defined as follows:

- ▶ **Preservation** focuses on the maintenance and repair of existing historic materials and retention of a property's form as it has evolved over time.
- ▶ **Rehabilitation** acknowledges the need to alter or add to a historic property to meet continuing or changing uses while retaining the property's historic character.
- ▶ **Restoration** depicts a property at a particular period of time in its history, while removing evidence of other periods.
- ▶ **Reconstruction** re-creates vanished or non-surviving portions of a property for interpretive purposes.

STATE

California Register of Historical Resources

All properties in California that are listed in or formally determined eligible for listing in the NRHP are eligible for the CRHR. The CRHR is a listing of State of California resources that are significant within the context of California's history. The CRHR is a statewide program of similar scope and with similar criteria for inclusion as those used for the NRHP. In addition, properties designated under municipal or county ordinances are also eligible for listing in the CRHR. A historic resource must be significant at the local, state, or national level under one or more of the criteria defined in the California Code of Regulations Title 15, Chapter 11.5, Section 4850 to be included in the CRHR. The CRHR criteria are similar to the NRHP criteria and are tied to CEQA because any resource that meets the criteria below is considered a significant historical resource under CEQA. Similar to the NRHP, a resource must meet one of the below four criteria and retain integrity.

1. Is associated with events or patterns of events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.
2. Is associated with the lives of persons important to local, California, or national history.
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values.
4. Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

Assembly Bill 52

AB 52, signed by the California Governor in September of 2014, established a new class of resources under CEQA: "tribal cultural resources," defined in Public Resource Code (PRC) 21074. Pursuant to PRC Sections 21080.3.1, 21080.3.2, and 21082.3, lead agencies undertaking CEQA review must, upon written request of a California Native American Tribe, begin consultation before the release of an environmental impact report, negative declaration, or mitigated negative declaration.

PRC Section 21080.3.2 states:

Within 14 days of determining that a project application is complete, or to undertake a project, the lead agency must provide formal notification, in writing, to the tribes that have requested notification of proposed projects in the lead agency's jurisdiction. If it wishes to engage in consultation on the project, the tribe must respond to the lead agency within 30 days of receipt of the formal notification. The lead agency must begin the consultation process with the tribes that have requested consultation within 30 days of receiving the request for consultation. Consultation concludes when either: 1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource, or 2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached.

If the lead agency determines that a project may cause a substantial adverse change to a tribal cultural resource, and measures are not otherwise identified in the consultation process, provisions under PRC Section 21084.3 (b) describe mitigation measures that may avoid or minimize the significant adverse impacts.

California Environmental Quality Act

CEQA requires public agencies to consider the effects of their actions on "historical resources," "unique archaeological resources," and "tribal cultural resources." Pursuant to PRC Section 21084.1, a "project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." Section 21083.2 requires agencies to determine whether projects would have effects on unique archaeological resources.

Historical Resources

"Historical resource" is a term with a defined statutory meaning (PRC, Section 21084.1; determining significant impacts to historical and archaeological resources is described in the State CEQA Guidelines, Sections 15064.5[a] and [b]). Under State CEQA Guidelines Section 15064.5(a), historical resources include the following:

1. A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR (PRC, Section 5024.1).
2. A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the PRC or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, will be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
3. Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource will be considered by the lead agency to be historically significant if the resource meets the criteria for listing in the CRHR (PRC Section 5024.1).
4. The fact that a resource is not listed in or determined to be eligible for listing in the CRHR, not included in a local register of historical resources (pursuant to Section 5020.1(k) of the PRC), or identified in a historical resources survey (meeting the criteria in Section 5024.1(g) of the PRC) does not preclude a lead agency from determining that the resource may be an historical resource as defined in PRC Section 5020.1(j) or 5024.1.

Unique Archaeological Resources

CEQA also requires lead agencies to consider whether projects will impact unique archaeological resources. Public Resources Code, Section 21083.2, subdivision (g), states that unique archaeological resource means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Tribal Cultural Resources

CEQA also requires lead agencies to consider whether projects will impact tribal cultural resources. PRC Section 21074 states the following:

- a) "Tribal cultural resources" include:
 - 1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
 - A) Included or determined to be eligible for inclusion in the CRHR.
 - B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.
 - 2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.
- b) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.
- c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

California Native American Historical, Cultural, and Sacred Sites Act

The California Native American Historical, Cultural, and Sacred Sites Act applies to both public and private lands. The Act requires that upon discovery of human remains, construction or excavation activity cease and the County coroner be notified. If the remains are of a Native American, the coroner must notify the NAHC, which notifies and has the authority to designate the most likely descendant (MLD) of the deceased. The Act stipulates the procedures the descendants may follow for treating or disposing of the remains and associated grave goods.

Health and Safety Code, Sections 7050.5 and 7052

Section 7050.5 of the Health and Safety Code requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If determined to be Native American, the coroner must contact the NAHC. Section 7052 states that the disturbance of Native American cemeteries is a felony.

Public Resources Code, Section 5097

PRC Section 5097 specifies the procedures to be followed in the event of the unexpected discovery of human remains on nonfederal land. The disposition of Native American burial falls within the jurisdiction of the NAHC. Section 5097.5 of the Code states the following:

No person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

LOCAL

Santa Clara County General Plan

The Santa Clara County General Plan contains the following strategies and policies related to heritage resources in the Resource Conservation chapter that are applicable to the IPM Program (Santa Clara County 1994a):

- ▶ **Policy C-RC 49:** Cultural heritage resources within Santa Clara County should be preserved, restored wherever possible, and commemorated as appropriate for their scientific, cultural, historic and place values.
- ▶ **Policy C-RC 52:** Prevention of unnecessary losses to heritage resources should be ensured as much as possible through adequate ordinances, regulations and standard review procedures. Mitigation efforts, such as relocation of the resource should be employed where feasible when projects will have significant adverse impact upon heritage resources.
- ▶ **Policy C-RC 54:** Heritage resources should be restored, enhanced, and commemorated as appropriate to the value and significance of the resource.

Santa Clara County Ordinance Code

Title B (Regulations), Division B6 of the Santa Clara County Ordinance Code includes regulations regarding cemeteries and Indian burial grounds. Sections B6-18 through B6-20 describe specific requirements related to discovering or unearthing burial sites, including the process for contacting the NAHC, pursuant to Health and Safety Code Section 7050.5(c), site inspection, and removal and reburial.

City of Morgan Hill General Plan

The Morgan Hill 2035 General Plan contains goals and policies related to cultural and historic resources, in the Healthy Community Element of the General Plan (City of Morgan Hill 2016). The following goals and policies are relevant to the IPM Program:

GOAL HC-8: Historic identity and cultural resources that are preserved for future generations.

- ▶ **Policy HC-8.1:** Identify and Protect Resources. Identify and protect heritage resources from loss and destruction. (South County Joint Area Plan 15.09)
- ▶ **Policy HC-8.2:** Historic Structures. Encourage the preservation and rehabilitation of the City's historic structures.
- ▶ **Policy HC-8.5:** Mitigation. Require that if cultural resources, including tribal, archaeological, or paleontological resources, are uncovered during grading or other on-site excavation activities, construction shall stop until appropriate mitigation is implemented.

City of San Jose General Plan

The Envision San Jose 2040 General Plan contains the following policies related to cultural and tribal cultural resources that are relevant to the IPM Program (City of San Jose 2018):

GOAL ER-10: Archaeology and Paleontology. Preserve and conserve archaeologically significant structures, sites, districts, and artifacts in order to promote a greater sense of historic awareness and community identity.

3.6.2 Environmental Setting

The IPM Program is located in the San Francisco Bay Area and consists of 16,446 acres of land in 14 open space preserves ranging in size from 39 to more than 5,500 acres. The preserves are owned and managed by the Authority and are all within Santa Clara County. Definitions related to cultural resources, the cultural setting for the IPM Program Area, and the results of cultural records searches and AB 52 outreach that was conducted for the IPM Program are described below.

DEFINITIONS

Cultural resources include districts, sites, buildings, structures, or objects generally older than 50 years and considered to be important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. They include archaeological resources and historic built or architectural resources. Archaeological resources are locations where human activity has measurably altered the earth or left deposits of prehistoric or historic-era physical remains (e.g., stone tools, bottles, former roads, house foundations). Historic (or architectural) resources include standing buildings (e.g., houses, barns, outbuildings, cabins) and intact structures (e.g., dams, bridges, roads, districts) that are 50 years or older.

Tribal cultural resources, as defined by AB 52, Statutes of 2014, in PRC Section 21074, include site features, places, cultural landscapes, sacred places or objects, which are of cultural value to a tribe. Refer to Section 3.6.1, "Regulatory Setting," for more information on these definitions.

CULTURAL RESOURCE SETTING

The first recorded settlement of the Santa Clara Valley was by the Ohlone around 250 AD. The Ohlone were a non-agricultural society, dependent on their surroundings for food and basic necessities. In 1769, the Moncado Party of Spanish explorers discovered the Santa Clara Valley by accident while searching for Monterey Bay. The initial Spanish settlements three years later were missions, presidios, and pueblos, colonized "to save the souls of Indians and to secure the territory against foreign intrusion" (Santa Clara County 1994b:5P1). The mission lands were secularized in the early 1800s and large land holdings were granted to prominent Mexican families between 1810 and 1840. A few English-speaking settlers came to Santa Clara Valley beginning in 1813; however, the first big wave of American pioneers (the Bidwell Party and the Stevens-Townsend party) did not arrive until the 1840s. Many archaeological sites in Santa Clara County are connected with the history of the Ohlone tribes. Native American burial sites and sacred sites are delicate resources because of their spiritual importance to Native American tribes still in the area.

Population in the Santa Clara Valley remained steady between 1844 and 1851, when discovery of gold in 1848 drew incoming pioneers to other parts of the state. In the meantime, families such as the Murphys took advantage of statehood, which ended the restriction of land ownership to Mexican citizens only, and began purchasing the Ranchos of the Castro, Hernandez, and Peralta families. Soon, Martin Murphy, Sr., owned most of the land between present-day Sunnyvale and Gilroy.

In 1864, the Central Railroad (now Southern Pacific) completed a line between San Francisco and San Jose. Several owners of large homesteads (including Martin Murphy's heirs) began selling 5 to 10 acre parcels for small ranches. Weather and soil conditions were superb for fruit and viticulture, and agricultural enterprises in the Santa Clara Valley flourished well into the 20th century. The industrialization of the northern Santa Clara Valley took place in the 1970s and 1980s. Development pressures resulting from the influx of the microchip and other high-technology industries caused the urbanization of much of the rural and agricultural land in that area.

Areas of Santa Clara Valley containing archaeological resources include the Isabel Valley Archaeological District, the Santa Teresa Archaeological District, the Circles Within Circles Archaeological District (near Morgan Hill), the Uvas Creek-Little Arthur Creek Archaeological District, the Upper and Lower Bodfish Creek Archaeological Districts, the Leavesley Road Alamas Creek Archaeological Area, and the Pacheco Pass Creek Archaeological District. Ohlone village sites have been identified in Gilroy and Los Altos Hills, and shell mounds in Mountain View and Milpitas. Two other archaeological sites, the Coyote Creek Archaeological District (National Register reference number 79002084) near Gilroy Hot Springs and Poverty Flat Site (National Register reference number 72000254) in Henry Coe State Park, are listed on the National Register.

Historic resources in Santa Clara County from the Mexican era include the Vacqueros Adobe Site and Hernandez Adobe in Los Gatos; Arroyo de San Jose (Juan Batista de Anza's encampment) in Cupertino; the Juan Prado Mesa Adobe site in Los Altos Hills; Palo Alto; Jose Alviso Adobe and Jose Higuera Adobe in Milpitas; the Mission Corral Site, Berryessa/Fernandez Adobe, Adobe Indian Dwelling, and Mission Santa Clara de Assisi in Santa Clara; and Peralta Adobe, Roberto-Sunol Adobe, the De Quevedo Adobe Site, and the first site of Pueblo de San Jose

Guadalupe in San Jose. Historic sites are clustered in unincorporated areas in and around San Jose and other cities in Santa Clara County. There are also clusters in the Los Gatos area, in the Coyote area near Metcalf Road, the settlement known as old Gilroy, the madrone area, the New Almaden historic district, Stanford University, Mt. Hamilton Road, and around the communities of Gilroy, San Martin, and Morgan Hill. Many of the historic sites listed are residences, but facilities range from windmills and tankhouses in the southern area of the county to Lick Observatory on Mt. Hamilton. The Gilroy Hot Springs spa buildings, William E. Riker's "Holy City" in Los Gatos, and several mines and other sites representing the area's industrial history.

KNOWN CULTURAL RESOURCES

On November 27, 2019, a records search for the IPM Program Area with a 0.05 mile buffer was conducted at the Northwest Information Center (NWIC), at California State University, Sonoma campus in Rohnert Park. All Authority lands as of late 2019 were included in the records search; however, North Coyote Valley was acquired by the Authority after the records search, so the research did not include this new preserve. The following information was reviewed as part of the records search:

- ▶ NRHP and CRHR,
- ▶ California Office of Historic Preservation Historic Property Directory,
- ▶ California Inventory of Historic Resources (1976),
- ▶ California State Historic Landmarks (1996 and updates),
- ▶ California Points of Historical Interest (1992 and updates),
- ▶ Archaeological Determinations of Eligibility for Santa Clara, and
- ▶ Historical United States Geological Survey Topographical Quadrangles.

The records search found 16 recorded cultural resources within the IPM Program Area, and an additional 7 cultural resources within 0.05 mile of the IPM Program Area (NIC 2019). The resources include a mix from the prehistoric and historic periods and include both archaeological and built/architectural resources. The resources are identified and described in Table 3.6-1 below. Given the sensitivity of cultural resources and to prevent potential looting of sites, specific locational information is not disclosed.

Table 3.6-1 Cultural Resources Recorded Within and Adjacent to the IPM Program Area

Primary Number	Trinomial	Description
P-43-120	CA-SCL-106	Permanent habitation site
P-43-160	CA-SCL-148/H	Bedrock mortar and dump site
P-43-178	CA-SCL-167	Lithic scatter
P-43-179	CA-SCL-168	Lithic scatter
P-43-216	CA-SCL-205	Lithic scatter
P-43-219	CA-SCL-208	Lithic scatter
P-43-347	CA-SCL-341	Ceremonial site
P-43-350	CA-SCL-344H	Leavesley/Dexter Mountain Ranch
P-43-352	CA-SCL-346H	Matthew's Ranch
P-43-362	CA-SCL-356	Chert quarry
P-43-363	CA-SCL-357	Chert quarry
P-43-370	CA-SCL-364H	Cottle House
P-43-452	CA-SCL-451	Habitation site with bedrock mortars and groundstone
P-43-480	CA-SCL-479H	Homestead remains

Primary Number	Trinomial	Description
P-43-481	CA-SCL-480H	Concrete structure
P-43-637	CA-SCL-719/H	Bedrock mortars and quarry pits
P-43-1436	NA	Burial site
P-43-2019	NA	Haskin-Ridge Cabin
P-43-2207	NA	Alum Park Historic District
P-43-2860	NA	Ellis Ranch and House
P-43-2861	NA	Two houses at 4960-4980 Frazier Lake Road
P-43-2886	NA	Mining site
P-43-3567	NA	Domestic refuse scatter

Source: NIC 2019

TRIBAL CULTURAL RESOURCES

In September 2019, the Authority requested a records search of the NAHC's Sacred Lands File (SLF) and a list of Native American tribes traditionally affiliated with the IPM Program Area. On October 3, 2019 the NAHC provided a positive response to the SLF request for known cultural resources within the IPM Program Area. The NAHC's letter advised the Authority to contact the Amah Mutsun Tribal Band for more information. The NAHC also provided a list and contact information for six additional Native American tribes who may have knowledge of cultural resources within the IPM Program Area and may have interest in the IPM Program.

On October 14, 2019, the Authority sent notifications pursuant to AB 52 regarding the proposed IPM Program via certified mail to the seven Native American tribal contacts provided by the NAHC. Letters were sent to the following tribes: Amah Mutsun Tribal Band, Amah Mutsun Tribal Band of Mission San Juan Bautista, Indian Canyon Mutsun Band of Costanoan, Muwekma Ohlone Indian Tribe of the San Francisco Bay Area, North Valley Yokuts Tribe, and the Ohlone Indian Tribe. No responses were received from any of the tribes and AB 52 consultation is considered complete.

3.6.3 Impacts and Mitigation Measures

METHODOLOGY

The impact analysis for cultural resources is based on the findings and recommendations of the *Cultural Resources Literature Review for the Santa Clara Valley Open Space Authority Integrated Pest Management Program* (NIC 2019), the results of the NAHC's SLF search, and outreach pursuant to AB 52. The analysis is also informed by the provisions and requirements of federal, state, and local laws and regulations that apply to cultural resources, including what constitutes a significant impact under CEQA. In addition, according to PRC Section 15126.4(b)(1), if a project adheres to the Secretary Standards for the Treatment of Historic Properties, the project's impacts to a historic resource "will generally be considered mitigated below the level of a significance and thus is not significant."

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines, the IPM Program would result in a significant impact on cultural resources if it would:

- ▶ cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5 of the State CEQA Guidelines;

- ▶ cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the State CEQA Guidelines;
- ▶ disturb any human remains, including those interred outside of dedicated cemeteries; or
- ▶ cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe.

ISSUES NOT DISCUSSED FURTHER

No issues have been dismissed; all relevant impacts are discussed below.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.6-1: Potential to Cause a Substantial Adverse Change in the Significance of a Historic Resource

There are multiple previously recorded historic period resources within the IPM Program Area, and additional historic period resources may be present that have not been previously recorded. The IPM Program includes treatment activities that could alter existing buildings and structures within the IPM Program Area, such as through installing barriers to prevent pest entry and conducting building retrofits. Buildings and structures within the IPM Program receiving these treatments could be eligible for listing in the CRHR and therefore considered historic. Incorporating barriers or building retrofits to historic buildings or structures could change their historical significance. Therefore, this would be a **potentially significant** impact.

Based on the records search conducted for the IPM Program, there are multiple previously recorded historic period resources that occur within the IPM Program Area (NIC 2019), and there may be additional historic period resources in the IPM Program Area that have not been previously recorded. Additionally, the North Coyote Valley Open Space Preserve is a new property that was added to the Authority lands after the records search was conducted. This PEIR recognizes that this new preserve could also contain historic period resources, based on the evidence that resources could occur on other Authority lands within the region. These resources could be eligible for listing in the CRHR and therefore considered historic for the purposes of CEQA.

Manual, mechanical, and chemical IPM activities proposed under the IPM Program on natural lands, agricultural lands, recreational facilities, and vegetative rights-of-ways would not affect historic resources because historic resources are generally built resources, which would not be treated in these management categories. However, manual, mechanical, and chemical treatments would occur within and adjacent to buildings and structures to control pests. Treatment options for pest management related to buildings and structures involve prevention (e.g., keeping the inside of buildings clean and free of food), physical controls (e.g., filling cracks, pruning vegetation, using sticky or snap traps), habitat modifications (e.g., preventing entry through exclusion techniques and building retrofits, moving habitat/nests, destroying burrows), and chemical control (e.g., use of insecticides or termite fumigation). Of these techniques, habitat modifications and prevention techniques could modify structures and buildings by installing exclusion features or conducting building retrofits. Because there are previously recorded historic period buildings and structures within the IPM Program Area, and there may be additional Authority structures and buildings that have not been recorded and may also be eligible for CHRP listing, these activities could affect the significance of a historical resource. Therefore, the impact would be **potentially significant**.

Mitigation 3.6-1: Built-Environment Survey

Before implementation of IPM treatment activities that could alter historic-age buildings or structures (50 years or older), the structures shall be surveyed by a qualified architectural historian who meets the Secretary's Standards. The structure will be evaluated for eligibility for listing on the CRHR. If the structure is evaluated and deemed not eligible for listing on

the CRHR, IPM Program treatment activities may proceed. If structures are determined to be eligible for the CRHR, IPM Program activities will follow the Secretary's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, or the Secretary's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings. If the Authority is unable to implement the Secretary's Standards, then no building alterations to structures deemed eligible for listing on the CRHR shall occur.

Significance after Mitigation

Implementation of Mitigation Measure 3.6-1 would reduce the potential impacts to historic resources because it requires the evaluation of historic age structures and buildings before building alterations and implementation of professionally-accepted and legally-compliant procedures during IPM treatments to protect such resources if deemed historically significant. Therefore, this impact would be **less than significant after mitigation**.

Impact 3.6-2: Potential to Cause a Substantial Adverse Change in the Significance of Unique Archaeological Resources

Archaeological resources have been identified within the IPM Program Area, and there is a potential for unknown archaeological resources to occur within IPM Program Area preserves, any of which could be eligible for the CRHR and thus considered unique archaeological resources. Ground-disturbing manual and mechanical activities proposed under the IPM Program could result in discovery or damage of unique archaeological resources if present, as defined in State CEQA Guidelines Section 15064.5. This would be a **potentially significant** impact.

As shown in Table 3.6-1, there are multiple previously recorded archaeological resources within the IPM Program Area. Because of the incidence of known resources and the history of Native American activities in the vicinity of the IPM Program Area, it is possible that previously undiscovered archaeological resources may also be present in the IPM Program Area. The North Coyote Valley Open Space Preserve, which was acquired after the records search was conducted, may include archeological resources based on the presence of resources in the surrounding region. Any of these resources could be eligible for listing in the CRHR and therefore considered unique archaeological resources for the purposes of CEQA.

Ground disturbing manual and mechanical IPM treatment activities, such as hoeing, digging, cultivating, and discing, could uncover archaeological resources if present within treatment areas. While this would be unlikely in agricultural areas because of previous soil and ground disturbance, it is possible in previously undisturbed areas. Therefore, this would be a **potentially significant** impact.

Mitigation Measure 3.6-2a: Records Search and Survey Before Ground Disturbance for Archaeological Resources

An archaeological and historical resource record search will be conducted prior to implementing ground disturbing IPM treatments on added preserves for which a records search is not available. Once the exact locations of ground disturbing IPM treatment activities have been determined and before commencement, the cultural records shall be consulted and a qualified archaeologist shall conduct pedestrian surveys in areas where previously recorded archaeological resources have been identified. In the event of a surface find, materials will be evaluated and recorded on standard Department of Parks and Recreation primary record forms (DPR 523) in accordance with national and state criteria. A determination of eligibility/ineligibility for the CRHR will be recommended for any surface finds. A survey report shall be completed by the qualified archaeologist and will include recommendations for minimizing potential adverse effects to any archaeological resource finds. The Authority shall follow recommendations identified in the report, which may include activities such as subsurface testing, implementing a Worker Environmental Awareness Program, flagging and complete avoidance of sites, construction monitoring by a qualified archaeologist, or notification of the geographically and culturally affiliated Native American tribe to extend an invitation for construction monitoring. If no archaeological resources are found during the pedestrian survey, the proposed IPM activities may proceed.

Mitigation Measure 3.6-2b: Halt Ground Disturbance Upon Discovery of Subsurface Archaeological Features

In the event that any surface or subsurface archaeological features or deposits, including locally darkened soil ("midden") that could conceal cultural deposits are discovered, all ground-disturbing activity within 100 feet of the find shall be halted and a qualified professional archaeologist shall be retained to assess the significance of the find. If the archaeologist determines that the find does not meet the CRHR standards of significance for cultural resources, IPM activities may proceed. If the qualified archaeologist determines the archaeological material to be Native American in nature, the Authority shall contact the appropriate Native American tribe for their input on the preferred treatment of the find. If the archaeologist determines that further information is needed to evaluate significance, a data recovery plan shall be prepared. If the find is determined to be significant by the archaeologist (i.e., because it is determined to constitute a unique archaeological resource), the archaeologist shall develop, and the Authority shall implement, appropriate procedures to protect the integrity of the resource and ensure that no additional resources are affected. Procedures could include but would not necessarily be limited to preservation in place (which shall be the preferred manner of mitigating impacts to archaeological sites), archival research, subsurface testing, or contiguous block unit excavation and data recovery (when it is the only feasible mitigation, and pursuant to a data recovery plan).

Significance after Mitigation

Implementation of Mitigation Measure 3.6-2a and 3.6-2b would avoid impacts to archaeological resources by requiring archaeological records searches for added preserves, surveys for previously recorded archaeological resources before ground disturbing activities, and following recommendations of a qualified professional archeologist if unique archaeological resources are found, and halting ground disturbance in the event of a surface or subsurface find and implementing professionally-accepted and legally-compliant procedures regarding the treatment of archaeological resources. Therefore, the impact would be **less than significant after mitigation**.

Impact 3.6-3: Potential to Disturb Human Remains

The records search conducted for the IPM Program noted the presence of a burial site within the IPM Program Area and ground-disturbing IPM treatment activities could uncover previously unknown human remains. If human remains are discovered during IPM treatments, the Authority would comply with California Health and Safety Code Sections 7050.5 and 7052 and California Public Resources Code Section 5097 regarding the treatment of human remains. Therefore, the impact would be **less than significant**.

As shown in Table 3.6-1, the records search conducted for the IPM Program noted the presence of a burial site within the IPM Program Area. Because the location of grave sites and Native American remains can occur outside of identified cemeteries or burial sites, and the North Coyote Valley Open Space Preserve was not included in the records search, additional burial sites could be present within the IPM Program Area and could be uncovered by ground disturbing IPM activities.

California law recognizes the need to protect Native American human burials, skeletal remains, and items associated with Native American burials from vandalism and inadvertent destruction. The procedures for the treatment of Native American human remains are contained in California Health and Safety Code Sections 7050.5 and 7052 and California Public Resources Code Section 5097. Additionally, the Santa Clara County Ordinance Code includes Sections B6-18 through B6-20, which describe the protocol should any human remains be uncovered during IPM Program activities. These statutes require that, if human remains are discovered, potentially damaging ground-disturbing activities in the area of the remains shall be halted immediately, and the appropriate County coroner shall be notified immediately. If the remains are determined by the coroner to be Native American, the NAHC shall be notified within 24 hours and the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. Following the coroner's findings, the NAHC-designated MLD shall determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments, if present, are not disturbed. The responsibilities for acting upon notification of a discovery of Native American human remains are identified in PRC Section 5097.94. In addition, Impact 3.6-2 above addresses potential impacts to archaeological resources through requiring surveys in areas where previously recorded archaeological resources are present before ground disturbing IPM activities and following recommendations of a qualified archaeologist in the event of a find, which would include previously recorded burial

sites. Thus, the previously recorded burial site area would be surveyed before ground disturbing IPM activities to determine if human remains or other associated artifacts are present. If any human remains are found at the previously recorded burial site, or are uncovered during IPM Program implementation, the Authority would comply with California Health and Safety Code Sections 7050.5 and 7052 and California Public Resources Code Section 5097.

Because the Authority would comply with California Health and Safety Code Sections 7050.5 and 7052 and California Public Resources Code Section 5097, which require the implementation of procedures to avoid and minimize the disturbance of human remains and the appropriate treatment of any remains that are discovered, this impact would be **less than significant**.

Impact 3.6-4: Potential to Cause a Substantial Adverse Change in the Significance of a Tribal Cultural Resource

Although no Native American tribes requested consultation pursuant to AB 52, the SLF search conducted by the NAHC for the IPM Program returned positive results and Native American tribes have previously inhabited portions of the IPM Program Area; therefore, there is a potential for tribal cultural resources to be present in the IPM Program Area. Ground-disturbing manual and mechanical activities proposed under the IPM Program could result in the inadvertent discovery or damage of unknown tribal cultural resources, if present. This would be a **potentially significant** impact.

The Authority requested a records search of the NAHC's SLF and a list of Native American tribes traditionally affiliated with the IPM Program Area. The NAHC provided a positive response to the SLF request within the IPM Program Area and provided a list and contact information for seven Native American tribes who may have knowledge of cultural resources within the IPM Program Area and may have interest in the IPM Program. The Authority sent notifications pursuant to AB 52 regarding the proposed IPM Program via certified mail to the seven Native American tribal contacts provided by the NAHC. Letters were sent to the following tribes: Amah Mutsun Tribal Band, Amah Mutsun Tribal Band of Mission San Juan Bautista, Indian Canyon Mutsun Band of Costanoan, Muwekma Ohlone Indian Tribe of the San Francisco Bay Area, North Valley Yokuts Tribe, and the Ohlone Indian Tribe. No responses were received from any of the tribes and AB 52 compliance is complete. Although no responses were received from any Native American tribes pursuant to AB 52, because the NAHC's SLF search results were positive and the IPM Program Area is known to have included Native American use, there is a potential for tribal cultural resources to be present (e.g., Native American remains, archaeological artifacts). If tribal cultural resources are present in the IPM Program Area, they could be uncovered by ground disturbing IPM activities.

As described under Impact 3.6-3, the Authority would comply with California Health and Safety Code Sections 7050.5 and 7052 and California Public Resources Code Section 5097, which require the implementation of procedures to avoid and minimize the disturbance of human remains and the appropriate treatment of any remains determined to be Native American that are discovered, including notifying the NAHC within 24 hours and adhering to the NAHC's guidelines regarding the treatment and disposition of the remains. If the coroner's finding the humans remains to be Native American, the NAHC-designated MLD shall determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments, if present, are not disturbed. The responsibilities for acting upon notification of a discovery of Native American human remains are identified in PRC Section 5097.94.

Ground disturbing manual and mechanical IPM treatment activities, such as hoeing, digging, cultivating, and discing, could uncover archaeological resources if present within treatment areas, which may be considered tribal cultural resources. While this would be unlikely in agricultural areas because of previous soil and ground disturbance, it is possible in previously undisturbed areas. Therefore, this would be a **potentially significant** impact.

Mitigation Measures

Mitigation Measure 3.6-2a: Records Search and Survey Before Ground Disturbance for Archaeological Resources

Mitigation Measure 3.6-2b: Halt Ground Disturbance Upon Discovery of Subsurface Archaeological Features

Significance after Mitigation

Implementation of Mitigation Measures 3.6-2a and 3.6-2b would avoid impacts to tribal cultural resources by requiring recent records searches and archaeological resource surveys prior to ground disturbance and halting all ground-disturbing activity within 100 feet of any discovered surface or subsurface archaeological features or deposits, including locally darkened soil ("midden") that could conceal cultural deposits. A qualified professional archaeologist would be retained to assess the significance of the find. If the qualified archaeologist determines the archaeological material to be Native American in nature, the Authority would contact the appropriate Native American tribe for their input on the preferred treatment of the find. The Authority would adhere to all professionally-accepted and legally-compliant procedures regarding the treatment of any archaeological finds, including those that are potentially tribal cultural resources. Therefore, the impact would be **less than significant after mitigation**.

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3.7 RECREATION

This section summarizes the regulatory environment as it relates to recreational resources, describes existing recreational facilities in the vicinity of the IPM Program Area, and evaluates the effects of the implementation of the proposed IPM Program on existing recreational facilities in the vicinity of the IPM Program Area.

There were no comments received on the Notice of Preparation related to recreation.

3.7.1 Regulatory Setting

FEDERAL AND STATE

No federal or state regulations pertaining to recreation are applicable to the proposed IPM Program.

LOCAL

Santa Clara Valley Open Space Authority IPM Policy

The Authority has developed IPM policies with input from the Citizen's Advisory Committee and partner agencies and organization which informs the IPM Manual. The following policy is applicable to recreation as it relates to the IPM Program:

- ▶ **IPM Policy 1 Item 2:** Develop pest management strategies and priorities to manage pests and potential human interactions in recreational facilities to minimize conflict, ensure visitor safety and enjoyment, and protect the surrounding natural resources.

Santa Clara Valley Greenprint

The Authority's Santa Clara Valley Greenprint identifies goals, priorities, and strategies for land conservation to meet the Authority's vision for the valley. The following recreation related goals and strategies are applicable to the IPM Program.

GOAL: Protect and manage a network of open space lands that provide opportunities for nature-based recreation and education for all residents.

Strategy: Maintain Authority preserves and recreational facilities to a high standard to provide visitors with a safe and enjoyable experience and to encourage increased use.

City of Morgan Hill General Plan

The IPM Program Area includes the El Toro preserve which is located within the jurisdiction of the city of Morgan Hill. There are no polices in the City of Morgan Hill General Plan pertaining to recreation that are applicable to the IPM Program (City of Morgan Hill 2017).

City of San Jose General Plan

The IPM Program Area includes Coyote Ridge, Coyote Valley, Rancho Canada del Oro, Santa Teresa Foothills, and Sierra Vista preserves which are located within the city of San Jose. The Envision San Jose 2040 General Plan (City of San Jose 2018) identifies the following recreation related policy relevant to the IPM Program.

- ▶ **PR-6.5:** Design and maintain park and recreation facilities to minimize water, energy and chemical (e.g., pesticides and fertilizer) use. Incorporate native and/or drought-resistant vegetation and ground cover where appropriate.

3.7.2 Environmental Setting

REGIONAL RECREATIONAL LANDS AND FACILITIES

Regional recreational lands and facilities are provided to Santa Clara County by several federal, state, and local agencies, including the U.S. Fish and Wildlife Service (USFWS), California Department of Parks and Recreation (CDPR), Santa Clara County Regional Park System, Midpeninsula Regional Open Space District, as well as by the Authority. Regional recreation facilities typically cover large areas and accommodate activities such as hiking, bicycling, running, wildlife viewing, and camping. In addition to the regional facilities provided by the above agencies, cities within the county provide local neighborhood park and recreational facilities. City park facilities differ from regional park facilities and preserves because they are typically smaller and offer different types of recreation amenities, such as playgrounds, sports fields, and picnic areas. Because recreation amenities at city parks differ greatly from those offered at large parks and preserves, recreational users displaced from regional amenities, such as IPM Program Area preserves, would not be expected to use city parks in place of regional facilities; therefore, city parks in the vicinity of the IPM Program are not discussed. Each of the regional recreational providers and their associated facilities are described in more detail below and shown in Figure 3.7-1.

U.S. Fish and Wildlife Service

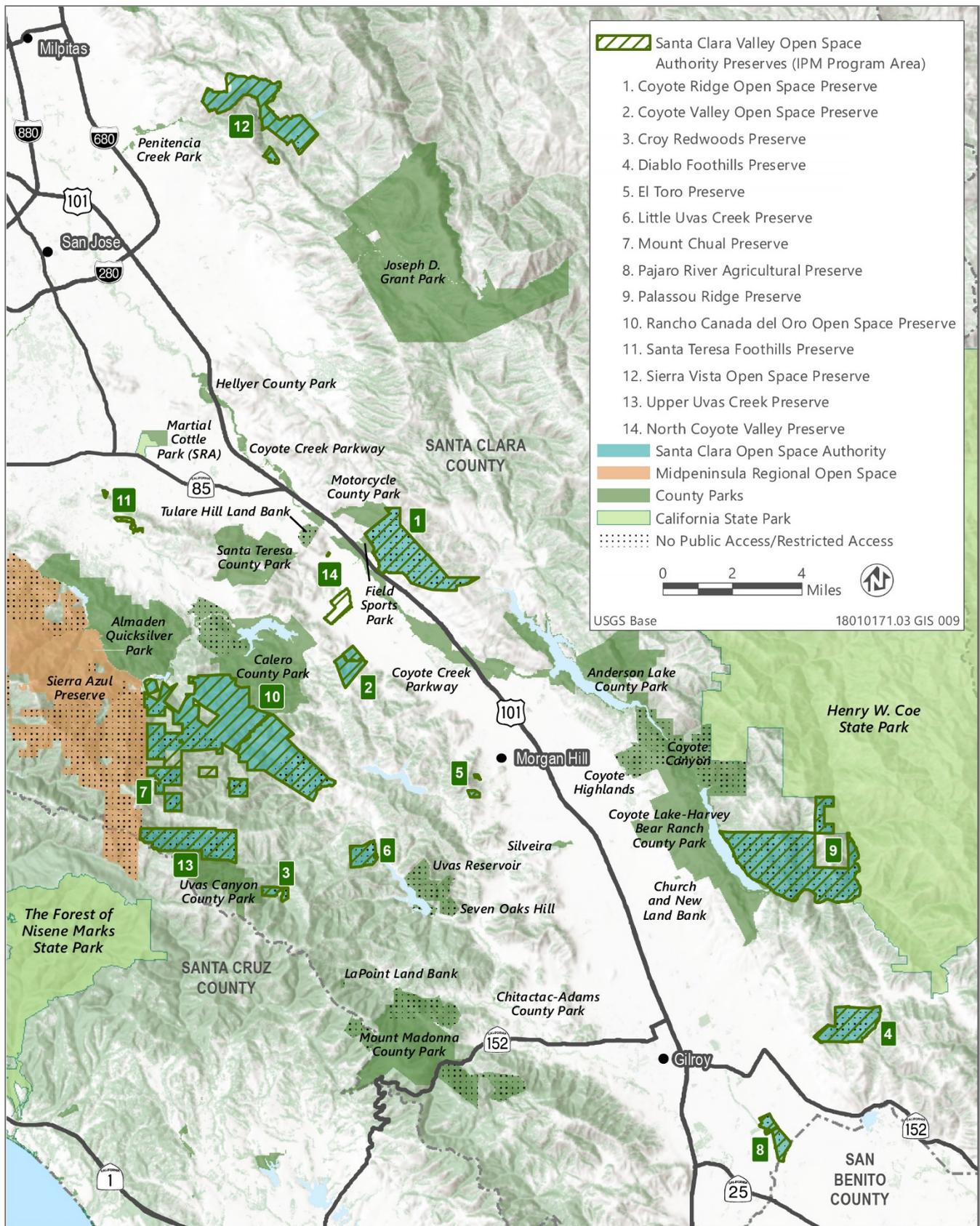
USFWS manages the San Francisco Bay National Wildlife Refuge, which consists of approximately 18,000 acres of wetlands, salt ponds, and mudflats along the perimeter of San Francisco Bay. Approximately 3,700 acres of the refuge are located within Santa Clara County and provide wildlife-oriented recreation to the region's residents (Santa Clara County 1994a, Santa Clara County 1994b). The wildlife refuge provides a variety of recreational uses including boating, fishing and hunting, hiking trails, wildlife viewing and photography. Several public access points are provided throughout the wildlife refuge. The Environmental Education Center located at 1751 Grand Boulevard in Alviso is approximately 11 miles north of downtown San Jose, or 8 miles northwest of the Authority's Sierra Vista Open Space Preserve, and provides access to trails, picnic areas and observational viewpoints (USFWS 2013).

California Department of Parks and Recreation

CDPR owns and maintains Henry W. Coe State Park, which is the largest state park in northern California with over 87,000 acres of wild open spaces, located in the Diablo Range east of Morgan Hill. The park is located directly east of the Authority's Palassou Ridge Preserve. The park is open year-round to the public and attracts hikers, mountain bikers, backpackers, equestrians, campers, picnickers, and photographers (CDPR 2019a). In addition, CDPR owns The Forest of Nisene Marks State Park located in Santa Cruz County in the Santa Cruz Mountains, approximately 2 miles south of the Authority's Upper Uvas Creek Preserve. The Forest of Nisene Marks State Park provides 30 miles of hiking and biking trails, as well as picnic areas and horseback riding (CDPR 2019b).

Santa Clara County Regional Park System

The Santa Clara County Parks and Recreation Department maintains 28 regional parks encompassing over 52,000 acres of land. Regional parks are generally more than 200 acres in size and provide opportunities for recreation to county residents (Santa Clara County 2018a). Regional parks include the Coyote Lake Harvey Bear Ranch, a 6,695-acre regional park, located near Henry W. Coe State Park, featuring a lake for fishing and boating; Joseph D. Grant County Park, a 10,882-acre park in the east foothills of the Santa Clara Valley, which features hiking, mountain biking, and equestrian trails, as well as picnic and camping areas; and Almaden Quicksilver County Park, a 4,163-acre park located in the Capitancillos Ridge, which provides over 37 miles of trails for hikers, equestrians, and bikers (Santa Clara County 2019). Several of these regional parks are located directly adjacent to or in the vicinity of the Authority's preserves, including Almaden Quicksilver County Park, Calero County Park, Uvas Canyon County Park, and Joseph D. Grant County Park.



Source: Data downloaded from Midpeninsula Regional District, CA State Parks, and SCVOSA in 2019 and CPAD in 2020

Figure 3.7-1 Regional Public Recreation

Midpeninsula Regional Open Space District

Midpeninsula Regional Open Space District has preserved nearly 65,000 acres of public land and manages 26 open space preserves in Santa Clara County. The District's preserves range from 55 to over 18,000 acres and include redwood, oak, and fir forests, chaparral-covered hillsides, riparian corridors, grasslands, and wetlands in the southwestern portion of the San Francisco Bay Area. The District provides public access, free of charge, 365 days a year, to 25 preserves where visitors find over 240 miles of trails (Midpeninsula Regional Open Space District 2019). As shown in Figure 3.7-1, the Sierra Azul preserve is adjacent to IPM Program Area preserves.

Santa Clara Valley Open Space Authority

As described in Chapter 2, "Program Description," the Authority protects over 25,000 acres of open space, natural areas, watersheds, and wildlife habitat and provides ecologically friendly outdoor recreation opportunities in Santa Clara County. Three preserves: Sierra Vista Open Space Preserve, Rancho Canada del Oro Open Space Preserve, and Coyote Valley Open Space Preserve, are open to the public, free of charge, 365 days a year and provide trails and picnic areas for recreation. These three preserves are included in the IPM Program Area (refer to Figure 3.7-1). Additional preserves in the IPM Program Area may be open to public access in the future.

RECREATIONAL USE AND NEEDS

According to the Santa Clara County Parks 2018 Strategic Plan, approximately 90 percent of the county's residents live within five miles of a county park and the county's regional park system is estimated to serve more than 3 million visitors annually (Santa Clara County 2018b:16). In addition, the County Parks Department served nearly 150,000 visitors through recreational programs and special events in 2016 (Santa Clara County 2018b:18). Primary uses include trail use (i.e., walking, hiking, and running), picnicking, camping, and bicycling. Consistent with state and national trends, Santa Clara County parks have also experienced steady demand for specialized recreation opportunities including off-leash dog parks, disc golf, kayaking, etc. (Santa Clara County 2018b:24).

3.7.3 Environmental Impacts and Mitigation Measures

METHODOLOGY

The evaluation of potential impacts to recreation from implementation of the IPM Program is based on a review of documents and data identifying existing recreation facilities and use in the region, including the Santa Clara County General Plan, Santa Clara County Parks 2018 Strategic Plan, and Countywide Trails Prioritization and Gaps Analysis, as well as aerial review of the IPM Program Area and its surroundings. The potential impacts to recreation that would result from IPM Program implementation are assessed by reviewing existing IPM Program Area preserve use and evaluating the potential for the IPM Program to create significant demand for and use of other recreational resources in the area.

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the CEQA Guidelines, the IPM Program would result in a significant impact to recreation resources if it would:

- ▶ 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, or
- ▶ include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

ISSUES NOT DISCUSSED FURTHER

The IPM Program would manage existing recreational lands and facilities owned by the Authority and would not require the construction or expansion of any recreational facilities. Therefore, the IPM Program would not result in construction of facilities that might have an adverse physical effect on the environment and this issue is not discussed further.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.7-1: Potential to Increase the Use of Existing Parks or Other Recreation Facilities Resulting in Physical Deterioration of the Facility

The IPM Program proposes to implement various pest control treatment activities on recreational facilities within the IPM Program Area. Mechanical and chemical treatment activities could result in temporary disruptions to recreational uses and access when conducted in public preserves within the IPM Program Area due to closures from heavy equipment use or use of herbicides. Recreational users of IPM Program Area preserves may elect to visit alternative regional recreational facilities during closures; however, disruptions to recreational uses would be temporary, lasting between one day and one week, and would typically be confined to one small area of a larger preserve. Therefore, when occurring in an IPM Program Area preserve that is open to the public, other areas of the preserve would likely remain open to recreation. Furthermore, only three of the 14 preserves in the IPM Program Area are open to the public. Because the IPM Program would be implemented across the preserves, the rate at which activities requiring public closures would be minimal. Furthermore, in the long-term, pest control treatment activities would likely benefit public recreation by reducing the presence of nuisance pests, such as poison oak and wasps. The IPM Program would not result in a substantial increase in the use of existing parks or recreation facilities and would not result in the physical deterioration of recreational facilities. Therefore, this impact would be **less than significant**.

The IPM Program proposes the use of manual, mechanical, and chemical pest control treatments within the IPM Program Area. As described in Section 2.7.1, "IPM Treatment Types," manual treatments include relatively low impact activities that would be implemented by hand, such as prevention and sanitation (e.g., picking up trash), digging and pulling weeds, habitat modifications (e.g., pond draining to remove American bullfrogs), and trapping animal pests. These activities would have little to no effect on existing recreation uses within the IPM Program Area because they would not be expected to disrupt recreation activities and would not likely require closures of public areas. Other IPM treatment activities proposed under the IPM Program would require the use of equipment such as chainsaws, pole saws, and tractor-operated mowers, as well as require the use of herbicides, within recreational facilities and vegetative rights-of-way. These areas include public trails, roads, parking lots, picnic areas, and structures used to store equipment and materials for IPM activities. While these treatments are being implemented within and near public areas, temporary closures may be required, which could result in the increased use of recreational facilities in the area. However, as described in Chapter 2, "Program Description," the Authority currently implements manual, mechanical, and chemical treatments for vegetation and animal pest management within recreational facilities and vegetative rights-of-way across Authority preserves. Implementation of the IPM Program would be reasonably expected to increase the number of simultaneous treatment activities by a few additional treatments over current levels within the IPM Program Area. This slight increase is minor and would be spread across the 14 preserves in the IPM Program Area; only three of which are currently open to the public. Therefore, the increase in closures of public recreational facilities as a result of the IPM Program would be minor. Furthermore, closures would be short-term and temporary, lasting one day to one week, and only occur in the area of a preserve where the treatment is occurring; other unaffected areas of a preserve would remain open. Therefore, implementation of the IPM Program would not be expected to substantially disrupt visitor access or use in such a way that significant use and associated deterioration of other recreational facilities would result.

As described in Chapter 2, "Program Description," the IPM Program would manage pests and potential human interactions in recreational facilities to minimize conflict, ensure visitor safety and enjoyment, and protect surrounding natural resources, as required by IPM Policy 1 and described in the IPM Manual (Appendix B). The IPM Program

would provide pest management on the Authority's recreation facilities and open space preserves within the IPM Program Area, which is anticipated to have long-term beneficial impacts to natural resources, which would also benefit the public. Therefore, the IPM Program would not increase the use of regional recreation facilities resulting in substantial physical deterioration and the impact is **less than significant**.

3.8 WILDFIRE

This section evaluates the effects of the proposed IPM Program on wildfire risk. The following analysis considers drivers of wildfire risk, and the whether the proposed IPM Program could potentially add to such risks, and if so, also expose people or structures to wildfire risk. This section also provides background and context on wildfire concepts, such as wildfire regime and wildfire behavior, and summarizes wildfire risks across the IPM Program Area.

There were no comments received on the Notice of Preparation related to wildfire.

3.8.1 Regulatory Setting

FEDERAL

No federal plans, policies, regulations, or laws related to wildfire are applicable to the proposed IPM Program.

STATE

California Department of Forestry and Fire Protection

The California Department of Forestry and Fire Protection (CAL FIRE) is dedicated to the fire protection and stewardship of over 31 million acres of the State Responsibility Area (SRA). CAL FIRE also provides emergency services in 36 of the state's 58 counties via contracts with local governments. Public Resource Code (PRC) Section 4291 gives CAL FIRE the authority to enforce 100 feet of defensible space around all buildings and structures on non-federal SRA lands, or non-federal forest-covered lands, brush-covered lands, grass-covered lands, or any land that is covered with flammable material. PRC Sections 4790 through 4799.04 provide the regulatory authority for CAL FIRE to administer the California Forest Improvement Program. PRC 4113 and 4125 give CAL FIRE the responsibility for preventing and extinguishing wildland fires in the SRA (PRC Sections 4113 and 4125). The PRC, beginning with Section 4427, includes fire safety statutes that restrict the use of equipment that may produce a spark, flame, or fire; require the use of spark arrestors on construction equipment with internal combustion engines; specify requirements for the safe use of gasoline-powered tools in fire hazard areas; and specify fire suppression equipment that must be provided on site for various types of work in fire-prone areas. These requirements could apply to certain IPM Program activities that would occur within the SRA.

Board of Forestry and Fire Protection

The Board of Forestry and Fire Protection (Board) is a Governor-appointed body within CAL FIRE. It is responsible for developing the general forest policy of the state, determining the guidance policies of CAL FIRE, and representing the state's interest in federal forestland in California. Together, the Board and CAL FIRE work to carry out the California Legislature's mandate to protect and enhance the state's unique forest and wildland resources.

The Board is charged with developing policy to protect all wildland forest resources in California that are not under federal jurisdiction. These resources include major commercial and non-commercial stands of timber, areas reserved for parks and recreation, woodlands, brush-range watersheds, and all private and state lands that contribute to California's forest resource wealth. This may include portions of Authority preserves in the IPM Program Area.

LOCAL

Santa Clara Valley Open Space Authority

The Authority is taking preventative steps to reduce the risk of wildfires and plans to develop a fuel management plan and policy. This plan will be a part of the Authority's vegetation management program and will incorporate resource management goals to enhance native plant diversity and reduce invasive plants. The Authority has

developed IPM policies as described in Chapter 2 of the IPM Manual (Appendix B); however, there are no policies related to wildfire. Therefore, there are no Authority plans or policies related to wildfire that are applicable to the proposed IPM Program.

Santa Clara County General Plan

There are no policies related to wildfire that are applicable to the IPM Program in the Santa Clara County General Plan (Santa Clara County 1994).

City of Morgan Hill General Plan

The Morgan Hill 2035 General Plan contains goals and policies related to minimizing threats and damage from fire hazards, including wildfire, in the Safety, Services, and Infrastructure element of the General Plan (City of Morgan Hill 2017). However, none of these goals and policies are applicable to the pest management activities proposed in the IPM Program.

City of San Jose General Plan

The Envision San Jose 2040 General Plan contains the following policies related to wildfire that are relevant to the IPM Program (City of San Jose 2018):

- ▶ **Policy MS-10.8:** Minimize vegetation removal required for fire prevention. Require alternatives to discing, such as mowing, to the extent feasible. Where vegetation removal is required for property maintenance purposes, encourage alternatives that limit the exposure of bare soil.
- ▶ **Policy EC-8.4:** Require use of defensible space vegetation management best practices to protect structures at and near the urban/wildland interface.

3.8.2 Environmental Setting

WILDFIRE REGIME

Wildfire regime describes the spatial and temporal patterns and ecosystem impacts of fire on the landscape. It is characterized by fire frequency, intensity, severity, and area burned. “Fire frequency” refers to the number of fires that occur in a given area over a given period of time; “fire intensity” refers to the speed at which fire travels and the heat that it produces; “fire severity” involves the extent to which ecosystems and existing conditions are affected or changed by a fire; and “area burned” is the size of the area burned by wildfire.

WILDFIRE BEHAVIOR AND CONTROLLING FACTORS

Wildfire behavior is a product of several variables that intermix to produce local and regional fire regimes that affect how, when, and where fires burn. Chief among these are climate, vegetation, topography, and human influence. It is important to understand how the variables that affect fire behavior produce fire risks.

Some of the variables that control wildfire behavior, namely, climate, vegetation, and human influence (discussed below), are rapidly changing in California and elsewhere—changes that are producing a fire regime that is increasingly susceptible to fire danger and gradually becoming more hazardous throughout the state. Warming, frequent droughts, and the legacy of past management policies, combined with the increase in development and expansion of the wildland-urban interface (WUI), have increased the risk of catastrophic damage during wildfires, which poses a substantial threat and cost to society. Recent trends have shown an increase in the number of ignitions, area burned, and impacts on ecosystems since 2007. Annually, since 2000, the average annual acres burned in California has more than doubled the annual average during the 1960s (Board and CAL FIRE 2018). This trend is expected to continue, and wildfire frequency and severity in California are anticipated to increase over the next century.

Human Influence on Wildfire

Human influence on wildfire is broad and can be substantial. It includes direct influences such as the ignition and suppression of fires, and indirect influence through climate change and alterations in land use patterns that support modified vegetative regimes and increased development in the WUI (refer to “Climate Change and Wildfire” below for more discussion on the indirect effect of climate change on wildfire).

Humans are responsible for most wildfire ignitions; however, natural events may also cause ignition (e.g., dry lightning). Once a wildfire has started, its spread and behavior become a function of fuel characteristics, terrain, and weather conditions (Syphard et al. 2008). Human-induced wildfire ignitions can change fire characteristics in two ways: (1) changing the distribution and density of ignitions, and (2) changing the seasonality of burning activity (Balch et al. 2017). A study of wildfires across the U.S. for the 20-year period between 1992 and 2012 showed that 82 percent of wildfires during that period were started by human causes (Balch et al. 2017), while in California specifically, humans account for starting approximately 95 percent of wildfires (Syphard et al. 2007). In California in 2017, more than half of all fires were caused by humans; including miscellaneous and undetermined causes, that number increases to 94 percent (CAL FIRE 2019).

Human ignitions include a multitude of sources, such as escapes from debris and brush-clearing fires, electrical equipment malfunctions, campfire escapes, smoking, fire play (e.g., fireworks), vehicles, and arson. Consequently, areas near human development, especially in the WUI or in areas near campgrounds, roads, or infrastructure, generate fires at a more frequent rate than very remote or urban areas (Syphard et al. 2007, Mann et al. 2016, Balch et al. 2017).

Climate Change and Wildfire

Wildfires are a significant threat in California, particularly in recent years as the landscape responds to climate change and decades of fire suppression. It is estimated that since 1985, more than 50 percent of the increase in the area burned by wildfire in the western U.S. is attributable to anthropogenic climate change (Abatzoglou and Williams 2016). As climate change persists, it will produce increasing temperatures and drier conditions that will generate abundant dry fuels. All wildfires (those initiated by both natural and human-made sources) tend to be larger under drier atmospheric conditions and when fed by drier fuel sources (Balch et al. 2017).

Additionally, climate change has led to exacerbation of wildfire conditions during a longer period of the year as the spring season has warmed—driving an earlier spring snowmelt, and as winter precipitation has overall decreased (Westerling et al. 2006). Further, wildfire activity is closely related to temperature and drought conditions, and in recent decades, increasing drought frequency and warming temperatures have led to an increase in wildfire activity (Westerling et al. 2006, Schoennagel et al. 2017). In particular, the western U.S., including California, has seen increases in wildfire activity in terms of area burned, number of large fires, and fire season length (Westerling et al. 2006, Abatzoglou and Williams 2016). These conditions have resulted in the largest, most destructive, and deadliest wildfires on record in California history, several of which occurred in the last five years. The 2018 Camp Fire is ranked as the deadliest and most destructive California wildfire and resulted in 85 known deaths and the loss of 18,804 structures (although the Camp Fire was the deadliest and most destructive fire in recorded history, it is not reflected in Table 3.8-1 because it is not one of the top ten in terms of size) (CAL FIRE 2020a; 2020b). The 2020 fire season resulted in five of the 10 largest fires in California history, including the August Complex Fire which burned 1,032,649 acres (Table 3.8-1). Prior to the 2020 fire season, the largest fire was the Mendocino Complex, which was half the size of the August Complex Fire and burned 459,123 acres (CAL FIRE 2020c).

In addition to the deadliness and destructiveness of the largest fires, the total number and total acreage of wildfires are also important. Highly destructive fires attract the most attention in press coverage and public awareness; however, from the perspective of wildfire risk reduction, it is also critical to understand and address the more frequent and more widespread smaller fires. Total burned acreage in California can be highly variable, from fewer than 150,000 acres in 2010 to an estimated 4.2 million acres in 2020 (CAL FIRE 2018a, 2018b, 2020c). Four in the last 12 years have exceeded 1.0 million acres (2008, 2017, 2018, and 2020) (CAL FIRE 2018a, 2018b, 2018c). In 2020, there were over 9,917 wildfires in the state during the calendar year (CAL FIRE 2020c).

Table 3.8-1 Ten Largest California Wildfires

#	Fire Name (cause)	Acres	Date	County
1	August Complex (under investigation)	1,032,649	August 2020	Mendocino, Humboldt, Trinity, Tehama, Glenn, Lake, Colusa
2	Mendocino Complex (under investigation)	459,123	July 2018	Colusa, Lake, Mendocino, Glenn
3	SCU Lightning Complex (under investigation)	396,624	August 2020	Stanislaus, Santa Clara, Alameda, Contra Costa, San Joaquin
4	Creek Fire (under investigation)	377,693	September 2020	Fresno, Madera
5	LNU Lightning Complex (under investigation)	363,220	August 2020	Sonoma, Lake, Napa, Yolo, Solano
6	North Complex (under investigation)	318,930	August 2020	Butte, Plumas, Yuba
7	Thomas (powerlines)	281,893	December 2017	Ventura, Santa Barbara
8	Cedar (human related)	273,246	October 2003	San Diego
9	Rush (lightning)	271,911 CA 43,666 NV	August 2012	Lassen
10	Rim (human related)	257,314	August 2013	Tuolumne

Note: CA = California; NV = Nevada

Source: CAL FIRE 2020c

Climate change will continue to produce conditions that facilitate a longer fire season, which, when coupled with human-caused changes in the seasonality of ignition sources, will produce more, longer, and bigger fires during more times of the year. According to California's *Fourth Climate Change Assessment, Statewide Summary Report* (OPR et al. 2018), if greenhouse gas emissions continue to rise, the frequency of extreme wildfires burning over 25,000 acres could increase by 50 percent by 2100 and the average area burned statewide could increase by 77 percent by the end of the century (OPR et al. 2018).

WILDFIRE ENVIRONMENT WITHIN SANTA CLARA COUNTY

Wildfire Risk

Some areas of Santa Clara County are considered "high or extreme fire hazard areas" due to a combination of factors including climatic factors, such as rainfall, humidity, and wind patterns; the amount of naturally-occurring "fuel" for fires, such as brush, dead trees, and grasses that ignite easily and burn hotly; steepness of slopes; and inaccessibility and lack of available water supplies for fire suppression (Santa Clara County 1994). CAL FIRE wildfire statistics for 2020 show that there was a total of six wildfires in the County, five of which were larger than 100 acres (CAL FIRE 2021). The 5,513-acre Crews Fire was the largest of the six wildfires in the County and burned through the Diablo Foothills Preserve in July 2020 (Midpen 2020). The large SCU Lightning Complex fire also crossed into part of northern Santa Clara County.

CAL FIRE has mapped fire hazard severity zones (FHSZs) for the entire state, including the IPM Program Area. FHSZ delineations are based on an evaluation of fuels, fire history, terrain, housing density, and occurrence of severe fire weather. They are intended to identify areas where urban conflagrations could result in catastrophic losses. FHSZs are categorized as: Moderate, High, and Very High, which are defined as follows (CAL FIRE 2007a):

- Moderate: Wildland areas supporting areas of typically low fire frequency and relatively modest fire behavior or developed/urbanized areas with a very high density of non-burnable surfaces including roadways, irrigated lawn/parks, and low total vegetation cover (greater than 30 percent) that is highly fragmented and low in flammability (e.g., irrigated, manicured, managed vegetation).

- ▶ High: Wildland areas that support medium to high hazard fire behavior and roughly average burn probabilities or developed/urban areas typically with moderate vegetation cover and more limited non-burnable cover. Vegetation cover typically ranges from 30 to 50 percent and is only partially fragmented.
- ▶ Very High: Wildland areas that support high to extreme fire behavior or developed/urban areas with high vegetation density (greater than 70 percent cover) and associated high fuel continuity.

The IPM Program Area contains Moderate, High, and Very High FHSZs (see Figure 3.8-1 and Table 3.8-2). As shown in Table 3.8-2, about half of the preserves in the IPM Program Area have portions designated as Very High FHSZs, although the overall total is approximately 2,954 acres, or 18 percent of the total 16,446-acre IPM Program Area.

Table 3.8-2 Fire Hazard Severity Zone Designations in the IPM Program Area

Preserve	Acres in Very High FHSZ	Acres in High FHSZ	Acres in Moderate FHSZ
Coyote Ridge Open Space Preserve	1	1,219	612
Coyote Valley Open Space Preserve	--	346	2
Croy Redwoods Preserve	116	--	--
Diablo Foothills Preserve	--	540	294
El Toro Preserve	39	--	--
Little Uvas Creek Preserve	164	112	--
Mount Chual Preserve	224	328	--
Pajaro River Agricultural Preserve ¹	--	--	--
Palassou Ridge Preserve	--	3,378	147
Rancho Canada del Oro Open Space Preserve	1,197	4,338	4
Santa Teresa Foothills Preserve	--	62	--
Sierra Vista Open Space Preserve	--	1,549	41
Upper Uvas Creek Preserve	1,214	2	--
North Coyote Valley Open Space Preserve	--	234	--
TOTALS	2,954	12,107	1,100

Notes: FHSZ = fire hazard severity zone. Acreages are rounded to the nearest whole number.

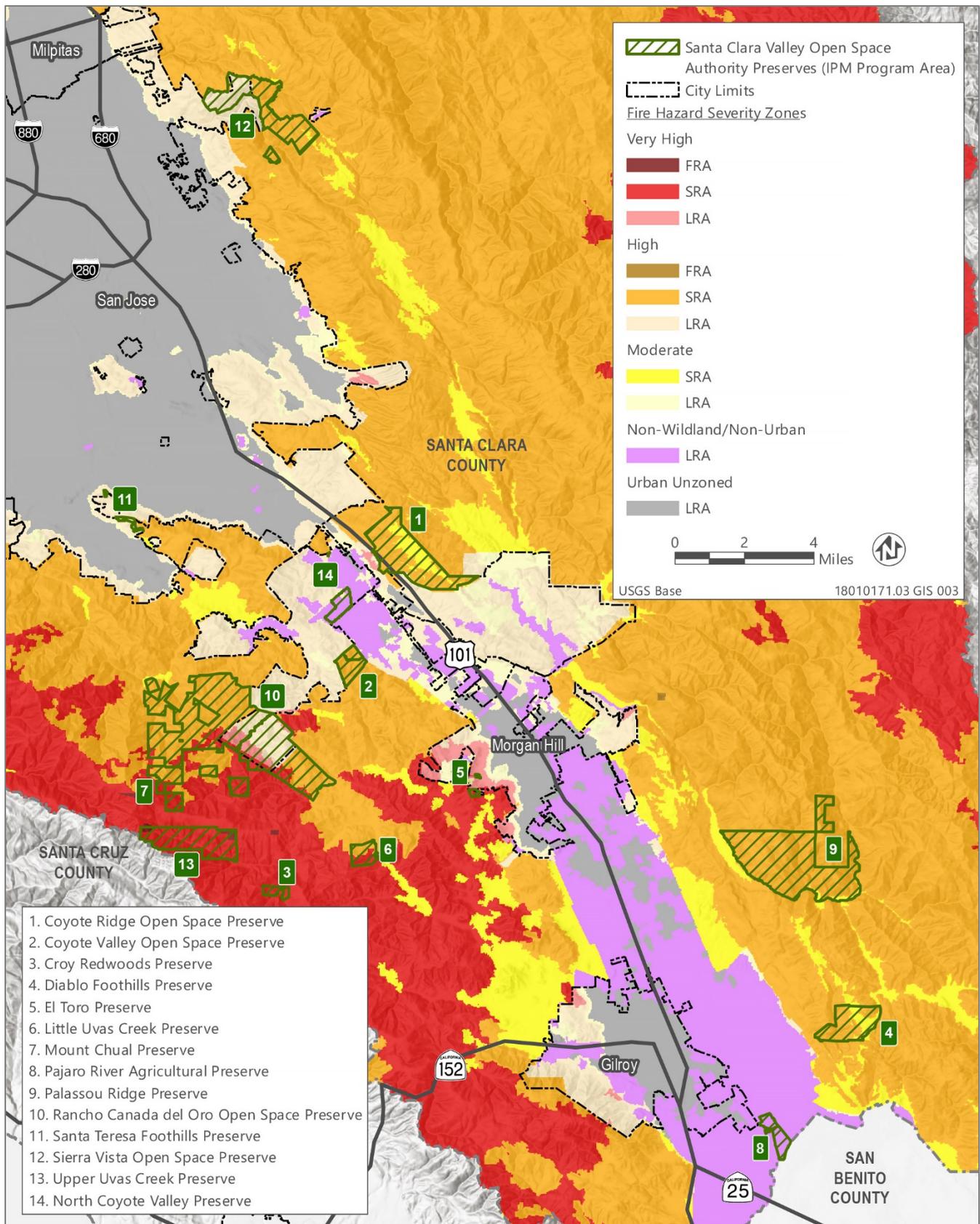
¹ Pajaro River Agricultural Preserve is designated as Non-Wildland/Non-Urban.

Source: CAL FIRE 2007b

Fire Protection Services

For purposes of wildland fire protection, California law classifies lands within the state into three categories for jurisdictional and financial responsibility: Federal Responsibility Areas (FRAs), wherein a federal government agency has jurisdiction for wildland fire protection on federally owned land; SRAs wherein CAL FIRE has jurisdiction for wildland fire protection on all lands within this zone whether public or private ownership; and Local Responsibility Area (LRAs), where neither the federal government nor the state have jurisdiction for wildland fire protection. The IPM Program Area includes lands within the FRA, SRA, and LRA. Thus, fire protection services within the IPM Program Area are distributed among the following fire response providers:

- ▶ **Santa Clara Unit of CALFIRE:** The Santa Clara Unit employs multiple programs for fire protection and wildfire risk reduction, including development of pre-fire management tactics, fire prevention, a defensible space inspection program for fire safe clearance around structures, information and education programs, and the Vegetation Management Program to reduce hazardous fuels and achieve natural resource management goals with within the SRA (Santa Clara County 2016).



Source: Data downloaded from CalFIRE in 2007b

Figure 3.8-1 Fire Hazard Severity Zones in the IPM Program Area

- ▶ **Santa Clara County Fire Department (SCCFD):** SCCFD has fire and life safety code responsibilities for the communities of Campbell, Cupertino, Los Altos, Los Altos Hills, Los Gatos, Monte Sereno, Saratoga, and all of unincorporated County area. SCCFD employs over 288 fire prevention, suppression, investigation, administration, and maintenance personnel; daily emergency response consists of 66 employees. SCCFD's suppression force is also augmented by approximately 30 volunteer firefighters. In addition, SCCFD implements a hazardous brush abatement program for hillside areas within its jurisdictional boundaries as part of the overall effort to reduce fire potential (SCCFD n.d.).
- ▶ **City of Morgan Hill Fire Department:** The Morgan Hill Fire Department has three fire stations within the city which provide first responder paramedic services, rescue response, fire response, fire prevention services, and other public safety services (City of Morgan Hill n.d.).
- ▶ **City of San Jose Fire Department:** The San Jose Fire Department is a high-volume, high-performance, "all-hazard" fire department and has 33 fire stations throughout the city (City of San Jose n.d.).

In addition, the Santa Clara County Fire Safe Council (SCCFSC) works with partners at the federal, state, and local level to provide education and project assistance for homeowners and landowners in communities that are vulnerable to wildfire. SCCFSC works with public agencies, other non-profits, businesses and private landowners to design and implement protective measures, such as developing shaded fuel breaks, to increase wildfire survivability (Santa Clara County 2016).

Post-Fire Debris Flows

Wildfire can significantly alter the hydrologic response of a watershed to the extent that even modest rainstorms can produce dangerous flash floods and debris flow. By reducing or destroying vegetative cover and altering soil characteristics, fires often result in conditions that can significantly increase runoff and erosion when winter rains begin to fall. These conditions may result in a debris flow (also referred to as mud flow), which is a slurry of water, sediment, and rock that converges in a stream channel. The occurrence of erosion, floods, and debris flows in burned areas is also dependent on precipitation intensity—storms with high intensity are more likely to initiate the processes described above and result in flood events. Additionally, easily eroded soils facilitate changes in hill slope conditions and increase the volume of runoff.

The U.S. Geological Survey (USGS) conducts post-fire debris flow hazard assessments for select fires in the Western U.S. The assessment for the Loma Fire, which occurred in Santa Clara County in 2016, shows that the likelihood of debris flow is high in many areas adjacent to and downslope of the burn area, especially in locations that are in ravines and canyons, and at the mouths of canyons (USGS 2016). Portions of Mount Chual Open Space Preserve and Upper Uvas Creek Open Space Preserve are within the burn area of the Loma Fire and may be susceptible to debris flows.

3.8.3 Environmental Impacts and Mitigation Measures

METHODOLOGY

The analysis of environmental impacts on wildfire risk focuses on the potential for new or increased risks associated with wildfire, including impairment of an emergency response plan, exposing people or structures to uncontrolled fire, and post-fire risks such as slope instability or landslides. Significance determinations account for the influence of relevant environmental protection measures (EPMs), which are incorporated into the IPM Program.

THRESHOLDS OF SIGNIFICANCE

Thresholds of significance are based on Appendix G of the State CEQA Guidelines. The IPM Program would result in a significant impact related to wildfire if it would:

- ▶ impair an adopted emergency response plan or emergency evacuation plan;

- ▶ due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire;
- ▶ require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment; or
- ▶ expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

ISSUES NOT DISCUSSED FURTHER

As discussed in Section 3.4, "Hazards and Hazardous Materials," implementation of the IPM Program would not alter potential emergency evacuation routes or impair an adopted emergency plan. This issue is not discussed further.

No new infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) are proposed under the IPM Program nor would they be required to support the IPM Program. Therefore, the IPM Program would not exacerbate fire risk or create temporary or ongoing impacts to the environment from the installation of infrastructure and this issue is not discussed further.

As discussed in Subsection 3.5.3 in Section 3.5, "Hydrology and Water Quality," no new impervious surfaces are proposed under the IPM Program; therefore, no substantial changes to runoff patterns in the IPM Program Area would occur. In addition, potentially ground disturbing activities such as mowing/cutting or discing and cultivating would not occur within or immediately adjacent to streams or other waterways that may act as drainages. Furthermore, the IPM Program does not include any new housing or other new land uses where the public would congregate and only one to two additional staff may be acquired to implement the IPM Program. Therefore, the potential to expose people to risks of flooding or landslides as a result of drainage changes in the IPM Program Area would not substantially change. This issue is not discussed further.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.8-1: Potential to Substantially Exacerbate Fire Risk and Expose People to Wildfire Pollutants or Uncontrolled Spread of a Wildfire

Pest management activities implemented under the IPM Program could result in accidental wildfire ignition risks from the use of vehicles and mechanical equipment in the IPM Program Area, and from the implementation of green flaming to treat vegetation on agricultural lands. However, several EPMs would be implemented to reduce the risk of wildfire ignition from treatment activities by properly maintaining all diesel- and gasoline-powered equipment (EPM HAZ-1), requiring spark arrestors (EPM HAZ-2), and prohibiting smoking in vegetated areas (EPM HAZ-3). Green flaming would be conducted on wet days when fire risk is low, and truck-mounted or backpack water tanks would be on-site during implementation. Furthermore, several fire departments are located in close proximity to the IPM Program Area and would be expected to adequately respond in the event of a wildfire to prevent substantial uncontrolled spread.

Implementation of the IPM Program is expected to increase the number of simultaneous IPM treatment activities by a few additional treatments over current levels within the IPM Program Area, which would not be a substantial increase in treatment activities and their associated wildfire ignition risks. Additionally, the IPM Program does not include any new housing or other new land uses where the public would congregate; there would be no new occupants that could be exposed to pollutant concentrations from a wildfire or the uncontrolled spread of as wildfire as a result of the IPM Program. In the long-term, the IPM Program is expected to reduce wildfire risk by removing invasive and nuisance vegetation. Therefore, with implementation of EPMs; availability of fire protection services in the IPM Program Area; and anticipated fire risk reduction outcomes of the IPM Program; the IPM Program would not substantially exacerbate fire risk and expose people to the uncontrolled spread of wildfire or wildfire related pollutants. This impact would be **less than significant**.

The IPM Program Area contains Moderate, High, and Very High FHSZs (see Figure 3.8-1 and Table 3.8-2) due to climatic factors, flammable vegetation, and areas with steep slopes. Pest management activities implemented under the IPM Program could result in accidental wildfire ignition risks from the use of vehicles and mechanical equipment in the IPM Program Area. These periodic pest management activities would introduce new temporary sources of ignition and fuel to the IPM Program Area in the form of worker vehicles and use of mechanical equipment. In addition, green flaming would be conducted to treat invasive plants on agricultural lands, which would require the use of small, hand-held propane torches.

As summarized in Chapter 2, "Program Description," several EPMs would be implemented to reduce the risk of wildfire ignition from pest management activities. The Authority would maintain all diesel- and gasoline-powered equipment in good working condition, free from leaks, and operating within normal parameters (EPM HAZ-1). All mechanized hand tools would have federal- or state-approved spark arrestors (EPM HAZ-2), which would prevent the emissions of sparks, a potential ignition source. Smoking, if permitted, would only be allowed in designated smoking areas with barren or cleared mineral soil within an area of at least 3 feet in diameter (EPM HAZ-3), which would minimize the risk of accidental wildfire ignition. In addition, pest management strategies for vegetation rights-of-way include grubbing to bare mineral dirt around utility poles and boxes to reduce the risk of fire where utilities are present are in the IPM Program Area. Green flaming would typically be conducted during light rains or on wet days when forest litter or grassland thatch is not likely to catch fire. Additional precautions are taken during implementation, including having truck-mounted or backpack water tanks on-site and conducting green flaming with more than one staff present. Furthermore, as discussed in Section 3.8.2, "Environmental Setting," extensive fire protection services are provided to the IPM Program Area in the event a wildfire occurs, including CAL FIRE, SCCFD, the City of Morgan Hill Fire Department, and the City of San Jose Fire Department. The IPM Program Area is near urban areas where these services are based. Therefore, if a wildfire were to occur, the response would likely be adequate to prevent substantial uncontrolled spread.

Implementation of the IPM Program would be reasonably expected to increase the number of simultaneous treatment activities by a few additional treatments over current levels within the IPM Program Area, which would not be a substantial increase in treatment activities and associated wildfire ignition risks. Additionally, the IPM Program does not include any new housing or other new land uses where the public would congregate; there would be no new occupants that could be exposed to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire as a result of the IPM Program. As described in Chapter 2, "Program Description," invasive plants, animals, and pathogens can create fire hazards within the IPM Program Area. If not well managed, invasive plants can present a fire risk by creating unnaturally high fuel levels. In addition to achieving other objectives of the IPM Program, invasive plant management techniques are anticipated to reduce fuel levels and associated wildfire risk within the IPM Program Area.

With the implementation of the EPMs, availability of fire protection services in the IPM Program Area, and the fire risk reduction benefits expected with implementation of the IPM Program, the IPM Program would not substantially exacerbate fire risk and expose people to the uncontrolled spread of wildfire or substantial pollutant concentrations. This impact would be **less than significant**.

Impact 3.8-2: Potential to Expose People or Structures to Substantial Risks Related to Post-Fire Landslides or Debris Flow

As discussed in Impact 3.8-1, the IPM Program would not substantially exacerbate fire risk, and thus would not result in a substantial increase in post-fire flooding and landslide due to an increase in wildfire risk itself. Ground disturbing manual and mechanical IPM activities have the potential to destabilize soils, which could increase the risk of post-fire landslides or debris flow if IPM treatments occur on steep slopes. However, manual and mechanical treatment activities would not typically occur on steep slopes and may be replaced with spraying of herbicides when treatment is deemed necessary, which would not result in ground disturbance and associated slope instability. Ground disturbing mechanical activities such as cultivation and discing would be used to prepare soils for crop production on agricultural lands, which are generally flat and not susceptible to landslides or debris flow. In addition, the IPM Program Area includes undeveloped lands where few buildings and structures are located, and it does not include new housing or any other growth-inducing features. Therefore, it would not place additional people or structures in the IPM Program Area. The IPM Program would not expose people or structures to substantial risks from post-fire landslides or flooding and this impact would be **less than significant**.

As described in Section 3.8.2, "Environmental Setting," wildfire can significantly alter the hydrologic response of a watershed by reducing vegetative cover and altering soil characteristics. As a result, subsequent rainstorms after wildfire can produce landslides and debris flows, which can impact people or structures that are located below an area that has burned. Areas of Santa Clara County that have been subject to recent wildfires, including lands within the IPM Program Area, are susceptible to potential debris flows.

As discussed in Impact 3.8-1, the IPM Program would not substantially exacerbate fire risk, and thus would not result in a substantial increase in post-fire flooding and landslide due to an increase in wildfire risk itself. However, manual and mechanical treatments proposed under the IPM Program would result in ground disturbing vegetation removal which could destabilize soils exacerbating post-fire landslide and debris flow hazards. These ground disturbing activities include manual treatments such as pulling and digging, and mechanical treatments such as cultivation and discing. However, as discussed in Chapter 2, "Program Description," manual and mechanical treatment activities would not typically occur on steep slopes for staff safety and may be replaced with spraying of herbicides when treatment is deemed necessary, which would not destabilize soils. Ground disturbing mechanical activities such as cultivation and discing would be used to prepare soils for crop production on agricultural lands, which are generally flat and not susceptible to landslides or debris flow. Therefore, the IPM Program would not destabilize soils on steep slopes such that substantial risks related to post fire landslides or debris flow would be created.

Furthermore, as described in Section 3.1.1, "Effects Found Not to Be Significant," the IPM Program does not include new housing nor would it result in substantial unplanned population growth, and accordingly, would not place additional people or structures in the IPM Program Area. Therefore, the IPM Program would not expose people or structures to substantial risks from post-fire landslides or flooding. This impact would be **less than significant**.

4 CUMULATIVE IMPACT ANALYSIS

4.1 INTRODUCTION TO THE CUMULATIVE ANALYSIS

This chapter presents an analysis of the potential cumulative impacts from implementation of the proposed Integrated Pest Management (IPM) Program. The potential environmental impacts of IPM Program implementation are considered together with other past, present, and probable future projects producing related impacts, as required by Section 15130 of the California Environmental Quality Act Guidelines (State CEQA Guidelines). The goal of such an exercise is twofold: first, to determine whether the overall long-term impacts of all related past, present, and probable future projects are cumulatively significant; and second, to determine whether the IPM Program's incremental contribution to any such cumulatively significant impacts would be "cumulatively considerable" (and therefore significant). (See State CEQA Guidelines Sections 15130[a]–[b], Section 15355[b], and Section 15064[h]; and *Communities for a Better Environment v. California Resources Agency* [2002] 103 Cal. App. 4th 98, 120).

Cumulative impacts are defined in State CEQA Guidelines Section 15355 as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." A cumulative impact occurs from "the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time" (State CEQA Guidelines Section 15355[b]).

In discussing cumulative impacts, the State CEQA Guidelines outline two approaches for characterizing the projects that occur in the vicinity of a proposed project:

- ▶ **Project list:** A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, projects outside the control of the agency (CEQA Guidelines Section 15130(b)(1)(A)).
- ▶ **Summary of projections:** A summary of projections contained in an adopted local, regional, or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect (CEQA Guidelines Section 15130(b)(1)(B)). This summary can be supplemented with additional information, including a regional modeling program.

This document uses both approaches, depending on which one is more appropriate for the resource area being analyzed. The approach selected depends on the resource area and the nature and character of expected impacts. The rationale for selecting an approach is provided in the cumulative impacts discussion for each resource area.

4.2 CUMULATIVE SETTING

4.2.1 Geographic Scope

A review of cumulative impacts is limited to Santa Clara County, the jurisdiction in which IPM Program activities would occur. The geographic area that could be affected by the IPM Program and is appropriate for a cumulative impact analysis varies depending on the environmental resource topic, as presented in Table 4-1.

Table 4-1 Geographic Scope of Cumulative Impacts

Resource Topic	Geographic Area
Aesthetics	Immediate vicinity
Biological Resources	Regional
Hazards and Hazardous Materials	Immediate vicinity
Hydrology and Water Quality	Regional watersheds
Cultural and Tribal Cultural Resources	Regional
Recreation	Regional
Wildfire	Regional and immediate vicinity

Source: Compiled by Ascent Environmental in 2019

4.2.2 Regional Planning Environment

The IPM Program does not include the construction of any new or expanded structures or built facilities, and physical activities would be limited to the pest management activities described in Chapter 2, "Program Description," within the IPM Program Area. Thus, related local, regional, and statewide plans, or related planning documents considered in the cumulative analysis include other pest management programs and the Santa Clara Valley Habitat Plan, implementation of which would affect similar resources as the IPM Program in similar ways. Although the IPM Program Area includes areas within the jurisdiction of Santa Clara County and the cities of San Jose and Morgan Hill, the general plans of these jurisdictions were not included in the cumulative analysis because general plans guide future development and growth, which would not occur under the IPM Program.

Related past, present, and reasonably foreseeable future plans considered for the IPM Program cumulative effects analysis include the following, each of which is described in the sections below.

- ▶ California Department of Food and Agriculture's (CDFA) Statewide Plant Pest Prevention and Management Program
- ▶ Santa Clara County Integrated Pest Management Program
- ▶ Midpeninsula Regional Open Space District Integrated Pest Management Program
- ▶ Santa Clara Valley Habitat Plan

STATEWIDE PEST PREVENTION AND MANAGEMENT PROGRAM

The overarching goal of the Statewide Pest Prevention and Management Program (Statewide Program) is to protect California's agriculture from damage caused by invasive plant pests. Proposed activities may occur anywhere that a pest is or may be found in agricultural or nursery settings, residential communities, border protection stations, and sometimes outside California for activities conducted by others besides CDFA, in response to restrictions on importation of potentially infested commodities and equipment from outside the state (CDFA 2014).

The Statewide Program encompasses a range of prevention, management, and regulatory activities. Pest management activities covered under the Statewide Program include physical, biological, and chemical management activities. Physical management activities include detection trapping and field work to identify the presence of pests. Biological management activities include the use of biological control agents and the sterile insect technique. Chemical management activities include the use of pesticides using various methods such as placed inside traps, spot applications, soil applications, fumigation, and foliar spray (CDFA 2014).

SANTA CLARA COUNTY INTEGRATED PEST MANAGEMENT PROGRAM

Santa Clara County's Integrated Pest Management Program is governed by County Ordinance Code Division B-28, "Integrated Pest Management and Pesticide Use." The ordinance governs and guides the control of pests on properties owned and managed by the county, such as regional parks, roads, airports, office complexes, hospitals, correctional facilities, and animal shelters. Common pests in these locations include ants, bedbugs, flies, roaches, wasps, termites, rodents, birds, weeds, and plant diseases. The ordinance does not apply to private property or other jurisdictions. Pest management methods include pest proofing, improved sanitation and housekeeping, trapping, mulching, hand-pulling, trimming, mowing, cattle and goat grazing, prescribed fire, and chemical treatment involving herbicides, fungicides, rodenticides, insecticides, and carbon dioxide injectors for ground squirrels and gophers (Santa Clara County 2019).

MIDPENINSULA REGIONAL OPEN SPACE DISTRICT INTEGRATED PEST MANAGEMENT PROGRAM

The Midpeninsula Regional Open Space District (District) Integrated Pest Management Program directs pest management on District properties, which cover 550 square miles, mostly in unincorporated portions of San Mateo, Santa Clara, and Santa Cruz counties. The Integrated Pest Management Program addresses pest management within five IPM management categories: buildings, recreational facilities, fuel management areas, rangelands and agricultural properties, and natural areas. Pest management activities consist of manual and mechanical control treatments (e.g., pulling, digging, mowing, green flaming) and chemical treatments using herbicides, fungicides, rodenticides, insecticides, and adjuvants/surfactants applied via baits, spot spraying, foliar spraying, cut-stump applications, and injecting (District 2014).

SANTA CLARA VALLEY HABITAT PLAN

The Santa Clara Valley Habitat Plan (Habitat Plan) provides a framework for promoting the protection and recovery of natural resources, including endangered species, while streamlining the permitting process for planned development, infrastructure, and maintenance activities. Rather than separately permitting and mitigating individual projects, the Plan evaluates natural-resource impacts and mitigation requirements comprehensively in a way that is more efficient and effective for at-risk species and their essential habitats. This approach allows the Habitat Plan Permittees to streamline mitigation requirements into one comprehensive program.

The Habitat Plan provides take authorization for 18 listed and non-listed species (i.e., covered species), and includes conservation measures to protect all 18 species under the Habitat Plan. As Permittees under the Habitat Plan, Santa Clara County, Santa Clara Valley Water District, Santa Clara Valley Transportation Authority, and the cities of Gilroy, Morgan Hill, and San Jose have endangered-species permits for the 18 covered species for activities and projects that are covered by the Habitat Plan. Covered activities in the Habitat Plan fall into seven general categories: urban development, in-stream capital projects, in-stream operations and maintenance, rural capital projects, rural operations and maintenance, rural development, and conservation strategy implementation (i.e., activities within the lands managed, enhanced, restored, and monitored to conserve the natural resources targeted by the Habitat Plan). The Habitat Plan provides a more efficient process for protecting natural resources by creating new habitat reserves that are larger in scale, more ecologically valuable, and easier to manage than individual mitigation sites created without a comprehensive Habitat Plan in place. The Habitat Plan covers 519,506 acres of land within Santa Clara County (Santa Clara County et. al. 2012a).

4.2.3 Related Projects

The Authority and other local agencies manage open space and park lands and conduct similar pest management and maintenance activities. Related local and regional projects considered in the cumulative analysis include control of invasive plants and animals; maintenance of existing buildings, roads, and recreational facilities; and restoration, which could affect the similar resources as the IPM Program in similar ways. Given the limited geographic scope of

potential cumulative impacts related to environmental resources that are evaluated using the project list approach (refer to Table 4-1), only projects within or immediately adjacent to the IPM Program Area are considered for the project list based cumulative impact analysis. The project list was compiled by querying the following agency websites for related past, ongoing, or planned projects:

- ▶ The Authority
- ▶ City of Morgan Hill Parks Department
- ▶ City of San Jose Parks Department
- ▶ Santa Clara County Parks Department
- ▶ Midpeninsula Regional Open Space District
- ▶ Peninsula Open Space Trust
- ▶ California State Parks

The related past, present, and reasonably foreseeable future projects that were identified and are considered in the cumulative impact analysis are presented in Table 4-2. Although no related parks department, Peninsula Open Space Trust, or California State Parks projects were identified within or immediately adjacent to the IPM Program Area, county and state parks are located adjacent to IPM Program Area preserves and past activities have influenced existing environmental conditions.

Table 4-2 Cumulative Project List for the IPM Program

Project Name	Agency	Project Description	Location
Facilities Maintenance and Improvement Project	Authority	Install electric vehicle chargers at Authority facilities. Anticipated in 2022.	Authority lands
Operations and Maintenance Activities	Authority	Continue to implement operations and maintenance activities. Activities include road and trail maintenance; vegetation management around structures, parking lots, and other paved surfaces; and vegetation management in orchards. Ongoing activity.	Authority lands
Grazing	Authority	Continue grazing management and monitoring activities on Authority-managed properties where grazing occurs. These activities include the installation of wildlife-friendly fencing and gates, spring enhancements, repair of waterlines, and replacement of water troughs and tanks. Ongoing activity.	Authority lands
Fuels Management	Authority	Develop a wildland fuels management policy and plan for identifying and prioritizing fuel reduction treatments to reduce wildfire risk and achieve natural resource goals across Authority preserves. Anticipated in 2021-2022.	Authority lands
Malech Road Public Access Project	Authority	Implement several new public access features on the 29-acre Malech Road project site including the construction of a parking lot, restroom facility, trailhead kiosk, and interpretive station. Anticipated in 2022-2023.	Coyote Ridge OSP
Coyote Ridge Open Space Preserve Phase 1 Project	Authority	Enhance public access by improving existing ranch roads, constructing a 1-mile segment of trail, and installing trail facilities including a creek crossing, rest areas, overlooks, and interpretive stations. Anticipated in 2022-2023.	Coyote Ridge OSP
Improved North Meadow Public Access Project	Authority	Upgrade Heart's Delight Trail to outdoor developed areas accessibility guidelines standards; add trail amenities improve equestrian parking lot surfacing. Anticipated in 2022-2023.	Coyote Valley OSP
North Coyote Valley Conservation Area Project	Authority and POST	Habitat restoration and public access improvements on 1,000 acres in North Coyote Valley. First phase anticipated in 2025.	North Coyote Valley

Project Name	Agency	Project Description	Location
Pajaro River Riparian Habitat Restoration Project	Authority	Enhance streambanks in the Pajaro River Agricultural Preserve by re-shaping banks and planting native riparian vegetation. Anticipated in 2021-2024.	Pajaro River Agricultural Preserve
Llagas Creek Bridge and Day Use Area Project	Authority	Install bridge over Llagas Creek; construct 1,000-foot trail and day-use area amenities in adjacent meadow. Anticipated in 2022.	Rancho Canada del Oro OSP
Blair Ranch Public Access Project	Authority	Enhance public access to the Blair Ranch area by constructing a staging area, trailhead kiosk, improving existing ranch roads, and construction of new trails. Anticipated in 2025.	Rancho Canada del Oro OSP
Blair Ranch Pond Enhancement	Authority	Enhance ponds for listed species. Anticipated in 2021.	Rancho Canada del Oro OSP
Additional Parking Project	Authority	Expand Sierra Road Staging Area to accommodate additional parking. Anticipated in 2024.	Sierra Vista OSP
Regional Trail Connections, Mount Umunhum-to-Sea-Trail	District	The Mount Umunhum-to-Sea-Trail would pass through the District's Sierra Azul OSP and run adjacent to the southern boundary of the Authority's Upper Uvas Creek OSP.	Upper Uvas Creek OSP

Note: Authority = Santa Clara Valley Open Space Authority; OSP = Open Space Preserve; District = Midpeninsula Regional Open Space.

Source: Compiled by Ascent Environmental in 2019 and 2021

4.3 ANALYSIS OF CUMULATIVE IMPACTS

The following sections contain a discussion of the cumulative effects anticipated from implementation of the IPM Program, together with related projects and plans in the cumulative project area, for each of the seven environmental issue areas evaluated in this PEIR. The analysis conforms with Section 15130(b) of the State CEQA Guidelines, which specifies that the "discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact."

When considered in relation to other reasonably foreseeable projects, cumulative impacts to some resources would be significant and more severe than those caused by the proposed IPM Program alone. For purposes of this PEIR, the IPM Program would result in a significant cumulative effect if:

- ▶ the cumulative effects of related projects (past, current, and probable future projects) are already significant and implementation of the IPM Program makes a considerable contribution to the effect. The standards used herein to determine a considerable contribution are that either the impact must be substantial or must exceed an established threshold of significance; or
- ▶ the cumulative effects of related projects (past, current, and probable future projects) are not significant but the incremental impact of implementing the IPM Program is substantial enough, when added to the cumulative effects of related projects, to result in a new cumulatively significant impact.

This cumulative analysis assumes that all mitigation measures identified in Chapter 3 to mitigate IPM Program impacts are adopted and implemented, as well as the environmental protection measures (EPMs) that have been incorporated into the IPM Program. The analysis herein analyzes whether, after implementation of IPM Program-specific mitigation measures and EPMs that minimize environmental effects, the residual impacts of the IPM Program would contribute considerably to existing/anticipated (without the IPM Program) cumulatively significant effects or, if the cumulative effects of related projects are not significant, would cause a cumulatively significant impact.

4.3.1 Resources with No Impacts

As discussed in Section 3.1.1, “Effects Found Not to be Significant,” the IPM Program would have no notable or significant effect to the following resources:

- ▶ Air quality and greenhouse gas emissions,
- ▶ Agricultural and forestry resources,
- ▶ Energy,
- ▶ Geology and soils,
- ▶ Land use and planning,
- ▶ Mineral resources,
- ▶ Noise,
- ▶ Population and Housing,
- ▶ Public services,
- ▶ Transportation, and
- ▶ Utilities and service systems.

Therefore, implementation of the IPM Program would not contribute to a cumulative impact related to these resource areas and are not discussed in this section.

4.3.2 Aesthetics

As discussed in Section 3.2.3, “Aesthetics, Issues Not Discussed Further,” although two officially designated state scenic highways are located in the vicinity of the IPM Program Area, they do not provide views of the IPM Program Area due to distance, intervening topography, and thick vegetation. Implementation of the IPM Program would not damage scenic resources within a state scenic highway, or substantially alter views from a state scenic highway. In addition, no substantial sources of new light or glare would occur with implementation of the IPM Program. Therefore, the IPM Program would not contribute to cumulative impacts related to these issues and these issues are not discussed further.

SCENIC VISTAS AND VISUAL CHARACTER/QUALITY

The list approach was used to evaluate potential cumulative impacts because aesthetic and visual resource impacts occur within a given viewshed and can be very localized, particularly in natural areas where trees and other vegetation can limit the extent of available views. The geographic extent for considering cumulative impacts to aesthetics includes all projects within the same viewshed (i.e., area visible from a viewer’s location) of the IPM Program Area. All projects listed in Table 4-2 are within the cumulative geographic scope of analysis because they are either within or adjacent to the IPM Program Area and thus would be within the same viewshed. The projects listed in Table 4-2 would involve the construction of new buildings and facilities, installation of new trails, vegetation removal, and the temporary presence of heavy mechanical equipment in open space lands, which could affect the visual character and quality of these areas. Thus, the cumulative scenario for visual resources in the region is considered significant.

As discussed in Impact 3.2-1, while the IPM Program could result in temporary effects on visual resources from the use of equipment in the IPM Program Area. However, its presence would be temporary, lasting up to one week at a treatment project site, and often would not be visible given that the majority of IPM Program Area preserves are closed to the public and would not dominate long range or panoramic views from a scenic vista. Furthermore, IPM activities would help re-establish native vegetation patterns and remove pests, likely improving visual quality of the preserves. Implementation of the IPM Program would not result in adverse effects on scenic vistas or substantially degrade the visual character or quality of the site and its surrounding areas. Therefore, the IPM Program’s incremental contribution to visual resource impacts **would not be cumulatively considerable**.

4.3.3 Biological Resources

As discussed in Section 3.3.3, “Biological Resources, Issues Not Discussed Further” implementation of the IPM Program would not modify or remove habitats to the extent that these habitats would be unsuitable for use for the movement by wildlife or use as nursery sites, nor does the IPM Program include the construction of any permanent barriers that could obstruct wildlife movement. Accordingly, there would be no substantial effects on the movement of resident or migratory species through the IPM Program Area or impediment of the use of native wildlife nursery sites. The IPM Program would not contribute to cumulative impacts related to these issues and these issues are not discussed further.

The geographic scope for the biological resources cumulative analysis is regional because biological resources occurring within the IPM Program Area are also typically found throughout open space lands in the region and impacts to special-status species and habitat within the IPM Program Area could have population-wide effects that extend beyond the IPM Program Area. Thus, the analysis for all potential cumulative biological resource impacts uses the projection approach.

SPECIAL-STATUS SPECIES

The Habitat Plan is intended to address the conservation needs of 18 covered species while allowing for specific covered activities to occur within the Plan Area, which encompasses the majority of Santa Clara County, including the IPM Program Area (Santa Clara County et. al 2012a). Because the Santa Clara Valley Habitat Plan Final Environmental Impact Report/Environmental Impact Statement (Habitat Plan EIR/EIS) evaluates the potential impacts of Habitat Plan implementation, which includes the IPM Program Area and most of the activities proposed in the IPM Program, it is used to determine if the cumulative scenario is significant for special-status species impacts. According to the Habitat Plan EIR/EIS, cumulative impacts were determined to be significant for the San Joaquin kitfox (*Vulpes macrotis mutica*) and the American badger (*Taxidea taxus*) due to regional loss of habitat, barriers to movement, pesticide toxicity and other factors (Santa Clara County et. al 2012b). Impacts to other special-status species were not determined to be cumulatively significant and because the IPM Program would not result in any significant and unavoidable impacts to any special-status species, it would not cause a cumulatively significant impact. In addition, this PEIR considers the Crotch bumble bee and monarch butterfly to be special-status species due to evidence of a substantial decline in populations, which are not covered in the Habitat Plan EIR/EIS. For these reasons, the cumulative scenario for San Joaquin kitfox, American badger, Crotch bumble bee, and monarch butterfly is considered significant.

As discussed in Impact 3.3-2, IPM Program activities have the potential to result in the incidental injury or mortality of San Joaquin kitfox, American badger, Crotch bumble bee, and monarch butterfly. Impacts to monarch butterflies as a result of the IPM Program were determined to be less than significant, and EPMs BIO-9 through BIO-11 further reduce and avoid impacts to monarch butterflies and their host plants by requiring the avoidance of overwintering sites if ever present, pre-treatment surveys for and avoidance of monarch butterfly host plants, and limitations regarding herbicide use within 15 feet of host plants. Mitigation Measure 3.3-2j requires the Authority to implement all applicable permit conditions required by the Habitat Plan if take coverage is obtained for San Joaquin kitfox, to consult with USFWS before application of pesticides within suitable habitat for San Joaquin kitfox to avoid impacts to the species, and if take coverage under the Habitat Plan is not obtained, the Authority would avoid impacts by surveying for dens and establishing a no-disturbance buffer if dens are found. If a natal den is discovered within 200 feet of a treatment site, all activity would cease, and the Authority would contact the USFWS and CDFW to consult about potential avoidance measures before activities could occur. Implementation of Mitigation Measure 3.3-2k would avoid impacts to American badgers by requiring pre-treatment surveys for potential American badger dens and prohibiting treatment activities within a 50-foot buffer around each den during the non-breeding season or within a 100-foot buffer around dens during the period when pups are potentially in the den (February 15 through July 1). Implementation of Mitigation Measure 3.3-2b would avoid impacts to Crotch bumble bees by requiring surveys for bumble bees and nest colonies prior to ground disturbing IPM treatments and flagging and avoidance of any identified colonies. It also requires that IPM treatments are conducted such that the entirety of floral resources are not removed during the period when colonies may be present, and untreated portions of occupied habitat are

retained adjacent to treatment areas to provide floral resources and refuge for Crotch bumble bees. Therefore, with implementation of these EPMs and mitigation measures, significant impacts to the San Joaquin kitfox, American Badger, Crotch bumble bee, and monarch butterfly would be avoided or substantially minimized such that the IPM Program's incremental contribution to the cumulative impact **would not be cumulatively considerable**.

RIPARIAN HABITAT AND OTHER SENSITIVE NATURAL COMMUNITIES

According to the Habitat Plan EIR/EIS, urbanization and associated infrastructure development in the region has resulted in and is projected to continue to result in impacts to and loss of riparian habitat (Santa Clara County et. al 2012b). The plans and programs listed in Section 4.2.2, "Regional Planning Environment," include activities that require vegetation removal, use of equipment and vehicles in natural areas, and pesticide use, which could damage riparian habitat or other sensitive natural communities if conducted in those areas. However, the plans and programs have been developed to improve habitat function through invasive species removal, which would likely result in habitat improvement within sensitive communities through the removal of invasive plants that compete with native vegetation for resources. Furthermore, none of the plans or programs would result in new development or urbanization that would permanently convert riparian habitat and other sensitive communities to urban uses. Thus, the cumulative scenario for riparian habitat and other sensitive natural communities is not considered significant. Similarly, the IPM Program would not permanently convert any sensitive natural communities to urban uses and is anticipated to improve habitat through invasive species removal. Therefore, the IPM Program would not create a cumulatively significant impact and there is **no cumulative impact**.

FEDERALLY PROTECTED WETLANDS AND WATERS

According to the Habitat Plan EIR/EIS, urbanization and associated infrastructure development in the region has resulted in and is projected to continue to result in impacts to federally protected wetlands and other waters (Santa Clara County et. al 2012b). The plans and programs listed in Section 4.2.2, "Regional Planning Environment," include manual, mechanical, and chemical activities that may be conducted near aquatic resources, which could result in runoff of sediment and pesticides to potentially protected wetlands and other waters. Thus, the cumulative scenario for federally protected wetland and other waters in the region is considered significant.

As discussed in Impact 3.3-4, treatments implemented under the IPM Program have the potential to result in runoff of sediment and pesticides to potentially protected wetlands and other waters. In addition, aquatic invasive animal control under the IPM Program would result in temporary fill and dewatering of potentially protected state and federal wetlands and other waters. However, the Authority would implement EPMs that prohibit broadcast spraying of herbicides within 50 feet of aquatic resources and ground disturbing mechanical treatments or any chemical treatments within 15 feet of any aquatic features (EPM BIO-1 and HAZ-5), require specific methods for safe handling of all pesticides to minimize accidental spills (EPM HAZ-4), and prohibit herbicide applications during high winds or precipitation to minimize the potential for herbicide drift or off-site runoff (EPM HAZ-5). These EPMs would minimize the potential for water quality effects from IPM treatments and no substantial degradation of any waters would occur. In addition, before conducting aquatic invasive animal control, the Authority would obtain all necessary permits, including a Clean Water Act Section 404 permit and Section 401 water quality certification. For permitted activities occurring in protected waters, the Authority would be required to meet a standard of no net loss of amount or function of wetlands or other waters. For these reasons, the IPM Program's incremental contribution to the cumulative wetlands impact **would not be cumulatively considerable**.

CONFLICTS WITH LOCAL POLICIES OR THE HABITAT PLAN

Portions of the IPM Program Area are within the City of San Jose, City of Morgan Hill, and Santa Clara County. Each jurisdictions' general plan and/or code of ordinances contains provisions for the protection of special-status species, sensitive communities and riparian habitats, waters, and trees. Projects occurring within these jurisdictions would be required to comply with these policies and ordinances protecting biological resources unless exceptions are granted

(e.g., hazard trees in Santa Clara County). Similarly, projects occurring within the Plan Area of the Habitat Plan would be required to assess and mitigate potential biological resource impacts or follow conservation measures from the Habitat Plan in the case of Habitat Plan Permittee projects. For these reasons, conflicts with local policies or the Habitat Plan do not occur such that a significant cumulative impact scenario would result. Similarly, the IPM Program would be consistent with applicable local policies for biological resource protection and would follow the applicable conservation measures of the Habitat Plan. Therefore, the IPM Program would not create cumulative impacts related to conflicts with local policies or habitat conservation plans and there is **no cumulative impact**.

4.3.4 Hazards and Hazardous Materials

As discussed in Section 3.4.3, "Hazards and Hazardous Materials, Issues Not Discussed Further," implementation of the IPM Program would not result in hazardous materials impacts to schools; result in airport-related safety hazards or excessive noise for people residing or working in the area; nor would it impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Therefore, the IPM Program would not contribute to cumulative impacts related to these issues and these issues are not discussed further. Cumulative impacts related to the exposure of people or structures to risks from wildland fires are addressed in Section 4.3.8, "Wildfire." Cumulative impacts to special-status species and watercourses from hazardous materials are addressed in Section 4.3.3, "Biological Resources" and Section 4.3.5, "Hydrology and Water Quality."

Hazard and hazardous materials impacts tend to be site-specific and highly localized. Therefore, the cumulative hazards and hazardous materials analysis uses the list approach. The geographic scope of hazards and hazardous materials cumulative impacts would be the area within 100 feet of the IPM Program Area, because there is low risk for a geographically large and dispersed hazardous material spill or release as a result of the IPM Program.

HAZARDOUS MATERIALS USE OR RELEASE

All projects listed in Table 4-2 are within the cumulative geographic scope for hazardous materials use or release. The types of construction, grazing and fuel management techniques, restoration activities, and maintenance projects that would occur may involve the routine use and storage of small quantities of common household hazardous materials such as fuels, oils, and lubricants, which would be used to operate mechanical equipment and vehicles. However, no large quantities of hazardous materials would be transported, used, or stored under any of the projects listed in Table 4-2 and no large hazardous materials spills or dispersal could occur. Furthermore, these projects would occur within open space areas and typically far from urban or residential areas where large quantities of people could be present. In addition, the use of these common household hazardous materials is subject to numerous laws, regulations, and policies that control the use of hazardous materials and protect public health and safety. The Authority and the District, which are the agencies responsible for implementing the projects listed in Table 4-2, would comply with laws, regulations, and policies relevant to the use, transport, storage, and disposal of hazardous materials to minimize potential health risks. The projects listed in Table 4-2 do not involve the use of pesticides; thus, there is no potential for the IPM Program's pesticide-related impacts to cumulatively combine with those projects. For these reasons, the cumulative scenario is not considered significant. Similarly, the IPM Program would use small quantities of common household hazardous materials according to applicable laws and regulations and no substantial risk related to transport, use, storage, or accidental spills would result. Pesticides under the IPM Program would be used as a last resort to control invasive plants and animals. EPMs would be implemented requiring that herbicides be applied according to the manufacturer's label directions and to avoid spills (EPM HAZ-4) and requiring specific weather parameters to minimize potential herbicide drift and off-site runoff (EPM HAZ-5). Therefore, the IPM Program would not create cumulative impacts related to hazardous materials use or accidental release and there is **no cumulative impact**.

DISTURBANCE TO KNOWN HAZARDOUS MATERIALS SITES

As discussed in Impact 3.4.2 in Section 3.4, "Hazards and Hazardous Materials," there is one known hazardous materials site with potential soil contamination in the IPM Program Area, the Wright Mine in Rancho Canada del Oro Open Space Preserve. Given its site-specific nature, and that no other known hazardous materials sites are located in the IPM Program Area, only ground disturbing activities occurring within the immediate vicinity of the known hazardous materials site are within the cumulative scope for disturbance to hazardous materials sites. The potential for other ground disturbing activities to occur in the immediate vicinity of the known hazardous materials site, which is in an undeveloped and vegetated portion of Rancho Canada del Oro Open Space Preserve, is low. There are no currently proposed ground-disturbing activities in this area. In addition, Mitigation Measure 3.4-2 would be implemented, which requires that the Authority flag the hazardous material site in the IPM Program Area prior to ground disturbing treatments in the vicinity of the site, and prohibits ground disturbing IPM activities within 100 feet of the site. Alternatively, if the Authority determines that there is no potential for contamination at the site in coordination with the Central Coast RWQCB, then no flagging would be necessary and ground disturbing treatments could occur. Because the hazardous waste site would be flagged and avoided, unless it is determined that no hazardous materials are present in soils, no exposure-related risks associated with the disturbance of a hazardous waste site to the public or environment would occur. Therefore, the IPM Program would not create cumulative impacts related to disturbance to known hazardous materials sites and there is **no cumulative impact**.

4.3.5 Hydrology and Water Quality

As discussed in Section 3.5.3, "Hydrology and Water Quality, Issues Not Discussed Further," implementation of the IPM Program would not interfere with groundwater recharge, decrease groundwater supplies through extraction, alter existing drainage patterns, and release significant pollutants as a result of seiche or tsunami inundation. Therefore, the IPM Program would not contribute to cumulative impacts related to these issues and these issues are not discussed further.

Given the geographic extent of the IPM Program Area and that water quality effects tend to be regional in nature and may span entire watersheds, the projection approach is used to evaluate all potential cumulative hydrology and water quality impacts.

WATER QUALITY

Several impaired water bodies exist within the Santa Clara County region, such as Anderson Reservoir, Coyote Reservoir, San Felipe Creek, Alamitos Creek, Guadalupe Creek, Calero Reservoir, Uvas Reservoir, and Los Gatos Creek (SWRCB 2017a; 2017b). The plans and programs listed in Section 4.2.2, "Regional Planning Environment," include activities that may require the use of heavy mechanical equipment, which could disturb soils and contribute to runoff into surface waters. In addition, these activities may involve the use of gasoline, diesel fuel, and oils to operate mechanical equipment and the use of pesticides to manage invasive species, which have the potential to leak or spill and enter nearby water bodies in runoff, some of which may be impaired. Thus, the cumulative scenario for water quality in the region is considered significant.

As discussed in Impacts 3.5-1 and 3.5-2, the IPM Program includes manual, mechanical, and chemical treatment activities that have the potential to affect water quality. Manual treatments involving weed mats could result in the introduction of inorganic materials to nearby water bodies. Mechanical treatments could disturb soils and have the potential to leak or spill gasoline, diesel fuel, and oils into nearby water bodies. Chemical treatments using herbicides have the potential to contaminate surface or groundwater quality if used in close proximity to surface waters, spilled, or used under the wrong conditions. Several EPMs would be implemented to minimize the potential impacts to water quality, including prohibiting broadcast spraying of herbicides within 50 feet of aquatic resources (unless the compound is specifically registered for aquatic use) and ground disturbing mechanical treatments or any chemical treatment within 15 feet of any aquatic feature (EPM BIO-1 and HAZ-5); requiring daily equipment checks for leaking equipment when in use and immediately removing any equipment found to be leaking (EPM HAZ-1); and requiring

that herbicides are applied according to the manufacturer's label directions and consistent with EPMs HAZ-4 and HAZ-5 which protect surface and groundwaters through measures to minimize herbicide drift and off-site runoff, and ensure proper storage, handling, and cleanup. Accordingly, the potential impacts to water quality from IPM Program implementation would be avoided and minimized and the incremental contribution to cumulative water quality impacts **would not be cumulatively considerable**.

FLOODING

As described in Section 3.5.2, "Environmental Setting," flood hazard areas within the county are located within the city of San Jose and in areas near existing creeks and streams. The plans and programs listed in Section 4.2.2, "Regional Planning Environment," include activities that would use mechanical equipment and pesticides. Gasoline, diesel fuel, and oils used to operate mechanical equipment have the potential to leak onto areas near creeks and streams when in use and pesticide treatment treatments could occur near creeks and streams and remain in the environment until they naturally degrade. During flood events, it is possible that inundation of areas near creeks and streams could result in the release of any pollutants that are present. The Santa Clara County General Plan indicates that there is only a one percent chance of a flood occurring each year that would be capable of creating substantial flooding along creeks (Santa Clara County 1994); therefore, the risk of a flood is low. Nonetheless, if a large flood were to occur, many pollutants would likely be released in the county and therefore, the cumulative scenario is considered significant.

As discussed in Impact 3.5-3, herbicides, pesticides, fuels, and other materials for proposed IPM activities would be stored at two field offices that are currently used to store these types of materials for existing IPM activities. Equipment would be inspected daily for leaks to prevent gasoline, diesel fuel, lubricating oils, or grease from entering the environment (EPM HAZ-1); and only pesticides registered for aquatic use would be broadcast sprayed within 50 feet of aquatic resources or within 100 feet of aquatic resources when precipitation is forecasted within 24 hours (EPM HAZ-5 and BIO-1). Additionally, no chemical or ground disturbing mechanical treatments would occur within 15 feet of any aquatic resource and all terrestrial treatment areas will be surveyed for the presence of aquatic resources (EPM BIO-1). Given implementation of EPMs, the low likelihood of flooding, and because the IPM Program would not result in a substantial increase in the presence of potential pollutants in the IPM Program Area, the IPM Program's incremental contribution to flood-related water quality impacts **would not be cumulatively considerable**.

4.3.6 Cultural and Tribal Cultural Resources

Because all significant cultural and tribal cultural resources are unique and nonrenewable members of finite classes, all adverse effects or negative impacts erode a dwindling resource base. The loss of any one archaeological or historic site affects all others in a region because these resources are best understood in the context of the entirety of the cultural system of which they are a part. Thus, the cumulative context for the cultural resources analysis uses the projection approach and considers the broad regional system of which the resources are a part.

HISTORIC RESOURCES

The plans and programs listed in Section 4.2.2, "Regional Planning Environment," could involve pest management activities in buildings and structures, which have the potential to alter historic resources. Given increasing development in the region and the potential for the plans and programs listed in Section 4.2.2 to affect historic resources, the cumulative scenario for historic resource impacts in the region would be considered significant.

As discussed in Impact 3.6-1, historic and prehistoric resources occur within and near the IPM Program Area, and additional historic resources may be present that have not yet been fully evaluated for historical significance. IPM treatment activities that are proposed for buildings and structures that involve implementing barriers to entry or building retrofits could adversely impact historical resources. However, implementation of Mitigation Measure 3.6-1 requires that before implementation of treatment activities that would be conducted within or near historic-age (50 years or older) buildings, the structures shall be surveyed by an architectural historian who meets the Secretary of the Interior's Standards. If structures are determined to be eligible for the California Register of Historic Resources, IPM

Program activities will follow the Secretary of the Interior's guidelines and standards for preserving, rehabilitating, restoring, and reconstructing historic buildings. Accordingly, potential impacts to historic resources from IPM Program implementation would be avoided such that historic resources would maintain their historical significance. Therefore, the IPM Program's incremental contribution to cumulative historic resource impacts **would not be cumulatively considerable**.

UNIQUE ARCHAEOLOGICAL RESOURCES

The plans and programs listed in Section 4.2.2, "Regional Planning Environment," could involve ground disturbing activities, which have the potential to affect archaeological resources, if present. Given increasing development in the region and the potential for the plans and programs listed in Section 4.2.2 to affect archaeological resources, the cumulative scenario for archaeological resource impacts in the region would be considered significant.

As discussed in Impact 3.6-2, ground-disturbing activities implemented under the IPM program could result in the discovery or damage of archaeological resources as defined in State CEQA Guidelines Section 15064.5. However, implementation of Mitigation Measures 3.6-2a and 3.6-2b require archaeological surveys to be conducted by a qualified archaeologist before ground-disturbing activities, halting of ground-disturbing activities if any prehistoric or historic-era subsurface archaeological resources are found, retaining a qualified archaeologist to assess the significance of the find, and implementing appropriate procedures to protect the integrity of the resource and ensure that no additional resources are affected. Thus, potential impacts to archaeological resources from IPM Program implementation would be avoided and minimized such that archaeological resources would maintain their integrity. Therefore, the IPM Program's incremental contribution to cumulative archaeological resource impacts **would not be cumulatively considerable**.

HUMAN REMAINS

California Health and Safety Code Sections 7050.5 and 7052 and California Public Resources Code Section 5097 protect Native American human burials, skeletal remains, and items associated with Native American burials from vandalism and inadvertent destruction. Additionally, the Santa Clara County Ordinance Code includes Sections B6-18 through B6-20, which describe the protocol should any human remains be uncovered during project activities. All projects within the state would be required to comply with state regulations and all projects within the County would also be required to comply with the County ordinance code. These regulations avoid or minimize the disturbance of human remains, and appropriately treat any remains that are discovered. Thus, a cumulative impact scenario does not exist for this impact. Similarly, the Authority would comply with California Health and Safety Code Sections 7050.5 and 7052 and California Public Resources Code Section 5097, which require the implementation of procedures to avoid and minimize the disturbance of human remains and the appropriate treatment any remains that are discovered. Therefore, the IPM Program would not create cumulative impacts related to the discovery of human remains and there is **no cumulative impact**.

TRIBAL CULTURAL RESOURCE

As described in Section 3.6.2, "Environmental Setting," the Native American Heritage Commission's (NAHC's) Sacred Lands File (SLF) search for the IPM Program returned positive results and Native American tribes have previously inhabited portions of the IPM Program Area. The plans and programs listed in Section 4.2.2, "Regional Planning Environment," could involve ground disturbing activities could result in the inadvertent discovery or damage of unknown tribal cultural resources, if present. Given increasing development in the region and the potential for the plans and programs listed in Section 4.2.2 to affect tribal cultural resources, the cumulative scenario for tribal cultural resources in the region would be considered significant.

As discussed in Impact 3.6-4, ground disturbing manual and mechanical IPM treatment activities, such as hoeing, digging, cultivating, and discing, could uncover archaeological resources if present within treatment areas, which may be considered tribal cultural resources. While this would be unlikely in agricultural areas because of previous soil and ground disturbance, it is possible in previously undisturbed areas. However, implementation of Mitigation Measure 3.6-2a and 3.6-2b would require archaeological records searches for newly acquired preserves and surveys in areas where known archaeological resources are present within treatment areas prior to ground disturbing treatments; and require all ground-disturbing activity within 100 feet of any surface or subsurface archaeological features or deposits, including locally darkened soil ("midden") that could conceal cultural deposits, be halted if discovered. A qualified professional archaeologist would be retained to assess the significance of any finds. If the qualified archaeologist determines the archaeological material to be Native American in nature, the Authority would contact the appropriate Native American tribe for their input on the preferred treatment of the find. Thus, potential impacts to tribal cultural resources from IPM Program implementation would be avoided and minimized such that tribal cultural resources would maintain their integrity. Therefore, the IPM Program's incremental contribution to cumulative archeological resource impacts **would not be cumulatively considerable**.

4.3.7 Recreation

As discussed in Section 3.7.3, "Recreation, Issues Not Discussed Further" the IPM Program would manage existing recreational lands and facilities owned by the Authority and would not require the construction or expansion of any recreational facilities, which could have an adverse physical effect on the environment. Therefore, the IPM Program would not contribute to cumulative impacts related to this issue and this issue is not discussed further.

DETERIORATION OF RECREATION FACILITIES

The projection approach was used to determine cumulative impacts related to the increased use of existing parks or other recreational facilities because potential impacts are regional in nature and would affect park resources outside of the immediate IPM Program Area. The plans and programs listed in Section 4.2.2, "Regional Planning Environment," would not be growth-inducing, and thus, would not be expected to generate increased demand for parks and recreational facilities. However, similar to the IPM Program, other pest management programs may require the use of heavy equipment and herbicides within public areas. Temporary closures of these public areas may be required for public safety, which could result in the displacement of visitors and increased use of other recreational facilities in the area. As described in Section 3.7.2, "Environmental Setting," regional recreational lands facilities are provided by several federal, state, and local agencies, including the U.S. Fish and Wildlife Service, California Department of Parks and Recreation, Santa Clara County Regional Park System, Midpeninsula Regional Open Space District, as well as by the Authority. Regional recreation facilities typically cover large areas and although temporary closures of certain park areas could occur, there would likely be others area of the same park available for public use or other regional facilities in the vicinity. In addition to the regional facilities provided by the above agencies, cities within the county provide local neighborhood park and recreational facilities. Given the site-specific and temporary nature of potential closures because of pest management activities and the availability of parks and recreational opportunities in the region, the cumulative scenario is not considered significant. Similarly, the IPM Program would result in minimal public closures, and in the long-term, pest control treatment activities would likely benefit public recreation by reducing the presence of nuisance pests, such as poison oak and wasps. Therefore, the IPM Program would not create cumulative impacts related to the deterioration of recreation facilities and there is **no cumulative impact**.

4.3.8 Wildfire

As discussed in Section 3.8.3, "Wildfire, Issues Not Discussed Further" the IPM Program would not alter potential emergency evacuation routes or impair an adopted emergency plan; would not result in new infrastructure that may exacerbate fire risk; and would not expose people or structures to downslope or downstream flooding or landslides

as a result of runoff or drainage changes. Therefore, the IPM Program would not contribute to cumulative impacts related to these issues and these issues are not discussed further.

The approach for analyzing the potential wildfire related cumulative effects of the IPM Program differs by topic, as further described below.

WILDFIRE RISK

Wildfire risk and behavior is a product of several variables, primarily weather, vegetation, topography, and human influences, which intermix to produce local and regional fire regimes that affect how, when, and where fires burn. Furthermore, although wildfire ignition is site-specific, it can spread and produce smoke far outside of the initial area where it starts. Thus, the geographic scope for evaluating fire risk and the exposure of people to wildfire pollutants or the uncontrolled spread of wildfire is regional and uses the projection approach.

As described in Section 3.8.2, "Wildfire Environment within Santa Clara County," some areas of Santa Clara County, including portions of the IPM Program Area, are considered "high or extreme fire hazard areas" due to a combination of factors including climatic factors, such as rainfall, humidity, and wind patterns; the amount of naturally-occurring "fuel" for fires, such as brush, dead trees, and grasses that ignite easily and burn hotly; steepness of slopes; and inaccessibility and lack of available water supplies for fire suppression (Santa Clara County 1994). Climate change has exacerbated wildfire conditions through increased temperatures and extreme weather conditions. Human influence is another major factor that affects wildfire risk and behavior: implementation of other pest management programs in the region, listed in Section 4.2.2, "Regional Planning Environment," will likely use internal combustion engines within wildlands, which have the potential to create sparks and subsequent fire. Thus, the cumulative scenario for wildfire risk in the region is considered significant.

As discussed in Impact 3.8-1, pest management activities implemented under the IPM Program could result in accidental wildfire ignition risks from the use of vehicles and mechanical equipment in the IPM Program Area, and from the implementation of green flaming to treat vegetation on agricultural lands. However, several EPMs would be implemented to reduce the risk of wildfire ignition from treatment activities by properly maintaining all diesel- and gasoline-powered equipment (EPM HAZ-1), requiring spark arrestors (EPM HAZ-2), and prohibiting smoking in vegetated areas (EPM HAZ-3). Additionally, the IPM Program does not include any new housing or other new land uses where the public would congregate; there would be no new occupants that could be exposed to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire as a result of the IPM Program. In the long-term, the IPM Program is expected to reduce wildfire risk by removing invasive and nuisance vegetation. Therefore, with implementation of EPMs; availability of fire protection services in the IPM Program Area; and anticipated fire risk reduction outcomes of the IPM Program; the IPM Program would not substantially exacerbate fire risk and expose people to the uncontrolled spread of wildfire or wildfire related pollutants. Therefore, the IPM Program's incremental contribution to exacerbating fire risk from implementation of pest management activities **would not be cumulatively considerable**.

POST-FIRE LANDSLIDE OR DEBRIS FLOW

The exposure of people or structures to significant risks due to downslope or downstream flooding or landslides as a result of post-fire slope instability is location specific and only projects within or immediately adjacent to the IPM Program Area could combine to result in cumulative impacts; thus, this impact uses the project list approach.

All projects listed in Table 4-2 are within the cumulative geographic scope of analysis for post-fire slope instability-related impacts because they are either within or adjacent to the IPM Program Area. The types of construction, grazing and fuel management activities, restoration, and maintenance projects may involve ground disturbing activities such as grading and vegetation removal on steep slopes which could destabilize soils and exacerbate post-fire landslide and debris flow hazards. While the majority of these projects are not anticipated to result in growth inducement, the Malech Road Public Access Project, Improved North Meadow Public Access Project, North Coyote Valley Conservation Area, and regional trail connections may result in new structures and additional visitors within or

adjacent to the IPM Program Area. Because there could be destabilizing activities occurring on steep slopes in the IPM Program Area and there is a slightly increased potential that people or structures would be exposed to risks related to post-fire landslides or debris flow, the cumulative scenario is considered significant.

As discussed in Impact 3.8-2, implementation of the IPM Program would not place additional people or structures in the IPM Program Area and would not result in a substantial increase in post-fire flooding and landslide due to an increase in wildfire risk itself. Ground disturbing manual and mechanical IPM activities have the potential to destabilize soils but would generally not occur on steep slopes and would be replaced with spraying of herbicides when treatment is deemed necessary. In addition, the more ground disturbing (and potentially destabilizing) mechanical activities would occur on agricultural lands; these lands are generally flat and not susceptible to landslides or debris flow. Therefore, the IPM Program's incremental contribution to post-fire landslides or debris flow risks **would not be cumulatively considerable.**

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5 ALTERNATIVES ANALYSIS

5.1 INTRODUCTION

The California Environmental Quality Act (CEQA) Guidelines (State CEQA Guidelines) Section 15126.6[a] requires an Environmental Impact Report (EIR) to “describe a range of reasonable alternatives to the project, ...[that] would feasibly attain most of the basic project objectives but would avoid or substantially lessen any of the significant effects, and evaluate the comparative merits of the alternatives.” The purpose of this alternatives analysis is to determine whether or not an alternative to the proposed IPM Program would feasibly reduce or eliminate significant impacts, while meeting most of the basic objectives of the proposed IPM Program.

The range of alternatives studied in an EIR is governed by the “rule of reason,” requiring evaluation of only those alternatives “necessary to permit a reasoned choice” (State CEQA Guidelines Section 15126.6[f]). Further, an agency “need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative” (State CEQA Guidelines Section 15126.6[f][3]). The analysis should focus on alternatives that are feasible, meaning that they may be accomplished in a successful manner within a reasonable period of time, taking economic, environmental, social, and technological factors into account. Alternatives that are remote or speculative or that do not feasibly meet most of the project objectives need not be discussed. Furthermore, the alternatives analyzed for a project should focus on reducing or avoiding significant environmental impacts associated with the project, as proposed.

The objectives of the proposed IPM Program are listed below. The evaluation of alternatives is conducted in the context of seeking to meet most of these objectives. Specific objectives of the IPM Program are to:

- ▶ develop and implement site-specific pest management strategies that are effective in controlling targeted pests while avoiding damage to natural resources, promoting visitor safety and enjoyment, and protecting human health;
- ▶ keep the interested public informed about treatment strategies, upcoming projects, and environmental and public health protection measures;
- ▶ inhibit the establishment of new invasive species on Authority preserves, such as new invasive plants in natural areas, rangelands, and agricultural properties;
- ▶ maintain an inventory of invasive species infestations, monitor treatment effectiveness, and incorporate relevant monitoring results into future treatment applications;
- ▶ implement an adaptive management framework to promote the long-term effectiveness of pest management activities; and
- ▶ develop and implement an IPM Manual to standardize pest management and IPM procedures.

5.2 SIGNIFICANT ENVIRONMENTAL IMPACTS OF THE IPM PROGRAM

The purpose of this section is to note the significant and potentially significant impacts to the environment that would occur with implementation of the proposed IPM Program, as described in Chapter 3 of this document. Potentially significant impacts were identified for biological resources (special-status wildlife), cultural and tribal cultural resources, and risk of exposure to contaminated soil. Implementation of mitigation measures identified in Chapter 3 would reduce these impacts to a less-than-significant level. See Chapter ES, “Executive Summary,” for a detailed summary of the impact analysis, conclusions, and mitigation measures.

5.3 ALTERNATIVES CONSIDERED BUT NOT EVALUATED FURTHER

State CEQA Guidelines Section 15126.6(c) provides that an EIR “should also identify any alternatives that were considered by the lead agency but rejected as infeasible during the scoping process and briefly explain the reasons underlying the lead agency’s determination. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts.” The following alternatives were considered, but were dismissed from further consideration as explained below.

5.3.1 No Pesticide Use Alternative

The Authority currently utilizes pesticides when chemical methods are necessary to meet a pest control objective. Under this alternative, the Authority would not use any pesticides to control pest populations in buildings and structures, recreational areas, agricultural lands, or natural lands. Instead, the Authority would only be permitted to implement manual and mechanical IPM activities to control pest populations. While this alternative would reduce potential environmental effects related to the use of pesticides (i.e., to special-status wildlife), it would also constrain the Authority’s response to pest populations and would likely prevent the Authority from successfully eradicating pests from a number of preserves included in the IPM Program Area. As a result, pest populations in these areas would continue to expand, thus creating even greater demands to respond to pest populations. Under this alternative, the rate at which pest populations would be reduced would likely be substantially slowed because only manual and mechanical treatment options could be applied.

This alternative would likely require substantially greater staff and mechanical equipment (e.g., chainsaws, mowers,) to implement successfully and, therefore, impacts related to noise, air emissions, and GHG emissions from staff, contractor, and volunteer commute trips and equipment use would likely be greater compared to the proposed IPM Program. Further, it may be financially infeasible for the Authority to dedicate funding to provide the increased numbers of staff and contractors required to implement this alternative. In addition, the Authority would be limited in pest eradication options for buildings and structures (leading to their deterioration or demolition) and would likely need to alter most buildings and structures to prevent pest entry. This could lead to greater costs, from potential alterations or demolition, and to a potentially significant impact on historic resources if the structure or building is historic.

The No Pesticide Use alternative would substantially limit the Authority’s ability to prevent the introduction of pest species in the IPM Program Area because of the slower response rates of manual and mechanical IPM activities. Thus, the Authority would not be as effective at reducing pest populations compared to the IPM Program and this would conflict with some of the objectives of the IPM Program. Overall, this alternative would reduce potential impacts related to the use of pesticides; however, it would likely result in greater environmental impacts related to noise, air quality, GHG emissions, and possibly historic resources, and it may be infeasible to implement. For these reasons, it was eliminated from further evaluation.

5.3.2 No Glyphosate Use Alternative

The Authority currently uses glyphosate-based herbicides when deemed appropriate to treat invasive vegetation. Given the increased public scrutiny over the use of glyphosate, the Authority considered removing glyphosate-based herbicides from the list of pesticides proposed for use in the IPM Program Area. However, the potentially significant biological resource impacts identified from the use of pesticides under the IPM Program (i.e., to special-status wildlife) are not specific only to glyphosate and would occur with use of many of the proposed chemicals, such as pyrethrin-based insecticides, and from spray applications of any of the proposed herbicides. Therefore, the removal of glyphosate-based products from the IPM Program would not avoid any significant environmental impacts and this alternative was eliminated from further evaluation.

5.4 ALTERNATIVES SELECTED FOR DETAILED ANALYSIS

Section 15126.6(e)(1) of the State CEQA Guidelines requires that the No Project Alternative be described and analyzed “to allow decision makers to compare the impacts of approving the project with the impacts of not approving the project.” The no project analysis is required to discuss “the existing conditions at the time the notice of preparation is published...as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services” (Section 15126.6[e][2]). This discussion compares the environmental effects of IPM activities that occur under existing conditions against the environmental effects which would occur if the IPM Program is approved and implemented.

Because the IPM Program is intended to comprehensively direct management of pests on Authority-owned open space preserves, the alternatives include variations in the IPM Program that would reduce certain environmental impacts. The alternatives are: a “Limited IPM Treatments on Natural Lands Alternative,” and a “No Alterations to Buildings Alternative.” These alternatives, as well as the No Project Alternative, are described below. Following each alternative description is a comparative evaluation of the environmental impacts associated with that alternative, in relation to implementation of the proposed IPM Program.

The following alternatives are evaluated in this PEIR.

- ▶ **Alternative 1: No Project Alternative** assumes the Authority would continue to implement manual, mechanical, and chemical treatments at the same rate and geographic coverage as occurs under existing conditions. Under the No Project Alternative, there would be no biological control treatments; there would be no increase in the rate or scale of IPM treatment activities; and there would be no increase in early detection/rapid response, mapping, and post treatment monitoring.
- ▶ **Alternative 2: Limited IPM Treatments on Natural Lands** would prohibit spraying of herbicides and invasive animal treatment activities, such as pond draining, egg addling, shooting, giggering, electroshocking, and trapping, on natural lands. Instead, only wicking and cut-stump application of herbicides would occur, and manual and mechanical treatments would be used to control invasive plants, including pulling, digging, scraping, cutting/mowing, weed whipping, brush cutting, girdling/frilling/drilling, and green flaming. IPM activities on recreational facilities, agricultural lands, and buildings and structures would be the same as those described under the IPM Program and would consist of manual, mechanical, and chemical treatments.
- ▶ **Alternative 3: No Alterations to Buildings** would prohibit all types of physical building and structure alterations to exclude pests, including building retrofits. The Authority would implement all other proposed IPM treatments for buildings and structures, including sanitation, pruning of vegetation, use of sticky or snap traps, habitat modifications, and pesticide use. IPM activities on recreational facilities, agricultural lands, and natural lands would be the same as those described under the IPM Program and would consist of manual, mechanical, and chemical treatments.

Further details on these alternatives, and an evaluation of the potential environmental effects of each relative to the proposed IPM Program, are provided below.

5.4.1 Alternative 1: No Project Alternative

The No Project Alternative assumes no approval of the IPM Manual and no implementation of the comprehensive IPM Program. The Authority would continue to implement manual, mechanical, and chemical IPM activities at the same rate and geographic extent as under existing conditions. While the Authority would continue to comply with existing regulatory requirements under the No Project Alternative, such as those related to the handling and use of pesticides, implementation of a comprehensive and consistent set of environmental protection measures (EPMs) and mitigation measures that are protective of the environment would not occur. In addition, under the No Project Alternative, there would be no formalized and coordinated adaptive management efforts, such as a ranking system for pest control projects, early detection and rapid response, and regional pest management research and monitoring, all of which would be reported and tracked through the annual IPM Program Report and Work Plan under the IPM Program.

AESTHETICS

Under the No Project Alternative, manual, mechanical, and chemical treatments would continue to occur across the Authority's preserves. The No Project Alternative includes the implementation of up to 20 simultaneous IPM treatment activities, each conducted by one to three Authority staff. Similar to the IPM Program, when large equipment is in use near public areas or in areas visible from nearby vistas, it would contrast with the natural aesthetic of the area and would temporarily degrade visual character and quality of views. In the long-term, IPM activities under the No Project Alternative may slightly alter the visual character of treatment sites by removing invasive plant species; however, the treated areas would remain in an undeveloped and natural state, thus views of the area would not change significantly and would likely improve with the re-establishment of native vegetation. With more IPM treatment activities occurring at any one time under the IPM Program, there could be a slight increase of equipment in use across the Authority's preserves that could be visible to the public; however, it would be similar to existing equipment and vehicles that are present throughout the IPM Program Area. In the long-term, with the increased pace and scale of IPM activities and early detection and rapid response proposed under the IPM Program, the visual character of the landscape in the IPM Program Area would likely return to native vegetative patterns with less nuisance plants and hazard trees more rapidly than under the No Project Alternative. Therefore, impacts to aesthetics associated with the No Project Alternative would be *Greater* than under the IPM Program.

BIOLOGICAL RESOURCES

Under the No Project Alternative, the Authority would continue to implement manual, mechanical, and chemical IPM activities at the same rate and geographic extent as under existing conditions. The Authority would continue to comply with existing regulatory requirements pertaining to biological resource protection. However, under this alternative, adherence to a comprehensive and consistent set of EPMs and mitigation measures that are protective of biological resources would not occur and some inconsistency in application of such measures could occur because of the lack of coordination of all pest management activities. Implementation of the IPM Program would incorporate several EPMs and mitigation measures to reduce impacts to sensitive biological resources, such as pretreatment surveys for and avoidance of certain special-status species, rare plants, and aquatic habitat, which would be incorporated into the mitigation monitoring and reporting program (MMRP) for the IPM Program to track and verify implementation of these measures. In addition, the IPM Program includes increased efforts in early detection and rapid response, monitoring treatment success, annual reporting of results, and adaptive management. Over time, these activities would likely improve the efficacy of the IPM Program and minimize the need for more potentially biologically harmful IPM treatment activities, such as the use of pesticides. Additionally, the increase of pest management activities under the IPM Program would result in a long-term benefit to special-status plant and wildlife species that occur in the IPM Program Area by removing invasive animals that may compete with special-status wildlife species and invasive plants that may reduce habitat suitability. The No Project Alternative would involve slightly fewer simultaneous IPM treatments because there would not be improvements in overall adaptive management, nor would there be a required set of EPMs or mitigation measures documented and tracked in the MMRP, and the long-term benefits to special-status species would occur at a slower rate. Therefore, impacts on biological resources would be *Greater* under the No Project Alternative than with the IPM Program.

HAZARDS AND HAZARDOUS MATERIALS

Under the No Project Alternative, the Authority would continue to implement manual, mechanical, and chemical IPM activities at the same rate and geographic extent as under existing conditions. Equipment and materials used for IPM activities (e.g., mowers, fuels, herbicides) would continue to be stored at the Authority's main office and two field offices located in the Rancho Canada del Oro Preserve and Sierra Vista Preserve. The Authority would continue to comply with existing regulatory requirements pertaining to hazardous material use, transport, and handling, including pesticides. However, under this alternative, adherence to a comprehensive and consistent set of EPMs that are aimed at minimizing potential impacts from hazardous materials as a result of pesticide and equipment use would not occur. Implementation of the IPM Program would incorporate several EPMs to reduce impacts related to the use of hazardous

materials, such as inspecting equipment for leaks, specific safety measures for handling and applying pesticides, and notifying the public of pesticide use in public areas. These EPMs would be incorporated into the MMRP for the IPM Program to track and verify implementation. In addition, the IPM Program includes increased efforts in early detection and rapid response, monitoring treatment success, annual reporting of results, and adaptive management. Over time, these activities would likely improve the efficacy of the IPM Program and minimize the need for more potentially harmful IPM treatment activities, such as the use of pesticides. Although the No Project Alternative would involve slightly fewer simultaneous IPM treatments, because there would not be improvements in overall adaptive management, nor would there be a required set of EPMs documented and tracked in the MMRP, impacts related to hazardous materials and wastes would be *Greater* under the No Project Alternative than with the IPM Program.

HYDROLOGY AND WATER QUALITY

Under the No Project Alternative, the Authority would continue to implement manual, mechanical, and chemical IPM activities at the same rate and geographic extent as under existing conditions. The Authority would continue to comply with existing regulatory requirements pertaining to water quality protection. However, under this alternative, adherence to a comprehensive and consistent set of EPMs that are aimed at minimizing potential water quality impacts as a result of pesticide and equipment use would not occur. Implementation of the IPM Program would incorporate several EPMs to reduce potential water quality impacts related to the use of hazardous materials, such as inspecting equipment for leaks and specific measures for handling and applying pesticides, including prohibiting the use of herbicides within 50 feet of surface waters and when precipitation is imminent. These EPMs would be incorporated into the MMRP for the IPM Program to track and verify implementation. In addition, the IPM Program includes increased efforts in early detection and rapid response, monitoring treatment success, annual reporting of results, and adaptive management. Over time, these activities would likely improve the efficacy of the IPM Program and minimize the need for more harmful IPM treatment activities that can adversely affect water quality, such as the use of pesticides. Although the No Project Alternative would involve slightly fewer simultaneous IPM treatments, because there would not be improvements in overall adaptive management, nor would there be a required set of EPMs documented and tracked in the MMRP, impacts related to hydrology and water quality would be *Greater* under the No Project Alternative than with the IPM Program.

CULTURAL AND TRIBAL CULTURAL RESOURCES

The No Project Alternative includes the implementation of up to 20 simultaneous IPM treatment activities, which include ground disturbing activities such as digging, hoeing, discing, and cultivating. These types of ground disturbing activities have the potential to disturb cultural and tribal cultural resources, including buried archaeological artifacts and human remains. The Authority would continue to comply with existing regulatory requirements pertaining to cultural and tribal cultural resources, if encountered. The IPM Program includes the same activities that occur under the No Project Alternative; however, they would be expanded in scope and geographic extent. With an increase of IPM treatment projects occurring simultaneously under the IPM Program, there would be slightly more ground disturbing IPM activities occurring that have the potential to disturb cultural resources. However, implementation of the IPM Program would incorporate mitigation measures to reduce impacts to cultural and tribal cultural resources, such as surveying historic age buildings and structures before conducting any alterations, requiring that a qualified professional archeologist conduct pedestrian surveys for previously recorded archaeological resources before ground disturbing activities, and following professionally developed and accepted measures to avoid and minimize impacts to cultural resources if present in treatment areas. These mitigation measures would be incorporated into the MMRP for the IPM Program to track and verify implementation. Therefore, impacts to cultural and tribal cultural resources associated with the No Project Alternative would be *Greater* than under the IPM Program.

RECREATION

Under the No Project Alternative, the Authority would continue to implement manual, mechanical, and chemical IPM activities at the same rate and geographic extent as under existing conditions. Certain mechanical and chemical treatment activities result in temporary disruptions to recreational uses and access when conducted within or adjacent to publicly used areas of preserves. These disruptions primarily result from temporary closures during heavy equipment use or use of herbicides along public trails. The IPM Program includes the same activities that occur under the No Project Alternative; however, they would be expanded in scope and geographic extent. With an increase of IPM treatment projects occurring simultaneously under the IPM Program, there would be slightly more IPM activities occurring that could result in temporary closures of public areas. Therefore, impacts to recreational resources associated with the No Project Alternative would be *Less* than under the IPM Program.

WILDFIRE

Under the No Project Alternative, the Authority would continue to implement manual, mechanical, and chemical IPM activities at the same rate and geographic extent as under existing conditions, which requires the use of various types of equipment. Use of mechanical equipment, vehicles, and green flaming in vegetated areas has the potential to result in accidental wildfire due to sparks or other equipment malfunctions. In the long-term, if not well managed, invasive plants can present a fire risk by creating unnaturally high fuel levels. Invasive plant management conducted by the Authority under the No Project Alternative would continue to reduce fuel levels and associated wildfire risk. However, under the No Project Alternative, adherence to a consistent set of EPMs that are aimed at minimizing accidental wildfire ignitions as result of IPM treatment activities would not occur. Implementation of the IPM Program would incorporate EPMs to reduce the potential for accidental wildfire ignitions, including maintaining all diesel- and gasoline-powered equipment in good working condition, requiring all mechanized hand tools to have federal- or state-approved spark arrestors, and only permitting smoking in designated smoking areas with barren or cleared mineral soil to at least 3 feet in diameter. These EPMs would be incorporated into the MMRP for the IPM Program to track and verify implementation. Similar to the No Project Alternative, the IPM Program would not result in any new structures or populations that would be exposed to an increase in wildfire risk or post fire landslides/debris flow if they were to occur. In addition, the IPM Program would increase the pace and scale of invasive vegetation treatment, which would reduce fuel levels and associated fire risk more quickly. Although the No Project Alternative would use slightly less equipment and vehicles, because there would not be a required set of EPMs aimed at reducing wildfire risk documented and tracked in the MMRP, and the overall pace of invasive vegetation removal would be less, impacts related to wildfire would be *Greater* under the No Project Alternative than with the IPM Program.

5.4.2 Alternative 2: Limited IPM Treatments on Natural Lands

Alternative 2 would prohibit the use of spray herbicides and invasive animal treatment activities on natural lands. Specifically, no pond draining, exclusionary fencing, trapping, egg removal/addling, shooting, giggering, or electroshocking would occur to manage invasive animals. Instead, only invasive vegetation would be treated through wicking and cut-stump application of herbicides and manual and mechanical treatments, including pulling, digging, scraping, cutting/mowing, weed whipping, brush cutting, girdling/frilling/drilling, and green flaming. IPM activities on recreational facilities, agricultural lands, and buildings and structures would be the same as those described under the IPM Program and would consist of manual, mechanical, and chemical treatments, including invasive animal treatments. Invasive animal treatments would include exclusion, habitat modifications, trapping, and chemical use in buildings and structures and recreational facilities. Consistent with the IPM Program, adaptive management efforts, increased early detection and rapid response, and the incorporation of applicable EPMs would occur under Alternative 2.

AESTHETICS

Under Alternative 2, manual, mechanical, and chemical treatments would occur across the Authority's preserves; however, there would be no herbicide spraying or invasive animal control on natural lands. When large equipment is in use near publicly accessible areas of the preserves or in areas visible from surrounding vistas, it can contrast with the natural aesthetic of the area and temporarily degrade visual quality. Because Alternative 2 would involve fewer treatments on natural lands, temporary impacts related to equipment use would be slightly reduced. In the long-term, IPM activities under Alternative 2 and the IPM Program are expected to improve the visual character of treatment sites by removing invasive plant species and returning the landscape to more native vegetative patterns; however, these benefits would be reduced in natural areas without the application of herbicide sprays under Alternative 2. In addition, without invasive animal control under Alternative 2, invasive animal populations could increase and physically displace and consume native plants and wildlife that normally inhabit natural areas, or otherwise alter natural processes. Overtime, this would likely degrade the visual character and quality of natural lands. Because the presence of equipment and vehicles under the IPM Program would only be slightly increased relative to Alternative 2, and that in the long-term, the visual character of the landscape on natural lands would likely be improved with fewer invasive plants and animals present, impacts to aesthetics associated with Alternative 2 would be *Greater* than under the IPM Program.

BIOLOGICAL RESOURCES

Alternative 2 includes manual, mechanical, and chemical IPM treatments similar to the IPM Program; however, there would be no herbicide spraying or invasive animal control on natural lands. Consistent with the IPM Program, Alternative 2 would also require the implementation of EPMs and mitigation measures to minimize and avoid impacts to special-status species and wetlands and waters. Because spraying of herbicides could inadvertently affect special-status wildlife habitat, such as through damaging host plants for Bay checkerspot butterfly or entering waterways that are habitat for California coast steelhead; and can directly injure special-status wildlife individuals if present in treatment areas; Alternative 2 would result in fewer adverse impacts to special-status species and wetlands and waters. In addition, invasive animal control on natural lands, such as trapping, giggering, and pond training, have the potential to adversely affect special-status aquatic and terrestrial wildlife if present. Because no invasive animal control on natural lands would occur under Alternative 2, there would be fewer impacts to special-status wildlife. However, with no invasive animal control or spraying of herbicides to control invasive vegetation, the presence of invasive plants and animals could increase on natural lands, potentially resulting in long-term deterioration of habitat and loss of native species. Because direct and indirect impacts to special-status wildlife and wetlands and waters would be reduced under Alternative 2, impacts to biological resources associated with Alternative 2 would be *Less* than under the IPM Program.

HAZARDS AND HAZARDOUS MATERIALS

Alternative 2 includes manual, mechanical, and chemical IPM treatments similar to the IPM Program; however, there would be no herbicide spraying or invasive animal control on natural lands. Equipment and materials used for IPM activities, with the exception of equipment and material used for herbicide spraying and invasive animal control, would be stored at the Authority's field offices located in the Rancho Canada del Oro Open Space Preserve and Sierra Vista Preserve. Both Alternative 2 and the IPM Program would use and store equipment that require fuels, oils, and lubricants, which have the potential to be released into the environment if equipment is leaking or if an accidental spill occurs. In addition, the use of pesticides under Alternative 2 and the IPM Program can impact human health or the environment if improperly stored, handled, or applied. Consistent with the IPM Program, Alternative 2 would also require the implementation of EPMs to minimize the potential for impacts to human health and the environment from equipment and pesticide use. Although the IPM Program would minimize the potential for offsite, non-target impacts from spraying herbicides through EPMs regulating weather parameters under which herbicides could be used; Alternative 2 would result in fewer potential adverse impacts to the public and environment because herbicide spraying on natural lands would not occur. Therefore, impacts related to hazards and hazardous materials as a result of Alternative 2 would be *Less* than under the IPM Program.

HYDROLOGY AND WATER QUALITY

Alternative 2 includes manual, mechanical, and chemical IPM treatments similar to the IPM Program; however, there would be no herbicide spraying or invasive animal control on natural lands. Both Alternative 2 and the IPM Program would use equipment that require fuels, oils, and lubricants, which have the potential to be released into the environment and degrade surface water if equipment is leaking or if an accidental spill occurs. In addition, the use of pesticides under Alternative 2 and the IPM Program could result in water quality degradation if improperly stored, handled, or applied such that it travels offsite and into surface waters. Consistent with the IPM Program, Alternative 2 would also require the implementation of EPMs to minimize the potential for impacts to water quality from equipment and pesticide use. Although the IPM Program would minimize the potential for offsite, non-target impacts from spraying herbicides through EPMs regulating weather parameters under which herbicides could be used; Alternative 2 would result in fewer potential adverse impacts to water quality because herbicide spraying on natural lands would not occur. Therefore, impacts related to hydrology and water quality as a result of Alternative 2 would be *Less* than under the IPM Program.

CULTURAL AND TRIBAL CULTURAL RESOURCES

Although Alternative 2 would not spray herbicides or conduct invasive animal control on natural lands, Alternative 2 would include the same types and geographic extents of ground disturbing IPM treatments as the IPM Program, such as digging, hoeing, cultivating, and discing. Under Alternative 2, the same mitigation measures proposed under the IPM Program would be implemented to minimize and avoid impacts to cultural and tribal cultural resources, including surveying historic age buildings and structures before conducting any alterations, requiring that a qualified professional archeologist conduct pedestrian surveys for previously recorded archaeological resources before ground disturbing activities, and following professionally developed and accepted measures to avoid and minimize impacts to cultural and tribal cultural resources if present in treatment areas. Therefore, impacts to cultural and tribal cultural resources as a result of Alternative 2 would be *Similar* to the IPM Program.

RECREATION

Alternative 2 would implement the same IPM treatment activities as the IPM Program on recreational facilities, agricultural lands, and buildings and structures, but no spraying of herbicides or invasive animal control would occur on natural lands. Similar to the IPM Program, temporary closures of small areas of Authority preserves could occur under Alternative 2 during heavy equipment use or spraying of herbicides when conducted in publicly accessible areas. Given that Alternative 2 only restricts spraying of herbicides on natural lands, and includes the same IPM treatment activities as the IPM Program on recreational facilities, which are likely to be the areas that are open to the public, impacts to recreation as a result of Alternative 2 would be *Similar* to the IPM Program.

WILDFIRE

Alternative 2 includes manual, mechanical, and chemical IPM treatments similar to the IPM Program; however, there would be no herbicide spraying or invasive animal control on natural lands. Under Alternative 2, the same EPMs as proposed under the IPM Program would be implemented, which include measures to reduce the risk of accidental wildfire ignition from the use of equipment in vegetated areas, such as maintaining all equipment and requiring spark arrestors on mechanized hand tools. Because no ATVs or vehicles would be used to spray herbicides on natural lands, the risk of accidental wildfire ignition under Alternative 2 is slightly reduced relative to the IPM Program. However, without herbicide spraying on natural lands, invasive and potentially ignitable vegetation would not be removed as quickly or effectively as under the IPM Program. This could present an increased risk associated with wildfire ignition or wildfire spread within natural areas. Therefore, impacts related to wildfire as a result of Alternative 2 would be *Greater* than under the IPM Program.

5.4.3 Alternative 3: No Alterations to Buildings

Alternative 3 would prohibit physical building and structure alterations to exclude pests, such as covering openings with plywood or concrete, installing one-way hinged doors, or building retrofits. The Authority would implement all other IPM treatment activities proposed for use in buildings and structures under the IPM Program, including sanitation, pruning of vegetation, use of sticky or snap traps, habitat modifications, and the use of pesticides. In addition, IPM activities on recreational facilities, agricultural lands, and natural lands would be the same as those described under the IPM Program and would consist of manual, mechanical, and chemical treatments. Consistent with the IPM Program, adaptive management efforts, increased early detection and rapid response, and the incorporation of applicable EPMs would occur under Alternative 3.

AESTHETICS

Alternative 3 includes manual, mechanical, and chemical IPM treatments similar to the IPM Program; however, there would be no pest exclusion in buildings and structures that require physical building alterations. Alternative 3 would result in similar temporary impacts to visual quality from the use of equipment and vehicles in natural areas because IPM treatment activities on natural lands, recreational facilities, and agricultural lands would be the same as under the IPM Program. For this reason, long-term visual effects would also be similar, because invasive plants and animals would be treated and removed at the same rate as under the IPM Program. Building and structure alternations proposed under the IPM Program primarily include covering openings and installing one-way doors, and in some rare cases, building retrofits. Exclusionary building modifications would be small and would not significantly contrast with building materials such that they would be noticeable to viewers. Building retrofits, although rare, would be expected to slightly improve the condition of a building or structure and thus could slightly improve visual quality and character. Because visual changes that could occur as a result of IPM treatments on natural lands, recreational facilities, and agricultural lands under Alternative 3 would be consistent with those that would occur under the IPM Program, and that building alterations proposed under the IPM Program are not expected to significantly alter the visual landscape, impacts to aesthetics associated with Alternative 3 would be *Similar* to the IPM Program.

BIOLOGICAL RESOURCES

Alternative 3 includes manual, mechanical, and chemical IPM treatments similar to the IPM Program; however, there would be no pest exclusion in buildings and structures that require physical building alterations. Pest exclusion in buildings and structures proposed under the IPM Program has the potential to adversely affect special-status bat nursery roosts if implemented during the nursery season; however, this impact is reduced to a less than significant level with implementation of Mitigation Measure 3.3-2n (Avoid Loss of Special-Status Bat Roosts). Consistent with the IPM Program, Alternative 3 would also require the implementation of EPMs and mitigation measures to minimize and avoid impacts to special-status species and wetlands and waters. Because Alternative 3 would not install any exclusionary features to buildings and structures, the potential to impact special-status bat nursery roosts would be avoided. Because all other IPM treatment activities would be the same as the IPM Program, and all applicable EPMs and mitigation measures would be implemented, all other potential impacts to biological resources would be similar to those identified under the IPM Program. Therefore, because of the avoidance of affects to special-status bats, impacts to biological resources associated with Alternative 3 would be *Less* than under the IPM Program.

HAZARDS AND HAZARDOUS MATERIALS

Alternative 3 includes manual, mechanical, and chemical IPM treatments similar to the IPM Program; however, there would be no pest exclusion in buildings and structures that require physical building alterations. Because the same types of IPM treatments are proposed in all instances, except for building and structure alterations, potential impacts to human health or the environment related to the use of pesticides and mechanical equipment under Alternative 3 would be the same as under the IPM Program. Consistent with the IPM Program, Alternative 3 would also require the implementation of EPMs to minimize and avoid impacts to human health and the environment from the use of

potentially hazardous materials. Building and structure alternations proposed under the IPM Program primarily include covering openings and installing one-way doors, and in some rare cases, building retrofits. These activities would not result in a substantial increase in the use of any potentially hazardous materials. Therefore, impacts related to hazardous materials and wastes under Alternative 3 would be *Similar* to the IPM Program.

HYDROLOGY AND WATER QUALITY

Alternative 3 includes manual, mechanical, and chemical IPM treatments similar to the IPM Program; however, there would be no pest exclusion in buildings and structures that require physical building alterations. Because the same types of IPM treatments are proposed in all instances, except for building and structure alterations, potential impacts to water quality related to the use of pesticides and mechanical equipment under Alternative 3 would be the same as under the IPM Program. Consistent with the IPM Program, Alternative 3 would also require the implementation of EPMs to minimize and avoid impacts to water quality from the use of potentially hazardous materials. Building and structure alternations proposed under the IPM Program primarily include covering openings and installing one-way doors, and in some rare cases, building retrofits. These activities would not result in a substantial increase in the use of any potentially hazardous materials or otherwise affect hydrology or water quality. Therefore, impacts related to hydrology and water quality under Alternative 3 would be *Similar* to the IPM Program.

CULTURAL AND TRIBAL CULTURAL RESOURCES

Alternative 3 includes manual, mechanical, and chemical IPM treatments similar to the IPM Program; however, there would be no pest exclusion in buildings and structures that require physical building alterations. Because the same types of ground disturbing IPM treatments are proposed under Alternative 3, potential impacts to archaeological resources, human remains, and tribal cultural resources under Alternative 3 would be the same as under the IPM Program. Consistent with the IPM Program, Alternative 3 would also require the implementation of mitigation measures to minimize and avoid impacts to cultural resources from ground disturbing IPM treatments. Buildings and structures within Authority preserves that are 50 years or older may be eligible for listing in the CRHR and therefore considered historically significant. Under the IPM Program, installation of building and structure exclusionary features have the potential to adversely affect historic resources. The Authority would implement Mitigation Measure 3.6-1, which requires that historic age buildings and structures be surveyed before alterations, and adhering to the Secretary of Interior's Standards for the Treatment of Historic Properties, which would reduce impacts under the IPM Program to less than significant. However, because Alternative 3 would not alter any buildings or structures, impacts to cultural and tribal cultural resources as a result of Alternative 3 would be *Less* than under the IPM Program.

RECREATION

Alternative 3 includes manual, mechanical, and chemical IPM treatments similar to the IPM Program; however, there would be no pest exclusion in buildings and structures that require physical building alterations. Because the same types of recreation disturbing IPM treatments are proposed under Alternative 3, such as spraying of herbicides and use of large mechanical equipment near publicly accessible areas, potential impacts to recreation under Alternative 3 would be the same as under the IPM Program. Building alterations proposed under the IPM Program would not substantially affect recreation because closures of public areas would likely not occur as a result. Therefore, impacts to recreation under Alternative 3 would be *Similar* to the IPM Program.

WILDFIRE

Alternative 3 includes manual, mechanical, and chemical IPM treatments similar to the IPM Program; however, there would be no pest exclusion in buildings and structures that require physical building alterations. Alternative 3 would use the same types of mechanical equipment and vehicles at a similar rate across Authority preserves as the IPM Program, thus the potential for wildfire ignition would be similar. Consistent with the IPM Program, Alternative 3 would also require the implementation of EPMs to minimize the potential for wildfire ignition from IPM treatment

activities. Building alterations proposed under the IPM Program would not result in significant wildfire related impacts because installing exclusionary features would use little to no mechanical equipment and building retrofits would be rare and likely improve the condition of buildings and structures. Therefore, impacts related to wildfire under Alternative 3 would be *Similar* to the IPM Program.

5.5 SUMMARY COMPARISON OF ALTERNATIVES

Table 5-1 summarizes the environmental analysis provided above for each of the alternatives relative to the IPM Program.

Table 5-1 Summary of Environmental Impacts of the Alternatives Relative to the Proposed IPM Program

Environmental Topic	Proposed IPM Program	Alternative 1: No Project Alternative	Alternative 2: Limited IPM Treatments on Natural Lands	Alternative 3: No Alterations to Buildings
Aesthetics	LTS	Greater	Greater	Similar
Biological Resources	LTSM	Greater	Less	Less
Hazards and Hazardous Materials	LTSM	Greater	Less	Similar
Hydrology and Water Quality	LTS	Greater	Less	Similar
Cultural and Tribal Cultural Resources	LTSM	Greater	Similar	Less
Recreation	LTS	Less	Similar	Similar
Wildfire	LTS	Greater	Greater	Similar

Notes: LTS = Less Than Significant Impact; LTSM = LTS with Mitigation; Less impact is less adverse than proposed IPM Program; Similar environmental impact is similar to proposed IPM Program; Greater impact is more adverse than proposed IPM Program.

Source: Compiled by Ascent Environmental in 2019 and 2021

Table 5-2 identifies which program objectives are met by the alternatives described above. As shown in Table 5-2, the No Project Alternative meets some of the program objectives; however, the proposed IPM Program goes further in meeting these objectives than the No Project Alternative. For instance, while the No Project Alternative would continue to inform the public about upcoming IPM activities and implement manual, mechanical, and chemical IPM treatments to inhibit the establishment of new invasive species on Authority preserves, it would not be as effective at controlling targeted pests nor would it result in the development of an adaptive management framework to promote the long-term effectiveness of pest management activities. The Limited IPM Treatments on Natural Lands Alternative (Alternative 2) and the No Alterations to Buildings Alternative (Alternative 3) at least partially meet all of the program objectives.

Table 5-2 Objectives Achieved by the Alternatives

Program Objectives	Objective Met with No Project Alternative?	Objective Met with Alternative 2?	Objective Met with Alternative 3?
Develop and implement site-specific pest management strategies that are effective in controlling targeted pests while avoiding damage to natural resources, promoting visitor safety and enjoyment, and protecting human health	Partially	Partially	Partially
Keep the interested public informed about treatment strategies, upcoming projects, and environmental and public health protection measures	Yes	Yes	Yes
Inhibit the establishment of new invasive species on Authority preserves	Yes	Partially	Partially
Maintain an inventory of invasive species infestations, monitor treatment effectiveness, and incorporate relevant monitoring results into future treatment applications	Partially	Yes	Yes
Implement an adaptive management framework to promote the long-term effectiveness of pest management activities;	No	Yes	Yes
Develop and implement an IPM Manual to standardize pest management and IPM procedures	No	Yes	Yes

Source: Compiled by Ascent Environmental in 2019 and 2021

5.6 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires the identification of the environmentally superior alternative among the alternatives to the proposed IPM Program that were evaluated in detail, or, to identify if the proposed IPM Program is environmentally superior to the alternatives. The environmentally superior alternative must be an alternative that reduces some of the environmental impacts of the proposed IPM Program, regardless of the financial costs associated with the alternative, otherwise the proposed IPM Program could be determined to be environmentally superior. Identification of the environmentally superior alternative is an informational procedure. The alternative identified as the environmentally superior alternative may not be that which best meets the goals or needs of the proposed IPM Program. Determination of the environmentally superior alternative does not preclude the proposed IPM Program or the other alternatives from being selected for implementation.

The No Alterations to Buildings Alternative is the environmentally superior alternative because it eliminates potentially significant impacts to historic resources and special-status bats, while all other environmental impacts are similar to those expected under the IPM Program. However, this alternative does not meet all of the goals of the IPM Program. Specific to the buildings and structures management category, this alternative does not meet the objectives of implementing pest management strategies that are effective in controlling targeted pests and inhibiting the establishment of new invasive species. Without the installation of exclusionary features to buildings and structures, existing invasive species populations could increase, or new species could establish. Furthermore, exclusion is the only method that has been identified to control invasive bats in buildings and structures; therefore, the Authority would have no way to control or prevent the establishment of this target pest. The benefits of installing exclusionary features or conducting retrofits to effectively prevent and control invasive pests in buildings and structures may outweigh the potentially significant effects to historic resources and special-status bats, particularly because the IPM Program would implement mitigation measures whereby impacts to historic resources and special-status bats from building alterations would be reduced to less-than-significant levels.

The Limited IPM on Natural Lands has environmental advantages over the IPM Program as well. Since it would not spray herbicides or conduct invasive animal control on natural lands, potentially significant impacts to special-status wildlife would be reduced relative to the IPM Program. It would also reduce impacts related to water quality degradation from herbicide use under the IPM Program; however, this would not constitute a substantial reduction because the IPM Program would not result in significant impacts to water quality with the implementation of environmentally protective EPMs. However, these benefits come with greater impacts related to aesthetics and wildfire. Because invasive animals would remain that can negatively affect the condition of natural lands and habitats, the visual quality of natural lands would likely decrease over time. In addition, the rate of vegetation removal on natural lands would substantially decrease if only manual and mechanical treatment methods could occur, which would result in increased risks related to wildfire ignition and wildfire spread. This alternative also does not meet all of the goals of the IPM Program. Specific to the natural lands management category, this alternative does not meet the objectives of implementing pest management strategies that are effective in controlling targeted pests and inhibiting the establishment of new invasive species. Without the ability to use herbicides via spraying on natural lands, invasive vegetation would not be as effectively controlled, and target invasive animals would not be controlled at all under this alternative. Furthermore, the IPM Program is expected to result in greater long-term benefits to special-status species compared to the Limited IPM Alternative by removing invasive species that may compete with or reduce habitat suitability for special-status species at a greater pace and scale. The benefits of spraying herbicides and controlling invasive animals under the IPM Program may outweigh the potentially significant affect to special-status wildlife, particularly because several EPMs and mitigation measures would be implemented under the IPM Program that reduce this potentially significant impact to a less-than-significant level.

As shown in Table 5-1, the No Project Alternative (described above in Section 5.4.1) would result in greater environmental impacts than the IPM Program, primarily due to the lack of implementation of a consistent set of EPMs and mitigation measures aimed at avoiding and minimizing potential environmental impacts and reduced efforts in early detection and rapid response. In addition, with no comprehensive review and environmental coverage of an IPM Program, when the Authority proposes to implement IPM activities under the No Project Alternative, each proposal would need to be reviewed and evaluated on an individual basis to determine the appropriate course of

action and level of environmental review. In cases where preparation of a CEQA document is determined to be required, there would likely be an overall delay in implementation of IPM activities to complete the process. Further, the Authority would likely be required to conduct multiple, repetitive environmental reviews on actions that are similar in nature. This would be less efficient, likely more costly, and longer process compared to the proposed IPM Program. It is likely that the overall treatment and success in pest eradication would be reduced relative to the IPM Program because of the potential need for individual evaluation (either by pest or by site), reduced geographic coverage and frequency of IPM treatments, and the lack of adaptive management techniques and thus would not meet many of the IPM Program objectives (refer to Table 5-2).

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Chapter 5 Alternatives

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