INTEGRATED VECTOR MANAGEMENT PROGRAM

FINAL PROGRAM ENVIRONMENTAL IMPACT REPORT

SCH# 2018081060

Lead Agency:

County of San Diego
Department of Environmental Health and Quality
Vector Control Program
5570 Overland Avenue, Suite 102
San Diego, California 92123

June 2024

This page intentionally left blank

Integrated Vector Management Program
Program Environmental Impact Report

Table of Contents

Section **Page**

List of Figures

List of Tables

List of Appendices

This page intentionally left blank

LIST OF ACRONYMS AND ABBREVIATIONS

2017 Scoping Plan	2017 Climate Change Scoping Plan
°F	degrees Fahrenheit
AB	Assembly Bill
ADA	Americans with Disabilities Act
AMSL	above mean sea level
ATSB	attractive toxic sugar baits
Attainment Plan	Attainment Plan for San Diego County
AWM	County Department of Agriculture, Weights and Measure
Basin Plan	Water Quality Control Plan for the San Diego Basin
BMO	Biological Mitigation Ordinance
BMP	best management practice
Board	County Board of Supervisors
Bti	Bacillus thuringiensis israelensis
BTU	British thermal units
CAA	federal Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CAL FIRE	California Department of Forestry and Fire Protection
CalEPA	California Environmental Protection Agency
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CAO	Cleanup and Abatement Order
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCA	California Coastal Act
CCC	California Coastal Commission
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CDO	Cease and Desist Order
CDPH	California Department of Public Health
CDPR	California Department of Pesticide Regulation
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFC	California Fire Code
CFG	California Fish and Game
CGP	Construction General Permit
CH_4	methane
CMP	Congestion Management Plan
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
County	County of San Diego
Cooperative Agreement	Cooperative Agreement for Pesticide-Related Requirements
CPA	Community Plan Area
CRHR	California Register of Historical Resources

CRPR	California Rare Plant Rank
CSA	County Service Area
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
DEHQ	County Department of Environmental Health and Quality
DPM	diesel particulate matter
DTSC	California Department of Toxic Substances Control
EIR	Environmental Impact Report
EO	Executive Order
Engineer's Report	Mosquito, Vector and Disease Control Assessment Engineer's Report
FAA	Federal Aviation Administration
FAC	California Food and Agriculture Code
FFDCA	Federal Food, Drug, and Cosmetic Act
FHSZs	Fire Hazard Severity Zones
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
GHG	greenhouse gas
GWh	gigawatt hours
HSC	Health and Safety Code
HA	hydrologic area
HCP	Habitat Conservation Plan
HU	hydrologic unit
Hz	Hertz
IFC	International Fire Code
IVMP or Proposed Project	Integrated Vector Management Program
kHz	kilohertz
kWh	kilowatt hours
LCFS	Low Carbon Fuel Standard
L_{EQ}	time-averaged noise level
LOS	level of service
LRA	Local Responsibility Area
Ls	Lysinibacillus (Bacillus) sphaericus
LTTP	Long Term Procurement Plan
MHCP	Multiple Habitat Conservation Program
MMBTU	metric million British thermal units
MMT	million metric tons
MMTh	million therms
MOU	Memorandum of Understanding
mPa	micro Pascals
mpg	miles per gallon
MS4	municipal separate storm sewer system
MSCP	Multiple Species Conservation Program
MT	metric tons
Municipal Permit	San Diego Regional Municipal Stormwater Permit
MW	megawatt
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NCCP	Natural Community Conservation Plan
NHTSA	National Highway Traffic Safety Administration

NO_2	nitrogen dioxide
NOP	Notice of Preparation
NO_X	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NRHP	National Register of Historic Places
O_3	ozone
OMRI	Organic Materials Review Institute
OSHA	Occupational Safety and Health Administration
OWTS	on-site wastewater treatment systems
PEIR or Program EIR	Program Environmental Impact Report
PM	particulate matter
PM_{10}	particulate matter equal to or less than 10 microns in diameter
$PM_{2.5}$	particulate matter equal to or less than 2.5 microns in diameter
Porter-Cologne	Porter-Cologne Water Quality Control Act
PRC	California Public Resources Code
PRP	Pesticide Regulation Program
RAQS	Regional Air Quality Strategy
RCRA	Resource Conservation and Recovery Act
Regional Plan	San Diego Forward: The Regional Plan
RGT	Reiter Gravid trap
ROG	reactive organic gas
RPO	Resource Protection Ordinance
SAFE Vehicles Rule	Safer Affordable Fuel-Efficient Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks
SARS	severe acute respiratory syndrome
SANDAG	San Diego Association of Governments
SanGIS	San Diego Geographic Information System
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SDAB	San Diego Air Basin
SDAPCD	San Diego County Air Pollution Control District
SDCWA	San Diego County Water Authority
SDG&E	San Diego Gas & Electric
SDHR	San Diego Hydrologic Region
SF_6	sulfur hexafluoride
SGMA	Sustainable Groundwater Management Act
SIP	State Implementation Plan
SO_2	sulfur dioxide
SRA	State Responsibility Area
STEM	science, technology, engineering, and mathematics
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TDS	total dissolved solids
TSG	Transportation Study Guide
U.S.	United States
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VCP	Vector Control Program
VDDL	Vector Disease and Diagnostic Laboratory

VHRP	Vector Habitat Remediation Program
VMT	vehicle miles traveled
VOC	volatile organic compound
WDR	Waste Discharge Requirement
WMA	Watershed Management Area
WNV	West Nile virus
WPO	Watershed Protection, Stormwater Management, and Discharge Control Ordinance
WUI	wildland urban interface

EXECUTIVE SUMMARY

This Program Environmental Impact Report (PEIR) has been prepared by the County of San Diego (County), Department of Environmental Health and Quality (DEHQ), Vector Control Program (VCP) for the Integrated Vector Management Program (IVMP or Proposed Project). The PEIR has been prepared in accordance with the California Environmental Quality Act (CEQA) (California Public Resources Code [PRC] Section 21000 et seq.), and the CEQA Guidelines (California Code of Regulations, Title 14, Section 15000 et seq.).

This executive summary introduces key components of the Proposed Project, summarizes the significant environmental impacts and mitigation measures, and examines project alternatives. The PEIR was prepared to disclose this information to decision makers, members of the public, and public agencies so that informed decisions can be made about the Proposed Project.

The County, as the Lead Agency under CEQA, has prepared this PEIR to provide an up-to-date, transparent, and comprehensive evaluation of the VCP's integrated vector management techniques that monitor and control mosquitoes and other vectors of human disease and discomfort. This PEIR will serve as an overarching CEQA framework for its ongoing program and activities.

S.1 Project Synopsis

The VCP is an existing division of County DEHQ that is responsible for monitoring and controlling mosquitoes and other disease-carrying insects and rodents throughout San Diego County. The VCP has been protecting the public from disease-carrying vectors since 1947 and operates under the authority of the Mosquito Abatement and Vector Control District Law of the State of California.

A vector is defined as any animal capable of spreading disease or producing human discomfort or injury, including but not limited to mosquitoes, flies, mites, ticks, other arthropods, and rodents and other vertebrates (California Health and Safety Code, Section 2002[k]).

The existing vector control program is ongoing and currently implements vector control through integrated management techniques. The VCP now proposes to enhance its existing program by including additional equipment, services, and techniques to enhance its integrated vector management strategies. While CEQA requires analysis of only new or proposed changes compared to existing conditions, in an effort to provide a transparent, comprehensive, and complete environmental analysis, this PEIR analyzes both the VCP's existing activities and its proposed activities. Both existing and proposed VCP activities are collectively referred to in this document as the Proposed Project or IVMP pursuant to CEQA.

Under the Proposed Project, the IVMP would continue to comprehensively implement vector control through various techniques, including surveillance and monitoring, source reduction (i.e., physical control), source treatment (i.e., biological and chemical controls), public education, outreach, and disease diagnostics. Specifically, surveillance and monitoring include assessing locations and abundance of vector populations and species so that data-informed decisions can be made. Source reduction includes physical controls such as vegetation management, water control, or other maintenance activities to reduce or eliminate vector-breeding sources. Source treatment includes the application of biological and chemical controls. Biological controls involve the use of mosquito fish (*Gambusia affinis*) or naturally occurring biological pesticides. Chemical controls primarily consist of the application of other pesticides that contain synthetic products to

reduce or eliminate vectors. For the purpose of this PEIR, "pesticide" is used as a generic term including different kinds of products—both natural and synthetic. As defined by the California Department of Pesticide Regulation, a pesticide is any substance intended to control, destroy, repel, or attract a pest[1]. Any living organism that causes damage, economic loss, and/or transmits or produces disease may be the target pest.

S.1.1 Location and Existing Conditions

The Service Area[2] is defined by the boundaries of San Diego County. The county encompasses approximately 4,261 square miles and includes all unincorporated areas within the county, as well as 18 incorporated cities.

Land uses within the county vary between urban areas along the coast and rural areas in the eastern regions. The majority of land in the unincorporated county is open space or undeveloped, while the majority of land in the incorporated cities is developed. In total, over 50 percent of the land in San Diego County includes public lands, dedicated parks and open space, lands constrained for environmental reasons, and military uses that are unavailable for development (SANDAG 2021a).

San Diego County's climate is generally semi-arid and supports a wide range of habitats and biological communities that vary greatly depending on the eco-region, soils and substrate, elevation, and topography. Habitats and vegetation communities include vegetated wetlands, oak woodlands, riparian scrub, meadows, freshwater marsh, tidal marshes, sloughs, lakes, ponds, sage scrub, chaparral, grassland habitats, and a variety of other upland and wetland habitats.

S.1.2 Project Components

This section of the PEIR briefly introduces each of the components of the IVMP. Section 1.2.3, *Program Description and Components*, provides further information about each of these components.

Surveillance and Monitoring

Vector surveillance, monitoring, and diagnostics are needed to assess location and abundance of vector populations and species so that data-informed decisions can be made. Vector surveillance involves monitoring vector populations and habitat, their disease pathogens, and human/vector interactions. Vector surveillance can help minimize the area to which control techniques may be applied by directing activities to the areas where they are needed.

Source Reduction

Source reduction techniques (i.e., physical controls) are used to reduce vector-breeding sources such as habitat and other areas of harborage. Source reduction primarily involves physical control techniques that eliminate or reduce standing water including, vegetation management, water

[1] California Code of Regulations: Title 3, Division 6, Chapter 1, Subchapter 1, Article 1.

[2] Service Area is synonymous with Assessment Area, which is defined in the *Engineer's Report* (County 2022a) as the area in which an annual levy provides funding for essential vector control services, including those properties that may request and/or receive direct and more frequent service and are located within the scope of the vector surveillance area. As such, Native American reservation land, as a Sovereign Nation, is excluded from the Service Area along with federally owned lands that receive minimal to no services.

control, and other maintenance activities. Trapping and removal of vectors is also a form of source reduction.

Source Treatment

Source treatment includes biological and chemical controls of vectors. Specifically, biological controls include mosquito fish and naturally occurring bacterial larvicides. Chemical controls include application of synthetic larvicides and adulticides to reduce larval and adult mosquito populations, respectively. Methods of application include but are not limited to backpack applicators, truck-mounted equipment, or other motorized vehicles (e.g., piloted aircraft and drones[3], watercraft).

Public Education and Outreach

The VCP conducts extensive public education and outreach to educate residents about vectors and vector-borne diseases within the county. VCP staff distribute educational materials in various languages, and social media is used to notify the public of press releases and scheduled aerial larvicide treatments. Other strategies include informational displays and presentations that comply with the Science, Technology, Engineering, and Mathematics (STEM) education guidelines given to schools and at health fairs and to other groups, such as older adults and non-English-speaking communities.

S.2 Summary of Significant Effects and Mitigation Measures That Reduce or Avoid the Significant Effects

Table S-1, *Summary of Significant Effects and Mitigation Measures*, provides a summary of each potential environmental effect found to be significant with the implementation of the Proposed Project, the mitigation measures that would reduce or avoid that effect, and the conclusion as to whether the effect is reduced below a level of significance by applying mitigation measures. While the location and specific details of individual activities to be implemented under the IVMP are unknown at this time, mitigation measures and best management practices (i.e., project design features) as identified in this PEIR would be implemented once site-specific individual activities are planned, depending on each activity's potential to result in environmental impacts.

Table S-1 is based on the impact analyses provided in this PEIR within Chapters 2.0, *Significant Environmental Effects of the Proposed Project*, and 3.0, *Environmental Effects Found Not to be Significant*. A detailed analysis of cumulative impacts is also provided in Chapters 2.0 and 3.0 for each environmental resource area. Chapter 4.0, *Project Alternatives*, identifies the impacts of project alternatives in relation to the Proposed Project.

S.3 Areas of Controversy

CEQA Guidelines, Section 15123(b)(2), requires that an EIR contain a discussion of areas of controversy known to the Lead Agency, including issues raised by agencies and the public. The VCP issued a Notice of Preparation (NOP) for the Proposed Project on August 23, 2018, held a public scoping meeting in the community, and received 17 written communications from surrounding residents, agencies, and other organizations during the NOP comment period.

[3] For the purposes of this PEIR, "drone" is intended to generically mean a remotely piloted or unpiloted aircraft. As of this writing, the Federal Aviation Administration's official terminology is Unmanned Aircraft Systems; however, Federal Aviation Administration is transitioning toward gender-neutral terminology such as drone operator, certificated remote pilot, model aircraft flyer, and advanced air mobility operator.

Appendix A contains the published NOP and comment letters received, which primarily address the following topics:

- Biological Resources: Some commenters expressed concerns regarding potential impacts and mitigation of protected animal and plant species and their habitats, wetlands, streambeds, lakes, and jurisdictional waters, including federal/State permits and Habitat Conservation Plans.

- Cultural/Tribal Cultural Resources: Some commenters wanted the VCP to ensure that the Proposed Project avoids inadvertent discoveries of protected resources, including those of Native American origin, such as sacred sites.

- Use of Pesticides for Vector Control: While some residents expressed a desire for increasing the use of pesticides to control mosquitoes, other respondents expressed concern regarding the use of such products and potential health effects.

S.4 Issues to Be Resolved by the Decision-Making Body

CEQA Guidelines, Section 15123(b)(3), requires that an EIR contain a discussion of issues to be resolved. Specifically, the County decision-making body (e.g., elected and non-elected officials) would be required to determine whether the significant impacts addressed in this PEIR can be reduced to less than significant with implementation of the proposed mitigation measures or whether or not to adopt a project alternative that would reduce the impacts to less than significant.

S.5 Project Alternatives

Alternatives are required to be identified and evaluated to determine if they would lessen or avoid any of the significant impacts identified in Chapter 2.0. In total, six alternatives were initially considered; however, only three alternatives were further considered that might reduce a significant effect of the project. The three alternatives that were evaluated include the following:

- No Project Alternative
- No Physical Management Alternative
- Organic Pesticides Alternative

For a full discussion of each alternative, please refer to Chapter 4.0 of this PEIR.

S.5.1 No Project Alternative

The existing vector program is ongoing and currently implements vector control through various techniques. Under CEQA, “when the project is the revision of an existing land use or regulatory plan, policy of operation, the ‘no project’ alternative will be the *continuation of the existing plan, policy or operation into the future*” [emphasis added] (Section 15126.6[e][3][a]).

Therefore, for the purposes of comparing alternatives, the No Project Alternative would be a continuation of the existing vector control program without the additional enhancements proposed under the IVMP. Specifically, the No Project Alternative would not include the following elements, which are not currently performed by the VCP:

- The use of fixed-wing aircraft or drones for surveillance

- Grading, dredging, or vegetation removal for source reduction
- Autodissemination[4] of larvicides
- Larvicides applied over a wide area[5] via fixed-wing aircraft or drones
- Adulticides applied via drones
- Non-emergency use of adulticides

The No Project Alternative would operate within the same parameters in relation to the existing VCP guidance documents identified in Chapter 1.0, *Project Description*.

S.5.2 No Physical Management Alternative

The No Physical Management Alternative would preclude source reduction activities as planned under the Proposed Project (e.g., grading, dredging, vegetation management). Physical management activities such as grading, dredging, and vegetation management directly improve water circulation, remove standing water, and reduce or eliminate vector-breeding sources. The No Physical Management Alternative would still allow the VCP to conduct surveillance and monitoring, source treatment (i.e., pesticide use), and public outreach and education.

S.5.3 Organic Pesticides Alternative

The Organic Pesticides Alternative would require the VCP to only use "organic" pesticides as registered by the U.S. Environmental Protection Agency and U.S. Department of Agriculture. In the United States, the term "organic" is federally regulated as defined by the Code of Federal Regulations as a "labeling term that refers to an agricultural product produced in accordance with the [Organic Foods Production Act of 1990]" (7 CFR 205.2).

Specifically, this alternative looks at the ramifications of only using registered organic pesticides even if non-registered products meet the definition of organic. For context, between calendar years 2018–2021, over 94% of all pesticides used by the VCP (by weight) were certified by the Organic Materials Review Institute (OMRI) as organic larvicides. Of the remaining pesticides used, approximately 4.2% contain the same or similar active ingredients and could be considered organically viable; meaning a total of 98.5% of all pesticides used are certified organic or contain similar ingredients. However, to treat adult mosquitoes, there are no organic commercially available adulticides and thus, the VCP would not be able to use adulticides to preemptively avert an increased risk to human health or well-being.

Under this alternative, the VCP would no longer use those similar products because they are not officially registered as organic by U.S. Environmental Protection Agency, U.S. Department of Agriculture, or Organic Materials Review Institute.

The only exception to this alternative is California Health and Safety Code, Section 116110(c) which obligates the VCP to retain emergency authority to prevent a disease outbreak and practice emergency measures.

[4] Autodissemination includes using mosquitoes to apply insecticides to hidden water sources where they breed.
[5] Wide area larviciding is the technique of applying larvicides over a wide area to specifically kill mosquito larvae. It can be performed from the ground or air.

This page intentionally left blank

Table S-1. Summary of Significant Effects and Mitigation Measures

Description of Impact	Mitigation Measure *		Significance After Mitigation
2.1 Biological Resources			
The Proposed Project has the potential to cause significant impacts to special status plant species **(BI-1)**.	**M-BI-1a**	Prior to conducting Integrated Vector Management Program activities that would result in vegetation removal, habitat modification, and/or ground disturbance, a qualified biologist shall conduct a biological evaluation of the individual Integrated Vector Management Program activity area. The biological evaluation shall include (1) a general reconnaissance survey; (2) a review of recent aerial imagery, topographic and soils maps, regional vegetation mapping (as available), and local, State, and federal biological databases including but not limited to County SanBIOS data, California Department of Fish and Wildlife Biogeographic Information and Observation System database, U.S. Fish and Wildlife Service National Wetland Inventory) and critical habitat databases, and U.S. Environmental Protection Agency Watershed Assessment, Tracking & Environmental Results System database to determine sensitive biological resources known to occur within and adjacent to the Integrated Vector Management Program activity area; (3) a query of sensitive species databases such as U.S. Fish and Wildlife Service occurrence records, California Department of Fish and Wildlife California Natural Diversity Database, and County SanBIOS data to determine if special status species are present or have high potential to occur within or adjacent to the individual Integrated Vector Management Program activity area; and (4) preparation of a biological resources report. The reconnaissance survey shall include an inventory of existing vegetation communities, flora and fauna resources, and potentially jurisdictional resources present within the individual Integrated Vector Management Program activity area and documentation of special status plant and animal species, if encountered during the survey. The biological resources report shall summarize existing biological resources present within the individual Integrated Vector Management Program activity area, identify sensitive biological resources that are present or have potential to occur, provide an assessment of potential impacts, and identify applicable mitigation measures if necessary.	Less than Significant
	M-BI-1b	Prior to conducting Integrated Vector Management Program activities that would result in vegetation removal, permanent habitat modification, and/or ground disturbance in areas with potential to support special status plant species, a qualified biologist shall conduct a rare plant survey to confirm the	

Description of Impact	Mitigation Measure *	Significance After Mitigation
	presence/absence of special status plant species within or adjacent to the individual Integrated Vector Management Program activity area. The exact timing of the rare plant survey shall be determined based on the location, elevation, and flowering phenology of the special status plant species with potential to occur within and adjacent to the individual Integrated Vector Management Program activity area. If special status plant species are discovered within the individual Integrated Vector Management Program activity area, those individuals or populations shall be avoided, or additional mitigation measures (which could include transplantation) shall be implemented that would reduce impacts to below a level of significance. Impacts to State- and/or federally listed plant species and species designated critical habitat may require additional consultation with the U.S. Fish and Wildlife Service pursuant to the federal Endangered Species Act if the individual Integrated Vector Management Program activity area occurs outside an adopted Natural Community Conservation Plan/Habitat Conservation Plan or if take of that species is not covered under the specific adopted plan. Mitigation for impacts to special status plant species shall be consistent with local jurisdictions' policies and ordinances and/or adopted Natural Community Conservation Plans/Habitat Conservation Plans where required and identified within the individual Integrated Vector Management Program activity biological resources report that shall be prepared pursuant to M-BI-1a.	
	M-BI-1c Prior to conducting Integrated Vector Management Program activities, a qualified biologist shall flag areas to be avoided that contain sensitive biological resources. Where indicated by the qualified biologist, these areas shall be fenced or otherwise protected from direct or indirect impacts. Specifically, temporary (i.e., exclusionary) fencing shall be installed where feasible when grubbing, clearing, or grading would be conducted within 100 feet of sensitive biological resources depending on the species or habitat present, individual Integrated Vector Management Program activities, and site constraints. Temporary fencing (such as silt or orange construction fencing) shall be installed at limits of an individual Integrated Vector Management Program activity area prior to initiation of activities. A qualified biologist shall monitor the installation of temporary (i.e., exclusionary) fencing wherever it would abut sensitive species or vegetation communities, jurisdictional wetlands and waterways, or other sensitive areas, such as environmentally designated open space.	

Description of Impact	Mitigation Measure *	Significance After Mitigation
	M-BI-1d Prior to conducting Integrated Vector Management Program activities that would result in vegetation removal, permanent habitat modification, and/or ground disturbance in areas known to contain sensitive biological resources, a qualified biologist shall conduct a training session for personnel, as applicable, to inform them of the sensitive biological resources with potential to occur in the sensitive area and any mitigation and/or avoidance measures that must be implemented. **M-BI-1e** When sensitive biological resources have been identified on site or adjacent to an individual Integrated Vector Management Program activity area, a qualified biologist shall monitor initial vegetation clearing, grubbing, and ground disturbance activities to ensure that activities occur within the approved limits of work and that protective measures (e.g., flagging, fencing) are in place.	
The Proposed Project has the potential to cause significant direct impacts to special status animal species **(BI-2)**.	Mitigation would occur through mitigation measures **M-BI-1a, M-BI-1c, M-BI-1d, M-BI-1e** in addition to: **M-BI-2a** Integrated Vector Management Program activities that could result in vegetation removal, permanent habitat modification, and/or ground disturbance activities within potentially suitable habitat for State- and/or federally listed animal species shall occur outside a species' breeding season. If such activities are unavoidable during the respective breeding season, focused protocol surveys for each species with potential to occur shall be conducted prior to conducting Integrated Vector Management Program activities. Surveys shall follow the current U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife protocols, as appropriate. If State- and/or federally listed species are determined to occur within or adjacent to the individual Integrated Vector Management Program activity area, consultation with the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife under the Federal Endangered Species Act and California Endangered Species Act, respectively, shall be initiated, and any resulting mitigation measures (including but not limited to breeding season activity restrictions and/or habitat-based compensatory mitigation) identified during consultation shall be implemented. **M-BI-2b** Clearing or grubbing of vegetation during the general bird breeding season (February 15 through September 15) or raptor breeding season (January 15 through July 15) as defined by the *County of San Diego Guidelines for Determining Significance – Biological Resources* shall be avoided except as outlined by this	Less than Significant

Description of Impact	Mitigation Measure *		Significance After Mitigation
		measure. These breeding seasons shall not supersede implementing any agreements with the wildlife agencies, Habitat Conservation Plans, Habitat/Resource Management Plans, and Special Area Management Plans. If clearing and grubbing of vegetation is unavoidable during the breeding season, a pre-construction survey shall be conducted by a qualified biologist no more than seven days prior to conducting work in an individual Integrated Vector Management Program activity area that supports suitable nesting bird habitat to determine if active bird nests are present. If no nesting birds are documented (includes nest building or other breeding or active nesting behavior) within the individual activity area, clearing, grubbing, and grading shall be allowed to proceed. If an active nest is observed within the activity area, the qualified biologist shall determine an appropriate buffer around the nest based on the biology of the species and the specific site constraints. Activities shall not occur within the buffer area until the qualified biologist has determined that the nest is no longer active, young have fledged, or determined which activities within the buffer would not jeopardize nesting success. The buffer area shall be demarcated in the field with flagging, stakes, and/or temporary fencing. The nesting buffer may be determined and adjusted depending on the species present, individual Integrated Vector Management Program activities and site constraints, and in consultation with applicable wildlife agencies.	
The Proposed Project has the potential to cause significant indirect noise-related impacts to special status animal species **(BI-3).**	**M-BI-3**	For individual Integrated Vector Management Program activities adjacent to habitat occupied by State- and/or federally listed bird species (e.g., coastal California gnatcatcher, least Bell's vireo, and southwestern willow flycatcher) in which noise would be produced in excess of 60 A-weighted decibel equivalent continuous sound level or ambient noise levels (if ambient levels are above 60 A-weighted decibel), the Integrated Vector Management Program activities shall: a) Be postponed until a qualified biologist determines the nest(s) is no longer active or until after the respective breeding season; or b) Not occur until a temporary noise attenuation structure or barrier is constructed at the edge of the individual Integrated Vector Management Program activity area and/or around the noise-generating equipment to ensure that noise levels are reduced to below 60 A-weighted decibels or ambient, whichever is greater.	Less than Significant

Description of Impact	Mitigation Measure *	Significance After Mitigation
The Proposed Project has the potential to cause significant impacts to riparian habitats and sensitive natural communities **(BI-4).**	Mitigation would occur through mitigation measures **M-BI-1a, M-BI-1c, M-BI-1d, M-BI-1e** in addition to: **M-BI-4a** Permanent impacts to riparian habitat and other sensitive natural communities shall be offset through mitigation of habitat of equal or higher biological value at ratios commensurate with individual Integrated Vector Management Program activity impacts. Mitigation shall occur by implementing one or a combination of the following: off-site or on-site preservation, enhancement, restoration, and/or creation of habitat; deduction of habitat mitigation credits from an approved mitigation area or bank, or other location deemed acceptable by the County and applicable regulatory agencies. Final mitigation obligations shall be determined based on the quality, quantity, and type of habitat impacted at ratios consistent with local policies and ordinances, or, for projects within the boundaries of an adopted Natural Community Conservation Plan/Habitat Conservation Plan, in accordance with the applicable mitigation ratios and measures of that specific final plan. In the event that the adopted Natural Community Conservation Plan/Habitat Conservation Plan does not stipulate mitigation ratios for temporary impacts, temporary impacts to riparian habitat and other sensitive natural communities shall be mitigated through on-site revegetation of temporarily impacted areas to pre-construction conditions and appropriate vegetation types at a minimum 1:1 ratio. **M-BI-4b** For individual Integrated Vector Management Program activities resulting in permanent impacts to wetland or riparian habitats and/or upland sensitive natural communities, and whose mitigation includes enhancement, restoration, and/or creation of such habitat, a restoration plan shall be prepared by qualified personnel with experience in Southern California ecosystems and native plant restoration techniques. At a minimum, the restoration plan shall include the following information: (a) the location of the mitigation site(s); (b) a schematic depicting the mitigation areas; (c) the plant species to be used, container sizes, and seeding rates; (d) a planting schedule; (e) a description of installation requirements, irrigation sources and methodology, erosion control, maintenance and monitoring requirements; (f) measures to properly control exotic vegetation on-site; (g) site-specific success criteria; (h) a detailed monitoring program; (i) contingency measures should the success criteria not be met; (j) a summary of the annual reporting requirements; and (k) identification of the responsible party(ies) for	Less than Significant

Description of Impact	Mitigation Measure *	Significance After Mitigation
	meeting the success criteria and providing for conservation of the mitigation site in perpetuity.	
The Proposed Project has the potential to cause significant impacts to jurisdictional waters and wetlands **(BI-5).**	Mitigation would occur through mitigation measures **M-BI-1a, M-BI-1c, M-BI-1d, M-BI-1e, M-BI-4a, M-BI-4b** in addition to: **M-BI-5** Individual Integrated Vector Management Program activities that would result in impacts to federal or State regulated water bodies (i.e., waters of the U.S. and State, streambeds, wetlands, and/or riparian habitat) shall obtain applicable permits from federal and State regulatory agencies prior to the commencement of such discharge or dredging activities. Such agencies may include U.S. Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife. Mitigation requirements for impacts to federal and State regulated water bodies would be determined through the permitting process.	Less than Significant
2.2 Cultural Resources		
Ground-disturbing activities have the potential to cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5 of the CEQA Guidelines **(CR-1).**	**M-CR-1** **Site-Specific Cultural Resources Survey.** For individual Integrated Vector Management Program source reduction activities that have been determined to have the potential to result in impacts to cultural resources, as identified in the Integrated Vector Management Program Best Management Practices (A13), a qualified archaeologist shall be retained to conduct a site-specific cultural resource survey if the site has not been surveyed in the previous 5 years. The survey shall consist of a record search of the California Historical Resources Information System housed at the South Coastal Information Center, research to identify historic land use in the area, and a pedestrian survey that includes the participation of a Native American monitor. A review of the Sacred Lands File maintained by the Native American Heritage Commission shall also be requested for the individual Integrated Vector Management Program activity. A report shall be prepared to discuss the survey and record search results. **Cultural Resources Evaluation.** If potential cultural resources are identified in an individual Integrated Vector Management Program activity area where ground disturbance is proposed, a cultural resources significance evaluation shall be conducted. Specifically, a significance evaluation shall be prepared if the individual Integrated Vector Management Program activity has the potential to result in an adverse effect to (1) new cultural resources that are identified as a result of a site-	Less than Significant

Description of Impact	Mitigation Measure *	Significance After Mitigation
	specific survey, or (2) previously recorded resources that have not been previously evaluated that are re-identified during a survey, unless resources can be avoided. Per the *County of San Diego Report Format and Content Requirements, Cultural Resources: Archaeological and Historic Resources*, significance evaluations will not be required if the resource has been evaluated for California Environmental Quality Act significance or for National Register of Historic Places eligibility within the last 5 years and if there has been no change in the conditions that contributed to the determination of resource importance (County 2007b). Significance evaluation efforts may include additional research to determine whether the resource meets the criteria for listing on the California Register of Historical Resources and/or subsurface investigation. Archaeological testing programs involving subsurface investigation shall include assessing the horizontal and vertical dimensions of a site, the chronological placement, site function, artifact/ecofact density and variability, presence/absence of subsurface features, and research potential. A Native American monitor shall be retained for all subsurface investigations. Resources found to be non-significant as a result of a survey and/or assessment will require no further work beyond documentation of the resources on the appropriate California Department of Parks and Recreation site forms and inclusion of results in the survey and/or assessment report prepared for the individual Integrated Vector Control Program activity. A cultural resources report shall be prepared to discuss potential impacts associated with the individual Integrated Vector Management Program activities and identify measures to reduce all significant impacts to below a level of significance, if applicable. **Cultural Resources Data Recovery Program.** If significant cultural resources are identified within an individual Integrated Vector Management Program activity area where ground disturbance is proposed, and avoidance of impacts to the resource is not possible, a data recovery program (including research design) shall be implemented. The data recovery program shall be subject to the provisions, as outlined in California Public Resources Code, Section 21083.2, and completed prior to the implementation of the individual Integrated Vector Management Program activity. Avoidance of significant cultural resources shall be sought to the extent possible. **Cultural Resources Monitoring Program.** If significant cultural resources are identified or potential cultural resources are suspected to occur in an individual Integrated Vector Management Program activity area where ground disturbance is	

Description of Impact	Mitigation Measure *	Significance After Mitigation
	proposed, monitoring shall be required by an archaeologist and Native American monitor. If unevaluated potentially significant cultural resources are discovered, construction activities shall be diverted away from the discovery until significance evaluation can be conducted. To mitigate potential impacts to significant cultural resources, a data recovery program for any newly discovered cultural resource would be prepared, approved by the County, and implemented using professional archaeological methods. Construction activities would be allowed to resume after the completion of the recovery of an adequate sample and the recordation of features. All cultural material collected during the data recovery program or monitoring program would be processed and curated at a San Diego County facility that meets federal standards per Code of Federal Regulations, Title 36, Part 79, unless the Native American monitors request the collection. After monitoring is completed, an appropriate report shall be prepared. If no significant cultural resources are discovered, a brief letter shall be prepared. If significant cultural resources are discovered, a report with the results of the monitoring and any data recovery (including the interpretation of the data within the research context) shall be prepared.	
Ground-disturbing activities have the potential to cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines **(CR-2)**.	Mitigation would occur through mitigation measure M-CR-1.	Less than Significant
Ground-disturbing activities have the potential to disturb human remains **(CR-3)**.	**M-CR-2** **Identification of Human Remains.** In the event that human remains are discovered during individual Integrated Vector Management Program source reduction activities, work shall halt in the identified area, the County Medical Examiner shall be contacted, and California Public Resources Code, Section 5097.98; CEQA Guidelines, Section 15064.5; and California Health and Safety Code, Section 7050.5, shall be followed. If the remains are determined to be of Native American origin, the most likely descendant shall be identified by the Native	Less than Significant

Description of Impact	Mitigation Measure *		Significance After Mitigation
		American Heritage Commission and contacted by the County to determine proper treatment and disposition of the remains.	
2.3 Geology and Soils			
Ground-disturbing activities have the potential to disturb the substratum or parent material below the major soil horizons in a paleontologically sensitive area, which would result in a potentially significant impact to paleontological resources **(GE-1)**.	**M-GE-1a**	Integrated Vector Management Program activities that are within **high or moderate paleontologically sensitive areas where excavation is *greater* than 2,500 cubic yards** pursuant to *County of San Diego Guidelines for Determining Significance – Paleontological Resources* shall implement a monitoring program during excavation/grading activities. A Project Paleontologist and Paleontological Resources Monitor shall be retained as defined by the County Guidelines. The Project Paleontologist shall attend the pre-grading/pre-construction meeting to consult with grading contractors regarding the requirement of monitoring for paleontological resources, the potential importance and uniqueness of fossils and other paleontological resources that could be found during grading and excavation for the Proposed Project, and the regulations that govern the protection of paleontological resources. The Project Paleontologist and Paleontological Resources Monitor shall monitor the original cutting (grading and excavation activities) of previously undisturbed formations of sedimentary rocks that may contain paleontological resources for unearthed fossils. The frequency of monitoring depends upon the rate of excavation, the materials excavated, and the abundance of fossils. In the event paleontological resources are found, construction activities shall be diverted or temporarily halted in the area where the resources were found to allow for recovery/salvage. Upon conclusion of grading or excavation activities, a Paleontological Resources Mitigation Report shall be prepared, even if no resources are found during the monitoring. The report shall summarize the results of the mitigation program, including field and laboratory methodology, monitoring dates, location and geologic and stratigraphic setting, monitoring efforts, conclusions, and references cited, as well as if paleontological resources were found, lists of collected fossils and their paleontological significance and descriptions of any analyses.	Less than Significant

Description of Impact	Mitigation Measure *		Significance After Mitigation
	M-GE-1b	Integrated Vector Management Program activities that are within **low or marginal paleontologically sensitive areas or within high or moderate paleontologically sensitive areas where excavation is *less* than 2,500 cubic yards** pursuant to *County of San Diego Guidelines for Determining Significance – Paleontological Resources* shall implement a monitoring program during excavation/grading activities. A Standard Monitor shall be retained as defined by County Guidelines. If a fossil of greater than 12 inches in any dimension, including circumference, is encountered during excavation or grading, all excavation operations in the area where the fossil was found shall be suspended immediately, the County Department of Environmental Health and Quality shall be notified, and a Project Paleontologist shall be retained to assess the significance of the find and, if the fossil is significant, to oversee the salvage program, including salvaging, cleaning, and curating the fossils and documenting the find.	
2.4 Tribal Cultural Resources			
Ground-disturbing activities could have the potential to cause a substantial adverse change in the significance of a TCR pursuant to §21074 of the California Public Resources Code **(TCR-1).**	**M-TCR-1**	Mitigation would occur through mitigation measures M-CR-1 and M-CR-2.	Less than Significant

* In addition to the Mitigation Measures listed above, the Proposed Project includes project design features in the form of best management practices (BMPs) applied prior to and during vector control activities. For a complete list of all BMPs (i.e., project design features), please refer to Table 1-2 (IVMP Best Management Practices), which identifies the BMPs that are intended to minimize impacts associated with the Proposed Project implementation.

CHAPTER 1.0 PROJECT DESCRIPTION, LOCATION, AND ENVIRONMENTAL SETTING

1.1 History and Background

This section presents the history of why and how the County of San Diego (County), Department of Environmental Health and Quality (DEHQ), Vector Control Program (VCP) was established to control vectors transmitting vector-borne diseases and creating public nuisances in San Diego County.

1.1.1 Legislative and Regulatory Actions

The VCP is an existing division of County DEHQ that is responsible for monitoring and controlling mosquitoes and other disease-carrying insects and rodents in the county. In 1947, California Government Code, Section 25842.5, was amended by the California Legislature to authorize local jurisdictions to directly control and abate mosquitoes. By 1950, the California Department of Public Health had contracted the County to conduct mosquito and vector mosquito control in the county. The County has been protecting public health from disease-carrying vectors since that time.

The VCP operates under the authority of the Mosquito Abatement and Vector Control District Law of the State of California (California Health and Safety Code, Sections 2000–2093), which details the need and rationale for creating mosquito abatement and vector control districts in the State. As identified in the California Health and Safety Code, Sections 2001 et seq., a board of supervisors is allowed by California Government Code, Section 25842.5, to provide the same services as, and exercise the powers of, a mosquito abatement and vector control district. As such, on July 1, 1989, the County Board of Supervisors (Board) assumed the powers of a vector control district.[1] The city council of each incorporated city consented to the Board's resolution, and the Service Area[2] was formed, which includes all 18 incorporated cities and unincorporated areas of San Diego County—excluding Native American reservation land and federally owned lands. The Board delegated implementation and enforcement duties to the VCP, which continues to provide countywide vector prevention and control services to this day. County Code of Regulatory Ordinances, Section 64.201, also identifies and governs the County's authority to establish and maintain a vector control program.

A "vector" is defined by Section 64.202 of the San Diego County Code of Regulatory Ordinances as an animal capable of transmitting the causative agent of human disease and also includes eye gnats. However, for the purposes of this Program Environmental Impact Report (PEIR), the State of California's definition is applied, which defines a vector as any animal capable of spreading disease or producing human discomfort or injury, including but not limited to mosquitoes, flies, mites, ticks, other arthropods, and rodents and other vertebrates (California Health and Safety Code, Section 2002[k]).

[1] At a regular meeting of the Board on May 23, 1989 (Item 67-67A), the Board authorized the formation of a Vector Control District effective July 1, 1989.

[2] Service Area is synonymous with Assessment Area, which is defined in the Engineer's Report (County 2022) as the area in which an annual levy provides funding for essential vector control services, including those properties that may request and/or receive direct and more frequent service and are located within the scope of the vector surveillance area. As such, Native American reservation land, as a Sovereign Nation, is excluded from the Service Area along with federally owned lands that receive minimal to no services.

Since first authorized under California Government Code, Section 25842.5, in 1947, the VCP has continued to reduce the potential for the spread of diseases and the impact that vectors have on property through a comprehensive strategy known as "integrated vector management." In 1967, the State Board of Health also adopted a policy recognizing the need for vector control programs to evolve from a pesticide-reliant program to integrated pest management (Bartkiewicz, Kronick & Shanahan 2013). Today, the VCP carries out a full range of vector control activities, practices, and procedures to protect the public from vector-borne diseases and public nuisances while minimizing the effects on the environment. The VCP updates its strategies as new information becomes available to use best management practices (BMPs) to protect against existing and new or emerging vectors and public health risks. The five core components of integrated vector management include (1) surveilling mosquito larvae and adults and vector-borne pathogens; (2) rationally setting action thresholds; (3) selecting appropriate and diverse vector control strategies, including habitat modification, biological control, and chemical control; (4) conducting outreach, educational programs, and community engagement; and (5) monitoring insecticide efficacy (CDPH 2008a; AMCA 2021).

Lastly, in June 2005, San Diego County property owners voted to approve the *Mosquito, Vector and Disease Control Assessment* for improved mosquito, vector, and disease surveillance and control services, which was first levied in fiscal year 2005–06[3] and is reassessed and approved by the Board annually.

It should be noted that the Board also adopted a countywide Eye Gnat Program on December 5, 2012, and associated Negative Declaration (County Environmental Review No. 12-00-001) dated October 31, 2012. In addition, on March 24, 2010, the Board certified a PEIR for the Vector Habitat Remediation Program (VHRP), which offered competitive and direct grants to private and public organizations with the goal of implementing long-term solutions to eliminate or reduce mosquito-breeding habitats (State Clearinghouse No. 2009011067). However, the VHRP has been concluded. As such, further analysis of these programs is not required because those programs and their associated California Environmental Quality Act (CEQA) documents were previously approved by the Board. The programs and their prior CEQA documents are incorporated by reference.

1.1.2 Vector-Borne Diseases in the Service Area

Of the world's 3,000 mosquito species, more than 50 species live in California, and 27 have been identified in San Diego County, which is the Service Area (see Figure 1-1, *Regional Map*).

Ten commonly encountered species of mosquitoes (*Culex tarsalis*, *Culex quinquefasciatus*, *Culex erythrothorax, Culex stigmatosoma*, *Culex thriambus*, *Culex restuans*, *Culiseta inornata, Anopheles hermsi*, *Aedes sierrensis,* and *Aedes taeniorhynchus*) detected in San Diego County have the ability to transmit endemic diseases such as California encephalitis, western equine encephalitis, Saint Louis encephalitis, malaria, canine heartworm, and/or the now established West Nile virus (WNV). Some of these species can potentially transmit foreign diseases like Japanese encephalitis, Venezuelan equine encephalitis, Rift Valley fever virus, and *Wuchereria bancrofti*, the nematode responsible for causing Bancroftian filariasis (a.k.a. elephantiasis). Two invasive *Aedes* species detected in the county since 2014 and 2015 (*Aedes aegypti* and *Aedes albopictus*, respectively) can transmit viruses such as dengue, Zika, and chikungunya. A third invasive *Aedes* species, *Aedes notoscriptus*, has also been detected and has the potential to transmit viruses and heartworm. Potential breeding sources may include private and public

[3] On July 13, 2005, the County Board of Supervisors approved Resolution No. 05-017, which approved the first-year levy of the assessments for fiscal year 2005–06.

lands in rivers, streams, marshlands, lagoons, ponds, and various other human-made and natural sources of standing water.

1.1.3 Potential for Human and Animal Illness

The VCP monitors disease-carrying animals such as mosquitoes, ticks, and rodents, as well as other pests, including flies on commercial poultry ranches in the unincorporated county. The VCP reduces mosquito populations through the control and abatement of mosquito-breeding sources. In addition, the VCP provides property inspections and advice for the control of domestic rats, flies, and other pests for properties throughout San Diego County. The VCP conducts trappings and tests for diseases carried by insects and small mammals. VCP staff conduct public education and outreach activities to increase public awareness of steps to prevent and protect themselves against disease-carrying vectors for different species of mosquitoes, which are the vectors that carry diseases such as Zika, dengue, chikungunya, and WNV. In recent years, following the outbreak of Zika in the Americas and invasive *Aedes* mosquitoes entering San Diego County, there has been an increased focus on controlling this species of mosquito.

The services provided by the VCP help reduce the likelihood and severity of such outbreaks in San Diego County and reduce the harm to economic activity caused by vectors.

1.1.4 County Vector Disease and Diagnostic Lab

As part of the VCP's surveillance technology, the program incorporated a Vector Disease and Diagnostic Laboratory in July 2010. The laboratory provides diagnostics to support the VCP. Scientists use state-of-the-art molecular tests to detect vector-borne pathogens in a variety of vectors and reservoirs, including mosquitoes, ticks, fleas, birds, and rodents.

In response to the emerging spread of Zika and other viruses, the Vector Disease and Diagnostic Laboratory implemented diagnostic tests to detect Zika and other viruses in mosquito samples to support rapid decision-making, help evaluate public health risk, and inform appropriate responses and treatments. As new pathogens arise, the laboratory continues to incorporate or develop new tests to support the VCP.

1.2 Program Purpose, Objectives, and Description

1.2.1 Purpose and Need

California's climate and topography support a variety of biological organisms. Most of these organisms are beneficial, but some are vectors of human disease pathogens or directly cause other human diseases such as hypersensitivity, envenomization, and secondary infections. Some of these diseases, such as mosquito-borne viral encephalitis, can be fatal, especially in children and older individuals. California's connections to the wider national and international economies increase the transport of vectors and pathogens. Invasions of the United States by vectors, such as the yellow fever mosquito, and pathogens, such as the WNV, underscore the vulnerability of humans to uncontrolled vectors and pathogens.

Accordingly, the State found that individual protection against vector-borne diseases is only partially effective. Adequate protection of human health against vector-borne diseases is best achieved by organized public programs. The protection of Californians and their communities against the discomforts and economic effects of vector-borne diseases is an essential public service that is vital to public health, safety, and welfare. As such, in 1989, the Board assumed the powers of a vector control district to better serve the entire county.

1.2.2 Program Goals and Objectives

The overarching goal of the VCP is to protect the public from vectors, including the diseases they transmit and the discomfort and injury they cause. The existing vector control program is ongoing and currently implements vector control through various techniques, including surveillance and monitoring, source treatment (i.e., biological and chemical controls), public education, outreach, and disease diagnostics. The VCP now proposes to enhance its existing program by including additional equipment, services, and techniques.

CEQA only requires analysis of new or proposed changes compared to existing conditions; however, this PEIR analyzes both the VCP's existing activities and its proposed activities to provide a transparent, comprehensive, and complete environmental analysis. Both existing and proposed VCP activities are collectively referred to as the **Proposed Project** or **Integrated Vector Management Program (IVMP)** in this document pursuant to CEQA.[4]

The CEQA Guidelines (Section 15124[b]) require that project objectives be set forth in an EIR to define the underlying purpose of the Proposed Project, help the Lead Agency define a reasonable range of alternatives, and ultimately, support CEQA findings as necessary. The objectives of the IVMP are as follows:

1. Protect public health and well-being and prevent economic damage, from vectors throughout San Diego County by applying integrated vector management practices.

2. Implement effective and efficient integrated vector management practices in a manner that balances protecting the environment with the need to protect the public from vector-borne diseases and nuisances.

3. Allow for the inclusion and utilization of new and proven vector control techniques and strategies, including a wide range of different tools and practices to safeguard public health and safety.

4. Coordinate and continuously collaborate with other vector control districts throughout California, as well as State and federal public health and environmental agencies, to ensure the vector control program adapts as new vectors and diseases emerge.

1.2.3 Program Description and Components

Under the Proposed Project, the VCP would continue to comprehensively implement vector control techniques and enhance its existing program through the following five components: 1) surveillance and monitoring; 2) source reduction (i.e., physical control); 3) source treatment (i.e., biological and chemical controls); 4) public education and outreach; and 5) disease diagnostics. Collectively, these techniques comprise an integrated vector management strategy. Table 1-1, *Summary of Core IVMP Functions*, provides a tabular summary of the activities included under each component. A general discussion of these components is discussed below followed by additional information unique to each vector activity.

Specifically, surveillance and monitoring include assessing the locations and abundance of vector populations and species so that data-informed decisions can be made. Source reduction includes physical controls such as vegetation management, water control, or other maintenance activities to reduce or eliminate vector-breeding sources. Source treatment includes the application of

[4] Although this PEIR analyzes existing and proposed activities as the "Proposed Project," the alternatives analysis in Chapter 4 only applies to future activities. For additional discussion, please refer to Chapter 4 of this PEIR.

biological and chemical controls. Biological controls involve the use of mosquito fish (*Gambusia affinis*) or naturally occurring biological pesticides.[5] Chemical controls primarily consist of the application of other pesticides that contain synthetic products to reduce or eliminate vectors.

Each of these techniques could be applied to the applicable vectors under the IVMP, including disease-transmitting mosquitoes (i.e., *Culex* spp., *Aedes* spp., and *Anopheles* spp.), nuisance mosquitoes (not disease-transmitting), vectors associated with mammalian disease reservoirs (i.e., ticks and rodents), and other nuisance species (e.g., eye gnats not on commercial organic farms) deemed necessary for control as approved by the VCP.

Specifically, the VCP proposes to enhance its existing vector program by incorporating:

- Use of fixed-wing aircraft or drones[6] for surveillance
- Grading, dredging, or vegetation removal for source reduction
- Autodissemination[7] of larvicides
- Larvicides applied over a wide area[8] via fixed-wing aircraft or drones
- Adulticides applied via drones
- Non-emergency use of adulticides

Vector reduction and treatment activities are guided by risk-based assessments and response criteria specific to each vector of concern. The location and extent of specific activities implemented under the IVMP are evaluated based on the site-specific situation and dictated by the targeted vector, regulatory requirements, and applicable management approaches. The IVMP incorporates various vector management principles and techniques from guidance documents that are regularly updated, such as the VCP's annual *Mosquito, Vector and Disease Control Assessment Engineer's Report* (hereafter referred to as *Engineer's Report*) and *Mosquito-borne Virus Strategic Response Plan* (County 2022a, 2022b), as well as procedural documents, such as the *Mosquito Breeding Site Access Standard Operating Procedure* (County 2014).

Vectors and their diseases continuously evolve and spread to new areas. These dynamic factors present new challenges that require best practices and methods for their control and to reduce the risk to public health. As such, the IVMP integrates proven and emerging vector control activities and materials established in coordination with other regional vector control districts and research institutions throughout California, as well as State and federal agencies such as the California Department of Public Health, California Environmental Protection Agency (CalEPA), U.S. Environmental Protection Agency (USEPA), and Centers for Disease Control and Prevention. VCP staff routinely communicate with other agencies and districts to identify new or emerging vector-borne diseases and outbreaks and to share vector management techniques.

[5] "Pesticide" is defined by Section 12753 of the federal Food and Agriculture Code as any substance intended for preventing, destroying, repelling, or mitigating any pest. The California Department of Pesticide Regulation incorporates this same definition from Food and Agriculture Code as reflected in the California Code of Regulations, Section 6000. Any living organism that causes damage or economic loss and/or transmits or produces disease may be the target pest. Some common categories of pesticides include insecticides, herbicides, rodenticides, fungicides, repellents, and disinfectants.

[6] For the purposes of this PEIR, "drone" is intended to generically mean a remotely piloted or unpiloted aircraft. As of this writing, the Federal Aviation Administration's official terminology is Unmanned Aircraft Systems; however, the Federal Aviation Administration is transitioning toward gender-neutral terminology such as drone operator, certificated remote pilot, model aircraft flyer, and advanced air mobility operator.

[7] Autodissemination includes using mosquitoes to apply insecticides to hidden water sources where they breed.

[8] Wide-area larviciding is the technique of applying larvicides over a wide area to specifically kill mosquito larvae. It can be performed from the ground or air.

Previously published research, data, expertise, and collaboration with external colleagues and stakeholders are consulted to help address topics where information may be lacking. Data analysis may be used to improve surveillance and control methods, genetic analyses of vectors and their pathogens to identify new strains, biological characteristics and virulence factors, new surveillance and control tools testing, analysis of vector resistance to pesticides so that appropriate materials can be used, and partnering with other laboratories, government agencies, academic institutes, companies, and foundations to gain knowledge that will improve the IVMP's ability to achieve its goals. All vector control methods based on empirical data, scientific evidence, and expert guidance may be implemented to address public health risks and public nuisances as they arise.

The next several paragraphs provide a general introduction of the Proposed Project's five components followed by additional information unique to each vector. Table 1-1 also provides a summary of these IVMP components.

1. Surveillance and Monitoring

Vector surveillance, monitoring, and diagnostics are needed to assess location and abundance of vector populations and species so that data-informed decisions can be made. Vector surveillance involves monitoring vector populations and habitat, their disease pathogens, and human/vector interactions. Vector surveillance provides VCP staff with valuable information about which vector species are present or likely to occur, locations in which they may occur, abundance, and if they are carrying diseases. The information obtained from surveillance is evaluated against treatment and risk-based response criteria to decide when and where to implement vector control measures, and to help form action plans that can also assist in reducing the risk of contracting disease. Vector surveillance can help minimize the area to which control techniques may be applied by directing activities to the areas where they are needed.

The VCP currently monitors over 1,600 mosquito-breeding sources throughout the county. Monitoring includes such techniques as setting traps to determine abundance and species of mosquitoes, testing mosquitoes for presence of disease, collecting and testing dead birds for WNV, and conducting surveys via ground vehicles, aircraft (including drones), watercraft, and remote sensing equipment to evaluate mosquito-breeding sources. Monitoring and testing sentinel chicken flocks for virus exposure is another technique that the VCP has used and may use to detect viruses in the environment.[9] Surveillance is also conducted for ticks (for tularemia, Lyme disease, and spotted fever rickettsias) and rodents (for plague and hantavirus). Under the Proposed Project, the VCP would also have the option to utilize fixed-wing aircraft or drones for surveillance. Specific details regarding existing and future vector surveillance activities implemented under the IVMP are described below.

2. Source Reduction

Source reduction techniques (i.e., physical controls) are used to reduce vector-breeding sources such as habitat and other areas of harborage. Source reduction primarily involves physical control techniques that eliminate or reduce standing water, including but not limited to ground disturbance (e.g., grading), vegetation management (including physical removal[10]), water control, and other

[9] Sentinel chickens are used primarily for detection of the mosquito-borne WNV and Saint Louis encephalitis virus. If bitten by infected mosquitoes, chickens develop antibodies to the virus but do not develop symptoms. Sentinel chickens may be placed in various locations throughout the IVMP area and regularly tested to detect these viruses.

[10] Another technique to manage vegetation is to apply herbicides, which target plants. However, the VCP does not currently employ herbicides as part of its existing vector control program and does not propose herbicide usage under this PEIR.

maintenance activities. Trapping and removing vectors is also a form of source reduction. Currently, VCP staff may direct property owners to manage mosquito-breeding sources on their properties to reduce mosquito production. Under the Proposed Project, VCP staff would consider implementing grading, dredging, or vegetation removal activities as needed. If necessary, any physical controls that alter the environment would be performed with concurrence of agencies with appropriate jurisdiction.

3. Source Treatment

Source treatment includes biological and chemical controls of vectors. Specifically, biological controls include mosquito fish and naturally occurring bacterial larvicides such as *Bacillus thuringiensis* subsp*. israelensis* (Bti) and/or *Lysinibacillus* (*Bacillus*) *sphaericus* (Ls)[11] applied at rates specific to larval mosquito control. Chemical controls include application of synthetic pesticide products, that contain manufactured active ingredients that are not naturally-occurring, to reduce larval and adult mosquito populations. Currently, methods of application include but are not limited to backpack applicators, truck-mounted equipment, or aircraft (i.e., helicopter). Under the Proposed Project, the VCP would also have the option to apply products via piloted aircraft, including larvicides via fixed-wing aircraft or drones, and adulticides via drones. In addition, the Proposed Project would give the VCP the ability to use autodissemination techniques of larvicides and non-emergency use of adulticides.

4. Public Education and Outreach

Community education and outreach efforts are critical to encourage prevention of vector-breeding sources and harborage within neighborhoods, as well as personal protection against vector exposure, including using insect repellents registered by the USEPA, wearing protective clothing (long-sleeve shirts and pants), and placing screens on doors, windows, and rain barrels.

While this component is a critical element of the VCP's ongoing vector program, public education activities are categorically exempt from CEQA review (CEQA Guidelines, Section 15322: *Educational or Training Programs Involving No Physical Changes*) based on a finding by the California Secretary of Natural Resources that these activities do not have a significant effect on the environment. Therefore, for completeness, educational activities will be described in this chapter but will not undergo environmental review in this document.

5. Disease Diagnostics

As discussed earlier in the chapter, the VCP utilizes a Vector Disease and Diagnostic Laboratory, which provides diagnostics to support the VCP. Scientists use state-of-the-art molecular tests to detect vector-borne pathogens in a wide variety of vectors and reservoirs, including mosquitoes, ticks, fleas, birds, and rodents.

The VCP uses the Vector Disease and Diagnostic Laboratory to test vector specimens from the field for numerous diseases that could be a risk to public health. These include viruses like WNV, Saint Louis encephalitis, western equine encephalitis, dengue, chikungunya, hanta, and Zika, and bacterial pathogens such as *Francisella* (tularemia), *Yersinia* (plague), *Rickettsia* (Rocky Mountain spotted fever) and *Borrelia* (Lyme), as well as many others. The laboratory uses tests to detect the genetic material and/or antibodies to these pathogens. Test results are obtained rapidly so that actions to protect public health can be instituted by the VCP in a timely manner. Strict biocontainment protocols are used, and pathogens are inactivated in samples before testing

[11] *Lysinibacillus* (*Bacillus*) *sphaericus* (Bs): *Lysinibacillus* is the new genus name for this organism, but the VectoMax label still refers to it by its previous name.

to not pose a risk to staff or the public. When necessary, new tests are used or developed to detect emerging diseases. Some mosquitoes are tested for genes that confer resistance to commonly used pesticides to monitor pesticide sensitivity and resistance.

While this component is a critical element of the VCP's ongoing vector program, disease diagnostic activities are categorically exempt from CEQA review (CEQA Guidelines, Section 15306: *Information Collection*) based on a finding by the California Secretary of Natural Resources that these activities do not have a significant effect on the environment. Therefore, for completeness, disease diagnostic activities will be described in this chapter but will not undergo environmental review in this document.

1.2.3.1 *Mosquitoes*

As discussed earlier, a "vector" is defined by the State of California as any animal capable of spreading disease or creating a public nuisance by producing human discomfort or injury. Therefore, this PEIR addresses both disease-carrying and nuisance mosquitoes. Furthermore, disease-specific management techniques can be employed depending on the type and location of mosquito species or disease (such as the *Culex* spp. that transmit WNV and invasive *Aedes* spp. that transmit multiple viral pathogens). Specifically, the *Mosquito-borne Virus Strategic Response Plan* identifies rational, integrated, risk-based responses designed to promote safe and livable communities and to educate and involve county agencies and property owners in a year-round effort to control mosquito breeding and minimize environmental and economic impacts associated with mosquito-borne diseases. The *Mosquito-borne Virus Strategic Response Plan* is based on published research, State and federal guidelines, BMPs, and VCP experience and is updated as new information becomes available to adapt to changing environmental conditions in San Diego County.

Surveillance and Monitoring

Surveillance is conducted throughout the county, focusing on areas near probable and known breeding sources. Treatment strategies are based on the results of the surveillance program and are specifically designed for individual areas. Surveillance devices include carbon dioxide-baited traps and Reiter Gravid traps (RGTs), as well as other species-specific traps such as BG Sentinel traps that target invasive *Aedes* mosquito species. RGTs are used for collecting female mosquitoes searching for a place to lay their eggs. The traps are strategically placed to measure mosquito levels throughout the county and are used to determine disease infection levels and locate mosquito-breeding sources. The IVMP is continually enhancing its surveillance program to monitor and trap in the areas of discovery (and beyond) to further define the extent and levels of mosquito species and to target outreach efforts.

Mosquito-breeding source inspections are performed in accordance with the San Diego County Code of Regulatory Ordinances, Title 6, Division 4, Chapter 2, Section 64.204, and the California Health and Safety Code, Section 2040, within the guidelines established by the Fourth Amendment of the U.S. Constitution. VCP staff are directed to avoid physical impacts to sites when accessing mosquito-breeding sources and to comply with standard operating procedures (County 2014).

Specifically, regarding WNV, dead bird testing is also used as a surveillance tool. The VCP requests that residents report deceased birds, such as crows, ravens, jays, hawks, and owls, which may be collected and tested for WNV, to the VCP. Dead birds are often the earliest indication of WNV activity. By monitoring WNV-positive dead birds in the county, the VCP can

identify the time and areas of high-WNV activity and strategically allocate resources to protect the community.

Homes with neglected green swimming pools and/or ponds can support significant mosquito breeding. To help locate these previously unidentified breeding sites, the VCP conducts aerial surveillance either with the San Diego County Sheriff's helicopter or through an approved contractor. Once neglected green pools and/or ponds have been located and determined to present a concern for potential mosquito breeding, the VCP inspects them and implements measures to prevent mosquito breeding if necessary.

Currently, the VCP's surveillance techniques include setting traps to determine abundance and species, testing for disease, collecting and testing dead birds, and conducting surveys via ground vehicles, aircraft, watercraft, and remote sensing equipment to evaluate mosquito-breeding sources. Under the Proposed Project, the VCP would also have the option to utilize fixed-wing aircraft or drones to visually inspect locations for potential presence of mosquito breeding. Specific details regarding existing and future vector surveillance activities implemented under the IVMP are described below.

Source Reduction

As part of the IVMP, VCP staff currently direct property owners to manage mosquito-breeding sources on their properties to reduce mosquito production. This may include the elimination of standing water, removal of vegetation or sediment, interruption of water flow, rotation of stored water, pumping out and/or filling of sources, improvement of drainage and water circulation systems, and installation, improvement, or removal of culverts, tide gates, and other water control structures in wetlands or other water bodies. The VCP has the authority to direct property owners to coordinate water management efforts under the guidance of applicable federal and State regulatory agencies. Under authority of County Code of Regulatory Ordinances, Section 64.101, the VCP also has the authority to conduct abatement activities if warranted. Under the Proposed Project, VCP staff would consider implementing grading, dredging, or vegetation removal activities as needed.

Source Treatment

Biological Control

Biological control entails the use of natural predators, parasites, or pathogens to reduce immature mosquito numbers. For example, mosquito fish are a species of fish that eat mosquito larvae and pupae and, when introduced to mosquito-breeding sources, are one of the VCP's primary biological control agents to reduce the abundance of mosquitoes within contained water sources that do not connect to natural waterways. Mosquito fish are not native to California but have been widely established in the State since the early 1920s and now inhabit many water bodies. The VCP breeds and maintains a population of mosquito fish that is freely available to property owners at multiple sites throughout the county. These fish are used to control mosquito production only in artificial containers such as ornamental ponds, rain barrels, horse troughs, and neglected swimming pools and spas, and continue to be used for biological control of mosquito populations. The VCP also periodically uses nets and traps to collect mosquito fish from water sources throughout the county to replenish stocks and provide enough fish to support public needs.

The VCP also uses biological larvicides and Organic Materials Review Institute-certified organic materials registered with the USEPA, CalEPA, and other environmental agencies to control mosquito populations that cannot be adequately controlled with physical control measures or

mosquito fish. These larvicide products can contain naturally occurring bacteria, such as *Bacillus thuringiensis* subsp. *israelensis* and *Lysinibacillus* (*Bacillus*) *sphaericus*, that eliminate mosquito larvae that ingest them but are harmless to people, fish, pets, plants, and vertebrate wildlife when applied in accordance with label requirements as regulated by the USEPA (USEPA 2022a, 2022i; CDC 2017).

Chemical Control

Many mosquito-breeding sources cannot be entirely managed with physical or biological control measures; therefore, chemical applications may be required. The type and location of chemical control vary based on different factors, including but not limited to the vector species and growth stage, environment, disease presence, and risk level to public health. The primary form of chemical control is the application of pesticides, which target either mosquito larvae (i.e., synthetic larvicides) or adult mosquitoes (i.e., adulticides).

Only after passing stringent regulatory review can pesticides be approved for sale and use. Pesticides are subjected to numerous laboratory tests by the manufacturers and are reviewed and approved by the CalEPA (as part of the California Department of Pesticide Regulation [CDPR]), USEPA (which has final oversight and approval), and other State and regulatory agencies to identify possible unintended adverse effects to humans and wildlife. Before a pesticide can be marketed and used in the United States, the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requires that the USEPA evaluate the proposed pesticide to ensure that its use will not pose unreasonable risks of harm to human health and the environment (USEPA 2022b). When chemical controls are necessary, they are applied by Certified Vector Control Technicians in a manner that minimizes risk to human and ecological health and in accordance with the legal application rates, label instructions, and federal and State guidelines.

It is important to note the total amount of pesticides (biological and chemical) used by the VCP is negligible compared to other sectors in San Diego County and other counties throughout California. Specifically, in 2018, the VCP accounted for only 1.2% of all pesticides (by weight) in San Diego County according to the State's pesticide use reporting database (CDPR 2018a). The industries using the largest amount of pesticide in the county are agriculture, structural pest control (e.g., termites), and landscape maintenance. The VCP uses the least amount of pesticides among all other major groups. Furthermore, a Statewide comparison shows that San Diego ranked 27th out of 58 counties for total pounds of active pesticide used, which includes all sectors such as residential, commercial, industrial, agriculture, and public health (CDPR 2018b). Finally, according to the USEPA, 90% of all pesticides used in the United States are applied by the agricultural sector, 6% to 7% by the home and garden sector, and only 4% to 5% by the industrial / commercial / government sectors combined (USEPA 2017). After considering this data, eliminating pesticides by the VCP would not significantly reduce the amount of pesticides used across San Diego County, but it would severely restrict the VCP's ability to carry out its mission of protecting the public from vectors and vector-borne diseases.

Lastly, chemical controls applied within waterbodies defined by federal and State regulations as waters of the U.S. and/or State must be applied in accordance with the Statewide National Pollutant Discharge Elimination System (NPDES) Permit for Biological and Residual Pesticide Discharges to Waters of the U.S. from Vector Control Applications, as described in further detail in Section 1.5.1.2, *State*. Chemical controls may also be warranted in underground municipal stormwater or wastewater conveyance systems. Detailed information regarding specific chemical control applications for mosquitoes is described below.

Larval Mosquito Control

One of the primary strategies used by the VCP to control mosquito larva is source reduction and materials that eliminate mosquito larvae (called larvicides) before they grow into adults. Larvicides may include either naturally occurring bacteria or synthetic products. This strategy prevents mosquito populations from growing to sizes that present a high risk of disease transmission or public nuisance to residents but, at the same time, limit the effects on the environment. Larvicides can be applied to bodies of water using a variety of methods, including by hand, backpack applicators, truck-mounted equipment, or other motorized vehicles (e.g., piloted aircraft and drones, watercraft), to access remote locations. Depending on the time of year, water temperature, organic content, mosquito species present, larval density, vegetation, and other variables, larvicide applications may be repeated at continual intervals ranging from weekly to annually. Aerial application of mosquito larvicide is the preferred method of application in areas where ground access is limited or restricted. For instance, common locations for aerial application include marsh areas, streams, and ponds that contain thick stands of cattails and other vegetation, or there are portions of the application location that are inaccessible by land in the county.

Under the Proposed Project, the VCP would continue to have the ability to use larvicides as under existing conditions; however, the VCP would also have the option to apply larvicides via piloted aircraft, including fixed-wing aircraft or drones. In addition, the Proposed Project would give the VCP the ability to use mosquitoes already in the environment to disseminate larvicides themselves (autodissemination).

Adult Mosquito Control

If surveillance or inspections reveal that adult mosquitoes are present in conditions that create the potential for an elevated risk to human health, (e.g., abundance of vector species, proximity to human settlements, favorable weather conditions, presence of pathogens), then chemical control measures may be necessary to eliminate adult mosquitoes (adulticides). In situations with an elevated public health risk, such as when sufficient quantities of disease-infected adult mosquitoes are present or mosquitoes capable of transmitting a specific disease are found in proximity to a confirmed case of the disease, aerosolized application of adulticide to control adult mosquitoes to prevent disease transmission may be used in accordance with adopted strategic response plans. The County's *Mosquito-borne Virus Strategic Response Plan* includes criteria customized to the vector species and diseases detected to determine when and where adulticide is warranted. Adulticide applications may also be warranted to control mosquitoes in situations when disease has not been detected but mosquitoes that are capable of producing human discomfort or injury and constitute a public nuisance as defined in Section 3480 of the California Civil Code are present.

Under the Proposed Project, the VCP would continue to have the ability to use adulticides as under current conditions; however, the VCP would also have the option to apply adulticides via drone or for non-emergency use.

Public Education/Outreach

The IVMP conducts public education and outreach to educate residents about vectors and vector-borne diseases in the county. VCP staff distribute educational materials such as brochures, pamphlets, bookmarks, and tip cards in multiple languages. Social media is used to notify the public of press releases and scheduled aerial larvicide treatments. Other strategies include informational emails to parties who register interest on County websites and media campaigns

that deliver important educational information to the public in multiple formats, including television, radio, internet, and outdoor advertising. In addition, informational displays and presentations that comply with the Science, Technology, Engineering, and Mathematics (STEM) education guidelines are given at schools and health fairs and to other groups such as older adults and non-English-speaking communities.

Disease Diagnostics

The Vector Disease and Diagnostic Laboratory since July 2010 has provided (and will continue to provide) the VCP with the technology and capabilities for in-house laboratory testing for timely identification of vector-borne pathogens.

In response to the emerging spread of tropical diseases such as Zika, dengue and chikungunya, here is an example of the laboratory's critical role. In the last several years, the VCP optimized four separate tests into one test that could detect all four different dengue serotype viruses at once in mosquito samples. This test enhanced the efficiency of testing and assists the VCP in making real-time decisions. The VCP received an award from the National Association of Counties in 2020 for developing this test. In 2021, the VCP tested 1,367 batches of mosquitoes (20,706 mosquitoes) and 79 dead birds for different viruses including Zika, WNV, Saint Louis encephalitis, Western equine encephalitis, chikungunya, and dengue viruses that could pose a risk to human health.

1.2.3.2 *Mammalian Disease and Transmission*

Rodents such as rats, mice, and squirrels are the primary mammals surveyed under the IVMP. Disease-carrying species such as ticks, fleas, and other arthropods are also included in this category due to their ability to transmit disease between the aforementioned mammals. When appropriate, the VCP collects and tests for the presence of pathogens. The IVMP implements a rodent prevention and vector control program to reduce the impacts of rodents such as wood rats (*Neotoma* spp.) and the roof or black rat (*Rattus rattus*). Negative impacts from these species include disease spread, property damage, and public nuisances. The VCP assists property owners with rodent control efforts by providing inspections and consultations, including exterior site inspections to educate property owners about attractants and harborage that could be attracting rodents to the home.

Surveillance and Monitoring

The IVMP conducts surveillance for rodent-borne diseases, such as plague and hantavirus, by trapping wild rodents, collecting samples from them, and testing the samples for diseases. Rodents are monitored at various ports of entry, campgrounds, and other areas for the presence of plague. Mice and voles are tested for hantavirus exposure and other diseases. Whenever positive cases are detected, precautionary notices are posted in the affected area to inform the public, and when appropriate, a press release is issued.

Source Reduction

The IVMP assists property owners with their rodent control efforts by providing inspections and consultations. This includes providing educational materials and information on how to identify signs of rodent activity, the necessity for the removal of attractants and habitat for rodents at homes or businesses, and how to trap for rodent removal. While source reduction related to mammalian disease and transmission does not routinely occur, the San Diego County Code of Regulatory Ordinances, Section 64.101 et seq., authorizes the VCP to order the abatement of

rodent harborages or conduct the abatement of the harborages. In addition, California Health and Safety Code, Sections 116125–116170, address rodent infestations.

Source Treatment

Source treatments of non-mosquito vectors can include but are not limited to chemical controls applied to mammalian vectors, such as rodents, and mammal-related disease carriers, such as ticks, fleas, and other arthropods. For example, dusting rodent burrows with an insecticide powder may be conducted to control flea populations to reduce the transmission of plague when rodent flea counts are elevated and plague exposure is detected in the area. When pesticides are applied, label requirements are followed by VCP staff.

Public Education/Outreach

Public education and outreach are the primary management techniques for preventing mammalian diseases and transmission. A proactive approach like the outreach conducted for mosquitoes is used for educating the public about diseases transmitted by rodents, ticks, and fleas. Educational presentations, tabletop displays, and pamphlets are provided and distributed throughout the San Diego region. For example, rat control starter kits are given to property owners during site consultations and include a rat trap and educational information that focuses on exclusion, baiting, and trapping.

Disease Diagnostics

In addition to testing for mosquito-borne disease, the VCP also tests for rodent-borne diseases such as plague and hantavirus. This was also discussed above under Surveillance and Monitoring.

1.2.3.3 *Other Species*

The IVMP addresses other species, such as flies on commercial poultry ranches and eye gnats, that materially diminish the utility and usability of property and affect quality of life for county residents and businesses. This includes the Fly Abatement Program, which operates under the authority of Title 6, Division 4, Chapter 3, of the San Diego County Code of Regulatory Ordinances relating to the prevention and control of fly breeding on commercial poultry ranches. Annual manure management proposals are prepared by each rancher for approval by the VCP. The poultry ranch operator is required to follow this manure management plan. This can help reduce fly populations generated by the ranch. Routine and complaint-based inspections, along with enforcement measures, are used to ensure the prevention and abatement of flies that are not considered a public health risk but may constitute a public nuisance. Site investigations are conducted to address public complaints concerning flies.

On December 5, 2012, the Board approved ordinances amending Title 6 of the San Diego County Code relating to vector control to establish an Eye Gnat Program and the County Administrative Code to establish an Eye Gnat Abatement Appeals Board. The amendments added eye gnats to the definition of a “vector” in Title 6, Division 4, Chapter 2, Section 64.202 of the San Diego County Code, thereby allowing abatement actions to be taken when it is determined that eye gnats are causing a public nuisance.

Surveillance and Monitoring

Routine and complaint-based inspections, along with enforcement measures, are used to prevent and abate other species, such as flies, that may constitute a risk to public health and welfare.

Regarding the Eye Gnat Program, it is primarily complaint driven and seeks voluntary compliance before escalating to enforcement. VCP staff investigate complaints, maintain County-owned eye gnat traps set in affected areas, and may conduct inspections during eye gnat season.

Source Reduction

Source reduction (such as physical control) is traditionally reserved for vectors where there is a risk to public health, including the presence of disease or disease-transmitting vectors. However, in certain cases, abatement using source reduction may be warranted for nuisance species.

Source Treatment

Similar to source reduction, source treatment (such as biological and chemical controls) is traditionally reserved for vectors where there is a risk to public health, including the presence of disease or disease-transmitting vectors. However, in certain cases, abatement using source treatment may be warranted for nuisance species.

Public Education/Outreach

As discussed above, the IVMP conducts public education and outreach to educate residents about vectors, including flies and eye gnats.

Disease Diagnostics

The VCP also tests for other possible vectors and vector-borne diseases such as ticks (tularemia, Lyme disease and spotted fever rickettsias) and mice for hantaviruses.

1.2.4 Equipment Used During Vector Control Activities

The VCP would continue to use a variety of equipment, vehicles, watercraft, and aircraft to implement the Proposed Project. Vector control equipment typically used during individual surveillance and monitoring, source reduction, public education/outreach, and source treatment activities include pumps, hand sprayers and foggers, autos and light duty trucks, vehicle-mounted sprayers, and construction equipment such as excavators, dump trucks, and other earthmoving equipment. Equipment needs at most sites are minor, consisting primarily of hand equipment used for vegetation removal.

In difficult-to-access areas, aircraft, such as helicopters, may be used for aerial surveillance and source treatment (i.e., biological or chemical control applications). The VCP contracts with independent aviation services to perform aerial applications, with guidance to the target site provided by VCP staff. Aerial application of larvicides is a relatively routine activity for the VCP in difficult-to-access areas, typically occurring seven to nine times each year at multiple locations. Using fixed or rotary wing (helicopter) aircraft, aerial larvicide application has four advantages compared to ground application. First, it can be more economical for large areas with extensive mosquito production. Second, by covering large areas quickly, it can free VCP staff to conduct other needed surveillance or control. Third, it can be more practical for remote or inaccessible areas, such as large marshes, than ground larviciding. Fourth, no risk of temporary damage to

the habitat being treated (e.g., tracks, crushed plants) that could otherwise occur with ground equipment.

Watercraft, such as a small boat or aquatic weed harvester, may also be used to access aquatic environments, including but not limited to marshes, lagoons, and estuaries, to conduct surveillance and control of vectors and when their use would reduce the risk of potential impacts that may otherwise occur from land-based vehicles.

1.2.5 Project Design Features

The Proposed Project includes Project Design Features in the form of BMPs applied prior to conducting certain IVMP activities and during vector control activities. As shown in Table 1-2, *IVMP Best Management Practices*, these BMPs are intended to minimize impacts associated with project implementation. These BMPs provide general performance standards and specifically address air quality and greenhouse gases (GHGs), biology, noise, hazards and hazardous materials, and water quality.

1.2.6 Technical, Economic, and Environmental Characteristics

The following provides a discussion of the IVMP's technical, economic, and environmental characteristics.

1.2.6.1 *Technical Considerations*

As noted above, vector management strategies are updated as new information becomes available and are adapted and applied to new or emerging vectors as they arise. All vector control methods are based on scientific evidence, published research, current State and federal guidelines, expert guidance, and the VCP's experience conducting vector control activities and may be implemented to address future public health risks and public nuisances. Emerging vector control strategies could include but not be limited to increased or early source prevention and/or reduction, surveillance, or physical/biological/chemical controls, depending on the assessment. As discussed above, vector control and surveillance activities are conducted by VCP staff under standard operating procedures and use a risk-based approach to determine appropriate levels of response. The vector management strategies and practices implemented under the IVMP are designed to reduce human exposure to vectors and vector-borne diseases in a manner that minimizes risks to people and the environment.

Technical and environmental commitments are considered standard operating procedures and specific measures designed for a particular project or activity. These Project Design Features minimize potential adverse effects associated with the Proposed Project for each of the above noted IVMP components. They are included in Chapter 7.0, *List of Mitigation Measures and Environmental Design Considerations*, of this PEIR.

1.2.6.2 *Economic Considerations*

As discussed in Section 1.1.1, *Legislative and Regulatory Actions*, the VCP is funded by a service charge and benefit assessment levied against properties that may request and/or receive direct and more frequent service and located within the scope of the vector surveillance area. As such, Native American reservation land, as a Sovereign Nation, is excluded from the Service Area along with federally owned lands that receive minimal to no services. The benefit assessment, named the *Mosquito, Vector and Disease Control Assessment*, is reassessed and approved by the Board annually. It provides funding for necessary equipment, capital improvements, services, facilities,

and incidentals for implementing vector control. The IVMP would continue to be implemented using the current service charge and benefit assessment funds.

In addition to transmitting vector-borne diseases, vectors (such as mosquitoes) can create public nuisances by negatively impacting farm and other outdoor workers, outdoor recreation and tourism industries, real estate values, and the public in general. The California Legislature determined that the protection of "Californians and their communities against the discomforts and economic effects of vector-borne diseases is an essential public service that is vital to public health, safety and welfare" (California Health and Safety Code, Section 2001[b][3]). For example, as demonstrated by the severe acute respiratory syndrome (SARS) outbreak in China and outbreaks of avian flu, outbreaks of pathogens can materially and negatively impact economic activity in the affected area. A vector-borne disease outbreak or other related public health risks could have a drastic negative effect on agriculture, tourism, business, and residential activities in the affected area. In addition, nuisance mosquitoes in high numbers can also negatively impact these areas in a similar manner. Implementation of the IVMP would continue to help prevent the likelihood of such outbreaks and reduce the harm to economic activity on property caused by existing vector populations. As noted above, funding for the IVMP is re-evaluated annually by the Board to ensure that the current assessment levied against all properties in the county is commensurate with the benefits received.

1.2.6.3 *Environmental Considerations*

The goal of the IVMP is to protect the public from vector-borne disease and public nuisance. The primary environmental considerations for implementing the IVMP are associated with potential environmental effects resulting from physical, biological, and chemical control methods. Source reduction and treatment activities are conducted under the guidance of federal, State, and local regulatory agencies and policies. Chapters 2.0, *Significant Environmental Effects of the Proposed Project*, and 3.0, *Environmental Effects Found Not to Be Significant*, of this PEIR discuss the environmental considerations specific to each of these resource areas.

1.3 Project Location

The Service Area is in southwestern California and is defined by the boundaries of San Diego County (Figure 1-2, *Vector Control Program Area*) — excluding Native American reservation land and federally owned lands. The county is bordered by Orange and Riverside Counties to the north, Imperial County to the east, the Pacific Ocean to the west, and the U.S./Mexico border to the south. The Service Area encompasses approximately 4,261 square miles and includes all unincorporated area in the county, as well as the 18 incorporated cities (Carlsbad, Chula Vista, Coronado, Del Mar, El Cajon, Encinitas, Escondido, Imperial Beach, La Mesa, Lemon Grove, National City, Oceanside, Poway, San Diego, San Marcos, Santee, Solana Beach, and Vista). The unincorporated portion of the county is divided into 23 planning areas, as shown on Figure 1-2. Fourteen of the planning areas are referred to as Community Planning Areas (CPAs), and nine of the planning areas are called Subregional Planning Areas (Subregions). The CPAs are Alpine, Bonsall, County Islands, Fallbrook, Julian, Lakeside, Pendleton/De Luz, Rainbow, Ramona, San Dieguito, Spring Valley, Sweetwater, Valle de Oro, and Valley Center. The nine Subregions are Central Mountain, Crest/Dehesa/Harbison Canyon/Granite Hills, Desert, Jamul/Dulzura, Mountain Empire, North County Metropolitan (Metro), North Mountain, Otay, and Pala/Pauma Valley.

1.4 Environmental Setting

In accordance with the CEQA Guidelines (Section 15125), the general environmental setting for the Service Area is provided in this section. The regulatory and/or physical environmental conditions that are uniquely relevant to each environmental resource area (e.g., ambient concentrations of criteria pollutants for air quality) are further explained in the beginning of each section of Chapters 2.0 and 3.0 of this PEIR. The existing environmental setting described in detail in each section provides the "baseline" or existing condition against which project-related impacts are compared.

1.4.1 Land Use and Development

San Diego County is a diverse region with a variety of land uses, habitats, and climatic and topographic conditions. Because of the diversity of vector habitat in the Service Area, vector control activities are conducted in a variety of ecosystems, habitats types, and land uses throughout the county. Mosquito control activities are associated with wet areas of all types and sizes, including marshes, ponds, creeks, seasonal wetlands, wastewater ponds, stormwater detention basins, ditches, ornamental fishponds, and impound areas, as well as individual homes or commercial buildings. Other vectors, such as fleas, ticks, and rodents, are more commonly found in rural or undeveloped areas, including campgrounds and agricultural areas.

The county is a generally semi-arid environment and supports a range of habitats and biological communities that vary greatly depending on the eco-region, soils and substrate, elevation, and topography. Habitats and vegetation communities include vegetated wetlands, oak woodlands, riparian scrub, meadows, freshwater marsh, tidal marshes, sloughs, lakes, ponds, sage scrub, chaparral, grassland habitats, and a variety of other upland and wetland habitats. Sensitive habitats and unique resources in the Service Area require special consideration due to the potential presence of endangered plants and animals. These include but are not limited to active coastal dunes; vernal pools; southern maritime scrub; maritime succulent scrub; southern coastal bluff scrub; riparian scrub, forest, and woodland; and salt marsh. Additionally, artificially created facilities that may be served by the IVMP include stormwater detention basins, flood control channels, roadside ditches, and liquid waste detention ponds.

The existing transportation network consists of freeways, highways, regional arterials, local streets and roads, alternative transportation facilities, commercial and general aviation facilities, seaport facilities, and ports of entry at the U.S./Mexico border. These facilities serve the 18 cities and unincorporated areas of the county.

Land uses in the county vary between the urban areas along the coast and the more rural areas in the eastern regions. The majority of the land in the unincorporated county is open space or undeveloped, while the majority of the land in the incorporated cities is developed. More than 50% of the total land area in the region is not available for urban development, including public lands, dedicated parks and open space, lands constrained for environmental reasons, and military use (SANDAG 2021a). The highest population densities are found in the western (coastal) third of the county, where topography and mild coastal climatic conditions have attracted intensive development. Urban uses tend to consist of residential and commercial uses, as well as small-scale agricultural and industrial uses. Land uses that occur throughout the county include low-density residential and commercial uses, agricultural operations, mineral resources and extraction, and undeveloped habitats, as well as national forest and State park lands. Public and semi-public facilities, recreational areas, and open space conservation areas are throughout the county.

1.4.2 Topography

The county is bisected by the Laguna Mountains, which extends roughly north–south and generally parallel to the coast approximately 45 miles inland and separates the coastal area from the desert portion of the county. The Laguna Mountains have peaks reaching over 6,000 feet above mean sea level (AMSL). The coastal region is made up of coastal terraces that rise from the ocean into wide mesas that transition into the Laguna Foothills to the east. Farther east, the topography gradually rises to the rugged mountains, then drops rapidly to the Anza-Borrego Desert, which is characterized by several broken mountain ranges with desert valleys in between. North of the county are the Santa Ana Mountains, which trend along the coast of Orange County, turning east to join with the Laguna Mountains near the San Diego-Orange County border (County 2007a).

1.4.3 Climate

The climate of the San Diego region varies by location. Historically, temperatures in the region were typically moderate on the coast, with an average high temperature of 69.9 degrees Fahrenheit (°F) and an average low temperature of 56.5°F. Average monthly temperatures rarely exceeded 75°F, and the average annual precipitation on the coast was 10.13 inches. The historical average high and low temperatures in the desert subregion (as measured at the unincorporated town of Borrego Springs) were 88.3°F and 63.6°F, respectively. Average monthly temperatures in the desert subregion typically exceeded 100°F in summer months, and the average annual precipitation in the desert subregion was 5.31 inches (SANDAG 2021a).

1.5 Intended Uses of the Program Environmental Impact Report

This PEIR is an informational document that will inform public agency decision makers and the public of the significant environmental effects (impacts) of the IVMP, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the Proposed Project. The VCP is responsible for preparing this PEIR and has done so in accordance with the requirements of the *County of San Diego Environmental Impact Report Format and General Content Requirements* (County 2006) and the statutes and guidelines of CEQA (PRC 21000 et seq.; CCR 14 15000 et seq.). The significance thresholds used in the PEIR analyses follow Appendix G of the CEQA Guidelines and the County's Guidelines for Determining Significance, which present a range of quantitative, qualitative, and performance levels for particular environmental resource areas (e.g., biological resources, cultural resources, noise).

As explained in Section 1.2, *Program Purpose, Objectives, and Description*, the VCP proposes to enhance the existing vector program, and in the interest of transparency, the VCP decided that the PEIR's analysis would address the combination of existing and proposed activities even though CEQA only requires the evaluation of the changes or additional activities. As explained in CEQA Guidelines, Section 15126.6(e)(3)(a), "When the project is the revision of an existing land use or regulatory plan, policy or ongoing operation, the 'no project' alternative will be the continuation of the existing plan, policy or operation into the future." Therefore, although this PEIR examines the potential environmental impacts of both existing and proposed VCP activities (referred to as IVMP), the Chapter 4.0, *Project Alternatives*, project alternative analysis only applies to future activities.

This program-level document examines the environmental impacts of the countywide implementation of the IVMP. The IVMP qualifies for a PEIR because it is a series of logically interrelated and geographically connected actions that have similar environmental effects for which mitigation requirements will be generally the same. All future actions implemented under

the IVMP would occur within the geographic area of San Diego County. All applicable actions will be required to incorporate avoidance and minimization measures as discussed in later chapters of this PEIR. Further, additional CEQA review for activities under the IVMP may be tiered using this PEIR. The review process for projects identified in the IVMP would proceed along the identified sequence defined by CEQA Guidelines (Section 15168[c]).

The County is the Lead Agency, defined in CEQA Guidelines, Sections 15050 and 15367, as the "public agency which has the principal responsibility for carrying out or approving a project," and the decision to approve or deny the Proposed Project is within the purview of the County's decision-makers (e.g., elected and non-elected officials). When deciding whether to approve the Proposed Project, the County will use the information included in this PEIR to consider potential impacts on the physical environment associated with the Proposed Project.

This PEIR has been made available for review to members of the public and public agencies for 46 days from October 6, 2023 to November 20, 2023 to provide comments "on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects of the project might be avoided or mitigated" as stated in CEQA Guidelines, Section 15204.

Environmental considerations and economic and social factors will be weighed to determine the most appropriate course of action. Subsequent to certification of the PEIR, agencies with permitting authority over all or portions of the Proposed Project may use the PEIR as the basis for their evaluation of environmental effects of actions covered by the Proposed Project and consideration of approval or denial of applicable permits.

1.5.1 Project Approvals/Permits

The legal authority for the VCP is derived from statutes and regulations in the California Government Code, California Health and Safety Code, California Civil Code, California Penal Code, San Diego County Code of Regulatory County Ordinances, San Diego County Code of Administrative County Ordinances, and CEQA. The legal authority of a vector control district for activities such as routine surveillance, control, and access does not require obtaining a permit from regulatory agencies (e.g., California Department of Fish and Wildlife [CDFW] or U.S. Fish and Wildlife Service [USFWS]). Permits may be required if major access or environmental modifications, such as drainage channel alterations, would be required to address vector issues under the IVMP.

For IVMP activities within State of California lands and riparian zones, wetlands, or other sensitive habitats, the VCP continues to coordinate, review activities, and collaborate with several agencies including the USFWS, CDFW, and other local agencies, municipalities, and property owners. The VCP coordinates with land managers and resource agency staff as needed to minimize the impacts of IVMP activities on jurisdictional waters and biological resources and within designated reserves and refuges. The following subsections discuss permits, approvals, or other oversight necessary to implement the IVMP.

Although the IVMP does not require discretionary approval to continue to operate, the following federal, State, and local agencies are involved in the oversight of vector control activities, including the IVMP.

1.5.1.1 *Federal*

U.S. Environmental Protection Agency

Before manufacturers can market and sell pesticides in the United States, the USEPA must evaluate them thoroughly in accordance with the FIFRA and Federal Food, Drug, and Cosmetic Act to ensure the pesticides meet federal safety standards to protect human health and the environment. These laws have been amended by the Food Quality Protection Act and Pesticide Registration Improvement Act. In evaluating a pesticide registration application, the USEPA assesses a wide variety of potential human health and environmental effects associated with use of the pesticide. The USEPA also evaluates and approves the language that appears on each pesticide label to ensure the directions for use and safety measures are appropriate to any potential risk. Following label directions is required by law and is necessary to ensure safe use.

After a manufacturer submits an application, the USEPA publishes a notice of receipt in the Federal Register for each application for registration of a new product that contains a new pesticide active ingredient or that proposes a new use for an existing pesticide. The USEPA then evaluates human health and environmental risks, implements risk assessments, researches alternatives, reviews whether any mitigation is needed, and ultimately decides whether to grant the registration (USEPA 2022c).

U.S. Fish and Wildlife Service

Depending on the location and nature of future IVMP activities, the VCP may be required to consult with the USFWS under Section 7 of the federal Endangered Species Act to address potential impacts to sensitive species and habitats. The VCP maintains a Special Use Permit for performing vector control activities on USFWS-owned land, including the Tijuana Estuary and Sweetwater Marsh Unit.

1.5.1.2 *State*

California Department of Pesticide Regulation

The CDPR 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. The CDPR regulates the sale and use of pesticides in California, and it has the authority to refuse, revoke, or suspend the license of any pesticide that harms or is likely to harm endangered species. Every year, the CDPR renews Certificates of Registration for the next calendar year for pesticide products currently registered in California. Many pesticide labels that are already approved by the USEPA also contain California-specific requirements.

The CDPR's Pesticide Regulatory Program provides special procedures for vector control agencies that operate under a Cooperative Agreement for Pesticide-Related Requirements (Cooperative Agreement) with the California Department of Public Health (CDPH). The application of pesticides by vector control agencies is regulated by a special and unique arrangement among the CDPH, CDPR, and County Agricultural Commissioners. The CDPR does not directly regulate vector control agencies; rather, it provides for the proper safe and efficient use of pesticides by registering products after confirming that, when used in conformance with its labeling, it is effective and will not harm human health or the environment.

Pesticide labels defining the registered applications and uses of a chemical are mandated by the USEPA as a condition of registration. Before a substance is initially registered as a pesticide, the

CDPR conducts a thorough evaluation in accordance with California Food and Agriculture Code (FAC), Section 12824. Once a product is registered, it is subject to continuous evaluation (FAC Section 12824; 3 CCR 6220–6226). The label instructions inform users of 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. Pesticide product labels provide critical information about how to handle and use pesticide products safely and legally. The VCP's use of all pesticides will be in strict accordance with the manufacturer's label instructions and all applicable federal, State, and local laws.

CDPR has drafted the *California State Plan for Protection of Endangered Species from Pesticide Exposure* (CDPR 1995) to protect threatened and endangered species in California from effects of pesticides. In addition to the label instructions, pesticide risks to endangered species in California are evaluated by an interagency network that includes the CDPR, CDFW Pesticide Investigation Unit, CDFA, Pesticide Registration and Evaluation Committee, and County Agricultural Commissioners, as well as the USEPA and USFWS.

California Department of Public Health

Pursuant to California Health and Safety Code, Section 116180, the VCP annually enters into a Cooperative Agreement with the CDPH. The Cooperative Agreement allows the VCP, as a "cooperating agency," to use specific pesticides for vector control in accordance with the product label. The Cooperative Agreement requires the VCP to:

1. Calibrate all application equipment and maintain all calibration records for review by the County Agricultural Commissioner.

2. Maintain pesticide application records for at least 2 years for review by the County Agricultural Commissioner.

3. Submit a monthly pesticide use report to the County Agricultural Commissioner.

4. Report any conspicuous or suspected adverse effects upon humans, domestic animals, or other non-target organisms to the County Agricultural Commissioner and CDPH.

5. Require employee certification by the CDPH to verify employee competence to use pesticides in vector control operations and ensure employees complete the necessary continuing education requirements to maintain status as a Certified Vector Control Technician.

6. Be inspected by the County Agricultural Commissioner on a regular basis to ensure that the agency is in compliance with State and federal laws and regulations pertaining to the storage and use of pesticides.

Agencies signatory to the Cooperative Agreement are reviewed annually by the CDPH to ensure compliance with the requirements listed above. These requirements meet the legislative intent in providing the many broad exemptions to California laws and regulations (described below) provided to vector control agencies and to ensure that all State and federal pesticide use requirements are met (CDPH 2008b).

Statewide General National Pollutant Discharge Elimination System Permit for Vector Control

Under the requirements of the Porter-Cologne Water Quality Control Act (Porter-Cologne Act) and the federal Clean Water Act, the State Water Resources Control Board (SWRCB) is delegated authority for protection of surface and groundwater. The application of pesticides at, near, or over waters of the U.S. that would result in discharges of pollutants requires coverage under a NPDES Permit. The VCP (and, therefore, the IVMP) is subject to the following permit: Statewide NPDES Permit for Biological and Residual Pesticide Discharges to Waters of the U.S. from Vector Control Applications (State Water Quality Order No. 2016-0039-DWQ, General Permit No. CA990004). The General Permit covers the point source discharge of biological and residual pesticides resulting from direct to water and spray applications for vector control using larvicides and adulticides with active ingredients that are currently registered in California and allowed for use. The VCP received a Notice of Authorization from the SWRCB to operate under the General Permit in 2011 (Enrollee No. 937AP00009) and submits annual reports to the SWRCB regarding pesticide use in compliance with the permit.

California Department of Fish and Wildlife

On September 20, 2014, the State approved Assembly Bill (AB) 896, which updated Section 1506 of the California Fish and Game Code, relating to wildlife management. AB 896 clarifies the intent of the California Legislature to control mosquito production on managed wetland habitat owned or managed by the CDFW and to increase coordination and communication between the CDFW, local mosquito abatement and vector control districts, and CDPH.

1.5.1.3 *Local*

County of San Diego, Department of Agriculture, Weights and Measures

The County Department of Agriculture, Weights and Measures (AWM) Pesticide Regulation Program (PRP) protects human health and the environment by regulating pesticide use and by fostering reduced-risk pest management through permits, outreach, inspections, illness investigations, and enforcement. The AWM's priority is to protect the health and safety of the public and employees while supporting a sustainable environment by identifying and reducing risk associated with the use and storage of pesticides.

Because the VCP uses and stores pesticides, the AWM conducts routine pesticide use monitoring inspections of the VCP. For example, applications and/or mixing and loading activities are inspected to verify that the VCP and individual Certified Vector Control Technicians are complying with all applicable conditions in pesticide labeling requirements, training, worker safety, and other laws and regulatory requirements. Inspections are also used to verify that the VCP addresses any possible hazards to people, non-target animals, crops, or property. Mixing and loading inspections in conjunction with an application inspection are used to accurately identify the pesticide and to verify the compliance status of labeling requirements such as site, rate, and handling precautions. The AWM also conducts inspections of equipment. In 2021, the AWM conducted 18 pesticide use monitoring inspections of the VCP.

1.5.2 Related Environmental Review and Consultation Requirements

Pursuant to Section 15082 of the CEQA Guidelines, the County prepared a Notice of Preparation (NOP) for this PEIR. The NOP and Initial Study for the Proposed Project were submitted to the State Clearinghouse and publicly circulated for 30 days from August 23 through September 21, 2018 (State Clearinghouse No. 2018081060). As required by CEQA and the CEQA Guidelines,

the NOP provided information on the background, goals, and objectives of the IVMP; announced preparation of, and requested public and agency comment on, the PEIR; and provided information on the public scoping meeting to be held in support of the PEIR. Copies of the NOP, Initial Study, and comments received are provided in Appendix A to this PEIR.

A public meeting to discuss the Proposed Project and potential contents of the PEIR was held on August 30, 2018 at the County Operations Center, Conference Center, at 5520 Overland Avenue, San Diego, California 92123. The public meeting was publicized in the San Diego Union Tribune newspaper and via direct mailings of the NOP to numerous stakeholders and agencies. The public scoping meeting was held in an open house format, with opportunities to hear a presentation, ask questions, and submit comments. A PowerPoint presentation was prepared by the VCP and presented at the beginning of the meeting. Posters and informational materials were on display and included general information on the current VCP outreach and activities. Technical, environmental, public health officials, and consultant staff were available to answer questions, discuss IVMP activities, and take comments. Written comment cards and information on how to access Proposed Project documents and participate in the public review process were available.

Although no members of the public attended the meeting, resulting in no verbal or written comments being received at the scoping meeting, a total of 17 comment letters were received during the NOP scoping process. Each of these is included in Appendix A to this PEIR. This PEIR addresses topics identified in the Initial Study and comments received regarding the NOP.

1.5.3 Emergency Projects

The VCP has authority under California Health and Safety Code, Section 116110(c),[12] to coordinate and conduct emergency vector control activities. In the event of emergency conditions, comprising an actual or imminent disease outbreak declared by the CDPH, the VCP activities could temporarily vary from routine operational tools through increases in scope or intensity of methods and potentially through use of legal pesticides, in strict conformance with label requirements, that are not routinely used by the VCP. Emergency activities are not evaluated separately in this PEIR because of their temporary nature and similarity to routine activities. In addition, the State has recognized that emergency conditions may require prompt action of a nature or intensity above typical levels as a means to protect public health, welfare, safety, or property and has exempted these activities from requirements for further environmental review (CEQA Guidelines, Sections 15269, 15359). In this PEIR, all reasonable methods and materials that could be used are identified (without speculation) and have been evaluated for their potential to impact the environment.

1.6 Project Inconsistencies with Applicable Regional and General Plans

Planning documents reviewed for the Proposed Project include the County General Plan and ordinances, Regional Air Quality Strategy (RAQS) for the San Diego County Air Pollution Control District (SDAPCD), Regional Water Quality Control Board (Region 9, San Diego) Basin Plan, established multiple species conservation plans, and the County Watershed Protection Ordinance. No inconsistencies were found.

[12] California Health and Safety Code, Division 104, Part 11, Chapter 2, Article 1. In addition, numerous other State regulations provide authority for the VCP to respond to vector-related emergency (https://westnile.ca.gov/download.php?download_id=2737)

1.7 List of Past, Present, and Reasonably Anticipated Future Projects in the Project Area

Section 15355 of the CEQA Guidelines defines cumulative effects as "two or more individual effects, which when considered together are considerable or which compound or increase other environmental impacts." The CEQA Guidelines further explain that the individual effects may be changes resulting from a single project or a number of separate projects or the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable future projects. Section 15130 of the CEQA Guidelines allows for the use of two alternative methods to determine the scope of projects for cumulative impact analysis:

- List Method – A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency.

- General Plan Projection Method – A summary of projects contained in an adopted general plan or related planning document or in a prior environmental document that has been adopted or certified that described or evaluated regional or area-wide conditions contributing to the cumulative impact.

Both of these methods for analyzing cumulative impacts of past, present, and reasonably foreseeable future projects under CEQA are appropriate for the evaluation of land development or other projects involving changes in land use and related activities. The list method is not practical for the IVMP given that its location includes the entire county. The summary of projection methods relies on projections contained in approved land use documents (e.g., general plans, specific plans, and local coastal plans) to serve as the foundation for the cumulative analysis. Projects are reviewed for consistency with the forecasts of economic and population growth contained in the planning documents and, therefore, already addressed in the certified EIRs on these plans and projects. This method of cumulative analysis is also not practical for the IVMP because it is based on summaries of growth in city and county plans, which are not relevant for the IVMP because it does not induce growth or develop land. Therefore, the cumulative analysis focuses on assessing impacts in the context of regional environmental concerns (e.g., consideration of regional trends in pesticide use) as applicable and based on available information. Chapters 2.0 and 3.0 of this PEIR provide an evaluation of the Proposed Project's potential to result in incremental effects that are cumulatively considerable for each resource area.

1.8 Growth-Inducing Impacts

As stated in CEQA Guidelines, Section 15126.2(e), whether or not a project may be growth inducing must be discussed in an EIR. The question for discussion is whether or not a "project would foster economic or population growth, or the construction of additional housing, either directly or indirectly, *in the surrounding environment*" (emphasis added). Included are projects that would remove obstacles to population growth. Examples of these types of actions are cited, including (1) a "major expansion of a wastewater treatment plant" that would thereby allow for more construction in service areas covered by the plant and (2) actions that could encourage and facilitate "other activities" that could significantly affect the environment. Typically, the latter action involves the potential for a project to induce further growth by the expansion or extension of existing services, utilities, or infrastructure. The CEQA Guidelines further state that "it must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment" (Section 15126.2[e]).

Implementation of the Proposed Project would have no growth-inducing effects, as discussed in the following sections.

1.8.1 Would the Project Foster Economic or Population Growth, or the Construction of Additional Housing?

The Proposed Project consists of implementing an integrated program that includes routine surveillance, testing, and source reduction/treatment of vectors that pose potential public health risks or public nuisances, as well as disseminating vector information to residents and property owners and responding to vector-related complaints. The IVMP would provide property owners with as-needed assistance from vector-borne disease and public nuisances. These are generally localized to specific areas. Notable job opportunities resulting in staffing increases are not anticipated to result from the implementation of the IVMP, and no residential housing is proposed to be built. Therefore, the IVMP would not foster economic or population growth or the construction of additional housing.

1.8.2 Would the Project Remove Obstacles to Population Growth?

Obstacles to population growth are generally associated with lack of new employment opportunities and vital infrastructure services, such as roads, water, sewer, and electric lines. As discussed in Section 1.8.1, the Proposed Project would not provide measurable new employment. The Proposed Project does not include the planned extension of any road, water, sewer, or electrical services and, therefore, would not induce growth related to the extension of such services and the removal of an obstacle to growth.

Table 1-1
SUMMARY OF INTEGRATED VECTOR MANAGEMENT PROGRAM COMPONENTS

Component	Activity Type		Existing	Proposed
Surveillance and Monitoring	Via land or water		Included	Included
	Via helicopter		Included	Included
	Via fixed-wing aircraft or drone		***Not Included***	Included
Source Reduction	Physical controls such as grading, dredging, vegetation removal		***Not Included***	Included
Source Treatment	Mosquito Fish		Included	Included
	Larvicides	Via land or water	Included	Included
		Via helicopter	Included	Included
		Via fixed-wing aircraft or drone (i.e., wide area)	***Not Included***	Included
	Adulticides	Emergency use	Included	Included
		Non-emergency use	***Not Included***	Included
		Via land or water	Included	Included
		Via helicopter	Included	Included
		Via fixed-wing aircraft	***Not Included***	Included
		Via drone	***Not Included***	Included
Public Education and Outreach	n/a		Included	Included
Disease Diagnostics	n/a		Included	Included

n/a = no changes are proposed. As noted in Section 1.2.3, the activity is categorically exempt from CEQA review based on a finding by the California Secretary of Natural Resources that it does not have a significant effect on the environment.

Table 1-2
INTEGRATED VECTOR MANAGEMENT PROGRAM BEST MANAGEMENT PRACTICES

Best Management Practice (BMP) *A. Prior to Conducting Vector Control Activities* *B. During Vector Control Activities*	CEQA Resource					
	General	**Air Quality/ GHG**	**Biology**	**Noise**	**Hazards and Hazardous Materials**	**Water Quality**
A. PRIOR TO CONDUCTING VECTOR CONTROL ACTIVITIES						
1. The VCP performs public education and outreach activities to educate residents how to prevent mosquito breeding and other vector problems at their homes, businesses, and properties; how to protect themselves from being bitten by mosquitoes; and how to report dead birds and mosquito-breeding sources, including unmaintained pools, to prevent the spread of mosquito-borne diseases. Reducing vector breeding minimizes the need for VCP control activities.	X (All)	—	—	—	—	—
2. The VCP has cooperative, collaborative relationships with federal, State, and local agencies. The VCP regularly communicates with resource agencies, including USFWS and CDFW, and abides by all applicable permits and agreements regarding planned vector activities in sensitive habitats. Access, timing, and methods of surveillance and control are discussed. Methods to minimize impacts to special status species, habitat, and wildlife are agreed upon prior to entering protected and sensitive habitats. The VCP will continue to foster these relationships, communication, and collaboration.	—	—	X (All)	—	—	X (All)
3. To help minimize the need for pesticide application or vegetation management, surveillance and monitoring at known or suspected vector sites will continue to be performed to assess vector species abundance and distribution and if they are carrying diseases. Information obtained from surveillance is evaluated with risk-based response criteria and other factors to decide when and where to implement vector control measures, such as pesticide application, and to help form action plans that reduce the risk of disease transmission and assist in reducing environmental impacts.	X (All)	—	—	—	—	—
4. All pesticides (i.e., chemical and biological controls) applied by the VCP are approved by the CDPR, and their application will continue to abide by all label instructions and regulations of the USEPA and CDPR, including application rates and methods, storage, transportation, mixing, and container disposal. In addition, the VCP will continue to comply with all pesticide reporting, equipment calibration, and inspection requirements as regulated by the County Agricultural Commissioner.	X (Source Treatment)	—	—	—	X (Source Treatment)	—
5. In accordance with CDPH regulations, pesticides will only be applied by Certified Vector Control Technicians. VCP staff who apply pesticides or remove	X	—	—	—	X	—

Best Management Practice (BMP) ***A. <u>Prior to</u> Conducting Vector Control Activities*** ***B. <u>During</u> Vector Control Activities***	CEQA Resource					
	General	**Air Quality/ GHG**	**Biology**	**Noise**	**Hazards and Hazardous Materials**	**Water Quality**
vegetation will continue to complete all training required by the CDPH to maintain status as a Certified Vector Control Technician and will follow the VCP's comprehensive documents, including the annual *Engineer's Report*, strategic response plans, and standard operating procedures to avoid and minimize negative environmental impacts. These activities are conducted in accordance with the BMPs described in the *Best Management Practices for Mosquito Control in California* (CDPH 2012), *Best Management Practices for Mosquito Control on California State Properties* (CDPH 2008a), and *California Mosquito-Borne Virus Surveillance and Response Plan* (CDPH 2021) which detail integrated vector best management practices for vector control and vector-borne disease prevention to ensure that pesticides are selected and applied appropriately and that potential impacts on non-targeted areas are eliminated or minimized.	(Source Treatment)				(Source Treatment)	
6. Chemical controls applied within waterbodies defined by federal and State regulations as wetland and/or non-wetland waters of the U.S. and/or State must be used in accordance with the Statewide NPDES Permit for Biological and Residual Pesticide Discharges to Waters of the U.S. from Vector Control Applications (Order No. 2016-0039-DWQ, General Permit No. CA990004).	X (Source Treatment)	—	X (Source Treatment)	—	—	X (Source Treatment)
7. Before conducting monitoring or treatment, a Certified Vector Control Technician will review all site records in the County's enterprise database (currently Accela) used by the Vector Control Program for any applicable permits or agreements on file dictating how a site should be addressed or any other notes discussing environmental constraints/requirements, points of access, whether a qualified biological monitor is required, or any other pertinent information prior to visiting a site. Sensitive sites may include but are not limited to CDFW- or USFWS-owned or operated lands, easements, and preserves; national forests; County-owned parks and open space areas; or other lands identified by the SanGIS.	—	—	X (All)	—	—	—

Best Management Practice (BMP) ***A. Prior to Conducting Vector Control Activities*** ***B. During Vector Control Activities***	**CEQA Resource**					
	General	**Air Quality/ GHG**	**Biology**	**Noise**	**Hazards and Hazardous Materials**	**Water Quality**
8. Prior to entering an environmentally sensitive area or other site that has the potential to contain sensitive habitat or species, VCP staff will identify suspected vector-breeding sources using satellite images, topographic maps, historical records, and on-site evaluation to help ascertain the least environmentally impactful way to access the site. If more than one access route is available, staff will prioritize the path that would minimize or avoid environmental impacts to sensitive biological resources. If site conditions warrant a qualified biologist to accompany the Certified Vector Control Technician, the VCP will arrange for a qualified biologist to accompany field staff. Certified Vector Control Technicians will strictly follow all guidance and instructions from the biologist, including where access is permissible or should be avoided near sensitive habitat.	—	—	X (All)	—	—	—
9. If a site has been flagged in the County's enterprise database (currently Accela) for potentially containing sensitive biological resources, VCP staff will review applicable sensitive species databases, such as USFWS occurrence records, CDFW's California Natural Diversity Database, and County SanBIOS data, to determine if any potentially special status species (e.g., birds, fish, insects, plants, or other animals) are present or have high potential to occur on the site and research any unfamiliar species with photographs and descriptions of biology and habitat. Staff will also discuss preferred access points, methods, and paths for reaching vector-breeding sources with the supervisor and/or land manager.	—	—	X (All)	—	—	—
10. VCP staff will receive annual training on the identification of sensitive biological resources, including sensitive habitat and special status species (e.g., vernal pools and fairy shrimp, coastal sage scrub, bird species).	—	—	X (All)	—	—	—
11. VCP staff will receive annual training regarding techniques and procedures to avoid or minimize negative effects to protect State- and/or federally listed threatened or endangered species, listed species habitat, and wildlife/wildlife habitat. For example, training includes observation and avoidance measures when accessing areas that may serve as bird nesting habitat (e.g., watch for flushing birds that may indicate a nest is nearby).	—	—	X (All)	—	—	—
12. Prior to commencing activities that would disturb State- and/or federally listed plants or wildlife, VCP will consult and coordinate with all applicable wildlife agencies (e.g., USFWS, CDFW) and obtain all required permits.	—	—	X (Source Reduction)	—	—	—

Best Management Practice (BMP) ***A. Prior to Conducting Vector Control Activities*** ***B. During Vector Control Activities***	CEQA Resource					
	General	**Air Quality/ GHG**	**Biology**	**Noise**	**Hazards and Hazardous Materials**	**Water Quality**
13. For operations that require large-scale treatments that may occur in proximity to homes or heavily populated, high traffic, or other sensitive areas (including bee farms) or other control activities that may generate noise expected to be of concern to the public, the VCP will notify the public and/or affected properties (approximately 24 to 48 hours in advance when possible) via the following communication protocols as appropriate: a) Provide Advance Notice. Depending on the nature and magnitude of the activities, information will be provided using press releases, social media posts, County website, mailers, hand-delivered flyers, posted signs, and/or emails. Public agencies, such as environmental health and agricultural agencies, emergency service providers, local governments, law enforcement, and airports, may also be notified of the nature and duration of the activities. b) Provide Mechanism to Address Questions. The County offers various methods for customers to communicate with VCP staff via online tools, email, telephone, and/or postal mail during all times of VCP activities to respond to service calls and address public inquiries.	—	—	—	X (Source Reduction, Source Treatment)	—	—
14. Individual IVMP source reduction activities that involve ground disturbance (e.g., grading, earthwork, or other excavation activities) will undergo a preliminary planning review by the County to assess the degree to which each activity may potentially result in impacts to cultural and tribal cultural resources. The County will review available records documentation and determine whether known archaeological or tribal resources are present within the proposed activity area or ascertain the potential that such resources may be encountered. Per the *County of San Diego Report Format and Content Requirements, Cultural Resources: Archaeological and Historic Resources*, project sites that have been previously surveyed within 5 years or less may use the previous study (County 2007b). As such, if preliminary planning review determines that the IVMP activity area has been previously surveyed for the presence of archaeological or tribal resources within the last 5 years with negative results or has been previously disturbed (e.g., grading, earthwork, or other excavation activities), the area would be considered “low sensitivity,” and no further evaluation would be required. If the results of the review determine that the area has not previously been surveyed or disturbed or has been surveyed and archaeological and/or tribal resources have been identified, a site-specific cultural resource survey will be required.	X (Source Reduction)	—	—	—	—	—

Best Management Practice (BMP) *A. Prior to Conducting Vector Control Activities* *B. During Vector Control Activities*	CEQA Resource					
	General	**Air Quality/ GHG**	**Biology**	**Noise**	**Hazards and Hazardous Materials**	**Water Quality**
B. DURING VECTOR CONTROL ACTIVITIES						
1. VCP staff will minimize potential disturbance to wildlife while performing surveillance and control activities. When walking or using small equipment in sensitive habitats, existing trails, levees, and access roads will be used whenever feasible to avoid or minimize impacts to sensitive species, sensitive vegetation communities, and wetlands.	—	—	X (All)	—	—	—
2. When accessing sensitive habitat, VCP staff will minimize the use of motorized vehicles to the extent feasible by conducting activities on foot with handheld equipment and remain in previously disturbed areas when vehicle use is needed. Aerial surveillance or control (e.g., helicopter or drones) will also be used when feasible and appropriate during pesticide applications and identification of potential vector sites, respectively.	—	—	X (All)	—	—	—
3. Vehicles will only be driven on existing roadways, access roads, and existing unpaved access paths. Vehicles driven on levees to travel near aquatic areas (such as tidal marshes, sloughs, or channels) for surveillance or treatment activities will travel at speeds slow enough to avoid or minimize noise and the production of dust, typically 15 miles per hour or less.	—	X (All)	X (All)	X (All)	—	—
4. Watercraft will be used to access aquatic environments where access is permissible, including but not limited to marshes, lagoons, and estuaries, to conduct surveillance and control of vectors and when their use would reduce the risk of potential impacts that may otherwise occur from land-based vehicles. Operation of watercraft within CDFW-owned lands and easements, USFWS-owned lands and preserves, and other open space areas would be completed in coordination with the CDFW, USFWS, and/or other applicable land managers and agencies and would follow avoidance and minimization measure as required by the relevant agencies and right-of-entry permit, Special Use Permit, or other relevant permits.	—	—	X (All)	—	—	—
5. Prior to entering sensitive habitat, VCP staff will minimize the potential for the introduction and spread of invasive plant species by ensuring all equipment, vehicles, and personal gear (such as clothing and boots) are clean.	—	—	X (All)	—	—	—
6. Only staff who are certified by the CDPH as a vector control technician or staff who have received training such as proper application methods to protect the environment and public health will be allowed to access environmentally sensitive areas.	—	—	X (All)	—	—	—
7. Operation of noise-generating equipment (e.g., construction equipment, woodchipper, pesticide application equipment) will abide by the time-of-day	—	—	—	X	—	—

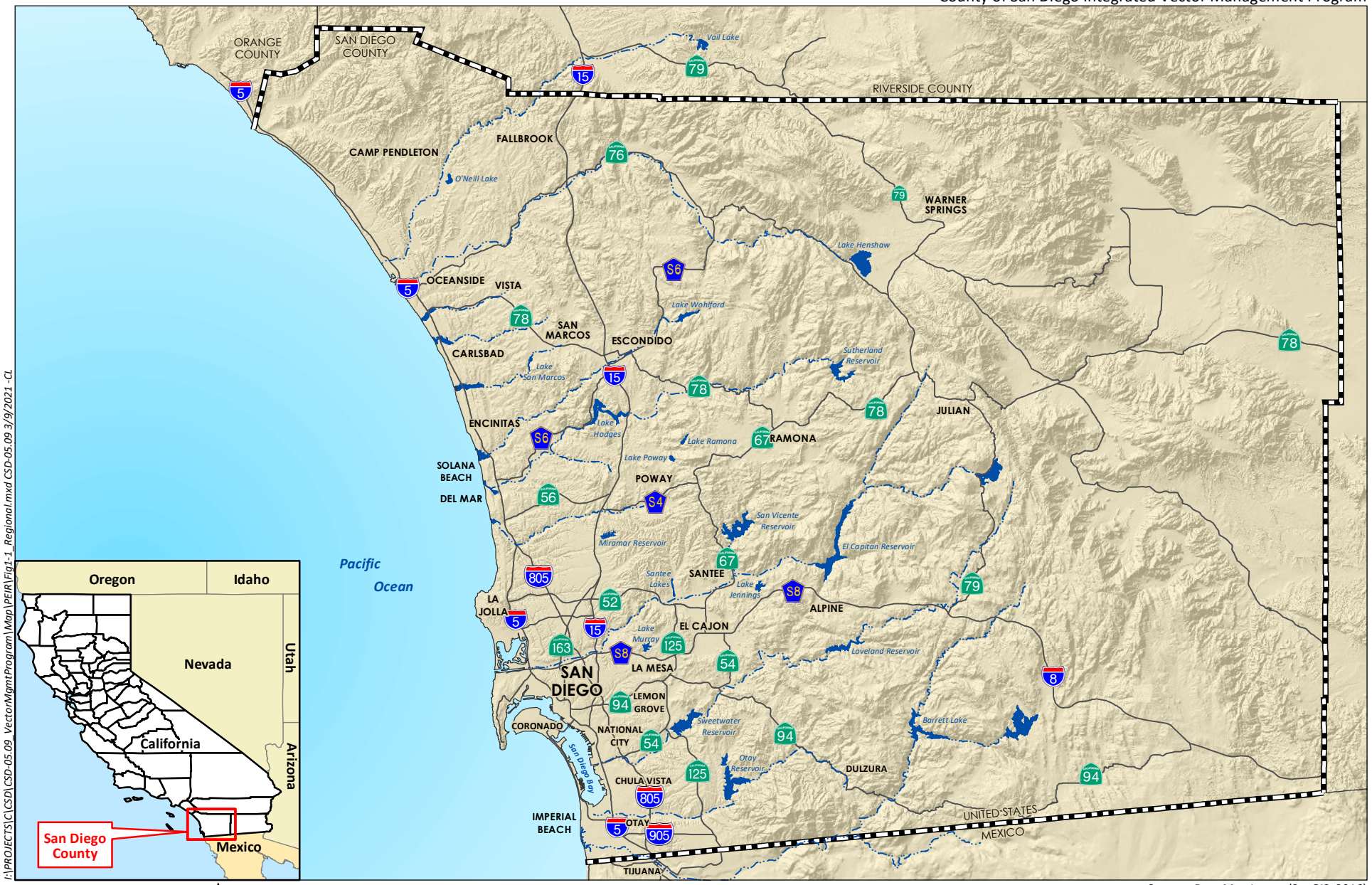
Best Management Practice (BMP) *A. Prior to Conducting Vector Control Activities* *B. During Vector Control Activities*	CEQA Resource					
	General	**Air Quality/ GHG**	**Biology**	**Noise**	**Hazards and Hazardous Materials**	**Water Quality**
restrictions established by the applicable local jurisdiction's municipal code or ordinance (e.g., city or county) if such noise activities would exceed acceptable noise levels for sensitive receptors (e.g., residential land uses, schools, hospitals, places of worship). All motorized equipment will be shut down when not in use.				(Source Reduction, Source Treatment)		
8. Engine idling times will be minimized by shutting off equipment and vehicles when not in use to the extent feasible.	—	X (All)	—	X (All)	—	—
9. Vehicles and equipment will be maintained in accordance with manufacturer's specifications, including mufflers, engine operation, and tire inflation pressure, to minimize rolling resistance.	—	X (All)	—	X (All)	—	—
10. Vegetation trimming or removal, when necessary to provide access to vector habitat for surveillance and control activities, will be conducted by hand using handheld tools rather than gas-powered equipment or heavy machinery to minimize negative environmental effects. Vegetation trimming or removal activities will be conducted outside the general bird breeding season (February 15 to September 15, including riparian for general birds; January 15 to July 15 for raptors) to the greatest extent feasible.	—	X (Source Reduction)	X (Source Reduction)	X (Source Reduction)	—	—
11. Downed trees and large vegetation that have fallen due to storm events or disease may be trimmed and/or removed to the minimum extent necessary to maintain existing access points or to allow access to for vector monitoring or control.	—	—	X (Source Reduction)	—	—	—
12. Any staging of equipment or materials will occur in developed/disturbed areas outside existing wetlands, non-wetland waters, and native or rare upland areas.	—	—	X (Source Reduction)	—	—	X (Source Reduction)
13. The changing of oil, refueling, and other actions that could result in a release of a hazardous substance will be restricted to designated service areas such as maintenance yards and gas stations or, when necessary, areas that are a minimum of 100 feet from any documented special status plant populations, sensitive habitats, or drainages. Equipment will be checked for leaks prior to operation and repaired as necessary. Fueling areas will be installed in the field, as applicable, by berms, sandbags, or other artificial barriers designed to prevent accidental spills.	—	—	X (Source Reduction)	—	X (Source Reduction)	X (Source Reduction)
14. Where heavy equipment or machinery is necessary, measures will be taken, such as reducing turns by track-type vehicles, taking a minimum number of passes with equipment, identifying multiple points of entry, driving vehicles at	—	X (Source Reduction)	X (Source Reduction)	X (Source Reduction)	—	X (Source Reduction)

Best Management Practice (BMP) ***A. <u>Prior to</u> Conducting Vector Control Activities*** ***B. <u>During</u> Vector Control Activities***	CEQA Resource					
	General	**Air Quality/ GHG**	**Biology**	**Noise**	**Hazards and Hazardous Materials**	**Water Quality**
low speed, and avoiding or minimizing operating on open mud and other soft areas.						
15. Microbial larvicides (Bti, Bs) or insect growth regulator (e.g., methoprene) will be used as primary treatment methods when necessary to control mosquito larvae due to their high effectiveness, high safety, and environmental compatibility. Only when necessary, surfactants (that are highly effective at suffocating mosquito larvae) may be used to control late-stage larvae or pupae that are resistant to microbial larvicides.	—	—	—	—	X (Source Treatment)	—
16. Pesticides will be applied at the lowest effective concentration for a specific, targeted set of vectors and site conditions. Application rates will never exceed the USEPA and CDPH-approved maximum label application rate. All pesticide application equipment is currently and will continue to be calibrated and inspected annually as required by regulating agencies, such as the CDPH and County Department of Agriculture, Weights and Measures.	—	—	X (Source Treatment)	—	X (Source Treatment)	X (Source Treatment)
17. VCP staff will modify, postpone, or cease pesticide application when weather parameters exceed product label specifications, such as when wind speeds exceed the velocity stated on the product label or may result in drift or when a high chance of rain is predicted and rain is a determining factor on the label of the material to be applied.	—	—	X (Source Treatment)	—	X (Source Treatment)	X (Source Treatment)
18. Spray nozzles for the application of pesticides will be adjusted to produce larger droplet size rather than smaller droplet size when feasible. Low-pressure nozzles will be used when appropriate. Certified Vector Control Technicians will keep spray nozzles within a predetermined maximum distance as close as feasibly possible of target weeds or pests to avoid or minimize overspray. For application of ultra-low volume adulticides, equipment will be calibrated to deliver proper droplet size per manufacturer specifications.	—	—	—	—	X (Source Treatment)	—
19. Caution will be exercised to prevent spillage of pesticides during storage, transportation, mixing, or application of pesticides. All pesticide spills and cleanups (excepting cases where dry materials may be returned to the container or application equipment) will be reported to appropriate staff and any regulatory agencies. Application equipment will be checked for proper operation prior to use.	—	—	—	—	X (Source Treatment)	X (Source Treatment)
20. A pesticide spill cleanup kit and proper protective equipment will be maintained at the VCP's service yard and in each vehicle for pesticide application and transport.	—	—	—	—	X (Source Treatment)	X (Source Treatment)

Best Management Practice (BMP) ***A. Prior to Conducting Vector Control Activities*** ***B. During Vector Control Activities***	**CEQA Resource**					
	General	**Air Quality/ GHG**	**Biology**	**Noise**	**Hazards and Hazardous Materials**	**Water Quality**
21. In the event of spilled pesticides, the site will be managed to prevent entry by unauthorized personnel while the spill is contained, controlled, and cleaned up by stopping it from leaking or spreading to surrounding areas. Dry spills will be covered with a polyethylene or plastic tarpaulin if they cannot be cleaned up immediately. Any liquid hazardous material spill will be contained with appropriate absorbent materials.	—	—	—	—	X (Source Treatment)	X (Source Treatment)
22. Staff will properly recover any spilled material, label the container or bag with the pesticide name, and coordinate with a VCP supervisor for disposal.	—	—	—	—	X (Source Treatment)	X (Source Treatment)
23. Staff will be trained annually on petroleum-based or other chemical-based storage and disposal regulations and procedures including spill management protocols.	—	—	—	—	X (All)	X (Source Treatment)
24. Field-based mixing and loading operations will occur in such a manner as to minimize the risk of accidental spill or release of pesticides.	—	—	—	—	X (Source Treatment)	X (Source Treatment)
25. All vehicles will contain a fire extinguisher and first aid kit at all times.	—	—	—	—	X (All)	—

Notes: Table 1-2 is included here since the above BMPs are considered part of the Proposed Project. This same table is duplicated in Chapter 7 (Table 7-1) to capture all Project Design Features.

BMP = best management practice; CDFW = California Department of Fish and Wildlife; CDPH = California Department of Public Health; CDPR = California Department of Pesticide Regulation; CEQA = California Environmental Quality Act; NPDES = National Pollutant Discharge Elimination System; SanBIOS = San Diego Biological Information and Observation System; SanGIS = San Diego Geographic Information System; USEPA = U.S. Environmental Protection Agency; USFWS = U.S. Fish and Wildlife Service; VCP = Vector Control Program. Sensitive Site = a location that is known to contain or has the potential to contain environmental resources, including unique vegetation communities and/or habitat that is either necessary to support a viable population of sensitive species, is critical to the proper functioning of a balanced natural ecosystem or which serves as a functioning wildlife corridor.

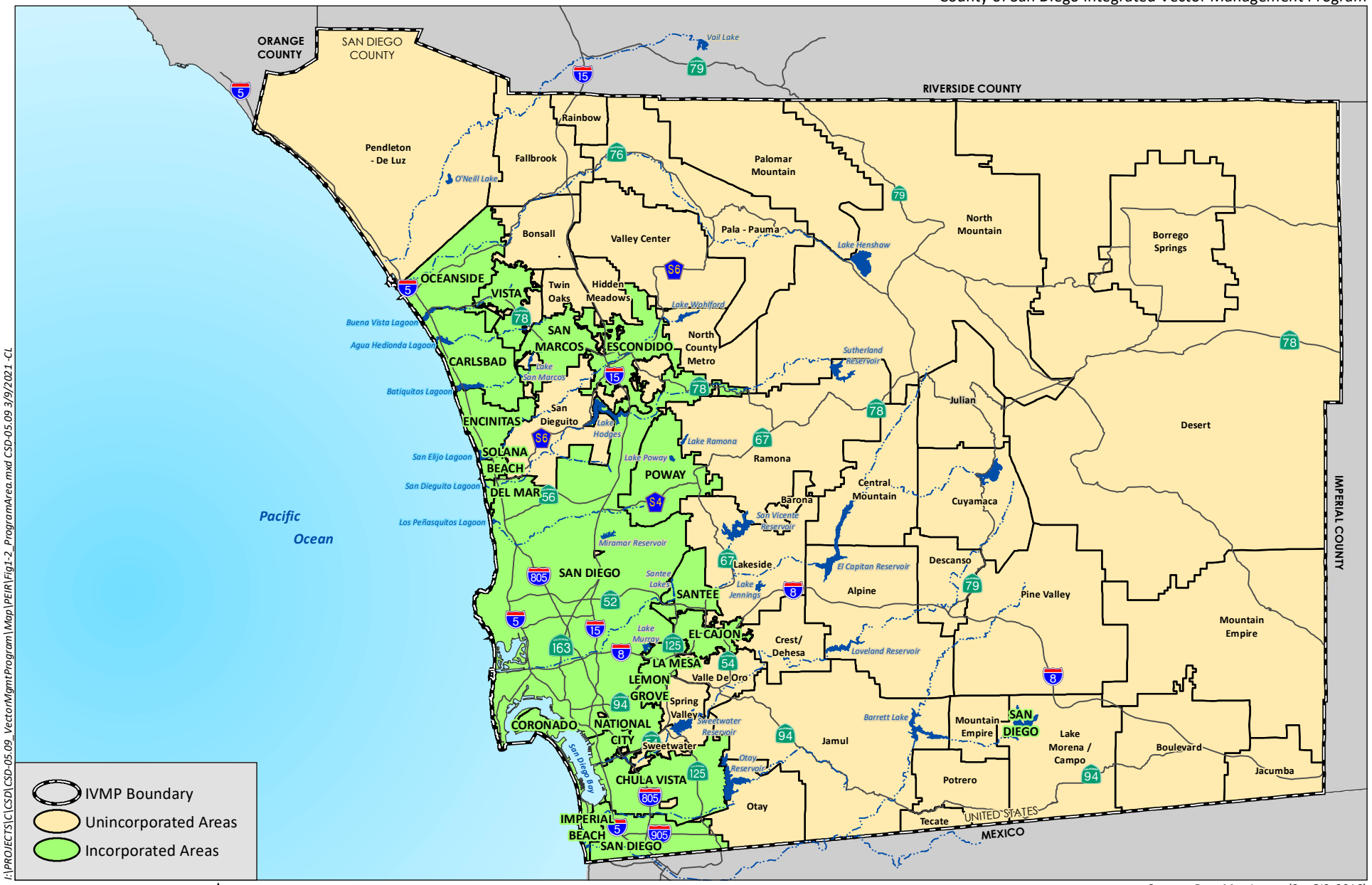


I:\PROJECTS\C\CSD\CSD-05.09_VectorMgmtProgram\Map\PEIR\Fig1-1_Regional.mxd CSD-05.09 3/9/2021 -CL

Source: Base Map Layers (SanGIS, 2016)

Regional Location

Figure 1-1



I:\PROJECTS\C\CSD\CSD-05.09_VectorMgmtProgram\Map\PEIR\Fig1-2_ProgramArea.mxd CSD-05.09 3/9/2021 -CL

Source: Base Map Layers (SanGIS, 2016)

Vector Control Program Service Area

Figure 1-2

2.1 Biological Resources

This section of the Program Environmental Impact Report (PEIR) evaluates potential impacts associated with biological resources resulting from implementation of the Integrated Vector Management Program (Proposed Project or IVMP). The analysis is based, in part, on the *Biological Resources Technical Report* prepared for the Proposed Project (HELIX 2021a; Appendix B), the *County of San Diego Guidelines for Determining Significance – Biological Resources* (County 2010a), and Appendix G of the California Environmental Quality Act (CEQA) Guidelines.

2.1.1 Existing Conditions

San Diego County is diverse with a variety of land uses, habitats, and climatic and topographic conditions. Because of the diversity of vectors in the Service Area[1], vector control activities are conducted in a wide variety of ecosystems, habitat types, and land uses throughout the region. Various wetlands, riparian habitat, and sensitive upland vegetation communities occur throughout the Service Area. These communities support a large number of special status plant and animal species, including State- and/or federally listed species, many of which are endemic to California. Numerous drainages, creeks, rivers, wetlands, and riparian habitat within the Service Area are subject to several regulatory jurisdictions, as described below and displayed on Figure 2.1-1*, Potential Jurisdictional Waters and Wetlands*.

The San Diego region is generally a semi-arid environment and supports a wide range of habitats and biological communities that vary greatly depending on the eco-region, soils and substrate, elevation, and topography. Representative habitats within the region include beaches, tidal marshes, and lagoons along the coast; coastal sage scrub, chaparral, grassland, riparian scrub and forests, oak woodlands, and freshwater lakes (both natural and artificial) throughout the lowlands and foothills; mixed chaparral, oak woodlands, and coniferous forest associated with the higher elevation mountain ranges in the east; and desert scrub and badlands in the eastern portion of the county in the desert. These communities provide habitat for a vast assemblage of flora and fauna, many of which are endemic to California. Refer to Table 2.1-1, *Vegetation Communities within San Diego County*, for a list of vegetation communities in San Diego County.

Sensitive Vegetation Communities

Sensitive vegetation communities/habitat types are defined as land that supports unique vegetation communities or the habitats of rare or endangered species or subspecies of animals or plants as defined by Section 15380 of the CEQA Guidelines. Sensitive vegetation communities in the county include those that have been identified in the *County of San Diego Guidelines for Determining Significance – Biological Resources* (County 2010a) and various Multiple Species Conservation Program (MSCP) and Multiple Habitat Conservation Program (MHCP) Subarea Plans and are protected by local jurisdictions and ordinances.

Three ecological subregions are found in San Diego County: coastal, montane, and desert. The coastal subregion habitats include chaparral, sage scrub, and grassland communities, with chaparral being the most widespread. Riparian woodlands are predominantly distributed in a

[1] Service Area is synonymous with Assessment Area, which is defined in the *Engineer's Report* (County 2022a) as the area in which an annual levy provides funding for essential vector control services, including those properties that may request and/or receive direct and more frequent service and are located within the scope of the vector surveillance area. As such, Native American reservation land, as a Sovereign Nation, is excluded from the Service Area along with federally owned lands that receive minimal to no services.

linear pattern along rivers and streams throughout this subregion. Sensitive vegetation communities occurring in the coastal subregion include but are not limited to southern foredunes, southern coastal bluff scrub, maritime succulent scrub, Diegan coastal sage scrub, southern maritime chaparral, native grassland, San Diego mesa hardpan/claypan vernal pools, southern coastal salt marsh, coastal brackish marsh, coastal freshwater marsh, riparian woodlands and scrubs, coast live oak woodland, Engelmann oak woodland, and Torrey pine forest. These communities provide habitat for a diversity of special status plant and animal species. Vegetation groups are based on the Holland vegetation community hierarchy (1986) as revised by Oberbauer et al. (2008). A comprehensive list of vegetation communities is included in the Proposed Project's *Biological Resources Technical Report* (HELIX 2021a; Appendix B). Figure 2.1-2, *Regional Vegetation Mapping*, illustrates a broad view of habitats ranging throughout San Diego County.

Vegetation communities that occur in the montane subregion of San Diego overlap in certain areas with the chaparral, scrub, riparian, and woodland communities of the coastal subregion; however, others are unique to the mountains of the region. These include coniferous woodlands, black oak woodlands, and montane meadows. Sensitive vegetation communities occurring in the montane subregion include but are not limited to marshes, meadows and seeps, sagebrush scrub, chaparral, oak woodlands, and coniferous woodlands. All of these vegetation communities provide habitat for a diversity of plant and animal species, including several special status species.

The vegetation communities present in the desert subregion are distinct from those found within the coastal and montane subregions of San Diego. The majority of vegetation communities in the desert subregion are low-growing scrub communities, of which creosote bush scrub is dominant, and unvegetated areas, such as desert dunes and badlands. Creosote bush scrub is also the second most common vegetation type in the San Diego region. Sensitive vegetation communities occurring in the desert subregion include but are not limited to desert washes, desert dunes, Sonoran Desert scrub, and mesquite bosque. Several special status plant and animal species are also found in these desert subregion vegetation communities.

In addition, environmentally sensitive areas, which are generally defined as a location with potential environmentally sensitive species and habitats, are throughout San Diego County. Sensitive sites may include but are not limited to California Department of Fish and Wildlife (CDFW)- or U.S. Fish and Wildlife Service (USFWS)-owned or operated lands, easements, and preserves; national forests; County-owned parks and open space areas; or other lands identified by the SanGIS. Potential environmentally sensitive areas in the San Diego region are shown on Figure 2.1-3, *Environmentally Sensitive Areas*.

Special Status Plant Species

Special status plant species are generally defined as any plant that is considered endangered, threatened, rare, or sensitive according to the USFWS, CDFW, and/or County. A special status plant species may also be included in the California Native Plant Society Inventory of Rare and Endangered Plants. Their status is often based on one or more of three distributional attributes: geographic range, habitat specificity, and/or population size. A species that exhibits a small or restricted geographic range (such as those endemic to the region) is geographically rare. A species may be abundant but occur only in very specific habitats. Lastly, a species may be widespread but exist naturally in small populations.

A total of 296 special status plant species have been documented in the Service Area according to the *Biological Resources Technical Report* based on a review of California Native Plant Society (2020), California Natural Diversity Database (CNDDB; CDFW 2020), and USFWS species

occurrence data. Of these, 36 species are federally and/or State-listed or candidate species. A list of special status plant species and habitat associations is included in Appendix A to the *Biological Resources Technical Report* (HELIX 2021a; Appendix B). Due to the programmatic nature of this PEIR and the vast size of the Service Area, the *Biological Resources Technical Report* only identifies special status plant species that are either State- and/or federally listed, have a California Rare Plant Rank (CRPR) of 1 or 2 as designated by the California Native Plant Society, or are considered sensitive by the County (County 2010a).

To aid in the protection of federally listed species, USFWS designates "critical habitat," which are specific areas that contain physical and biological features essential to the conservation and recovery of a federally listed species. The Service Area contains USFWS-designated critical habitat for nine federally listed plant species, including San Diego thornmint (*Acanthomintha ilicifolia*), cushenbury oxytheca (*Acanthoscyphus parishii var. goodmaniana*), San Diego ambrosia (*Ambrosia pumila*), thread-leaved brodiaea (*Brodiaea filifolia*), Otay tarplant (*Deinandra conjugens*), Mexican flannel bush (*Fremontodendron mexicanum*), willowy monardella (*Monardella viminea*), spreading navarretia (*Navarretia fossalis*), and San Bernardino bluegrass (*Poa atropurpurea*).

Special Status Animal Species

Special status animal species are generally defined as any animal that is considered endangered, threatened, rare, or sensitive according to the USFWS, CDFW, and/or County. In general, the principal reason a species is given such recognition is due to the decline or limitations of its population size or geographical distribution, resulting in most cases from habitat loss.

A total of 192 special status animal species have been documented in the Service Area based on a review of the CNDDB (CDFW 2020), USFWS species occurrence data (USFWS 2022), and County's SanBIOS database (County 2020a). Specifically, these 192 species consist of 16 invertebrates, 6 fish, 7 amphibians, 27 reptiles, 107 birds, and 29 mammals. Of these, 41 species are federally and/or State-listed or candidate species. These species and habitat associations are included in Appendix B, *Special Status Animal Species with Potential to Occur within the IVMP Service Area*, of the *Biological Resources Technical Report* (HELIX 2021a; Appendix B).

The USFWS has designated critical habitat for 12 federally listed animal species in the Service Area, including San Diego fairy shrimp (*Branchinecta sandiegonensis*), Riverside fairy shrimp (*Streptocephalus woottoni*), Hermes copper butterfly (*Lycaena hermes*), quino checkerspot butterfly (*Euphydryas editha quino*), Laguna Mountains skipper (*Pyrgus ruralis lagunae*), tidewater goby (*Eucyclogobius newberryi*), arroyo toad (*Anaxyrus californicus*), western snowy plover (*Charadrius nivosus nivosus*), southwestern willow flycatcher (*Empidonax traillii extimus*), coastal California gnatcatcher (*Polioptila californica californica*), least Bell's vireo (*Vireo bellii pusillus*), and Peninsular bighorn sheep (*Ovis canadensis nelsoni*).

Jurisdictional Wetlands and Waterways

San Diego County contains numerous streams and rivers, ephemeral drainages, ponds and lakes, lagoons and estuaries, and associated wetland and riparian habitat. These resources support waters of the U.S. subject to the regulatory jurisdiction of the USACE, pursuant to Section 404 of the federal CWA; waters of the State, subject to the regulatory jurisdiction of the Regional Water Quality Control Board (RWQCB), pursuant to Section 401 of the CWA and/or Porter-Cologne; and unvegetated stream channels and riparian habitat, subject to the regulatory jurisdiction of the CDFW to Section 1600 et seq. of the California Fish and Game (CFG) Code.

Figure 2.1-1 illustrates approximate locations of these resources as identified by national datasets from the U.S. Geological Survey's (USGS 2020) National Hydrography Dataset (NHD) and the USFWS National Wetland Inventory (NWI) (USFWS 2020). However, these datasets are not considered final determinations and should only be used as references since a formal delineation would be required to determine the actual extent of jurisdictional resources in a given area.

Habitat Connectivity and Wildlife Corridors

Wildlife corridors connect otherwise isolated pieces of habitat and allow movement or dispersal of plants and animals. Local wildlife corridors allow access to resources such as food, water, and shelter within the framework of their daily routine. Regional corridors provide these functions over a larger scale and link two or more large habitat areas, allowing the dispersal of animals and the consequent mixing of genes between populations. A corridor is a specific route that is used for the movement and migration of species; whereas a linkage is an area of land that connects to other habitat areas and supports or contributes to the long-term movement of animals and genetic exchange by providing live-in habitat. Many linkages occur as a stepping stone that provide smaller, fragmented habitats over a linear distance.

Wildlife movement corridors in San Diego County primarily consist of riparian corridors and larger blocks of undeveloped habitat containing rugged terrain that provide sufficient vegetative cover to facilitate movement of both small and large mammals. These areas contain vital resources, such as food and water, and conceal wildlife from human influences that would otherwise deter wildlife usage. Movement corridors can provide both live-in habitat and a temporary refuge for wildlife when moving between more expansive blocks of habitat or areas of higher biological value. Wildlife movement within the western portion of San Diego County, particularly along the coast, is heavily impaired and constrained by urban and residential development. Riparian corridors, preserves, and open space areas function as local movement corridors for smaller mammals, such as coyote (*Canis latrans*) and bobcat (*Lynx rufus*), and provide stepping-stone linkages for birds between key habitat blocks of upland and riparian habitat providing important breeding, foraging, and dispersal functions. Movement of larger mammals, such as mule deer, is concentrated within larger blocks of undeveloped habitat and open space areas, such as Los Peñasquitos Canyon Preserve. Further inland, these wildlife movement corridors increase in function and support a wider range of species as development is largely rural containing larger blocks of undeveloped land with fewer major highways and roadways present.

Regional movement corridors have been identified in planning documents such as the San Diego MSCP and North County MHCP Plans. These planning documents delineate biological core and linkage areas that represent areas of high biological value supporting sensitive resources and identify linkages connecting these areas together. Figure 2.1-4, *Wildlife Movement Corridors and Habitat Linkages*, illustrates these regional movement corridors and habitat linkages. The linkages tend to be formed by rivers and valleys, mesa tops, and ridgelines, such as the San Diego River, San Luis Rey River, San Dieguito River, Los Peñasquitos Creek, Sweetwater River, Otay River, Del Mar Mesa, Jamul Mountains, Otay Mountain, Lake Hodges, and Lyons Valley. Areas targeted for conservation under the individual MSCP and MHCP Subarea Plans are based on the core and linkage concept of landscape-level conservation. The configuration of preserve lands includes large, contiguous areas of habitat supporting important species populations or habitat areas and important functional linkages and movement corridors between them.

2.1.2 Regulatory Setting

The VCP operates under the authority of the Mosquito Abatement and Vector Control District Law of the State of California (California Health and Safety Code, Sections 2000–2093), which details the need and rationale for creating mosquito abatement and vector control districts in the State. In July 1989, the County Board of Supervisors assumed the powers of a Vector Control District. The city council of each incorporated city consented to the Board's resolution, and the Service Area was formed, which includes all 18 incorporated cities and unincorporated areas of San Diego County. The Board delegated implementation and enforcement duties to the County DEHQ VCP, which continues to provide countywide vector prevention and control services to this day. The VCP's authority is further established in the California Government Code, California Health and Safety Code, California Civil Code, California Penal Code, San Diego County Code of Regulatory County Ordinances, and San Diego County Code of Administrative County Ordinances.

Aside from the VCP's regulatory authority to monitor and control vectors, individual IVMP activities would be subject to applicable federal, State, and local environmental regulations as described in the following subsections.

2.1.2.1 *Federal*

Federal Endangered Species Act

Administered by the USFWS, the federal Endangered Species Act (FESA) provides the legal framework for the listing and protection of species (and their habitats) that are identified as endangered or threatened with extinction. Actions that jeopardize endangered or threatened species and the habitats upon which they rely are considered a "take" under the FESA. Section 9(a) of the FESA defines take as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct."

The USFWS designates critical habitat for endangered and threatened species. Critical habitat is defined in the FESA and refers to specific areas that contain features necessary for endangered or threatened species. Once an area is designated as critical habitat pursuant to the FESA, all federal agencies must consult with the USFWS to ensure that any action they authorize, fund, or carry out is not likely to result in destruction or adverse modification of the critical habitat.

Sections 7 and 10(a) of the FESA regulate actions that could jeopardize endangered or threatened species. Section 7 federal interagency consultation must occur when federal actions may adversely affect listed species. A Section 7 consultation (formal or informal) is required when there is a nexus between endangered species and a federal action for a proposed impact (e.g., USACE would initiate a Section 7 consultation with the USFWS for impacts proposed to USACE jurisdictional areas that may also affect listed species or their critical habitat). Section 10(a) allows issuance of permits for incidental take of endangered or threatened species with preparation of a Habitat Conservation Plan (HCP) when there is no federal nexus. An HCP must be submitted for issuance of Section 10(a) permits to demonstrate how the impact would be minimized. The San Diego MSCP and North County MHCP Plans are regional HCPs that were developed pursuant to Section 10(a) of the FESA.

Depending on the location and nature of individual IVMP activities, the VCP may be required to consult with the USFWS if activities would have the potential to impact sensitive species and habitats. The VCP maintains a Special Use Permit for performing vector control activities on USFWS-owned land, including the Tijuana Estuary and the Sweetwater Marsh Unit.

Regarding pesticide application, the USEPA has embarked on an unprecedented effort to improve the current process between the FESA and the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) in collaboration with the USFWS, National Marine Fisheries Service (NMFS), U.S. Department of Agriculture (USDA), Council on Environmental Quality (CEQ), and stakeholders, especially environmental and agricultural ones. This includes deciding to meet FESA obligations when registering new conventional pesticides, incorporating mitigation for FESA species much earlier in the FIFRA process for certain pesticide decisions, and revitalizing the FESA-FIFRA Interagency Working Group. This workplan is another important step, reflecting the agency's most comprehensive thinking to date on how to improve its FESA-FIFRA work to meet its mission of protecting human health and the environment while supporting responsible use of pesticides for agriculture, public health, and other important purposes (USEPA 2022d, 2022e).

As of January 11, 2022, before registering any new conventional pesticide active ingredient, the USEPA will evaluate the potential effects on listed species and their designated critical habitats and initiate FESA consultation with the wildlife agencies as appropriate. If the USEPA finds through its analyses that a new conventional pesticide active ingredient is likely to adversely affect listed species or their designated critical habitats, the USEPA will initiate formal consultation with the USFWS and NMFS before granting a registration for a product containing a new active ingredient. As part of its analysis and under its existing authorities, the USEPA will consider the likelihood that the registration action may jeopardize the continued existence of listed species or adversely modify their designated critical habitat and provide its findings to the wildlife agencies. To determine or predict the potential effects of a pesticide on these species and habitats, the USEPA will use appropriate ecological assessment principles and apply what it has learned from effects determinations and the wildlife agencies' biological opinions and other relevant documents (USEPA 2022f).

Migratory Bird Treaty Act

All migratory bird species that are native to the United States or its territories are protected under the federal MBTA, as amended under the Migratory Bird Treaty Reform Act of 2004 (Federal Register Doc. 05-5127). The MBTA is generally protective of migratory birds but does not actually stipulate the type of protection required. In common practice, the MBTA is used to place restrictions on disturbance of active bird nests during the breeding season. For the purposes of this PEIR, the general bird breeding season is February 15 to September 15 (includes riparian birds). In addition, the USFWS commonly places restrictions on disturbances allowed near active raptor nests. The raptor breeding season is generally January 15 through July 15. These breeding seasons are defined in the *County of San Diego Guidelines for Determining Significance – Biological Resources* (County 2010a).

Clean Water Act and Rivers and Harbors Act

Federal wetland regulation (nonmarine issues) is guided by the Rivers and Harbors Act of 1899 and the Clean Water Act (CWA). The Rivers and Harbors Act deals primarily with discharges into navigable waters, while the purpose of the CWA is to restore and maintain the chemical, physical, and biological integrity of all waters of the U.S. Permitting for projects filling waters of the U.S. is overseen by the USACE under Section 404 of the CWA. A CWA Section 401 Water Quality Certification administered by the State Water Resources Control Board (SWRCB) must be issued prior to any 404 Permit. If individual IVMP activities would affect waters of the U.S. or State, coordination and potential permits may be required from the USACE and RWQCB.

Bald and Golden Eagle Protection Act

This act makes it illegal to transport, import, export, take (pursue, shoot, shoot at, poison, wound, kill, trap, collect, destroy, molest, or disturb), possess, sell, purchase, or barter any bald eagle or golden eagle or part, nest, or egg thereof without prior authorization. The administrating agency is the USFWS.

Executive Order 11990, Protection of Wetlands

This order, signed by President Jimmy Carter in 1977, provides for the protection of wetlands by Federal agencies and applies to Federal lands, Federally undertaken or funded projects, and Federal programs and during NEPA review. The administering agency for the above authority is the USEPA.

2.1.2.2 *State*

Statewide General NPDES Permit for Biological and Residual Pesticides

Under the requirements of Porter-Cologne and the federal CWA, the SWRCB is delegated authority for protection of surface and groundwater. Accordingly, the SWRCB maintains a general permit that allows vector control districts to conduct pesticide applications at, near, or over waters of the U.S. that would result in discharges of pollutants: *Statewide NPDES Permit for Biological and Residual Pesticide Discharges to Waters of the U.S. from Vector Control Applications (State Water Quality Order No. 2016-0039-DWQ, General Permit No. 990004)*. The SWRCB originally authorized the NPDES Permit in 2011, and it expires every 5 years. Most recently, the SWRCB renewed the NPDES Permit on March 1, 2016.

The VCP initially enrolled in this Statewide permit in 2011 when it became available, and the VCP has continued to enroll under the permit and has been operating in compliance with the SWQCB's requirements since that time (Enrollee No. 937AP00009). Specifically, the NPDES Permit allows the point source discharge of biological and residual pesticides that are currently registered in California resulting from applications for vector control using larvicides and adulticides. As required by the permit, the VCP submits annual reports to the SWRCB regarding pesticide use.

Statewide General NPDES Permit for Residual Aquatic Pesticide Discharges to Waters of the U.S. from Algae and Aquatic Weed Control Applicants

On January 11, 2009, the Sixth Circuit Court of Appeals ruled that pesticide applications at, near, or over water must be covered by an NPDES Permit. Thus, algaecide and aquatic herbicide applications in California must be covered by the Aquatic Weed Control Permit currently being implemented under State Water Board Order 2013-0002-DWQ (Aquatic Weed Control Permit) (SWRCB 2021). The Aquatic Weed Control Permit, which became effective on December 1, 2013, covers only discharges of algaecides, and aquatic herbicides that are currently registered for use in California or that become registered for use and contain certain active ingredients and ingredients represented by the surrogate of nonylphenol. The Aquatic Weed Control Permit has since been amended multiple times (Order 2014-0078-DWQ effective May 20, 2014; Order 2015-0029-DWQ effective March 3, 2015; and Order 2016-0073-EXEC effective June 30, 2016). The VCP is not currently enrolled in this NPDES Permit because herbicides are not currently used or proposed under the IVMP.

California Fish and Game Code

Streambed Alteration Agreement

The CFG Code provides specific protection and listing for several types of biological resources. Section 1600 of the CFG Code requires a Streambed Alteration Agreement (SAA) for any activity that would alter the flow, change, or use any material from the bed, channel, or bank of any perennial, intermittent, or ephemeral river, stream, and/or lake. Typical activities that require an SAA include excavation or fill placed within a channel, vegetation clearing, structures for diversion of water, installation of culverts and bridge supports, cofferdams for construction dewatering, and bank reinforcement. Notification is required prior to any such activities.

Nesting Birds

Pursuant to CFG Code, Section 3503, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird except as otherwise provided by the code or any regulation made pursuant thereto. Raptors, owls, and their active nests are protected by CFG Code, Section 3503.5, which states that it is unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird unless authorized by the CDFW. Section 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the MBTA. These regulations could require that program activities (particularly vegetation removal or vector control near nests) be reduced or eliminated during critical phases of the nesting cycle unless surveys by a qualified biologist demonstrate that nests, eggs, or nesting birds will not be disturbed, subject to approval by the CDFW and/or USFWS.

Assembly Bill 896

On September 20, 2014, the State approved Assembly Bill 896, which updated Section 1506 of the CFG Code, relating to wildlife management. Assembly Bill 896 clarifies the intent of the California Legislature to control mosquito production on managed wetland habitat owned or managed by the CDFW and to increase coordination and communication between the CDFW, local mosquito abatement and vector control districts, and CDPH.

Fully Protected Species

CFG Code, Sections 3511, 4700, 5050, and 5515, prohibit take or possession of birds, mammals, reptiles, and fish listed as “fully protected,” except for necessary scientific research as provided by the CFG Code. The administering agency is the CDFW.

Water Quality

CFG Code, Section 5650, protects water quality from substances or materials deleterious to fish, plant life, or bird life. It prohibits such substances or materials from being placed in waters or places where they can pass into waters of the State except as authorized pursuant to and in compliance with the terms and conditions of permits or authorizations of the SWRCB or an RWQCB such as a waste discharge requirement (WDR) issued pursuant to California Water Code, Section 13263; a waiver issued pursuant to California Water Code, Section 13269(a); or permit pursuant to California Water Code, Section 13160. The administering agency for the CFG Code, Section 5650, is the CDFW.

California Endangered Species Act

The California Endangered Species Act (CESA) established that it is State policy to conserve, protect, restore, and enhance State endangered species and their habitats. Under State law, plant and animal species may be formally designated rare, threatened, or endangered by official listing by the CFG Commission. CESA authorizes that private entities may "take" plant or wildlife species listed as endangered or threatened under FESA and CESA, pursuant to a federal Incidental Take Permit if the CDFW certifies that the incidental take is consistent with CESA (CFG Code, Section 2080.1[a]). For State-only listed species, Section 2081 of CFG Code authorizes the CDFW to issue an Incidental Take Permit for State-listed threatened and endangered species if specific criteria are met. Approved MSCP and MHCP Subarea Plans are regional Natural Community Conservation Plans (NCCPs) that have been granted take coverage under Section 2081 of CESA.

Memorandum of Understanding for Salvage of Bird, Lagomorph, and Rodent Carcasses for Detection of West Nile Virus Infection

In February 2019, the CDFW and CDPH entered into a Memorandum of Understanding (MOU) to provide authority for the salvage of dead birds, lagomorphs (rabbits and hares), and rodents for the detection of West Nile virus (WNV). Other public agencies, including mosquito and vector control member agencies, local environmental health agencies, and animal control agencies, and members of the public shall be permitted to salvage carcasses, pursuant to the authority granted to the CDPH. The MOU is renewed every 5 years.

Native Plant Protection Act

Sections 1900–1913 of the CFG Code (Native Plant Protection Act) direct the CDFW to carry out the California Legislature's intent to "preserve, protect, and enhance endangered or rare native plants of this state." The Native Plant Protection Act gives the CFG Commission the power to designate native plants as "endangered" or "rare" and protect endangered and rare plants from take.

Natural Communities Conservation Planning Act

The Natural Communities Conservation Planning program is a cooperative effort to protect habitats and species. It began under the State's Natural Communities Conservation Planning Act of 1991, legislation broader in its orientation and objectives than CESA or FESA. These laws are designed to identify and protect individual species that have already declined significantly in number. The Natural Communities Conservation Planning Act of 1991 and the associated *Southern California Coastal Sage Scrub NCCP Process Guidelines* (1993), *Southern California Coastal Sage Scrub NCCP Conservation Guidelines* (1993), and *NCCP General Process Guidelines* (1998) have been superseded by the Natural Communities Conservation Planning Act of 2003.

The primary objective of the Natural Communities Conservation Planning program is to conserve natural communities at the ecosystem level while accommodating compatible land uses. The program seeks to anticipate and prevent the controversies and gridlock caused by species' listings by focusing on the long-term stability of wildlife and plant communities and including key interests in the process.

This voluntary program allows the State to enter into planning agreements with landowners, local governments, and other stakeholders to prepare plans that identify the most important areas for

a threatened or endangered species and the areas that may be less important. These NCCPs may become the basis for a State permit to take threatened and endangered species in exchange for conserving their habitat. The CDFW and USFWS worked to combine the Natural Communities Conservation Planning program with the federal HCP process to provide take permits for State- and federally listed species. Under the NCCP, local governments, such as the County, can take the lead in developing these NCCPs and become the recipients of State and federal take permits. The County MSCP Subarea Plan is an NCCP adopted for San Diego County's southern region. Other NCCPs adopted within the Service Area include the *City of Carlsbad Habitat Management Plan*, *City of Chula Vista MSCP Subarea Plan*, *City of La Mesa MSCP Subarea Plan*, *City of San Diego MSCP Subarea Plan*, and *City of San Diego Vernal Pool HCP*. Additionally, the San Diego County Water Authority (SDCWA) and San Diego Gas & Electric (SDG&E) have each developed and adopted their own respective NCCPs/HCPs covering new projects and ongoing activities along existing SDCWA and SDG&E infrastructure that occurs throughout the county. The NCCPs/HCPs in effect or under development within the Service Area are summarized in Table 2.1-2, *Natural Community Conservation Plans/Habitat Conservation Plans within San Diego County*.

Porter-Cologne Water Quality Control Act

The SWRCB and the RWQCB regulate the discharge of waste to waters of the State via the 1969 Porter-Cologne as described in the California Water Code. The California Water Code is the State's version of the federal CWA. Waste, according to the California Water Code, includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal.

State waters that are not federal waters (i.e., areas not regulated by the CWA) may be regulated under Porter-Cologne. A Report of Waste Discharge must be filed with the RWQCB for projects that result in discharge of waste into waters of the State. The RWQCB will issue WDRs or a waiver. The WDRs are the Porter-Cologne version of a CWA 401 Water Quality Certification.

California Coastal Act

The California Coastal Commission (CCC) regulates coastal wetlands under the California Coastal Act (CCA). IVMP activities conducted within the coastal zone that would result in physical alteration of the environment may be subject to regulation under the CCA.

2.1.2.3 *Local*

Regarding local ordinances, plans, and policies to protect biological resources, the County and cities maintain general plans for development and protection of lands within their jurisdictions. The general plans address the protection and enhancement of natural resources, including plant and wildlife habitat and special status species, with broad goals and more specific policies to implement those goals.

Multiple Species Conservation Program

The California Natural Community Conservation Planning Act of 1991 (Section 2835) allows the CDFW to authorize take of species covered by plans in agreement with Natural Community Conservation Planning guidelines. A Natural Communities Conservation Program initiated by the

State of California focuses on conserving coastal sage scrub and, in concert with the USFWS and FESA, is intended to avoid the need for future federal and State listing of coastal sage scrub-dependent species.

The *San Diego MSCP Plan* for the southwestern portion of San Diego County was approved in August 1998 and covers 85 species (County 1998). The City of San Diego, portions of the unincorporated San Diego County, and 10 additional city jurisdictions make up the *San Diego MSCP Plan* area. It is a comprehensive, long-term HCP that addresses the needs of multiple species by identifying key areas for preservation as open space to link core biological areas into a regional wildlife preserve.

Other Local Natural Community Conservation Plan Areas

Several conservation planning efforts have been completed, or are in progress, throughout the region. These efforts consist of regionwide NCCPs/HCPs with the long-term goal of establishing regional reserve systems that will protect native habitats and ensure the long-term survival of sensitive plant and animal species that inhabit them. There are several NCCPs/HCPs in effect or under development within the Service Area. The San Diego region's NCCPs/HCPs are shown on Figure 2.1-5*, Natural Community Conservation Plans/Habitat Conservation Plans*. These NCCPs/HCPs include the *San Diego MSCP Plan* covering the County of San Diego and city jurisdictions in the southwestern portion of the county, the North County MHCP covering the northwestern portion of the county, and respective MSCP and MHCP Subarea Plans. Adopted Subarea Plans under these programs include the *County of San Diego (South County) MSCP Subarea Plan*, *City of San Diego MSCP Subarea Plan*, *City of San Diego Vernal Pool HCP*, *City of Chula Vista MSCP Subarea Plan*, *City of La Mesa MSCP Subarea Plan*, and *City of Carlsbad Habitat Management Plan*. Additionally, the SDCWA and SDG&E have each developed and adopted their own respective NCCPs/HCPs covering new projects and ongoing activities along existing SDCWA and SDG&E infrastructure that occurs throughout the county.

County of San Diego

The County regulates natural resources (among other resources) via the MSCP, Biological Mitigation Ordinance (BMO), and Resource Protection Ordinance (RPO), as discussed below.

County of San Diego – Multiple Species Conservation Program Subarea Plan

The *County (South County) MSCP Subarea Plan* (County 1997) implements the MSCP within the unincorporated areas under County jurisdiction. It was originally considered by the Board of Supervisors in 1997 with the Subarea Plan and adopted in March 1998. The *County MSCP Subarea Plan* is divided into three segments: Lake Hodges, Metropolitan-Lakeside-Jamul, and South County. The plan addresses areas authorized for take and planned for conservation, including portions of the South County Segment that are conserved subject to agreements with the wildlife agencies. Take of covered species and their habitat is authorized for projects that satisfy the requirements of the County's BMO.

County of San Diego – Biological Mitigation Ordinance

The BMO (County 2010b) is the ordinance by which the County implements the County MSCP Subarea Plan at the project level within the unincorporated area to attain the goals set forth in the *County MSCP Subarea Plan*. The BMO contains design criteria and mitigation standards that, when applied to projects requiring discretionary permits, protect habitats and species and ensure

that a project does not preclude the viability of the MSCP Preserve System. In this way, the BMO promotes the preservation of lands that contribute to contiguous habitat core areas or linkages.

County of San Diego – Resource Protection Ordinance

The County regulates natural resources (among other resources) as sensitive biological resources via the RPO (County 2011a), the regulations of which cover wetlands, wetland buffers, sensitive plant and animal species, sensitive vegetation communities/habitat types, and habitats containing sensitive animals or plants. It is the intent of the RPO to increase the preservation and protection of the County's unique topography, natural beauty, biological diversity, and natural and cultural resources.

Pursuant to Section 86.603 of the RPO, the RPO is applicable to discretionary applications such as a Tentative Map, Tentative Parcel Map, Revised Tentative Map and Revised Tentative Parcel Map, Rezone, Major Use Permit, Major Use Permit Modification, Site Plan, Vacation of Open Space Easement Expired Map, Certificate of Compliance, or Administrative Permit. The Proposed Project is a program that would allow the County authority to control vectors; it is not a discretionary application. Therefore, the RPO is not applicable to the Proposed Project.

Other Local Jurisdictions

The IVMP is a countywide program that would occur within the boundaries of other local jurisdictions that have also adopted local zoning ordinances to protect and preserve biological resources, including native habitats, sensitive plant and animal species, waters and wetlands, trees, and open space areas. Depending on the location and nature of individual IVMP activities, the VCP may be required to consult with local jurisdictions to address potential impacts to sensitive species and habitats.

Integrated Vector Management Program Best Management Practices

The IVMP follows BMPs described in State guidance documents, such as the B*est Management Practices for Mosquito Control in California* (CDPH 2012), *Best Management Practices for Mosquito Control on California State Properties* (CDPH 2008a), and *California Mosquito-Borne Virus Surveillance and Response Plan* (CDPH 2021), which detail best integrated vector management practices for vector control and vector-borne disease prevention. In addition, BMPs would be incorporated into the IVMP serving as a comprehensive management framework for implementation of individual activities. The following design considerations and BMPs have been developed by the VCP in combination with the above-referenced sources and are applicable to biological resources to avoid or minimize impacts to the maximum extent feasible:

- A2: The VCP has cooperative, collaborative relationships with federal, State, and local agencies. The VCP regularly communicates with resource agencies, including the USFWS and CDFW, and abides by all applicable permits and agreements regarding planned vector activities in sensitive habitats. Access, timing, and methods of surveillance and control are discussed. Methods to minimize impacts to special status species, habitat, and wildlife are agreed upon prior to entering protected and sensitive habitats. The VCP will continue to foster these relationships, communication, and collaboration.

- A3: To help minimize the need for pesticide application or vegetation management, surveillance and monitoring at known or suspected vector sites will continue to be performed to assess vector species abundance and distribution and to determine if they are carrying

diseases. Information obtained from surveillance is evaluated with risk-based response criteria and other factors to decide when and where to implement vector control measures, such as pesticide application, and to help form action plans that reduce the risk of disease transmission and assist in reducing environmental impacts.

- A4: All pesticides (i.e., chemical and biological controls) applied by the VCP are approved by the CDPR and their application will continue to abide by all label instructions and regulations of the USEPA and CDPR, including application rates and methods, storage, transportation, mixing, and container disposal. In addition, the VCP will continue to comply with all pesticide reporting, equipment calibration, and inspection requirements as regulated by the County Agricultural Commissioner.

- A5: In accordance with CDPH regulations, pesticides will only be applied by Certified Vector Control Technicians. VCP staff who apply pesticides or remove vegetation will continue to complete all training required by the CDPH to maintain status as a Certified Vector Control Technician and will follow the VCP's comprehensive documents, including the annual *Engineer's Report*, strategic response plans, and standard operating procedures to avoid and minimize negative environmental impacts. These activities are conducted in accordance with the BMPs described in the *Best Management Practices for Mosquito Control in California* (CDPH 2012), *Best Management Practices for Mosquito Control on California State Properties* (CDPH 2008a), and *California Mosquito-Borne Virus Surveillance and Response Plan* (CDPH 2021), which detail integrated vector best management practices for vector control and vector-borne disease prevention to ensure pesticides are selected and applied appropriately and potential impacts on non-targeted areas are eliminated or minimized.

- A6: Chemical controls applied within waterbodies defined by federal and State regulations as wetland and/or non-wetland waters of the U.S. and/or State must be used in accordance with the Statewide NPDES Permit for Biological and Residual Pesticide Discharges to Waters of the U.S. from Vector Control Applications (Order No. 2016-0039-DWQ, General Permit No. CA990004).

- A7: Before conducting monitoring or treatment, a Certified Vector Control Technician will review all site records in the County's enterprise database (currently Accela) used by the vector control program for any applicable permits or agreements on file dictating how a site should be addressed or any other notes discussing environmental constraints/requirements, points of access, whether a qualified biological monitor is required, or any other pertinent information prior to visiting a site.

  Sensitive sites may include but are not limited to CDFW- or USFWS-owned or operated lands, easements, and preserves; national forests; County-owned parks and open space areas; or other lands identified by SanGIS.

- A8: Prior to entering an environmentally sensitive area or other site that has the potential to contain sensitive habitat or species, VCP staff will identify suspected vector-breeding sources using satellite images, topographic maps, historical records, and on-site evaluation to help ascertain the least environmentally impactful way to access the site. If more than one access route is available, staff will prioritize the path that would minimize or avoid environmental impacts to sensitive biological resources.

  If site conditions warrant a qualified biologist to accompany the Certified Vector Control Technician, the VCP will arrange for a qualified biologist to accompany field staff. Certified

Vector Control Technicians will strictly follow all guidance and instructions from the biologist, including where access is permissible or should be avoided near sensitive habitat.

- A9: If a site has been flagged in the County's enterprise database (currently Accela) for potentially containing sensitive biological resources, VCP staff will review applicable sensitive species databases such as the USFWS's occurrence records, CDFW's California Natural Diversity Database, and County SanBIOS data to determine if any potentially special status species (e.g., birds, fish, insects, plants, or other animals) are present or have high potential to occur on the site and research any unfamiliar species with photographs and descriptions of biology and habitat. Staff will also discuss preferred access points, methods, and paths for reaching vector-breeding sources with their supervisor and/or land manager.

- A10: VCP staff will receive annual training on the identification of sensitive biological resources, including sensitive habitat and special status species (e.g., vernal pools and fairy shrimp, coastal sage scrub, bird species).

- A11: VCP will staff receive annual training regarding techniques and procedures to avoid or minimize negative effects to protect State- and/or federally listed threatened or endangered species, listed species habitat, and wildlife/wildlife habitat. For example, training includes observation and avoidance measures when accessing areas that may serve as bird nesting habitat (e.g., watch for flushing birds that may indicate a nest is nearby).

- B1: VCP staff will minimize potential disturbance to wildlife while performing surveillance and control activities. When walking or using small equipment in sensitive habitats, existing trails, levees, and access roads will be used whenever feasible to avoid or minimize impacts to sensitive species, sensitive vegetation communities, and wetlands.

- B2: When accessing sensitive habitat, VCP staff will minimize the use of motorized vehicles to the extent feasible by conducting activities on foot with handheld equipment and remain in previously disturbed areas when vehicle use is needed. Aerial surveillance or control (e.g., helicopter or drone[2]) will also be used when feasible and appropriate during pesticide applications and identification of potential vector sites, respectively.

- B3: Vehicles will only be driven on existing roadways, access roads, and existing unpaved access paths. Vehicles driven on levees to travel near aquatic areas (such as tidal marshes, sloughs, or channels) for surveillance or treatment activities will travel at speeds slow enough to avoid or minimize noise and the production of dust, typically 15 miles per hour or less.

- B4: Watercraft will be used to access aquatic environments where access is permissible, including but not limited to marshes, lagoons, and estuaries, to conduct surveillance and control of vectors and when their use would reduce the risk of potential impacts that may otherwise occur from land-based vehicles. Operation of watercraft within CDFW-owned lands and easements, USFWS-owned lands and preserves, and other open space areas would be completed in coordination with the CDFW, USFWS, and/or other applicable land managers

[2] For the purposes of this PEIR, "drone" is intended to generically mean a remotely piloted or unpiloted aircraft. As of this writing, the Federal Aviation Administration's official terminology is Unmanned Aircraft Systems; however, FAA is transitioning toward gender-neutral terminology such as drone operator, certificated remote pilot, model aircraft flyer, and advanced air mobility operator.

and agencies and would follow avoidance and minimization measure as required by the relevant agencies and right-of-entry permit, Special Use Permit, or other relevant permits.

- B5: Prior to entering sensitive habitat, VCP staff will minimize the potential for the introduction and spread of invasive plant species by ensuring all equipment, vehicles, and personal gear (such as clothing and boots) are clean.

- B6: Only staff who are certified by the CDPH as a vector control technician or staff who have received training such as proper application methods to protect the environment and public health will be allowed to access environmentally sensitive areas.

- B10: Vegetation trimming or removal, when necessary to provide access to vector habitat for surveillance and control activities, will be conducted by hand using handheld tools rather than gas-powered equipment or heavy machinery to minimize negative environmental effects. Vegetation trimming or removal activities will be conducted outside the general bird breeding season (February 15 to September 15, including riparian for general birds; January 15 to July 15 for raptors) to the greatest extent feasible.

- B12: Any staging of equipment or materials will occur in developed/disturbed areas outside existing wetlands, non-wetland waters, and native or rare upland areas.

2.1.3 Analysis of Project Effects and Determination as to Significance

The *County of San Diego Guidelines for Determining Significance – Biological Resources* (County 2010a) provides guidance for evaluating impacts related to biological resources. However, these guidelines are based on criteria provided in CEQA Guidelines Appendix G and have not been updated to reflect the current CEQA Guidelines. Therefore, the following impact analysis relies on Appendix G of the CEQA Guidelines.

Accordingly, the Proposed Project would result in a significant impact if it would cause:

1. A substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species listed in local or regional plans, policies, or regulations, or by the CDFW or USFWS.

2. A substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or USFWS.

3. 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.

4. Substantial interference 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.

5. A conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

6. A conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or State HCP.

The following sections analyze impacts for several components of the Proposed Project: surveillance and monitoring, source reduction (i.e., physical control), and source treatment (i.e., biological and chemical controls). Since these are the only components of the Proposed Project that could have an effect on biological resources, there would be no impact from public education and outreach or disease diagnostics activities and, therefore, they are not discussed further in this section.

2.1.3.1 *Special Status Species*

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would result in a significant impact if it would 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 the CDFW or USFWS.

Impact Analysis

Special Status Plant Species

Surveillance and Monitoring

Surveillance and monitoring activities include evaluation of mosquito-breeding areas by conducting surveys via ground vehicles, aircraft (helicopter), watercraft, and remote sensing equipment; trapping of mosquitoes and rodents; and testing of collected samples for vector-borne diseases. Under the Proposed Project, the VCP would also have the option to utilize fixed-wing aircraft or drones for surveillance. To avoid or minimize potential adverse environmental impacts, the VCP follows CDPH and County guidance documents for conducting inspections and employs BMPs, as detailed above and listed in Section 1.2.5, Project Design Features, in areas with potential to support sensitive biological resources. These BMPs include coordination with the appropriate land managers and agency staff to determine the least environmentally impactful way to access the site and conduct IVMP activities (BMPs A2 and A9).

As part of existing ground surveillance and monitoring activities, minor trimming of vegetation along existing access routes and paths may be required to provide access to vector-breeding sources. Trimming of vegetation would only be implemented on an as-needed basis, would be the minimum amount necessary to provide safe access, and whenever feasible, would not impact native trees and shrubs (BMPs B2 and B10). Impacts from minor trimming of vegetation would be less than significant due to the negligible area involved, selective nature of the trimming, and temporary nature of the action as vegetation would grow back, and no individual plants would be removed. Therefore, impacts to special status plant species would be less than significant as part of surveillance and monitoring activities, and no mitigation is required.

Source Reduction

Source reduction includes physical controls such as vegetation management, water control, or other maintenance activities to reduce or eliminate vector-breeding sources. These techniques include but are not limited to trimming and removal of vegetation, removal of sediment, water control, and other maintenance activities. While the VCP has historically had regulatory authority to conduct source reduction as applicable, this technique has not been widely used. Under the

Proposed Project, VCP staff would consider implementing grading, dredging, or vegetation removal activities as needed.

As discussed above, minor trimming of vegetation would result in a less than significant impact. However, source reduction activities that involve the physical removal of vegetation could result in potentially significant impacts to special status plant species if they are found to be present within a project-specific IVMP activity area. Generally, impacts to plant species with a CRPR of 1 or 2 are considered potentially significant, whereas CRPR 3 and 4 species are relatively widespread, and impacts to such species would not substantially reduce their populations in the region and are not typically significant. It is anticipated that impacts to special status plant species from source reduction would be avoided to the extent feasible with implementation of BMPs and other design considerations. In addition, unavoidable impacts would be minimized and unlikely to affect large numbers or the long-term survival of individual populations. Although the significance of impacts would be assessed on an individual project basis for CRPR 1 and 2 plant species, for the purposes of this programmatic analysis, impacts to special status plant species from source reduction would have a **potentially significant impact (BI-1)** and require mitigation. Due to the unknown location of future IVMP activities, project-specific mitigation would be identified and implemented to include species-specific or habitat-based compensation once individual activities and locations are proposed that may impact special status plant species.

Source Treatment

Biological Control. Biological controls used to manage and reduce vectors can include the use of naturally occurring bacterial larvicides, natural predators, parasites, or pathogens to reduce immature mosquito numbers. One of the techniques employed by the VCP is the application of mosquito fish in artificial mosquito-breeding sources, such as ornamental ponds, rain barrels, horse troughs, neglected swimming pools, and spas, to reduce the abundance of mosquitoes. Special status plant species would not be impacted by the use of mosquito fish because mosquito fish are used only within contained water sources that do not connect to natural waterways.

Another biological control technique is the application of naturally occurring bacterial larvicides (such as *Bacillus thuringiensis* subsp*. israelensis* [Bti] and/or *Lysinibacillus* [*Bacillus*] *sphaericus* [Ls][3]). A form of pesticide, bacterial larvicides are applied through on-ground techniques by Certified Vector Control Technicians, including backpack applicators with handheld sprayers, truck-mounted equipment, helicopters, or watercraft. In addition, the IVMP would use other aircrafts (including piloted aircrafts and drones) to deliver bacterial larvicides when other methods are infeasible due to the large size of a targeted area or impediments to access. Bacterial larvicides function by targeting specific larvae of insects and, therefore, would not impact plants or other animals. USEPA conducted studies of Bti, which is the most common active ingredient used by the VCP, and concluded that Bti has no known detrimental effects on plant life, including terrestrial, semi-aquatic and aquatic plant life. Specifically, USEPA confirmed that Bti must be ingested by an organism and exposed to appropriate digestive enzymes at a pH of 9.0 to 10.5. Therefore terrestrial, semi-aquatic or aquatic plants are unaffected by Bti because plants have no mechanism for its ingestion. In addition, USEPA found no reports of adverse plant effects caused by other toxins that might be produced by strains of Bti. In fact, USEPA concluded that plant health could potentially improve as an indirect benefit from the reduction of plants damaged by insect populations (USEPA 1998).

[3] *Lysinibacillus* (*Bacillus*) *sphaericus* (Bs): *Lysinibacillus* is the new genus name for this organism but some pesticide products, such as VectoMax, still refer to it by its previous name, *Bacillus sphaericus*.

In addition, routine maintenance of existing access paths to provide access to vector-breeding sources may involve minor trimming of native vegetation that would only be implemented on an as-needed basis, would be the minimum necessary, and, whenever feasible, would not impact native trees or shrubs (BMPs B2 and B10). Minor trimming of vegetation would be a less than significant impact, as detailed above in the Surveillance and Monitoring section. As such, impacts to special status plant species from biological control activities would be less than significant, and no mitigation is required.

Chemical Control. In addition to the above methods, the VCP controls mosquito populations through the application of chemical controls that target both larvae (larvicides) and adult mosquitoes (adulticides), both of which are forms of pesticides. Pesticides are applied by Certified Vector Control Technicians through on-ground techniques, including backpack applicators with handheld sprayers, truck-mounted equipment, or watercraft or by aircraft (including piloted and drones) when land-based methods are not practicable due to the size of the area to be treated or impediments to access.

Under the Proposed Project, the VCP would also have the option to apply products via piloted aircraft, including larvicides via fixed-wing aircraft or drones, and adulticides via drones when other methods are infeasible due to the large size of a targeted area or impediments to access. In addition, the Proposed Project would give the VCP the ability to use autodissemination techniques of larvicides and non-emergency use of adulticides.

The VCP follows CDPH and County guidance documents for conducting vector treatment activities and employs BMPs to avoid or minimize potential adverse environmental impacts. These BMPs include application of CDPR-approved pesticides by Certified Vector Control Technicians in strict accordance with all labeled instructions, application rates and methods, and regulations of the USEPA and CDPR (BMPs A4, A5, and B6). Additionally, vector treatment activities within sensitive areas are coordinated with the appropriate land managers and agencies, and activities are conducted in such a manner to ensure that site access and abatement activities avoid or minimize potential impacts to sensitive biological resources to the greatest extent feasible (BMPs A2 and A9). Application of pesticides through land-based methods prioritizes use of existing access routes and avoid creation of new pedestrian access paths unless no other alternatives are present (BMPs B2 and B3). Routine maintenance of existing access paths may involve minor trimming of native vegetation to provide access to vector-breeding sources and is only to be implemented on an as-needed basis, to the minimum extent necessary, and whenever feasible, does not impact native trees or shrubs (BMPs B2 and B10). Minor trimming of vegetation would be a less than significant impact, as detailed in the Surveillance and Monitoring section. No removal of vegetation or other ground-disturbing activities would occur as part of chemical control activities. As such, impacts to special status plant species from chemical control activities would be less than significant, and no mitigation is required.

Special Status Animal Species

Surveillance and Monitoring

The VCP completes surveillance and monitoring activities for three broad groups of vectors: birds, mammals, and invertebrates (largely mosquitoes and ticks). Accordingly, this section will discuss potential impacts from surveillance and monitoring in the context of birds, mammals, and mosquitoes.

Regarding bird vectors, surveillance and monitoring activities include collecting and testing dead birds for WNV. As part of the VCP's effort to monitor mosquito-transmitted WNV, deceased birds that are reported by the public are collected and tested by the VCP for WNV. Species of particular importance include crows, ravens, jays, hawks, and owls. The salvage of dead birds is permitted in accordance with an MOU between the CDFW and CDPH[4] authorizing said activities (CDFW 2019). Additionally, the VCP has previously completed monitoring and testing of sentinel chicken flocks for virus exposure and may continue to use in the future to detect viruses in the environment. No significant impacts to special status animal species would occur through the salvaging and testing of dead birds, as authorized under the CDPH's MOU, or through the monitoring and testing of sentinel chicken flocks for virus exposure. No mitigation is required.

Regarding mammal vectors, surveillance and monitoring activities include trapping of rodents and other small mammals, salvage of dead mammal vectors, and testing for a variety of diseases. Within the Service Area, trapping activities primarily occur at ports of entry (for plague) where freight is received by boat, plane, or truck from foreign points of origin and parks, campgrounds, or trails (for hantavirus, Lyme disease, and plague). Trapping activities use non-lethal capture and release methods; therefore, no individuals are intentionally killed or salvaged. Targeted species for trapping at ports of entry include the Norway rat (*Rattus norvegicus*), black rat (*Rattus rattus*), deer mouse (*Peromyscus maniculatus*), and California ground squirrel (*Otospermophilus beecheyi*) at developed campgrounds. Fleas and blood samples are collected from captured animals and tested for plague at the County's Vector Disease and Diagnostic Laboratory. Additionally, they are checked for ticks, which can transmit disease agents that cause tularemia, Lyme disease, Rocky Mountain spotted fever, and other rickettsial spotted fevers. Any trapping activities proposed to occur on CDFW-owned lands and easements, USFWS-owned lands and preserves, and other open space areas would be completed in coordination with the CDFW, USFWS, and/or other applicable land managers and agencies and would follow avoidance and minimization measures as required by the relevant agencies and right-of-entry permit, Special Use Permit, or other relevant permits (BMP A2). Staff conducting trapping activities would possess any required federal and State permits and agreements if applicable to specific activities.

Additionally, several special status small mammal species have the potential to occur within the Service Area, including two State- and federally listed species: Stephens' kangaroo rat (*Dipodomys stephensi*) and Pacific pocket mouse (*Perognathus longimembris pacificus*). The Stephens' kangaroo rat occurs in the northern portions of the county, particularly at Camp Pendleton in the northwestern portion of the county and the Vista, Bonsall, and San Luis Rey River Valley regions in the north-central portion of the county. The Pacific pocket mouse has been extirpated from the vast majority of the county in localities where the species historically occurred (USFWS 2010). Currently, the Pacific pocket mouse is restricted to the Oceanside area in the northwestern portion of the county at Camp Pendleton. Trapping activities associated with implementation of the IVMP primarily occur in areas that don't have these species, such as near human populations, within higher elevation developed campgrounds outside the known range of these species, and within developed regions along the coast at ports of entry that do not support suitable habitat for either species. Therefore, no adverse effects would occur to populations of Stephens' kangaroo rat and Pacific pocket mouse as part of surveillance and monitoring activities. Rodent trapping is not and will not be performed excessively as a mass trapping control measure. For example, the VCP conducts trapping activities twice per year at ports of entry to test for the presence of plague. All animals captured have a blood sample taken for testing and are released. Furthermore, trapping activities are unlikely to result in adverse effects on other special status

[4] The 2019 MOU between CDFW and CDPH authorizes mosquito and vector control member agencies such as County DEHQ VCP to conduct salvage activities.

mammal species with potential to occur within the Service Area because activities are generally confined to developed areas lacking suitable habitat (sparse native scrub habitats and grasslands with sandy, friable soils) that support these species. Therefore, no significant impacts to special status animal species would occur through surveillance and monitoring activities of mammal vectors, and no mitigation is required.

Regarding mosquitoes, surveillance and monitoring activities include evaluation of mosquito-breeding areas by conducting surveys via ground vehicles, piloted aircraft, watercraft, and remote sensing equipment; trapping of mosquitoes; and testing collected samples for vector-borne diseases. The IVMP proposes to include mosquito monitoring by drones as well. To minimize potential adverse environmental impacts, the VCP follows CDPH and County guidance documents for conducting inspections and employs BMPs in areas with potential to support sensitive biological resources. These BMPs include coordination with the appropriate land managers and agency staff to determine the least environmentally impactful way to access the site and conduct activities (BMPs A2 and A9).

Trapping of mosquitoes would be completed at known and suspected breeding sources, such as slow-moving streams, stagnant water sources, ponds, and lakes. Surveillance devices include carbon dioxide baited traps and Reiter Gravid traps, as well as other species-specific traps, such as BG Sentinel traps that target invasive *Aedes* mosquito species. Reiter Gravid traps are used for collecting female mosquitoes searching for a place to lay their eggs. The traps are strategically placed to measure mosquito levels throughout the county and are used to determine disease infection levels and help locate mosquito-breeding sources. As these are species-specific traps, the mosquito trapping program would not result in significant impacts to special status invertebrate animal species present within the Service Area, and no mitigation is required.

As part of general surveillance and monitoring activities of the IVMP that are not specific to any vector, minor trimming of vegetation along existing access routes and paths may be required to provide access to the vector-breeding source. Trimming of vegetation would only be implemented on an as-needed basis, would be the minimum necessary to provide safe access, and whenever feasible, would not impact native trees and shrubs (BMPs B2 and B10). Trimming of vegetation would be temporary in nature as vegetation would grow back, and no individual plants would be removed. Further, BMPs would be implemented during vegetation trimming to minimize impacts to nesting birds and all staff would be trained to recognize and avoid potential nests (BMPs A10, A11, and B10). However, if minor trimming were to occur associated with surveillance and monitoring activities during the general bird breeding season (February 15 to September 15, including riparian birds; January 15 to July 15 for raptors), potential direct impacts to nesting individuals would be considered **potentially significant (BI-2)** and would require mitigation.

Operation of IVMP ground vehicles, watercrafts, and piloted aircraft and drones is not anticipated to have a significant impact on special status animal species. Vehicles would only be operated on previously disturbed areas and would not travel onto sensitive, undisturbed biological resources (BMPs B2 and B3). Watercrafts would be operated in open water environments where access is permissible (BMP B5). Any surveillance activities via watercraft on CDFW-owned lands and easements, USFWS-owned lands and preserves, and other open space areas would be completed in coordination with the CDFW, USFWS, and/or other applicable land managers and agencies and would follow avoidance and minimization measures as required by the relevant agencies and right-of-entry permit, Special Use Permit, or other relevant permits (BMPs B1 and B5). Although the operation of piloted aircraft and drones may result in temporary noise disturbances to animal species, activities would consist of sporadic events of short duration. Therefore, impacts on special status animal species from the operation of ground, water, and

airborne vehicles for surveillance and monitoring activities would be less than significant, and no mitigation would be required.

Source Reduction

Source reduction involves physical control techniques that eliminate or reduce standing water that functions as mosquito-breeding habitat. These techniques include but are not limited to vegetation management, including trimming and removal of vegetation; removal of sediment; water control; and other maintenance activities. Project BMPs would be implemented during vegetation trimming to minimize impacts to nesting birds, and all staff would be trained to recognize and avoid potential nests (BMPs A10, A11, and B10).

As previously discussed, activities that involve the trimming or removal of vegetation could result in significant direct impacts to nesting birds and raptors present within project-specific IVMP activity areas if activities were to occur during the general bird breeding season (February 15 to September 15, including riparian birds; January 15 to July 15 for raptors) and would require mitigation. In addition, habitat modification and ground disturbance activities also have the potential to adversely affect State- and/or federally listed species (such as arroyo toad), USFWS-designated critical habitat, and raptor foraging habitat (i.e., grasslands) within the Service Area if activities were to occur within areas containing habitat suitable to support these species and/or USFWS-designated critical habitat. As such, these source reduction activity impacts would be considered **potentially significant direct impacts (BI-2)** and require mitigation.

Additionally, **potentially significant indirect impacts from noise (BI-3)** could occur and require mitigation if activities were to take place adjacent to habitat occupied by nesting raptors or State- and/or federally listed species, including but not limited to coastal California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, and light-footed Ridgway's rail (*Rallus obsoletus levipes*). Impacts to these special status species are anticipated to be localized and limited to the smallest footprint necessary to eliminate or reduce vector-breeding sources. For example, drainage improvements for slow-moving and/or stagnant areas would be limited in scope to the removal of sediment and debris jams to increase flows.

Due to the programmatic nature of this analysis, the specific location and quantity of impacts cannot be assessed at this time. However, project-specific impacts would be assessed prior to future projects, and impacts would be mitigated prior to implementation in accordance with local policies and ordinances and/or adopted NCCPs/HCPs.

Source Treatment

Biological Control. Biological controls used to control and reduce vectors include the use of natural predators, parasites, or pathogens to reduce immature mosquito numbers. One of the primary techniques employed by the VCP is the application of mosquito fish in artificial mosquito-breeding sources, such as ornamental ponds, rain barrels, horse troughs, neglected swimming pools, and spas, to reduce the abundance of mosquitoes. Special status animal species are not impacted by the use of mosquito fish because mosquito fish are used only within contained water sources that do not connect to natural waterways.

Another biological control technique is the application of naturally occurring bacterial larvicides, which are developed from bacteria that have natural larvicidal properties. The VCP strictly adheres to product label requirements and its pesticide application BMPs for the protection of ecological health. Because bacterial larvicides are applied to aquatic rather than terrestrial

environments to control larval mosquitoes, the potential for exposure of terrestrial organisms is low. In fact, bacterial larvicides used by the VCP are nontoxic to terrestrial organisms, including birds, bees, and mammals (Washington State Department of Health 2022; USEPA 2022g, USEPA 2022i), and are not acutely toxic to nontarget aquatic species such as fish and aquatic invertebrates.

More specifically, the bacterial larvicides used by the VCP predominantly contain one of the following common active ingredients: Bti, methoprene, and spinosad. While the VCP has conducted extensive investigative research on pesticide usage and regulations in preparing this PEIR, the *Ecological & Human Health Assessment Report* prepared by Cardno Entrix provides a significant volume of data and research regarding potential pesticides effects upon which this PEIR relies (Cardno Entrix 2013).[5]

Regarding Bti, according to USEPA and Maryland Department of Agriculture, research has demonstrated that Bti is nontoxic to humans, mammals, birds, fish (trout and bluegill), and most invertebrates when applied according to USEPA-approved label requirements. Specifically, USEPA's Reregistration Eligibility Decision provides quantified studies finding that toxicity and infectivity risks to nontarget avian, freshwater fish, freshwater aquatic invertebrates, estuarine and marine animals, arthropod predators/parasites, honey bees, annelids and mammalian wildlife are minimal to nonexistent when used according to the USEPA-approved label rates, which the VCP abides by (USEPA 1998). In addition, according to Cardno Entrix, neither Bs nor Bti are acutely toxic to nontarget species including fish and invertebrates, nor are they toxic to predators of mosquito larvae. Bti may affect some dipterans (chironomids, simuliids, ceratopogonids, and dixids), but only at concentrations 10 to 1,000 times higher than used for mosquito control (San Mateo 2018; Cardno Entrix 2013).

Regarding methoprene, it is an insect growth regulator that interferes with the development of larval insects, preventing them from becoming adults. Methoprene degrades rapidly in water and is part of a larger family of hydrocarbon esters, which are largely considered some of the safest larvicides available. Liquid and granular forms are most prevalently used in residential and ornamental pond application scenarios. Methoprene is sometimes co-applied with Bti to prevent resistance and ensure all larval stages are controlled. Methoprene is generally applied in small amounts during treatments due to its efficacy against mosquitoes even at low concentrations. Like all pesticides, the VCP applies methoprene in accordance with USEPA-approved label requirements. At this rate, some effects may occur to some nontarget midges (Chironomidae) and blackflies (Simuliidae) according to Cardno Entrix, but these populations recover quickly after treatment. No other invertebrates have shown signs of toxicity at these concentrations (Cardno Entrix 2013). Furthermore, according to the Journal of Ecotoxicology and Environmental Safety, long-term effects of both liquid and sustained-release methoprene in salt marshes have been studied. In the most recent studies cited in the article, the species that comprised over 90% of insects were unaffected, and brine flies were able to grow and mature from the egg stage. Similarly, a field study found no effects on non-target salt marsh insects, and there was no detection of depleted non-target insects following experimental methoprene use for mosquito control on a freshwater pond, or on terrestrial insects. The journal concludes that levels of methoprene used for mosquito control have no detectable effects on a majority of the invertebrates tested, which included both freshwater and marine taxa. This conclusion is similar to older existing reviews (Lawler 2017). Furthermore, extended-release forms including granular

[5] Cardno Entrix prepared the Ecological & Human Health Assessment Report in June 2013 on behalf of nine mosquito abatement districts in northern California. The report was then integrated into each district's Environmental Impact Report (i.e., Appendix B of the San Mateo County Mosquito and Vector Control District's Programmatic EIR for the Integrated Mosquito and Vector Management Program; SCH # 2012052063).

and briquet varieties may be more residual in the environment; however, the methoprene active ingredient in this formulation has a half-life of a few hours to a couple days in water and does not migrate through soil, significantly reducing the potential for groundwater impacts (Csondes 2004). In summary, at low concentration rates during application, little to no toxicity occurs to nontarget aquatic organisms. Therefore, when handled and applied using VCP BMPs, hydrocarbon esters, such as methoprene, are considered to be one of the safest larvicides available.

Regarding spinosad, it is a natural insecticide derived from the fermentation of a naturally occurring common soil micro-organism, *Saccharopolyspora spinosa*. In water, spinosad is degraded primarily through photolysis, which has a half-life of less than one day. USEPA has classified spinosad as a "reduced risk" compound because it is an alternative to more toxic, organophosphate insecticides (USEPA 2018). Spinosad is of low acute toxicity to birds and has low toxicity to moths and butterflies. According to a report by Mayes et al. (2003), a tiered evaluation of the toxicity of spinosad to insects, including bees, indicates that within 3 hours, dried spinosad was effectively nontoxic to the insects tested. This is supported by the National Pesticide Information Center, which concluded that spinosad is practically non-toxic to moderately toxic to fish depending on the species and is slightly to moderately toxic to aquatic invertebrates (NPIC 2014). According to Cardno Entrix, spinosad may have slight impacts on some aquatic invertebrates under chronic exposure; however, the application by the VCP for mosquitoes control is episodic, not chronic, and given the rapid breakdown of spinosad in the environment, chronic exposure is unlikely (San Mateo 2018; Cardno Entrix 2013). Implementation of bacterial larvicides that contain spinosad strictly adhere to product labels and other BMPs. Therefore, the timing and short-term exposure at levels used for mosquito control is not anticipated to have a significant impact to population size and distribution of nontarget organisms.

Therefore, no significant impact to special status animal species would occur as a result of biological control activities, and no mitigation is required.

Chemical Control. In addition to the above methods, the VCP controls mosquito populations through the application of chemical controls that target both larvae (larvicides) and adult mosquitoes (adulticides), both of which are forms of pesticides. Pesticides are applied by Certified Vector Control Technicians using on-ground techniques, such as backpack applicators, truck-mounted equipment, or watercraft, or by specialized contractors using aircrafts (including piloted aircrafts and drones) when land-based methods are not practicable due to the size of the area to be treated or impediments to access.

The VCP follows CDPH and County guidance documents for conducting inspections and vector treatment abatement activities and employs BMPs to avoid or minimize potential adverse environmental impacts. These BMPs include application of CDPR-approved pesticides by Certified Vector Control Technicians in strict accordance with all label instructions (BMPs A5, A7, and B6), application rates and methods (BMPs A4 and B6), and regulations of the USEPA and CDPR (BMP A4). Additionally, vehicles can only be operated on roadways, access roads, and unpaved access paths (BMPs B2 and B3). Watercrafts would be operated in open water environments where access is currently permissible (BMP B5). Any chemical application activities conducted via watercraft on CDFW-owned lands and easements, USFWS-owned lands and preserves, and other open space areas would be completed in coordination with the CDFW, USFWS, and/or other applicable land managers and agencies and would follow avoidance and minimization measure as required by the relevant agencies and right-of-entry permit, Special Use Permit, or other relevant permits (BMPs B1 and B4). Although piloted aircraft and drones may result in temporary noise disturbances to animals, including special status species, within the vicinity of operation, activities would consist of sporadic events of short duration. Therefore, no

significant impacts to special status animal species would occur from chemical control activities, and no mitigation would be required.

However, if minor vegetation trimming was necessary along access paths during the bird breeding season, this could potentially result in a significant impact. Impacts would be reduced through implementation of BMPs. For example, application of pesticides through land-based methods would prioritize use of existing access routes and avoid creation of new pedestrian access paths unless no other alternatives are present (BMPs B2 and B3). Routine maintenance of existing access paths to provide access to vector-breeding sources may involve the minor trimming of native vegetation, which would only be implemented on an as-needed basis, would be the minimum necessary, and whenever feasible, would not impact native trees and shrubs (BMPs B2 and B10). Additionally, project BMPs to minimize impacts to nesting birds would be implemented during vegetation trimming, and all staff would be trained to recognize and avoid potential nests (BMPs A10, A11, and B10).

In general, minor trimming of vegetation to conduct source treatment activities would be less than significant, as detailed above. However, if minor trimming were to occur during the general bird breeding season (February 15 to September 15, including riparian birds; January 15 to July 15 for raptors), potential direct impacts to nesting individuals would be considered **potentially significant (BI-2)** and would require mitigation.

In conclusion, implementation of the IVMP could result in **significant impacts** to special status plant and animal species through the removal of vegetation, habitat modification, access for application of chemical controls, and/or noise **(BI-1, BI-2, BI-3)**. A combination of avoidance through project design and implementation of the mitigation measures described below (M-BI-1a through M-BI-1e, M-BI-2a, M-BI-2b, and M-BI-3) would reduce impacts to special status plant and animal species to less than significant.

2.1.3.2 *Riparian Habitat and Sensitive Natural Communities*

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would result in a significant impact if it would have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or USFWS.

Impact Analysis

Surveillance and Monitoring

Surveillance and monitoring activities generally occur along existing access routes that have already been established and are regularly maintained (BMPs B2 and B3). To minimize potential adverse environmental impacts, the VCP follows CDPH and County guidance documents for conducting inspections and employs BMPs in areas with potential to support sensitive biological resources. These BMPs include coordination with the appropriate land managers and agency staff to determine the least environmentally impactful way to access the site and conduct IVMP activities, including the avoidance of physical modification to sensitive habitats to the greatest extent feasible (BMPs A2 and A9). As part of surveillance and monitoring activities, minor trimming of vegetation along existing access routes and paths may be required to provide access to the vector-breeding source. Trimming of native vegetation would only be implemented on an

as-needed basis, would be the minimum amount necessary to provide access, and whenever feasible, would not impact native trees and shrubs (BMPs B2 and B10). Impacts from minor trimming of vegetation would be less than significant due to the negligible area involved, selective nature of the trimming, and temporary nature of the action because vegetation would grow back and no individual plants would be removed. Therefore, impacts to riparian habitat and other sensitive natural communities would be less than significant as part of surveillance and monitoring activities, and no mitigation is required.

Source Reduction

The reduction of vector-breeding sources involves physical control techniques that eliminate or reduce standing water that function as mosquito-breeding habitat. These techniques include but are not limited to vegetation management, including trimming and removal of vegetation; removal of sediment; water control; and other maintenance activities.

As previously discussed, minor trimming of vegetation would be a less than significant impact. However, source reduction activities that involve the removal of vegetation could result in **potentially significant impacts** to riparian habitat and sensitive natural communities **(BI-4)** and require mitigation. Due to the programmatic nature of this analysis, project-specific impacts would be assessed through future projects and applicable permits, and impacts to riparian habitat and sensitive natural communities would be mitigated in accordance with local policies and ordinances and/or adopted NCCPs/HCPs.

Source Treatment

Biological Control. Riparian habitat and other sensitive natural communities would not be impacted by the use of mosquito fish because mosquito fish are used only within contained water sources that do not connect to natural waterways. Additionally, bacterial larvicides act against larvae of specific organisms and would not impact riparian habitat or sensitive natural communities. Therefore, no significant impacts to riparian habitat and sensitive natural communities would occur from biological control, and no mitigation is required.

Chemical Control. The VCP follows CDPH and County guidance documents for conducting inspections and vector treatment abatement activities and employs BMPs to avoid or minimize potential adverse environmental impacts. These BMPs include application of CDPR-approved pesticides by Certified Vector Control Technicians in strict accordance with all label instructions, application rates and methods, and regulations of the USEPA and CDPR (BMPs A4, A5, and B6). Application of pesticides through land-based methods would prioritize use of existing access routes and avoid creation of new pedestrian access paths unless no other alternatives are present (BMPs B2 and B3). Routine maintenance of existing access paths may involve the minor trimming of native vegetation, which would be implemented only on an as-needed basis, would be the minimum necessary to provide safe access to the mosquito-breeding source, and whenever feasible, would not impact native trees and shrubs (BMPs B2 and B10). Minor trimming of vegetation would be less than significant as detailed in the discussion in the Surveillance and Monitoring section. No removal of vegetation or other ground-disturbing activities would occur as part of chemical control activities. Therefore, impacts to riparian habitat and sensitive natural communities would be less than significant as part of chemical control activities, and no mitigation is required.

In conclusion, source reduction (i.e., physical ground disturbance) is the only IVMP activity that may result in **potentially significant impacts** to riparian habitat or sensitive natural communities

(BI-4) that would require mitigation. Due to the unknown location of future IVMP activities, project-specific mitigation would be identified and implemented to include compensation prior to any impacts to riparian habitat and sensitive natural communities, which would occur at ratios consistent with the County Guidelines (County 2010a), wildlife agencies (CDFW and USFWS), and other local jurisdictions, where applicable.

A combination of avoidance measures through project design and BMPs along with implementation of mitigation measures described below (M-BI-1a, M-BI-1c, M-BI-1d, M-BI-1e, M-BI-4a, and M-BI-4b) would reduce impacts to riparian habitats and sensitive natural communities to less than significant.

2.1.3.3 *Jurisdictional Wetlands and Waterways*

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would result in a significant impact if it would have a substantial adverse effect on State- or federally protected wetlands (including but not limited to marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means.

Impact Analysis

Surveillance and Monitoring

To avoid or minimize potential adverse environmental impacts, the VCP follows CDPH and County guidance documents for conducting inspections and vector treatment abatement activities and employs BMPs in areas with potential to support sensitive biological resources. These BMPs include coordination with the appropriate land managers and agency staff to determine the least environmentally impactful way to access the site and conduct IVMP activities (BMPs A2 and A9). As part of surveillance and monitoring activities, minor trimming of vegetation along existing access routes and paths may be required to provide access to the vector-breeding source. Trimming of native vegetation would only be implemented on an as-needed basis, would be the minimum amount necessary to provide safe access, and whenever feasible, would not impact native trees and shrubs (BMPs B2 and B10). Impacts from minor trimming of vegetation would be less than significant due to the negligible area involved, selective nature of the trimming, and temporary nature of the action as vegetation would grow back, and no individual plants would be removed. Further, IVMP surveillance and monitoring activities would not result in discharge into, or the removal, filling, or other physical disturbance to waters or wetlands subject to CDFW, RWQCB, and/or USACE jurisdiction. Therefore, no significant impacts to State- and/or federally protected waters or wetlands would occur from surveillance and monitoring, and no mitigation is required.

Source Reduction

As described above, source reduction techniques include but are not limited to vegetation management, including trimming and removal of habitat; removal of sediment; water control; installing, removing, or improving culverts, tide gates, and other water control structures; and other maintenance activities.

As previously discussed, minor trimming of vegetation during surveillance and monitoring activities would be a less than significant impact. However, source reduction activities that result

in the filling, removal, and or discharge into waters, wetlands, or riparian habitat, such as sediment and vegetation removal, may result in **potentially significant impacts (BI-5)** to CDFW, RWQCB, and/or USACE jurisdictional wetlands and waterways if they are found to be present within a project-specific IVMP activity area. Significant impacts to waters and wetlands subject to CDFW, RWQCB, and/or USACE jurisdiction would require mitigation in addition to coordination and potential permitting through the appropriate regulatory agencies. Due to the programmatic nature of this analysis, project-specific impacts would be assessed prior to future projects and impacts to wetlands would be mitigated in accordance with applicable permits. Permits that may be required include a CWA Section 404 Permit from the USACE, CWA Section 401 Water Quality Certification or Porter-Cologne WDRs from the RWQCB, and CFG Code, Section 1602, SAA from CDFW. Final mitigation requirements for impacts to waters and wetlands under the jurisdiction of the permitting agencies (USACE, RWQCB, and CDFW) would be determined through consultation with these agencies, as applicable.

Source Treatment

Biological Control. Waters and wetlands subject to the jurisdiction of the CDFW, RWQCB, and/or USACE would not be impacted by the use of mosquito fish because mosquito fish are used only within contained water sources that do not connect to natural waterways. Additionally, bacterial larvicides function by targeting specific larvae of targeted organisms and would not impact waters and wetlands. Therefore, no significant impacts to State- and/or federally protected waters or wetlands would occur from biological control activities, and no mitigation is required.

While bacterial larvicides have been previously addressed in this PEIR as a biological control, the following chemical control discussion will address larvicides in wetlands and waterways to avoid duplicating analysis.

Chemical Control. In addition to the above methods, the VCP controls mosquito populations through the application of chemical controls that target both larvae (larvicides) and adult mosquitoes (adulticides), both of which are forms of pesticides.

On March 1, 2016, the SWRCB issued the *Statewide NPDES Permit for Biological and Residual Pesticide Discharges to Waters of the U.S. from Vector Control Applications*, which has been renewed multiple times since it was initially authorized in 2011. The NPDES Permit allows pesticides to be applied to waters of the U.S. for vector control purposes. The County VCP has been enrolled in the NPDES Permit since its creation in 2011. The County VCP maintains an active status with the SWRCB (Enrollee No. 937AP00009) by submitting the required annual pesticide use reports to the SWRCB.

Specifically, the NPDES Permit covers the point source discharge of pesticides resulting from vector control applications of authorized larvicides and adulticides with active ingredients that are currently registered in California and allowed for use. In 2013, the SWRCB amended the permit (State Water Quality Order No. 2014-0106-DWQ), which (1) added all larvicides and adulticides that are currently registered by the CDPR using the same active ingredients, (2) included additional receiving water limitations and receiving water monitoring triggers for newly added active ingredients, and (3) included a provision for reopening the permit to include new active ingredients that the CDPR registers for vector control. The current permit includes the addition of “minimum risk pesticides,” which are exempted from FIFRA requirements when used only in the manner specified by federal regulations.

VCP activities are conducted in accordance with the current NPDES Permit, and annual reports are submitted to the SWRCB regarding pesticide use in compliance with the NPDES Permit.

Pesticides are applied through techniques such as by backpack applicators or watercraft by Certified Vector Control Technicians or by aircraft (including piloted and drones) when land-based methods are not practicable based on the size of the area to be treated or impediments to access. The VCP follows CDPH and County guidance documents for conducting inspections and vector treatment abatement activities and employs BMPs to avoid or minimize potential adverse environmental impacts. These BMPs include application of CDPR-approved pesticides by Certified Vector Control Technicians in strict accordance with all label instructions, application rates and methods, and regulations of the USEPA and CDPR (BMPs A4, A5, and B6). Additionally, VCP activities within sensitive areas are coordinated with the appropriate land managers and agencies, and activities are conducted in such a manner to ensure site access and abatement activities avoid and minimize potential impacts to sensitive biological resources to the greatest extent feasible (BMPs A2 and A9).

IVMP chemical control activities would not result in the removal, filling, or alteration of waters or wetlands subject to CDFW, RWQCB, and/or USACE jurisdiction. Application of pesticides through land-based methods would prioritize use of existing access routes and avoid creation of new pedestrian access paths unless no other alternatives are present. Routine maintenance of existing access paths to provide access to vector-breeding sources may involve the minor trimming of native vegetation, which would only be implemented on an as-needed basis, would be the minimum necessary, and whenever feasible, would not impact native trees and shrubs (BMPs B2 and B10). Minor trimming of vegetation would be less than significant as detailed in the discussion in the Surveillance and Monitoring section. No removal of vegetation or other ground-disturbing activities would occur as part of chemical control activities.

The application of pesticides would not result in the unlawful discharge into or the removal, filling, or alteration of waters or wetlands subject to the jurisdiction of the CDFW, RWQCB, and/or USACE and would be completed pursuant to the CDPH guidance and applicable permits. Therefore, no significant impacts would occur to State- and/or federally protected waters or wetlands from chemical control activities, and no mitigation is required.

In conclusion, source reduction (i.e., physical ground disturbance) is the only IVMP activity that may result in **potentially significant impacts** to State- and federally protected waters and wetlands that would be subject to the regulatory jurisdiction of the CDFW, RWQCB, and/or USACE **(BI-5)**. A combination of avoidance through project design and implementation of the mitigation measures described below (M-BI-1a, M-BI-1c, M-BI-1d, M-BI-1e, M-BI-4a, M-BI-4b, and M-BI-5) would reduce impacts to jurisdictional wetlands and waterways to less than significant.

2.1.3.4 *Wildlife Movement and Nursery Sites*

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would result in a significant impact if it would 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.

Impact Analysis

The Proposed Project would target identified vector threats and apply various methods to protect the public from vector-borne disease and nuisances and is not intended to interfere with the movement of any native resident or migratory fish or wildlife species. Regional movement corridors and habitat linkages are shown on Figure 2.1-4.

Surveillance and Monitoring

The majority of IVMP activities focus on the surveillance and monitoring of potential vector-breeding sources and populations through non-invasive methods (e.g., aerial surveys, trapping of insects and rodents), and control of vector populations through application of larvicides and adulticides.

Surveillance and monitoring activities would not result in the removal or alteration of native habitats. Surveillance activities may temporarily be located near local wildlife movement areas due to the presence of personnel and equipment, but any potential effects would be minimal and temporary in nature in any given location. Wildlife would be expected to return to the area once activities have ceased, and no habitat or ground disturbance would occur. Therefore, these activities would not impede the movement of native, resident, or migratory fish or wildlife species; would not interfere with established native, resident, or migratory wildlife corridors, including linkages identified in the County MSCP Plan and North County MHCP; and would not impede the use of native wildlife nursery sites. Impacts would be less than significant, and no mitigation is required.

Source Reduction

Source reduction activities to reduce or eliminate vector-breeding sources could potentially result in the removal of native habitats. However, these activities would be localized, and the individual IVMP activities areas would be restricted to the greatest extent feasible such that the width of existing wildlife corridors and linkages would not be affected or reduced. Although these activities have the potential to temporarily be located near local wildlife movement areas, potential effects would be minimal, and wildlife would be expected to return to the area once activities have ceased. Existing wildlife corridors and linkages would continue to function in their existing capacity. Impacts would be less than significant, and no mitigation is required.

Source Treatment

Similar to surveillance activities, source treatment activities may temporarily occur near local wildlife movement areas due to the presence of personnel and equipment, but any potential effects would be minimal and temporary in nature in any given location. Implementation of biological and chemical controls would not permanently disturb or disrupt wildlife movement. Impacts would be less than significant, and no mitigation is required.

In conclusion, impacts to wildlife movement and nursery sites would be less than significant and no mitigation is required.

2.1.3.5 *Local Policies and Ordinances*

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would result in a significant impact if it would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Impact Analysis

Surveillance and Monitoring

Surveillance and monitoring activities would not result in the removal or alteration of native habitats, and implementation of the Proposed Project would be consistent with local policies and ordinances protecting biological resources. Therefore, no significant impact on local policies or ordinances would occur through implementation of the IVMP resulting from surveillance and monitoring activities.

Source Reduction

Source reduction activities could potentially result in physical disturbances to the environment such as trimming or removal of habitats. However, these activities would be localized and are not anticipated to conflict with local policies and ordinances. Furthermore, the IVMP will consult with local jurisdictions, land managers, and regulatory agencies prior to conducting activities that have potential to result in impacts to sensitive biological resources to ensure that impacts are minimized to the greatest extent feasible and mitigated in accordance with local requirements when required. No significant impact on local policies or ordinances would occur through implementation of the IVMP resulting from source reduction activities.

Source Treatment

Similar to surveillance and source reduction activities, implementation of biological and chemical controls would not conflict with local policies or ordinance designed to identify and protect habitats and species throughout San Diego County because individual vector treatment would be localized. Therefore, no significant impact on local policies or ordinances would occur through implementation of the IVMP resulting from source treatment activities.

In conclusion, impacts to local policies and ordinances would be less than significant and no mitigation is required.

2.1.3.6 *Habitat Conservation Plans and Natural Community Conservation Plans*

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would result in a significant impact if it would conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or State HCP.

Impact Analysis

Surveillance and Monitoring

At the time of this writing, seven city or County-adopted conservation plans are within the Service Area, and multiple plans are in development. Figure 2.1-2 provides an overview of the San Diego region's conservation plans. The IVMP will not conflict with any of the policies or conservation goals of these NCCPs/HCPs. The VCP will consult with local jurisdictions, land managers, and regulatory agencies prior to conducting activities that have potential to result to impacts to sensitive biological resources within adopted NCCP/HCP areas to ensure that impacts are minimized to the greatest extent feasible and mitigated in accordance with local requirements when required. Therefore, no significant impact on adopted plans would occur through implementation of the IVMP resulting from surveillance and monitoring activities.

Source Reduction

Similar to surveillance and monitoring activities, no significant impact on adopted plans would occur through implementation of the IVMP resulting from source reduction activities.

Source Treatment

Similar to surveillance and monitoring activities, no significant impact on adopted plans would occur through implementation of the IVMP resulting from source treatment activities.

In conclusion, impacts to an adopted HCP, NCCP, or other approved local, regional, or State HCP would be less than significant and no mitigation is required.

2.1.4 Cumulative Impact Analysis

The geographic scope of cumulative impact analysis for biological resources includes the entirety of San Diego County. The Proposed Project includes implementation of a countywide IVMP in which individual activities would occur throughout the San Diego region. The IVMP consists of a range of activities involving surveillance of existing and potential vector threats and physical, biological, and chemical control methods to reduce the spread of mosquito-borne and other vector-borne diseases and nuisances. As with cumulative projects, the Proposed Project would be required to comply with applicable federal, State, and local regulations for the protection of biological resources within the Service Area.

Special Status Species

The Proposed Project has the potential to cause cumulative impacts to special status plant and animal species within the San Diego region as a result of project activities. Due to the nature and scale of the activities that could be implemented under the IVMP, the Proposed Project would be required to comply with all applicable federal, State, and local regulations. In addition, the Proposed Project would implement Mitigation Measures M-BI-1a through M-BI-1e, M-BI-2a, M-BI-2b, and M-BI-3; project-specific BMPs; and standard operating procedures and protocols to avoid or reduce impacts to special status species. As a result, the Proposed Project would not result in a cumulatively considerable contribution to cumulative sensitive special status species impacts.

Riparian Habitat and Sensitive Natural Communities

The Proposed Project has the potential to cause cumulative impacts to riparian habitat and other sensitive natural communities as a result of project activities. Due to the nature and scale of the activities that could be implemented under the IVMP, the Proposed Project would be required to comply with all applicable federal, State, and local regulations. In addition, the Proposed Project would implement Mitigation Measures M-BI-1a, M-BI-1c, M-BI-1d, M-BI-1e, M-BI-4a, and M-BI-4b, project-specific BMPs, and standard operating procedures and protocols to avoid or reduce impacts to riparian habitat and other sensitive natural communities. As a result, the Proposed Project would not result in a cumulatively considerable contribution to cumulative riparian habitat and other sensitive natural community's impacts.

Jurisdictional Wetlands and Waterways

The Proposed Project has the potential to cause cumulative impacts to jurisdictional wetlands and waterways as a result of project activities. Due to the nature and scale of the activities that could be implemented under the IVMP, the Proposed Project would be required to comply with all applicable federal, State, and local regulations. In addition, the Proposed Project would implement Mitigation Measures M-BI-1a, M-BI-1c, M-BI-1d, M-BI-1e, M-BI-4a, M-BI-4b, and M-BI-5, project-specific BMPs, and standard operating procedures and protocols to avoid or reduce impacts. As a result, the Proposed Project would not result in a cumulatively considerable contribution to cumulative jurisdictional wetlands and waterways impacts.

Wildlife Movement and Nursery Sites

Cumulative projects would have the potential to result in cumulative impacts associated with the loss of wildlife movement corridors and nursery sites. However, as discussed above, the Proposed Project would result in less than significant impacts to wildlife movement corridors and nursery sites. Project activities would comply with applicable regulations, and these activities would not impede the movement of native, resident, or migratory fish or wildlife species. Therefore, implementation of the IVMP would not result in a cumulatively considerable contribution to cumulative wildlife movement corridors and nursery sites impacts.

Local Policies and Ordinances

Cumulative projects would have the potential to result in cumulative impacts associated with local policies and ordinances. However, as discussed above, the Proposed Project would comply with all local policies and ordinances. The creation of these policies and ordinances is intended to minimize cumulative impacts associated with individual projects. Since the Proposed Project would comply with these policies and conservation goals, the Proposed Project would result in less than significant impacts, and implementation of the IVMP would not result in a cumulatively considerable contribution to cumulative impacts.

Habitat Conservation Plans and Natural Community Conservation Plans

Cumulative projects would have the potential to result in cumulative impacts associated with local HCPs and NCCPs. However, as discussed above, the Proposed Project would comply with all adopted plans. The creation of these plans is intended to minimize cumulative impacts associated with individual projects. Since the Proposed Project would comply with these plans, the Proposed Project would result in less than significant impacts, and implementation of the IVMP would not result in a cumulatively considerable contribution to cumulative impacts.

2.1.5 Significance of Impacts Prior to Mitigation

The Proposed Project has the potential to cause significant impacts to special status plant and animal species, sensitive natural communities, jurisdictional wetlands, and/or riparian habitats as defined by the USACE, RWQCB, and CDFW. In each case, however, the identified significant impact can be mitigated to a less than significant level via the mitigation measures below.

BI-1 The Proposed Project has the potential to cause significant impacts to special status plant species.

BI-2 The Proposed Project has the potential to cause significant direct impacts to special status animal species.

BI-3 The Proposed Project has the potential to cause significant indirect noise-related impacts to special status animal species.

BI-4 The Proposed Project has the potential to cause significant impacts to riparian habitats and sensitive natural communities.

BI-5 The Proposed Project has the potential to cause significant impacts to jurisdictional waters and wetlands.

2.1.6 Mitigation Measures

Significant impacts to special status plant species **(BI-1)** would be mitigated through the implementation of the following Mitigation Measures M-BI-1a through M-BI-1e:

M-BI-1a Prior to conducting Integrated Vector Management Program activities that would result in vegetation removal, habitat modification, and/or ground disturbance, a qualified biologist shall conduct a biological evaluation of the individual Integrated Vector Management Program activity area. The biological evaluation shall include (1) a general reconnaissance survey; (2) a review of recent aerial imagery, topographic and soils maps, regional vegetation mapping (as available), and local, State, and federal biological databases including but not limited to County SanBIOS data, California Department of Fish and Wildlife Biogeographic Information and Observation System database, U.S. Fish and Wildlife Service National Wetland Inventory) and critical habitat databases, and U.S. Environmental Protection Agency Watershed Assessment, Tracking & Environmental Results System database to determine sensitive biological resources known to occur within and adjacent to the Integrated Vector Management Program activity area; (3) a query of sensitive species databases such as U.S. Fish and Wildlife Service occurrence records, California Department of Fish and Wildlife California Natural Diversity Database, and County SanBIOS data to determine if special status species are present or have high potential to occur within or adjacent to the individual Integrated Vector Management Program activity area; and (4) preparation of a biological resources report. The reconnaissance survey shall include an inventory of existing vegetation communities, flora and fauna resources, and potentially jurisdictional resources present within the individual Integrated Vector Management Program activity area and documentation of special status plant and animal species, if encountered during the survey. The biological resources report shall summarize existing

biological resources present within the individual Integrated Vector Management Program activity area, identify sensitive biological resources that are present or have potential to occur, provide an assessment of potential impacts, and identify applicable mitigation measures if necessary.

M-BI-1b Prior to conducting Integrated Vector Management Program activities that would result in vegetation removal, permanent habitat modification, and/or ground disturbance in areas with potential to support special status plant species, a qualified biologist shall conduct a rare plant survey to confirm the presence/absence of special status plant species within or adjacent to the individual Integrated Vector Management Program activity area. The exact timing of the rare plant survey shall be determined based on the location, elevation, and flowering phenology of the special status plant species with potential to occur within and adjacent to the individual Integrated Vector Management Program activity area. If special status plant species are discovered within the individual Integrated Vector Management Program activity area, those individuals or populations shall be avoided, or additional mitigation measures (which could include transplantation) shall be implemented that would reduce impacts to below a level of significance. Impacts to State- and/or federally listed plant species and species designated critical habitat may require additional consultation with the U.S. Fish and Wildlife Service pursuant to the federal Endangered Species Act if the individual Integrated Vector Management Program activity area occurs outside an adopted Natural Community Conservation Plan/Habitat Conservation Plan or if take of that species is not covered under the specific adopted plan. Mitigation for impacts to special status plant species shall be consistent with local jurisdictions' policies and ordinances and/or adopted Natural Community Conservation Plans/Habitat Conservation Plans where required and identified within the individual Integrated Vector Management Program activity biological resources report that shall be prepared pursuant to M-BI-1a.

M-BI-1c Prior to conducting Integrated Vector Management Program activities, a qualified biologist shall flag areas to be avoided that contain sensitive biological resources. Where indicated by the qualified biologist, these areas shall be fenced or otherwise protected from direct or indirect impacts. Specifically, temporary (i.e., exclusionary) fencing shall be installed where feasible when grubbing, clearing, or grading would be conducted within 100 feet of sensitive biological resources depending on the species or habitat present, individual Integrated Vector Management Program activities, and site constraints. Temporary fencing (such as silt or orange construction fencing) shall be installed at limits of an individual Integrated Vector Management Program activity area prior to initiation of activities. A qualified biologist shall monitor the installation of temporary (i.e., exclusionary) fencing wherever it would abut sensitive species or vegetation communities, jurisdictional wetlands and waterways, or other sensitive areas, such as environmentally designated open space.

M-BI-1d Prior to conducting Integrated Vector Management Program activities that would result in vegetation removal, permanent habitat modification, and/or ground disturbance in areas known to contain sensitive biological resources, a qualified biologist shall conduct a training session for personnel, as applicable, to inform them of the sensitive biological resources with potential to occur in the sensitive area and any mitigation and/or avoidance measures that must be implemented.

M-BI-1e When sensitive biological resources have been identified on site or adjacent to an individual Integrated Vector Management Program activity area, a qualified biologist shall monitor initial vegetation clearing, grubbing, and ground disturbance activities to ensure that activities occur within the approved limits of work and that protective measures (e.g., flagging, fencing) are in place.

Significant direct and indirect impacts to special status animal species **(BI-2)** would be mitigated through the implementation of Mitigation Measures M-BI-1a, M-BI-1c, M-BI-1d, M-BI-1e, as well as the following M-BI-2a, and M-BI-2b:

M-BI-2a Integrated Vector Management Program activities that could result in vegetation removal, permanent habitat modification, and/or ground disturbance activities within potentially suitable habitat for State- and/or federally listed animal species shall occur outside a species' breeding season. If such activities are unavoidable during the respective breeding season, focused protocol surveys for each species with potential to occur shall be conducted prior to conducting Integrated Vector Management Program activities. Surveys shall follow the current U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife protocols, as appropriate. If State- and/or federally listed species are determined to occur within or adjacent to the individual Integrated Vector Management Program activity area, consultation with the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife under the Federal Endangered Species Act and California Endangered Species Act, respectively, shall be initiated, and any resulting mitigation measures (including but not limited to breeding season activity restrictions and/or habitat-based compensatory mitigation) identified during consultation shall be implemented.

M-BI-2b Clearing or grubbing of vegetation during the general bird breeding season (February 15 through September 15) or raptor breeding season (January 15 through July 15) as defined by the *County of San Diego Guidelines for Determining Significance – Biological Resources* shall be avoided except as outlined by this measure. These breeding seasons shall not supersede implementing any agreements with the wildlife agencies, Habitat Conservation Plans, Habitat/Resource Management Plans, and Special Area Management Plans. If clearing and grubbing of vegetation is unavoidable during the breeding season, a pre-construction survey shall be conducted by a qualified biologist no more than seven days prior to conducting work in an individual Integrated Vector Management Program activity area that supports suitable nesting bird habitat to determine if active bird nests are present. If no nesting birds are documented (includes nest building or other breeding or active nesting behavior) within the individual activity area, clearing, grubbing, and grading shall be allowed to proceed. If an active nest is observed within the activity area, the qualified biologist shall determine an appropriate buffer around the nest based on the biology of the species and the specific site constraints. Activities shall not occur within the buffer area until the qualified biologist has determined that the nest is no longer active, young have fledged, or determined which activities within the buffer would not jeopardize nesting success. The buffer area shall be demarcated in the field with flagging, stakes, and/or temporary fencing. The nesting buffer may be determined and adjusted depending on the species present, individual Integrated Vector Management Program activities and site constraints, and in consultation with applicable wildlife agencies.

Significant indirect impacts to special status animal species related to noise **(BI-3)** would be mitigated through the implementation of the following Mitigation Measure M-BI-3:

M-BI-3 For individual Integrated Vector Management Program activities adjacent to habitat occupied by State- and/or federally listed bird species (e.g., coastal California gnatcatcher, least Bell's vireo, and southwestern willow flycatcher) in which noise would be produced in excess of 60 A-weighted decibel equivalent continuous sound level or ambient noise levels (if ambient levels are above 60 A-weighted decibel), the Integrated Vector Management Program activities shall:

a) Be postponed until a qualified biologist determines the nest(s) is no longer active or until after the respective breeding season; or

b) Not occur until a temporary noise attenuation structure or barrier is constructed at the edge of the individual Integrated Vector Management Program activity area and/or around the noise-generating equipment to ensure that noise levels are reduced to below 60 A-weighted decibels or ambient, whichever is greater.

Significant impacts to riparian habitats and sensitive natural communities **(BI-4)** would be mitigated through implementation of the mitigation measures M-BI-1a, M-BI-1c, M-BI-1d, M-BI-1e, M-BI-4a, and M-BI-4b below:

M-BI-4a Permanent impacts to riparian habitat and other sensitive natural communities shall be offset through mitigation of habitat of equal or higher biological value at ratios commensurate with individual Integrated Vector Management Program activity impacts. Mitigation shall occur by implementing one or a combination of the following: off-site or on-site preservation, enhancement, restoration, and/or creation of habitat; deduction of habitat mitigation credits from an approved mitigation area or bank, or other location deemed acceptable by the County and applicable regulatory agencies. Final mitigation obligations shall be determined based on the quality, quantity, and type of habitat impacted at ratios consistent with local policies and ordinances, or, for projects within the boundaries of an adopted Natural Community Conservation Plan/Habitat Conservation Plan, in accordance with the applicable mitigation ratios and measures of that specific final plan. In the event that the adopted Natural Community Conservation Plan/Habitat Conservation Plan does not stipulate mitigation ratios for temporary impacts, temporary impacts to riparian habitat and other sensitive natural communities shall be mitigated through on-site revegetation of temporarily impacted areas to pre-construction conditions and appropriate vegetation types at a minimum 1:1 ratio.

M-BI-4b For individual Integrated Vector Management Program activities resulting in permanent impacts to wetland or riparian habitats and/or upland sensitive natural communities, and whose mitigation includes enhancement, restoration, and/or creation of such habitat, a restoration plan shall be prepared by qualified personnel with experience in Southern California ecosystems and native plant restoration techniques. At a minimum, the restoration plan shall include the following information: (a) the location of the mitigation site(s); (b) a schematic depicting the mitigation areas; (c) the plant species to be used, container sizes, and seeding rates; (d) a planting schedule; (e) a description of installation requirements, irrigation sources and methodology, erosion control, maintenance and monitoring

requirements; (f) measures to properly control exotic vegetation on-site; (g) site-specific success criteria; (h) a detailed monitoring program; (i) contingency measures should the success criteria not be met; (j) a summary of the annual reporting requirements; and (k) identification of the responsible party(ies) for meeting the success criteria and providing for conservation of the mitigation site in perpetuity.

Significant impacts to jurisdictional wetlands and waterways **(BI-5)** would be mitigated through implementation of the mitigation measures M-BI-1a, M-BI-1c, M-BI-1d, M-BI-1e, M-BI-4a, M-BI-4b, and M-BI-5 below:

M-BI-5 Individual Integrated Vector Management Program activities that would result in impacts to federal or State regulated water bodies (i.e., waters of the U.S. and State, streambeds, wetlands, and/or riparian habitat) shall obtain applicable permits from federal and State regulatory agencies prior to the commencement of such discharge or dredging activities. Such agencies may include U.S. Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife. Mitigation requirements for impacts to federal and State regulated water bodies would be determined through the permitting process.

2.1.7 Conclusion

Refer to Table 2.1-3, *Summary of Biological Impacts*, for a summary of potential impacts to biological resources before and with implementation of mitigation.

Special Status Species

Implementation of the Proposed Project could result in significant impacts to special status plant and animal species through the removal of vegetation, habitat modification, application of chemical controls, and/or noise **(BI-1, BI-2, BI-3)**. A combination of avoidance through project design and implementation of Mitigation Measures M-BI-1a through M-BI-1e, M-BI-2a, M-BI-2b, and M-BI-3 would reduce impacts to special status plant and animal species to less than significant.

Riparian Habitat and Sensitive Natural Communities

Implementation of the Proposed Project could result in significant impacts to sensitive natural communities and riparian habitat (**BI-4)**; however, a combination of avoidance through project design and implementation of project mitigation measures to fully compensate the loss of habitat would reduce impacts to below a level of significance. With the implementation of Mitigation Measures M-BI-1a, M-BI-1c, M-BI-1d, M-BI-1e, M-BI-4a, and M-BI-4b, impacts to sensitive natural communities, including riparian habitat, would be less than significant.

Jurisdictional Wetlands and Waterways

Implementation of the Proposed Project may result in impacts to federally or State-protected wetlands and waters through the filling, removal, and/or alteration of waters of the U.S., waters of the State, and/or CDFW riparian or stream habitat **(BI-5)**. Mitigation Measures M-BI-1a, M-BI-1c, M-BI-1d, M-BI-1e, M-BI-4a, M-BI-4b, and M-BI-5 would reduce impacts to jurisdictional wetlands and waterways to below a level of significance. Furthermore, impacts to jurisdictional areas would require permitting through the appropriate regulatory agencies. Final mitigation requirements

would be determined through consultation with the USACE, RWQCB, and CDFW and would reduce impacts to less than significant.

Wildlife Movement and Nursery Sites

Implementation of the Proposed Project would not result in significant impacts on wildlife movement and nursery sites. A less than significant impact would occur, and mitigation is not required.

Local Policies and Ordinances

Implementation of the Proposed Project would not result in conflicts with local policies and ordinances. A less than significant impact would occur, and mitigation is not required.

Habitat Conservation Plans and Natural Community Conservation Plans

Implementation of the Proposed Project would not result in conflicts with HCPs, NCCPs, or other adopted conservation plans. A less than significant impact would occur, and mitigation is not required.

Table 2.1-1
VEGETATION COMMUNITIES IN SAN DIEGO COUNTY

Vegetation Community[1]		
Wetlands and Waters	**Sensitive Uplands**	**Non-Sensitive Uplands**
Disturbed Wetland (11200)	Coastal Dunes (21000)	Non-Native Vegetation (11000)
Vernal Pool (44000)	Desert Dunes (22000)	Disturbed Habitat (11300)
Meadows and Seeps (45000)	Coastal Bluff Scrub (31000)	Urban/Developed (12000)
Alkali Playa (46000)	Coastal Scrub (32000)	Agriculture (18000)
Coastal Salt Marsh (52100)	Sonoran Desert Scrub (33000)	Badlands/Mudhills (25000)
Freshwater Marsh (52400)	Chaparral (37000)	Eucalyptus Woodland (79100)
Herbaceous Wetland (52510)	Native Grassland (42100)	
Riparian Forest (61000)	Non-Native Grassland (42200)	
Riparian Woodland (62000)	Oak Woodlands (71100)	
Riparian Scrub (63000)	Oak Forest (81310)	
Open Water (64100)	Closed-Cone Coniferous Forest (83000)	
Non-Vegetated Floodplain or Channel (64200)	Lower Montane Coniferous Forest (84000)	
Saltpan/Mudflats (64300)		
Beach (64400)		
Non-Native Riparian (65000)		

Notes:

[1] Vegetation categories and numerical codes are from Holland (1986) and Oberbauer (2008).

Table 2.1-2
NATURAL COMMUNITY CONSERVATION PLANS/
HABITAT CONSERVATION PLANS IN SAN DIEGO COUNTY

NCCP/HCP
North County MHCP
Final Plans
City of Carlsbad Habitat Management Plan
In Development
City of Encinitas MHCP Subarea Plan
City of Escondido MHCP Subarea Plan
City of Oceanside MHCP Subarea Plan
City of San Marcos MHCP Subarea Plan
City of Vista MHCP Subarea Plan
San Diego County MSCP
Final Plans
County of San Diego (South County) MSCP Subarea Plan
City of Chula Vista MSCP Subarea Plan
City of La Mesa MSCP Subarea Plan
City of Poway MSCP Subarea Plan
City of San Diego MSCP Subarea Plan
City of San Diego Vernal Pool Habitat Conservation Plan
In Development
County of San Diego (North County) MSCP Subarea Plan
County of San Diego (East County) MSCP Subarea Plan
City of Coronado MSCP Subarea Plan
City of Del Mar MSCP Subarea Plan
City of El Cajon MSCP Subarea Plan
City of Santee MSCP Subarea Plan
San Diego County Water Authority Subregional NCCP/HCP (Final Plan)[1]
SDG&E Subregional NCCP (Final Plan)[1]

Notes: HCP = Habitat Conservation Plan; MHCP = Multiple Habitat Conservation Program; MSCP = Multiple Species Conservation Program; NCCP = Natural Community Conservation Plan; SDG&E = San Diego Gas & Electric

[1] These NCCPs cover discrete linear or energy projects but have larger plan areas that overlap with other NCCPs.

Table 2.1-3
SUMMARY OF BIOLOGICAL IMPACTS

Topic	IVMP Activities[1]			
	Surveillance and Monitoring	Source Reduction	Source Treatment	
			Biological Control	Chemical Control
Special Status Plant Species	Less than Significant	**Less than Significant after Mitigation (BI-1)**	No Impact	Less than Significant
Special Status Animal Species	**Less than Significant after Mitigation (BI-2)**	**Less than Significant after Mitigation (BI-2 + BI-3)**	**Less than Significant after Mitigation (BI-2)**	**Less than Significant after Mitigation (BI-2)**
Riparian Habitat and Sensitive Natural Communities	Less than Significant	**Less than Significant after Mitigation (BI-4)**	No Impact	Less than Significant
Jurisdictional Wetlands and Waterways	No Impact	**Less than Significant after Mitigation (BI-5)**	No Impact	No Impact
Wildlife Movement and Nursery Sites	Less than Significant	Less than Significant	No Impact	Less than Significant
Local Policies and Ordinances	Less than Significant	Less than Significant	Less than Significant	Less than Significant
HCPs and NCCPs	Less than Significant	Less than Significant	Less than Significant	Less than Significant

Notes: HCP = Habitat Conservation Plan; IVMP = Integrated Vector Management Program; NCCP = Natural Community Conservation Plan
[1] Surveillance and monitoring, source reduction, and source treatment are the only vector control techniques required to be evaluated because other components of the Proposed Project (i.e., public education and outreach and disease diagnostics) would not result in impacts to biological resources and, therefore, are not discussed further.

This page intentionally left blank

ORANGE COUNTY

RIVERSIDE COUNTY

IMPERIAL COUNTY

MEXICO

Pacific Ocean

OCEANSIDE
VISTA
SAN MARCOS
ESCONDIDO
CARLSBAD
ENCINITAS
SOLANA BEACH
DEL MAR
POWAY
SANTEE
EL CAJON
SAN DIEGO
LA MESA
LEMON GROVE
NATIONAL CITY
CORONADO
CHULA VISTA
IMPERIAL BEACH

5
78
15
52
125
8
94
805

San Diego County Integrated Vector Management Program Service Area Boundary

Incorporated Cities

Freeways

USGS National Hydrography Dataset (NHD) Flowlines*

USFWS National Wetlands Inventory*

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine

**Potentially jurisdictional waters and wetlands depicted are limited to publicly available data and do not represent the field-verified limits or boundaries of jurisdictional resources subject to regulation by the relevant federal, state, and local agencies.*

0 8 Miles

N

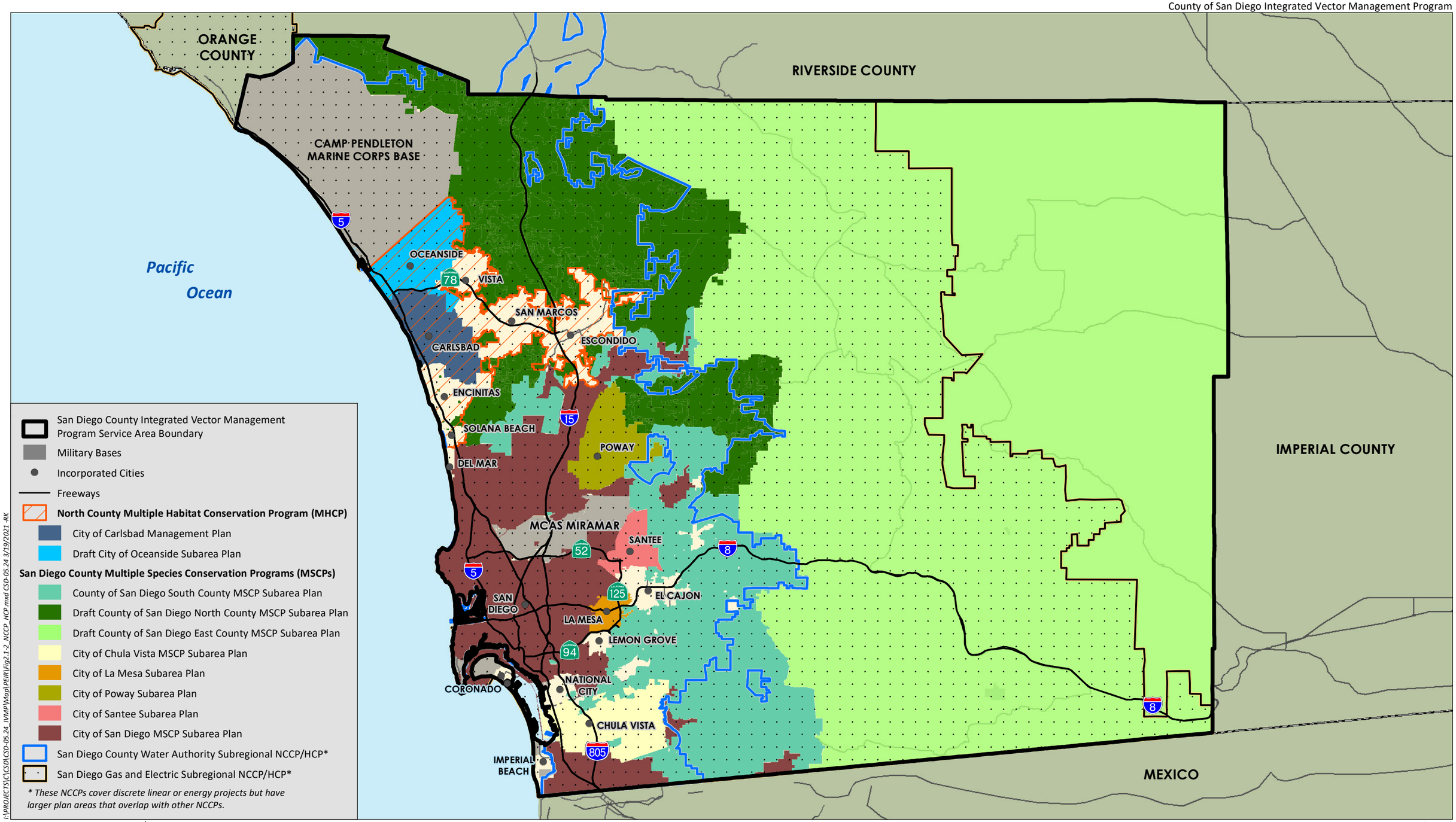
Sources: NWI (U.S. Fish and Wildlife Service 2020c)

I:\PROJECTS\C\CSD\CSD-05.24_IVMP\Map\PEIR\Fig2.1-1_Wetlands_Waters.mxd CSD-05.24 3/19/2021 -RK

Potential Jurisdictional Waters and Wetlands

Figure 2.1-1

County of San Diego Integrated Vector Management Program



- San Diego County Integrated Vector Management Program Service Area Boundary
- Military Bases
- Incorporated Cities
- Freeways
- **North County Multiple Habitat Conservation Program (MHCP)**
  - City of Carlsbad Management Plan
  - Draft City of Oceanside Subarea Plan
- **San Diego County Multiple Species Conservation Programs (MSCPs)**
  - County of San Diego South County MSCP Subarea Plan
  - Draft County of San Diego North County MSCP Subarea Plan
  - Draft County of San Diego East County MSCP Subarea Plan
  - City of Chula Vista MSCP Subarea Plan
  - City of La Mesa Subarea Plan
  - City of Poway Subarea Plan
  - City of Santee Subarea Plan
  - City of San Diego MSCP Subarea Plan
- San Diego County Water Authority Subregional NCCP/HCP*
- San Diego Gas and Electric Subregional NCCP/HCP*

** These NCCPs cover discrete linear or energy projects but have larger plan areas that overlap with other NCCPs.*

0 8 Miles

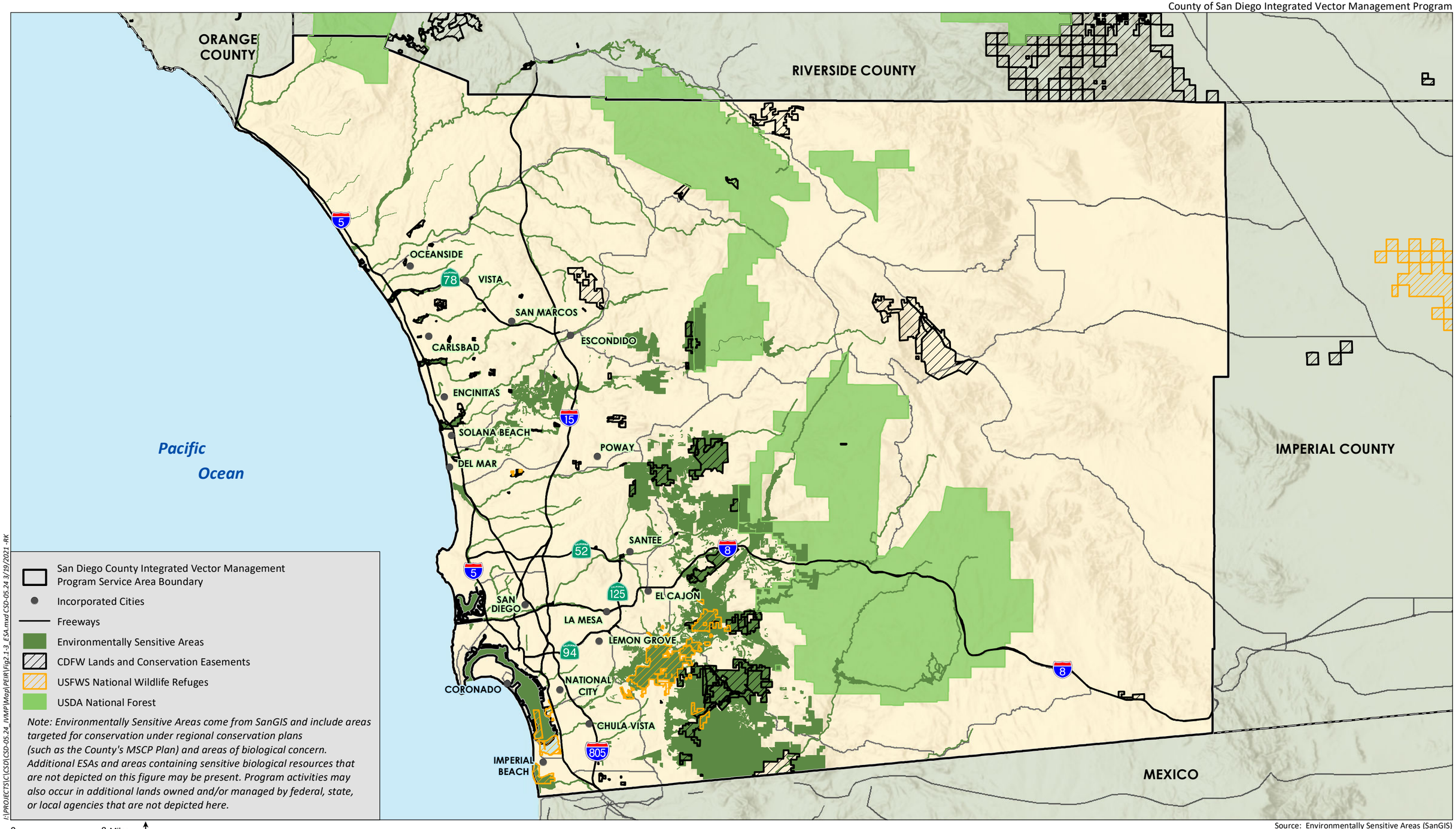
N

Source: HMP Layers (SanGIS)

I:\PROJECTS\CSD\CSD-05.24_IVMP\Mxd\PEIR\Fig2.1-2_NCCP_HCP.mxd CSD-05.24 3/19/2021 -RK

Natural Community Conservation Plans/Habitat Conservation Plans

Figure 2.1-2



I:\PROJECTS\C\CSD\CSD-05.24_IVMP\Map\PEIR\Fig2.1-3_ESA.mxd CSD-05.24 3/19/2021 - RK

Source: Environmentally Sensitive Areas (SanGIS)

Environmentally Sensitive Areas

Figure 2.1-3

ORANGE COUNTY

RIVERSIDE COUNTY

IMPERIAL COUNTY

MEXICO

Pacific Ocean

OCEANSIDE
VISTA
SAN MARCOS
CARLSBAD
ESCONDIDO
ENCINITAS
SOLANA BEACH
POWAY
DEL MAR
SANTEE
EL CAJON
SAN DIEGO
LA MESA
LEMON GROVE
NATIONAL CITY
CORONADO
CHULA VISTA
IMPERIAL BEACH

5
78
15
52
8
125
94
805

San Diego County Integrated Vector Management Program Service Area Boundary
Incorporated Cities
Freeways

North County Multiple Habitat Conservation Plan

Biological Core and Linkage Areas

Multiple Species Conservation Program Cores and Linkages

Core
Linkage

South Coast Missing Linkages

0 8 Miles

N

Source: MSCP Program (San Diego Management and Monitoring Program, 2020)

i:\PROJECTS\CSD\CSD-05.24_IVMP\Mxd\PEIR\Fig2.1-4_Core_Linkages.mxd CSD-05.24 3/19/2021 - RK

Wildlife Movement Corridors and Habitat Linkages

Figure 2.1-4

2.2 Cultural Resources

Cultural resources are defined as archaeological and historic sites, buildings, structures, objects, and human remains. This section of the Program Environmental Impact Report describes the existing cultural resources in San Diego County, analyzes the potential impacts that may occur under the Integrated Vector Management Program (Proposed Project or IVMP) activities, recommends mitigation measures to reduce or avoid impacts to these resources, and examines levels of significance after mitigation. This section is based on the *Cultural Resources Technical Report* (HELIX 2021b; Appendix C), the *County of San Diego Guidelines for Determining Significance – Cultural Resources: Archaeological and Historic Resources* (County 2007b), and Appendix G of the California Environmental Quality Act (CEQA) Guidelines.

2.2.1 Existing Conditions

Cultural resources are found throughout San Diego County and are reminders of the county's prehistoric and historic past. Archaeological and historical resources are the remains left by the people who made and used them and may include gathering areas, landmarks, significant historical buildings, and ethnographic locations, as well as physical artifacts. Archaeological resources include prehistoric and historic artifacts and features, and historic resources refer to the built environment 50 years or older. These resources can provide clues to prehistoric and historic human behaviors and provide scientific, religious, and other valuable information about the cultural past. Cultural resources can be located throughout the county and are irreplaceable; therefore, such resources are considered vital to the general welfare of all county residents.

Cultural Setting

Cultural resources can be identified and evaluated based on standard criteria established by the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), CEQA, and San Diego County Local Register of Historical Resources. The integrity of the resource, its attributes, and its location are also key factors in establishing its significance. Resource significance is assigned to districts, sites, buildings, structures, and objects that possess exceptional value or quality illustrating or interpreting the heritage of San Diego County in history, architecture, archaeology, engineering, and culture that possess a high degree of integrity.

Prehistoric Period

The following cultural history outlines and describes the known prehistoric background for San Diego County. The approximately 12,000 years of documented prehistory of the San Diego region has often been divided into three periods: Early Prehistoric Period (San Dieguito Tradition/complex), Archaic Period (San Dieguito Tradition, Milling Stone Horizon, Encinitas Tradition, La Jolla, and Pauma complexes), and Late Prehistoric Period (Cuyamaca and San Luis Rey complexes).

Early Prehistoric Period

The Early Prehistoric Period represents the time period of the first known inhabitants in California. Terminology used for the prehistory of San Diego County includes a mixture of ideas of ordering archaeological sites using terms for peoples, collections of artifacts, and temporal time frames. The earliest well-documented sites in the San Diego area belong to the San Dieguito Tradition, dating to more than 9,000 years ago (Warren 1967; Warren et al. 1998). The San Dieguito

Tradition is thought by most researchers to emphasize big game hunting and coastal resources (Warren 1967). Diagnostic material culture associated with the San Dieguito complex includes scrapers, scraper planes, choppers, large blades, and large projectile points (Rogers 1939; Warren 1967). The San Dieguito Tradition has been documented mostly in the coastal and near-coastal areas of the county, as well as in the southeastern California deserts, but with some evidence for it recently exhibited in both the eastern mountains of the county and the coastal area north of the county.

Archaic Period

The Archaic Period includes the San Dieguito, La Jolla, and Pauma complexes, which are poorly defined, as are the interrelationships between contemporaneous inland, desert, and coastal assemblages. Initially believed to represent big game hunters, the San Dieguito people are better typified as a hunting and gathering society. These people had a relatively diverse and non-specialized economy wherein relatively mobile bands accessed and used a wide range of plant, animal, and lithic (stone) resources. A high number of archaeological site assemblages dating to this period have been identified at a range of coastal and inland locations. These assemblages, designated as the La Jolla and Pauma complexes, are considered part of Warren's (1968) "Encinitas Tradition" and Wallace's (1955) "Early Milling Stone Horizon." The Encinitas Tradition is generally "recognized by millingstone assemblages in shell middens, often near sloughs and lagoons" (Moratto 1984), and brings a shift toward a more generalized economy and an increased emphasis on seed resources, small game, and shellfish.

The local cultural manifestations of the Archaic Period are called the La Jolla complex along the coast and the Pauma complex inland. Pauma complex sites lack the shell that dominates many La Jolla complex site assemblages. Sites dating to the Archaic Period are numerous along the coast, in near-coastal valleys, and around estuaries. In the inland areas of San Diego County, sites associated with the Archaic Period are less common relative to the Late Prehistoric complexes that succeed them (Cooley and Barrie 2004; Raven-Jennings and Smith 1999; True 1970). The La Jolla complex tool assemblage is dominated by rough cobble tools, especially choppers and scrapers (Moriarty 1966). The La Jolla complex tool assemblage includes manos and metates, terrestrial and marine mammal remains, flexed burials, doughnut stones, discoidals, stone balls, plummets, bifacial points, beads, and bone tools (True 1958, 1980).

While there has been considerable debate about whether San Dieguito and La Jollan patterns might represent the same people using different environments and subsistence techniques or whether they are separate cultural patterns (Bull 1983; Ezell 1987; Gallegos 1987; Warren et al. 1998), abrupt shifts in subsistence and new tool technologies occurred at the onset of the Late Prehistoric Period.

Late Prehistoric Period

The Late Prehistoric Period is characterized by higher population densities and intensification of social, political, and technological systems. The Late Prehistoric Period is represented by the San Luis Rey complex in the northern portion of the county and the Cuyamaca complex in the southern portion of the county. Late prehistoric artifactual material known for the region is characterized by Tizon Brown Ware pottery, various cobble-based tools (e.g., scrapers, choppers, and hammerstones), arrow shaft straighteners, pendants, manos and metates, and mortars and pestles. The arrow point assemblage is dominated by the Desert Side-notched series, but the Cottonwood series and the Dos Cabezas Serrated type also occur. Subsistence is thought to have been focused on the use of acorns and grass seeds, with small game serving as a primary

protein resource and big game as a secondary protein resource. Fish and shellfish were also secondary resources, except immediately adjacent to the coast where they assumed primary importance (Bean and Shipek 1978; Luomala 1978; Sparkman 1908). The settlement system is characterized by seasonal villages where people used a central-based collecting subsistence strategy.

Based on ethnographic data, including the areas defined for the Hokan-based Yuman-speaking peoples at the time of contact, it is now generally accepted that the Cuyamaca complex is associated with the Kumeyaay people, also known as Ipai, Tipai, or Diegueño (named for Mission San Diego de Alcalá). Agua Hedionda Creek is often described as the division between the territories of the Luiseño (Takic Shoshonean-speaking peoples) and the Kumeyaay people (Bean and Shipek 1978; Luomala 1978), although various archaeologists and ethnographers use slightly different boundaries.

Historic Period

The following cultural history outlines and describes the known historic background for San Diego County. The history of San Diego County is commonly presented in terms of Spanish, Mexican, and American political domination.

Spanish Period (1769 to 1821)

The Spanish Period represents exploration and the establishment of the San Diego Presidio and missions at San Diego (1769) and San Luis Rey (1798) and asistencias (chapels) to the San Diego Mission at Santa Ysabel (1818) and to the San Luis Rey Mission at Pala (1816). Horses, cattle, agricultural foods, weed seeds, and a new architectural style and method of building construction were also introduced.

While Juan Rodriguez Cabrillo visited San Diego briefly in 1542, the beginning of the historic period in the San Diego area is generally given as 1769. During the mid-eighteenth century, Spain had escalated its involvement in California from exploration to colonization (Weber 1992), and it was that year that the Royal Presidio of San Diego was founded on a hill overlooking the San Diego River. Initially, both a mission and a military presidio were on Presidio Hill overlooking the San Diego River. A small pueblo, now known as Old Town San Diego, developed below the presidio. The Mission San Diego de Alcalá was constructed in its current location 5 years later. The economy of Alta California during the Spanish Period was based on cattle ranching at the missions and a few Spanish land grant ranchos. A minor amount of agriculture and commerce took place in and around San Diego.

Mexican Period (1821 to 1848)

Mexico, including Alta California, gained its independence from Spain in 1821, but Spanish culture and influence remained as the missions continued to operate as they had in the past; laws governing the distribution of land were also retained for a period. Following secularization of the missions in 1834, large ranchos were granted to prominent and well-connected individuals. During this period, society made a transition from one dominated by the church and the military to a more civilian focus, with people living on ranchos or in pueblos. With numerous new ranchos, cattle ranching expanded and prevailed over agricultural activities. These ranches put new pressures on California's native populations because grants were made for inland areas still occupied by the Kumeyaay, forcing them to acculturate or relocate farther into the backcountry. In rare instances, former mission neophytes were able to organize pueblos and attempt to live within the

new confines of Mexican governance and culture. The most successful of these was the Pueblo of San Pasqual, located inland along the San Dieguito River Valley, founded by the Kumeyaay who were no longer able to live at the Mission San Diego de Alcalá (Carrico 2008). The Mexican Period ended in 1848 as a result of the Mexican-American War.

American Period (1848 to Present)

The American Period began when Mexico ceded California to the United States after the Mexican-American War (1846–1848), which concluded with the signing of the Treaty of Guadalupe Hidalgo. The terms of the treaty brought about the creation of the Lands Commission in response to the Homestead Act of 1851, which was adopted as a means of validating and settling land ownership claims. A great influx of settlers to California and the San Diego region occurred during the American Period, resulting from several factors, including the discovery of gold in the State in 1848, the end of the Civil War, the availability of free land through the passage of the Homestead Act, and later, the importance of San Diego County as an agricultural area supported by roads, irrigation systems, and connecting railways. The increase in American and European populations quickly overwhelmed many of the Spanish and Mexican cultural traditions and greatly increased the rate of population decline among Native American communities.

At the beginning of the American Period, Old Town San Diego remained the center of civic life in the region; however, the San Diego River was prone to major floods, and in the 1870s, what is now downtown San Diego, then known as Horton's Addition, became the urban center. The 1880s saw "boom and bust" cycles that brought thousands of people to San Diego County. By the end of the decade, many had left, although some remained to form the foundations of small communities based on dry farming, orchards, dairies, and livestock ranching. During the late-nineteenth and early-twentieth centuries, rural areas of San Diego County developed small agricultural communities centered on one-room schoolhouses. Such rural farming communities consisted of individuals and families tied together through geographical boundaries, a common schoolhouse, and a church.

The influence of military development, beginning in 1916 and 1917 (during World War I), moved much of the population away from the ranching and agricultural lifestyles. After World War II, San Diego County experienced massive development. New roadways, freeways, infrastructure, tract housing and multi-family housing developments, and commercial and recreational developments were constructed in the 1950s, 1960s, and 1970s. San Diego became California's second-largest city, with a population of 696,474, with the overall county population being greater than 1.3 million by 1970 (San Diego History Center 2020). San Diego County continued to grow in population and development into the last decades of the twentieth century.

2.2.2 Regulatory Setting

Cultural resources in San Diego County are protected through a number of regulations at the federal, State, and local levels. Below is a listing and brief description of some of the various regulations and standards that relate to cultural resources within the county.

2.2.2.1 *Federal*

National Historic Preservation Act

The National Historic Preservation Act was passed in 1966 and set the foundation for much of the more specific legislation that guides cultural resource protection and management in local

jurisdictions, such as the County of San Diego. The act established an Advisory Council on Historic Preservation to help implement and monitor it. Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effects of their undertakings on historic properties and to afford the Advisory Council a reasonable opportunity to comment on such undertakings. The goal of the Section 106 process is to identify historic properties potentially affected by the undertaking, assess its effects, and seek ways to avoid, minimize, or mitigate any adverse effects on historic properties.

National Register of Historic Places

Developed in 1981, the NRHP is an authoritative guide to be used by federal, State, and local governments, private groups, and citizens to identify the nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment. Listing of private property on the NRHP does not prohibit under federal law or regulation any actions that may otherwise be taken by the property owner with respect to the property.

National Historic Landmarks Program

The National Historic Landmarks Program, developed in 1982, identifies and designates National Historic Landmarks and encourages the long-range preservation of nationally significant properties that illustrate or commemorate the history and prehistory of the United States. These regulations set forth the criteria for establishing national significance and the procedures used by the U.S. Department of the Interior for conducting the National Historic Landmarks Program.

Native American Graves Protection and Repatriation Act

Enacted in 1990, the Native American Graves Protection and Repatriation Act (NAGPRA) conveys to Native American of demonstrated lineal decent the human remains and funerary or religious items that are held by federal agencies and federally supported museums or that have been recovered from federal lands. It also makes the sale or purchase of Native American remains illegal, whether or not they derive from federal or Native American lands.

Secretary of the Interior's Standards

The Secretary of the Interior is the head of the U.S. Department of the Interior, which is the nation's principal conservation agency. The department oversees the Bureau of Land Management, the Bureau of Indian Affairs, and the National Park Service.

Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (Federal Register 1983, Vol. 48, No. 190, 44720–44723)

The purpose of the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation of 1983 is to (1) organize the information gathered about preservation activities; (2) describe results to be achieved by federal agencies, States, and others when planning for the identification, evaluation, registration, and treatment of historic properties; and (3) integrate the diverse efforts of many entities performing historic preservation into a systematic effort to preserve the nation's cultural heritage.

2.2.2.2 *State*

California Environmental Quality Act

CEQA (PRC 21084.1) and the CEQA Guidelines (14 CCR 15064) discuss significant cultural resources as "historical resources," which are defined as:

1. Resources listed or determined eligible by the State Historical Resources Commission for listing in the CRHR (14 CCR 15064.5[a][1]);

2. Resources either listed in the NRHP or in a "local register of historical resources" or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the California Public Resources Code [PRC] unless "the preponderance of evidence demonstrates that it is not historically or culturally significant" (14 CCR 15064.5[a][2]); or

3. Resources determined by the Lead Agency to meet the criteria for listing in the CRHR (14 CCR 15064.5[a][3]).

For listing in the CRHR, a historical resource must be significant at the local, State, or national level under one or more of the following four criteria:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States;

2. It is associated with the lives of persons important to local, California, or national history;

3. It 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; or

4. It has yielded or has the potential to yield information important to the prehistory or history of the local area, California, or the nation.

Under Title 14, Section 15064.5(a)(4), of the California Code of Regulations, a resource may also be considered a "historical resource" for the purposes of CEQA at the discretion of the Lead Agency.

All resources that are eligible for listing in the CRHR must have integrity, which is the authenticity of a historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Resources, therefore, must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. In an archaeological deposit, integrity is assessed with reference to the preservation of material constituents and their culturally and historically meaningful spatial relationships. A resource must also be judged with reference to the particular criteria under which it is proposed for nomination.

According to the CEQA Guidelines (Section 15064.5[b]), a project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment. CEQA defines a substantial adverse change as:

(1) Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.

(2) The significance of an historical resource is materially impaired when a project:

(a) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or

(b) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

(c) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.

Section 15064.5 of the CEQA Guidelines applies to effects on archaeological sites and contains additional provisions regarding archaeological sites. If an archaeological site does not meet the criteria defined in subsection (a) as a historical resource but does meet the definition of a unique archaeological resource in PRC Section 21083.2, the site shall be treated in accordance with the provisions of Section 21083.2. The time and cost limitations described in PRC Section 21083.2(c–f) do not apply to surveys and site evaluation activities intended to determine whether the project location contains unique archaeological resources. If an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment. It shall be sufficient that both the resource and the effect on it are noted in the environmental document, if one is prepared to address impacts on other resources, but they need not be considered further in the CEQA process.

Sections 15064.5(d) and (e) contain additional provisions regarding human remains. Regarding Native American human remains, paragraph (d) provides the following:

> When an initial study identifies the existence of, or the probable likelihood, of Native American human remains within the project, a Lead Agency shall work with the appropriate Native Americans as identified by the Native American Heritage Commission as provided in Public Resources Code section 5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American burials with the appropriate Native Americans as identified by the Native American Heritage Commission.

California Assembly Bill 52

California Assembly Bill 52 revised PRC Section 21074 to include Tribal Cultural Resources as an area of CEQA environmental impact analysis. As such, Section 2.4 of this PEIR addresses Tribal Cultural Resources. Further, per new PRC Section 21080.3, a CEQA Lead Agency must consult with any California Native American tribe that requests consultation and that is traditionally and culturally affiliated with the geographic area of a proposed project to identify resources of cultural or spiritual value to the tribe, even if such resources are already eligible as historical resources as a result of cultural resources studies.

A Tribal Cultural Resource may be considered significant if it is (i) included in a local or State register of historical resources, (ii) determined by the Lead Agency to be significant pursuant to criteria set forth in PRC Section 5024.1, (iii) a geographically defined cultural landscape that meets one or more of these criteria, (iv) a historical resource described in PRC Section 21084.1 or a unique archaeological resource described in PRC Section 21083.2, or (v) a non-unique archaeological resource if it conforms with the above criteria.

State Historical Landmarks Program

The State Historical Landmarks Program places an emphasis on well-known places and events in California history. The goals of the program include the preservation and maintenance of registered landmarks, most of which include missions, early settlements, battles, and gold rush sites. As of August 2022, 74 historical landmarks had been registered for San Diego County and 11,063 historical landmarks had been registered for California.

State Points of Historical Interest Program

The State Points of Historical Interest Program was established in the effort to accommodate local historic properties not able to meet the restrictive criteria of the State Historical Landmarks Program. The State Points of Historical Interest Program requires the participation of local governmental officials, such as the chairperson of the Board of Supervisors, in the approval process. As of August 2022, 17 properties had been listed in the State Points of Historical Interest Program for San Diego County and 853 properties had been listed for California.

California Register of Historical Resources

The CRHR is an authoritative guide for use by State and local agencies, private groups, and citizens to identify the State's historical resources. A historical resource can include any object, building, structure, site, area, or place that is determined to be historically or archaeologically significant. The CRHR also identifies historical resources for State and local planning purposes, determines eligibility for State historic preservation grant funding, and provides a certain measure of protection under CEQA.

California Native American Graves Protection and Repatriation Act

The California NAGPRA of 2001 conveys to Native Americans of demonstrated lineal descent the human remains and funerary items that are held by State agencies and museums.

California Health and Safety Code

The California Health and Safety Code, Section 7050.5, requires that, in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site, or any nearby area reasonably suspected to overlay adjacent remains, until the County Coroner has examined the remains. If the County Coroner determines the remains to be those of a Native American or has reason to believe that they are those of a Native American, the County Coroner shall contact the Native American Heritage Commission by telephone within 24 hours. In addition, any person who mutilates or disinters, wantonly disturbs, or willfully removes any human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor.

2.2.2.3 *Local*

County of San Diego – Resource Protection Ordinance (Code of Regulatory Ordinances, Sections 86.601–86.608)

The County's Resource Protection Ordinance (RPO) requires that cultural resources be evaluated as part of the County's discretionary environmental review process, and if resources are determined to be significant under the RPO, they must be preserved. Pursuant to Section 86.603, the RPO is applicable to discretionary applications such as Tentative Map, Tentative Parcel Map, Revised Tentative Map, Revised Tentative Parcel Map, Rezone, Major Use Permit, Major Use Permit Modification, Site Plan, Vacation of Open Space Easement Expired Map, Certificate of Compliance, or Administrative Permit. The Proposed Project is a countywide program that protects the public from vector-borne disease and public nuisances and would continue to comprehensively implement vector control through various techniques. As such, it is not a discretionary application. Therefore, the RPO is not applicable to the Proposed Project.

County of San Diego – Zoning Ordinance

The County's Zoning Ordinance provides for the designation and regulation of "special areas." One type of special area is a Historic/Archaeological Landmark or District. These resources may be assigned an "H" designator for historic areas or a specific district designator. The purpose of these provisions is to identify, preserve, and protect the historical, cultural, archaeological, and/or architectural resource values of designated landmarks and districts. Zoning regulations for these resources are designed to preserve their integrity and content. Other types of resources of equal or greater significance may exist and be designated in other ways, such as the NRHP or CRHR.

County of San Diego – Resource Conservation Areas

County of San Diego Resource Conservation Areas are identified lands requiring special attention to conserve resources in a manner best satisfying public and private objectives. The appropriate implementation actions will vary depending on the conservation objectives of each resource but may include public acquisition; establishment of open space easements; application of special land use controls, such as cluster zoning, large lot zoning, and scenic or natural resource preservation overlay zones; or incorporation of special design considerations into subdivision maps or Special Use Permits. Resource Conservation Areas include but are not limited to the following: groundwater problem areas, coastal wetlands, native wildlife habitats, construction quality sand areas, littoral sand areas, astronomical dark sky areas, unique geologic formations, and significant archaeological and historical sites. County departments and other public agencies

must give careful consideration and special environmental analysis to all projects in Resource Conservation Areas.

San Diego County Local Register of Historical Resources

The purpose of the San Diego County Local Register of Historical Resources is to develop and maintain "an authoritative listing and guide to be used by local agencies, private groups, and citizens in identifying historical resources within the county…and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change." Sites, places, or objects that are eligible for the NRHP or the CRHR are automatically included in the San Diego County Local Register of Historical Resources. If a resource meets any one of the following criteria as outlined in the local register, it will be considered an important resource:

1. Is associated with events that have made a significant contribution to the broad patterns of San Diego County's history and cultural heritage;

2. Is associated with the lives of persons important to the history of San Diego County or its communities;

3. Embodies the distinctive characteristics of a type, period, San Diego County region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

4. Has yielded, or may be likely to yield, information important in prehistory or history.

Integrated Vector Management Program Best Management Practices

The Integrated Vector Management Program (IVMP) follows best management practices (BMPs) described in State guidance documents, such as the *Best Management Practices for Mosquito Control in California* (CDPH 2012), *Best Management Practices for Mosquito Control on California State Properties* (CDPH 2008a), and *California Mosquito-Borne Virus Surveillance and Response Plan* (CDPH 2021), which detail best integrated vector management practices for vector control and vector-borne disease prevention. Additionally, the Proposed Project includes BMPs intended to minimize impacts associated with IVMP activities. The following BMPs have been developed by the VCP in combination with the above-referenced sources and are applicable to cultural resources:

- A1: The Vector Control Program (VCP) performs public education and outreach activities to educate residents on how to prevent mosquito breeding and other vector problems at their homes, businesses, and properties; how to protect themselves from being bitten by mosquitoes; and how to report dead birds and mosquito-breeding sources, including unmaintained pools, to prevent the spread of mosquito-borne diseases. Reducing vector breeding minimizes the need for VCP control activities.

- A3: To help minimize the need for pesticide application or vegetation management, surveillance and monitoring at known or suspected vector sites will continue to be performed to assess vector species abundance and distribution and if they are carrying diseases. Information obtained from surveillance is evaluated with risk-based response criteria and other factors to decide when and where to implement vector control measures, such as pesticide application, and to help form action plans that reduce the risk of disease transmission and assist in reducing environmental impacts.

- A4: All pesticides (i.e., chemical and biological controls) applied by the VCP are approved by the California Department of Pesticide Regulation, and their application will continue to abide by all label instructions and regulations of the U.S. Environmental Protection Agency and California Department of Pesticide Regulation, including application rates and methods, storage, transportation, mixing, and container disposal. In addition, the VCP will continue to comply with all pesticide reporting, equipment calibration, and inspection requirements as regulated by the County Agricultural Commissioner.

- A5: In accordance with CDPH regulations, pesticides will only be applied by Certified Vector Control Technicians. VCP staff who apply pesticides or remove vegetation will continue to complete all training required by the CDPH to maintain status as a Certified Vector Control Technician and will follow the VCP's comprehensive documents, including the annual *Engineer's Report*, strategic response plans, and standard operating procedures to avoid and minimize negative environmental impacts. These activities are conducted in accordance with the BMPs described in the *Best Management Practices for Mosquito Control in California* (CDPH 2012), *Best Management Practices for Mosquito Control on California State Properties* (CDPH 2008a), and *California Mosquito-Borne Virus Surveillance and Response Plan* (CDPH 2021), which detail integrated vector best management practices for vector control and vector-borne disease prevention to ensure pesticides are selected and applied appropriately and potential impacts on non-targeted areas are eliminated or minimized.

- A13: Individual IVMP source reduction activities that involve ground disturbance (e.g., grading, earthwork, or other excavation activities) will undergo a preliminary planning review by the County to assess the degree to which each activity may potentially result in impacts to cultural and Tribal Cultural Resources. The County will review available records documentation and determine whether known archaeological or tribal resources are present in the proposed activity area or ascertain the potential that such resources may be encountered. Per the *County of San Diego Report Format and Content Requirements, Cultural Resources: Archaeological and Historic Resources*, project sites that have been previously surveyed within 5 years or less may use the previous study (County 2007b). As such, if preliminary planning review determines that the IVMP activity area has been previously surveyed for the presence of archaeological or tribal resources within the last 5 years with negative results or has been previously disturbed (e.g., grading, earthwork, or other excavation activities), the area would be considered "low sensitivity," and no further evaluation would be required. If the results of the review determine that the area has not previously been surveyed or disturbed or has been surveyed and archaeological and/or tribal resources have been identified, a site-specific cultural resource survey will be required.

2.2.3 Analysis of Project Effects and Determination as to Significance

Based on Appendix G of the CEQA Guidelines and the *County of San Diego Guidelines for Determining Significance – Cultural Resources: Archaeological and Historic Resources* (County 2007b), the Proposed Project would result in a significant impact if it would:

1. Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines. This shall include the destruction, disturbance, or any alteration of characteristics or elements of a resource that cause it to be significant in a manner consistent with the Secretary of Interior Standards.

2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines. This shall include the destruction or disturbance of an important archaeological site or any portion of an important archaeological site that contains or has the potential to contain information important to history or prehistory.

3. Disturb any human remains, including those interred outside of formal cemeteries.

The Proposed Project is a countywide program that protects the public from vector-borne diseases and public nuisances and would continue to comprehensively implement integrated vector management practices. Because specific locations of IVMP activities have not been defined at this time, record searches and field surveys were not conducted for the Proposed Project. In addition, this Program Environmental Impact Report analysis is qualitative in nature and does not provide specific locations of resources.

2.2.3.1 *Historical Resources*

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines and the *County of San Diego Guidelines for Determining Significance – Cultural Resources: Archaeological and Historic Resources* (County 2007b), the Proposed Project would have a significant impact on the environment if it would result in a substantial adverse change in the significance of a historical resource as defined in Section 15064.5. This shall include the destruction, disturbance, or any alteration of characteristics or elements of a resource that cause it to be significant in a manner consistent with the Secretary of the Interior Standards.

Impact Analysis

The *Cultural Resources Technical Report* (HELIX 2021b; Appendix C) evaluated program-level impacts associated with implementation of the IVMP. Under the Proposed Project, the IVMP would continue to comprehensively approach vector control through various techniques, including surveillance and monitoring, source reduction (i.e., physical control), source treatment (i.e., biological and chemical controls), public education, outreach, and disease diagnostics. Of these, only source reduction would potentially result in tangible impacts to cultural resources due to the potential ground-disturbing or physical impacts that environmental modifications could entail.

Physical controls could potentially include but not be limited to removal of vegetation or sediment; interruption of water flow; rotation of stored water; pumping and/or filling of water sources; improvements to drainage and water circulation systems; and installation, removal, or improvements of culverts, tide gates, or other water control structures. Although no structures or buildings associated with vectors are anticipated to be constructed, physical control activities could potentially result in direct or indirect impacts to cutural resources. Unrecorded or unevaluated archaeological sites may require research or testing programs to determine their eligibility for inclusion in the CRHR or San Diego County Local Register of Historical Resources. If an archaeological resource is found to be eligible for inclusion in the CRHR or San Diego County Local Register of Historical Resources, it would be considered a “historical resource” in accordance with CEQA Guidelines, Section 15064.5(c).

As a result, the Proposed Project could have the potential to cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5 of the CEQA Guidelines, resulting in a **potentially significant impact (CR-1)**.

2.2.3.2 *Archaeological Resources*

Guidelines for the Determination of Significance Analysis

Based on Appendix G of the CEQA Guidelines and the *County of San Diego Guidelines for Determining Significance – Cultural Resources: Archaeological and Historic Resources* (County 2007b), the Proposed Project would have a significant impact on the environment if it would result in a substantial adverse change in the significance of a unique archaeological resource as defined under Section 15064.5. This shall include the destruction or disturbance of an important archaeological site or any portion of an important archaeological site that contains or has the potential to contain information important to history or prehistory.

Impact Analysis

The *Cultural Resources Technical Report* (HELIX 2021b; Appendix C) evaluated program-level impacts associated with implementation of the IVMP. As discussed in the *Cultural Resources Technical Report*, the County conducted consultation with tribal governments in accordance with Assembly Bill 52. On August 23, 2018, the County notified all applicable Native American tribes of the IVMP Notice of Preparation. On August 28, 2018, the Viejas Band of Kumeyaay Indians provided a response letter requesting compliance with CEQA, the National Environmental Policy Act, and NAGPRA in addition to immediately contacting the band of any project changes or inadvertent discoveries.

As described above, the only IVMP activity that would potentially result in tangible impacts to cultural resources is source reduction due to the potential ground-disturbing or physical impacts that environmental modifications could entail. Source reduction activities involving ground-disturbing work that may occur within or near archaeological resources, within previously undisturbed areas, or within previously disturbed areas with known cultural resource sensitivity could result in potential impacts if archaeological resources present on or below the ground surface are damaged or destroyed.

Unrecorded or unevaluated archaeological sites may require research or testing programs to determine their eligibility for inclusion on the CRHR or San Diego County Local Register of Historical Resources. Adverse effects to known significant or unique archaeological resources may result in a loss of valuable information that could be gained from the resources or prevent potentially eligible sites from being listed on a register of cultural resources. Existing federal, State, and local regulations, as well as the proposed BMPs identified in Section 2.2.2, *Regulatory Setting*, would minimize potential impacts. However, since specific sites cannot be defined at this time, it is anticipated that ground-disturbing activities could have the potential to cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines, resulting in a **potentially significant impact (CR-2)**.

2.2.3.3 *Human Remains*

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines and the *County of San Diego Guidelines for Determining Significance – Cultural Resources: Archaeological and Historic Resources* (County 2007b), the Proposed Project would have a significant impact on the environment if it would disturb any human remains, including those interred outside formal cemeteries.

Impact Analysis

The *Cultural Resources Technical Report* (HELIX 2021b; Appendix C) evaluated program-level impacts associated with implementation of the IVMP. Pursuant to CEQA Guidelines, Section 15064.5, a project must be evaluated for its potential to disturb any human remains, including those interred outside formal cemeteries. Archaeological materials, including human burials, have been found throughout unincorporated San Diego County and incorporated cities serviced by the IVMP. Human burials have occurred outside formal cemeteries, usually associated with archaeological resource sites and prehistoric people. While some burials have been uncovered, the potential exists for unknown burials to be present within areas potentially requiring physical control activities associated with the IVMP. Ground-disturbing activities associated with implementation of the Proposed Project could have the potential to disturb human remains and result in a **potentially significant impact (CR-3)**.

2.2.4 Cumulative Impact Analysis

The geographic scope of cumulative impact analysis for cultural resources (including historical and archaeological resources) and human remains is the entirety of San Diego County, including both incorporated and unincorporated areas. Cumulative projects include countywide residential and non-residential land development, open space and recreation, and agricultural activities that have the potential for ground disturbance, vegetation removal, and pesticide use. As with cumulative projects, the Proposed Project would be required to comply with applicable federal, State, and local regulations for the protection of unique or significant cultural resources in the Service Area.[1]

Historical Resources

Cumulative projects would have the potential to result in cumulative impacts associated with the loss of historical resources through the physical disturbance, relocation, or alteration of these resources. However, as discussed above, the Proposed Project has the potential to cause impacts to unrecorded or unevaluated sites that may require research or testing programs to determine their eligibility for inclusion in the CRHR or San Diego County Local Register of Historical Resources. Due to the nature and scale of the activities that could be implemented under the IVMP, the Proposed Project would be required to comply with all applicable federal, State, and local regulations. In addition, the Proposed Project would implement mitigation measures and standard operating procedures and protocols to avoid or reduce impacts to

[1] Service Area is synonymous with Assessment Area, which is defined in the Engineer's Report (County 2022a) as the area in which an annual levy provides funding for essential vector control services, including those properties that may request and/or receive direct and more frequent service and are located within the scope of the vector surveillance area. As such, Native American reservation land, as a Sovereign Nation, is excluded from the Service Area along with federally owned lands that receive minimal to no services.

historical resources. As a result, the Proposed Project would not result in a cumulatively considerable contribution to cumulative historical resources impacts.

Archaeological Resources

The Proposed Project has the potential to cause impacts to unknown archaeological resources during source reduction ground-disturbing activities. Due to the nature and scale of the activities that could be implemented under the IVMP, the Proposed Project would be required to comply with all applicable federal, State, and local regulations. In addition, the Proposed Project would implement mitigation measures and standard operating procedures and protocols to avoid or reduce impacts to archaeological resources. As a result, the Proposed Project would not result in a cumulatively considerable contribution to cumulative archaeological resources impacts.

Human Remains

The Proposed Project has the potential to cause impacts to human remains during source reduction ground-disturbing activities. Due to the nature and scale of the activities that could be implemented under the IVMP, the Proposed Project would be required to comply with all applicable federal, State, and local regulations. In addition, the Proposed Project would implement mitigation measures and standard operating procedures and protocols to avoid or reduce impacts to human remains. As a result, the Proposed Project would not result in a cumulatively considerable contribution to cumulative human remains impacts.

2.2.5 Significance of Impacts Prior to Mitigation

The Proposed Project would result in potentially significant impacts to cutural resources and human remains prior to mitigation.

CR-1 Ground-disturbing activities have the potential to cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5 of the CEQA Guidelines.

CR-2 Ground-disturbing activities have the potential to cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines.

CR-3 Ground-disturbing activities have the potential to disturb human remains.

2.2.6 Mitigation Measures

Although ground-disturbing activities associated with the Proposed Project are expected to generally be minor in scale, source reduction activities could potentially result in direct or indirect impacts to cultural resources. As such, the following mitigation measures are identified for individual activities that would involve ground-disturbing work to guide the identification, evaluation, and mitigation of potential impacts to cultural resources, if encountered.

Significant impacts to historical resources **(CR-1)** would be mitigated through the implementation of the following Mitigation Measure M-CR-1:

M-CR-1 **Site-Specific Cultural Resources Survey.** For individual Integrated Vector Management Program source reduction activities that have been determined to

have the potential to result in impacts to cultural resources, as identified in the Integrated Vector Management Program Best Management Practices (A13), a qualified archaeologist shall be retained to conduct a site-specific cultural resource survey if the site has not been surveyed in the previous 5 years. The survey shall consist of a record search of the California Historical Resources Information System housed at the South Coastal Information Center, research to identify historic land use in the area, and a pedestrian survey that includes the participation of a Native American monitor. A review of the Sacred Lands File maintained by the Native American Heritage Commission shall also be requested for the individual Integrated Vector Management Program activity. A report shall be prepared to discuss the survey and record search results.

Cultural Resources Evaluation. If potential cultural resources are identified in an individual Integrated Vector Management Program activity area where ground disturbance is proposed, a cultural resources significance evaluation shall be conducted. Specifically, a significance evaluation shall be prepared if the individual Integrated Vector Management Program activity has the potential to result in an adverse effect to (1) new cultural resources that are identified as a result of a site-specific survey, or (2) previously recorded resources that have not been previously evaluated that are re-identified during a survey, unless resources can be avoided. Per the *County of San Diego Report Format and Content Requirements, Cultural Resources: Archaeological and Historic Resources*, significance evaluations will not be required if the resource has been evaluated for California Environmental Quality Act significance or for National Register of Historic Places eligibility within the last 5 years and if there has been no change in the conditions that contributed to the determination of resource importance (County 2007b). Significance evaluation efforts may include additional research to determine whether the resource meets the criteria for listing on the California Register of Historical Resources and/or subsurface investigation. Archaeological testing programs involving subsurface investigation shall include assessing the horizontal and vertical dimensions of a site, the chronological placement, site function, artifact/ecofact density and variability, presence/absence of subsurface features, and research potential. A Native American monitor shall be retained for all subsurface investigations. Resources found to be non-significant as a result of a survey and/or assessment will require no further work beyond documentation of the resources on the appropriate California Department of Parks and Recreation site forms and inclusion of results in the survey and/or assessment report prepared for the individual Integrated Vector Control Program activity. A cultural resources report shall be prepared to discuss potential impacts associated with the individual Integrated Vector Management Program activities and identify measures to reduce all significant impacts to below a level of significance, if applicable.

Cultural Resources Data Recovery Program. If significant cultural resources are identified within an individual Integrated Vector Management Program activity area where ground disturbance is proposed, and avoidance of impacts to the resource is not possible, a data recovery program (including research design) shall be implemented. The data recovery program shall be subject to the provisions, as outlined in California Public Resources Code, Section 21083.2, and completed prior to the implementation of the individual Integrated Vector Management Program activity. Avoidance of significant cultural resources shall be sought to the extent possible.

Cultural Resources Monitoring Program. If significant cultural resources are identified or potential cultural resources are suspected to occur in an individual Integrated Vector Management Program activity area where ground disturbance is proposed, monitoring shall be required by an archaeologist and Native American monitor. If unevaluated potentially significant cultural resources are discovered, construction activities shall be diverted away from the discovery until significance evaluation can be conducted.

To mitigate potential impacts to significant cultural resources, a data recovery program for any newly discovered cultural resource would be prepared, approved by the County, and implemented using professional archaeological methods. Construction activities would be allowed to resume after the completion of the recovery of an adequate sample and the recordation of features. All cultural material collected during the data recovery program or monitoring program would be processed and curated at a San Diego County facility that meets federal standards per Code of Federal Regulations, Title 36, Part 79, unless the Native American monitors request the collection.

After monitoring is completed, an appropriate report shall be prepared. If no significant cultural resources are discovered, a brief letter shall be prepared. If significant cultural resources are discovered, a report with the results of the monitoring and any data recovery (including the interpretation of the data within the research context) shall be prepared.

Significant impacts to archaeological resources **(CR-2)** would be mitigated through the implementation of Mitigation Measure M-CR-1.

Significant impacts to human remains **(CR-3)** would be mitigated through the implementation of the following Mitigation Measure M-CR-2:

M-CR-2 **Identification of Human Remains.** In the event that human remains are discovered during individual Integrated Vector Management Program source reduction activities, work shall halt in the identified area, the County Medical Examiner[2] shall be contacted, and California Public Resources Code, Section 5097.98; CEQA Guidelines, Section 15064.5; and California Health and Safety Code, Section 7050.5, shall be followed. If the remains are determined to be of Native American origin, the most likely descendant shall be identified by the Native American Heritage Commission and contacted by the County to determine proper treatment and disposition of the remains.

2.2.7 Conclusion

Historical Resources

Implementation of the Proposed Project would not result in substantial adverse changes to the significance of historical structures. However, the Proposed Project would result in ground-disturbing activities that could have the potential to cause a substantial adverse change in the significance of an unrecorded or unevaluated archaeological site that may require research or

[2] For CEQA compliance, California Health and Safety Code, Section 7050.5; California Public Resources Code, Section 5097.98; and CEQA Guidelines, 15064.5, require a coroner. However, in San Diego County, this requirement is fulfilled by the Medical Examiner.

testing programs to determine their eligibility for inclusion in the CRHR or San Diego County Local Register of Historical Resources. Therefore, the Proposed Project would result in a potentially significant impact to historical resources **(CR-1)**. However, mitigation measure **M-CR-1** would mitigate the Proposed Project's potentially significant impacts related to historical resources to a less than significant level. With program-level mitigation and compliance with applicable federal, State, and local regulations for the protection of unique or significant historical resources mitigation, the Proposed Project will not contribute to cumulatively considerable historical resources impact.

Archaeological Resources

Implementation of the Proposed Project would result in ground-disturbing activities that could have the potential to cause a substantial adverse change in the significance of an archaeological resource, including the potential destruction or disturbance of an archaeological site that contains or has the potential to contain information important to history or prehistory. Therefore, the Proposed Project would result in a potentially significant impact to archaeological resources **(CR-2)**. However, mitigation measure **M-CR-1** would mitigate the Proposed Project's potentially significant impacts related to archaeological resources to a less than significant level. With program-level mitigation and compliance with applicable federal, State, and local regulations for the protection of unique or significant cultural resources, the Proposed Project will not contribute to cumulatively considerable archaeological resources impacts.

Human Remains

Implementation of the Proposed Project would result in ground-disturbing activities that could have the potential to disturb human remains, including those discovered outside formal cemeteries. Therefore, the Proposed Project would result in a potentially significant impact associated with human remains prior to mitigation **(CR-3)**. However, mitigation measure **M-CR-2** would mitigate the Proposed Project's potentially significant impacts related to human remains to a less than significant level. With program-level mitigation and compliance with applicable federal, State, and local regulations, the Proposed Project will not contribute to cumulatively considerable human remains impacts.

2.3 Geology and Soils

This section of the Program Environmental Impact Report (PEIR) describes the existing geology, soils, and seismic conditions in San Diego County and analyzes the potential physical environmental impacts to people and property related to seismic hazards, underlying soil characteristics, slope stability, erosion, and excavation and export of soils. This section is based on desktop research performed by HELIX Environmental Planning, Inc., the *County of San Diego Guidelines for Determining Significance – Geologic Hazards* (County 2007c), *County of San Diego Guidelines for Determining Significance – Paleontological Resources* (County 2009a), *County of San Diego Guidelines for Determining Significance – Unique Geology* (County 2007d), and Appendix G of the California Environmental Quality Act (CEQA) Guidelines.

2.3.1 Existing Conditions

Natural geologic processes that represent an existing or future hazard to life, health, or property are called geologic hazards. Natural geologic hazards that affect people and property in San Diego County include earthquakes (which can cause surface fault rupture, ground shaking, and liquefaction), expansive soils, weathering, and mass wasting phenomena such as landslides or rockfalls. San Diego County contains active faults, steep topography, and other geological characteristics that pose public safety concerns and constrain physical development.

General Geologic Setting

San Diego County is along the Pacific Rim, an area characterized by island arcs with subduction zones forming mountain ranges and deep oceanic trenches, active volcanoes, and earthquakes. The U.S. Geological Survey defines a subduction zone as any area where one lithospheric plate sinks under another. This occurs when plates move toward each other or converge.

As a result of the region's geologic history, four general rock types are found within the county: (1) Cretaceous Age crystalline and Upper Jurassic metavolcanics, (2) Mesozoic Age metamorphic rocks, (3) Tertiary Age sedimentary rocks, and (4) recent alluvium.

Cretaceous Age crystalline rocks, including granites, diorites, gabbros, and Upper Jurassic metavolcanics, underlie most of the mountainous terrain in the central portion of the county. These rocks are associated with the Peninsular Ranges Region batholith of Southern California and Baja California. Mesozoic Age metamorphic rocks include marble, schist, and gneiss outcrops that are found in the western foothills and mountains of the Peninsular Ranges Region and in the desert east of the mountains. Tertiary Age sedimentary rocks include sandstone, conglomerate, and mudstone and are found in the western portion of the county, as well as in the eastern portion of the Desert Basin. Deposits of recent alluvium, including sand, gravel, silt, and clay, are found in river and stream valleys, around lagoons, in intermountain valleys, and in the desert basins.

Additionally, the *Natural Resources Inventory of San Diego County* identified 67 unique geologic features in the entire county, primarily for scientific research purposes (County 2007d). The inventory includes stratigraphic formations, igneous rocks, fossil locations, and structural features. A unique feature may be the best example of its kind locally or regionally, it may illustrate a geologic principle, it may provide a key piece of geologic information, it may be the "type locality" of a fossil or formation, or it may have high aesthetic appeal. Unique geologic features may be exposed or created from natural weathering and erosion processes or from human-made excavations. Geologic formations, their structure, and the fossils within them provide information

about past environments. Therefore, rocks provide aesthetic, scientific, educational, and recreational value.

Geographic Regions

San Diego County has three distinctive geographic regions, from west to east: the low-lying Coastal Plain, the mountainous Peninsular Ranges Region, and the Desert Basin (Salton Trough).

The Coastal Plain

The Coastal Plain ranges in elevation from sea level to approximately 600 feet above mean sea level (AMSL) and lies mostly within incorporated cities in San Diego County. The Coastal Plain Region is an area characterized by interbedded marine and nonmarine sedimentary rock units deposited over the last 75 million years. The sedimentary rocks overlie a buried topography of plutonic crystalline rocks typically composed of granite or granodiorite. Many of the level surfaces in the coastal areas, including most of the mesa tops and coastal benches, are elevated marine terraces, and these, as well as the broad, level floodplains of river valleys, are characteristic features of the Coastal Plain region.

Peninsular Ranges Region

The lower Peninsular Ranges Region in San Diego County is made up of foothills that span in elevation from 600 to 2,000 feet AMSL. It is characterized by rolling to hilly uplands that contain frequent narrow, winding valleys. This area is traversed by several rivers and a number of intermittent drainages. The foothills are developed with various urban, suburban, and rural land uses, including the communities of Bonsall, Fallbrook, Ramona, Lakeside, Crest/Dehesa, Valle de Oro, Spring Valley, and Otay.

The higher elevations of 2,000 to 6,000 feet AMSL are dominated by steep mountains typically covered with granitic boulders and chaparral vegetation on the western slopes, evergreen and temperate forests at and near the top, and desert chaparral on the eastern slopes. The largely undeveloped mountain areas of San Diego County surround scattered rural communities, including Alpine, Pine Valley, Jamul/Dulzura, Campo, and Julian.

The Peninsular Ranges Region is primarily underlain by plutonic igneous rocks that formed from the cooling of molten magmas deep within Earth's crust. Younger under-formed sedimentary rocks occur in various areas of the Peninsular Ranges Region. The Peninsular Ranges Region contains Quaternary alluvial and alluvial fan deposits in many of the mountain valleys. Some of the more southern mountain valleys contain Quaternary peat deposits.

Desert Basin (Salton Trough)

The Desert Basin is generally within the far eastern portion of San Diego County. Elevations range from sea level to 3,000 feet AMSL, and the terrain includes mountains, alluvial fans, and desert floor. Most of the region is within the Anza-Borrego Desert State Park. Development within this area includes the small desert communities of Borrego Springs, Ocotillo Wells, and Shelter Valley.

The desert is undergoing active deformation related to faulting along the San Jacinto and Elsinore fault zones, which are related to the San Andreas Fault system and described below. Since the early Miocene (~24 million years ago), the Salton Trough has been filling with sediments, which

are now up to 5 miles thick. The major source of the sediments on the San Diego County side of the trough is erosion of the Peninsular Ranges Region. Dry lake beds, filled with sediments, are notable features of the region.

General Paleontological Setting

Paleontological resources are the remains and/or traces of prehistoric life (exclusive of human remains, artifacts or features) that include the localities where fossils are collected and the sedimentary rock formations in which they were formed. The defining character of fossils is their geologic age. Fossils or fossil deposits are generally regarded as being older than 10,000 years, marking the end of the late Pleistocene and the beginning of the Holocene.

Fossils result from the preservation of organic remains, which requires a unique combination of physical and biological factors. Skeletal tissue with a high percentage of mineral matter is the most readily preserved, while soft tissues not intimately connected with the skeletal parts are least likely to be preserved. For this reason, the fossil record contains a biased selection not only of types of organisms but also of parts of organisms. Much of the paleontological knowledge about mammals is based on teeth alone, the teeth being generally more durable than other parts of the skeleton. The best-preserved fossils are of those organisms that lived within a sedimentary depositional environment or were buried by sediment shortly after death, thus partially insulating them from destructive chemical and physical processes.

The majority of San Diego County fossils are represented by shells and/or tests (hard coverings) of marine invertebrates (corals, mollusks, crustaceans, and echinoderms). However, important skeletal remains of terrestrial vertebrates (reptiles, birds, and mammals) characterize certain geologic rock units and time intervals. The local terrestrial fossil record also consists of remains and impressions of plants including leaf assemblages and petrified wood.

A geologic formation is a body of rock identified by its lithic characteristics (e.g., grain size, texture, color, mineral content) and stratigraphic position. Formations are mapped at Earth's surface or traced in the subsurface and are formally named and described in the geologic literature. The fossil content may also be a characteristic of a formation. There is a direct relationship between fossils and the geologic formations within which they are enclosed; therefore, with sufficient knowledge of the geology and stratigraphy of a particular area and the paleontological resource potential, it is possible to reasonably predict where fossils might or might not be found. This is the case in San Diego County where a general overview of the geologic setting provides a basis for reasonably predicting the location of paleontological resources.

In San Diego County, the geologic record is most complete for parts of the past 75 million years, represented by the Cretaceous Period, the Eocene, Oligocene, and Pliocene Epochs of the Tertiary Period, and the Pleistocene Epoch of the Quaternary Period.

Resource Potential Ratings and Sensitivity of Paleontological Resources

Sensitivity levels are rated for individual geologic formations, as it is the formation that contains the fossil remains. The sensitivity levels are the same as the resource potential ratings. For example, a formation with a high potential for containing important fossils has high sensitivity. The resource potential ratings and geologic formation sensitivity levels are described below.

High

High resource potential and high sensitivity are assigned to geologic formations known to contain paleontological localities with rare, well-preserved, critical fossil materials for stratigraphic or paleoenvironmental interpretation, and fossils providing important information about the paleoclimatic, paleobiological and/or evolutionary history (phylogeny) of animal and plant groups. In general, formations with high resource potential are considered to have the highest potential to produce unique invertebrate fossil assemblages or unique vertebrate fossils and are, therefore, highly sensitive.

Moderate

Moderate resource potential and moderate sensitivity are assigned to geologic formations known to contain paleontological localities. These geologic formations are judged to have a strong, but often unproven, potential for producing unique fossil remains.

Low

Low resource potential and low sensitivity are assigned to geologic formations that, based on their relatively young age and/or high-energy depositional history, are judged unlikely to produce unique fossil remains. Low resource potential formations rarely produce fossil remains of scientific importance and are considered to have low sensitivity. However, when fossils are found in these formations, they are often very significant additions to the geologic understanding of the area.

Marginal

Marginal resource potential and marginal sensitivity are assigned to geologic formations that are composed either of volcaniclastic (derived from volcanic sources) or of metasedimentary rocks, but that nevertheless have a limited probability for producing fossils from certain formations at localized outcrops. Volcaniclastic rock can contain organisms that were fossilized by being covered by ash, dust, mud, or other debris from volcanoes. Sedimentary rocks that have been metamorphosed by heat and/or pressure caused by volcanoes or plutons are called metasedimentary. If the sedimentary rocks had paleontological resources within them, those resources may have survived the metamorphism and still be identifiable within the metasedimentary rock, but since the probability of this occurring is so limited, these formations are considered marginally sensitive.

No Potential

No resource potential is assigned to geologic formations that are composed entirely of volcanic or plutonic igneous rock, such as basalt or granite, and therefore do not have any potential for producing fossil remains. These formations have no paleontological resource potential; therefore, they are not considered to be sensitive resources.

Faults and Seismicity

Regional Seismic Setting

The faulting and seismicity of Southern California is dominated by the compressionary regime associated with the “Big Bend” of the San Andreas Fault Zone. The San Andreas Fault Zone separates two of the major tectonic plates of Earth’s crust. West of the San Andreas Fault Zone

lies the Pacific Plate, which is moving in a northwesterly direction relative to the North American Plate, which is east of the San Andreas Fault Zone. This relative movement between the two plates is the driving force of fault ruptures on the west coast of California. The San Andreas Fault generally trends northwest to southeast and is to the northeast of San Diego County.

A series of sub-parallel faults are to the west of the San Andreas Fault Zone including the active San Jacinto, Elsinore, and Rose Canyon Fault Zones, which each traverse through San Diego County. North of the Transverse Ranges Province, generally between Santa Barbara and Joshua Tree National Park, the San Andreas Fault trends more in an east to west direction (the Big Bend), causing the fault's right-lateral strike-slip movement to produce north–south compression between the two plates. This compression has produced rapid uplift of many of the mountain ranges in Southern California. This crustal shortening is accommodated by faulting (mainly reverse faulting) and causes a large potential for seismicity throughout most of Southern California. Faults of the northern Peninsular Ranges Province generally reflect reverse and strike-slip faulting patterns since the province is in a transitionary position between areas dominated by strike-slip movement and by compression.

Local Faults and Seismicity

Several major active faults and fault zones are present within San Diego County. These active fault zones are San Jacinto Fault Zone, including Coyote Creek Fault, Elsinore Fault Zone and the nearby Earthquake Valley Fault, and Rose Canyon Fault Zone, including a series of unnamed faults trending from Downtown San Diego across San Diego Bay to the City of Coronado.

Seismic Hazards

Earthquake-related geologic hazards pose a significant threat to San Diego County and can impact extensive regions of land. Earthquakes can produce fault rupture and strong ground shaking, and can trigger landslides, rockfalls, soil liquefaction, tsunamis, and seiches. In turn, these geologic hazards can lead to other hazards such as fires, dam failures, and toxic substance releases. Primary effects of earthquakes include violent ground motion, and sometimes permanent displacement of land associated with surface rupture. Secondary effects of earthquakes include near-term phenomena, such as liquefaction, landslides, fires, tsunamis, seiches, and floods. Long-term effects associated with earthquakes include phenomena such as regional subsidence or emergence of landmasses and regional changes in groundwater levels.

Fault Rupture

During earthquakes, the ground can rupture at or below the surface. Ground rupture occurs when two lithospheric plates heave past each other, sending waves of motion across Earth. The lithosphere is approximately 75 miles thick and consists of the upper continental and oceanic crusts and the rigid mantle layer that is directly beneath the crust. Earthquakes can cause large vertical and/or horizontal displacement of the ground along the fault.

Alquist-Priolo Earthquake Fault Zones

In 1972, the State passed the Alquist-Priolo Earthquake Zoning Act to help identify areas subject to severe ground shaking. Earthquake faults are categorized as active, potentially active, and inactive. A fault is classified as active if it is included as an Alquist-Priolo Earthquake Fault Zone (movement within the past 11,000 years). The purpose of this act is to prohibit the placement of most structures for human occupancy across the traces of active faults, thereby mitigating the

hazard of fault ruptures. Alquist-Priolo zones serve as an official notification of the probability of ground rupture for future earthquakes.

The Alquist-Priolo zones that the State of California has designated along active faults in San Diego County are the Elsinore Fault, Earthquake Valley Fault, San Jacinto Zone, and Rose Canyon Fault Zone.

Ground Shaking

Ground shaking is the earthquake effect that produces the vast majority of damage. Several factors control how ground motion interacts with structures, making the hazard of ground shaking difficult to predict. Earthquakes, or earthquake induced landslides, can cause damage near and far from fault lines. The potential damage to public and private buildings and infrastructure can threaten public safety and result in significant economic loss. Ground shaking is the most common effect of earthquakes that adversely affects people, animals, and constructed improvements.

Liquefaction

Liquefaction occurs primarily in saturated, loose, fine to medium-grained soils in areas where the groundwater table is generally 50 feet or less below the surface. When these sediments are shaken during an earthquake, a sudden increase in pore water pressure causes the soils to lose strength and behave as a liquid. In general, three types of lateral ground displacement are generated from liquefaction: (1) flow failure, which generally occurs on steeper slopes; (2) lateral spread, which generally occurs on gentle slopes; and (3) ground oscillation, which occurs on relatively flat ground. In addition, surface improvements on liquefiable areas may be prone to settlement and related damage in the event of a large earthquake on a regionally active fault. The primary factors that control the type of failure that is induced by liquefaction (if any) include slope, and the density, continuity, and depth of the liquefiable layer.

Within the county, there may be a potential for liquefaction in areas with loose sandy soils combined with a shallow groundwater table, which typically are in alluvial river valleys/basins and floodplains.

Landslides

A landslide is the down slope movement of soil and/or rock. Landslides can range in speed from very rapid to an imperceptible slow creep. Landslides can be caused by ground shaking from an earthquake or water from rainfall, septic systems, landscaping, or other origins that infiltrate slopes with unstable material. Boulder-strewn hillsides can pose a boulder-rolling hazard from ground shaking, blasting, or a gradual loosening of their contact with the surface. The likelihood of a landslide depends on an area’s geologic formations, topography, ground shaking potential, and influences of humans. Improper or excessive grading can increase the probability of a landslide. Land alterations such as excavation, filling, removing of vegetative cover, and introducing the concentration of water from drainage, irrigation, or septic systems may contribute to the instability of a slope and increase the likelihood of a landslide. Undercutting support at the base of a slope or adding too much weight to the slope can also produce a landslide.

Significant landslides have occurred within incorporated portions of the county along coastal bluffs and in other areas. Previous landslides and landslide-prone sedimentary formations are mostly in the western portion of the unincorporated county. Landslides have also occurred in the granitic terrain in the eastern portion of the county, although they are less prevalent. Reactivations of

existing landslides can be triggered by situations such as heavy rainfall or irrigation, seismic shaking, and/or grading.

Subsidence and Settlement

Subsidence, which can be caused by groundwater depletion, seismic activity, and other factors, refers to elevation changes of the land whether slow or sudden. Subsidence can cause a variety of problems including broken utility lines, blocked drainage, or distorted property boundaries and survey lines. According to the *Multi-Jurisdictional Hazard Mitigation Plan* (URS 2004), the underlying geologic formations in the county are mostly granitic, which has a very low potential of subsidence.

Expansive Soils

Certain types of clay soils expand when they are saturated and shrink when dried. These are called expansive soils and can pose a threat to the integrity of structures built on them without proper engineering. Areas of highly expansive soils within San Diego County occur predominately in the coastal plains, an area of dissected marine terraces and uplands. They can also be found in valleys and on slopes in the foothills and mountains of the Peninsular Ranges Region and, to a lesser extent, in the desert.

The expansion and contraction of the soil varies with the soil moisture content (wet or dry) and can be aggravated by the way a property is maintained or irrigated. Human activities can increase the moisture content of the soils and the threat of expansive soil damage. For example, a subdivision of homes that continually irrigates the landscaping or removes significant amounts of native vegetation could create this condition.

Soil Erosion

Erosion of soils can occur from both wind and water sources. Wind erosion physically removes the lighter, less dense soil constituents such as organic matter, clays, and silts, which are often the most fertile part of the soil. Surface water runoff erodes agricultural land and undercuts road banks, landfills, and riverbanks. Wind moves exposed loose soils off site and can contribute to reduced air quality. Eroded materials fill reservoirs, ponds, and drainage ditches and silt up harbors, streams, and rivers.

2.3.2 Regulatory Setting

2.3.2.1 *Federal*

U.S. Geological Survey Landslide Hazard Program

In fulfillment of the requirements of Public Law 106-113, the U.S. Geological Survey created the Landslide Hazard Program in the mid-1970s. According to the U.S. Geological Survey, the primary objective of the National Landslide Hazard Program is to reduce long-term losses from landslide hazards by improving our understanding of the causes of ground failure and suggesting mitigation strategies. The federal government takes the lead role in funding and conducting this research, whereas the reduction of losses due to geologic hazards is primarily a State and local responsibility. In San Diego County, the Unified Disaster Council is the governing body of the Unified San Diego County Emergency Services Organization. The primary purpose of the Unified

Disaster Council and the Emergency Services Organization is to provide for the coordination of plans and programs designed for the protection of life and property in San Diego County.

2.3.2.2 *State*

Alquist-Priolo Earthquake Fault Zoning Act

The California Legislature passed this law in 1972 to help identify areas subject to severe ground shaking. This State law requires that proposed developments incorporating tracts of four or more dwelling units investigate the potential for ground rupture within Alquist-Priolo zones. These zones serve as an official notification of the probability of ground rupture during future earthquakes. Where such zones are designated, no building may be constructed on the line of the fault, and before any construction is allowed, a geologic study must be conducted to determine the locations of all active fault lines in the zone.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act was passed by the State in 1990 to address non-surface fault rupture earthquake hazards, including liquefaction and seismically induced landslides. Guidelines for Evaluation and Mitigating Seismic Hazards in California (Special Publication 117) were adopted by the State Mining and Geology Board on March 13, 1997 (revised and re-adopted on September 11, 2008, as Special Publication 117a), in accordance with the Seismic Hazards Mapping Act of 1990. The publication contains the guidelines for evaluating seismic hazards other than surface fault rupture (landslides and liquefaction), and for recommending mitigation measures to minimize impacts. A Lead Agency may determine when the investigation required by the guidelines and the Seismic Hazards Mapping Act would occur for a project. Investigation can occur before, during, or after the CEQA process.

State Water Code, Section 13282

On-site wastewater treatment systems (OWTS) discharge pollutants to groundwater and, therefore, are regulated by the State Water Code. Section 13282 of the State Water Code allows the Regional Water Quality Control Board to authorize a local public agency to issue permits for and to regulate OWTS “to ensure that systems are adequately designed, located, sized, spaced, constructed and maintained.” The San Diego Regional Water Quality Control Board, with jurisdiction over San Diego County, authorizes the County Department of Environmental Health and Quality to issue certain OWTS permits.

2.3.2.3 *Local*

County Special Studies Zones

The Alquist-Priolo Act provides that a city or county may establish more restrictive policies than those in the Alquist-Priolo Act, if desired. The County established Special Study Zones that include late-Quaternary faults mapped by the California Division of Mines and Geology in the county. Late-Quaternary faults (movement during the past 700,000 years) were mapped based on geomorphic evidence similar to that of Holocene faults except that tectonic features are less distinct. As indicated by the California Division of Mines and Geology, these faults may be younger, but the lack of younger overlying deposits precludes more accurate age classification. Traces of faults within Special Study Zones are treated by the County as active unless a fault investigation can prove otherwise.

On-Site Wastewater System Groundwater Separation Policy

The purposes of this County Department of Environmental Health and Quality policy are to (1) protect groundwater quality by ensuring proper treatment of sewage effluent prior to its entering into groundwater, (2) protect the public health from failing on-site wastewater systems caused by high groundwater, and (3) provide a methodology for the evaluation of potential building sites using on-site wastewater systems.

San Diego County Code

Section 68.301 of the County Code is the OWTS Ordinance, which establishes the requirements for OWTS in the county. It also makes it unlawful for any person to cause, suffer, or permit the disposal of sewage, human excrement, or other liquid wastes in any place or manner except through and by means of an approved plumbing and drainage system and an approved sewage disposal system installed and maintained in accordance with the provisions of Division 3 of Title 5 of the County Plumbing Code and OWTS Ordinance.

San Diego County Zoning Ordinance Fault Displacement Area Regulations

The County Zoning Ordinance, Sections 5400 through 5406, implement the requirements of the Alquist-Priolo Act. The provisions of Sections 5400 through 5406 outline the allowable development, permitting requirements, and construction limitations within Fault Rupture Zones, as designated by the Alquist-Priolo Act. The County generally requires geologic reports for development proposed in Alquist-Priolo zones (Section 5406[b], Zoning Ordinance).

County of San Diego Code of Regulatory Ordinances

Chapter 4 of the County Grading Ordinance (which starts at Section 87.101 of the County Code) includes requirements for the maximum slope allowed for cut and fill slopes, requirement for drainage terraces on cut or fill slopes exceeding 40 feet in height, expansive soil requirements for cuts and fills, minimum setback requirements for buildings from cut or fill slopes, and reporting requirements including a soil engineer's report and a final engineering geology report by an engineering geologist, which includes specific approval of the grading as affected by geological factors.

County of San Diego Code of Regulatory Ordinances, Sections 87.101–87.804, Grading, Clearing, and Watercourses Ordinance

Section 87.430 of the County's Grading and Clearing Ordinance provides for the requirement of a paleontological monitor at the discretion of the County. In addition, the suspension of grading operation is required upon the discovery of fossils greater than 12 inches in any dimension. The ordinance also requires notification of the County Official (e.g., Permit Compliance Coordinator). The ordinance gives the County Official the authority to determine the appropriate resource recovery operations, which shall be carried out prior to the County Official's authorization to resume normal grading operations.

Other Agency Regulations and Plans

In addition to the unincorporated areas, there are 18 incorporated cities within San Diego County: Carlsbad, Chula Vista, Coronado, Del Mar, El Cajon, Encinitas, Escondido, Imperial Beach, La Mesa, Lemon Grove, National City, Oceanside, Poway, San Diego, San Marcos, Santee, Solana

Beach, and Vista. Incorporated cities within the county may have their own plans and policies related to geology, soils, and paleontological resources.

Integrated Vector Management Program Best Management Practices

The Integrated Vector Management Program (IVMP or Proposed Project) follows the best management practices (BMPs) described in State guidance documents, such as the *Best Management Practices for Mosquito Control in California* (CDPH 2012), *Best Management Practices for Mosquito Control on California State Properties* (CDPH 2008a), and *California Mosquito-Borne Virus Surveillance and Response Plan* (CDPH 2021), which detail vector control and pesticide application procedures. In addition, the County integrates BMPs into the IVMP serving as a comprehensive management framework for implementation of individual activities. BMPs implemented as part of the IVMP demonstrate the County's commitment to avoid or minimize impacts to the maximum extent feasible. The following BMPs have been developed by the VCP in combination with the above-referenced sources and will be implemented to reduce geologic hazards:

- B2: When accessing sensitive habitat, Vector Control Program staff will minimize the use of motorized vehicles to the extent feasible by conducting activities on foot with handheld equipment and remain in previously disturbed areas when vehicle use is needed. Aerial surveillance or control (e.g., helicopter or drone[1]) will also be used when feasible and appropriate during pesticide applications and identification of potential vector sites, respectively.

- B3: Vehicles will only be driven on existing roadways, access roads, and existing unpaved access paths. Vehicles driven on levees to travel near aquatic areas (such as tidal marshes, sloughs, or channels) for surveillance or treatment activities will travel at speeds slow enough to avoid or minimize noise and the production of dust, typically 15 miles per hour or less.

- B10: Vegetation trimming or removal, when necessary to provide access to vector habitat for surveillance and control activities, will be conducted by hand using handheld tools rather than gas-powered equipment or heavy machinery to minimize negative environmental effects. Vegetation trimming or removal activities will be conducted outside the general bird breeding season (February 15 to September 15, including riparian for general birds; January 15 to July 15 for raptors) to the greatest extent feasible.

- B12: Any staging of equipment or materials will occur in developed/disturbed areas outside existing wetlands, non-wetland waters, and native or rare upland areas.

- B14: Where heavy equipment or machinery is necessary, measures will be taken, such as reducing turns by track-type vehicles, taking a minimum number of passes with equipment, identifying multiple points of entry, driving vehicles at low speed, and avoiding or minimizing operating on open mud and other soft areas.

[1] For the purposes of this PEIR, "drone" is intended to generically mean a remotely piloted or unpiloted aircraft. As of this writing, the Federal Aviation Administration's official terminology is Unmanned Aircraft Systems; however, Federal Aviation Administration is transitioning toward gender-neutral terminology such as drone operator, certificated remote pilot, model aircraft flyer, and advanced air mobility operator.

2.3.3 Analysis of Project Effects and Determination as to Significance

Appendix G of the CEQA Guidelines and the *County of San Diego Guidelines for Determining Significance, Geologic Hazards, Unique Geology, and Paleontological Resources* (County 2007c, 2007d, 2009a) provide guidance for evaluating adverse environmental effects associated with geology, soils, and paleontological resources. The Proposed Project would result in a significant impact if it would lead to any of the following:

1. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving the rupture of a known earthquake fault, strong seismic ground shaking, liquefaction, or landslides.

2. Result in substantial soil erosion or the loss of topsoil.

3. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

4. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property.

5. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

6. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

The following sections analyze impacts from the IVMP's surveillance and monitoring, source reduction (i.e., physical control), and source treatment (i.e., biological and chemical controls). There would be no impact from the IVMP's public education and outreach and disease diagnostics activities; therefore, public education and outreach and disease diagnostics are not discussed further in this section.

2.3.3.1 *Exposure to Seismic-Related Hazards*

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines and the *County of San Diego Guidelines for Determining Significance for Geologic Hazards* (2007c), impacts related to the exposure to seismic-related hazards would be significant if:

a. The project proposes any building or structure to be used for human occupancy over or within 50 feet of the trace of an Alquist-Priolo Fault or County Special Study Zone Fault.

b. The project proposes the following uses within an Alquist-Priolo zone which are prohibited by the County:

    i. Uses containing structures with a capacity of 300 people or more. Any use having the capacity to serve, house, entertain, or otherwise accommodate 300 or more persons at any one time.

ii. Uses with the potential to severely damage the environment or cause major loss of life. Any use having the potential to severely damage the environment or cause major loss of life if destroyed, such as dams, reservoirs, petroleum storage facilities, and electrical power plants powered by nuclear reactors.

iii. Specific civic uses. Police and fire stations, schools, hospitals, rest homes, nursing homes, and emergency communication facilities.

The Proposed Project would result in a significant impact from ground shaking if the Service Area[2] is within Seismic Design Categories E and F of the California Building Code and the Proposed Project does not conform to the California Building Code.

The Proposed Project would have the potential to expose people or structures to substantial adverse effects from liquefaction if:

a. The Service Area contains potentially liquefiable soils;

b. The potentially liquefiable soils are saturated or have the potential to become saturated; or

c. In-situ soil densities are not sufficiently high to preclude liquefaction.

The Proposed Project would result in a significant impact from landslide risk if:

a. The Service Area would expose people or structures to substantial adverse effects, including the risk of loss, injury, or death involving landslides;

b. The project is located on a geologic unit or soil that is unstable, or would become unstable as a result of the project, and potentially result in an on- or off-site landslide; or

c. The Service Area lies directly below or on a known area subject to rockfall which would result in collapse of structures.

Impact Analysis

Implementation of the IVMP, including its surveillance and monitoring, source reduction (i.e., physical control), and source treatment (i.e., biological and chemical controls) activities would not require the construction of buildings or other structures that would be subject to human occupancy.

IVMP activities have the potential to be implemented across the county, including in areas determined to be Alquist-Priolo zones. IVMP fieldwork in these zones would be required under the Proposed Project's source reduction and source treatment activities. Although some source reduction activities may require the use of construction equipment and minor earthwork activities, IVMP activities do not have the potential to severely damage the environment or cause major loss

[2] Service Area is synonymous with Assessment Area, which is defined in the *Engineer's Report* (County 2022a) as the area in which an annual levy provides funding for essential vector control services, including those properties that may request and/or receive direct and more frequent service and are located within the scope of the vector surveillance area. As such, Native American reservation land, as a Sovereign Nation, is excluded from the Service Area along with federally owned lands that receive minimal to no services.

of life. Similarly, the Proposed Project's source reduction activities would not require the construction of structures that would be susceptible to liquefaction, landslides, fault rupture, or unstable soils. Therefore, impacts related to the exposure of seismic-related hazards would be less than significant.

In conclusion, impacts related to the exposure to seismic-related hazards would be less than significant and no mitigation is required.

2.3.3.2 *Soil Erosion or Topsoil Loss*

Guidelines for the Determination of Significance Analysis

Based on Appendix G of the CEQA Guidelines, the Proposed Project would have a significant impact if it would result in substantial soil erosion or the loss of topsoil.

Impact Analysis

Topsoil is the uppermost layer of soil, usually composed of the top 6 to 8 inches below the ground surface. It has the highest concentration of organic matter and microorganisms and is where most biological soil activity occurs. Plants generally concentrate their roots in, and obtain most of their nutrients from, this layer of soil. Topsoil erosion is of concern when the topsoil layer is blown or washed away. This creates an environment that does not support plants and animals otherwise present in topsoil, which can disrupt the food chain and local ecosystem.

Surveillance and Monitoring

The Proposed Project's surveillance and monitoring activities include evaluation of mosquito-breeding areas by conducting surveys via ground vehicles, aircraft (including piloted and drones), watercraft, and remote sensing equipment; trapping of mosquitoes and rodents; and testing of collected samples for vector-borne diseases. Surveillance activities generally occur along existing access routes that have already been established and are regularly maintained. Minor trimming of vegetation along existing access routes and paths may be required to provide access to the mosquito-breeding source. Trimming of vegetation would only be implemented on an as-needed basis and would be the minimum amount necessary to provide safe access. Impacts from minor trimming of vegetation would not affect large areas and would not significantly disturb existing topsoil because no individual plants would be removed. Furthermore, the IVMP has identified BMPs to reduce impacts to vegetation and undeveloped areas, including restricting vehicles to existing roadways and unpaved access paths (B2), requiring the use of handheld equipment (B10). Through the implementation of BMPs to reduce impacts to undisturbed areas, impacts to topsoil from source reduction activities would be less than significant.

Source Reduction

Similar to the surveillance and monitoring activities, implementation of the IVMP's source reduction activities would require access to various locations throughout the county, including in areas without paved roads and on relatively undisturbed soils. Source reduction activities involve physical control techniques to eliminate or reduce standing water. These techniques include but are not limited to ground disturbance (e.g., grading); vegetation management, including trimming and removal of vegetation; removal of sediment; water control; and other maintenance activities.

Minor ground disturbance would be one component of source reduction activities but would not be the primary technique to reduce vector breeding sources. Grading activities would disturb soils in the areas where it is required to reduce standing water, such as to remove impediments to the movement of water. However, these activities would be limited in scope and scale. Furthermore, as mentioned above, the IVMP has identified BMPs to reduce impacts to undeveloped areas, including restricting vehicles to existing roadways and unpaved access paths (B2), using handheld equipment (B10), staging equipment and materials on developed/disturbed areas (B12), and minimizing operating on open mud and other soft areas (B14). Ground-disturbing activities would similarly adhere to these BMPs. As such, source reduction activities would have minimal disturbance to existing topsoil, and impacts would be less than significant.

Source Treatment

Similar to source reduction, implementation of the Proposed Project's source treatment activities would result in potential vegetation removal and require access to relatively undisturbed soils during biological control and chemical control applications. Disturbance to topsoil would be avoided because vegetation removal would be limited to the area immediately surrounding individual plants. Furthermore, as mentioned above, the IVMP has identified BMPs to reduce impacts to undeveloped areas, including restricting vehicles to existing roadways and unpaved access paths (B2), using handheld equipment (B10), staging equipment and materials on developed/disturbed areas (B12), and minimizing operating on open mud and other soft areas (B14). Impacts would be less than significant.

In conclusion, with implementation of BMPs impacts related to soil erosion or topsoil loss would be less than significant and no mitigation is required.

2.3.3.3 *Soil Stability*

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines and the *County of San Diego Guidelines for Determining Significance, Geologic Hazards* (2007c), the Proposed Project would have a potentially significant impact if it would be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Proposed Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

Impact Analysis

Surveillance and Monitoring

As described in Section 2.3.3.2, *Soil Erosion, and Topsoil Loss*, the Proposed Project's surveillance and monitoring activities involve evaluation of mosquito-breeding areas by conducting surveys via ground vehicles. Minor trimming of vegetation along existing access routes and paths may be required to provide access. IVMP activities have the potential to be in geologic units or soils that are unstable. However, the IVMP surveillance and monitoring activities would not require significant earthmoving activities that could result in an off-site landslide, lateral spreading, subsidence, liquefaction, or collapse, and impacts would be less than significant.

Source Reduction

Similar to the surveillance and monitoring activities, implementation of the IVMP's source reduction activities would require access to various locations throughout the county, including areas that could be classified as unstable. The IVMP's source reduction activities do not propose the construction of structures such as buildings or major earthworks.

Minor grading activities would be required to reduce standing water, such as to remove impediments to the movement of water. However, these activities would be limited in scope and would not be conducted on a large scale or in such a way to affect soil stability. Furthermore, the IVMP has identified BMPs to reduce impacts to undeveloped areas, including restricting vehicles to existing roadways and unpaved access paths (B3) using handheld equipment (B10), staging equipment and materials on developed/ disturbed areas (B12), and minimizing operating on open mud and other soft areas (B14). Ground-disturbing activities would similarly adhere to these BMPs. As such, source reduction activities would have minimal disturbance to existing soil stability, and impacts would be less than significant.

Source Treatment

Similar to source reduction, implementation of the Proposed Project's source treatment activities would result in potential vegetation removal and require access to relatively undisturbed areas during biological control and chemical control applications. These applications would not involve heavy equipment or the construction of structures or large earthworks. Impacts to soil stability would be less than significant.

In conclusion, with implementation of BMPs impacts related to soil stability would be less than significant and no mitigation is required.

2.3.3.4 *Expansive Soils*

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines and the *County of San Diego Guidelines for Determining Significance, Geologic Hazards* (2007c), the Proposed Project would have a potentially significant impact if it would be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.

Impact Analysis

Certain types of clay soils expand when they are saturated and shrink when dried. These are called expansive soils and can pose a threat to the integrity of structures built on them without proper engineering. The Proposed Project's surveillance and monitoring, source reduction (i.e., physical control), and source treatment (i.e., biological and chemical controls) would not involve the construction of buildings or structures. No impact to expansive soils would occur.

2.3.3.5 *Wastewater Disposal Systems*

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would have a significant impact if it would have soils incapable of adequately supporting the use of septic tanks or

alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

Impact Analysis

The IVMP does not propose the construction of structures or buildings or wastewater disposal systems. Existing wastewater disposal systems would be used during IVMP activities, including the use of portable toilets, if needed. No impacts would occur.

2.3.3.6 *Unique Geologic Features*

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines and the *County of San Diego Guidelines for Determining Significance, Unique Geology* (2007d), the Proposed Project would have a significant impact if it would directly or indirectly destroy a unique geologic feature. Specifically, the Proposed Project would result in a significant impact if it would materially impair a unique geologic feature by destroying or altering those physical characteristics that convey the uniqueness of the resource. A geologic feature is unique if it meets one of the following criteria:

a. Is the best example of its kind locally or regionally;

b. Embodies the distinctive characteristics of a geologic principle that is exclusive locally or regionally;

c. Provides a key piece of geologic information important in geology or geologic history;

d. Is a “type locality” of a formation;

e. Is a geologic formation that is exclusive locally or regionally;

f. Contains a mineral that is not known to occur elsewhere in the county; or

g. Is used repeatedly as a teaching tool.

Impact Analysis

Surveillance and Monitoring

As described under Topic 2, the IVMP’s surveillance and monitoring activities involve evaluation of mosquito-breeding areas by conducting surveys via ground vehicles. Minor trimming of vegetation along existing access routes and paths may be required to provide access and would not impact unique geologic features. IVMP activities have the potential to be in areas within or adjacent to unique geologic features. However, the IVMP surveillance and monitoring activities would not require significant earthmoving activities, and impacts would be less than significant.

Source Reduction

Similar to the surveillance and monitoring activities, implementation of the IVMP’s source reduction activities would require access to various locations throughout the county. IVMP activities may occur within the vicinity of areas considered to be unique geologic features. Minor grading activities would be required to reduce standing water, such as to remove impediments to

the movement of water. However, as mentioned above, these activities would be limited, would not be conducted on a large scale, and are not anticipated to require removal of unique geologic features. Furthermore, the IVMP has identified BMPs to reduce impacts to undeveloped areas, including restricting vehicles to existing roadways and unpaved access paths (B3), using handheld equipment (B10) and staging equipment and materials on developed/disturbed areas (B12). As such, source reduction activities would have minimal disturbance to existing unique geologic features, and impacts would be less than significant.

Source Treatment

Similar to source reduction, implementation of the IVMP's source treatment activities would result in potential vegetation removal and require access to relatively undisturbed areas during biological control and chemical control applications. Source treatments would not involve heavy equipment or the construction of structures or large earthworks. Impacts would be less than significant.

In conclusion, with implementation of BMPs impacts to unique geologic features would be less than significant and no mitigation is required.

2.3.3.7 *Paleontological Resources*

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would have a significant impact if it would directly or indirectly destroy a unique paleontological resource or site.

The *County of San Diego Guidelines for Determining Significance – Paleontological Resources* (2009a) further explain that a significant impact to paleontological resources[3] may occur as a result of the Proposed Project if project-related grading or excavation will disturb the substratum or parent material below the major soil horizons in any paleontologically sensitive area of the county, as shown on the San Diego County Paleontological Resources Potential and Sensitivity Map.

Impact Analysis

Impacts to paleontological resources generally occur from the physical destruction of fossil remains by excavation operations that cut into geologic formations. When such activities occur, potential impacts are limited to the immediate area of disturbance. Because paleontological resources are typically underground and, therefore, not apparent until revealed by excavation, the potential for significant impacts to paleontological resources is based on the extent that a geologic formation would be disturbed and the potential for those geologic formations to contain fossils.

Surveillance and Monitoring

The IVMP's surveillance and monitoring activities involve evaluation of mosquito-breeding areas by conducting surveys via ground vehicles. Minor trimming of vegetation along existing access routes and paths may be required to provide access and would not impact ground features

[3] A unique paleontological resource is defined by the *County of San Diego Guidelines for Determining Significance – Paleontological Resources* (County 2009a) as any fossil or assemblage of fossils, paleontological resource site, or formation that meets certain criteria defined in the County Guidelines.

including paleontological resources. IVMP activities have the potential to be in areas with high paleontological resource sensitivity. However, the IVMP surveillance and monitoring activities would not require the disturbance of soils and impacts would be less than significant.

Source Reduction

IVMP's source reduction activities would require the access to various locations throughout the county, including areas with high paleontological resource sensitivity. The Proposed Project's source reduction activities do not propose the construction of structures such as buildings or major earthworks.

Minor grading activities may occur to reduce standing water, such as to remove impediments to the movement of water. IVMP activities may occur within paleontologically sensitive areas. Activities would be the minimum necessary to reduce or eliminate vector habitat and would not be conducted on a large scale. However, since specific site locations cannot be defined at this time, it is anticipated that source reduction could require earthmoving activities that could disturb the substratum or parent material below major soil horizons. This would create a potential to cause a substantial adverse change in the significance of a paleontological resource, resulting in a **potentially significant impact (GE-1)**.

Source Treatment

Similar to source reduction, source treatment activities would result in potential vegetation removal and require access to relatively undisturbed areas during biological control and chemical control applications. Source treatments would not involve heavy equipment or the construction of structures or large earthworks. Impacts would be less than significant.

In conclusion, implementation of the IVMP could result in **significant impacts** to paleontological resources through earthmoving activities that could disturb the substratum or parent material below major soil horizons **(GE-1)**. Implementation of mitigation measures **M-GE-1a** and **M-GE-1b** would reduce impacts to paleontological resources to less than significant.

2.3.4 Cumulative Impact Analysis

The geographic scope of cumulative impact analysis for geology, soils, and paleontological resources includes the entirety of San Diego County. Cumulative projects include countywide residential and non-residential land development, open space and recreation, and agricultural activities that have the potential for ground disturbance, vegetation removal, and pesticide use. As with cumulative projects, the Proposed Project would be required to comply with applicable federal, State, and local regulations for the protection of geology, soils, and significant paleontological resources in the Service Area.

Exposure to Seismic-Related Hazards

Most of Southern California is in an area of relatively high seismic activity, including cumulative projects in San Diego County. The geographic scope of cumulative impact analysis for seismic-related hazards is limited to the immediate area of the geologic constraint because site-specific developments and activities do not compound cumulative risks from seismic hazards. Cumulative projects, including the Proposed Project, would be subject to the Alquist-Priolo Earthquake Fault Zone Act and other applicable regulations addressing seismic activity. These regulations restrict development on active fault traces and address seismic-related hazards. Cumulative seismic-

related hazards would be less than significant. Therefore, implementation of the IVMP would not result in a cumulatively considerable contribution to cumulative seismic-related hazards.

Soil Erosion or Topsoil Loss

Cumulative projects would have the potential to result in substantial soil erosion or the loss of topsoil through construction activities such as grading and excavation that may result in hydromodification or exposure of topsoil to wind that would result in topsoil being washed or blown away. Most cumulative projects are subject to State and local runoff and erosion prevention requirements that would be required to be implemented prior to a project's approval. Additionally, the Proposed Project would result in less than significant impacts to soil erosion and topsoil loss through the implementation of BMPs. As a result, cumulative erosion and topsoil impacts would be less than significant. Therefore, implementation of the IVMP would not result in a cumulatively considerable contribution to cumulative erosion and topsoil impacts.

Soil Stability

The geographic scope of cumulative impact analysis for soil stability is limited to the immediate area of the geologic constraint because site-specific developments and activities do not compound cumulative soil stability risks. Cumulative projects that would have the potential to be on geologic units or soils that are unstable would be required to undergo analysis of geological and soil conditions applicable to the development site. Cumulative project compliance with applicable regulations would ensure that a significant cumulative impact would not occur. Additionally, the Proposed Project would result in less than significant impacts to soil stability. Therefore, implementation of the IVMP would not result in a cumulatively considerable contribution to cumulative soil stability impacts.

Expansive Soils

Some cumulative projects and activities throughout San Diego County may occur in areas that are prone to expansive soils. The geographic scope of cumulative impact analysis for expansive soils is limited to the immediate area of the geologic constraint because site-specific developments and activities do not compound cumulative expansive soils risks. A cumulative impact would occur if future cumulative development would contribute to risks associated with expansive soils. Cumulative project compliance with applicable regulations would ensure that a significant cumulative impact associated with expansive soils would not occur. Additionally, the Proposed Project would result in less than significant impacts related to expansive soils. Therefore, implementation of the IVMP would not result in a cumulatively considerable contribution to cumulative expansive soils impacts.

Wastewater Disposal Systems

The geographic scope for wastewater disposal is San Diego County. Cumulative development and activities would be required to comply with applicable regulations related to wastewater treatment and disposal. Additionally, the Proposed Project does not involve the construction of structures or the installation of wastewater disposal systems, and implementation of the IVMP would result in no impact to water disposal systems. Therefore, implementation of the IVMP would not result in a cumulatively considerable contribution to cumulative wastewater disposal systems impacts.

Unique Geologic Features

The geographic scope of cumulative impact analysis for unique geologic features is limited to the immediate area of the geologic feature because site-specific developments and activities do not compound risks to unique geologic features. It is anticipated that most cumulative development within San Diego County would be subject to protections for unique geologic features established through the jurisdiction's general plan or other regulations. Additionally, the Proposed Project would not impact unique geologic features. Therefore, implementation of the IVMP would not result in a cumulatively considerable contribution to cumulative impacts related to unique geologic features.

Paleontological Resources

The geographic scope of cumulative impact analysis for paleontological resources is limited to the immediate area of the paleontological resource because additional development does not compound risks to paleontological resources. It is anticipated that development within San Diego County would be subject to protections for paleontological resources established through the jurisdiction's general plan or other regulations. In addition, due to the nature and scale of the activities that could be implemented under the IVMP, the Proposed Project would be required to comply with all applicable federal, State, and local regulations. The Proposed Project would also implement mitigation measures and standard operating procedures and protocols to avoid or reduce impacts to paleontological resources. Therefore, the Proposed Project would not result in a cumulatively considerable contribution to cumulative archaeological resources impacts.

2.3.5 Significance of Impacts Prior to Mitigation

The Proposed Project would not result in impacts to geology or soils; however, the Proposed Project could result in potentially significant impacts to paleontological resources prior to mitigation.

GE-1 Ground-disturbing activities have the potential to disturb the substratum or parent material below the major soil horizons in a paleontologically sensitive area, which would result in a potentially significant impact to paleontological resources.

2.3.6 Mitigation Measures

Although ground-disturbing activities associated with the Proposed Project are expected to generally be minor in scale, source reduction activities could potentially result in direct or indirect impacts to paleontological resources. As such, the following mitigation measures are identified for individual activities that would involve ground-disturbing work to guide the identification, evaluation, and mitigation of potential impacts to paleontological resources, if encountered.

M-GE-1a IVMP activities that are within **high or moderate paleontologically sensitive areas where excavation is *greater* than 2,500 cubic yards** pursuant to *County of San Diego Guidelines for Determining Significance – Paleontological Resources* shall implement a monitoring program during excavation/grading activities. A Project Paleontologist and Paleontological Resources Monitor shall be retained as defined by the County Guidelines.

The Project Paleontologist shall attend the pre-grading/pre-construction meeting to consult with grading contractors regarding the requirement of monitoring for

paleontological resources, the potential importance and uniqueness of fossils and other paleontological resources that could be found during grading and excavation for the Proposed Project, and the regulations that govern the protection of paleontological resources.

The Project Paleontologist and Paleontological Resources Monitor shall monitor the original cutting (grading and excavation activities) of previously undisturbed formations of sedimentary rocks that may contain paleontological resources for unearthed fossils. The frequency of monitoring depends upon the rate of excavation, the materials excavated, and the abundance of fossils.

In the event paleontological resources are found, construction activities shall be diverted or temporarily halted in the area where the resources were found to allow for recovery/salvage.

Upon conclusion of grading or excavation activities, a Paleontological Resources Mitigation Report shall be prepared, even if no resources are found during the monitoring. The report shall summarize the results of the mitigation program, including field and laboratory methodology, monitoring dates, location and geologic and stratigraphic setting, monitoring efforts, conclusions, and references cited, as well as if paleontological resources were found, lists of collected fossils and their paleontological significance and descriptions of any analyses.

M-GE-1b Integrated Vector Management Program activities that are within **low or marginal** paleontologically sensitive areas or within **high or moderate paleontologically sensitive areas where excavation is *less* than 2,500 cubic yards** pursuant to *County of San Diego Guidelines for Determining Significance – Paleontological Resources* shall implement a monitoring program during excavation/grading activities. A Standard Monitor shall be retained as defined by County Guidelines.

If a fossil of greater than 12 inches in any dimension, including circumference, is encountered during excavation or grading, all excavation operations in the area where the fossil was found shall be suspended immediately, the County Department of Environmental Health and Quality shall be notified, and a Project Paleontologist shall be retained to assess the significance of the find and, if the fossil is significant, to oversee the salvage program, including salvaging, cleaning, and curating the fossils and documenting the find.

2.3.7 Conclusion

Exposure to Seismic-Related Hazards

Implementation of the Proposed Project would not result in exposure to seismic-related hazards. A less than significant impact would occur, and mitigation is not required.

Soil Erosion or Topsoil Loss

With implementation of BMPs, the Proposed Project would not result in significant impacts related to soil erosion or topsoil loss. A less than significant impact would occur, and mitigation is not required.

Soil Stability

With implementation of BMPs, the Proposed Project would not result in impacts related to soil stability. A less than significant impact would occur, and mitigation is not required.

Expansive Soils

The Proposed Project does not involve the construction of buildings or structures and implementation of the IVMP would result in no impact to expansive soils. No mitigation is required.

Wastewater Disposal Systems

The Proposed Project does not involve the installation of wastewater disposal systems and implementation of the IVMP would result in no impacts to wastewater disposal systems. No mitigation is required.

Unique Geologic Features

With implementation of BMPs, the Proposed Project would not result in impacts to unique geologic features. A less than significant impact would occur and mitigation is not required.

Paleontological Resources

Implementation of the Proposed Project would result in ground-disturbing activities that could have the potential to cause a substantial adverse change in the significance of a paleontological resource. However, the mitigation measures identified above would mitigate the Proposed Project's potentially significant impacts related to paleontological resources to a less than significant level. With program-level mitigation and compliance with applicable federal, State, and local regulations for the protection of paleontological resources, the Proposed Project would not contribute to a cumulatively considerable paleontological resources impact.

2.4 Tribal Cultural Resources

This section of the Program Environmental Impact Report (PEIR) describes the existing Tribal Cultural Resources (TCRs) in San Diego County, analyzes the potential impacts that may occur under the proposed Integrated Vector Management Program (Proposed Project or IVMP) activities, recommends mitigation measures to reduce or avoid impacts to these resources, and examines levels of significance after mitigation. This section is based on the *Cultural Resources Technical Report* (HELIX 2021b; Appendix C), the *County of San Diego Guidelines for Determining Significance – Cultural Resources: Archaeological and Historic Resources* (County 2007b), and Appendix G of the California Environmental Quality Act (CEQA) Guidelines.

2.4.1 Existing Conditions

TCRs are defined as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following: Included or determined to be eligible for inclusion in the California Register of Historical Resources [CRHR]; Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1" (California Public Resources Code, 21074[a]). TCRs include archaeological sites, traditional gathering areas, or other areas of traditional tribal use. TCRs are found throughout San Diego County and can provide clues to prehistoric and historic human behaviors and provide scientific, religious, and other valuable educational information.

2.4.1.1 *Cultural Setting*

Cultural resources can be identified and evaluated based on standard criteria established by the National Register of Historic Places (NRHP), CRHR, CEQA, and San Diego County Local Register of Historical Resources. The integrity of the resource, its attributes, and its location are also key factors in establishing its significance. Resource significance is assigned to districts, sites, buildings, structures, and objects that possess exceptional value or quality illustrating or interpreting the heritage of San Diego County in history, architecture, archaeology, engineering, and culture that possess a high degree of integrity.

Evidence for continuous human occupation in Southern California spans the last 10,000 years. Various attempts to parse out variability in archaeological assemblages over this broad time frame have led to the development of several cultural chronologies; some of these are based on geologic time, most are based on temporal trends in archaeological assemblages, and others are interpretive reconstructions. The approximately 12,000 years of documented prehistory of the San Diego region has often been divided into three periods: Early Prehistoric Period (San Dieguito Tradition/complex), Archaic Period (Milling Stone Horizon, Encinitas Tradition, La Jolla, and Pauma complexes), and Late Prehistoric Period (Cuyamaca and San Luis Rey complexes). Descriptions of these chronological trends are outlined in detail in Section 1.2.2 of the *Cultural Resources Technical Report* prepared for the Proposed Project (HELIX 2021b; Appendix C).

Native American Consultation

In accordance with Assembly Bill (AB) 52, consultation with tribal governments for the PEIR was conducted by the County. On August 23, 2018, at the start of the Notice of Preparation/Initial Study review period for the Proposed Project, the County notified Native American tribes of the Notice of Preparation (who at the time requested to be notified of upcoming County projects). The list of tribes who were notified include Barona Group of the Capitan Grande, Campo Band of Diegueño Mission Indians, Iipay Nation of Santa Ysabel, Jamul Indian Village, Kwaaymii Laguna

Band of Mission Indians, Pala Band of Mission Indians, Pechanga Band of Luiseño Indians, Rincon Band of Luiseño Indians, San Luis Rey Band of Mission Indians, Soboba Band of Luiseño Indians, Sycuan Band of the Kumeyaay Nation, and Viejas Band of Kumeyaay Indians.

On August 28, 2018, the Viejas Band of Kumeyaay Indians provided a response letter requesting compliance with CEQA, the National Environmental Policy Act, and the Native American Graves Protection and Repatriation Act in addition to immediately informing the band of any changes or inadvertent discoveries.

2.4.2 Regulatory Setting

2.4.2.1 *Federal*

National Historic Preservation Act

The National Historic Preservation Act was passed in 1966 and set the foundation for much of the more specific legislation that guides cultural resource protection and management in local jurisdictions, such as the County of San Diego. The act established an Advisory Council on Historic Preservation to help implement and monitor it. Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effects of their undertakings on historic properties and to afford the Advisory Council a reasonable opportunity to comment on such undertakings. The goal of the Section 106 process is to identify historic properties potentially affected by the undertaking, assess its effects, and seek ways to avoid, minimize, or mitigate any adverse effects on historic properties.

National Register of Historic Places

Developed in 1981, the NRHP is an authoritative guide to be used by federal, State, and local governments, private groups, and citizens to identify the nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment. Listing of private property on the NRHP does not prohibit under federal law or regulation any actions that may otherwise be taken by the property owner with respect to the property.

Native American Graves Protection and Repatriation Act

Enacted in 1990, the Native American Graves Protection and Repatriation Act conveys to Native Americans of demonstrated lineal decent the human remains and funerary or religious items that are held by federal agencies and federally supported museums or that have been recovered from federal lands. It also makes the sale or purchase of American Indian remains illegal, whether or not they derive from federal or Indian lands.

2.4.2.2 *State*

California Environmental Quality Act

CEQA (PRC 21084.1) and the CEQA Guidelines (CCR 14 15064.5) discuss significant cultural resources as "historical resources," which are defined as:

- Resources listed or determined eligible by the State Historical Resources Commission for listing in the CRHR (14 CCR 15064.5[a][1]);

- Resources either listed in the NRHP or in a "local register of historical resources" or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the California Public Resources Code (PRC) unless "the preponderance of evidence demonstrates that it is not historically or culturally significant" (14 CCR 15064.5[a][2]); or

- Resources determined by the Lead Agency to meet the criteria for listing on the CRHR (14 CCR 15064.5[a][3]).

For listing in the CRHR, a historical resource must be significant at the local, State, or national level under one or more of the following four criteria:

- It is associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States;

- It is associated with the lives of persons important to local, California, or national history;

- It 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; or

- It has yielded or has the potential to yield information important to the prehistory or history of the local area, California, or the nation.

Under Title 14, Section 15064.5(a)(4), of the California Code of Regulations, a resource may also be considered a "historical resource" for the purposes of CEQA at the discretion of the Lead Agency.

All resources that are eligible for listing in the CRHR must have integrity, which is the authenticity of a historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Resources, therefore, must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. In an archaeological deposit, integrity is assessed with reference to the preservation of material constituents and their culturally and historically meaningful spatial relationships. A resource must also be judged with reference to the particular criteria under which it is proposed for nomination.

According to the CEQA Guidelines (Section 15064.5[b]), a project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment. The CEQA Guidelines define a substantial adverse change as:

(1) Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.

(2) The significance of an historical resource is materially impaired when a project:

(a) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and

that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or

(b) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

(c) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.

Section 15064.5 of the CEQA Guidelines applies to effects on archaeological sites and contains additional provisions regarding archaeological sites. If an archaeological site does not meet the criteria defined in subsection (a) as a historical resource but does meet the definition of a unique archaeological resource in PRC Section 21083.2, the site shall be treated in accordance with the provisions of Section 21083.2. The time and cost limitations described in PRC Section 21083.2 (c–f) do not apply to surveys and site evaluation activities intended to determine whether the project location contains unique archaeological resources. If an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment. It shall be sufficient that both the resource and the effect on it are noted in the environmental document, if one is prepared to address impacts on other resources, but they need not be considered further in the CEQA process.

Sections 15064.5(d) and (e) contain additional provisions regarding human remains. Regarding Native American human remains, paragraph (d) provides the following:

> When an initial study identifies the existence of, or the probable likelihood, of Native American human remains within the project, a lead agency shall work with the appropriate Native Americans as identified by the Native American Heritage Commission as provided in Public Resources Code Section 5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American burials with the appropriate Native Americans as identified by the Native American Heritage Commission.

<u>California Assembly Bill 52</u>

California AB 52 revised PRC Section 21074 to include TCRs as an area of CEQA environmental impact analysis. Further, per new PRC Section 21080.3, a CEQA Lead Agency must consult with any California Native American tribe that requests consultation and that is traditionally and culturally affiliated with the geographic area of a proposed project to identify resources of cultural or spiritual value to the tribe, even if such resources are already eligible as historical resources as a result of cultural resources studies.

As a general concept, a TCR is similar to the federally defined Traditional Cultural Property; however, it incorporates consideration of local and State significance and required mitigation

under CEQA. A TCR may be considered significant if it is (i) included in a local or State register of historical resources; (ii) determined by the Lead Agency to be significant pursuant to criteria set forth in PRC Section 5024.1; (iii) a geographically defined cultural landscape that meets one or more of these criteria; (iv) a historical resource described in PRC Section 21084.1 or a unique archaeological resource described in PRC Section 21083.2; or (v) a non-unique archaeological resource if it conforms with the above criteria.

Native American Heritage Values: Traditional Tribal Cultural Places Bill

The Traditional Tribal Cultural Places Bill of 2004 requires local governments to consult with Native American tribes during the project planning process, specifically before adopting or amending a General Plan or a Specific Plan, or when designating land as open space for the purpose of protecting Native American cultural places. The intent of this legislation is to encourage consultation and assist in the preservation of Native American places of prehistoric, archaeological, cultural, spiritual, and ceremonial importance.

Federal and State laws mandate that consideration be given to the concerns of contemporary Native Americans with regard to potentially ancestral human remains, associated funerary objects, and items of cultural patrimony. Consequently, an important element in assessing the significance of the study site has been to evaluate the likelihood that these classes of items are present in areas that would be affected by a proposed project.

Potentially relevant to prehistoric archaeological sites is the category termed Traditional Cultural Properties in discussions of cultural resource management performed under federal auspices. According to Patricia L. Parker and Thomas F. King (1998), “traditional” in this context refers to those beliefs, customs, and practices of a living community of people that have been passed down through the generations, usually orally or through practice. Then, the traditional cultural significance of a historic property is derived from the role the property plays in a community’s historically rooted beliefs, customs, and practices. Cultural resources can include Traditional Cultural Properties, such as gathering areas, landmarks, and ethnographic locations, in addition to archaeological districts. Generally, a Traditional Cultural Property may consist of a single site or group of associated archaeological sites (district or traditional cultural landscape) or an area of cultural/ethnographic importance.

California Government Code, Sections 6254(r) and 6254.10

California Government Code, Sections 6254(r) and 6254.10 (California Public Records Act), were enacted to protect archaeological sites from unauthorized excavation, looting, or vandalism. Section 6254(r) explicitly authorizes public agencies to withhold information from the public relating to “Native American graves, cemeteries, and sacred places maintained by the Native American Heritage Commission.” Section 6254.10 specifically exempts from disclosure requests for “records that relate to archaeological site information and reports maintained by, or in the possession of, the Department of Parks and Recreation, the State Historical Resources Commission, the State Lands Commission, the Native American Heritage Commission, another State agency, or a local agency, including the records that the agency obtains through a consultation process between a California Native American tribe and a State or local agency.”

2.4.2.3 *Local*

County of San Diego – Code of Regulatory Ordinances, Sections 86.601–86.608, Resource Protection Ordinance

The County's Resource Protection Ordinance (RPO) requires that cultural resources be evaluated as part of the County's discretionary environmental review process, and if resources are determined to be significant under the RPO, they must be preserved. Pursuant to Section 86.603, the RPO is applicable to discretionary applications such as Tentative Map, Tentative Parcel Map, Revised Tentative Map, Revised Tentative Parcel Map, Rezone, Major Use Permit, Major Use Permit Modification, Site Plan, Vacation of Open Space Easement Expired Map, Certificate of Compliance, or Administrative Permit. The Proposed Project is a countywide program that protects the public from vector-borne disease and public nuisances and would continue to comprehensively implement vector control through various techniques. As such, it is not a discretionary application. Therefore, the RPO is not applicable to the Proposed Project.

County of San Diego – Zoning Ordinance

The County's Zoning Ordinance provides for the designation and regulation of "special areas." One type of special area is a Historic/Archaeological Landmark or District. These resources may be assigned an "H" designator for historic areas or a specific district designator. The purpose of these provisions is to identify, preserve, and protect the historical, cultural, archaeological, and/or architectural resource values of designated landmarks and districts. Zoning regulations for these resources are designed to preserve their integrity and content. Other types of resources of equal or greater significance may exist and be designated in other ways, such as the NRHP or CRHR.

County of San Diego – Resource Conservation Areas

County of San Diego Resource Conservation Areas are identified lands requiring special attention to conserve resources in a manner best satisfying public and private objectives. The appropriate implementation actions will vary depending on the conservation objectives of each resource but may include public acquisition; establishment of open space easements; application of special land use controls, such as cluster zoning, large lot zoning, and scenic or natural resource preservation overlay zones; or incorporation of special design considerations into subdivision maps or Special Use Permits. Resource Conservation Areas include but are not limited to the following: groundwater problem areas, coastal wetlands, native wildlife habitats, construction quality sand areas, littoral sand areas, astronomical dark sky areas, unique geologic formations, and significant archaeological and historical sites. County departments and other public agencies must give careful consideration and special environmental analysis to all projects in Resource Conservation Areas.

San Diego County Local Register of Historical Resources

The purpose of the San Diego County Local Register of Historical Resources is to develop and maintain "an authoritative listing and guide to be used by local agencies, private groups, and citizens in identifying historical resources within the county…and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change." Sites, places, or objects that are eligible for the NRHP or the CRHR are automatically included in the San Diego County Local Register of Historical Resources. If a resource meets any one of the following criteria as outlined in the local register, it will be considered an important resource:

1. Is associated with events that have made a significant contribution to the broad patterns of San Diego County's history and cultural heritage;

2. Is associated with the lives of persons important to the history of San Diego County or its communities;

3. Embodies the distinctive characteristics of a type, period, San Diego County region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

4. Has yielded, or may be likely to yield, information important in prehistory or history.

Integrated Vector Management Program Best Management Practices

The IVMP follows best management practices (BMPs) described in State guidance documents, such as the *Best Management Practices for Mosquito Control in California* (CDPH 2012), *Best Management Practices for Mosquito Control on California State Properties* (CDPH 2008a), and *California Mosquito-Borne Virus Surveillance and Response Plan* (CDPH 2021), which detail best integrated vector management practices for vector control and vector-borne disease prevention. Additionally, the Proposed Project includes BMPs intended to minimize impacts associated with IVMP activities. The following BMPs have been developed by the VCP in combination with the above-referenced sources and would be implemented as part of the IVMP, which demonstrate the County's commitment to avoid or minimize impacts to TCRs to the maximum extent feasible:

- A1: The Vector Control Program (VCP) performs public education and outreach activities to educate residents on how to prevent mosquito breeding and other vector problems at their homes, businesses, and properties; how to protect themselves from being bitten by mosquitoes; and how to report dead birds and mosquito-breeding sources, including unmaintained pools, to prevent the spread of mosquito-borne diseases. Reducing vector breeding minimizes the need for VCP control activities.

- A3: To help minimize the need for pesticide application or vegetation management, surveillance and monitoring at known or suspected vector sites will continue to be performed to assess vector species abundance and distribution and if they are carrying diseases. Information obtained from surveillance is evaluated with risk-based response criteria and other factors to decide when and where to implement vector control measures, such as pesticide application, and to help form action plans that reduce the risk of disease transmission and assist in reducing environmental impacts.

- A4: All pesticides (i.e., chemical and biological controls) applied by the VCP are approved by the California Department of Pesticide Regulation, and their application will continue to abide by all label instructions and regulations of the U.S. Environmental Protection Agency and California Department of Pesticide Regulation, including application rates and methods, storage, transportation, mixing, and container disposal. In addition, the VCP will continue to comply with all pesticide reporting, equipment calibration, and inspection requirements as regulated by the County Agricultural Commissioner.

- A5: In accordance with CDPH regulations, pesticides will only be applied by Certified Vector Control Technicians. VCP staff who apply pesticides or remove vegetation will continue to complete all training required by the CDPH to maintain status as a Certified Vector Control Technician and will follow the VCP's comprehensive documents, including

the annual *Engineer's Report*, strategic response plans, and standard operating procedures to avoid and minimize negative environmental impacts. These activities are conducted in accordance with the BMPs described in the *Best Management Practices for Mosquito Control in California* (CDPH 2012), *Best Management Practices for Mosquito Control on California State Properties* (CDPH 2008a), and *California Mosquito-Borne Virus Surveillance and Response Plan* (CDPH 2021), which detail integrated vector best management practices for vector control and vector-borne disease prevention to ensure pesticides are selected and applied appropriately and potential impacts on non-targeted areas are eliminated or minimized.

- A13: Individual IVMP source reduction activities that involve ground disturbance (e.g., grading, earthwork, or other excavation activities) will undergo a preliminary planning review by the County to assess the degree to which each activity may potentially result in impacts to cultural and TCRs. The County will review available records documentation and determine whether known archaeological resources or TCRs are present in the proposed activity area or ascertain the potential that such resources may be encountered. Per the *County of San Diego Report Format and Content Requirements, Cultural Resources: Archaeological and Historic Resources*, project sites that have been previously surveyed within 5 years or less may use the previous study (County 2007b). As such, if preliminary planning review determines that the IVMP activity area has been previously surveyed for the presence of archaeological resources or TCRs within the last 5 years with negative results or has been previously disturbed (e.g., grading, earthwork, or other excavation activities), the area would be considered "low sensitivity," and no further evaluation would be required. If the results of the review determine that the area has not previously been surveyed or disturbed or has been surveyed and archaeological resources and/or TCRs have been identified, a site-specific cultural resource survey will be required.

2.4.3 Analysis of Project Effects and Determination as to Significance

The *County of San Diego Guidelines for Determining Significance – Cultural Resources: Archaeological and Historic Resources* were adopted in 2007 and addressed the questions posed in Appendix G of the CEQA Guidelines. In December 2018, the Appendix G questions were updated to include TCRs. The *County of San Diego Guidelines for Determining Significance – Cultural Resources: Archaeological and Historic Resources* have yet to be updated to address these amendments. Accordingly, the PEIR analysis does not rely on the County's significance guidelines from 2007 and instead analyzes project impacts using the updated CEQA Guidelines Appendix G thresholds, which state that the Proposed Project would result in a significant impact if it would:

- Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code 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, and that is:

    i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k).

ii. 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 Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

2.4.3.1 *Tribal Cultural Resources*

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would result in a significant impact if it would cause a substantial adverse change in the significance of a TCR.

Impact Analysis

Considering the various techniques of the Proposed Project, only source reduction would potentially result in tangible impacts to TCRs due to the potential ground-disturbing or physical impacts that environmental modifications could entail. Physical controls could potentially include but would not be limited to removal of vegetation or sediment; interruption of water flow; rotation of stored water; pumping and/or filling of water sources; improvements to drainage and water circulation systems; and installation, removal, or improvements of culverts, tide gates, or other water control structures. No new structures or buildings are anticipated to be constructed for the Proposed Project.

As discussed in the *Cultural Resources Technical Report* (HELIX 2021b; Appendix C), ground-disturbing activities associated with the Proposed Project have the potential to affect TCRs, including archaeological sites, traditional gathering areas, or other areas of traditional use. Per AB 52, the County initiated consultation with California Native American tribes that are traditionally and culturally affiliated with the Service Area[1] of the Proposed Project to identify resources of cultural value. On August 23, 2018, the County notified all applicable Native American tribes of the IVMP Notice of Preparation. The list of tribes who were notified include Barona Group of the Capitan Grande, Campo Band of Diegueño Mission Indians, Iipay Nation of Santa Ysabel, Jamul Indian Village, Kwaaymii Laguna Band of Mission Indians, Pala Band of Mission Indians, Pechanga Band of Luiseño Indians, Rincon Band of Luiseño Indians, San Luis Rey Band of Mission Indians, Soboba Band of Luiseño Indians, Sycuan Band of the Kumeyaay Nation, and Viejas Band of Kumeyaay Indians. On August 28, 2018, the Viejas Band of Kumeyaay Indians provided a response letter requesting compliance with CEQA, the National Environmental Policy Act, and the Native American Graves Protection and Repatriation Act in addition to immediately contacting the band of any project changes or inadvertent discoveries.

As described in Section 2.4.2, *Regulatory Setting*, the County integrates BMPs into the Proposed Project that serve as a comprehensive management framework for implementation of individual activities. However, since specific site locations cannot be defined at this time, it is anticipated that ground-disturbing activities could have the potential to cause a substantial adverse change

[1] Service Area is synonymous with Assessment Area, which is defined in the *Engineer's Report* (County 2022a) as the area in which an annual levy provides funding for essential vector control services, including those properties that may request and/or receive direct and more frequent service and are located within the scope of the vector surveillance area. As such, Native American reservation land, as a Sovereign Nation, is excluded from the Service Area along with federally owned lands that receive minimal to no services.

in the significance of a TCR pursuant to Section 21074 of the California Public Resources Code and result in a **potentially significant impact (TCR-1)**.

Any subsequent discretionary projects that are not evaluated under this PEIR would be required to prepare site-specific project-level analyses to fulfill CEQA requirements, which may include additional AB 52 consultation with the culturally affiliated Native American tribes that could lead to the identification of TCRs.

2.4.4 Cumulative Impact Analysis

Due to the programmatic nature of the IVMP, the geographic scope of cumulative impact analysis for TCRs is the entirety of San Diego County, including both incorporated and unincorporated areas. Cumulative projects include countywide residential and non-residential land development, open space and recreation, and agricultural activities that have the potential for ground disturbance, vegetation removal, and pesticide use. As such, cumulative projects throughout San Diego County may have the potential to result in cumulative impacts associated with the loss of TCRs. Those discretionary projects would be required to comply with applicable federal, State, and local regulations for the protection of unique or significant cultural resources.

Because specific sites cannot be defined at this time, a detailed analysis of the potential cumulative impacts related to TCRs cannot be conducted. However, due to the nature and scale of the activities that could be implemented under the IVMP; the requirement to comply with all applicable federal, State, and local regulations; and the requirement to implement the program-level mitigation measures and BMPs, the Proposed Project would not have a cumulatively considerable contribution to potentially significant impacts to TCRs that may occur in the Service Area.

2.4.5 Significance of Impacts Prior to Mitigation

TCR-1 Ground-disturbing activities could have the potential to cause a substantial adverse change in the significance of a TCR pursuant to Section 21074 of the California Public Resources Code.

2.4.6 Mitigation Measures

Although ground-disturbing activities associated with the Proposed Project are expected to generally be minor in scale, source control activities could potentially result in direct or indirect impacts to TCRs. As such, impact **TCR-1** would be reduced to less than significant with the implementation of mitigation measures **M-CR-1** and **M-CR-2** as described in Section 2.2, *Cultural Resources*.

2.4.7 Conclusion

Implementation of the Proposed Project would result in ground-disturbing activities that could have the potential to cause a substantial adverse change in the significance of TCRs. Therefore, the Proposed Project would result in a potentially significant impact. However, implementation of the Mitigation Measure described above would mitigate the Proposed Project's potentially significant impacts related to TCRs to a less than significant level. The Proposed Project would implement standard operating procedures and protocols, BMPs, and mitigation measures. Therefore, impacts to TCRs resulting from the Proposed Project would be less than significant.

CHAPTER 3.0 ENVIRONMENTAL EFFECTS FOUND NOT TO BE SIGNIFICANT

This chapter addresses effects found not significant as part of the environmental impact report (EIR) process in Section 3.1, *Effects Found Not Significant as Part of the Environmental Impact Report Process*, and effects found not significant in the Initial Study (Appendix A) in Section 3.2, *Effects Found Not Significant During Initial Study*.

3.1 Effects Found Not Significant as Part of the Environmental Impact Report Process

During the analysis of potential effects in this Program EIR (PEIR), the following issue areas were determined to result in less than significant impacts on the environment as a result of the Proposed Project: air quality, climate change/greenhouse gas (GHG) emissions, energy, hazards and hazardous materials, hydrology, noise, transportation, and wildfire. This section provides a summary of the analysis completed to determine that the effects on these resources would not be significant.

This page intentionally left blank

3.1.1 Air Quality

This section of the Program Environmental Impact Report (PEIR) summarizes the *Air Quality Technical Report* (HELIX 2021c; Appendix D), which was prepared in conformance with the *County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements – Air Quality* (County 2007a) and Appendix G of the California Environmental Quality Act (CEQA) Guidelines.

3.1.1.1 *Existing Conditions*

Climate and Meteorology

The climate in Southern California, including the San Diego Air Basin (SDAB) (defined as "All of San Diego County")[1] is controlled largely by the strength and position of the subtropical high-pressure cell over the Pacific Ocean. Areas within 30 miles of the coast experience moderate temperatures and comfortable humidity. The general region possesses a mild climate tempered by cool sea breezes with light average wind speeds. This basin experiences warm summers, mild winters, infrequent rainfall, light winds, and moderate humidity. This usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. Precipitation occurs mostly during the winter and relatively infrequently during the summer (WRCC 2020).

Due to its climate, the SDAB experiences frequent temperature inversions (temperature increases as altitude increases, which is the opposite of general patterns). Temperature inversions prevent air close to the ground from mixing with the air above it. As a result, air pollutants are trapped near the ground. During the summer, air quality problems are created due to the interaction between the ocean surface and the lower layer of the atmosphere, creating a moist marine layer. An upper layer of warm air mass forms over the cool marine layer, preventing air pollutants from dispersing upward. Additionally, hydrocarbons and nitrogen dioxide (NO_2) react under strong sunlight, creating smog. Light, daytime winds, predominantly from the west, further aggravate the condition by driving the air pollutants inland, toward the foothills. During the fall and winter, air quality problems are created due to carbon monoxide (CO) and NO_2 emissions. High NO_2 levels usually occur during autumn or winter on days with summer-like conditions.

San Diego County supports a wide range of climates, land uses, and habitat types. The San Diego County Air Pollution Control District (SDAPCD) identifies five distinct climate zones as occurring within the county: Maritime, Coastal, Transitional, Interior, and Desert. These climatic zones run nearly parallel to the coast, with each having its own specific characteristics (County 2008):

- The Maritime zone consists of the area from the coastline to 5 miles east. This climate zone is dominated by the influence of the Pacific Ocean. The humidity is high and temperatures are mild. Low clouds, fog, and dampness are common.

- The Coastal zone encompasses the area approximately 5 miles from the coast to 15 miles inland. The ocean's influence is diminished but is still significant. The prevailing climate is semi-arid to arid. The climate in this region experiences frequent summer morning fog, clouds, and moderate humidity.

[1] The San Diego Air Basin is defined in the California Code of Regulations, Title 17, Section 60110 (17 CCR 60110), as "All of San Diego County."

- The Transitional zone is approximately 20 to 25 miles inland from the coast. The conditions can include brief Coastal zone climate conditions but normally consist of a warm, dry climate. Daytime humidity is low. Summer temperatures may reach 100 degrees Fahrenheit (°F), while winter days average approximately 70°F with frosty mornings.

- The Interior zone is approximately 25 to 60 miles inland. This zone consists of topographical terrain that rises from 2,000 to 6,500 feet that produces dramatic contrasts in climate ranging from the 70s to the 90s.

- The Desert zone is approximately 60 miles inland and extends to the eastern border of the State. Temperatures in the desert can reach 80°F in the winter and 120°F in the summer.

Background Air Quality

Air quality is defined by ambient air concentrations of specific pollutants identified by the U.S. Environmental Protection Agency (USEPA) to be of concern with respect to health and welfare of the general public. The SDAPCD operates a network of ambient air monitoring stations throughout the county. The purpose of the monitoring stations is to measure ambient concentrations of the pollutants and determine whether the ambient air quality meets the California Ambient Air Quality Standards (CAAQS) and the National Ambient Air Quality Standards (NAAQS). The monitoring stations collectively measure the ambient concentrations of six criteria air pollutants: ozone (O_3), NO_2, sulfur dioxide (SO_2), CO, coarse particulate matter equal to or less than 10 microns in diameter (PM_{10}), and fine particulate matter equal to or less than 2.5 microns in diameter ($PM_{2.5}$).

Air quality is affected by a variety of existing sources in San Diego County. Light motor vehicles, diesel powered construction equipment, and commercial trucks are a source of oxides of nitrogen (NO_X) and reactive organic gases (ROGs), along with PM_{10} and $PM_{2.5}$ pollutants. Non-combustion sources of PM_{10} and $PM_{2.5}$ include fugitive dust from roads, construction, demolition, and earthmoving. Commercial and general aviation aircraft also generate emissions that affect air quality. O_3 is a secondary pollutant that is not emitted directly by sources, but rather is formed by a reaction between NO_X and ROGs in the presence of sunlight. Reductions in O_3 concentrations are dependent upon reducing emissions of these precursors. Major sources of O_3 precursors are motor vehicles and other mobile equipment, solvent use, and electric utilities operation.

Air Pollutants of Concern

Criteria Air Pollutants

Six air pollutants have been identified by the USEPA and California Air Resources Board (CARB) as being of concern both on a nationwide and Statewide level: ground-level O_3, CO, NO_2, SO_2, lead, and particulate matter (PM), which is subdivided into two classes based on particle size: PM_{10} and $PM_{2.5}$. These air pollutants are commonly referred to as “criteria air pollutants” because air quality standards are regulated using human health and environmentally based criteria. Criteria pollutants can be emitted directly from sources (primary pollutants; e.g., CO, SO_2, PM_{10}, $PM_{2.5}$, and lead), or they may be formed through chemical and photochemical reactions of precursor pollutants (secondary pollutants; e.g., O_3 and NO_2) in the atmosphere. The principal

precursor pollutants of concern, which can lead to the formation of secondary criteria pollutants, are ROGs also known as volatile organic compounds (VOCs)[2] and nitrogen oxides (NO_X).

The descriptions of sources and general health effects for each of the criteria air pollutants are shown in Table 3.1.1-1, *Summary of Common Sources and Human Health Effects of Criteria Air Pollutants*, based on information provided by the California Air Pollution Control Officers Association (CAPCOA 2018). Criteria pollutant precursors (ROG and NO_X) affect air quality on a regional scale, typically after significant delay and distance from the pollutant source emissions. Health effects related to O_3 and NO_2 are therefore the product of emissions generated by numerous sources throughout a region. As such, specific health effects from these criteria pollutant emissions cannot be directly correlated to the incremental contribution from a single project.

Toxic Air Contaminants

Pollutants of concern also include toxic air contaminants (TACs), which are defined by CARB and are different from criteria pollutants. TACs are a diverse group of air pollutants that may cause or contribute to an increase in deaths or in serious illness or that may pose a present or potential hazard to human health. TACs can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage or short-term acute effects such as eye watering, respiratory irritation (a cough), runny nose, throat pain, and headaches. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For carcinogenic TACs, there is no level of exposure that is considered safe, and impacts are evaluated in terms of overall relative risk expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

Sensitive Receptors

CARB and the California Office of Environmental Health Hazard Assessment identify the following groups of individuals as the most likely to be affected by air pollution: adults over 65 years old, children under 14, infants (including in utero in the third trimester of pregnancy), and people with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis (CARB 2005; OEHHA 2015). Examples of sensitive receptors include residences, schools, hospitals, and daycare centers. Due to the nature of the Integrated Vector Management Program (IVMP or Proposed Project) occurring throughout San Diego County, sensitive receptors are within the Service Area.[3]

[2] CARB defines and uses the term ROGs while the USEPA defines and uses the term VOCs. The compounds included in the lists of ROGs and VOCs and the methods of calculation are slightly different. However, for the purposes of estimating criteria pollutant precursor emissions, the two terms are often used interchangeably.

[3] Service Area is synonymous with Assessment Area, which is defined in the Engineer's Report (County 2022a) as the area in which an annual levy provides funding for essential vector control services, including those properties that may request and/or receive direct and more frequent service and are located within the scope of the vector surveillance area. As such, Native American reservation land, as a Sovereign Nation, is excluded from the Service Area along with federally owned lands that receive minimal to no services.

3.1.1.2 *Regulatory Setting*

Federal and State

The USEPA is responsible for enforcing the federal Clean Air Act (CAA) of 1970 and its 1977 and 1990 Amendments. The CAA required the USEPA to establish NAAQS, which identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. In response, the USEPA established both primary and secondary standards for criteria pollutants. Primary standards are designed to protect human health with an adequate margin of safety. Secondary standards are designed to protect property and the public welfare from air pollutants in the atmosphere. The CAA allows states to adopt ambient air quality standards and other regulations provided they are at least as stringent as federal standards. CARB has established the more stringent CAAQS for the six criteria pollutants through the California Clean Air Act of 1988, and has established CAAQS for additional pollutants, including sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. Table 3.1.1-2, *California and National Ambient Air Quality Standards*, shows the federal and State ambient air quality standards.

Areas that do not meet the NAAQS or the CAAQS for a particular pollutant are considered to be "non-attainment areas" for that pollutant. As of August 3, 2018, the SDAB has been classified as a non-attainment area in the NAAQS for 8-hour O_3. The SDAB is also currently classified as a non-attainment area under the CAAQS for O_3, PM_{10}, and $PM_{2.5}$. The SDAB is an attainment area for the NAAQS and CAAQS for all other criteria pollutants (SDAPCD 2020a). The current federal and State attainment status for SDAB is shown in Table 3.1.1-3, *Federal and State Air Quality Designation*.

CARB is the State regulatory agency with authority to enforce regulations to both achieve and maintain the NAAQS and CAAQS. The local air district has the primary responsibility for the development and implementation of rules and regulations designed to attain the NAAQS and CAAQS, as well as the permitting of new or modified sources, development of air quality management plans, and adoption and enforcement of air pollution regulations. The SDAPCD is the local agency responsible for the administration and enforcement of air quality regulations in San Diego County.

Local

The CAA requires that regional planning and air pollution control agencies prepare regional air quality plans to outline the measures by which both stationary and mobile sources of pollutants can be controlled to achieve all standards by the deadlines specified in the act. The SDAPCD and San Diego Association of Governments (SANDAG) are the agencies responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the SDAB. The SDAPCD prepared an *Attainment Plan for San Diego County (Attainment Plan)* (SDAPCD 2020b) demonstrating how the SDAB will further reduce air pollutant emissions to attain the current NAAQS for O_3. The *Attainment Plan*, in combination with those from all other California non-attainment areas with serious (or worse) air quality problems, is submitted to CARB, which develops the California *State Implementation Plan* (SIP). The most recent *Attainment Plan* was approved by the SDAPCD Board on October 14, 2020, and by CARB on November 19, 2020.

The *Attainment Plan* relies on information from CARB and SANDAG, including mobile and area source emissions, as well as information regarding projected growth in the county, to project

future emissions and then determine from that the strategies necessary for the reduction of emissions through regulatory controls. CARB mobile source emissions projections and SANDAG growth projections are based on population and vehicle trends and land use plans developed by the cities and by the County as part of the development of the County's *General Plan* (County 2011b).

The SIP relies on the same information from SANDAG to develop emissions inventories and emissions reduction strategies that are included in the attainment demonstration for the air basin.

Integrated Vector Management Program Best Management Practices

The IVMP follows the best management practices (BMPs) described in State guidance documents, such as the *Best Management Practices for Mosquito Control in California* (CDPH 2012), *Best Management Practices for Mosquito Control on California State Properties* (CDPH 2008b), and *California Mosquito-Borne Virus Surveillance and Response Plan* (CDPH 2021), which detail best integrated vector management practices for vector control and vector-borne disease prevention. In addition, the County integrates BMPs into the IVMP serving as a comprehensive management framework for implementation of individual activities. BMPs implemented as part of the IVMP demonstrate the County's commitment to avoid or minimize impacts to the maximum extent feasible. The following BMPs have been developed by the VCP in combination with the above-referenced sources and will be implemented to reduce air pollutant emissions:

- B3: Vehicles will only be driven on existing roadways, access roads, and existing unpaved access paths. Vehicles driven on levees to travel near aquatic areas (such as tidal marshes, sloughs, or channels) for surveillance or treatment activities will travel at speeds slow enough to avoid or minimize noise and the production of dust, typically 15 miles per hour or less.

- B8: Engine idling times will be minimized by shutting off equipment and vehicles when not in use to the extent feasible.

- B9: Vehicles and equipment will be maintained in accordance with manufacturer's specifications, including mufflers, engine operation, and tire inflation pressure, to minimize rolling resistance.

- B10: Vegetation trimming or removal, when necessary to provide access to vector habitat for surveillance and control activities, will be conducted by hand using handheld tools rather than gas-powered equipment or heavy machinery to minimize negative environmental effects.

- B14: Where heavy equipment or machinery is necessary, measures will be taken, such as reducing turns by track-type vehicles, taking a minimum number of passes with equipment, identifying multiple points of entry, driving vehicles at low speed, and avoiding or minimizing operating on open mud and other soft areas.

In addition to the aforementioned BMPs, the County also engages in other environmentally friendly practices that further reduce potential air emissions, such as the following:

- The Vector Control Program (VCP) assigns geographic locations, defined by continuous census tracts, to individual Certified Vector Control Technicians. Each geographic

location is referred to as a "district." Work is assigned to each district, which defines the routine work area for Certified Vector Control Technicians within a specific geographic area, thereby reducing mileage driven, which reduces fuel consumption and vehicle emissions.

- Certified Vector Control Technicians use mobile phones to call customers and to access the County-produced Vector Mobile App. Real-time access to new work requests while in the field allows Certified Vector Control Technicians to conduct and complete additional work while remaining in the geographic area. When they are able to complete new work assignments while remaining in the current area, this eliminates the need to return at a later time, thereby reducing mileage driven, which reduces fuel consumption and vehicle emissions.

3.1.1.3 *Analysis of Project Effects and Determination as to Significance*

The *County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements – Air Quality* (County 2007a) provides guidance for evaluating adverse environmental effects associated with air quality. However, these guidelines have not been updated to reflect the current CEQA Appendix G questions related to air quality. Therefore, the impact analysis that follows relies on Appendix G of the CEQA Guidelines. Based on guidance provided in Appendix G of the CEQA Guidelines, the Proposed Project would result in a significant impact if it would lead to any of the following:

1. Conflict with or obstruct implementation of the applicable air quality plan;

2. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard;

3. Expose sensitive receptors (including but not limited to residences, schools, hospitals, resident care facilities, or daycare centers) to substantial pollutant concentrations; and/or

4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.It

To determine whether a project would result in a cumulatively considerable net increase of PM_{10} or the O_3 precursors, NO_X and ROG, project emissions may be evaluated based on the quantitative emissions thresholds established by the SDAPCD. County Guidelines identify as screening level thresholds the Air Quality Impact Analysis trigger levels for new or modified stationary sources from the SDAPCD Rules 20.2 and 20.3. County Guidelines also use the screening threshold of 55 pounds per day or 10 tons per year as a significance threshold for $PM_{2.5}$.[4]

For CEQA purposes, these screening criteria can be used as numeric methods to demonstrate that a project's total emissions would not result in a significant impact to air quality. The screening thresholds are included in Table 3.1.1-4, *Screening Level Thresholds for Air Quality Impact Analysis*.

[4] In October 2020, an updated to SDAPCD Rule 20.2 became effective, which includes Air Quality Impact Analysis threshold for $PM_{2.5}$ of 67 pounds/day. However, because this update has not been reflected in County Guidelines, and because the 55 pounds/day is more stringent, the 55 pounds/day threshold will be used for this PEIR.

The following sections analyze impacts from the IVMP's surveillance and monitoring, source reduction (i.e., physical control), and source treatment (i.e., biological and chemical controls). There would be no impact from the IVMP's public education and outreach and disease diagnostics activities; therefore, public education and outreach and disease diagnostics are not discussed further in this section.

Plan Conformance

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would have a potentially significant environmental impact if it would conflict with or obstruct the implementation of the applicable air quality plan.

Impact Analysis

As stated in the Regulatory Setting, SDAPCD prepared the *Attainment Plan* for San Diego County (SDAPCD 2020b) demonstrating how the SDAB will further reduce air pollutant emissions. The *Attainment Plan*, in combination with those from all other California non-attainment areas, is submitted to CARB, which develops the California SIP.

These plans accommodate emissions from all sources, including natural sources, through the implementation of control measures, where feasible, on stationary sources to attain the standards. Mobile sources are regulated by the USEPA and CARB, and the emissions and reduction strategies related to mobile sources are considered in the *Attainment Plan* and SIP.

The *Attainment Plan* relies on information from CARB and SANDAG, including projected growth in the county, mobile source, area source, and all other source emissions to project future emissions and determine the strategies necessary for the reduction of stationary source emissions through regulatory controls. CARB mobile source emissions projections and SANDAG growth projections are based on population and vehicle trends and land use plans developed by the cities and the county. As such, projects that propose development that is consistent with the growth anticipated by the local jurisdictions' General Plans would be consistent with the *Attainment Plan*.

The proposed IVMP would provide vector control services using a comprehensive strategy that includes surveillance and monitoring, source reduction (i.e., physical control), source treatment (i.e., biological and chemical controls), public education and outreach, and disease diagnostics. The IVMP would not generate growth, increase population or associated vehicle usage, or require the alteration of an existing land use designation through amendments to General Plans or changes to zoning.

In addition, the Proposed Project would be required to comply with all applicable SDAPCD Rules and Regulations. The emissions source categories associated with the proposed IVMP include small equipment, portable equipment, off-road vehicles, on-road vehicles, watercraft, and aircraft, all of which are mobile sources of non-attainment pollutants. As discussed in Section 3.1.1.1, these types of emissions sources are included in the SIP emissions inventory, required to meet CARB and USEPA non-road and on-road emissions standards applicable on the date of manufacture. The *Attainment Plan* also assesses the impact of all emissions sources and all control measures, including those under the jurisdiction of CARB (e.g., on-road motor vehicles, off-road vehicles and equipment, and consumer products). Therefore, the Proposed Project would

not conflict with or obstruct the implementation of the *Attainment Pla*n or applicable portions of the SIP. Impacts would be less than significant.

Conformance to Federal and State Ambient Air Quality Standards

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines the Proposed Project would have a potentially significant environmental impact if it would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard.

Per *County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements – Air Quality* (County 2007a), to determine whether a project would result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation, project emissions may be evaluated based on the quantitative emissions thresholds established by the SDAPCD (as shown in Table 3.1.1-4).

Impact Analysis

Construction Impacts

Under the Proposed Project, the IVMP would continue to use a comprehensive and balanced approach to vector control. The IVMP does not include the construction or renovation of habitable structures, stationary sources, or infrastructure. Therefore, the Proposed Project would not result in construction activities and associated emissions.

Grading and vegetation clearing are analyzed further below under *Operational Impacts* since they are considered ongoing activities under the IVMP.

Operational Impacts

Implementation of the IVMP does not propose new development. Due to the scope and scale of IVMP activities, its emissions potential has been evaluated at a programmatic level based on the types of equipment that may be used during surveillance and monitoring, source reduction, and source treatment activities. Due to the programmatic nature of this document, the exact locations and extent of all activities to be conducted under the IVMP are not known at this time.

Specifically, implementation of the IVMP includes operation of on-road fleet vehicles, watercraft, aircraft, off-road construction vehicles/equipment, portable equipment, and small equipment for the purpose of conducting surveillance, source treatment, and source reduction activities, which would result in air pollutant emissions, as evaluated below. A list of equipment, assumed usage, and emissions factor source is provided in Table 3.1.1-5, *Integrated Vector Management Program Equipment Usage (Daily).*

Surveillance and Monitoring

Surveillance and monitoring activities include evaluation of mosquito-breeding areas by conducting surveys via ground vehicles, aircraft (including piloted and drones[5]), watercraft, and remote sensing equipment; trapping of mosquitoes and rodents; and testing of collected samples for vector-borne diseases. Accordingly, all vehicles currently used or proposed under the IVMP were quantified, and their respective peak daily usage was estimated based on historical data or anticipated frequency. As shown in Table 3.1.1-5, surveillance and monitoring vehicles include medium-duty and light-duty ground fleet vehicles[6], helicopters and fixed-wing aircraft, and boat motors for watercraft. Using applicable emissions factors published by CARB and the USEPA, criteria pollutant emissions and O_3 precursors were calculated and are summarized in Table 3.1.1-6, *Summary of Air Quality Emissions,* and Table 3.1.1-7, *Estimated Daily Operational Emissions by Category,* based on the method of surveillance and application.

Source Reduction

The reduction of vector-breeding sources primarily involves physical control techniques that eliminate or reduce standing water that functions as mosquito-breeding habitat. These techniques include but are not limited to vegetation management, including trimming and removal of vegetation; removal of sediment; water control; and other maintenance activities. Accordingly, all equipment proposed for source reduction under the IVMP were quantified, and their respective peak daily usage was estimated based on anticipated frequency. As shown in Table 3.1.1-5, equipment intended for source treatment would include a tractor, tracked dozer, excavator, woodchipper, dump truck, all-terrain vehicle with plow, and aquatic weed harvester. Using applicable emissions factors published by CARB and the USEPA, criteria pollutant emissions and O_3 precursors were calculated and are summarized in Table 3.1.1-6, *Summary of Air Quality Emissions,* and Table 3.1.1-7, *Estimated Daily Operational Emissions by Category,* based on the method of surveillance and application.

Source Treatment

Source treatment, which includes biological and chemical controls used to manage and reduce vectors, can include the use of natural predators, parasites, or pathogens to reduce immature mosquito numbers (biological controls) and application of pesticides that target larvae (larvicides) or adult mosquitoes (adulticides). The primary technique employed by the VCP for biological controls is the application of mosquito fish in artificial mosquito-breeding sources such as ornamental ponds, rain barrels, horse troughs, neglected swimming pools, and spas to reduce the abundance of mosquitoes. As such, biological controls would not result in criteria pollutant emissions.

Chemical controls (i.e., pesticides) are applied through on-ground techniques such as by foot with backpack applicators, vehicle-mounted equipment, watercraft by Certified Vector Control Technicians, or by aircraft (including piloted and drones) when land-based methods are not practicable due to the size of the area to be treated or impediments to access. Accordingly, all equipment currently used or proposed for source treatment under the IVMP were quantified, and their respective peak daily usage was estimated based on historical data or anticipated frequency.

[5] For the purposes of this PEIR, “drone” is intended to generically mean a remotely piloted or unpiloted aircraft. As of this writing, the Federal Aviation Administration’s official terminology is Unmanned Aircraft Systems; however, Federal Aviation Administration is transitioning toward gender-neutral terminology such as drone operator, certificated remote pilot, model aircraft flyer, and advanced air mobility operator.

[6] Refer to Table 3.1.7-2 for a summary of fleet vehicle usage data.

As shown in Table 3.1.1-5, source treatment equipment includes hand sprayer/fogger, granular applicator, vehicle-mounted sprayer, and pond pump. Using applicable emissions factors published by CARB and the USEPA, criteria pollutant emissions and O_3 precursors were calculated and are summarized in Tables 3.1.1-6 and 3.1.1-7 based on the method of surveillance and application.

It is important to note that some equipment used by the VCP does not generate criteria pollutant emissions and were therefore excluded from this analysis, including hand-operated tools, attachments, battery-powered traps, and other equipment (see Appendix D for a listing of all equipment and activity schedules and equipment emissions data).

In addition to vehicles and equipment, the application of certain pesticides can emit VOCs. VOCs contained in some mosquito abatement and vector control materials would be emitted in relatively minor quantities through the evaporation of aqueous and aerosolized pesticides during application. First and foremost, many pesticide products used by the VCP are applied in a solid form and do not pose a risk of evaporation into the air (see Section 3.1.4, *Hazards and Hazardous Materials*, for further discussion of pesticide products and usage). In addition, not all VOCs are considered photochemically reactive. VOCs that are non-reactive or of negligible reactivity are exempted from the definition of VOCs used by air districts and the USEPA (USEPA 2009). The exempt compounds are specified in Code of Federal Regulations, Title 40, Section 51.100(s). Also, many products labeled for non-agricultural uses are often excluded from the regulations as well, but it depends on the specific product. Non-agricultural uses include (1) home use, (2) use in structural pest control, (3) industrial or institutional use, (4) control of an animal pest under the written prescription of a veterinarian, or (5) vector control.

For compounds that are not considered exempt, the VOC contribution of most pesticides can be estimated by knowing its “emissions potential,” which is a percentage of the product assumed to potentially contribute to atmospheric VOCs. To help determine this, the California Department of Pesticide Regulation (CDPR) developed a web-based tool for calculating VOC emissions. According to CDPR, “emissions potential” using this calculator may overestimate the VOC emissions under certain circumstances because they do not account for other factors that can influence emissions, such as application method or soil adsorption (CDPR 2022a).

Since total pounds of product used per year is reported to CDPR, the total calculated VOC emissions for each product can be determined from the estimate of active ingredients. For the Proposed Project, VOC emissions were estimated for all pesticides used by the VCP in 2018 (i.e., baseline year) using the calculator template provided by the CDPR. Using the CDPR’s online calculator and based on 2018 usage, pesticides were estimated to generate approximately 3,232.16 pounds of VOC emissions for the calendar year (8.86 pounds per day), as shown in Table 3.1.1-8, *Annual Volatile Organic Compound Emissions from Pesticides*. VOC contributions of this level are well below ROG (VOC) operational thresholds contained in Table 3.1.1-4 of 75 pounds per day and 13.7 tons per year and are therefore considered not significant.

Furthermore, CARB and the CDPR developed a plan to track and reduce pesticide sources of VOCs as part of the California SIP to meet the O_3 emissions standards. The CDPR is responsible for agricultural and commercial structural pesticide products, and CARB is responsible for pesticides in consumer products. Specifically, the CDPR must track and control VOC emissions in five specific regions that do not attain O_3 standards (Sacramento Metro, San Joaquin Valley, South Coast, Southeast Desert, and Ventura). Most notably, San Diego County is not subject to the California Environmental Protection Agency’s or CDPR’s annual monitoring or reporting requirements related to VOC emissions from pesticide application (CDPR 2022b; CDPR 2021a).

In conclusion, as analyzed above and as shown in Tables 3.1.1-6 and 3.1.1-7, emissions of criteria pollutants and O_3 precursors during IVMP implementation would not exceed the daily screening thresholds. Therefore, the Proposed Project's operational emissions would not result in a violation of the NAAQS or CAAQS, and impacts would be less than significant.

Impacts to Sensitive Receptors

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines and the *County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements – Air Quality* (County 2007a), the Proposed Project would have a potentially significant environmental impact if it would expose sensitive receptors (including but not limited to residences, schools, hospitals, resident care facilities, or daycare centers) to substantial pollutant concentrations.

The following guidelines of significance are used by the County to address the above question:

- Would the project place sensitive receptors near CO hotspots or create CO hotspots near sensitive receptors?

- Would project implementation result in exposure to TACs resulting in a maximum incremental cancer risk greater than 1 in 1 million without application of Toxics Best Available Control Technology or a health hazard index greater than 1 and, thus, be deemed as having a potentially significant impact?

Impact Analysis

As discussed in Section 3.1.1.1, *Existing Conditions*, criteria pollutants that would be generated by the Proposed Project are associated with some form of health risk. Existing models have limited sensitivity to small changes in criteria pollutant concentrations; attempting to correlate the small amount of regional project-generated criteria pollutants to specific health effects or additional days of non-attainment would not yield meaningful results. Due to the wide geographic nature of the IVMP activities and their short-term, temporary application at any particular location, no quantifiable risk to sensitive receptors or the general public would be posed by regional program-related emissions. Consequently, an analysis of impacts on human health associated with project-generated regional ROG and NO_X emissions is not included in this assessment. Localized pollutants generated by a project can, however, directly affect nearby sensitive receptors. Consistent with the current State practice and published guidance by CAPCOA (2018), the analysis in this assessment focuses only on those localized pollutants with the greatest potential to result in a significant, material impact on human health, which are TACs (including diesel particulate matter [DPM]) and locally concentrated CO (i.e., CO hot spots).

CO Concentrations (CO Hotspot Analysis)

CO hotspots are most likely to occur at heavily congested intersections where idling vehicles increase localized CO concentrations. The County Guidelines call for a CO hotspot analysis if a project would:

- Place sensitive receptors within 500 feet of a signalized intersection with a level of service (LOS) of E or F, with peak-hour trips exceeding 3,000 vehicles; or

- Cause intersections to operate at LOS E or F, with peak-hour trips exceeding 3,000 vehicles.

The Proposed Project includes implementation of surveillance and monitoring, source reduction (i.e., physical control), source treatment (i.e., biological and chemical controls), public education and outreach, and disease diagnostics for the purpose of protecting public health, well-being, and economic effects from vectors throughout San Diego County. The Proposed Project does not include the construction or placement of sensitive receptors. Furthermore, as detailed in Section 3.1.7, *Transportation/Traffic*, traffic generated by the Proposed Project would largely consist of sporadic trips associated with ongoing maintenance and monitoring efforts and would likely consist of one or two vehicles traveling to and from individual sites minimizing the potential that the Proposed Project would cause intersections to operate at LOS E or F. Thus, there would be no potential for a CO hotspot to be created. Impacts would be less than significant.

Toxic Air Contaminants

Under the Proposed Project, the IVMP would continue to provide vector control services using a comprehensive strategy. Implementation of the IVMP does not include the construction or renovation of habitable structures, stationary sources, or infrastructure. Therefore, for the purpose of this analysis, the Proposed Project does not include construction or operation of stationary sources of TACs. Ongoing implementation would result in the use of heavy-duty equipment and vehicles. These vehicles and equipment could generate the TAC DPM. Generation of DPM from equipment and vehicles typically occurs in a localized area for short periods of time. Because activities and subsequent emissions vary depending on the location and activity being performed, the emissions to which nearby receptors are exposed would also vary. The dose (of TAC) to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance in the environment and the extent of exposure a person has with the substance; a longer exposure period to a fixed amount of emissions would result in higher health risks. Current models and methodologies for conducting health risk assessments are best suited for evaluation of long duration TAC emissions with predictable schedules and locations. These assessment models do not correlate well with the highly variable nature of the Proposed Project. Because the Proposed Project would result in variable emissions occurring throughout the county, the dose of any individual receptor is expected to be minimal. Additionally, the Proposed Project would implement the IVMP BMPs that would further reduce air pollutant emissions. Specifically, limiting vehicle travel to existing roadways and paths (BMP B3), limiting of idling time (BMP B8), properly maintaining vehicles and equipment (BMP B9), using handheld tools where feasible (BMP B10), and minimizing the use of heavy equipment and machinery (BMP B14). Therefore, the Proposed Project would not generate substantial emissions of TACs.

Odors

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines and the *County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements – Air Quality* (County 2007a), the Proposed Project would have a potentially significant environmental impact if it would create objectionable odors affecting a substantial number of people.

Impact Analysis

SDAPCD Rule 51 (Public Nuisance) and California Health and Safety Code, Division 26, Part 4, Chapter 3, Section 541700, prohibit the emissions of any material that causes nuisance to a considerable number of people or endangers the comfort, health, or safety of the public. In addition, the County's Zoning Ordinance, Section 6318, states, "all commercial and industrial uses shall be so operated as to not emit matter causing unpleasant odors which are perceptible by the average person at or beyond any lot line of the lot containing said uses." Projects required to obtain permits from the SDAPCD, typically industrial and some commercial projects, are evaluated by SDAPCD staff for potential odor nuisance and conditions may be applied (or control equipment required), where necessary, to prevent occurrence of public nuisance.

According to CARB's *Air Quality and Land Use Handbook* (CARB 2005), land uses associated with odor complaints include agriculture (e.g., farming, livestock), public facilities (e.g., landfills, wastewater treatment), industrial (e.g., construction, rock quarries, power plants), and commercial (e.g., autobody shops, distribution centers). The Proposed Project does not include construction or operation of any of these uses.

Certain VOCs, sulfur compounds, and chlorine compounds found in some pesticides, fumigants, and organochlorines emit characteristic odors when they evaporate (volatilize) into air, even at very low concentrations well within safety limits. The human sense of smell (olfactory system) is sensitive to these types of compounds as a warning mechanism, and some individuals are more sensitive than others. As described previously, VOCs contained in vector control materials would be emitted in relatively minor quantities during application of aqueous pesticides. Of the aqueous pesticides listed in Table 3.1.5-1, *Vector Control Program Pesticide Use within Service Area: 2018–2021*, only one, VectoBac 12AS, has an odor described on its material safety datasheet as being "malt-like" but not unpleasant; all others are described as having no odor.

Ongoing implementation of various IVMP activities could potentially include diesel equipment operating at various sites or unburned hydrocarbons in equipment exhaust that may generate nuisance odors; however, since equipment would operate at various locations throughout each individual IVMP activity area, and because operation near existing sensitive receptors would be temporary and intermittent, impacts associated with odors would be less than significant.

3.1.1.4 *Cumulative Impact Analysis*

The geographic scope for the analysis of cumulative air quality impacts is the SDAB. It is appropriate to consider the entire air basin as air emissions can travel substantial distances and are not confined by jurisdictional boundaries; rather, they are influenced by large-scale climatic and topographical features. While some air emissions can be localized, such as a CO hotspots or odor, the overall consideration of cumulative air quality is typically more regional. By its very nature, air pollution is largely a cumulative impact.

The SDAB is a federal non-attainment area for O_3, and a State non-attainment area for PM_{10}, $PM_{2.5}$, and O_3. The non-attainment status of regional pollutants is a result of past and present development within the SDAB, and this regional impact is cumulative rather than attributable to any one source. Cumulative projects throughout the air basin would generate construction and operational air pollutant emissions that could contribute to significant cumulative air quality impacts. As discussed in the second threshold above (conformance to federal and state standards) the analysis is relevant to whether a project's individual emissions would result in a cumulatively considerable incremental contribution to the existing cumulative air quality

conditions. This threshold is designed to identify those projects that would result in significant levels of air pollution and to assist the region in attaining the applicable State and federal ambient air quality standards. If a project's emissions would be less than those threshold levels, the project would not be expected to result in a considerable incremental contribution to the significant cumulative impact.

Plan Conformance

The Proposed Project would not conflict with or obstruct the implementation of the *Attainment Plan* or applicable portions of the SIP. The *Attainment Plan* is the County's clean air plan for attainment and maintenance of the ambient air quality standards in the SDAB. By being consistent with the *Attainment Plan*, implementation of the IVMP would not result in a cumulatively considerable contribution to cumulative air quality plan conformance impacts.

Conformance to Federal and State Ambient Air Quality Standards

The Proposed Project's emissions would not exceed the County screening threshold levels that were designed to ensure attainment of the federal and State ambient air quality standards. Therefore, implementation of the IVMP would not result in a cumulatively considerable contribution to federal and State ambient air quality standard impacts.

Impacts to Sensitive Receptors

As discussed previously, no exceedances of the CO standard or substantial generation of TACs would occur. The Proposed Project also would not result in hotspots or health impacts affecting a substantial number of people. These impacts would be less than significant and not cumulatively considerable.

Odors

As discussed previously, the Proposed Project would not result in the creation of objectionable odors affecting a substantial number of people. This impact would be less than significant and not cumulatively considerable.

3.1.1.5 *Significance of Impacts Prior to Mitigation*

In summary, the Proposed Project would result in air pollutant emissions during the ongoing implementation of the IVMP. The analysis evaluated the potential for adverse impacts to the ambient air quality due to project emissions. No construction is proposed as part of IVMP implementation. Operation of on-road fleet vehicles, watercraft, aircraft, portable equipment, and small equipment would result in emissions of criteria pollutants from engine exhaust. As detailed in Section 3.1.1.3, the Proposed Project would not conflict with or obstruct the implementation of the *Attainment Plan* or applicable portions of the SIP. The Proposed Project's emissions of criteria pollutants and O_3 precursors during IVMP implementation would not exceed the daily screening thresholds, and operational emissions would not result in a violation of the NAAQS or CAAQS. Air pollutant emissions impacts would be less than significant. The Proposed Project would not result in cumulatively considerable emissions of non-attainment air pollutants that would exceed the screening level thresholds. Impacts associated with exposure of sensitive receptors to substantial pollutant concentrations would be less than significant. Impacts from odors would be less than significant.

3.1.1.6 *Mitigation Measures*

Because the Proposed Project would not result in significant impacts, no mitigation is required.

3.1.1.7 *Conclusion*

The Proposed Project would have a less than significant project and cumulative impact with respect to air quality.

Table 3.1.1-1
SUMMARY OF COMMON SOURCES AND HUMAN HEALTH EFFECTS OF CRITERIA AIR POLLUTANTS

Pollutant	Major Human Sources	Human Health Effects
Carbon Monoxide (CO)	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
Nitrogen Dioxide (NO_2)	A reddish-brown gas formed during fuel combustion for motor vehicles and industrial sources. Sources include motor vehicles, electric utilities, and other sources that burn fuel.	Respiratory irritant; aggravates lung and heart problems. Precursor to O_3 and acid rain. Contributes to climate change and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere.
Ozone (O_3)	Formed by a chemical reaction between ROGs and NO_X in the presence of sunlight. Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, gasoline storage and transport, solvents, paints, and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing, and pain when inhaling deeply; decreases lung capacity; and aggravates lung and heart problems. Damages plants; reduces crop yield. Damages rubber, some textiles, and dyes.
Particulate Matter (PM_{10} and $PM_{2.5}$)	Produced by power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles, and other sources.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
Sulfur Dioxide (SO_2)	A colorless, nonflammable gas formed when fuel containing sulfur is burned, when gasoline is extracted from oil, or when metal is extracted from ore. Examples are petroleum refineries, cement manufacturing, metal processing facilities, locomotives, and ships.	Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, SO_2 converts to sulfuric acid which can damage marble, iron, and steel. Damages crops and natural vegetation. Impairs visibility. Precursor to acid rain.
Lead	Metallic element emitted from metal refineries, smelters, battery manufacturers, iron and steel producers, use of leaded fuels by racing and aircraft industries.	Anemia, high blood pressure, brain and kidney damage, neurological disorders, cancer, lowered IQ. Affects animals, plants, and aquatic ecosystems.

Source: CAPCOA 2018.
Notes: NO_X = nitrogen oxides; O_3 = ozone; ROG = reactive organic gas

Table 3.1.1-2
CALIFORNIA AND NATIONAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	Federal Standards	
			Primary[a]	Secondary[b]
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m^3)	–	–
	8 Hour	0.070 ppm (137 µg/m^3)	0.070 ppm (147 µg/m^3)	Same as Primary
Respirable Particulate Matter (PM_{10})	24 Hour	50 µg/m^3	150 µg/m^3	Same as Primary
	AAM	20 µg/m^3	–	–
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	–	35 µg/m^3	Same as Primary
	AAM	12 µg/m^3	12.0 µg/m^3	Same as Primary
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	–
	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	–
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)	–	–
Nitrogen Dioxide (NO_2)	AAM	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary
	1 Hour	0.18 ppm (339 µg/m^3)	0.100 ppm (188 µg/m^3)	–
Sulfur Dioxide (SO_2)	24 Hour	0.04 ppm (105 µg/m^3)	–	–
	3 Hour	–	–	0.5 ppm (1,300 µg/m^3)
	1 Hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)	–
Lead	30-day Avg.	1.5 µg/m^3	–	–
	Calendar Quarter	–	1.5 µg/m^3	Same as Primary
	Rolling 3-month Avg.	–	0.15 µg/m^3	
Visibility-Reducing Particles	8 Hour	Extinction coefficient of 0.23 per km – visibility ≥ 10 miles (0.07 per km – ≥30 miles for Lake Tahoe)	**No Federal Standards**	
Sulfates	24 Hour	25 µg/m^3		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)		
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m^3)		

Source: CARB 2016.
Note: More detailed information in the data presented in this table can be found at the CARB website (www.arb.ca.gov).
[a] National Primary Standards: The levels of air quality necessary, within an adequate margin of safety, to protect the public health.
[b] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
– = No Standard; µg/m^3 = micrograms per cubic meter; AAM = Annual Arithmetic Mean; km= kilometer; mg/m^3 = milligrams per cubic meter; ppm = parts per million

Table 3.1.1-3
FEDERAL AND STATE AIR QUALITY DESIGNATIONS

Criteria Pollutant	Federal Designation	State Designation
Ozone (O_3) (1-hour)	(No federal standard)	Non-attainment
Ozone (O_3) (8-hour)	Non-attainment	Non-attainment
Carbon Monoxide (CO)	Attainment	Attainment
Respirable Particulate Matter (PM_{10})	Unclassified	Non-attainment
Fine Particulate Matter ($PM_{2.5}$)	Attainment	Non-attainment
Nitrogen Dioxide (NO_2)	Attainment	Attainment
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	(No federal standard)	Attainment
Hydrogen Sulfide	(No federal standard)	Unclassifiable
Visibility	(No federal standard)	Unclassifiable

Source: SDAPCD 2020a.

Table 3.1.1-4
SCREENING LEVEL THRESHOLDS FOR AIR QUALITY IMPACT ANALYSIS

Pollutant	Total Emissions		
Construction Emissions (pounds per day)			
Respirable Particulate Matter (PM_{10})	100		
Fine Particulate Matter ($PM_{2.5}$)	55		
Oxides of Nitrogen (NO_X)	250		
Oxides of Sulfur (SO_X)	250		
Carbon Monoxide (CO)	550		
Volatile Organic Compounds (VOCs)	75		
Operational Emissions			
	Pounds per Hour	**Pounds per Day**	**Tons per Year**
Respirable Particulate Matter (PM_{10})	---	100	15
Fine Particulate Matter ($PM_{2.5}$)	---	55	10
Oxides of Nitrogen (NO_X)	25	250	40
Oxides of Sulfur (SO_X)	25	250	40
Carbon Monoxide (CO)	100	550	100
Lead and Lead Compounds	---	3.2	0.6
Volatile Organic Compounds (VOCs)	---	75	13.7
Toxic Air Contaminant Emissions			
Excess Cancer Risk	1 in 1 million 10 in 1 million with T-BACT		
Non-Cancer Hazard	1.0		

Sources: County 2007a; SDAPCD Rules 20.2 and 20.3.
Notes: T-BACT = Toxics-Best Available Control Technology

Table 3.1.1-5
INTEGRATED VECTOR MANAGEMENT PROGRAM EQUIPMENT USAGE (DAILY)

Equipment Name	Equipment Type	Peak Daily Usage per Unit (hours)	Emissions Factor Source
Land Surveillance and Application/Management			
Dump Truck[1]	Dump Truck	6	CARB's OFF-ROAD
Caterpillar 320[1]	Excavator	4	CARB's OFF-ROAD
Polaris Sportsman[1]	ATV Quad with Plow	4	CARB's OFF-ROAD
John Deere 6420[1]	Tractor	4	CARB's OFF-ROAD
Caterpillar D3[1]	Tracked Dozer	4	CARB's OFF-ROAD
Woodchipper[1]	Processing Equipment	4	CARB's OFF-ROAD
Arrow ULV (gas)	Hand Sprayer/Fogger	4	CARB's OFF-ROAD
Colt ULV (gas)	Hand Sprayer/Fogger	4	CARB's OFF-ROAD
Maruyama	Granular applicator	2	CARB's OFF-ROAD
Buffalo turbine	Vehicle-mounted sprayer	2	CARB's OFF-ROAD
Skid Sprayer	Vehicle-mounted sprayer	2	CARB's OFF-ROAD
Fleet Vehicle [2]	Medium Duty Truck	79 miles	CARB's EMFAC
Fleet Vehicle [2]	Light Duty Truck	113 miles	CARB's EMFAC
Water Surveillance and Application/Management			
Marshmaster MM-1LX[1]	Aquatic Weed Harvester	1	CARB's OFF-ROAD
Pond Pump – WB15	Pond Pump	2	CARB's OFF-ROAD
Boat motor – 5 horsepower four stroke engine	Outboard Motor	3	CARB's PC2014
Boat motor – 9.9 horsepower four stroke engine	Outboard Motor	3	CARB's PC2014
Aerial Surveillance and Application/Management			
Bell 206B	Aircraft	8.5	USEPA AP-42
Robinson R44 Raven II	Aircraft	8.5	USEPA AP-42
Piper Chieftain	Aircraft	6	USEPA AP-42

Source: County 2021c.
Notes:
[1] Equipment/vehicle is not part of VCP's existing inventory but is proposed under IVMP.
[2] Using County Department of Environmental Health and Quality's fleet vehicle data from calendar year 2019, an average daily mileage was determined (Medium Duty = 63.4, Light Duty = 90.7). Because this is an average, an additional 25% was conservatively added for the purposes of estimated peak mileage for this air quality analysis.
This table only includes equipment that is gas-powered. Equipment that is battery-operated is excluded since no air emissions would occur.
ULV = ultra-low volume

This page intentionally left blank

Table 3.1.1-6
SUMMARY OF AIR QUALITY EMISSIONS

Program	Pollutant Emissions (pounds per day)					
	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$
Existing IVMP	13.61	98.24	77.65	0.18	2.54	1.86
Proposed Enhancements to IVMP[1]	2.78	38.90	10.71	0.03	0.80	0.80
Total Daily Maximum Emissions	**16.38**	**137.15**	**88.37**	**0.23**	**3.34**	**2.67**
Screening Level Thresholds	*75*	*550*	*250*	*250*	*100*	*55*
Exceed Thresholds?	***No***	***No***	***No***	***No***	***No***	***No***

Source: HELIX 2021c (Appendix D).
Notes: total emissions modeled may not precisely equal sum of subparts due to rounding. CO = carbon monoxide; NO_X = oxides of nitrogen; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; ROG = reactive organic gas; SO_X = oxides of sulfur; PM_{10} = particulate matter 10 microns or less in diameter

[1] See Table 3.1.1-5 for list of proposed equipment/vehicles.

Table 3.1.1-7
ESTIMATED DAILY OPERATIONAL EMISSIONS BY CATEGORY

Category	Pollutant Emissions (pounds per day)					
	ROG	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$
Land Surveillance and Application/Management	5.90	137.03	11.71	0.08	1.97	1.66
Water Surveillance and Application/Management	1.60	4.14	2.03	<0.01	0.33	0.33
Air Surveillance and Application/Management	0.02	0.31	74.63	0.15	1.04	0.68
Pesticides [1]	8.86	N/A	N/A	N/A	N/A	N/A
Total Daily Maximum Emissions	**16.38**	**137.15**	**88.37**	**0.23**	**3.34**	**2.67**
Screening Level Thresholds	*75*	*550*	*250*	*250*	*100*	*55*
Exceed Thresholds?	***No***	***No***	***No***	***No***	***No***	***No***

Source: HELIX 2021c (Appendix D).
Notes: Notes: total emissions modeled may not precisely equal sum of subparts due to rounding. CO = carbon monoxide; N/A = not applicable (no related emissions); NO_X = oxides of nitrogen; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter; ROG = reactive organic gas; SO_X = oxides of sulfur; PM_{10} = particulate matter 10 microns or less in diameter

[1] See Table 3.1.1-8 for summary of pesticide-related VOC emissions. As noted in this chapter, CARB defines and uses the term ROGs, while the USEPA defines and uses the term VOCs. The compounds included in the lists of ROGs and VOCs and the methods of calculation are slightly different. However, for the purposes of estimating criteria pollutant precursor emissions, the two terms are used interchangeably.

Table 3.1.1-8
ANNUAL VOLATILE ORGANIC COMPOUNDS EMISSIONS FROM PESTICIDES

Product	CA Registration No.	VOC Emissions Potential	Primary Active Ingredient	Formulation Type	Application Total (pounds)	Total VOC Emissions (pounds)
Zoecon Altosid Briquets	2724-375-ZA	17.31	S-Methoprene	Pellet/Tablet/Cake/ Briquet	205.01	35.49
Zoecon Altosid Pellets	2724-448-ZA	2.82	S-Methoprene	Granular/Flake	206.50	5.82
Zoecon Altoside XR Extended Residual Briquets	2724-421-ZA	5.18	S-Methoprene	Pellet/Tablet/Cake/ Briquet	432.15	22.39
FourStar BTI CRG	85685-4-AA	3.7	Bacillus Thuringiensis (Berliner), subsp. Israelensis, Serotype H-14	Granular/Flake	2,308.35	85.41
CocoBear[1]	8329-93-AA	50	Mineral Oil	Oil	27.63 (gal)	100.01
MetaLarv S-PT Mosquito Growth Regulator Pellet	73049-475-AA	5.18	S-Methoprene	Pellet/Tablet/Cake/ Briquet	381.22	19.75
Mosquito Dunks	6218-47-ZB	5.18	Bacillus Thuringiensis (Berliner), Subsp. Israelensis, Serotype H-14	Pellet/Tablet/Cake/ Briquet	27.20	1.41
Mosquito Fish	N/A	N/A	N/A	organism	22,707 units	N/A
Natular G	8329-80-AA	3.7	Spinosad	Granular/Flake	10,100.63	373.72
VectoBac 12AS Biological Larvicide Aqueous Suspension	73049-38-AA	5.71	Bacillus Thuringiensis, subsp. Israelensis, Strain AM 65-52	Suspension	1.80 (gal)	0.91
VectoMax FG Biological Larvicide Fine Granule	73049-429-ZC	3.7	Bacillus Thuringiensis, subsp. Israelensis, Strain AM 65-52	Granular/Flake	69,902.15	2,586.38
VectoMax WSP Biological Larvicide	73049-429-ZA	1.15	Bacillus Thuringiensis, subsp. Israelensis, Strain AM 65-52	Soluble Powder	75.38	0.87
					TOTAL	**3,232.16 pounds/yr (8.86 pounds/day)**

Notes:
[1] In 2018, the VCP applied Golden Bear 1111; however, CDPR's VOC online calculator no longer offers Golden Bear calculations. Therefore, CocoBear was substituted as a comparable replacement in the VOC calculator.
Table represents all pesticides applied by the VCP in baseline calendar year 2018 according to pesticide use reports.
VOC emissions were determined using CDPR's online VOC calculator (https://apps.cdpr.ca.gov/voc-calculator/start.cfm), accessed 12/22/21.

3.1.2 Greenhouse Gas Emissions

This section presents the results of an assessment of potential greenhouse gas (GHG) emissions impacts associated with the proposed Integrated Vector Management Program (Proposed Project or IVMP) based on the information and analysis presented in the Proposed Project's *GHG Emissions Technical Report* (HELIX 2021d; Appendix E).

3.1.2.1 *Existing Conditions*

Environmental Setting

Understanding Global Climate Change

Global climate change refers to changes in average climatic conditions on Earth as a whole, including temperature, wind patterns, precipitation, and storms. Global temperatures are moderated by naturally occurring atmospheric gases. These gases are commonly referred to as GHGs because they function like a greenhouse by letting light in but preventing heat from escaping, thus warming Earth's atmosphere.

GHGs are emitted by natural processes and human (anthropogenic) activities. Anthropogenic GHG emissions are primarily associated with (1) the burning of fossil fuels during motorized transport, electricity generation, natural gas consumption, industrial activity, manufacturing, and other activities; (2) deforestation; (3) agricultural activity; and (4) solid waste decomposition.

Greenhouse Gases of Primary Concern

The GHGs, as defined under California's Assembly Bill (AB) 32, include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (SF_6).

Carbon Dioxide. CO_2 is the most important and common anthropogenic GHG. CO_2 is an odorless, colorless GHG. Natural sources include the decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungi; evaporation from oceans; and volcanic outgassing. Anthropogenic sources of CO_2 include burning fuels, such as coal, oil, natural gas, and wood. Data from ice cores indicate that CO_2 concentrations remained steady prior to the current period for approximately 10,000 years.

Methane. CH_4 is a gas and the main component of natural gas used in homes. A natural source of CH_4 is from the decay of organic matter. Geological deposits known as natural gas fields contain CH_4, which is extracted for fuel. Other sources are from decay of organic material in landfills, fermentation of manure, and cattle digestion.

Nitrous Oxide. N_2O is produced by both natural and human-related sources. N_2O is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste. Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic (fatty) acid production, and nitric acid production.

Fluorocarbons. Fluorocarbons are gases formed synthetically by replacing all hydrogen atoms in CH_4 or ethane with chlorine and/or fluorine atoms. Chlorofluorocarbons are nontoxic, nonflammable, insoluble, and chemically nonreactive in the troposphere (the level of air at Earth's

surface). Chlorofluorocarbons were first synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone; therefore, their production was stopped as required by the Montreal Protocol.

Sulfur Hexafluoride. SF_6 is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF_6 is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semi-conductor manufacturing, and as a tracer gas for leak detection.

To measure and compare GHG pollutants, emissions are calculated in terms of CO_2 equivalents, which is the universal unit of measurement used to indicate the global warming potential for different GHG pollutants. Represented as CO_2 equivalent (CO_2e), these values range from "1" for CO_2 to "25" for CH_4 to "298" for N_2O.

Worldwide and National Greenhouse Gas Inventory

In 2013, total GHG emissions worldwide were estimated at 48,257 million metric tons (MMT) of CO_2e emissions. The United States contributed the second largest portion (13%) of global GHG emissions in 2013. Total U.S. GHG emissions were 6,213 MMT CO_2e in 2013, of which 82% was CO_2 emissions. On a national level, approximately 27% of GHG emissions were associated with transportation and about 38% were associated with electricity generation (WRI 2017).

State Greenhouse Gas Inventories

The California Air Resources Board (CARB) performed Statewide inventories for the years 1990 to 2017, as shown in Table 3.1.2-1, *California Greenhouse Gas Emissions by Sector*. The inventory is divided into six broad sectors of economic activity: agriculture, commercial, electricity generation, industrial, residential, and transportation.

As shown in Table 3.1.2-1, Statewide GHG source emissions totaled 431 MMT CO_2e in 1990, 471 MMT CO_2e in 2000, 449 MMT CO_2e in 2010, and 424 MMT CO_2e in 2017. Transportation-related emissions consistently contribute the most GHG emissions followed by electricity generation and industrial emissions.

Regional Greenhouse Gas Inventory

A San Diego regional emissions inventory that was prepared by the County and the University of San Diego School of Law Energy Policy Initiatives Center accounted for the unique characteristics of the region. The 2014 emissions inventory update for San Diego County, which represents the most recent data available at the time of this analysis, is presented in Table 3.1.2-2, *San Diego County Greenhouse Gas Emissions by Sector in 2014*. Similar to the Statewide emissions, transportation-related GHG emissions contributed the most countywide followed by emissions associated with electricity generation.

3.1.2.2 *Regulatory Setting*

Federal

Federal Greenhouse Gas Regulations

The U.S. Supreme Court ruled on April 2, 2007, in *Massachusetts v. U.S. Environmental Protection Agency* that CO_2 is an air pollutant, as defined under the Clean Air Act, and that the

U.S. Environmental Protection Agency (USEPA) has the authority to regulate GHG emissions. The USEPA announced that GHGs (including CO_2, CH_4, N_2O, hydrofluorocarbons, perfluorocarbons, and SF_6) threaten the public health and welfare. This action was a prerequisite to finalizing the USEPA's GHG emissions standards for light-duty vehicles, which were jointly proposed by the USEPA and the U.S. Department of Transportation's National Highway Traffic Safety Administration (NHTSA). The standards were established on April 1, 2010, for 2012 through 2016 model year vehicles and on October 15, 2012, for 2017 through 2025 model year vehicles (USEPA and NHTSA 2012).

Mandatory Reporting Rule of Greenhouse Gases

On January 1, 2010, the USEPA began requiring large emitters of heat-trapping emissions to begin collecting GHG data under a new reporting system. This program covers approximately 85% of the nation's GHG emissions and applies to roughly 10,000 facilities. Fossil fuel and industrial GHG suppliers, motor vehicle and engine manufacturers, and facilities that emit 25,000 metric tons or more of CO_2e (MT CO_2e) per year are required to report GHG emissions data to the USEPA annually. This reporting threshold is equal to the annual GHG emissions from approximately 4,600 passenger vehicles.

Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards

The USEPA and NHTSA worked together to develop a national program of regulations to reduce GHG emissions and improve the fuel economy of light-duty vehicles. The USEPA established the first-ever national GHG emissions standards under the Clean Air Act, and the NHTSA established Corporate Average Fuel Economy standards under the Energy Policy and Conservation Act. On April 1, 2010, the USEPA and NHTSA announced a joint Final Rulemaking that established standards for 2012 through 2016 model year vehicles. This was followed up on October 15, 2012, when the agencies issued a Final Rulemaking with standards for model years 2017 through 2025. On August 2, 2018, the agencies released a notice of proposed rulemaking—the Safer Affordable Fuel-Efficient Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks (SAFE Vehicles Rule). The purpose of the SAFE Vehicles Rule is "to correct the national automobile fuel economy and greenhouse gas emissions standards to give the American people greater access to safer, more affordable vehicles that are cleaner for the environment." The direct effect of the rule is to eliminate the standards that were put in place to gradually raise average fuel economy for passenger cars and light trucks under test conditions from 37 miles per gallon in 2020 to 50 miles per gallon in 2025. By contrast, the new SAFE Vehicles Rule freezes the average fuel economy level standards indefinitely at the 2020 levels. The new SAFE Vehicles Rule also results in the withdrawal of the waiver previously provided to California for the State's GHG and zero-emissions vehicle programs under Section 209 of the Clean Air Act. The combined USEPA GHG standards and NHTSA Corporate Average Fuel Economy standards resolve previously conflicting requirements under both federal programs and the standards of the State of California and other states that have adopted the California standards.

State

Executive Order S-3-05

Signed by Governor Schwarzenegger on June 1, 2005, Executive Order (EO) S-3-05 proclaimed that California is vulnerable to climate change impacts. It declared that increased temperatures could reduce snowpack in the Sierra Nevada, further exacerbate California's air quality problems,

and potentially cause a rise in sea levels. To avoid or reduce climate change impacts, EO S-3-05 calls for a reduction in GHG emissions to the year 2000 level by 2010, to year 1990 levels by 2020, and to 80% below 1990 levels by 2050.

Assembly Bill 32 – Global Warming Solutions Act of 2006

Approved by Governor Schwarzenegger on September 27, 2006, the California Global Warming Solutions Act of 2006 (California Health and Safety Code, Sections 38500, 38501, 28510, 38530, 38550, 38560, 38561–38565, 38570, 38571, 38574, 38580, 38590, and 38592–38599), widely known as AB 32, requires that CARB develop and enforce regulations for the reporting and verification of Statewide GHG emissions. CARB was directed to set a GHG emissions limit based on 1990 levels to be achieved by 2020. The bill requires CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions. AB 32 enacts the goals of EO S-3-05.

Senate Bill 375

In September 2008, California's Governor approved SB 375, which directs CARB to set regional targets for reducing GHG emissions. The law establishes a "bottom up" approach to ensure that cities and counties are involved in the development of regional plans to achieve those targets. SB 375 builds on the existing framework of regional planning to tie together the regional allocation of housing needs and regional transportation planning in an effort to reduce emissions from motor vehicle trips.

Executive Order B-30-15

Signed by Governor Brown on April 29, 2015, EO B-30-15 established a California GHG reduction target of 40% below 1990 levels by 2030. California achieved the target of reducing GHG emissions to 1990 levels by 2020, as established in AB 32. The updated emissions reduction target of 40% below 1990 levels by 2030 will make it possible to reach the ultimate goal established by EO S-3-05 of reducing emissions 80% under 1990 levels by 2050.

Senate Bill 32

Approved by Governor Brown on September 8, 2016, Senate Bill (SB) 32 (Amendments to the California Global Warming Solutions Action of 2006) extended California's GHG reduction programs beyond 2020. SB 32 amended the California Health and Safety Code to include Section 38566, which contains language to authorize CARB to achieve a Statewide GHG emissions reduction of at least 40% below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by EO B-30-15 for 2030, which set the next interim step in the State's continuing efforts to pursue the long-term target expressed in EO B-30-15 of 80% below 1990 emissions levels by 2050.

Assembly Bill 197

A condition of approval for SB 32 was the passage of AB 197. Approved by Governor Brown on September 8, 2016, AB 197 requires that CARB consider the social costs of GHG emissions and prioritize direct reductions in GHG emissions at mobile sources and large stationary sources. AB 197 also gives the California legislature more oversight over CARB through the addition of two legislatively appointed members to the CARB and the establishment a legislative committee to make recommendations about CARB programs to the legislature.

Assembly Bill 1493 – Vehicular Emissions of Greenhouse Gases

Approved by Governor Davis on July 22, 2002, AB 1493 (Pavley) requires that CARB develop and adopt regulations that achieve "the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty truck and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the State." On September 24, 2009, CARB adopted amendments to the Pavley regulations that intend to reduce GHG emissions in new passenger vehicles from 2009 through 2016. The amendments bind California's enforcement of AB 1493 (starting in 2009) while providing vehicle manufacturers with new compliance flexibility. The amendments also prepare California to merge its rules with the federal Corporate Average Fuel Economy rules for passenger vehicles. In January 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emissions vehicles into a single packet of standards called Advanced Clean Cars.

Executive Order S-01-07

EO S-01-07 was signed by Governor Schwarzenegger on January 18, 2007, and directs that a Statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10% by 2020. It orders that a Low Carbon Fuel Standard (LCFS) for transportation fuels be established for California and directs CARB to determine whether an LCFS can be adopted as a discrete early action measure pursuant to AB 32. CARB approved the LCFS as a discrete early action item with a regulation adopted and implemented in 2010. Although challenged in 2011, the Ninth Circuit reversed the District Court's opinion and rejected arguments that implementing LCFS violates the interstate commerce clause in September 2013. Therefore, CARB is continuing to implement the LCFS Statewide.

California Air Resources Board: Scoping Plan

In December 2008, CARB adopted its first version of its *Climate Change Scoping Plan*, which contained the main strategies for California to achieve the mandate of AB 32 to reduce Statewide GHG emissions to 1990 levels by 2020. The *Climate Change Scoping Plan* establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. The *Climate Change Scoping Plan* evaluates opportunities for sector-specific reductions, integrates all CARB and Climate Action Team early actions and additional GHG reduction measures by both entities, identifies additional measures to be pursued as regulations, and outlines the role of a cap-and-trade program.

On December 14, 2017, CARB adopted the *2017 Climate Change Scoping Plan* (*2017 Scoping Plan*), which lays out the framework for achieving the mandate of SB 32 (2016) to reduce Statewide GHG emissions to at least 40% below 1990 levels by the end of 2030 (CARB 2017). The *2017 Scoping Plan* includes guidance to local governments in Chapter 5, including plan-level GHG emissions reduction goals and methods to reduce communitywide GHG emissions. In its guidance, CARB recommends that "local governments evaluate and adopt robust and quantitative locally-appropriate goals that align with the statewide per capita targets and the State's sustainable development objectives and develop plans to achieve the local goals." CARB further states that "it is appropriate for local jurisdictions to derive evidence-based local per capita goals [or some other metric] that the local jurisdiction deems appropriate, such as mass emissions or per service population, based on local emissions sectors and population projections that are consistent with the framework used to develop the statewide per capita targets" (CARB 2017).

Most recently, in May 2022 CARB published developed a draft *2022 Scoping Plan*, which assesses progress toward the statutory 2030 target, while laying out a path to achieving carbon neutrality no later than 2045. The *2022 Scoping Plan* focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the State's long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities (CARB 2022).

Local

San Diego Association of Governments – San Diego Forward: The Regional Plan

Initially adopted in 2011, *San Diego Forward: The Regional Plan* (*Regional Plan*) is the long-range planning document developed to address the region's housing, economic, transportation, environmental, and overall quality-of-life needs. The *Regional Plan* is updated approximately every 4 years, and the most recent version was adopted by the San Diego Association of Governments (SANDAG) on December 10, 2021. The underlying purpose of the *Regional Plan* is to provide direction and guidance on future regional growth (i.e., the location of new residential and non-residential land uses) and transportation patterns throughout the region as stipulated under SB 375. The *Regional Plan* includes a vision for transportation that is informed by five key strategies for mobility, collectively known as the 5 Big Moves: Complete Corridors, Transit Leap, Mobility Hubs, Flexible Fleets, and Next Operating System (SANDAG 2021b).

County of San Diego General Plan

The County 2011 General Plan includes a plan to balance population growth and development with infrastructure needs and resource protection. The General Plan is based on smart growth and land planning principles that will reduce VMT, and thus result in a reduction of GHGs.

The General Plan's Conservation and Open Space Element also includes goals and policies that are designed to reduce GHGs emissions by enhancing the efficiency of energy use in buildings and infrastructure, promoting the use of renewable energy sources and conservation, and other methods of efficiency. Such policies include the following:

- COS-14.4, Sustainable Technology and Projects: Require technologies and projects that contribute to the conservation of resources in a sustainable manner, that are compatible with community character, and that increase the self-sufficiency of individual communities, residents, and businesses.

- COS-14.10, Low-Emission Construction Vehicles and Equipment: Require County contractors and encourage other developers to use low-emission construction vehicles and equipment to improve air quality and reduce GHG emissions.

County of San Diego Climate Action Plan

In February 2018, the County Board of Supervisors adopted a long-term programmatic Climate Action Plan (CAP) that outlined the actions the County would undertake to achieve its proportional share of State GHG emissions reductions to be compliant with AB 32 and EO S-3-05.

However, as a result of litigation, the County Board of Supervisors rescinded and vacated the CAP and associated actions on September 30, 2020. Pending adoption of a new CAP, the County

would continue to implement the 26 GHG reduction measures and sustainability initiatives and programs identified in the 2018 CAP to reduce GHG emissions to meet the State's 2030 reduction target. Since the CAP has been formally rescinded, it is not discussed further in this document.

County of San Diego 2021–2026 Strategic Plan

The County's commitment to sustainability is highlighted in the County's *2021–2026 Strategic Plan*, which identifies enhancing the quality of the environment through sustainability, pollution prevention, and strategic planning as County priorities. The County has developed a number of plans and programs to further that commitment and improve air quality and health and provide long-term economic benefits.

Electric Vehicle Roadmap

On October 16, 2019, the County Board of Supervisors adopted the *Electric Vehicle Roadmap* to identify actions the County will take over the next decade to facilitate the adoption of clean mobility in the region. The *Electric Vehicle Roadmap* contains 6 goals and 11 recommendations that leverage the County's land use authority, permitting processes, and outreach platforms to increase electric vehicle ownership and charging installations in the unincorporated area and at County facilities.

Strategic Plan to Reduce Waste

On April 26, 2017, the County Board of Supervisors adopted the *Strategic Plan to Reduce Waste*, a plan that explores best practices and innovations that will help the County achieve a 90% (zero waste) waste diversion goal by 2040. The purpose of the *Strategic Plan to Reduce Waste* is to effectively and efficiently make the best use of natural resources and reduce the need for new landfills.

Renewable Energy Program

Electricity and natural gas used in buildings contribute 33% of total GHG emissions in the unincorporated county. The County works to incentivize solar photovoltaic systems and incorporates new technologies and practices that increase energy savings, lower utility costs, and improve air quality in County buildings. The County also strives to increase the generation and use of renewable energy on site at facilities and across the unincorporated county to reduce emissions from fossil fuel-generated electricity.

Looking to the future, the County plans to achieve 90% renewable electricity for the unincorporated area by 2030 through a renewable energy program.

Regional Decarbonization Framework

On January 27, 2021, the County Board of Supervisors approved the development of a framework for a regional zero-carbon sustainability plan in partnership with the University of California, San Diego, School of Global Policy and Strategy and the University of San Diego School of Law Energy Policy Initiatives Center. The framework would provide science-based pathways to achieve zero carbon in the region and includes a three-pronged regional approach to lower the carbon footprint to zero emissions:

- Zero emissions of CO_2.

- Reduction of “super-pollutants” such as black carbon (or “soot”) and ground-level ozone (the main ingredient of “smog”), much of which are directly harmful to human health.

- Drawdown of atmospheric pollution through technological and natural means. Nature-based methods for carbon capture and storage include climate-smart practices in forestry and agriculture.

The *San Diego Regional Decarbonization Framework: Technical Report* was finalized in August 2022, and the *Implementation Playbook* has begun to be prepared that will assist in implementing the Regional Decarbonization Framework (County 2022e; McCord 2022).

Integrated Vector Management Program Best Management Practices

The IVMP follows the best management practices (BMPs) described in State guidance documents, such as the *Best Management Practices for Mosquito Control in California* (CDPH; 2012), *Best Management Practices for Mosquito Control on California State Properties* (CDPH 2008a), and *California Mosquito-Borne Virus Surveillance and Response Plan* (CDPH 2021), which detail best integrated vector management practices for vector control and vector-borne disease prevention. In addition, the County integrates BMPs into the IVMP serving as a comprehensive management framework for implementation of individual activities. BMPs implemented as part of the IVMP demonstrate the County’s commitment to avoid or minimize impacts to the maximum extent feasible. The following BMPs have been developed by the VCP in combination with the above-referenced sources and will be implemented to reduce GHG emissions:

- B8: Engine idling times will be minimized by shutting off equipment and vehicles when not in use to the extent feasible.

- B9: Vehicles and equipment will be maintained in accordance with manufacturer’s specifications, including mufflers, engine operation, and tire inflation pressure to minimize rolling resistance.

- B10: Vegetation trimming or removal, when necessary to provide access to vector habitat for surveillance and control activities, will be conducted by hand using handheld tools rather than gas-powered equipment or heavy machinery to minimize negative environmental effects.

- B14: Where heavy equipment or machinery is necessary, measures will be taken, such as reducing turns by track-type vehicles, taking a minimum number of passes with equipment, identifying multiple points of entry, driving vehicles at low speed, and avoiding or minimizing operating on open mud and other soft areas.

In addition to the aforementioned BMPs, the County also engages in other environmentally friendly practices that further reduce potential air emissions, such as the following:

- The Vector Control Program assigns geographic locations, defined by continuous census tracts, to individual Certified Vector Control Technicians. Each geographic location is referred to as a “district.” Work is assigned to each district, which defines the routine work area for Certified Vector Control Technicians within a specific geographic area, thereby reducing mileage driven, which reduces fuel consumption and vehicle emissions.

- Certified Vector Control Technicians use mobile phones to call customers and to access the County-produced Vector Mobile App. Real-time access to new work requests while in the field allows Certified Vector Control Technicians to conduct and complete additional work while remaining in the geographic area. When they are able to complete new work assignments while remaining in the current area, this eliminates the need to return at a later time, thereby reducing mileage driven, which reduces fuel consumption and vehicle emissions.

3.1.2.3 *Analysis of Project Effects and Determination as to Significance*

California Environmental Quality Act (CEQA) Guidelines Appendix G criteria shall apply in the absence of a County-established threshold for GHG emissions to determine if the Proposed Project would result in a significant impact. Specifically, a significant impact from GHG emissions would result if the Proposed Project would:

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

2. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Currently, no local, State, or federal regulatory standards of significance exist for GHG emissions under CEQA for temporary or intermittent mobile sources such as vector control activities. Nonetheless, CEQA Guidelines, Section 15064.4, states that a CEQA Lead Agency "shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of GHG emissions resulting from a project." It also states that the lead agency has the discretion to determine the methodology to assess the significance of GHG emissions on the environment. Accordingly, the following section describes the threshold of significance applied to the Proposed Project.

California Air Pollution Control Officers Association Screening Levels

To establish context in which to consider the Proposed Project's GHG emissions, this analysis reviewed guidelines used by other experts and public agencies. Prior to 2020, a screening level based on the California Air Pollution Control Officers Association's (CAPCOA) report *CEQA & Climate Change* was used as a tool used to determine whether further analysis would be needed to examine the GHG impacts of a proposed project (CAPCOA 2008). CAPCOA developed a 900 MT CO_2e per year screening level by analyzing the capture of 90% or more of future discretionary development for residential and commercial projects across the State. Direct and cumulative impacts would be potentially significant and require further analysis if a project results in emissions that exceed 900 MT CO_2e beyond current baseline emissions. This screening threshold was developed to achieve the reductions required by AB 32 for meeting 1990 levels of Statewide GHG emissions by the year 2020.

Subsequently, SB 32 set a further GHG emissions reduction target of 40% below 1990 levels by 2030. To achieve this target, a regression trajectory can be projected by reducing the emissions goal from the 900 MT CO_2e target in 2020 by the State's 40% reduced target, which would be 540 MT CO_2e in 2030. This trajectory is outlined in Table 3.1.2-3, *Greenhouse Gas Screening Level Trajectory*. Therefore, for the purpose of this report, 540 MT CO_2e is considered a valid and adequate screening level because it is based on current methodologies. It is not the intent of the County to adopt the above screening levels as mass emissions limits but, rather, to disclose this

information and put project-generated GHG emissions in the appropriate Statewide context and consider the Proposed Project's potential impacts pursuant to CEQA.

Project-Generated Greenhouse Gas Emissions

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would result in a significant impact if it would generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

Impact Analysis

Construction Impacts

Under the Proposed Project, the IVMP would continue to use a comprehensive and balanced approach to vector control. The IVMP does not include the construction or renovation of habitable structures, stationary sources, or infrastructure. Grading and vegetation clearing are analyzed further below under *Operational Impacts* since they are considered ongoing activities under the IVMP.

Therefore, the Proposed Project would not result in construction activities and associated emissions, and the following analysis considers the continued operation and enhancement of the VCP's vector control practices.

Operational Impacts

Because of the scope and scale of IVMP activities, its emissions potential has been evaluated at a programmatic level based on the types of vehicles and equipment that may be used during surveillance and monitoring, source reduction, and source treatment activities. Due to the programmatic nature of this document, the exact locations and extent of all activities to be conducted under the IVMP are not known at this time.

Specifically, implementation of the IVMP includes operation of on-road fleet vehicles, watercraft, aircraft, off-road construction vehicles/equipment, portable equipment, and small equipment for the purpose of conducting surveillance, source treatment, and source reduction activities, which would result in GHG emissions from engine exhaust, as evaluated below. A list of equipment, assumed usage, and emissions factor source is provided in Table 3.1.2-4, *Integrated Vector Management Program Equipment Usage (Annual).*

Surveillance and Monitoring

Surveillance and monitoring activities include evaluation of mosquito-breeding areas by conducting surveys via ground vehicles, aircraft (including piloted and drone[1]), watercraft, and remote sensing equipment; trapping of mosquitoes and rodents; and testing of collected samples for vector-borne diseases. Accordingly, all vehicles currently used or proposed under the IVMP were quantified, and their respective total annual usage was estimated based on historical data

[1] For the purposes of this Program Environmental Impact Report, "drone" is intended to generically mean a remotely piloted or unpiloted aircraft. As of this writing, the Federal Aviation Administration's official terminology is Unmanned Aircraft Systems; however, the Federal Aviation Administration is transitioning toward gender-neutral terminology such as drone operator, certificated remote pilot, model aircraft flyer, and advanced air mobility operator.

or anticipated frequency. As shown in Table 3.1.2-4, surveillance and monitoring vehicles include medium-duty and light-duty ground fleet vehicles[2], helicopters and fixed-wing aircraft, and boat motors for watercraft. Using applicable emissions factors published by CARB and the USEPA, GHG emissions were calculated and are summarized in Table 3.1.2-5, *Summary of Greenhouse Gas Emissions*, and Table 3.1.2-6, *Estimated Annual Operational Greenhouse Gas Emissions,* based on the method of surveillance and application.

Source Reduction

The reduction of vector-breeding sources primarily involves physical control techniques that eliminate or reduce standing water that functions as mosquito-breeding habitat. These techniques include but are not limited to vegetation management, including trimming and removal of vegetation, removal of sediment, water control, and other maintenance activities. Accordingly, all equipment proposed for source reduction under the IVMP were quantified, and their respective total annual usage was estimated based on anticipated frequency. As shown in Table 3.1.2-4, equipment intended for source treatment would include a tractor, tracked dozer, excavator, woodchipper, dump truck, all-terrain vehicle with plow, and aquatic weed harvester. Using applicable emissions factors published by CARB and the USEPA, GHG emissions were calculated and are summarized in Tables 3.1.2-5 and 3.1.2-6 based on the method of surveillance and application.

Source Treatment

Source treatment involves application of biological and chemical controls to control, manage, and reduce vectors. It can include the use of natural predators, parasites, or pathogens to reduce immature mosquito numbers (biological controls) and application of chemical controls that are pesticides that target larvae (larvicides) or adult mosquitoes (adulticides). The primary technique employed by the Vector Control Program for biological controls is the introduction of mosquito fish into artificial mosquito-breeding sources, such as ornamental ponds, rain barrels, horse troughs, neglected swimming pools, and spas, to reduce the abundance of mosquitoes. As such, biological controls would not result in GHG emissions.

Chemical controls (i.e., pesticides) are applied through on-ground techniques such as by foot with backpack applicators, vehicle-mounted equipment, or watercraft by qualified, certified technicians, or by aircraft (including piloted and drone) when land-based methods are not practicable due to the size of the area to be treated or impediments to access. Accordingly, all equipment currently used or proposed for source treatment under the IVMP were quantified, and their respective total annual usage was estimated based on historical data or anticipated frequency. As shown in Table 3.1.2-4, source treatment equipment includes hand sprayer/fogger, granular applicator, vehicle-mounted sprayer, and pond pump. Using applicable emissions factors published by CARB and the USEPA, GHG emissions were calculated and are summarized in Tables 3.1.2-5 and 3.1.2-6 based on the method of surveillance and application.

It is important to note that some equipment used by the VCP does not generate GHG emissions and were therefore excluded from this analysis, including hand-operated tools, attachments, battery-powered traps, and other equipment (see Appendix E for a listing of all equipment and activity schedules and equipment emissions data).

[2] Refer to Table 3.1.7-2 for a summary of fleet vehicle usage data.

As shown in Tables 3.1.2-5 and 3.1.2-6, implementation of the IVMP would emit approximately 285 MT CO_2e annually. In comparison to the screening level used for this analysis, emissions generated from IVMP implementation would not exceed the screening level of 540 MT CO_2e. Additionally, the Proposed Project would implement the BMPs described in Section 3.1.2.2, *Regulatory Setting*, to reduce GHG emissions. Specifically, limiting of idling time (B8), proper maintenance of vehicles and equipment (B9), use of handheld tools where feasible (B10), and minimization of the use of heavy equipment and machinery (B14). Therefore, the Proposed Project's emissions would result in a less than significant impact to climate change/GHG.

Conflict with Plans, Policies, or Regulations

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would result in a significant impact if it would conflict with a plan, policy or regulation adopted for the purpose of reducing the emissions of GHG.

Impact Analysis

As discussed in Section 3.1.2.2, *Regulatory Setting*, the *2017 Scoping Plan* outlines the framework for achieving GHG reduction targets by 2030 as established in Executive Order B-30-15 and Senate Bill 32. The *2017 Scoping Plan* identifies GHG emissions reduction goals to achieve a statewide emissions level that is 40% below 1990 levels by 2030. Therefore, the *2017 Scoping Plan* is the applicable plan with which the Proposed Project should demonstrate consistency regarding state goals. However, the *2017 Scoping Plan* does not contain any measure or goal requirements for vector control-related GHG emissions; thus, it can be concluded that the *2017 Scoping Plan* would achieve the identified statewide goals for 2020 and 2030 regardless of vector control activity. Furthermore, as analyzed above under *Project-Generated Greenhouse Gas Emissions*, the Proposed Project would not exceed the established screening level and, therefore, would comply with statewide GHG reduction targets and would not conflict with the *2017 Scoping Plan*.

In addition, in August 2022 the County finalized the *San Diego Regional Decarbonization Framework: Technical Report* and is working towards preparing the *Implementation Playbook* that will assist in fulfilling the Regional Decarbonization Framework. Specifically, the *San Diego Regional Decarbonization Framework: Technical Report* provides technical and policy pathways to decarbonization in the medium-term to inform near-term policymaking in regional, County, and city governments. The *San Diego Regional Decarbonization Framework: Technical Report* models science-based pathways to net zero carbon emissions for the San Diego region by 2045, and it shows numerous ways to achieve regional emissions goals in multiple sectors to highlight trade-offs, co-benefits, decision points, risks, and synergies. The analyses and pathways should be updated as technologies evolve or uncertainties are resolved or clarified. To that end, the *San Diego Regional Decarbonization Framework: Technical Report* explores policy processes to help regional jurisdictions learn about uncertainties and adjust strategies as information arises (County 2022e; McCord 2022). As a County program, the IVMP would be subject to any applicable policies or directives that apply to County facilities and services, such as vector control activities. Therefore, because the IVMP includes a continuation of an existing program and because the

program would be subject to change to comply with current County initiatives, the IVMP would not conflict with or obstruction implementation of the Regional Decarbonization Framework.

Lastly, at the time of this writing there is no County-adopted CAP. Pending adoption of a new CAP, the County would continue to implement the 26 GHG reduction measures and sustainability initiatives and programs identified in the 2018 CAP to reduce GHG emissions to meet the State's 2030 reduction target. Nonetheless, it should be noted that the 2018 CAP did not contain a measure or goal requirements for vector control-related GHG emissions, and the CAP would have achieved its objectives regardless of vector control activity.

Therefore, the project would not conflict with an applicable plan, policy, or regulation adopted to reduce GHG emissions, and impacts would be less than significant.

3.1.2.4 *Cumulative Impact Analysis*

Given the small levels of emissions generated by a typical project relative to the total amount of GHG emissions generated on a regional, national, or global basis, individual projects are not expected to result in significant, direct impacts with respect to climate change. However, given the magnitude of the impact of GHG emissions on the global climate, GHG emissions from individual projects could result in significant, cumulative impacts with respect to climate change. Thus, the potential for a significant GHG impact is limited to cumulative impacts.

Global climate change is a cumulative issue by definition, and its analysis constitutes a cumulative review. The geographic scope for the analysis of cumulative climate change impacts is worldwide. The Proposed Project would continue to comprehensively approach vector control through various techniques, including surveillance and monitoring, source reduction (i.e., physical control), source treatment (i.e., biological and chemical controls), public education and outreach, and disease diagnostics. The Proposed Project would not generate growth, increase population or associated vehicle usage, or require the alteration of an existing land use designation through amendments to General Plans or changes to zoning. Furthermore, as shown in Tables 3.1.2-5 and 3.1.2-6, the Proposed Project would not result in a significant increase in GHG emissions. Therefore, the Proposed Project would not result in a cumulatively considerable contribution to cumulative climate change/GHG impacts.

3.1.2.5 *Significance of Impacts Prior to Mitigation*

In summary, the Proposed Project would result in GHG emissions during the ongoing implementation of the IVMP. The analysis evaluated the potential for adverse impacts to climate change due to project emissions. Operation of on-road fleet vehicles, watercraft, aircraft, portable equipment, and small equipment would result in emissions of GHGs from engine exhaust. As detailed in Section 3.1.2.3, *Analysis of Project Effects and Determination as to Significance*, the GHG emissions during IVMP implementation would not exceed the screening threshold of 540 MT CO_2e adjusted from CAPCOA for compliance with SB 32 in 2030. Therefore, the Proposed Project would have a less than significant cumulative impact with respect to climate change.

3.1.2.6 *Mitigation Measures*

Because the Proposed Project would not result in significant impacts, no mitigation is required.

3.1.2.7 *Conclusion*

The Proposed Project would have a less than significant impact with respect to climate change and GHG emissions.

Table 3.1.2-1
CALIFORNIA GREENHOUSE GAS EMISSIONS BY SECTOR

Sector	1990[1]	2000[1]	2010[1]	2017[1]
Agriculture and Forestry	18.9 (4%)	31.0 (7%)	33.7 (8%)	32.4 (8%)
Commercial	14.4 (3%)	14.1 (3%)	20.1 (4%)	23.3 (5%)
Electricity Generation	110.5 (26%)	105.4 (22%)	90.6 (20%)	62.6 (15%)
Industrial	105.3 (24%)	105.8 (22%)	101.8 (23%)	101.1 (24%)
Residential	29.7 (7%)	31.7 (7%)	32.1 (7%)	30.4 (7%)
Transportation	150.6 (35%)	183.2 (39%)	170.2 (38%)	174.3 (41%)
Unspecified Remaining	1.3 (<1%)	0.0 (0%)	0.0 (0%)	0.0 (0%)
Total	430.7	471.1	448.5	424.1

Source: CARB 2007, 2019.
Notes: MMT = million metric tons; CO_2e = carbon dioxide equivalent
[1] Emissions (MMT CO_2e)

Table 3.1.2-2
SAN DIEGO COUNTY GREENHOUSE GAS EMISSIONS BY SECTOR IN 2014

Sector	2014 Emissions MMT CO_2e (% total)[1]
On-Road Transportation	1.46 (45%)
Electricity	0.76 (24%)
Solid Waste	0.34 (11%)
Natural Gas Consumption	0.29 (9%)
Agriculture	0.16 (5%)
Water	0.13 (4%)
Off-Road Transportation	0.04 (1%)
Wastewater	0.02 (1%)
Propane	0.01 (<0.5%)
Total	3.21

Source: USD EPIC 2017. County of San Diego 2014 Greenhouse Gas Inventory and Projections. Prepared by the University of San Diego School of Law Energy Policy Initiatives Center and available online at: https://www.sandiegocounty.gov/content/dam/sdc/pds/advance/cap/publicreviewdocuments/PostBOSDocs/CAP%20Appendix%20A%20%20-%202014%20Inventory%20and%20Projections.pdf.
Notes: MMT = million metric tons; CO_2e = carbon dioxide equivalent
[1] Percentages may not total 100 due to rounding.

Table 3.1.2-3
GREENHOUSE GAS SCREENING LEVEL TRAJECTORY

Year	Screening Level (MT CO_2e)
2020	900
2021	855
2022	813
2023	722
2024	734
2025	697
2026	662
2027	629
2028	598
2029	568
2030	**540**

Source: CAPCOA 2008; SB 32.
Notes: MT = metric tons; CO_2e = carbon dioxide equivalents
Emissions reduce by 4.98% each year to achieve SB 32's 2030 target.

Table 3.1.2-4
INTEGRATED VECTOR MANAGEMENT PROGRAM EQUIPMENT USAGE (ANNUAL)

Equipment Name	Equipment Type	Total Annual Average Usage (hours)	Emissions Factor Source
Land Surveillance and Application/Management			
Dump Truck[1]	Dump Truck	330	CARB's OFF-ROAD
Caterpillar 320[1]	Excavator	80	CARB's OFF-ROAD
Polaris Sportsman[1]	ATV Quad with Plow	32	CARB's OFF-ROAD
John Deere 6420[1]	Tractor	36	CARB's OFF-ROAD
Caterpillar D3[1]	Tracked Dozer	48	CARB's OFF-ROAD
Woodchipper[1]	Processing Equipment	48	CARB's OFF-ROAD
Arrow ULV (gas)	Hand Sprayer/Fogger	24	CARB's OFF-ROAD
Colt ULV (gas)	Hand Sprayer/Fogger	12	CARB's OFF-ROAD
Maruyama	Granular applicator	180	CARB's OFF-ROAD
Buffalo turbine	Vehicle-mounted sprayer	24	CARB's OFF-ROAD
Skid Sprayer	Vehicle-mounted sprayer	72	CARB's OFF-ROAD
Fleet Vehicle	Medium Duty Truck	178,447 miles	CARB's EMFAC
Fleet Vehicle	Light Duty Truck	212,310 miles	CARB's EMFAC
Water Surveillance and Application/Management			
Marshmaster MM-1LX[1]	Aquatic Weed Harvester	96	CARB's OFF-ROAD
Pond Pump – WB15	Pond Pump	78	CARB's OFF-ROAD
Boat motor – 5 horsepower four stroke engine	Outboard Motor	60	CARB's PC2014
Boat motor – 9.9 horsepower four stroke engine	Outboard Motor	60	CARB's PC2014
Aerial Surveillance and Application/Management			
Bell 206B	Aircraft	85.3	USEPA AP-42
Robinson R44 Raven II	Aircraft	50	USEPA AP-42
Piper Chieftain	Aircraft	6	USEPA AP-42

Source: County 2021d.
Notes:
[1] Equipment/vehicle is not part of VCP's existing inventory but is proposed under IVMP.
This table only includes equipment that is gas-powered. Equipment that is battery-operated is excluded since no GHG emissions would occur.
ULV = ultra-low volume

Table 3.1.2-5
SUMMARY OF GREENHOUSE GAS EMISSIONS

Program	CO_2	CH_4	N_2O	CO_2e
Existing IVMP	232.64	<0.01	<0.01	234.71
Proposed Enhancements to IVMP[1]	50.09	<0.01	<0.01	50.25
Total Annual Emissions	**282.73**	**0.0086**	**0.0067**	**284.94**

Source: HELIX 2021d; Appendix E.
Units: metric tons (MT) per year
Notes: total emissions modeled may not precisely equal sum of subparts due to rounding. CH_4 = methane; CO_2 = carbon dioxide; CO_2e = carbon dioxide equivalents; N_2O = nitrous oxide. The IVMP does not include the construction or renovation of habitable structures, stationary sources, or infrastructure. Therefore, the Proposed Project would not result in construction activities and associated emissions. The analysis considers the continued operation and enhancement of the VCP's vector control practices.
[1] See Table 3.1.2-4 for list of proposed equipment/vehicles.

Table 3.1.2-6
ESTIMATED ANNUAL OPERATIONAL GREENHOUSE GAS EMISSIONS BY CATEGORY

Category	CO_2	CH_4	N_2O	CO_2e
Land Surveillance and Application/ Management	204.40	0.0055	0.0043	205.83
Water Surveillance and Application/ Management	2.99	0.0011	0.0002	3.06
Air Surveillance and Application/Management	75.35	0.0020	0.0022	76.05
Total Annual Emissions	**282.73**	**0.0086**	**0.0067**	**284.94**

Source: HELIX 2021d; Appendix E.
Units: metric tons (MT) per year
Notes: total emissions modeled may not precisely equal sum of subparts due to rounding. CH_4 = methane; CO_2 = carbon dioxide; CO_2e = carbon dioxide equivalents; N_2O = nitrous oxide. The IVMP does not include the construction or renovation of habitable structures, stationary sources, or infrastructure. Therefore, the Proposed Project would not result in construction activities and associated emissions. The analysis considers the continued operation and enhancement of the VCP's vector control practices.

3.1.3 Energy

This section provides an evaluation of existing energy production/consumption conditions and potential energy use and related impacts from the Integrated Vector Management Program (IVMP or Proposed Project). The following discussion is consistent with and fulfills the intent of the California Environmental Quality Act (CEQA) Guidelines Appendix F and is based on Proposed Project-related calculations from the *Greenhouse Gas Emissions Technical Report* (HELIX 2021d; Appendix E), the California Energy Demand (CED) *2020–2030 Revised Forecast* (CEC 2020a), and the California Energy Commission's (CEC's) *Final 2019 Integrated Energy Policy Report* (CEC 2020b).

3.1.3.1 *Existing Conditions*

Existing Energy Consumption and Generation

Units of Measure

The units of energy used in this section are the British thermal units (BTU), kilowatt hours (kWh), therms, and gallons. A BTU is the quantity of heat required to raise the temperature of 1 pound of water 1 degree Fahrenheit (°F) at sea level. Because the other units of energy can all be converted into equivalent BTU, the BTU is used as the basis for comparing energy consumption associated with different resources. A kWh is a unit of electrical energy, and 1 kWh is equal to approximately 3,413 BTU, taking into account initial conversion losses (i.e., from one type of energy, such as chemical, to another type of energy, such as mechanical) and transmission losses. Natural gas consumption is described typically in terms of cubic feet or therms; 1 cubic foot of natural gas is equal to approximately 1,050 BTU, and 1 therm represents 100,000 BTU. One gallon of gasoline/diesel is equal to approximately 125,000/139,000 BTU, respectively, taking into account energy consumed in the refining process.

Overview of Energy Supply

California's electricity needs are satisfied by a variety of entities, including investor-owned utilities, publicly owned utilities, electric service providers, and community choice aggregators. As of 2010, in-State generating facilities accounted for about 71% of the total electric power produced in California, with the remaining electricity coming from out-of-State imports. In-State generation also accounted for approximately 12% of the State's natural gas supply and approximately 38% of the State's crude oil supply.

On the demand side, Californians consumed 282,720 gigawatt hours (GWh) of electricity in 2018; this is a decrease from the 288,210 GWh demanded in 2017. CEC staff forecasts of future electricity demand anticipate that consumption will grow by between 0.23% and 1.41% per year from 2017 to 2030 (CEC 2020b).

The San Diego Regional Energy Office's *San Diego Regional Energy Infrastructure Study* provided an integrated and comprehensive analysis of the electricity and natural gas supply and demand inventory and issues (SDREO 2002). That study found that the San Diego region is unique compared to the rest of the State because of its proximity to Baja California, Mexico, and the close integration with respect to trade flows, movement of people, and capital. Currently, there is a growing interdependency between San Diego County and northern Baja California in terms of both the supply and demand of energy. Electric power transfers have taken place between California and northern Baja California, to some extent, for more than 20 years, and recently, the

bi-national supply and demand interdependencies have increased dramatically. In addition, while abundant renewable resources are in San Diego County, the available resources are much greater when the potential of surrounding counties and northern Baja California are considered. The San Diego region's economic and energy development future depends on bi-national and interregional cooperation and joint problem solving.

The San Diego Association of Governments' (SANDAG's) 2009 *Regional Energy Strategy* (SANDAG 2009) serves as the energy policy blueprint for the San Diego region through 2050. The *Regional Energy Strategy* identifies priority early implementation actions that are essential to meeting the region's energy goals:

- Pursue a comprehensive building retrofit program to improve efficiency and install renewable energy systems
- Create financing programs to pay for projects and improvements that save energy
- Use the SANDAG-San Diego Gas & Electric (SDG&E) Local Government Partnership to help local governments identify opportunities and implement energy savings at government facilities and throughout their communities
- Support land use and transportation planning strategies that reduce energy use and greenhouse gas (GHG) emissions
- Support planning of electric charging and alternative fueling infrastructure
- Support use of existing unused reclaimed water to decrease the amount of energy needed to meet the water needs of the San Diego region

The major sources of energy in San Diego County include electricity, natural gas, and petroleum. Electricity and natural gas are primarily provided to the San Diego region by SDG&E. The following discussion outlines consumption rates for these various energy sources in San Diego.

Electricity

San Diego County is currently served by SDG&E. The SDG&E service area covers 4,100 square miles in San Diego and southern Orange Counties. Energy is provided by SDG&E to 3.6 million customers through 1.4 million electric meters and 873,000 natural gas meters. The region's electricity supply was supplemented in 2012 by the Sunrise Powerlink, a 117-mile, 500,000-volt transmission line that carries renewable energy from Imperial Valley County to San Diego County. This transmission line has the capacity to bring 1,000 megawatts (MW) of power to the region, which is enough energy for 650,000 homes (SDG&E 2021).

The electricity consumption in San Diego County decreased approximately 5% from 2008 to 2010 because of the economic downturn, followed by an upward trend with an increase of approximately 3% from 2010 to 2018 (CEC 2021a). The annual electricity consumption for the county in 2019 was approximately 19,000 GWh. Projections are shown to increase toward the end of the CED forecast period (2026) as a result of consumption from electric vehicles. By 2030, per-capita electricity consumption is projected to range between approximately 7,400 and 8,200 kWh per person (CEC 2020a).

SDG&E forecasts future energy consumption demand on a continual basis, primarily based on installation of transmission and distribution lines. The SDG&E Long Term Procurement Plan (LTPP), as discussed below under Regulatory Framework, ensures that adequate energy supplies are available to meet existing and projected future demands.

In situations where projects with large power loads are planned, this is considered together with other loads in the project vicinity, and electrical substations are upgraded if required.

Natural Gas

Natural gas continues to play an important and varied role in California. In 2012, the most recent year for which data is available, nearly 45% of the natural gas burned in California was used for electricity generation, and much of the remainder was consumed in the residential (21%), industrial (25%), and commercial (9%) sectors (CEC 2021b). Natural gas supplies are currently plentiful and relatively inexpensive as a result of technological advances that allow recovery of natural gas from formations such as shale reservoirs that were previously inaccessible. However, potential environmental concerns are causing decision makers to re-examine the development of shale resources and consider tighter regulations, which could affect future natural gas supplies and prices.

Several major generating plants were implemented in the last two decades in San Diego County, including the 90 MW Larkspur Energy Facility in Chula Vista in 2001, the 550 MW Palomar Power Plant in Escondido in 2006, the 513 MW Otay Mesa Center Power Plant near the United States-Mexico border in 2009, and the 558 MW Carlsbad Energy Center in Carlsbad in 2018.

The San Diego region consumed approximately 482 million therms (MMTh) of natural gas in 2018 (not including gas used for electricity generation, as accounted for above) (CEC 2020a). The majority of natural gas uses are for residential and commercial purposes. Currently, California imports 87% of natural gas needs from out of State, while in-State natural gas production is decreasing. Regional gas consumption is expected to increase to 660 MMTh in 2020 and 730 MMTh in 2030 (SANDAG 2009).

Petroleum

Automobiles and trucks consume gasoline and diesel fuel, which are nonrenewable energy products derived from crude oil, which in turn is derived from petroleum. In addition to energy consumption associated with on-road vehicle use, energy is consumed in connection with construction and maintenance of transportation infrastructure. Passenger cars and light-duty trucks are by far the largest consumers of transportation fuel, accounting for approximately 1.6 billion gallons of gasoline and diesel fuel per year (SANDAG 2009).

Based on the California Air Resources Board (CARB) EMFAC Emissions Database, the average fuel economy of the 2018 vehicle fleet in San Diego County was estimated as 23 miles per gallon (mpg) for gasoline and 10 mpg for diesel. Based on the CARB EMFAC2017 vehicle fleet type breakdown, approximately 94% of the vehicle miles traveled is from gasoline-powered vehicles and approximately 6% is from diesel-powered trucks. The energy consumption rates for gasoline- and diesel-powered vehicles are 5,378 and 14,183 BTU per vehicle miles traveled, respectively. The total automobile and truck-related energy usage in San Diego County in 2018 was approximately 207 trillion BTU per year.

Energy Efficiency and Potential

Energy Demand Reductions

Estimates vary on what level of future energy reductions will be attributed to efficiency programs and standards over the next decade, depending on the assumptions used. A 2015 study intended to determine the remaining potential for energy efficiency programs in California included a detailed, bottom-up study of energy efficiency program potential in San Diego County. The primary objective of the work underlying this report was to produce estimates of remaining potential energy savings that might be obtainable in the near (2015) and foreseeable (2016–2024) future through publicly funded energy efficiency programs in the existing and new residential, industrial, and commercial sectors. The study focused on providing a reasonable proxy of the remaining potential for implementation of local government policies to affect energy savings. The study estimates that in the San Diego region, efficiency programs will achieve gross savings of 2,214 GWh and 33.4 MMTh between 2016 and 2024 (Navigant 2015).

3.1.3.2 *Regulatory Setting*

Energy consumption is a significant source of GHGs. Regulations to address energy also address GHGs, resulting in some overlap in the discussions in the following text and Section 3.1.2, *Climate Change/Greenhouse Gas Emissions*. Federal, State, and local regulations directed at reducing GHG emissions through increased efficiencies are discussed below.

Federal

Federal Energy Policy and Conservation Act

The Energy Policy and Conservation Act of 1975 is a U.S. act of Congress that responded to the 1973 oil crisis by creating a comprehensive approach to federal energy policy. The primary goals of the act are to increase energy production and supply, reduce energy demand, provide energy efficiency, and give the executive branch additional powers to respond to disruptions in energy supply. Most notably, the act established the Strategic Petroleum Reserve, Energy Conservation Program for Consumer Products, and Corporate Average Fuel Economy (CAFE) regulations.

Energy Independence and Security Act of 2007

House of Representatives Bill 6, the federal Energy Independence and Security Act of 2007, established new standards for a few equipment types not already subjected to a standard, and updated some existing standards. Perhaps the most substantial new standard that the bill established is for general service lighting that is being deployed in two phases. First, phased in between 2012 through 2014, common light bulbs were required to use about 20% to 30% less energy than previous incandescent bulbs. Second, by 2020, light bulbs were required to consume 60% less energy than previous incandescent bulbs; this requirement will effectively phase out the incandescent light bulb.

Corporate Average Fuel Economy Standards

The U.S. Environmental Protection Agency (USEPA) and the National Highway Traffic Safety Administration established the CAFE standards under the Energy Policy and Conservation Act. On April 1, 2010, the USEPA and National Highway Traffic Safety Administration announced a joint Final Rulemaking that established standards for 2012 through 2016 model year vehicles.

This was followed up on October 15, 2012, when the agencies issued a Final Rulemaking with standards for model years 2017 through 2025. On August 2, 2018, the agencies released a notice of proposed rulemaking: the Safer Affordable Fuel-Efficient Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks (SAFE Vehicles Rule). The purpose of the SAFE Vehicles Rule is "to correct the national automobile fuel economy and greenhouse gas emissions standards to give the American people greater access to safer, more affordable vehicles that are cleaner for the environment." The direct effect of the rule is to eliminate the standards that were put in place to gradually raise average fuel economy for passenger cars and light trucks under test conditions from 37 mpg in 2020 to 50 mpg in 2025. By contrast, the new SAFE Vehicles Rule freezes the average fuel economy level standards indefinitely at the 2020 levels. The new SAFE Vehicles Rule also results in the withdrawal of the waiver previously provided to California for the State's GHG and zero emissions vehicle programs under Section 209 of the Clean Air Act (CAA). The SAFE Vehicles Rule Part I (SAFE-1), which withdraws the waiver, was published in September 2019, and Part II (SAFE-2), which finalizes the regulation, was published in April 2020. On April 26, 2021, the USEPA published the Notice of Reconsideration of Previous Withdrawal of a Waiver for California's Advanced Clean Car Program. The purpose of this Notice of Reconsideration is to seek comment on a number of issues in the SAFE-1 action, including the following:

- Whether it was proper for the USEPA to reconsider a previously issued CAA waiver
- Whether the USEPA's actions to withdraw California's waiver was appropriate
- Whether the SAFE-1 interpretation of the CAA that enabled the USEPA to withdraw California's waiver was appropriate
- Whether the SAFE-1 interpretation of CAA Section 177 that could disallow other states' ability to adopt California GHG emission standards was appropriate

State

California Energy Plan

The CEC is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the fewest environmental and energy costs. To further this policy, the plan identifies a number of strategies, including providing assistance to public agencies and fleet operators.

CEQA Guidelines – Appendix F

CEQA Guidelines Appendix F, Energy Conservation, provides guidance for Environmental Impact Reports regarding potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing the inefficient, wasteful, and unnecessary consumption of energy. In addition, though not described as thresholds for determining the significance of impacts, Appendix F seeks inclusion of information in the Environmental Impact Report addressing the following topics:

- The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project, including construction, operation, maintenance, and/or removal. If appropriate, the energy intensiveness of materials may be discussed.
- The effects of the project on local and regional energy supplies and on requirements for additional capacity.
- The effects of the project on peak and base period demands for electricity and other forms of energy.
- The degree to which the project complies with existing energy standards.
- The effects of the project on energy resources.
- The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

Local

County of San Diego General Plan

The Conservation and Open Space Element of the County of San Diego General Plan contains goals and policies for energy conservation and sustainable development. Because the Proposed Project does not include a residential component or permanent structures, most of the General Plan goals and policies for energy conservation and sustainable land use development are not directly applicable to the Proposed Project. Goals and policies relevant to the Proposed Project involve air pollutant and/or GHG reduction, which in turn would reduce energy consumption. Such policies include the following:

- COS-14.4, Sustainable Technology and Projects: Require technologies and projects that contribute to the conservation of resources in a sustainable manner, that are compatible with community character, and that increase the self-sufficiency of individual communities, residents, and businesses.
- COS-14.10, Low-Emission Construction Vehicles and Equipment: Require County contractors and encourage other developers to use low-emission construction vehicles and equipment to improve air quality and reduce GHG emissions.

County of San Diego 2021–2026 Strategic Plan

The County's commitment to sustainability is highlighted in the County's 2021–2026 Strategic Plan, which identifies enhancing the quality of the environment through sustainability, pollution prevention, and strategic planning as County priorities. The County has developed a number of plans and programs to further that commitment and improve air quality and health and provide long-term economic benefits.

County of San Diego Operations Strategic Sustainability Plan (2020–2030)

In October 2015, the Board of Supervisors adopted the 2015 – 2020 Strategic Energy Plan, which expired at the end of 2020, to lay out high level sustainability initiatives and measures for both internal operations and community-based actions. Meanwhile, County departments have crafted

more specific long-range implementation plans to address many of these sustainability initiatives. Such plans include: the 2018 CAP (which was subsequently rescinded) which aims to reduce greenhouse gas emissions from sources within the unincorporated county as well as County operations; the 2017 Zero Net Energy Portfolio Plan which identifies strategies for reducing non-renewable energy use in County owned and leased facilities; the 2019 Renewable Energy Plan which guides efforts to expand renewable energy on County sites to replace grid energy; the 2017 Strategic Plan to Reduce Waste and the 2019 County Operations Waste Diversion Plan which aim to divert 75% of internal operational waste away from landfills; and the 2019 EV Roadmap and 2015 Green Fleet Action Plan which provide strategies for reducing tailpipe emissions from the County Fleet (County 2022f; County 2022g).

Electric Vehicle Roadmap

On October 16, 2019, the County Board of Supervisors adopted the Electric Vehicle Roadmap to identify actions the County will take over the next decade to facilitate the adoption of clean mobility in the region. The Electric Vehicle Roadmap contains 6 goals and 11 recommendations that leverage the County's land use authority, permitting processes, and outreach platforms to increase electric vehicle ownership and charging installations in the unincorporated area and at County facilities.

Renewable Energy Program

Electricity and natural gas used in buildings contribute 33% of total GHG emissions in the unincorporated county. The County works to incentivize solar photovoltaic systems and incorporates new technologies and practices that increase energy savings, lower utility costs, and improve air quality in County buildings. The County also strives to increase the generation and use of renewable energy on-site at facilities and across the unincorporated county to reduce emissions from fossil fuel-generated electricity.

Looking to the future, the County plans to achieve 90% renewable electricity for the unincorporated area by 2030 through a renewable energy program.

Regional Decarbonization Framework

On January 27, 2021, the County Board of Supervisors approved the development of a framework for a regional zero-carbon sustainability plan in partnership with the University of California, San Diego, School of Global Policy and Strategy and the University of San Diego School of Law Energy Policy Initiatives Center. The framework would provide science-based pathways to achieve zero carbon in the region and includes a three-pronged regional approach to lower the carbon footprint to zero emissions:

- Zero emissions of CO_2.
- Reduction of "super-pollutants" such as black carbon (or "soot") and ground-level ozone (the main ingredient of "smog"), much of which are directly harmful to human health.
- Drawdown of atmospheric pollution through technological and natural means. Nature-based methods for carbon capture and storage include climate-smart practices in forestry and agriculture.

The *San Diego Regional Decarbonization Framework: Technical Report* was finalized in August 2022, and the *Implementation Playbook* has begun to be prepared that will assist in implementing the Regional Decarbonization Framework (County 2022e; McCord 2022).

Integrated Vector Management Program Best Management Practices

The IVMP follows the best management practices (BMPs) described in State guidance documents, such as the *Best Management Practices for Mosquito Control in California* (CDPH 2012), *Best Management Practices for Mosquito Control on California State Properties* (CDPH 2008b), and *California Mosquito-Borne Virus Surveillance and Response Plan* (CDPH 2021), which detail best integrated vector management practices for vector control and vector-borne disease prevention. In addition, the County integrates BMPs into the IVMP serving as a comprehensive management framework for implementation of individual activities. BMPs implemented as part of the IVMP demonstrate the County's commitment to avoid or minimize impacts to the maximum extent feasible. The following BMPs have been developed by the VCP in combination with the above-referenced sources and will be implemented to reduce energy consumption:

- B8: Engine idling times will be minimized by shutting off equipment and vehicles when not in use to the extent feasible.

- B9: Vehicles and equipment will be maintained in accordance with manufacturer's specifications, including mufflers, engine operation, and tire inflation pressure to minimize rolling resistance.

- B10: Vegetation trimming or removal, when necessary to provide access to vector habitat for surveillance and control activities, will be conducted by hand using handheld tools rather than gas-powered equipment or heavy machinery to minimize negative environmental effects.

- B14: Where heavy equipment or machinery is necessary, measures will be taken, such as reducing turns by track-type vehicles, taking a minimum number of passes with equipment, identifying multiple points of entry, driving vehicles at low speed, and avoiding or minimizing operating on open mud and other soft areas.

In addition to the aforementioned BMPs, the County also engages in other environmentally friendly practices that further reduce potential energy consumption, such as the following:

- The Vector Control Program assigns geographic locations, defined by continuous census tracts, to individual Certified Vector Control Technicians. Each geographic location is referred to as a "district." Work is assigned to each district, which defines the routine work area for Certified Vector Control Technicians within a specific geographic area, thereby reducing mileage driven, which reduces fuel consumption and vehicle emissions.

- Certified Vector Control Technicians use mobile phones to call customers and to access the County-produced Vector Mobile App. Real-time access to new work requests while in the field allows Certified Vector Control Technicians to conduct and complete additional work while remaining in the geographic area. When they are able to complete new work assignments while remaining in the current area, this eliminates the need to return at a later time, thereby reducing mileage driven, which reduces fuel consumption and vehicle emissions.

SDG&E Long Term Procurement Plan

As required by the California Public Utilities Commission, utility companies such as SDG&E must prepare an LTPP to ensure that adequate energy supplies are available to maintain a reserve margin of 15% above the estimated energy demand. These plans outline any future energy needs and how those needs can be met. In December 2006, SDG&E filed its LTPP with the California Public Utilities Commission, which included a 10-year energy resource plan that details its expected portfolio of energy resources over the planning horizon of 2007 through 2016. The projections included in the current LTPP were based on the CEC's CED 2008 2018 Forecast, dated November 2007. The 2020–2030 CEC CED projections are now lower than what was anticipated in 2007.

3.1.3.3 *Analysis of Project Effects and Determination as to Significance*

In the absence of a County-established threshold for energy consumption, CEQA Guidelines Appendix G criteria shall apply to determine if the Proposed Project would result in a significant impact. Specifically, a significant impact related to energy would result if the Proposed Project would:

1. Result in the wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

2. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Energy Consumption and Energy Efficiency

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would result in a significant impact if it would result in the wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation.

This threshold also takes into consideration guidance from CEQA Guidelines Appendix F, *Energy Conservation*. Although CEQA Guidelines Appendix F does not prescribe a threshold for the determination of significance, it provides guidance for EIRs regarding potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing the inefficient, wasteful and unnecessary consumption of energy. The State Natural Resources Agency amended Appendix F to make it clear that an energy analysis is mandatory. However, the Natural Resources Agency also clarified that "lead agencies shall analyze energy conservation in their EIRs" and that the analysis should be limited to effects that are applicable to the project (California Natural Resources Agency 2009). Appendix F is not described as a threshold for determining the significance of impacts, and it merely seeks inclusion of information in the EIR to the extent relative and applicable to the project.

Impact Analysis

Construction Energy Use

Under the Proposed Project, the IVMP would continue to comprehensively approach vector control through various techniques. The IVMP does not include the construction or renovation of habitable structures, stationary sources, or infrastructure. Therefore, for the purpose of this

analysis, the Proposed Project would not result in construction activities or associated impacts. No construction related impacts to energy would occur as a result of the Proposed Project.

Operational Energy Use

Under the Proposed Project, the IVMP would use the following vector control techniques: surveillance and monitoring, source reduction (i.e., physical control), source treatment (i.e., biological and chemical controls), public education and outreach, and disease diagnostics.

Operation of on-road fleet vehicles, off-road equipment, watercraft, aircraft, portable equipment, and small equipment would result in the burning of fossil fuels, including diesel fuel and gasoline consumption. Equipment lists and annual activity schedules were estimated by the Vector Control Program (County 2022a, 2020b). The list of equipment is provided in Table 3.1.2-4, *Integrated Vector Management Program Equipment Usage (Annual).*

Using the list of equipment, the Proposed Project's energy consumption was calculated using a combination of California Emissions Estimator Model, Version 2016.3.2, and CARB's emission inventory models EMFAC and OFFROAD. Energy consumption is estimated in terms of total million BTU (MMBTU)[1] per year. Calculations were performed using the most recent and applicable fuel consumption rates published by CARB and the USEPA. Table 3.1.3-1, *Estimated Annual Operational Energy Consumption*, presents the summary of operational energy consumption for the Proposed Project. Operational energy calculations are provided in Appendix E.

As shown in Table 3.1.3-1, implementation of the Proposed Project has been conservatively estimated to result in the consumption of approximately 3,620 MMBTU of energy annually. The predominant consumer of energy for the Proposed Project would be on-road vehicle travel due to Certified Vector Control Technicians conducting surveillance and monitoring or source treatment activities. Specifically, the fleet vehicles would make up approximately 64% of the entirety of the Proposed Project's energy consumption.

Table 3.1.3-2, *Project Fuel Economy and Energy Consumption Rates for Fleet Vehicles*, provides further breakdown of the fuel economy and energy consumption rates for the Proposed Project-related light-duty and medium-duty vehicle use. As shown, the total estimated direct annual energy consumption from Proposed Project-related automobile (both gasoline and diesel combined) would be approximately 2,324 MMBTU per year.

In comparison, individuals in San Diego County used 207 trillion BTU of energy for transportation in 2018 as discussed in Section 3.1.3.1. This means the Proposed Project's estimated transportation energy usage of 2,324 MMBTU represents 0.000001% of the 2018 countywide usage. This percentage is so small that it is considered within the margin of error built into the inventory process and is considered negligible.

In addition, the Proposed Project would implement several BMPs to further minimize the Vector Control Program's energy consumption. Specifically, engine idling times will be minimized by shutting off equipment and vehicles when not in use to the extent feasible (B8); vehicles and equipment will be maintained in accordance with manufacturer's specifications, including mufflers, engine operation, and tire inflation pressure to minimize rolling resistance (B9); vegetation trimming or removal, when necessary to provide access to vector habitat for

[1] As described in Section 3.1.3.1, other units of energy can all be converted into equivalent BTU; therefore, the BTU is used as the basis for comparing energy consumption associated with different resources.

surveillance and control activities, will be conducted by hand using handheld tools rather than gas-powered equipment or heavy machinery to minimize negative environmental effects (B10); and where heavy equipment or machinery are necessary, measures will be taken, such as reducing turns by track-type vehicles, taking a minimum number of passes with equipment, identifying multiple points of entry, driving vehicles at low speed, and avoiding or minimizing operating on open mud and other soft areas (B14).

In addition to the BMPs identified above, Certified Vector Control Technicians are assigned to geographic locations or districts that define their routine work areas, thereby reducing mileage driven, which reduces fuel consumption and vehicle emissions. Also, Certified Vector Control Technicians use mobile phones to call customers and to access the County-produced Vector Mobile App in real-time, which allow them to complete new work assignments while remaining in the current area. This practice eliminates the need to return at a later time, thereby reducing mileage driven, which reduces fuel consumption and vehicle emissions.

In conclusion, the Proposed Project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources. Therefore, energy impacts during Proposed Project operations would be less than significant.

Conflict With or Obstruct a State or Local Plan for Renewable Energy or Energy Efficiency

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would result in a significant impact if it would conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Impact Analysis

The Proposed Project would be consistent with several energy reduction policies of the County General Plan (see Section 3.1.3.2, Regulatory Setting), including policies COS-14.4 and COS-14.10, which apply to sustainability projects and low-emission vehicles, respectively. Also, as explained in Section 3.1.2 of this PEIR (Greenhouse Gas Emissions), as a County program the IVMP would be subject to any applicable policies or directives that apply to County facilities and services, such as vector control activities. Therefore, the IVMP includes a continuation of an existing program and the program would be subject to change to comply with current County initiatives, including but not limited to, the *Regional Decarbonization Framework*, *Electric Vehicle Roadmap*, and the *Strategic Sustainability Plan*.

Also, many of the current regulations regarding energy efficiency are focused on increasing the efficiency of buildings and renewable energy generation, as well as reducing water consumption and VMT. Because the Proposed Project would not include construction of buildings or renewable energy generation, most of the Proposed Project's energy consumption would come from on-road vehicle travel due to surveillance and monitoring or source treatment of individual vector-breeding sites. Regarding vehicles in general, State regulations are expected to require increasingly stricter standards for vehicular fuel efficiency. The federal CAFE standards, Executive Order S-1-07 LCFS, and Assembly Bill 1493 fuel efficiency standard (analogous to the federal CAFE standard), as well as light-/heavy-vehicle efficiency/hybridization programs, all contribute to increased fuel efficiency and, therefore, would continue to reduce vehicle fuel energy consumption rates over time. Therefore, the annual vehicular energy consumption calculated for the Proposed Project is considered a conservative estimate because 2020-level fuel efficiency was used in the

calculation. Thus, the Proposed Project's negligible energy uses would not require the construction of new regional facilities or sources of energy. Because gasoline and diesel are transported via truck to individual service stations, the increase in demand also is not anticipated to require major utility improvements to local fueling infrastructure. Also, the vehicle fleet for the Proposed Project would continue to replace older, less efficient vehicles with newer, more fuel-efficient vehicles. While the Proposed Project would result in the consumption of gasoline and diesel, the energy consumed is consistent overall with the energy projections for the State and the region, as described in Section 3.1.3.1.

As such, the Proposed Project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. Therefore, energy impacts during Proposed Project operations would be less than significant.

3.1.3.4 *Cumulative Impact Analysis*

The geographic scope for energy is San Diego County. Short-term and long-term cumulative development is expected to result in an increase in the demand for energy resources throughout the county. Several County programs and policies and SDG&E initiatives would serve to reduce total energy demand among cumulative projects. Additionally, minimum standards for energy efficiency are outlined in California's Energy Efficiency Standards for Residential and Non-Residential Buildings. To exceed these standards, SDG&E and State and federal agencies offer incentive programs to encourage developers to exceed Title 24 standards.

The Proposed Project's energy usage would not be carried out in a wasteful, inefficient, or unnecessary manner or conflict with or obstruct a state or local plan for renewable energy or energy efficiency. In addition, the predominant consumer of energy for the project would be on-road vehicle travel. On-road vehicle efficiency is regulated at the State and federal level. Therefore, the Proposed Project's cumulative impacts related to energy usage would be less than cumulatively considerable.

3.1.3.5 *Significance of Impacts Prior to Mitigation*

As discussed above, the Proposed Project would not result in significant impacts. Therefore, no mitigation is required.

3.1.3.6 *Mitigation Measures*

Because the Proposed Project would not result in significant impacts, no mitigation is required.

3.1.3.7 *Conclusion*

The Proposed Project would have a less than significant impact with respect to energy.

Table 3.1.3-1
SUMMARY OF ENERGY CONSUMPTION

Program	Total Energy (MMBTU/year)
Existing IVMP	2,923
Proposed Enhancements to IVMP[1]	697
Total	**3,620**

Source: HELIX 2021d; Appendix E. CalEEMod; CARB EMFAC2017; CARB OFFROAD2017.
Notes: MMBTU = metric million British thermal units
[1] See Table 3.1.2-4 for list of proposed equipment/vehicles.

Table 3.1.3-2
ESTIMATED ANNUAL OPERATIONAL ENERGY CONSUMPTION BY CATEGORY

Category	Total Energy (MMBTU/year)
Land Surveillance and Application/Management	3,000
Water Surveillance and Application/Management	43
Air Surveillance and Application/Management	577
Total	**3,620**

Source: HELIX 2021d; Appendix E. CalEEMod; CARB EMFAC2017; CARB OFFROAD2017.
Notes: MMBTU = metric million British thermal units

Table 3.1.3-3
PROJECT FUEL ECONOMY AND ENERGY CONSUMPTION RATES FOR FLEET VEHICLES

Vehicle Type	Fuel Economy (mpg)	VMT per Year	Total Energy (MMBTU/year)
Light-Duty Trucks	22.86	212,310	1,155
Medium-Duty Trucks	18.98	178,447	1,169
		Total	**2,324**

Sources: HELIX 2021d; Appendix E. CalEEMod; CARB EMFAC2017.
Notes: MMBTU = metric million British thermal units; mpg = miles per gallon; VMT = vehicle miles traveled

This page intentionally left blank

3.1.4 Hazards and Hazardous Materials

This section of the Program Environmental Impact Report (PEIR) evaluates potential impacts associated with hazards and hazardous materials resulting from implementation of the Integrated Vector Management Program (IVMP or Proposed Project). This section is based on desktop research performed by HELIX Environmental Planning, Inc., the *County of San Diego Guidelines for Determining Significance – Hazardous Materials and Existing Contamination* (County 2007e) and Appendix G of the California Environmental Quality Act (CEQA) Guidelines.

3.1.4.1 *Existing Conditions*

Hazardous Materials

Hazardous materials are commonly stored and used by a variety of businesses and are commonly encountered during construction activities. Hazardous materials typically require special handling, reuse, and disposal because of their potential to harm human health and the environment. The California Health and Safety Code (HSC) defines a hazardous material and is summarized by the following (see HSC Section 25501 for the full definition):

> 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 that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

The following discussion outlines the existing hazardous materials conditions in San Diego County.

Sites with Known Hazardous Materials Issues

A variety of government data sources are available to identify sites that may have been subject to a release of hazardous substances or that may have supported a use that could have resulted in a hazardous condition on site. Listed below are some key sources of data that identify potential environmental conditions and historical uses that may represent a hazardous condition on specific properties:

1. Hazardous waste and substances sites from the California Environmental Protection Agency (CalEPA) Department of Toxic Substances Control (DTSC) EnviroStor database.

2. Leaking underground storage tank sites by county and fiscal year from the State Water Resources Control Board (SWRCB) GeoTracker database.

3. Solid waste disposal sites identified by the SWRCB with waste constituents above hazardous waste levels outside the waste management unit.

4. Active Cease and Desist Orders (CDO) and Cleanup and Abatement Orders (CAO) from the SWRCB.

5. Hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the HSC, identified by the DTSC.

6. Active and closed solid waste sites (Solid Waste Inventory System database) maintained by the California Integrated Waste Management Board.

7. Hazardous Materials Establishment Listing maintained by the County of San Diego.

8. Resource Conservation and Recovery Information System: A database of Resource Conservation and Recovery Act (RCRA) facilities that is maintained by U.S. Environmental Protection Agency (USEPA).

9. The DTSC School Property Evaluation and Cleanup Division is responsible for assessing, investigating, and cleaning up proposed school sites. A list is maintained by the DTSC of school properties with environmental assessments and the findings.

All databases listed above have identified sites in San Diego County. Sites listed in the Resource Conservation and Recovery Information System and the Hazardous Materials Establishment Listing databases are not included in this discussion because information contained in these databases is repetitive of other databases.

Department of Toxic Substances Control EnviroStor Database

The EnviroStor database is managed by the DTSC and includes the following site types: Federal Superfund (National Priorities List); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School. Information includes site name, site type, status, address, any restricted use (recorded deed restrictions), past uses that caused contamination, potential contaminants of concern, potential environmental media affected, site history, and planned and completed activities. In the entire San Diego County, over 800 sites are listed on the EnviroStor database.

GeoTracker Database

The GeoTracker database is managed by the SWRCB and is a geographic information system that provides online access to environmental data, including underground fuel tanks, fuel pipelines, and public drinking water supplies. GeoTracker contains information about leaking underground storage tanks and can identify leaking underground storage tanks sites throughout the county. GeoTracker also has information and data on non-leaking underground storage tank cleanup programs, including Spills-Leaks-Investigations-Cleanups sites, Department of Defense sites, and Land Disposal programs. Nearly 9,500 sites are listed in the GeoTracker database as occurring in San Diego County. Of these, 420 sites are listed as “Open.”

Active Cease and Desist Order and Cleanup and Abatement Order List

The list of active CDO and CAO from the SWRCB is a compilation of “all cease and desist orders issued after January 1, 1986, pursuant to Section 13301 of the Water Code, and all cleanup or abatement orders issued after January 1, 1986, pursuant to Section 13004 of the Water Code, that concern the discharge of wastes that are hazardous materials.” The orders that are “active,” meaning the necessary actions have not yet been completed, are on this list. The SWRCB updates this list by deleting sites when there is no longer any discharge of wastes and/or where

the necessary cleanup or abatement actions were taken. There are 47 “active” CDO and/or CAO sites listed in San Diego County.

Solid Waste Inventory System Database

The Solid Waste Inventory System database is managed by the California Department of Resources Recycling and Recovery (CalRecycle) and contains information on solid waste facilities, operations, and disposal sites throughout the State of California. The types of facilities found in this database include landfills, closed disposal sites, transfer stations, materials recovery facilities, composting sites, transformation facilities, waste tire sites, and construction, demolition, and inert debris facilities and operations. For each facility, the database contains information about location, owner, operator, facility type, regulatory and operational status, authorized waste types, local enforcement agency, and inspection and enforcement records. A total of 162 sites are listed on the Solid Waste Inventory System database as occurring in San Diego County.

Pesticides

“Pesticide” is used in this PEIR as a generic term including different kinds of substances—naturally-occurring (i.e., found in the existing environment) or synthetic (i.e., contain manufactured ingredients). As defined by the federal Food and Agriculture Code section 12753 and incorporated by the California Department of Pesticide Regulation (CDPR), a pesticide is any substance intended for preventing, destroying, repelling, or mitigating any pest. Any living organism that causes damage, economic loss, and/or transmits or produces disease may be the target pest. Some common categories of pesticides include insecticides (such as larvicides and adulticides), herbicides, rodenticides, fungicides, repellents, and disinfectants.

Before a pesticide can be marketed and used in the United States, the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requires that USEPA evaluate the proposed pesticide to assure that its use will not pose unreasonable risks of harm to human health and the environment (USEPA 2022b).

As part of the review process, product submissions are required to undergo multiple review steps. This process includes the coordination of scientific data evaluation by other CDPR branches. All new and amended pesticide products must go through the registration process before they may be sold, distributed, or used in California. Only after passing stringent regulatory review can pesticides be approved for sale and use. When pesticide usage is necessary, they are applied by vector control technicians certified by the California Department of Public Health (CDPH) in a manner that minimizes risk to human and ecological health and in accordance with the legal application rates, label instructions, and federal and State guidelines.

Pesticides are commonly used throughout the county by a variety of industries, including agricultural, commercial/business, and residential.

Pesticide use is heavily regulated by federal, State, and local agencies to ensure pesticides do not endanger employees, residents, sensitive species, or sensitive habitats. Further, California has one of the most stringent programs of pesticide regulation in the country, so pesticides sold and used in the county have undergone thorough screening before becoming available to the variety of local users. In addition, Agricultural Pest Control Advisors, who are private individuals licensed to give pest control advice, assist growers with selecting and determining usage protocols for farmlands (County 2022c; Food and Agricultural Code, Sections 11410, 11411). An

Agricultural Pest Control Advisor must receive a license by CDPR and must be registered with County Department of Agriculture, Weights and Measure annually to maintain their license.

Regarding vector control, the County Department of Environmental Health and Quality Vector Control Program (VCP) uses a variety of pesticides to manage vectors. The pesticides used by the VCP in 2018 through 2021 are provided in Table 3.1.4-1, *Vector Control Program Pesticide Use within Service Area: 2018–2021*.[1] Table 3.1.4-2, *Pesticides Available to the Vector Control Program*, includes a comprehensive list of other various pesticides available to the VCP, some of which have been used prior to 2018.

All the pesticides used by the VCP are USEPA/CalEPA registered products (refer to Section 3.1.4.2). Additionally, the VCP maintains a Safety Data Sheet prepared by the manufacturer for each pesticide that is used, which includes general information, health hazard data, and environmental protection procedures.

As shown in Table 3.1.4-1, most of the VCP's pesticide products come in a solid form (i.e., pellet, briquet, granule, tablet). Solid pesticides are ideal for reducing the potential for off-target application from aerial drift and facilitate their penetration of dense vegetation to water where mosquitoes can breed. As shown in Table 3.1.4-1, the VCP's most commonly used pesticide has been VectoMax FG, which is a biological mosquito larvicide in granule form. In addition to being reviewed and approved by the USEPA and CDPR, VectoMax FG is approved by the Organic Materials Review Institute for application on organic crops according to the U.S. Department of Agriculture National Organic Program regulations and has a low potential for off-target application due to aerial drift because of the size, shape, and density of the granules (OMRI 2017; Valent BioScience Corporation 2021). Another common control method was mosquito fish, which do not cause hazards to the environment because they are only used in artificial sources such as ornamental ponds, rain barrels, horse watering troughs, and neglected swimming pools and spas.

Wildland Fires

Although wildfire was added by the State in 2018 as its own CEQA resource category, the hazards and hazardous materials criteria continue to address wildland fires as a potential hazard.

Wildfire, as defined in California Public Resources Code, Sections 4103 and 4104, is any uncontrolled fire spreading through vegetative fuels that threatens to destroy life, property, or resources. Several factors, including climate, wind patterns, native vegetation, topography, and development patterns, make the county susceptible to wildfires. A vast amount of the county's undeveloped lands support natural habitats such as grasslands, sage scrub, chaparral, and some coniferous forest. Extended droughts, characteristic of the region's Mediterranean climate, result in large areas of dry vegetation that provide fuel for wildland fires. In addition, climate change has also contributed to soil dryness. This dry vegetation is especially vulnerable to wildfire in areas with high winds. Therefore, wildfire risk tends to be high in locations with dense vegetation, dry conditions, and steep slopes (CAL FIRE 2007). As a result, high wildfire risk occurs in the hills and mountains of the eastern areas of the county where sparse development intermingles with fire-prone native vegetation.

CAL FIRE has mapped areas of significant fire hazards in the county through its Fire and Resource Assessment Program. CAL FIRE defines and maps Fire Hazard Severity Zones

[1] 2018 is included as it is the baseline for the PEIR (i.e., NOP), and 2021 is the most complete calendar year. Therefore, in the interest of transparency, this PEIR provides 4 complete calendar years of data.

(FHSZs) to identify the potential fire hazard severity expected in different areas within the State as required by California Public Resources Code, Sections 4201 through 4205. The FHSZs are determined based on an area's vegetation, topography (slope), weather (including winds), crown fire potential, and ember production and movement potential. The FHSZ includes the classifications Very High, High, or Moderate in areas where the State is responsible for fire protection (State Responsibility Areas). The majority of San Diego County is included in a State Responsibility Area for fire prevention and suppression. However, some areas, such as national forests, are within Federal Responsibility Areas, which are under the responsibility of the U.S. Forest Service for wildfire protection. The FHSZ also includes the classification Very High in areas where local agencies are responsible for fire protection (Local Responsibility Areas). In San Diego County, local fire protection is provided by Fire Protection Districts and County Service Areas in unincorporated areas and by city fire departments and joint powers agreements within city boundaries. Local fire protection is discussed in more detail in Section 3.2.6, *Public Services*.

The majority of the county is designated as a Very High and High FHSZ, except for the Desert and eastern Mountain Empire subregions, which are in the Moderate FHSZ. There are also areas of Moderate FHSZ and un-zoned areas in the more densely populated communities around the county. In addition to this PEIR section, refer to Section 3.1.8, *Wildfire*, for further discussion of potential project impacts related to wildfire.

3.1.4.2 *Regulatory Setting*

Federal

Federal Insecticide, Fungicide, and Rodenticide Act

In 1947, the U.S. Congress enacted the FIFRA, which regulates the distribution, sale, and use of pesticides and is enforced by the USEPA. The FIFRA Title 7, section 136(u) defines a pesticide as "any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest." The FIFRA requires USEPA registration of pesticides prior to their distribution for use in the United States, sets registration criteria (testing guidelines), and mandates that pesticides perform their intended functions without causing unreasonable adverse effects on people and the environment when used according to USEPA-approved label directions. The FIFRA Title 7, section 136[bb] defines an "unreasonable adverse effect on the environment" as "(1) any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits of the use of the pesticide, or (2) a human dietary risk from residues that result from a use of a pesticide in or on any food inconsistent with the standard under Section 408 of the Federal Food, Drug, and Cosmetic Act".

Under the FIFRA, the USEPA mandates extensive scientific research to assess risks to humans, domestic animals, wildlife, plants, groundwater, and beneficial insects before granting registration for a pesticide. This allows the USEPA to assess the potential for human and ecological health effects resulting from a pesticide. If new research indicates potential issues with a registered pesticide's safety, the USEPA may take action to suspend or cancel its registration, which would prevent the pesticide from being used. The USEPA may also perform an extensive special review of a pesticide's risks and benefits and/or work with manufacturers and users to implement changes in a pesticide's approved use.

The FIFRA regulates only the active ingredients of pesticides, not inert ingredients, which manufacturers are not required to identify. However, stringent toxicity studies conducted under

the FIFRA are required to evaluate the active ingredient and the entire product formulation, through which any potential additive or synergistic effects of inert ingredients are established.

As part of the review process, product submissions are required to undergo multiple review steps. This process includes the coordination of scientific data evaluation by other CDPR branches. All new and amended pesticide products must go through the registration process before they may be sold, distributed, or used in California. Within the CDPR, the Pesticide Registration Branch works to complete submission reviews in a timely manner.

Federal Food, Drug, and Cosmetic Act

In addition to the FIFRA, the USEPA also regulates pesticides by mandating extensive scientific research under the Federal Food, Drug, and Cosmetic Act (FFDCA). In 1938, the U.S. Congress enacted the FFDCA, which gives the USEPA authority to set tolerances (i.e., maximum allowable amounts) for pesticide residues in/on food, including both raw agricultural commodities and processed foods. Thus, the FFDCA does not expressly regulate pesticide use, but exceedance of tolerances may result in prosecution or changes in the approved use of a pesticide regulated under the FIFRA. Although the FFDCA regulates agricultural production, the VCP does not conduct pesticide treatment on crops or farmland.

Clean Water Act and National Pollutant Discharge Elimination System

The Clean Water Act, as describes in section 101(a), establishes the statutes for water quality protection “to restore and maintain the chemical, physical, and biological integrity of the nation’s water, to achieve a level of water quality which provides for recreation in and on the water, and for the propagation of fish and wildlife.”

The Clean Water Act regulates potentially toxic discharges through the National Pollutant Discharge Elimination System (NPDES) and ambient water quality through numeric and narrative water quality standards. The release of aquatic pesticides into waters of any State may require an NPDES Permit, depending on the pesticide considered and the conditions proposed for application. For further information, refer to the State regulations under *Porter-Cologne Act and State National Pollutant Discharge Elimination System NPDES Permitting*.

Safe Drinking Water Act of 1974

Under the Safe Drinking Water Act of 1974, the USEPA establishes Maximum Contaminant Levels, which are specific concentrations that cannot be exceeded for a given contaminant in surface water or groundwater. The USEPA has the ability to enforce these nationwide standards or delegate administration and enforcement duties to State agencies. The SWRCB administers the federal Safe Drinking Water Act in California.

Comprehensive Environmental Response, Compensation, and Liability Act

The 1980 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, provides federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. Federal actions related to CERCLA are limited to sites on the National Priority List for cleanup activities, with National Priority List listings based on the USEPA Hazard Ranking System. The Hazard Ranking System is a numerical ranking system used to screen potential sites based on criteria such as the likelihood and nature of hazardous material release and the potential

to affect people or environmental resources. CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986 as outlined below.

Superfund Amendments and Reauthorization Act

SARA is intended primarily to address the emergency management of accidental releases, and to establish State and local emergency planning committees responsible for collecting hazardous material inventory, handling and transportation data. Specifically, under Title III of SARA, a nationwide emergency planning and response program established reporting requirements for businesses that store, handle, or produce significant quantities of hazardous or acutely toxic substances as defined under federal laws. Title III of SARA also requires each State to implement a comprehensive system to inform federal authorities, local agencies and the public when significant quantities of hazardous or acutely toxic substances are stored or handled at a facility. These data are made available to the community at large under the “right-to-know” provision, with SARA also requiring annual reporting of continuous emissions and accidental releases of specified compounds.

Resource Conservation and Recovery Act

The federal RCRA of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984, provides for the management of hazardous wastes from generation to disposal to ensure that it is handled in a manner that protects human health and the environment. Under the RCRA, the USEPA has established regulations and procedures for the generation, transportation, storage, and disposal activities of hazardous waste handlers, as well as technical standards for the design and safe operation of treatment, storage, and disposal facilities, to minimize the release of hazardous waste into the environment. The RCRA’s corrective action program is designed to investigate and guide the cleanup of any contaminated air, groundwater, surface water, or soil from hazardous waste management of spills or releases into the environment as a result of the past and present activities at RCRA-regulated facilities.

Hazardous Materials Transportation Act

The U.S. Department of Transportation, Federal Highway Administration, and Federal Railroad Administration are the three entities that regulate the transport of hazardous materials at the federal level. The Hazardous Materials Transportation Act (49 CFR 171, Subchapter C) governs the transportation of hazardous materials. These regulations are promulgated by the U.S. Department of Transportation and enforced by the USEPA.

Occupational Safety and Health Administration

The Occupational Safety and Health Administration’s (OSHA’s) mission is to ensure the safety and health of workers by setting and enforcing standards; providing training, outreach, and education; establishing partnerships; and encouraging continual improvement in workplace safety and health. OSHA staff establishes and enforces protective standards and reaches out to employers and employees through technical assistance and consultation programs. The California Division of Occupational Safety and Health implements OSHA’s mission for workers in California through setting and enforcing standards; providing outreach, education, and assistance; and issuing permits, licenses, certifications, registrations, and approvals.

State

California Environmental Protection Agency

In 1991, California's environmental authority was unified into a single Cabinet level agency—CalEPA. Similar to how other government agencies are structured, CalEPA is composed of six separate divisions or departments: (1) California Air Resources Board, (2) CalRecycle, (3) CDPR, (4) DTSC, (5) Office of Environmental Health Hazard Assessment, and (6) SWRCB.

Of these six departments, the CDPR is responsible for regulating pesticides, as discussed below.

California Department of Pesticide Regulation

The CalEPA regulates registration of pesticides and commercial chemicals in California. Within CalEPA, the CDPR oversees pesticide evaluation and registration through environmental monitoring, residue testing, reevaluation, and enforcement. The CDPR works with county agricultural commissioners, who evaluate, develop conditions of use, approve, or deny permits for restricted-use pesticides; certify private applicators; conduct compliance inspections; and take formal compliance or enforcement actions (CDPR 2008).

California also requires commercial growers and pesticide applicators to report commercial pesticide applications to local county agricultural commissioners. The CDPR compiles this information in annual pesticide use reports. The CDPR's Environmental Hazards Assessment Program collects and analyzes environmental pesticide residue data, characterizes drift and other off-site pesticide movement, and evaluates the effect of application methods on movement of pesticides in air. If a pesticide is determined to be a toxic air contaminant, appropriate control measures are developed with the California Air Resources Board to reduce emissions to levels that adequately protect public health. Control measures may include product label amendments, applicator training, restrictions on use patterns or locations, and product cancellations.

Regarding the use of aircraft, the CDPR also maintains a certification program for piloted and drone[2] pest control aircraft pilots (CDPR 2021b). Specifically, a pilot is required to pass a State-mandated exam and possess a CDPR Pest Control Aircraft Pilot Certificate if they operate an aircraft to conduct pest control in California, pursuant to Food and Agricultural Code, Section 11901 (in addition to maintaining a pilot's license pursuant to Federal Aviation Administration regulations). In addition, pilots must register each with the County Department of Agriculture, Weights and Measures demonstrating a valid Federal Aviation Administration and Commercial Pilot's certificate (County 2021a). Lastly, pilots are required to undergo continuing education classes to maintain these credentials.

Certified Unified Program Agency

CalEPA oversees California's Unified Program, which protects Californians from hazardous waste and hazardous materials by ensuring local regulatory agencies consistently apply Statewide standards when they issue permits, conduct inspections, and engage in enforcement activities. The Unified Program is a consolidation of six different environmental and emergency

[2] For the purposes of this PEIR, "drone" is intended to generically mean a remotely piloted or unpiloted aircraft. As of this writing, the Federal Aviation Administration's official terminology is Unmanned Aircraft Systems; however, Federal Aviation Administration is transitioning toward gender-neutral terminology such as drone operator, certificated remote pilot, model aircraft flyer, and advanced air mobility operator.

management programs, which are managed Statewide by local governments who serve as a Certified Unified Program Agency (CUPA).

County VCP's Hazardous Materials Division has been serving as the CUPA for San Diego County since 1996 (County 2021b). Specifically, the VCP is permitted under Unified Program Facility Permit (DEH2010-HUPFP-211944), which is renewed annually. The CUPA inspects hazardous materials inventory that should be reported in the California Environmental Reporting System as well as any and all hazardous and medical waste generated by the facility. Hazardous materials and waste are in the VCP shop (pesticide room and lockers) in properly labeled containers/packaging. Medical waste is stored in properly labeled containers in the Vector Disease and Diagnostic Laboratory.

In addition, the CUPA performs routine annual inspections of the VCP to determine compliance with various health and safety regulations, including, California HSC; Medical Waste Management Act; California Code of Regulations; San Diego County Code of Regulatory Ordinances. The VCP is also subject to inspection of the following: Hazardous Materials Business Plan for the handling and storage of hazardous materials at or above the thresholds of 55 gallons of liquid, 500 pounds of solid, and/or 200 cubic feet of non-inert gas; hazardous waste requirements for a small quantity generator of hazardous waste, generating less than 1,000 kilograms of hazardous waste per month; medical waste requirements for a small quantity generator of medical waste, generating less than 200 pounds of medical waste per month.

Porter-Cologne Act and State National Pollutant Discharge Elimination System Permitting

Under the Porter-Cologne Act (California Water Code, Section 13000) the SWRCB, and the State's nine Regional Water Quality Control Boards that it oversees, are responsible for administering federal and State water quality regulation and permitting duties.

The SWRCB oversees pesticide NPDES permitting in California. Users of selected larvicide and adulticide registered products are required to obtain coverage under the Statewide NPDES Permit for Biological and Residual Pesticide Discharges to Waters of the U.S. from Vector Control Applications (SWRCB Water Quality Order No. 2016-0039-DWQ; NPDES No. CAG 990004; Vector Control Permit). The VCP is currently enrolled in this NPDES Permit as an authorized user.

Users of certain aquatic herbicides are required to obtain coverage under the Statewide General NPDES Permit for the Discharge of Aquatic Pesticides for Aquatic Weed Control in Waters of the U.S. (SWRCB Water Quality Order No. 2013-0002-DWQ; NPDES No. CAG 990005; Aquatic Weed Control Permit). Because the VCP does not currently (nor does it intend to) apply herbicides, the VCP is not enrolled in this NPDES Permit. Pesticides covered by Water Quality Order No. 2016-0039-DWQ include larvicides containing monomolecular films, methoprene, *Bacillus thuringiensis* subsp. *israelensis* (Bti), *Bacillus sphericus* (Bs)[3], temephos, spinosad, or petroleum distillates and adulticides containing malathion, naled, pyrethrin, deltamethrin, lambda-cyhalothrin, permethrin, resmethrin, prallethrin, sumithrin, piperonyl butoxide (PBO), etofenprox, or N-octyl bicycloheptene dicarboximide (MGK-264). The order also covers the point source discharge of residual pesticides from the application of minimum risk pesticides which are pesticides that USEPA has exempted from FIFRA requirements when used only in the manner specified in Code of Federal Regulations, Title 40, Section 152.25.

[3] *Lysinibacillus* (*Bacillus*) *sphaericus* (Bs): *Lysinibacillus* is the new genus name for this organism, but the Vectomax label still refers to it by its previous name.

Safe Drinking Water and Toxic Enforcement Act (Proposition 65)

This act, 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 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.

California Health and Safety Code, Division 3 – Pest Abatement

Division 3 of the California HSC concerns pest abatement in the State. Per Chapter 1, *Mosquito Abatement and Vector Control Districts*, the protection against vector-borne diseases is an essential public service, and vector control districts should cooperate with other public agencies to implement vector management activities. Specifically, Article 1 section 2001(c) states that it was Congress's intent to "create and continue a broad statutory authority for a class of special districts with the power to conduct effective programs for the surveillance, prevention, abatement, and control of mosquitos and other vectors."

California Health and Safety Code, Division 104 – Environmental Health

Division 104, Part 11, of the California HSC concerns the effects of vectors in relation to environmental health. Chapter 2, *Powers and Duties*, maintains that department shall maintain a vector control program that includes (a) consultation and assistance to vector control agencies, (b) surveillance of vectors and vector-borne diseases, (c) coordination of emergency vector control, (d) training and certification of government agency vector control technicians, and (e) disclosure of information to the public regarding vectors and vector-borne diseases.

California Department of Public Health

The CDPH includes a Vector-Borne Disease Section to protect the health and well-being of Californians from diseases transmitted to people from insects and other animals. The Vector-Borne Disease Section conducts prevention, surveillance, and control of vector-borne diseases, including hantavirus pulmonary syndrome, plague, Lyme disease, West Nile virus, and other tick-borne and mosquito-borne diseases. Vector-Borne Disease Section staff, in four regional offices and headquartered in Sacramento, provide a variety of services, including (1) developing and implementing Statewide vector-borne disease surveillance, protection, and control programs; (2) designing and conducting scientific investigations on vector-borne disease in California; (3) coordination of preparedness activities for detection and response to introduced vectors and vector-borne diseases; (4) emergency vector control; (5) advises local agencies on vector-borne public health issues; (6) overseeing local vector control agency activities through a Cooperative Agreement; (7) overseeing the Vector Control Technician Certification and Continuing Education programs; (8) providing information, training, and education materials to governmental agencies and the public; and (9) providing assistance in coordinating issues related to the management of public health pests.

Local

County of San Diego General Plan

The General Plan includes goals and policies within the Safety Element that would reduce the exposure of people and the environment to hazards involved with the routine transport, use, or disposal of hazardous materials.

Safety Element

Goal S-1 is to enhance public safety and the protection of public and private property within the unincorporated county. Policy S-1.1 supports this goal by minimizing the population exposed to hazards through the assignment of land use designations that reflect site-specific constraints and hazards. Enforcement of Policy S-1.2 locates future public facilities away from the county's most hazardous materials that pose a threat to human lives or environmental resources. Goal S-11 is to limit human and environmental exposure to hazardous materials that pose a threat to human lives or environmental resources. Implementation of Policy S-11.1 supports this goal by appropriately locating land uses that involve the storage, transfer, or processing of hazardous materials in quantities that could pose a significant risk to humans or the environment to minimize risk and comply with all applicable hazardous materials regulations.

Integrated Vector Management Program Best Management Practices

The IVMP follows vector control guidance documents and best management practices (BMPs) prepared by the CDPH that detail surveillance methods, vector control management strategies, and pesticide application procedures. These documents include *Best Management Practices for Mosquito Control in California* (CDPH 2012), *Best Management Practices for Mosquito Control on California State Properties* (CDPH 2008a), and *California Mosquito-Borne Virus Surveillance and Response Plan* (CDPH 2021), among other management practices and guidance documents that are regularly updated and published on the CDPH website (https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/VBDS.aspx).

In addition, the County integrates BMPs into the IVMP serving as a comprehensive management framework for implementation of individual activities. The following BMPs have been developed by the VCP in combination with the above-referenced sources and would be incorporated into the IVMP, which demonstrate the County's commitment to avoid or minimize impacts to the maximum extent feasible:

General Best Management Practices

- A1: The VCP performs public education and outreach activities to educate residents how to prevent mosquito breeding and other vector problems at their homes, businesses, and properties; how to protect themselves from being bitten by mosquitoes; and how to report dead birds, mosquito-breeding sources, including unmaintained pools, to prevent the spread of mosquito-borne diseases. Reducing vector breeding minimizes the need for VCP control activities.

- A3: To help minimize the need for pesticide application or vegetation management, surveillance and monitoring at known or suspected vector sites will continue to be performed to assess vector species abundance and distribution and if they are carrying diseases. Information obtained from surveillance is evaluated with risk-based response

criteria and other factors to decide when and where to implement vector control measures such as pesticide application and to help form action plans that reduce the risk of disease transmission and assist in reducing environmental impacts.

- A4: All pesticides (i.e., chemical and biological controls) applied by the VCP are approved by the CDPR, and their application will continue to abide by all label instructions and regulations of the USEPA and CDPR, including application rates and methods, storage, transportation, mixing, and container disposal. In addition, the VCP will continue to comply with all pesticide reporting, equipment calibration, and inspection requirements as regulated by the County Agricultural Commissioner.

- A5: In accordance with CDPH regulations, pesticides will only be applied by Certified Vector Control Technicians. VCP staff who apply pesticides or remove vegetation will continue to complete all training required by the CDPH to maintain status as a Certified Vector Control Technician and will follow the VCP's comprehensive documents, including the annual *Engineer's Report*, strategic response plans, and standard operating procedures to avoid and minimize negative environmental impacts. These activities are conducted in accordance with the BMPs described in the *Best Management Practices for Mosquito Control in California* (CDPH 2012), *Best Management Practices for Mosquito Control on California State Properties* (CDPH 2008a), and *California Mosquito-Borne Virus Surveillance and Response Plan* (CDPH 2021), which detail integrated vector best management practices for vector control and vector-borne disease prevention to ensure pesticides are selected and applied appropriately and potential impacts on non-targeted areas are eliminated or minimized.

- A6: Chemical controls applied within waterbodies defined by federal and State regulations as wetland and/or non-wetland waters of the U.S. and/or State must be used in accordance with the Statewide NPDES Permit for Biological and Residual Pesticide Discharges to Waters of the U.S. from Vector Control Applications (Order No. 2016-0039-DWQ, General Permit No. CA990004).

Best Management Practices Pertaining to Hazards and Hazardous Materials

- B13: The changing of oil, refueling, and other actions that could result in a release of a hazardous substance will be restricted to designated service areas, such as maintenance yards and gas stations, or when necessary, areas that are a minimum of 100 feet from any documented special status plant populations, sensitive habitats, or drainages. Equipment will be checked for leaks prior to operation and repaired as necessary. Fueling areas will be installed in the field, as applicable, by berms, sandbags, or other artificial barriers designed to prevent accidental spills.

- B15: Microbial larvicides (Bti, Bs) or insect growth regulator (e.g., methoprene) will be used as primary treatment methods when necessary to control mosquito larvae due to their high effectiveness, high safety, and environmental compatibility. Only when necessary, surfactants (that are highly effective at suffocating mosquito larvae) may be used to control late stage larvae or pupae that are resistant to microbial larvicides.

- B16: Pesticides will be applied at the lowest effective concentration for a specific, targeted set of vectors and site conditions. Application rates will never exceed the USEPA and CDPH-approved maximum label application rate. All pesticide application equipment is currently and will continue to be calibrated and inspected annually as required by

regulating agencies, such as the CDPH and County Department of Agriculture, Weights and Measures.

- B17: VCP staff will modify, postpone, or cease pesticide application when weather parameters exceed product label specifications, such as when wind speeds exceed the velocity stated on the product label or may result in drift, or when a high chance of rain is predicted and rain is a determining factor on the label of the material to be applied.

- B18: Spray nozzles for the application of pesticides will be adjusted to produce larger droplet size rather than smaller droplet size when feasible. Low-pressure nozzles will be used when appropriate. Certified Vector Control Technicians will keep spray nozzles within a predetermined maximum distance as close as feasibly possible to intended targets to avoid or minimize overspray. For application of ultra-low volume adulticides, equipment will be calibrated to deliver proper droplet size per manufacturer specifications.

- B19: Caution will be exercised to prevent spillage of pesticides during storage, transportation, mixing, or application of pesticides. All pesticide spills and cleanups (excepting cases where dry materials may be returned to the container or application equipment) will be reported to appropriate staff and any regulatory agencies as required. Application equipment will be checked for proper operation prior to use.

- B20: A pesticide spill cleanup kit and proper protective equipment will be maintained at the VCP's service yard and in each vehicle for pesticide application and transport.

- B21: In the event of spilled pesticides, the site will be managed to prevent entry by unauthorized personnel while the spill is contained, controlled, and cleaned up by stopping it from leaking or spreading to surrounding areas. Dry spills will be covered with a polyethylene or plastic tarpaulin if they cannot be cleaned up immediately. Any liquid hazardous material spill will be contained with appropriate absorbent materials.

- B22: Staff will properly recover any spilled material, label the container or bag with the pesticide name, and coordinate with a VCP supervisor for disposal.

- B23: Staff will be trained annually on petroleum-based or other chemical-based storage and disposal regulations and procedures, including spill management protocols.

- B24: Field-based mixing and loading operations will occur in such a manner as to minimize the risk of accidental spill or release of pesticides.

- B25: All vehicles will contain a fire extinguisher and first aid kit at all times.

3.1.4.3 *Analysis of Project Effects and Determination as to Significance*

The *County of San Diego Guidelines for Determining Significance – Hazardous Materials and Existing Contamination* (County 2007e) provides guidance for evaluating adverse environmental effects associated with hazardous materials. However, these guidelines have not been updated to reflect the current CEQA Guidelines Appendix G questions related to hazards and hazardous materials. Therefore, the impact analysis that follows relies on Appendix G of the CEQA Guidelines. Based on guidance provided in Appendix G of the CEQA Guidelines, the Proposed Project would result in a significant impact if it would lead to any of the following:

1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

2. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

3. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

4. 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, create a significant hazard to the public or the environment.

5. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, and therefore result in a safety hazard or excessive noise for people residing or working in the project area.

6. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

7. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

Use, Handling, and Storage of Hazardous Materials

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would have a significant impact on the environment if it would create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

Impact Analysis

The Proposed Project involves the implementation of a countywide IVMP. Activities with the potential to cause impacts include vector control through various techniques, including surveillance and monitoring, source reduction (i.e., physical control), and source treatment (i.e., pesticide usage). The source treatment methods would include pesticide application to reduce the spread of mosquito-borne and vector-borne disease.

For the purpose of this analysis, CEQA 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. Per the HSC, 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 that it would be injurious to the health and safety of people or harmful to the environment if released into the workplace or the environment. Although some pesticides contain naturally occurring bacteria or are certified organic, pesticides are conservatively analyzed as potentially hazardous materials for the purposes of this analysis.

As identified in Table 3.1.4-1, the VCP maintains pesticides for vector control that are used in solid, liquid, and aerosol forms. Solid pesticides (granules, tablets, briquets, and pellets) are typically larvicides used to control mosquito larvae in a variety of locations. Granular forms are used at specified amounts and can be scaled to achieve correct doses in very small (pots, drains) through to very large bodies of water (ponds and wetlands). Tablets, briquet, and pellet larvicide formulations often offer longer control through slow release formulations (approximately 1 to 6 months). Some of these products can also be applied as a "pre-treatment" to a site that is known to later flood and develop mosquitoes (e.g., a tidal wetland). Liquid forms of larvicides can also be used to treat very small to large areas. Liquid adulticides may be applied as a spray or fog to coat surfaces and kill adult mosquitoes when they contact the surface. This is often done to areas near or where mosquitoes rest. Aerosolized adulticide formulations consist of very fine droplets (ultra-low volume) that rapidly disperse and degrade in the environment. They are used to immediately kill adult mosquitoes that pose a risk of disease transmission and/or to suppress abnormally high vector or pest species.

As shown in Table 3.1.4-1, most of the pesticide products used are products that come in a solid form (i.e., pellet, briquet, granule, tablet). Solid pesticides lessen the potential for off-target application from aerial drift and facilitate their penetration of dense vegetation to water where mosquitoes can breed. While products applied in liquid form have a higher potential of aerial drift compared to solid form, only 0.17% of total pesticide applications used in calendar year 2018 (i.e., baseline year) were in liquid form as determined by weight.[4] Therefore, potential aerial drift from liquid applications would be negligible. Nonetheless, the VCP modifies, postpones, or ceases pesticide application when weather parameters exceed product label specifications, such as when wind speeds exceed the velocity stated on the product label and may result in drift, or high chance of rain is predicted and rain is a determining factor on the label of the material to be applied.

Other factors considered when evaluating pesticides include the toxicity and half-life of the main active ingredient. A half-life is defined as the time it takes for an ingredient to be reduced by half, typically as it dissipates or breaks down. As shown in Table 3.1.4-1, there are five main active ingredients in the pesticides used by VCP in 2019: methoprene, Bti, Bs, aliphatic petroleum hydrocarbons, and spinosad. These five active ingredients are very common among vector control pesticides and are anticipated to remain the active ingredients of products to be used by VCP in the future. Bti and spinosad are both classified as bacterial larvicides, while methoprene and aliphatic petroleum hydrocarbons are synthetic larvicides (i.e., hydrocarbon esters) that kill mosquito larvae.

Both bacterial larvicides and hydrocarbon esters have been reviewed by the USEPA and found to have very low toxicity to humans (USEPA 1991; 2007; 2018; 2022a; 2022i). For instance, according to USEPA, Bti has no toxicity to people and is approved for use for pest control, and USEPA concluded that Bti does not pose a risk to humans (USEPA 2022a). To offer a specific definition of bacterial larvicides, they are highly selective microbial pesticides (for mosquitoes) that, when ingested, produce gut toxins that eliminate the targeted vector. These microbial agents are delivered as endospores in granular, powder, or liquid concentrate formulations. Applications follow strict guidelines in the VCP BMPs and product label requirements. Microbial larvicides are one of the safest forms of natural pesticides available for commercial use. Bti is a naturally occurring toxicant of mosquito larvae and, therefore, does not pose a risk to nontarget ecological receptors. Bti generally persists in the environment for 1 to 4 days but may be effective for up to

[4] According to products applied in calendar year 2019 reported by the VCP *Pesticide Use State Report*, approximately 101,075 pounds of pesticides were applied, of which liquid pesticides totaled approximately 168.8 pounds. This results in 0.17% of product applied in 2019 being in liquid form.

180 days when applied in a long term briquet. As discussed in Section 2.1 of this PEIR, spinosad is a natural insecticide derived from the fermentation of a naturally occurring common soil micro-organism, *Saccharopolyspora spinosa*. In water, spinosad is degraded primarily through photolysis, which has a half-life of less than one day. Spinosad alters nicotine acetylcholine receptors in insects.

While the VCP has conducted extensive investigative research on pesticide usage and regulations in preparing this PEIR, the *Ecological & Human Health Assessment Report* and Programmatic EIR prepared by Cardno Entrix for the San Mateo County Mosquito and Vector Control District provides a significant volume of data and research regarding potential pesticide effects (San Mateo 2018; Cardno Entrix 2013).[5] While the VCP does not utilize every pesticide evaluated by Cardno Entrix, the products that the VCP does utilize were all evaluated in the aforementioned documents. Both the *Ecological & Human Health Assessment Report* and Programmatic EIR conclude that pesticides were found to result in no impact or less than significant impact with no mitigation required. As such, it can be reasonably concluded that the Proposed Project would result in similar less than significant impacts.

Regarding equipment and vehicles, the VCP would use a variety of equipment to implement the Proposed Project. As discussed in Section 1.2.4, *Equipment Used During Vector Control Activities*, of this PEIR, vector control equipment typically used includes pumps, hand sprayers and foggers, autos and light duty trucks, aircraft (such as helicopters, fixed-wing, and drones), vehicle-mounted sprayers, and construction equipment such as excavators, dump trucks, and other earthmoving equipment. The operation of construction equipment would require the transportation and use of limited quantities of fuel, oil, sealants, and other hazardous materials related to construction equipment. The use of hazardous materials and substances during the operation of construction equipment would be subject to federal, State, and local health and safety requirements for handling, storage, and disposal. In the event of a spill of fuel, oil, sealants, or other hazardous materials related to construction equipment, the spill would be contained, documented, and cleaned up in accordance with applicable regulations. As a result, hazardous materials impacts related to construction and equipment use would be less than significant.

The VCP only uses pesticides that are USEPA/CalEPA registered, and adheres to the storage, usage, and transportation requirements provided by each pesticide's manufacturer and, as such, have been determined by the USEPA/CalEPA to be safe for environmental application as specified on the label. Pesticides are only applied or supervised by VCP Certified Vector Control Technicians, who are approved personnel that have been trained and maintain certification through continuing education on how to use, store, and dispose of such substances. Pesticides are stored according to their label, in either the original container and packaging or another properly labeled container within a secured pesticide storage room, in accordance with the CDPR. The storage room remains locked at all times, and access to the pesticides are restricted to authorized personnel only. VCP staff are granted access to the pesticide storage room if necessary to performing their designated job duties per their job classification. Pesticides are checked in and out with each use using sign out sheets in the storage room. The inventory of pesticides is continuously monitored by a shop technician. The Certified Vector Control Technicians also report in the County's enterprise database (i.e., Accela) how much product has been used after each application.

[5] Cardno Entrix prepared the Ecological & Human Health Assessment Report in June 2013 on behalf of nine mosquito abatement districts in northern California. The report was then integrated into each district's Environmental Impact Report (i.e., Appendix B of the San Mateo County Mosquito and Vector Control District's Programmatic EIR for the Integrated Mosquito and Vector Management Program; SCH # 2012052063).

Additionally, the Proposed Project would implement IVMP BMPs that would minimize the potential of creating a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials related to pesticides. For a complete list of all 17 BMPs that would be implemented, please refer to Section 3.1.4.2. Further, the Proposed Project activities would be completed in accordance with local CUPA regulations. As previously discussed, the County Department of Environmental Health and Quality's Hazardous Materials Division serves as the CUPA for San Diego County, and the VCP is permitted under Unified Program Facility Permit (DEH2010-HUPFP-211944), which is renewed annually. The CUPA inspects hazardous materials inventory that should be reported in the California Environmental Reporting System, as well as any and all hazardous waste generated by the facility, including pesticides. Additionally, the CUPA performs routine annual inspections of the VCP to determine compliance with applicable health and safety regulations. Pesticides used by the Proposed Project would be stored in the VCP shop in accordance with CUPA regulations. Pesticide storage would also be inspected annually by the CUPA to ensure compliance with applicable regulations.

Therefore, the Proposed Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Impacts would be less than significant.

Release of Hazardous Materials

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would have a significant impact on the environment if it would create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Impact Analysis

As previously discussed, the Proposed Project would include the use of insecticides and pesticides during source treatment activities. However, as shown in Table 3.1.4-1, the majority of the pesticides recently used by the VCP occur in a solid form, which minimizes the potential for accidental release of pesticides through aerial drift.

Additionally, pesticides would only be handled by qualified personnel, including Certified Vector Control Technicians, who have received State and local training to handle such substances thereby reducing the potential of accidental release. The Proposed Project would also implement BMPs (refer to Section 1.2.5 of this PEIR), further minimizing the potential for a spill. Specifically, caution would be exercised to prevent spillage of pesticides, and all pesticide spills and cleanups (excepting cases where dry materials may be returned to the container or application equipment) would be reported to appropriate staff and any regulatory agencies as required (BMP B19). Staff would also be trained annually on petroleum-based or other chemical-based storage and disposal regulations and procedures including spill management protocols (BMP B23). Also, the changing of oil, refueling, and other actions that could result in a release of a hazardous substance would be restricted to designated service areas, such as maintenance yards and gas stations, or when necessary, areas that are a minimum of 100 feet from any documented special-status plant populations, sensitive habitats, or drainages (BMP B13).

In the event of an unforeseen spill, the site will be managed to prevent entry by unauthorized personnel while the spill is contained, controlled, and cleaned up by stopping it from leaking or

spreading to surrounding areas. Dry spills will be covered with a polyethylene or plastic tarpaulin if they cannot be cleaned up immediately. Any liquid hazardous material spill will be contained with appropriate absorbent materials (BMP B21). Staff will properly recover any spilled material, label the container or bag with the pesticide name, and coordinate with a VCP Supervisor for disposal (BMP B22).

Regarding vehicles and equipment, during source reduction activities, a variety of equipment may be used, including pumps, hand sprayers and foggers, autos and light duty trucks, aircraft (such as helicopters, fixed-wing, and drones), vehicle-mounted sprayers, and construction equipment such as excavators, dump trucks, and other earthmoving equipment. The operation of construction equipment would require the transportation and use of limited quantities of fuel, oil, sealants, and other hazardous materials related to construction equipment. The use of hazardous materials and substances during the operation of construction equipment would be subject to federal, State, and local health and safety requirements for handling, storage, and disposal. In the event of a spill, the materials would be cleaned, contained, and disposed of in accordance with applicable regulations and the VCP's standard operating procedures.

Adherence to pesticide label instructions and the VCP's spill cleanup procedures would ensure that the unforeseen spill of pesticides or other potentially hazardous materials would not create a significant hazard to the public or the environment. Therefore, the Proposed Project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Impacts would be less than significant.

Hazardous Materials near Schools

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would have a significant impact on the environment if it would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

Impact Analysis

Because site-specific locations of IVMP activities have not been defined at this time, this PEIR analysis is qualitative in nature and does not provide specific locations. However, given the need to conduct vector control services throughout San Diego County, it is possible that source treatment techniques (i.e., pesticides) may need to be applied within one-quarter mile of an existing or proposed school.

However, as discussed above regarding the handling, storage, and use of pesticides, most of the pesticide products typically used by the VCP come in a solid form, which lessens the potential for off-target application from aerial drift and facilitates their penetration of dense vegetation to water where mosquitoes can breed. As previously discussed, application of liquid pesticides by hand has a low potential for aerial drift. While products applied in liquid form have a higher potential of aerial drift compared to solid form, only 0.17% of total recent pesticide applications were in liquid form (as determined by weight). When applied by aircraft, liquid pesticides are typically combined with water and applied as a low-volume wet spray, which lowers the concentration and increases the droplet size to help minimize potential drift. Therefore, potential aerial drift from liquid applications would be negligible. Nonetheless, the VCP modifies, postpones, or ceases pesticide

application when weather parameters exceed product label specifications, such as when wind speeds exceed the velocity stated on the product label and may result in drift, or when a high chance of rain is predicted and rain is a determining factor on the label of the material to be applied.

Additionally, as previously discussed, there are five main active ingredients in the pesticides used by VCP: methoprene, Bti, Bs, aliphatic petroleum hydrocarbons, and spinosad. These five active ingredients are common among pesticides and are anticipated to remain the active ingredients of pesticides to be used by VCP in the future. Bti and spinosad are both classified as bacterial larvicides, while methoprene and aliphatic petroleum hydrocarbons are synthetic larvicides (i.e., hydrocarbon esters) that kill mosquito larvae. As discussed in prior sections, both bacterial larvicides and hydrocarbon esters have been reviewed by the USEPA and found to have very low toxicity to humans (USEPA 1991; 2007; 2018; 2022a; 2022i).

The Proposed Project would fully adhere to all applicable federal, State, and local regulations. The IVMP would only use pesticides that are USEPA/CalEPA registered, and would adhere to the storage, usage, and transportation guidelines provided by each pesticide's manufacturer and, as such, have been determined by the USEPA/CalEPA to be safe for environmental application as specified on the label. Pesticides would only be applied by Certified Vector Control Technicians, who are approved personnel that have been trained and maintain certification through continuing education on how to use, store, and dispose of such substances. Pesticides would be stored according to their label, in either the original container and packaging or another properly labeled container within a secured pesticide storage room, in accordance with the CDPR. The storage room would remain locked at all times, and access to the pesticides would be restricted to authorized personnel only. VCP staff would be granted badge access to the pesticide storage room if necessary to performing their designated job duties per their job classification. Pesticides would be checked in and out with each use using sign out sheets in the storage room. The inventory of pesticides would be monitored by a shop technician. The technicians also report how much product has been used after each application.

Additionally, the Proposed Project would implement the BMPs listed for the first to thresholds above (refer to Section 1.2.5 of this PEIR) that would further minimize potential effects associated with the handling of hazardous materials. For a complete list of all 17 BMPs that would be implemented, please refer to Section 3.1.4.2.

Hazardous Materials Sites

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would have a significant impact on the environment if it would be located on a site that is included on a list of hazardous materials sites compiled pursuant to California Government Code, Section 65962.5, and as a result, create a significant hazard to the public or the environment.

Impact Analysis

As part of the source reduction component of the IVMP, the Proposed Project may result in minor grading or earthmoving activities in certain locations to conduct a variety of improvements, such as eliminate areas of standing water, remove vegetation or sediment, interrupt water flow, rotate stored water, pump and/or fill sources, improve drainage and water circulation systems, and

install, improve, or remove culverts, tide gates, and other water control structures in wetlands or other water bodies.

As stated previously, site-specific locations of IVMP activities have not been defined at this time; therefore, a search of federal, State, and local databases regarding a specific project area and its surroundings could not be conducted for this PEIR. As discussed in Section 3.1.4.1, numerous locations throughout the county are listed as hazardous materials sites. Therefore, the Proposed Project has the potential to be at or near a location that is listed as a hazardous materials site.

Although site-specific activities have the potential to occur on or near a site identified in one of the regulatory databases compiled pursuant to California Government Code, Section 65962.5, or is otherwise known to have been the subject of a release of hazardous substances, the Proposed Project does not include any activities that would result in a significant hazard to the public or the environment. Specifically, such activities would be both temporary and periodic in nature, and the Proposed Project does not propose any activities that would result in a significant hazard to the public or the environment. Other than for temporary pesticide usage activities, implementation of the Proposed Project would not bring people to individual sites addressed by the Proposed Project. Furthermore, activities associated with the Proposed Project would be required to comply with federal, State, and local regulations governing worker safety, the preparation of emergency response programs, and the use of controls to limit exposure to workers. In addition, the Proposed Project would comply with the applicable federal, State, and local regulations governing the treatment, storage, and disposal of hazardous materials.

If the Proposed Project requires work on or within the vicinity of a burn ash site, then the Proposed Project would be required to comply with burn ash site remediation requirements provided by CalRecycle and the California DTSC. Remediation requirements stipulate the approval of a Post Closure Maintenance and Monitoring Plan. In addition, if the Proposed Project requires work on or within the vicinity of a Formerly Used Defense Site, then the Proposed Project must obtain a RCRA Emergency Permit (if unexploded ordinance is unexpectedly found) or obtain approval of a Removal Action Workplan/Remedial Action Plan to remediate the site prior to the start of the Proposed Project work on such land. Compliance with these regulations would ensure that implementation of the Proposed Project would not result in a significant hazard to the public or the environment.

In addition, the Proposed Project would not construct buildings for human occupancy or demolish existing buildings. The Proposed Project is designed to reduce vector populations and habitats, which would not require construction or demolition of structures.

The Proposed Project would adhere to all applicable regulations and BMPs related to the handling of hazardous materials (refer to Section 1.2.5 of this PEIR). This would include applying pesticides at the lowest effective concentration for a specific, targeted set of vectors and site conditions (BMP B16); modifying, postponing, or ceasing pesticide application when weather parameters exceed product label specifications (BMP B17); and training staff annually on petroleum-based or other chemical-based storage and disposal regulations and procedures including spill management protocols (BMP B23). Further, the Proposed Project does not include the construction of any buildings or structures that would be permanently located on a hazardous materials site. Therefore, the Proposed Project would not result in any significant impacts related to hazardous materials sites and would not create a significant hazard to the public or the environment.

Airport Hazards

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would have a significant impact on the environment if it would be 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 and, therefore, result in a safety hazard or excessive noise for people residing or working in the Service Area.[6]

Impact Analysis

The Proposed Project includes implementation of the countywide IVMP. Individual activities would occur in a wide range of locations throughout the county, including areas potentially covered by an airport land use plan or within 2 miles of a public airport or public use airport where such a plan has not been adopted. However, the Proposed Project would not construct residential or other habitable or commercial structures that would create a safety hazard or excessive noise for people residing or working in the Service Area. Therefore, no impacts related to airport hazards would occur.

Emergency Response and Evacuation

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would have a significant impact on the environment if it would impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Impact Analysis

The Proposed Project involves the implementation of an IVMP to protect the public from vector-borne disease and public nuisances. Under the Proposed Project, the IVMP would continue to comprehensively approach vector control through various techniques. Specifically, IVMP activities would require the ongoing and periodic use of vehicles and light trucks. Project activities may require the use of flaggers or cones to park equipment, but such activities would be temporary in nature. Further, Proposed Project activities would not result in any road or lane closures or detours that would impede emergency response or evacuation. Additionally, the Proposed Project would not introduce new structures or residents that may result in slower emergency response or evacuation times. The Proposed Project would not involve activities that could impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Impacts would be less than significant.

[6] Service Area is synonymous with Assessment Area, which is defined in the *Engineer's Report* (County 2022a) as the area in which an annual levy provides funding for essential vector control services, including those properties that may request and/or receive direct and more frequent service and are located within the scope of the vector surveillance area. As such, Native American reservation land, as a Sovereign Nation, is excluded from the Service Area along with federally owned lands that receive minimal to no services.

Wildland Fires

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would have a significant impact on the environment if it would expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

Impact Analysis

The Proposed Project involves the implementation of an IVMP to protect the public from vector-borne disease and public nuisances. The Proposed Project would not include activities that would exacerbate wildfire risk, such as installing infrastructure with an increased fire risk (i.e., power plant or telephone poles). Additionally, the Proposed Project would implement IVMP BMPs (refer to Section 1.2.5 of this PEIR) that would ensure that the Proposed Project would not result in an increased risk of wildfire. Specifically, the changing of oil, refueling, and other actions that could result in a release of a hazardous substance would be restricted to designated service areas, such as maintenance yards and gas stations, or when necessary, areas that are a minimum of 100 feet from any documented special-status plant populations, sensitive habitats, or drainages (BMP B13), and all vehicles used for IVMP activities would be equipped with fire extinguishers at all times (BMP B25). Such BMPs would help ensure minimal fire risk. The pesticides would be used in accordance with label instructions, which would minimize potential hazards including fire risk.

Further, the Proposed Project would not involve the construction of any new structures and therefore would not result in an increase of inhabitants in the county. Thus, it would not expose people or structures to wildland fires. As such, the Proposed Project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires, and the Proposed Project would result in no impacts.

Refer to Section 3.1.8, *Wildfire*, for further discussion of impacts related to wildfire.

3.1.4.4 *Cumulative Impact Analysis*

The geographic scope of cumulative impact analysis for hazards and hazardous materials includes the entirety of San Diego County. Cumulative projects may include countywide residential and non-residential land development, open space and recreation, and agricultural activities that have the potential for ground disturbance, vegetation removal, and pesticide use. However, the geographic scope of cumulative impact analysis for the wildland fires subsection could be larger than the other areas due to the transitory nature of wildland fires, which can burn across multiple landscapes if suitable fuel is present. As with cumulative projects, the Proposed Project would be required to comply with applicable federal, State, and local regulations related to hazards and hazardous materials in the Service Area.

Use, Handling, and Storage of Hazardous Materials

Implementation of the Proposed Project would not result in a significant increase in the use, storage, disposal, or transport of hazardous materials, including pesticides, because it largely involves the continuation of current VCP activities. The amount of pesticides used by the VCP is negligible compared to other sectors in San Diego County and when compared to other counties throughout California. Specifically, it is important to note that in 2018 the VCP accounted for only

1.2% of all pesticides (by weight) in San Diego County according to the State's pesticide use reporting database (CDPR 2018a). The industries using the largest amount of pesticide in the county are agriculture, structural pest control (e.g., termites), and landscape maintenance. The VCP uses the least amount of pesticides among all other major groups. Furthermore, a Statewide comparison shows that San Diego ranked 27th out of 58 counties for total pounds of active pesticide used, which includes all sectors such as residential, commercial, industrial, agriculture, and public health (CDPR 2018b). Finally, according to the USEPA, 90% of all pesticides used in the United States is applied by the agricultural sector, 6% to 7% by the home and garden sector, and only 4% to 5% for industrial/commercial/government sectors combined (USEPA 2017). After considering this data, eliminating pesticides by the VCP would not significantly reduce the amount used across San Diego County, but it would severely restrict the VCP's ability to carry out its mission of protecting the public from vectors and vector-borne diseases.

In addition, information obtained from surveillance is evaluated against treatment and risk-based response criteria to decide when and where to implement vector control measures, and to help form action plans that can also assist in reducing the risk of contracting disease as well as assist in reducing environmental impacts. Through this effort, the VCP strives to ensure the most effective techniques are utilized and all pesticides are applied at or below USEPA-mandated label rates and requirements.

Other sectors throughout San Diego County would use pesticides in addition to the Proposed Project, such as residential and non-residential land development, open space and recreation, and agricultural activities. However, similar to the Proposed Project, cumulative projects would be required to comply with regulations applicable to the use, disposal, and transportation of hazardous materials, including but not limited to RCRA, CERCLA, and the Hazardous Materials Transportation Act. Additionally, the Proposed Project would result in less than significant impacts related to the handling and storage of hazardous materials. Therefore, implementation of the IVMP would not result in a cumulatively considerable contribution to impacts related to the handling and storage of hazardous materials.

Release of Hazardous Materials

Pesticides are only handled by State-certified personnel who have been trained to handle such substances thereby reducing the potential of accidental release since Certified Vector Control Technicians have received State and local training. In the event of an unforeseen spill of pesticides or other potentially hazardous materials, cleanups would occur in adherence with the pesticide label instructions and VCP standard spill response procedures.

Additionally, cumulative projects would also be subject to regulations regarding the handling of hazardous materials, such as the RCRA, HSC, and the California Code of Regulations. These regulations would reduce the risks associated with an accidental release of hazardous materials from cumulative projects. Further, the Proposed Project would also adhere to these regulations and would not result in a significant impact related to the accidental release of hazardous materials. As a result, implementation of the IVMP would not result in a cumulatively considerable contribution related to hazards to the public or the environment through the reasonably foreseeable upset or accident involving the release of hazardous materials into the environment.

Hazardous Materials near Schools

Cumulative projects may occur within a quarter mile of an existing or proposed school, and therefore may result in the use of hazardous materials near schools. However, cumulative

projects would be subject to CEQA review and would be required to comply with applicable hazardous materials regulations. These requirements, such as mandated hazard investigations for potential school sites and analyses of proposed projects or existing land uses, would reduce the risk of cumulative projects emitting hazardous materials within one-quarter mile of a school. The Proposed Project would also adhere to these regulations and would not result in a significant impact related to the use of hazardous materials near schools. As a result, implementation of the IVMP would not result in a cumulatively considerable contribution related to the use of hazardous materials near schools.

Hazardous Materials Sites

Because San Diego County spans approximately 4,261 square miles, it is reasonable to assume that the county has multiple existing hazardous materials sites, pursuant to California Government Code, Section 65962.5. Therefore, implementation of cumulative projects may result in the location of a project on a site with existing hazardous materials issues, which can result in a potentially significant impact to the public or environment. However, cumulative projects would be subject to CEQA review and would be required to comply with applicable regulations that prevent risks associated with existing hazardous materials sites. Similarly, the Proposed Project would comply with those same regulations and would not result in a significant impact related to existing hazardous materials sites. As such, implementation of the IVMP would not result in a cumulatively considerable contribution related to existing hazardous materials sites.

Airport Hazards

Cumulative development projects would have the potential to result in incompatible land uses within the vicinity of an airport. This could potentially result in a significant safety hazard for people residing or working in these project areas. However, cumulative projects would be subject to safety regulations, such as Federal Aviation Administration standards, which would reduce the potential for cumulative airport safety hazards to below a level of significance. Additionally, the Proposed Project would not propose structures or development that could result in a significant impact related to airport hazards. As such, implementation of the IVMP would not result in a cumulatively considerable contribution related to airport hazards.

Emergency Response and Evacuation

Cumulative projects may result in increases in population that may interfere with emergency response and evacuation plans. This could occur from any of the following: (1) an increase in population that is induced from cumulative projects which are unaccounted for in emergency plans; (2) an increase in population that emergency response teams are unable to service adequately in the event of a disaster; or (3) evacuation route impairment if multiple development projects concurrently block multiple evacuation or access roads. However, cumulative projects would be required to comply with applicable emergency response and evacuation policies outlined in regulations such as local fire codes. Additionally, the Proposed Project would not introduce new inhabitants to the region or result in any roadway closures that could impede emergency response. The Proposed Project would not result in a significant impact to emergency response and evacuation. As a result, implementation of the IVMP would not result in a cumulatively considerable contribution related to emergency response and evacuation.

Wildland Fires

A cumulative impact would occur if future cumulative development would contribute to risks associated with wildland fires. Southern California has a history of experiencing frequent and intensive wildland fires, which have exposed people and structures to significant loss of life and property. Some cumulative projects and activities may occur in areas that are considered High or Very High FHSZs resulting in a significant cumulative wildland fire impact. However, implementation of the IVMP would not increase fire risk or result in a cumulatively considerable contribution to cumulative wildland fire impacts.

3.1.4.5 *Significance of Impacts Prior to Mitigation*

The Proposed Project involves vector management activities to protect the public from vector-borne disease and public nuisances. The vector management activities involved in the Proposed Project include surveillance and monitoring, source reduction, source treatment, public education, outreach, and disease diagnostics. As discussed in Section 3.1.4.3, the Proposed Project would not result in any significant impacts related to hazards and hazardous materials. Specifically, the Proposed Project would result in less than significant impacts related to the use, storage, and transportation of hazardous materials; release of hazardous materials; use of hazardous materials near schools; existing hazardous materials sites; airport hazards; emergency response and evacuation plans; and wildland fires. Additionally, as discussed in Section 3.1.4.4, the Proposed Project would not significantly contribute to any cumulative impacts related to hazards. The Proposed Project would not result in significant direct or cumulatively considerable impacts related to hazards or hazardous materials.

3.1.4.6 *Mitigation Measures*

Because the Proposed Project would not result in significant impacts, no mitigation is required.

3.1.4.7 *Conclusion*

Implementation of the Proposed Project would not result in any significant direct project or cumulative impacts related to hazards or hazardous materials.

This page intentionally left blank

Table 3.1.4-1
VECTOR CONTROL PROGRAM PESTICIDE USE WITHIN SERVICE AREA: 2018–2021

Product	Manufacturer	Active Ingredient	USEPA Registration Number	Form	Amount Used			
					2018	2019	2020	2021
Altosid 30 (pounds)	Wellmark International	Methoprene	2724-375	Briquet	205.01	21.23	18.58	22.48
Altosid Liquid SR-5 (pounds)	Wellmark International	Methoprene	2724-375	Liquid	0.0	0.0	0.0	0.63
Altosid P35 (pounds)	Wellmark International	Methoprene	89459-95	Granule	0.0	0.0	0.0	49.10
Altosid Pellets (pounds)	Wellmark International	Methoprene	2724-448	Pellet	206.49	148.11	148.45	188.86
Altosid XR Briquets (pounds)	Wellmark International	Methoprene	2724-421	Briquet	432.15	46.93	71.60	91.48
AquaBac 3000 WDG (pounds)	Becker Microbial Products	Bti	62637-14	Granule	0.0	0.0	0.0	105.00
Fourstar 150 Bti Briquets (pounds)	Central Life Sciences	Bti	83362-2-89459	Briquet	0.0	0.0	0.19	10.89
Fourstar BTI-CRG (pounds)	Fourstar Microbial Products, LLC	Bti	85685-4	Granule	2,308.35	1,563.60	1,620.08	1,116.79
Fourstar MBG (pounds)	Central Life Sciences, LLC	Bti	85685-3	Granule	0.0	34.26	151.73	332.17
Fourstar WSP (pounds)	Fourstar Microbial Products, LLC	Bti + Bs	85685-3	Water Soluble Pouch	0.0	0.0	0.0	8.33
Golden Bear 1111 (gallons)	Clarke Mosquito Control Products, Inc.	Aliphatic petroleum hydrocarbons	8329-72	Liquid	27.63	18.61	7.88	6.24
MetaLarv S-PT (pounds)	Valent BioScience Corporation	Methoprene	73049-475	Pellet	381.22	640.01	1,333.97	854.71
Mosquito Dunks (pounds)	Summit Chemical Company	Bti	6218-47	Tablet	27.20	5.73	2.73	1.70
Mosquito Fish (units)	N/A	N/A	N/A	Organism	11,952	21,207	17,134	10,837
Natular G30 (pounds)	Clarke Mosquito Control Products, Inc.	Spinosad	8329-80	Granule	10,100.63	409.55	618.63	301.66
Natular XRT (pounds)	Clarke Mosquito Control Products, Inc.	Spinosad	8329-84	Tablet	0.0	0.0	0.0	16.86
Teknar SC (gallons)	Valent BioScience Corporation	Bti	73049-435	Liquid	0.0	0.0	2.38	20.00
VectoBac 12AS (gallons)	Valent BioScience Corporation	Bti	73049-38	Liquid	1.80	4.13	5.13	5.67
VectoBac GR (pounds)	Valent BioScience Corporation	Bti	73049-486	Granule	0.0	0.0	260.44	0.39
VectoBac WDG (pounds)	Valent BioScience Corporation	Bti	73049-56	Granule	0.0	0.0	29.73	143.16
Vectolex WDG (pounds)	Valent BioScience Corporation	Bs	73049-57	Granule	0.0	0.0	27.00	33.00
VectoMax FG (pounds)	Valent BioScience Corporation	Bti + Bs	73049-429	Pellet	69,902.15	97,972.04	90,044.19	58,692.07
VectoMax WSP (pounds)	Valent BioScience Corporation	Bti + Bs	73049-20	Granule	75.38	65.30	98.68	41.14
VectoPrime FG (pounds)	Valent BioScience Corporation	Bti + Methoprene	73049-501	Granule	0.0	0.0	0.0	21.09

Notes: Bs = *Bacillus sphericus;* Bti = *Bacillus thuringiensis* subsp. *Israelensis*; USEPA = U.S. Environmental Protection Agency

Table 3.1.4-2
PESTICIDES AVAILABLE TO THE VECTOR CONTROL PROGRAM

Pesticide Type	Product	Manufacturer	Highest Active Ingredient	USEPA Registration Number	Form
Available for Routine Use					
Larvicide	Altosid 30	Wellmark International	Methoprene	2724-375	Briquet
Larvicide	Altosid Pellets	Wellmark International	Methoprene	2724-448	Pellet
Larvicide	Altosid XR Briquets	Wellmark International	Methoprene	2724-421	Briquet
Larvicide	Fourstar BTI-CRG	Fourstar Microbial Products, LLC	Bti	85685-4	Granule
Larvicide	Fourstar MBG	Central Life Sciences, LLC	Bti	85685-3	Granule
Larvicide	Golden Bear 1111	Clarke Mosquito Control Products, Inc.	Aliphatic petroleum hydrocarbons	8329-72	Liquid
Larvicide	MetaLarv S-PT	Valent BioScience Corporation	Methoprene	73049-475	Pellet
Larvicide	Mosquito Dunks	Summit Chemical Company	Bti	6218-47	Tablet
Larvicide	Mosquito Fish	N/A	N/A	N/A	Organism
Larvicide	Natular G30	Clarke Mosquito Control Products, Inc.	Spinosad	8329-80	Granule
Larvicide	VectoBac 12AS	Valent BioSciences	Bti, strain AM 65-52	73049-38	Liquid
Larvicide	VectoMax FG	Valent BioScience Corporation	Bti + Bs	73049-429	Pellet
Larvicide	VectoMax WSP	Valent BioScience Corporation	Bti + Bs	73049-20	Granule
Available for Use on Limited As-Needed Basis					
Adulticide	Pyrenone 25-5	Bayer Environmental Science	Piperonyl Butoxide 25%	432-1050	Liquid
Adulticide	Aqua-Duet	Clarke Mosquito Control Products, Inc.	Sumithrin %5 Piperonyl Butoxide 5%	1021-2562-8329	Liquid
Adulticide	Pyrocide	MGK	Piperonyl Butoxide 25%	1021-1569	Liquid
Adulticide	Resmethrin (Scourge)	Bayer Environmental Science	Piperonyl Butoxide 12%	432-716	Liquid
Adulticide	Aqua-Reslin	Bayer Environmental Science	Permethrin 20%	432-796	Liquid
Adulticide	Demand CS	Syngenta Crop Protection	Lambda-cyhalothrin 10%	100-1066	Liquid
Adulticide	DeltaGard	Bayer Environmental Science	Deltamethrin 2%	432-1534	Liquid
Adulticide	Suspend SC	Bayer Environmental Science	Deltamethrin 4%	No. 432-763	Liquid

Notes: Bs = *Bacillus sphericus;* Bti = *Bacillus thuringiensis* subsp. *Israelensis*; USEPA = U.S. Environmental Protection Agency

3.1.5 Hydrology and Water Quality

This section of the Program Environmental Impact Report (PEIR) describes hydrology and water quality, including the existing surface water and groundwater quality, groundwater resources, hydrology and drainage patterns, inundation hazards, and water planning, in the county and any changes to the physical environment that could occur as a result of implementation of the Integrated Vector Management Program (IVMP or Proposed Project). This section is based on a literature review performed by HELIX Environmental Planning, Inc., the *County of San Diego Guidelines for Determining Significance – Hydrology and Water Quality* (County 2021c), the *County of San Diego Guidelines for Determining Significance – Groundwater Resources* (County 2007f), and Appendix G of the California Environmental Quality Act (CEQA) Guidelines.

3.1.5.1 *Existing Conditions*

General surface water hydrology and water quality conditions of the Service Area[1] discussed below is based on a review of the *Water Quality Control Plan for the San Diego Basin* (*Basin Plan*) (RWQCB 1994), the *San Diego County General Plan EIR*, and available online information.

Surface Water Hydrology

San Diego County's surface waters are characterized by estuaries, lagoons, bays, lakes, reservoirs, rivers, and creeks. These water bodies capture the flow of the region's surface water runoff and become a blend of natural runoff and imported water. Many support natural habitat and recreational areas in addition to acting as storage reservoirs for the region's water supply. Figure 3.1.5-1, *Surface Waters and Floodplains*, shows the location of surface water including streams, rivers, lakes, and reservoirs within the region. An inventory of these surface water resources is provided below.

The Laguna Mountains divide San Diego County into two hydrologic regions that can be used to further evaluate surface water characteristics. These include the (1) Colorado Hydrologic Region and (2) San Diego Hydrologic Region (SDHR). The Colorado Hydrologic Region has small portions of five hydrologic units (HU) within the eastern part of the county. These units are collectively referred to as Desert units and contained within the Salton Sea Transboundary Watershed Management Area (WMA), discussed further below. The SDHR contains 11 HUs within the county. These include San Juan, Santa Margarita, San Luis Rey, Carlsbad, San Dieguito, Peñasquitos, San Diego, Pueblo San Diego, Sweetwater, Otay, and Tijuana. Figure 3.1.5-2, *Hydrologic Units*, shows the boundaries of the HUs within the county.

For the purpose of this analysis, the HUs in the region will be discussed in terms of WMAs. A watershed is an area of land that drains to a common waterway, such as a stream, lake, estuary, wetland, aquifer or ocean. WMAs are grouped according to HUs and have been developed to implement federal and State statutes for the management of water quality in the region. There are ten WMAs within the region. All WMAs within the region, with two exceptions, include only one HU and are named accordingly. One exception includes the San Diego Bay WMA, which includes the Pueblo San Diego HU, Sweetwater HU, and Otay HU. The other exception is the

[1] Service Area is synonymous with Assessment Area, which is defined in the *Engineer's Report* (County 2022a) as the area in which an annual levy provides funding for essential vector control services, including those properties that may request and/or receive direct and more frequent service and are located within the scope of the vector surveillance area. As such, Native American reservation land, as a Sovereign Nation, is excluded from the Service Area along with federally owned lands that receive minimal to no services.

Salton Sea Transboundary WMA, which includes five HUs in portions of San Diego and Imperial Counties. The WMAs are discussed below.

San Juan Watershed Management Area

The San Juan WMA covers 317,440 acres in San Diego, Orange, and Riverside Counties. Approximately 96,000 acres of this area is in northwestern San Diego County, almost entirely within the Camp Pendleton military base. There is one HU (San Juan) and five hydrologic areas (HAs) in this WMA. The San Onofre and San Mateo HAs are the only HAs within San Diego County. Major stream systems from these two HAs include San Mateo Creek, San Onofre Creek, and Las Flores Creek. The mouth of San Mateo Creek forms a saltwater tidal marsh that is entirely within the Camp Pendleton Marine Corps Base. In addition, there is a State beach along the Interstate 5 corridor near the northern boundary of Camp Pendleton (County 2011b).

Santa Margarita River Watershed Management Area

The Santa Margarita River WMA is the second largest in the SDHR. It covers over 494,396 acres, with about three-quarters of the watershed in Riverside County and about one-quarter in San Diego County. Included in it are portions of Camp Pendleton and the unincorporated communities of Fallbrook, Palomar/North Mountain, Pala-Pauma, Pendleton/De Luz, and Rainbow. The watershed includes one HU (Santa Margarita) and nine HAs including Ysidora, De Luz, Murrieta, Auld, Pechanga, Wilson, Cave Rocks, Aguanga, and Oak Grove. The Ysidora HA is entirely within the County of San Diego, while the De Luz HA, Pechanga HA, Aguanga HA, and Oak Grove HA cover portions of both San Diego and Riverside Counties. The remainder of the HAs within the Santa Margarita WMA are entirely within Riverside County. The WMA contains the Santa Margarita River, Temecula Creek, Murrieta Creek, Rainbow Creek, De Luz Creek, Sandia Creek, Santa Margarita Lagoon, Vail Lake, Skinner Reservoir, and Diamond Valley Lake Reservoir. There are nine dams in the watershed with 92% of the river miles categorized as free flowing (County 2017).

San Luis Rey River Watershed Management Area

The San Luis Rey River WMA, at 358,927 acres, is the third largest of the watersheds within the SDHR. It is along the northern border of the county and includes the unincorporated areas of Bonsall, Desert, Fallbrook, North County Metro, Palomar/North Mountain, Pala-Pauma, Pendleton/De Luz, Rainbow, and Valley Center. In addition, there are several Native American reservations in the WMA. This WMA consists of one HU (San Luis Rey) and three HAs including Lower San Luis Rey, Monserate, and Warner Valley. The watershed contains two major water bodies. Lake Henshaw is the main reservoir for the San Luis Rey WMA and is the third largest in San Diego County. The San Luis Rey River is the major stream system (County 2017).

Carlsbad Watershed Management Area

The Carlsbad WMA encompasses 135,345 acres and extends from Lake Wohlford on the east to the Pacific Ocean on the west and from the cities of Vista and Oceanside on the north to Cardiff-by-the-Sea on the south. The Carlsbad WMA is primarily within the jurisdictional boundaries of incorporated cities including the Cities of Oceanside, Carlsbad, Encinitas, Solana Beach, San Marcos, Vista, and Escondido. However, approximately 31% of the WMA is in unincorporated areas under the jurisdiction of the County including the North County Metro, Valley Center, and San Dieguito Community Planning Areas. It includes one HU (Carlsbad) and six HAs (Loma Alta, Buena Vista Creek, Agua Hedionda, Encinas, San Marcos, and Escondido Creek). The

watershed contains five coastal lagoons including Loma Alta Slough, Buena Vista Lagoon, Agua Hedionda Lagoon, Batiquitos Lagoon, and San Elijo Lagoon. The WMA also includes two small reservoirs, Dixon Lake and Lake Wohlford. The San Marcos Dam controls approximately 53% of the San Marcos HA. The area is drained by Buena Vista, Agua Hedionda, San Marcos, and Escondido Creeks (County 2017).

San Dieguito River Watershed Management Area

The San Dieguito River WMA covers 221,320 acres and includes portions of the Cities of Del Mar, Escondido, Poway, San Diego, and Solana Beach, as well as the unincorporated communities of Julian, North County Metro, North Mountain, Pala-Pauma, Ramona, San Dieguito, and Valley Center. The WMA consists of one HU (San Dieguito) and five HAs including Solana Beach, Hodges, San Pasqual, Santa Maria Valley, and Santa Ysabel. The watershed contains the San Dieguito River and its tributaries, along with Santa Ysabel and Santa Maria Creeks. It also contains the following reservoirs: Lake Hodges, Lake Ramona, Lake Poway, Sutherland Reservoir, Olivenhain Reservoir, and the San Dieguito Reservoir (County 2017).

Los Peñasquitos Creek Watershed Management Area

The Los Peñasquitos Creek WMA includes 60,424 acres of land that extends easterly to Iron Mountain and westerly to Los Peñasquitos Lagoon. This WMA includes portions of the Cities of Del Mar, Poway, and San Diego, as well as the unincorporated areas of Lakeside, Ramona, and Miramar County Island. This WMA contains the Peñasquitos HU, Miramar Reservoir HA, Poway HA, Scripps HA, Miramar HA, and Tecolote HA. The major receiving waters for the Los Peñasquitos Creek WMA are the Los Peñasquitos Lagoon and Mission Bay. Los Peñasquitos Creek WMA is drained by Los Peñasquitos Creek, which flows into Los Peñasquitos Lagoon near the northern border of the City of San Diego within the Torrey Pines State Reserve. Los Peñasquitos Lagoon also receives inputs from Carroll Canyon, just south of Los Peñasquitos Creek, and McGonigle Canyon to the north. This lagoon is a 630-acre wetland that lies near the mouth of the Los Peñasquitos Creek and provides coastal wetland habitat. Rose Creek and Tecolote Creek are the main tributaries to Mission Bay. Mission Bay is the largest human-made aquatic park in the country, consisting of 4,235 acres, approximately 46% land and 54% water. Mission Bay was converted from a coastal marshland in the 1940s after the completion of a large dredging project. There are no major streams in this WMA although it is drained by numerous creeks (County 2017).

San Diego River Watershed Management Area

The San Diego River WMA covers 277,554 acres and includes portions of the Cities of El Cajon, La Mesa, Poway, San Diego, and Santee. The watershed also covers portions of the unincorporated areas of Alpine, Central Mountain, Crest/Dehesa, Harbison Canyon/Granite Hills, Julian, Lakeside/Pepper Drive-Bostonia, North Mountain, Ramona, and Valle de Oro and the Barona Indian Reservation. The watershed contains the San Diego River, Boulder Creek, El Capitan Reservoir, San Vicente Reservoir, Lake Jennings, Lake Cuyamaca, and Lake Murray. Much of the impounded water in the reservoirs is used to serve major population centers within the county. The watershed is drained by the San Diego River, which discharges into the Pacific Ocean between Mission Beach and Ocean Beach in the City of San Diego (County 2017).

San Diego Bay Watershed Management Area

The San Diego Bay WMA covers 282,584 acres and consists of three major watersheds: Pueblo San Diego, Sweetwater, and Otay (County 2017).

Pueblo San Diego Watershed

The Pueblo San Diego Watershed covers nearly 38,000 acres (Project Clean Water 2021). It is composed of one HU (Pueblo) and three HAs including Point Loma, San Diego Mesa, and National City. Major water bodies in the watershed include Chollas Creek, Paleta Creek, and San Diego Bay.

Sweetwater Watershed

The Sweetwater Watershed encompasses over 145,000 acres and includes one HU (Sweetwater) and three HAs including Lower Sweetwater, Middle Sweetwater, and Upper Sweetwater (Project Clean Water 2021). Major water bodies include the Sweetwater River, Sweetwater Reservoir, Loveland Reservoir, and San Diego Bay.

Otay Watershed

The Otay Watershed is nearly 98,500 acres in size and consists of the Otay HU and three HAs including Coronado, Otay Valley, and Dulzura (Project Clean Water 2021). Major water bodies include the Upper and Lower Otay Reservoirs, Otay River, and San Diego Bay. The two major reservoirs in the watershed supply water, important wildlife habitat, and recreational opportunities. The Lower Otay Reservoir lies at the end of the San Diego Aqueduct.

Tijuana River Watershed Management Area

The Tijuana River WMA is the largest of the San Diego watersheds and covers over 1.1 million acres. The Tijuana River is formed by two drainage networks that merge in the City of Tijuana, then flow across the U.S./Mexico international border into the Tijuana River Estuary in Imperial Beach, and ultimately flow to the Pacific Ocean. The watershed is divided by the U.S.-Mexico international border with just over 27% lying within the San Diego region. The watershed is composed of the Tijuana HU and the following HAs: Tijuana Valley, Potrero, Barrett Lake, Monument, Morena, Cottonwood, Cameron, and Campo. Major water bodies in this WMA include the Tijuana River, Cottonwood Creek, and Tijuana River Estuary. The Tijuana River Estuary is a National Estuarine Sanctuary.

Salton Sea Transboundary Watershed Management Area

The Salton Sea Transboundary WMA includes HUs located in the Colorado Hydrologic Region. The Salton Sea Transboundary WMA contains parts of five HUs in the eastern desert portion of the county. These include the Anza-Borrego, Clark, Whitewater, West Salton, and Imperial Watersheds. The Anza-Borrego Watershed is the largest hydrologic unit, covering about 80% of the desert portion of San Diego County and extending into Imperial and Riverside Counties. Portions of the Clark, Whitewater, and West Salton Watersheds are at the extreme northeast corner of the county. The Imperial Watershed is at the southeast edge of San Diego County and extends into Imperial County. Water is limited in all of these areas. The surface water that intermittently exists flows toward the Salton Sea and the Colorado River. Runoff occurs from winter precipitation especially in the higher elevations and from summer thunderstorms.

Groundwater Hydrology

San Diego County overlies a complex groundwater resource that varies greatly throughout the region. All major watersheds in the San Diego region contain groundwater basins. The county includes three general categories of aquifers that include fractured crystalline rock, alluvial, and desert basin aquifers; however, alluvial groundwater aquifers have the potential to create suitable conditions for mosquito-breeding habitat as discharges to the surface become overland flow that can become localized in stagnant, shallow pools of water. Alluvial groundwater aquifers are typically found in river and stream valleys, around lagoons, near the coastline, and in the intermountain valleys. Figure 3.1.5-3, *Alluvial Groundwater Aquifers*, depicts the major alluvial aquifers in San Diego County.

Water Quality

This section defines common water quality contaminants that have been identified in surface and groundwater resources, as well as surface water quality issues, within the county's WMAs.

Water Quality Contaminants

Common contaminants in surface waters include metals, nutrients (phosphorous and nitrogen), petroleum products, pathogens, pesticides and herbicides, radioactive elements, sediments, and total dissolved solids (TDS). Surface water quality, including beneficial uses, water quality objectives, implementation strategies, plans and policies, and surveillance, monitoring and assessment information, for each WMA is contained in the *Basin Plan*, prepared in 1994 and last amended in May 2016.

Metals

Metals can impact surface water quality by accumulating in sediments and fish tissues. This poses risks of toxicity such as lowering the reproductive rates and life spans of aquatic animals and animals up the food chain. Metals can also alter photosynthesis in aquatic plants and form deposits in pipes. Metals in urban runoff can result from automobile use, industrial activities, water supply infrastructure corrosion, mining, or pesticide application. Atmospheric deposition can also contribute metals to water bodies. Groundwater can be contaminated from metals from improper disposal of waste generated from small businesses such as automobile repair shops or metal parts cleaning operations. Once groundwater is contaminated with metals it can be extremely difficult, costly, or impossible to remove them.

Nutrients (Phosphorous and Nitrogen)

High levels of nitrogen and phosphorus in surface waters can produce harmful algal blooms. In turn, these blooms can produce "dead zones" in water bodies where dissolved oxygen levels are so low that most aquatic life cannot survive. Typical sources of nutrients in surface waters are improper fertilizer usage (both agricultural and residential), discharges from failing or improperly maintained septic systems, and accidental sanitary sewer overflows. Nitrate, which is composed of nitrogen and oxygen, occurs naturally in soil and water. Nitrate is an important constituent in fertilizers used for agricultural purposes and is present in human and animal wastes. Typical sources of elevated nitrates in groundwater are failing septic tanks, feed lots, or farming operations. Infants, young livestock, and pets are extremely susceptible to potential health effects from drinking water with nitrates above regulated levels and could become seriously ill. If untreated, the condition can be fatal.

Petroleum Products (Gasoline, Diesel, Oil, and Grease)

Gasoline, diesel, oil, and grease are characterized as high molecular weight organic compounds. Primary sources of gasoline, diesel, oil and grease contaminants are motor products from leaking vehicles and underground storage facilities and tanks. Petroleum hydrocarbon products commonly found in gasoline, including benzene, toluene, ethylbenzene, xylene, and Methyl tertiary butyl ether, are considered common petroleum contaminants to surface water and groundwater. Benzene is used as a gasoline additive, industrial solvent and in the production of drugs, plastics, rubber, and dyes. Toluene is widely used as an industrial feedstock and as a solvent. Ethylbenzene is used in the production of plastic while xylene is used as a solvent in the printing, rubber, and leather industries. Methyl tertiary butyl ether is a gasoline additive that has historically caused groundwater contamination from spills or leaks at gas stations. Introduction of petroleum pollutants to water bodies is typical due to the widespread use and application of these products in municipal, residential, commercial, industrial, and construction areas. Over 2,000 leaking underground fuel tanks, typically storing petroleum products, exist throughout the county. Petroleum products are common contaminants in county groundwater.

Additional sources of oil and grease include esters, oils, fats, waxes, and high molecular weight fatty acids. Introduction of these pollutants to water bodies is typical due to the widespread use and application of these products in municipal, residential, commercial, industrial, and construction areas. Elevated oil and grease content can decrease the aesthetic value of a water body, as well as its water quality.

Pathogens (Bacteria and Viruses)

Water contaminated with pathogens such as bacteria and viruses can introduce diseases to humans and animals. This can have significant public health implications, particularly related to water used for drinking and recreational uses such as swimming, surfing, and shellfish harvesting. Common sources of pathogens in surface water include wild and domesticated animals, urban and agricultural activities, and accidental sanitary sewer overflows. Elevated bacteria in groundwater occur primarily from human and animal wastes. Sources of bacteriological contamination include septic tanks, natural soil/plant bacteria, feed lots, pastures, and other land areas where animal wastes are deposited. Old wells with large openings, including hand dug wells and wells with inadequate seals, are most susceptible to bacteriological contamination from insects, rodents, or animals entering the well.

Pesticides and Herbicides

As defined by the California Department of Pesticide Regulation (CDPR), a pesticide is any substance intended to control, destroy, repel, or attract a pest. Any living organism that causes damage, economic loss, and/or transmits or produces disease may be the target pest. Some common categories of pesticides include insecticides, herbicides, rodenticides, fungicides, repellents, and disinfectants. The Proposed Project does not propose to use herbicides. While pesticides have the potential to enter surface water, this is predominantly due to agricultural and urban sources. Typical impacts may include accumulation in sediments and bioaccumulation in the food chain. Pesticides and herbicides have the potential to be toxic to both aquatic life and humans, depending on their constituents, concentration, and application method. However, pesticides must pass a stringent regulatory review by the U.S. Environmental Protection Agency (USEPA) prior to sale and use in the United States. When pesticide usage is necessary for the County Department of Environmental Health and Quality, Vector Control Program (VCP), they are applied by vector control technicians certified by the California Department of Public Health

(CDPH) in a manner that minimizes risk to human and ecological health and in accordance with the legal application rates, label instructions, and federal and State guidelines. Additionally, some pesticides are classified as “minimum risk pesticides” by the USEPA if they are determined to pose little to no risk to human health or the environment. Pesticides that are classified as “minimum risk pesticides” would still be applied according to label instructions if used by the VCP.

Radioactive Elements

Naturally occurring radioactive elements are present to some extent in nearly all rocks and soil throughout the world and leach into groundwater from natural mineral deposits. Radioactivity in groundwater is not a new phenomenon, having been present in some form since the earth was formed. Elevated levels of naturally occurring radioactive elements including uranium have been detected in groundwater in various areas throughout San Diego County. Several community water systems have had ongoing problems with radioactive elements and have relatively expensive treatment systems to reduce levels of various contaminants to levels below regulatory limits. Potential health effects of various radioactive elements include an increased risk of various cancers and kidney toxicity.

Sediments

Increased sedimentation, over and above the amount that enters the water system by natural erosion, can cause many adverse impacts on aquatic organisms, water supply, and wetlands. Sedimentation can decrease transmission of light, which affects plant production and leads to loss of food and cover for aquatic organisms. It can change behavioral activities (nesting, feeding, mating), and adversely affect respiration, digestion, and reproduction. Contaminants and toxic substances can also be transported in sediments. Sediments can damage water treatment equipment, increasing treatment costs. They can reduce reservoir volume and flood storage and increase peak discharges.

Total Dissolved Solids

TDS refer to the total concentration of all minerals, salts, metals, cations, or anions that are dissolved in water. TDS is composed of inorganic salts (principally calcium, magnesium, potassium, sodium, bicarbonate, carbonate, chloride and sulfate), and some small amounts of organic matter that are dissolved in water. The primary source of TDS in groundwater is the natural dissolution of rocks and minerals, but septic tanks, agricultural runoff, and stormwater runoff also contribute. Increased salts in regional freshwater resources from mining, urban runoff, and construction can create stressful environments and even destroy habitat and food sources for wetland animals in aquatic and wetland habitats, as well as favoring salt tolerant species; reduce the quality of drinking water; and may cause skin or eye irritations in people. In deep desert basins like those found underlying Borrego Valley, groundwater in the deeper portions of the basin typically contains older water than the shallower zones. This older water may contain high concentrations of salt and other dissolved minerals making it unsuitable for human consumption. Pumping shallow wells may draw deeper poor quality water into the wells. An elevated TDS concentration is not a health hazard; however, it can cause the water to have a salty or brackish taste, it can cause the water to be corrosive and results in scale formation on pipes, pumps, and water heaters. Because of the seasonal nature of precipitation within the San Diego region, surfacing groundwater and runoff from applied water (agricultural and urban) represent the primary contributors to dry season stream flows. The interchange between surface water and groundwater, and the extreme seasonal variability of flow, evaporation, and water quality in San

Diego County all contribute to a wide range of TDS in our surface waters. Much of the water that is imported to the San Diego region is relatively high in TDS content.

Surface Water Quality

The following discussion identifies surface water quality issues facing WMAs within the unincorporated county. Table 3.1.5-1, *Impaired Water Bodies in San Diego County*, lists the water bodies and their associated pollutants/stressors that are listed as impaired under the Clean Water Act. Additional information, including beneficial uses, water quality objectives, implementation strategies, plans and policies, and surveillance, monitoring, and assessment information for each WMA discussed below, can be found by accessing the *Basin Plan* on the State Water Resources Control Board (SWRCB) website: http://www.swrcb.ca.gov/.

San Juan Watershed Management Area

Water quality concerns for this WMA include surface and groundwater quality degradation, habitat loss, channel bed erosion, and invasive species. Constituents of concern that have been identified include coliform bacteria, nutrients, TDS, solvents, trace metals, and petroleum. Six water bodies within the San Juan WMA have been identified as having indicator bacteria and are listed on the Clean Water Act (CWA 303[d]) List of Impaired Water Bodies. Table 3.1.5-1 identifies the water bodies included on this list within the San Juan WMA.

Santa Margarita River Watershed Management Area

Major impacts affecting this watershed include surface water and groundwater quality degradation, habitat loss, invasive species, and channel bed erosion. There are eight water bodies in the Santa Margarita River WMA that have been placed on the CWA 303(d) list (see Table 3.1.5-1) from pollutant/stressors, including aluminum, ammonia (unionized), chlorpyrifos, copper, eutrophic conditions (from sedimentation), iron, manganese, nitrogen, phosphorus, selenium, silver, sulfates, TDS, and toxicity.

San Luis Rey River Watershed Management Area

Major impacts to the San Luis Rey River WMA include surface water quality degradation, habitat loss, invasive species, and channel bed erosion. Three water bodies in the San Luis Rey WMA have been placed on the CWA 303(d) list (see Table 3.1.5-1). Constituents of concern for the WMA include benthic community effects, bifenthrin, chloride, indicator bacteria, nitrogen, phosphorus, TDS, and toxicity at the San Luis Rey River (west of I-15), indicator bacteria, phosphorus, and total nitrogen along the San Luis Rey River (east of I-15), and eutrophic conditions within Guajome Lake. Potential sources of these contaminants are varied and include both anthropogenic and natural sources.

Carlsbad Watershed Management Area

Major impacts to the watershed include surface water quality degradation, sewage spills, beach closures, sedimentation, habitat degradation and loss, invasive species, and eutrophication. Nine water bodies in the Carlsbad WMA have been placed on the CWA 303(d) list (see Table 3.1.5-1). Pollutant conditions in the WMA include ammonia as nitrogen, benthic community effects, bifenthrin, chlorpyrifos, copper, cypermethrin, indicator bacteria, eutrophic conditions, nutrients, sedimentation/siltation, sulfates, nitrates, and phosphates. Three of the five lagoons within the Carlsbad WMA (Loma Alta Slough, Buena Vista Lagoon, and Agua Hedionda Lagoon) are on the

CWA 303(d) list. The sources of these pollutants are varied and include urban runoff, agricultural runoff, sewage spills, livestock/domestic animals, and other natural sources.

San Dieguito River Watershed Management Area

Major impacts affecting the San Dieguito River WMA include surface water quality degradation, beach closures, sedimentation, habitat degradation and loss, invasive species, and eutrophication. Seven water bodies within this watershed have been placed on the CWA 303(d) list (see Table 3.1.5-1). Pollutants of concern for the WMA include aluminum, bacterial indicators, benthic community effects, bifenthrin, chloride, color, iron, manganese, mercury, nitrogen, pentachlorophenol (PCP), phosphorus, sulfates, total nitrogen as N, TDS, Trichloroethylene/TCE, turbidity, and pH. Land use activities, including urban runoff, agricultural runoff, and domestic animals, as well as other natural sources, are the primary sources of water quality impacts in the WMA.

Los Peñasquitos Creek Watershed Management Area

Major impacts to the Los Peñasquitos Creek watershed include surface water quality degradation, beach closures, sedimentation, habitat degradation and loss, invasive species, and eutrophication. Table 3.1.5-1 presents two water bodies in this WMA that have been placed on the CWA 303(d) list. Constituents of concern that have led to these water bodies being placed on the CWA 303(d) list are benthic community effects, bifenthrin, chlorpyrifos, indicator bacteria, nitrogen, phosphate, TDS, and toxicity within the Los Peñasquitos WMA.

San Diego River Watershed Management Area

Major impacts to the San Diego River WMA include surface water quality degradation, habitat degradation and loss, sediment, invasive species, eutrophication, and flooding. Table 3.1.5-1 presents the six water bodies in the San Diego River WMA that have been placed on the CWA 303(d) list. Constituents that resulted in water bodies being placed on the CWA 303(d) list include bacterial indicators, benthic community effects, cadmium, chloride, color, eutrophic conditions, nitrogen, oxygen (dissolved), pH, phosphorus, sulfates, TDS, and toxicity. Factors that may be impairing water quality in the WMA include urban runoff, agricultural runoff, mining operations, sewage spills, sand mining, and other natural sources.

San Diego Bay Watershed Management Area

The San Diego Bay WMA contains the Pueblo San Diego Watershed, the Sweetwater River Watershed and the Otay River Watershed. There are 24 water bodies within the San Diego Bay WMA that are listed on the CWA 303(d) list (see Table 3.1.5-1). Pollutants of concern include benthic community effects, bifenthrin, chlordane, copper, cypermethrin, diazinon, indicator bacteria, lead, malathion, nitrogen, polycyclic aromatic hydrocarbon (PAHs), Polychlorinated biphenyls (PCBs), phosphorus, sediment toxicity, trash, and zinc. Sewer overflows, stormwater runoff, and habitat degradation are all factors that may be impairing water quality within the San Diego Bay WMA.

Tijuana River Watershed Management Area

Major impacts to the watershed include surface water quality degradation, trash, sedimentation, eutrophication, habitat degradation and loss, flooding, erosion, and invasive species. The Tijuana River Watershed has a variety of water quality issues, many of which stem from runoff that enters

the watershed from Mexico and is outside the County's jurisdiction. Five water bodies within the Tijuana River WMA have been placed on the CWA 303(d) list (see Table 3.1.5-1). Constituents of concern in the watershed include ammonia as nitrogen, benthic community effects, cadmium, chlorpyrifos, diazinon, eutrophic, indicator bacteria, low dissolved oxygen, malathion, pesticides, phosphorus, sedimentation/siltation, selenium, solids, surfactants, synthetic organics, total nitrogen as N, toxicity, trace elements, and trash. The sources of the pollutants are varied and include urban runoff, sewage spills, industrial discharges, agricultural/orchards, livestock/domestic animals, natural sources, and septic systems.

Salton Sea Transboundary Watershed Management Area

Constituents of concern to the Salton Sea Transboundary WMA include high concentrations of salt, TDS and elevated levels of selenium. Replenishment of the watershed is predominantly from farm drainage and seepage and occasional storm runoff from the Coachella Valley, Imperial Valley, Anza-Borrego, and the Mexicali Valley in Mexico. No Salton Sea Transboundary WMA waterbodies within San Diego County are listed on the CWA 303(d) list.

Groundwater Quality

Traditionally, groundwater supplies within the county have produced high-quality drinking water. However, naturally occurring and more recently anthropogenic sources of contamination have caused the quality of groundwater to be adversely affected in localized areas. The most common anthropogenic sources of groundwater contamination include leaking underground fuel tanks, sewer and septic systems, agricultural applications, and facilities producing animal wastes. The most common contaminants in groundwater within San Diego County include elevated nitrate, naturally occurring radionuclides, TDS, bacteria, and petroleum products. Other groundwater contaminants of concern, which may occur in localized areas, include herbicides, pesticides and other complex organics, and metals. Each of these constituents is described below.

Nitrates

Potable water, whether from local or imported supplies, does not contain significant amounts of nitrates. Nitrate impacts in the county are most common from small lots and/or areas of shallow groundwater on septic systems, excess nitrate used in agricultural applications, and feed lots. Nitrate impacts are most common in more urbanized areas. This includes portions of the unincorporated communities of Rainbow, Valley Center, Ramona, Crest, and Jamul. The nitrate impacts can largely be attributed to agricultural uses and/or imported water being brought into these basins causing septic system failures. The imported water, which allows for dense development, results in artificial recharge through septic systems along with irrigation return flows, which cause shallow groundwater conditions and septic system failures. Additional mapped nitrate problem areas within the unincorporated county include areas of the Mountain Empire Subregion, including Morena Village and the Cameron Corners area of Campo, and a small portion of the Alpine Community Plan Area (CPA) along Interstate 8. There are no data available over a vast portion of the unincorporated county; therefore, there are likely additional areas with nitrate problems that are unmapped.

Naturally Occurring Radionuclides

Naturally occurring radionuclides are present to some extent in nearly all rocks and soil throughout the world and leach into groundwater from natural mineral deposits. As referenced in the County's General Plan Update EIR, known radiochemical problem areas include portions of the Campo,

Lake Morena, and Potrero areas in the Mountain Empire Subregion, Jamul/Dulzura Subregion, Guatay (Central Mountain Subregion), Julian CPA, Cuyamaca (Central Mountain Subregion), Lake Wohlford area (Valley Center CPA), State Route 78 area east of the Ramona CPA, Warner Springs (Desert Subregion), and State Route 79 area near the Riverside County border. No data is available over a vast portion of the county; therefore, there are likely additional areas with potential radionuclide problems that are unmapped.

Total Dissolved Solids

TDS originate naturally from the dissolution of rocks and minerals and can also enter groundwater from septic systems, agricultural runoff, and stormwater runoff. The most common groundwater areas with elevated concentrations of TDS in the county include coastal sedimentary formations and deeper water found in desert basins.

Coliform Bacteria

Elevated bacteria levels in groundwater occur primarily from human and animal wastes. Old wells with large openings and wells with inadequate seals are most susceptible to bacteriological contamination from insects, rodents, or animals entering the well.

Petroleum Products

Petroleum products enter groundwater primarily from leaking vehicles and widespread use and application in municipal, residential, commercial, industrial, and construction areas. Areas of potential localized contamination of groundwater from leaking underground fuel tanks include sites in the Cameron Corners area of Campo (Mountain Empire Subregion), Julian CPA, Guatay (Central Mountain Subregion), Pine Valley (Central Mountain Subregion), Santa Ysabel (Julian CPA), and several other areas. In a few cases, water supply wells were inactivated due to the possibility of inducing flow of contaminated groundwater from the leaking underground storage tanks.

Borrego Valley

In general, water quality has historically been good within the Borrego Valley Aquifer, as reported by Borrego Water District. Wells from the aquifer show TDS at concentrations of less than 500 milligrams per liter; however, historical nitrate impacts have been noted from wells taken out of production. High salinity and poor quality water is thought to occur in deeper formational materials of the Borrego Valley Aquifer and shallow groundwater in the vicinity of the Borrego Sink in the southern portion of Borrego Valley (County 2011b).

Stormwater Drainage Systems

A stormwater conveyance system, as defined by the County of San Diego Watershed Protection, Stormwater Management, and Discharge Control Ordinance (WPO), means “private and public drainage facilities other than sanitary sewers within the unincorporated areas of San Diego County by which urban runoff may be conveyed to receiving waters, and includes, but is not limited to, roads, streets, constructed channels, aqueducts, storm drains, pipes, street gutters, inlets to storm drains or pipes, and catch basins.” The stormwater conveyance system is designed to prevent flooding by transporting water away from developed areas. A vast amount of the unincorporated area is rural land that does not support or require stormwater drainage facilities.

In contrast, most urban areas within the incorporated areas of San Diego County have a range of stormwater drainage facilities.

Unfiltered and untreated stormwater can contain a number of pollutants that may eventually flow to surface waters. The chief cause of urban stormwater pollution is the discharge of inadequately treated waste or pollutants into the natural water system. Discharge may occur naturally or as a result of human activities. Over recent decades, rapid growth and urbanization have placed increased pressure on water resources and resulted in local impacts to water quality, especially in the densely developed western part of the County. In general, increased urbanization increases the amount of pollutants generated by human activities within a watershed and increases the amount of impervious (paved) surfaces, thus reducing the amount of water that would normally infiltrate into the soil and be filtered naturally. Pollutants, such as fertilizers and pesticides, motor oil, antifreeze, sediment, heavy metals, bacteria, and viruses, that accumulate on impervious surfaces are easily picked up by rainfall runoff and flow downstream via the stormwater conveyance system to surface waters. The stormwater conveyance system is not connected with the sanitary sewer system; therefore, urban runoff is not filtered to remove trash, cleaned, or otherwise treated before it is discharged to surface waters. The typical result is that pollutants are carried directly into surface water by runoff. Stormwater discharges that enter the natural receiving waters can be polluted by either point sources or non-point sources.

Point Source Discharge

Point source pollution refers to pollutants discharged to surface water through any discernable, confined, and discrete conveyance. In other words, the boundaries of the source of pollution can be easily defined and identified from a single point. Point sources generally discharge predictable concentrations and volumes of pollutants. Examples of point source pollution are sewage treatment plants, landfills, and industrial facilities, all of which may release effluent and sewage or other liquid waste directly into a body of water.

Non-Point Source Discharge

Non-point source pollution refers to diffuse, widespread cumulative sources of pollution and is the primary source of surface water and groundwater contamination. Non-point source pollution cannot be traced back to a single point or source. Non-point sources may be large or small but are generally numerous throughout a watershed. Non-point source water pollution is often a by-product of poor land use practices, which do not incorporate adequate best management practices (BMPs), and the collective effects of individual behaviors. These may include pollution caused by rainfall and over-irrigation that washes pollutants into storm drains, streams, rivers, lakes, and oceans. Common sources of non-point pollution include, but are not limited to, runoff from urban, agricultural, or industrial areas, landscaping, roads, highways, improperly managed construction sites, septic system failures, recreational boating, timber harvesting, mining, and livestock. Non-point source discharges can also result from physical changes to stream channels and habitat degradation. Typical non-point source contaminants include trash, sediments, pesticides, fertilizers, petroleum-based hydrocarbons, metals, and pathogens. Non-point sources of pollution can occur year round and during any time that rainfall, snowmelt, irrigation, or any other source of water runs over land picks up pollutants and deposits them into surface or groundwater.

Flood Hazards

Flooding is a general or temporary condition of partial or complete inundation of normally dry land areas near water. Flooding is commonly associated with the overflow of natural rivers or streams but can also occur near stormwater diversion facilities or dams or in low-lying areas not designed to carry water. Several rivers and streams flow through the county, as shown on Figure 3.1.5-1. Flooding can be induced by precipitation or as a result of increased rates and amounts of runoff and altered drainage patterns. The Federal Emergency Management Agency Flood Insurance Rate Maps identify flood zones and areas that are susceptible to 100- and 500-year floods. Typically, flood zones are used to require protection of development within the 100-year flood zone; however, in the case of mosquitoes, flood zones are ideal breeding grounds. Many flood zones in San Diego County are choked with invasive plant species that prohibit the natural flow of water, thereby creating shallow pools that are ideal for mosquito reproduction.

Flooding inundation could also occur in areas identified within flood, tsunami, or seiche zones. The potential for flooding in the County of San Diego is high. The climate is semi-arid and the seasonal precipitation is highly variable in frequency, magnitude and location. Infrequent large bursts of rain can rush down steep canyons and flood areas unexpectedly. Flooding in San Diego and the rest of Southern California most frequently occurs during winter storm events between the months of November and April and occasionally during the summer when a tropical storm makes landfall in the region. Most flooding events occur over several days, but can also develop within a matter of hours, particularly in narrow valleys, or in desert alluvial fans that are prone to sheet flow. Seiches or tsunamis can result from abrupt movements of large volumes of water due to earthquakes, landslides, volcanic eruptions, meteoric impacts, or onshore slope failure.

3.1.5.2 *Regulatory Setting*

Federal

Clean Water Act

Increasing public awareness and concern for controlling water pollution led to enactment of the Federal Water Pollution Control Act Amendments of 1972. As amended in 1977, this law became commonly known as the CWA (33 USC 1251 et seq.). The objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. The CWA established basic guidelines for regulating discharges of pollutants into waters of the U.S. The CWA requires that states adopt water quality standards to protect public health, enhance the quality of water resources, and ensure implementation of the CWA. The California Legislature has assigned the primary responsibility to administer and enforce statutes for the protection and enhancement of water quality to the SWRCB and its nine RWQCBs. The SWRCB provides State-level coordination of the water quality control program by establishing Statewide policies and plans for the implementation of State and federal regulations. The nine RWQCBs throughout California adopt and implement Water Quality Control Plans that recognize the unique characteristics of each region with regard to natural water quality, actual and potential beneficial uses, and water quality problems. The RWQCB adopts and implements a Basin Plan that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan (California Water Code, Sections 13240–13247).

The CWA was amended in 1972 to provide that the discharge of pollutants to waters of the U.S. from any point source is unlawful unless the discharge is in compliance with a National Pollutant

Discharge Elimination System (NPDES) Permit. The 1987 amendments to the CWA added Section 402(p), which establishes a framework for regulating municipal and industrial stormwater discharges under the NPDES Program. In November 1990, the USEPA published final regulations that also establish stormwater permit application requirements for discharges of stormwater to waters of the U.S. from construction projects that encompass 5 or more acres of soil disturbance. Regulations (Phase II Rule) that became final on December 8, 1999, expanded the existing NPDES Program to address stormwater discharges from construction sites that disturb land equal to or greater than one acre and less than 5 acres (small construction activity). The regulations also require that stormwater discharges from small municipal separate storm sewer systems (MS4s) be regulated by an NPDES Permit.

National Flood Insurance Program

The National Flood Insurance Program is administered by the Federal Emergency Management Agency, a component of the U.S. Department of Homeland Security. The National Flood Insurance Program is a federal program enabling property owners in participating communities to purchase insurance protection against losses from flooding. In support of the National Flood Insurance Program, the Federal Emergency Management Agency identifies flood hazard areas throughout the United States and its territories by producing flood hazard boundary maps, Flood Insurance Rate Maps, and flood boundary and floodway maps.

Executive Order 11988, Floodplain Management

Executive Order (EO) 11988 directs all federal agencies to avoid the long-term and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practical alternative.

Executive Order 11990, Protection of Wetlands

EO 11990 directs all federal agencies to avoid to the maximum extent possible the long-term and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practical alternative.

U.S. Environmental Protection Agency

The USEPA Office of Pesticide Programs conducts human health risk assessments related to pesticide use and evaluates the safety of pesticides to people. The USEPA requires that pesticide manufacturers conduct tests that demonstrate how a particular pesticide moves readily across land into surface or groundwater and whether it will persist. These tests demonstrate the duration it takes for a pesticide to break down in water, how quickly microbes and sunlight degrade a pesticide, how readily the pesticide binds to certain types of soil, and how readily the pesticide dissolves in water.

State

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne) (codified in the California Water Code, Section 13000 et seq.) is the basic water quality control law for California. As mentioned above, it is implemented by the SWRCB and the nine RWQCBs. The SWRCB establishes

Statewide policy for water quality control and provides oversight of the RWQCBs' operations. In addition to other regulatory responsibilities, the RWQCBs have the authority to conduct, order, and oversee investigation and cleanup where discharges or threatened discharges of waste to waters of the State could cause pollution or nuisance, including impacts to public health and the environment. Evident from the preceding regulatory discussion, Porter-Cologne and the CWA overlap in many respects, as the entities established by Porter-Cologne are, in many cases, enforcing and implementing federal laws and policies.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA) was signed into law in September 2014 and is intended to achieve sustainable management of groundwater resources for long-term reliability for multiple benefits while avoiding undesirable results. The SGMA directed the California Department of Water Resources to assign priority ratings to groundwater basins throughout the State. All counties and cities that draw water from basins identified as "high" or "medium" priority must comply with the SGMA. The SGMA identifies two compliance options for "high" or "medium" priority basins: form a groundwater sustainability agency and adopt a groundwater sustainability plan or submit a groundwater sustainability plan alternative if basin conditions demonstrate that the basin has operated under sustainable yield for the past 10 years.

In San Diego County, the State of California has designated 19 groundwater basins that vary in priority including very low, low, medium, and high. Of the 19 groundwater basins, three basins, Borrego Valley, San Luis Rey Valley, and San Pasqual Valley, are identified as medium priority and subject to the SGMA. The SGMA includes deadlines for action and required the adoption of Groundwater Sustainability Plans by January 31, 2022, followed by a 20-year implementation period. According to the California Department of Water Resources SGMA Portal, Groundwater Sustainability Plans were prepared and finalized for Borrego Valley dated August 2019, San Pasqual Valley dated September 2021, and San Luis Rey Valley dated January 2022.

California Department of Transportation National Pollutant Discharge Elimination System Permit

Under the California Department of Transportation (Caltrans) Statewide NPDES Permit (Order 2012-0011-DWQ), Caltrans is required to regulate non-point-source discharges from its properties, facilities, and activities, such as the following:

- Stormwater discharges from all Caltrans-owned MS4s
- Stormwater discharges from Caltrans' vehicle maintenance, equipment cleaning, and operations facilities and any other nonindustrial facilities with activities that have the potential to generate significant quantities of pollutants
- Certain categories of non-stormwater discharges, as listed under Provision B in Order 2012-0011-DWQ

Order 2012-0011-DWQ does not regulate stormwater discharges from Caltrans-owned batch plants or any other industrial facilities. Caltrans must obtain coverage for stormwater discharges associated with industrial activities under the Statewide Industrial General Permit for these discharges and must comply with the applicable requirements. Although Order 2012-0011-DWQ does not regulate stormwater discharges associated with industrial activities, it does impose contractor requirements for certain industrial facilities.

Order 2012-0011-DWQ also does not regulate discharges from Caltrans construction activities, including dewatering effluent discharges from construction projects. Instead, Caltrans must obtain coverage for stormwater discharges associated with construction activities under Order 2009-0009-DWQ (as amended by Orders 2010-0014-DWQ and 2012-0006-DWQ), the General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit [CGP]) (SWRCB 2009).

Construction General Permit

On November 18, 2015, the SWRCB issued an amendment to the NPDES General Permit for Stormwater Associated with Construction Activities (NPDES No. CAS010266, SWRCB Order No. R9-2013-0001, as amended by Order Nos. R9-2015-001 and R9-2015-0100) that became effective on January 7, 2016. For stormwater discharges associated with construction activity in the State of California, the SWRCB has adopted the General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (i.e., CGP) to avoid and minimize water quality impacts attributable to such activities. The CGP applies to all projects where construction activity disturbs one or more acres of soil. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground, such as stockpiling and excavation. The CGP requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP), which would include and specify BMPs designed to prevent pollutants from contacting stormwater and keep all products of erosion from moving off site into receiving waters. Routine inspection of all BMPs is required under the provisions of the CGP. In addition, the SWPPP must contain a visual monitoring program, a chemical monitoring program for non-visible pollutants, and a sediment monitoring plan if the site discharges directly to a water body listed on the CWA Section 303(d) list for sediment.

Statewide General National Pollutant Discharge Elimination System Permit for Biological and Residual Pesticides

The SWRCB maintains a general permit that allows vector control districts to conduct pesticide applications at, near, or over waters of the U.S. that would result in discharges of pollutants: *Statewide NPDES Permit for Biological and Residual Pesticide Discharges to Waters of the U.S. from Vector Control Applications (State Water Quality Order No. 2016-0039-DWQ, General Permit No. 990004)*. The SWRCB originally authorized the NPDES Permit in 2011, and it expires every 5 years. Most recently, the SWRCB renewed the NPDES Permit on March 1, 2016.

The VCP initially enrolled in this Statewide permit in 2011 when it became available, and the VCP has continued to enroll under the permit and has been operating in compliance with the SWQCB's requirements since that time (Enrollee No. 937AP00009). Specifically, the NPDES Permit allows the point source discharge of biological and residual pesticides that are currently registered in California resulting from applications for vector control. Dischargers may use larvicides and adulticides that are currently registered by the CDPR and new larvicides and adulticides that will be registered by the CDPR using the same active ingredients listed above for vector control applications. In addition, dischargers may use minimum risk pesticide products for vector control applications. This order covers the discharge of residuals from larvicides and adulticides that are currently registered in California and minimum risk pesticide products and is still in effect.

Local

County of San Diego Watershed Protection, Stormwater Management, and Discharge Control Ordinance

The County WPO was adopted in March 2008 and revised in February 2016. The purpose of the WPO is to protect water resources and improve water quality by controlling the non-stormwater discharges to the stormwater conveyance system and receiving waters, cause the use of management practices by the County and its citizens that would reduce the adverse effects of polluted runoff discharges on waters of the State, secure benefits from the use of stormwater as a resource, and ensure that the County is compliant with State and federal law. The WPO establishes standards and requirements that are legally enforceable by the County within the County's jurisdiction. Projects that require a permit (e.g., administrative permit, major use permit, grading permit) are required to demonstrate compliance with the WPO. Section 67.804, for example, specifically addresses waste discharge and prohibits the discharge of pollutants to the stormwater system unless they are permitted through the NPDES Program. Section 67.806 identifies minimum required construction and post-construction water quality BMPs applicable to all dischargers.

San Diego Regional Water Quality Control Board

As described above, Porter-Cologne requires that the RWQCBs adopt Water Quality Control Plans (Basin Plans) for watersheds within their jurisdiction. These plans establish water quality standards for particular surface water bodies and groundwater resources.

The San Diego RWQCB (Region 9) is responsible for the *Basin Plan* for the San Diego Basin. The RWQCB implements management plans to modify and adopt standards under provisions set forth in Section 303(c) of the CWA and California Water Code (Division 7, Section 13240). In addition to *Basin Plan* requirements, the RWQCB issues water quality certifications under CWA Section 401. The RWQCB also regulates discharges to, and the quality of, groundwater resources through the issuance of Waste Discharge Requirements. Waste Discharge Requirements are issued for discharges that specify limitations relative to the *Basin Plan* (RWQCB 1994).

Water Quality Control Plan for the San Diego Basin

The *Basin Plan* (RWQCB 1994) establishes water quality objectives for constituents that could potentially cause an adverse effect or impact on the beneficial uses of water. Specifically, the *Basin Plan*:

1. Designates beneficial uses for surface and ground waters

2. Sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to California's anti-degradation policy

3. Describes implementation programs to protect beneficial uses of all waters in the region

4. Describes surveillance and monitoring activities to evaluate the effectiveness of the *Basin Plan*

5. Incorporates by reference all applicable State and Regional Board plans and policies

San Diego Regional Municipal Stormwater Permit

The San Diego Regional Municipal Stormwater Permit (Order R9-2013-0001 [as amended by Order No. R9-2015-0001]) (Municipal Permit) regulates the conditions under which stormwater and non-stormwater discharges into and from MS4s are prohibited or limited. The 18 cities, County of San Diego government, County of San Diego Regional Airport Authority, and San Diego Unified Port District each owns or operates an MS4 through which it discharges stormwater and non-stormwater into waters of the U.S. within the San Diego region. These entities are the County of San Diego Copermittees (Copermittees), which along with the applicable Orange County and Riverside County Copermittees, are subject to the requirements of the permit. The Caltrans stormwater system is regulated separately under the Caltrans NPDES Permit as described previously.

Under Phase I of its stormwater program, the USEPA published NPDES Permit application requirements for municipal stormwater discharges for municipalities that own and operate separate storm drain systems serving populations of 100,000 or more or that contribute significant pollutants to waters of the U.S. Under Phase II, small MS4s that are not permitted under the municipal Phase I regulations are regulated under the Phase II Small MS4 Permit (Order 2013-0001-DWQ).

The Municipal Permit establishes prohibitions and limitations with the goal of protecting water quality and designated beneficial uses of waters of the State from adverse impacts caused by or contributed to by MS4 discharges. The Municipal Permit requires that each jurisdiction covered under the permit implement a Jurisdictional Urban Runoff Management Program to control the contribution of pollutants to and the discharges from the MS4. The goal of the Jurisdictional Urban Runoff Management Programs is to implement water quality improvement strategies and runoff management programs that effectively prohibit non-stormwater discharges into the Copermittees' MS4s and reduce pollutants in stormwater discharges from the Copermittees' MS4s to the maximum extent practicable.

The Municipal Permit requires that the Copermittees develop a Water Quality Improvement Plan for each of the ten WMAs in the San Diego region. These plans will identify the highest priority water quality conditions within each watershed and specific goals, strategies, and schedules to address those priorities, including numeric goals and action levels, and requirements for water quality monitoring and assessment. The Copermittees will implement strategies through their jurisdictional runoff management programs to achieve the goals of the Water Quality Improvement Plans.

Under the Municipal Permit, Copermittees are required to implement stormwater management requirements and controls, which include requirements for stormwater BMPs during construction and post-construction, including implementing low impact development BMPs for development and significant redevelopment to reduce pollutants in stormwater runoff from sites through more natural processes such as infiltration and biofiltration.

County of San Diego Best Management Plan Design Manual

Updated in September 2020, the County's *BMP Design Manual* guides land development and public improvement projects in the unincorporated area to reach compliance with the Regional MS4 Permit and reduce the discharge of pollutants in stormwater to the maximum extent practicable. It is focused on project design requirements and related post-construction requirements and provides guidance on which stormwater management requirements apply to a

given project; defines the performance standards for source control and site design BMPs, stormwater pollution control BMPs, and hydromodification management BMPs based on the Regional MS4 Permit; outlines the required steps to the comprehensive stormwater management design process; contains the source control and site design requirements applicable to all development; outlines the process of determining which category of on-site pollution control BMP or combination of BMPs is most appropriate for a given project and how those BMPs should be designed; provides guidance for meeting the performance standards for the two components of hydromodification management: protection of critical coarse sediment yield areas and flow control for post-project runoff; and describes the long-term maintenance requirements for structural BMPs.

The *BMP Design Manual* established the minimum BMP requirements applicable to all development projects regardless of size or type. These measures include general BMP siting, source control BMPs, and site design BMPs. The County's 2013 MS4 Permit (as amended by R92015-0001 and R92015-0100) requires Copermittees to impose additional requirements on those projects considered Priority Development Projects, which are required to comply with structural BMP performance requirements specified in the *BMP Design Manual*. These additional requirements focus on retention of the 85th percentile storm event. If on-site retention is not feasible, other alternatives are available, including partial retention and biofiltration. Priority Development Projects are also required to comply with hydromodification management BMP requirements, as specified in the *BMP Design Manual*, which address flow duration impacts and critical sediment yield areas. All projects must meet the following general requirements:

- On-site BMPs must be located so as to remove pollutants from runoff prior to its discharge to any receiving waters and as close to the source as possible.
- Structural BMPs must not be constructed within waters of the U.S.
- On-site BMPs must be designed and implemented with measures to avoid the creation of nuisance or pollution associated with vectors (e.g., mosquitoes, rodents, or flies).

Integrated Vector Management Program Best Management Practices

The IVMP follows BMPs described in State guidance documents, such as the *Best Management Practices for Mosquito Control in California* (CDPH 2012), *Best Management Practices for Mosquito Control on California State Properties* (CDPH 2008a), and *California Mosquito-Borne Virus Surveillance and Response Plan* (CDPH 2021), which detail best integrated vector management practices for vector control and vector-borne disease prevention. Additionally, as shown in Table 1-2, *Integrated Vector Management Program Best Management Practices*, the Proposed Project includes BMPs intended to minimize impacts associated with IVMP activities. The following BMPs have been developed by the VCP in combination with the above-referenced sources and are applicable to hydrology and water quality:

- A2: The VCP has cooperative, collaborative relationships with federal, State, and local agencies. The VCP regularly communicates with resource agencies, including the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife, and abides by all applicable permits and agreements regarding planned vector activities in sensitive habitats. Access, timing, and methods of surveillance and control are discussed. Methods to minimize impacts to special status species, habitat, and wildlife are agreed upon prior to entering protected and sensitive habitats. The VCP will continue to foster these relationships, communication, and collaboration.

- A6: Chemical controls applied within waterbodies defined by federal and State regulations as wetland and/or non-wetland waters of the U.S. and/or State must be used in accordance with the Statewide NPDES Permit for Biological and Residual Pesticide Discharges to Waters of the U.S. from Vector Control Applications (Order No. 2016-0039-DWQ, General Permit No. CA990004).

- B12: Any staging of equipment or materials will occur in developed/disturbed areas outside existing wetlands, non-wetland waters, and native or rare upland areas.

- B13: The changing of oil, refueling, and other actions that could result in a release of a hazardous substance will be restricted to designated service areas, such as maintenance yards and gas stations, or when necessary, areas that are a minimum of 100 feet from any documented special status plant populations, sensitive habitats, or drainages. Equipment will be checked for leaks prior to operation and repaired as necessary. Fueling areas will be installed in the field, as applicable, by berms, sandbags, or other artificial barriers designed to prevent accidental spills.

- B14: Where heavy equipment or machinery is necessary, measures will be taken, such as reducing turns by track-type vehicles, taking a minimum number of passes with equipment, identifying multiple points of entry, driving vehicles at low speed, and avoiding or minimizing operating on open mud and other soft areas.

- B16: Pesticides will be applied at the lowest effective concentration for a specific, targeted set of vectors and site conditions. Application rates will never exceed the USEPA and CDPH-approved maximum label application rate. All pesticide application equipment is currently and will continue to be calibrated and inspected annually as required by regulating agencies, such as the CDPH and County Department of Agriculture, Weights and Measures.

- B17: VCP staff will modify, postpone, or cease pesticide application when weather parameters exceed product label specifications, such as when wind speeds exceed the velocity stated on the product label or may result in drift or when a high chance of rain is predicted and rain is a determining factor on the label of the material to be applied.

- B19: Caution will be exercised to prevent spillage of pesticides during storage, transportation, mixing, or application of pesticides. All pesticide spills and cleanups (excepting cases where dry materials may be returned to the container or application equipment) will be reported to appropriate staff and any regulatory agencies as required. Application equipment will be checked for proper operation prior to use.

- B20: A pesticide spill cleanup kit and proper protective equipment will be maintained at the VCP's service yard and in each vehicle for pesticide application and transport.

- B21: In the event of spilled pesticides, the site will be managed to prevent entry by unauthorized personnel while the spill is contained, controlled, and cleaned up by stopping it from leaking or spreading to surrounding areas. Dry spills will be covered with a polyethylene or plastic tarpaulin if they cannot be cleaned up immediately. Any liquid hazardous material spill will be contained with appropriate absorbent materials.

- B22: Staff will properly recover any spilled material, label the container or bag with the pesticide name, and coordinate with a VCP supervisor for disposal.

- B23: Staff will be trained annually on petroleum-based or other chemical-based storage and disposal regulations and procedures including spill management protocols.

- B24: Field-based mixing and loading operations will occur in such a manner as to minimize the risk of accidental spill or release of pesticides.

3.1.5.3 *Analysis of Project Effects and Determination as to Significance*

The *County of San Diego Guidelines for Determining Significance – Hydrology*, *Surface Water Quality*, and *Groundwater Resources* were adopted in 2007 and intended to address the hydrology and water quality questions posed in Appendix G of the CEQA Guidelines. Updated guidelines were provided in the *County of San Diego Guidelines for Determining Significance – Hydrology and Water Quality* in 2021. In December 2018, the Appendix G questions were updated and several of the questions pertaining to hydrology and water quality previously listed in Appendix G were revised, deleted, or modified. Accordingly, the PEIR does not rely on the County's significance guidelines from 2021 and 2007 and instead analyzes Proposed Project impacts using the updated CEQA Guidelines Appendix G thresholds, which state that the Proposed Project would result in a significant impact if it would:

1. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.

2. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

   i) result in substantial erosion or siltation on- or off-site.

   ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.

   iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

   iv) impede or redirect flood flows.

4. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.

5. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Water Quality Standards and Requirements

Guidelines for the Determination of Significance

The Proposed Project would have a significant impact if it would violate any water quality standards or waste discharge requirements or otherwise degrade surface or groundwater quality.

Impact Analysis

The following section evaluates the potential for the Proposed Project to violate water quality standards or otherwise degrade water quality by examining potential surface water and groundwater quality issues in San Diego County. Implementation of the IVMP would involve two key activities that have the potential to impact hydrology and water quality: source reduction and source treatment. Surveillance and monitoring would involve trapping and testing activities that would not involve chemical applications to water or soil and would involve little interaction with waterbodies to collect samples. Bait stations for rodents would be located above the water line in storm drains and small animals may be trapped using traps baited with food in terrestrial settings only and would not involve the introduction of water quality contaminants to surface water or groundwater resources. Therefore, the following analysis analyzes potential impacts to hydrology and water quality resulting from source reduction and source treatment activities.

Surface Water Quality

The reduction of vector-breeding sources would primarily involve source reduction techniques to control vector populations by reducing vector-breeding habitat and other areas of harborage. Anticipated actions associated with source reduction techniques associated with the Proposed Project would generally involve eliminating or reducing standing water by conducting grading activities, managing vegetation (including vegetation removal), trapping, and water controls. Source reduction techniques involving grading and vegetation removal may involve the use of various types of construction equipment such as dozers, scrapers, and graders that could have short-term impacts on surface water quality associated with sedimentation. Other pollutants associated with these construction activities that could substantially degrade surface water quality include soils, debris, and fuels and other fluids associated with construction equipment.

Pollutants associated with grading and vegetation management associated with source reduction techniques would degrade surface water quality if the pollutants are carried by stormwater or other runoff into surface waters. However, it should be noted that pesticides entering surface water primarily occurs due to agricultural and urban sources. There are three categories of pollutants that will be addressed here: sediment, hydrocarbons, and trash. Sediment is often the most common pollutant associated with grading or earthmoving activities where soil is exposed, including vegetation removal. Sediment that is washed off site can result in turbidity in surface waters, which can impact aquatic species. In addition, when sediment is deposited into a receiving water, it can smother species, alter the substate and habitat, and alter the drainage course. Because of this, multiple waterbodies in San Diego County have been identified as being “impaired,” which is defined by CWA Section 303(d) as waters that do not meet established water quality standards. As shown in Table 3.1.5-1, surface water body impairments related to sedimentation/siltation in San Diego County include the Buena Vista Lagoon, Los Peñasquitos Lagoon, several areas along the San Diego Bay, and Tijuana River. Hydrocarbons such as fuels, oils, and hazardous materials, discharged from grading sites could also potentially impact aquatic plants and animals downstream if not protected. Debris and trash could potentially be washed into existing storm drainage channels to downstream surface waters and could impact wildlife as

well as aesthetic quality if not addressed. Surface water body impairments related to trash include Chollas Creek, the Pacific Ocean Shoreline at the Imperial Beach Pier, the Tijuana River, and the Tijuana River Estuary (see Table 3.1.5-1).

Regarding the protection of surface water quality, existing regulatory processes in place to protect surface water quality include the NPDES CGP program for disturbances that exceed one acre and the County's WPO Section 67.806 and local watershed protection requirements for incorporated cities for disturbances of less than 1 acre. For disturbances exceeding 1 acre, a SWPPP must be prepared that identifies BMPs that minimize disturbance, protect slopes, reduce erosion, and limit or prevent various pollutants from entering surface water runoff. For disturbances of less than 1 acre, minimum BMPs such as silt fencing, desilting basins, sediment traps and check dams, street sweeping, stormwater inlet protection, sandbag barriers, straw bale barriers, gravel bag berms, and fiber rolls would be required to reduce the discharge of pollutants associated with smaller sites. Also, the Proposed Project includes the identification and implementation of several BMPs that would further reduce potential impacts on surface water quality resulting from source reduction activities. Specifically, any staging of equipment or materials associated with source reduction activities would occur in developed or disturbed areas outside existing wetlands and non-wetland waters (BMP B12); the changing of oil, refueling, or other service and maintenance activities would occur at least 100 feet from documented drainages and would be supported by the installation of barriers to prevent accidental spills (BMP B13); and the use of heavy equipment and machinery would be minimized (BMP B14).

Source treatment techniques associated with the Proposed Project to control vector populations would involve biological and chemical controls. Biological controls would involve the application of mosquito fish (biological control) within contained sources such as ornamental ponds, rain barrels, horse troughs, neglected swimming pools, and spas. Therefore, the application of mosquito fish would not result in an impact to surface water quality.

Chemical controls would involve the application of pesticides, including both larvicides and adulticides, applied through on-ground techniques by foot with backpack applicators, truck-mounted equipment, or watercraft by qualified certified technicians or by aircraft (including piloted and drones[2]). As shown on Table 3.1.5-1, existing surface water body impairments related to pesticides include numerous water bodies throughout San Diego County (according to the SWRCB CWA 303[d] database for 2022).

However, the VCP does not use any of the pesticide pollutants identified in Table 3.1.5-1. Therefore, the IVMP would not exacerbate any of the impacted water bodies due to pesticides. In addition, the Proposed Project would not use pesticides in a manner that would have the potential to serve as pollutants to water bodies. The IVMP would only use pesticides that are USEPA/California Environmental Protection Agency registered, and would adhere to the storage, usage, and transportation guidelines provided by each pesticide's manufacturer and, as such, have been determined by the USEPA/California Environmental Protection Agency to be safe for environmental application as specified on the label. The Proposed Project would also comply with the Statewide NPDES Permit for Biological and Residual Pesticide Discharges to Waters of the United States from Vector Control Applications (SWRCB Water Quality Order No. 2016-0039-DWQ; NPDES No. CAG 990004; Vector Control Permit), which is regulated by the SWRCB.

[2] For the purposes of this PEIR, "drone" is intended to generically mean a remotely piloted or unpiloted aircraft. As of this writing, the Federal Aviation Administration's official terminology is Unmanned Aircraft Systems; however, Federal Aviation Administration is transitioning toward gender-neutral terminology such as drone operator, certificated remote pilot, model aircraft flyer, and advanced air mobility operator.

Pesticides would only be applied by Certified Vector Control Technicians, who are approved personnel that have been trained and maintain certification through continuing education on how to use, store, and dispose of such substances. Pesticides would be stored according to their label, in either the original container and packaging or another properly labeled container within a secured pesticide storage room, in accordance with the CDPR. The storage room would remain locked at all times, and access to the pesticides would be restricted to authorized personnel only. VCP staff would be granted badge access to the pesticide storage room if necessary to performing their designated job duties per their job classification. Pesticides would be checked in and out with each use using sign out sheets located in the storage room. The inventory of pesticides would be monitored by a shop technician. The technicians would report how much product has been used after each application.

The majority of the pesticide products typically used by the VCP are products that come in solid form. Solid pesticides lessen the potential for off-target application from aerial drift and facilitate their penetration of dense vegetation to water where mosquitoes can breed. Pesticides with a low potential for aerial drift have a low potential of entering unintended areas, including non-target water bodies. While products applied in liquid form have a higher potential of aerial drift compared to solid form, only 0.17% of total pesticide applications in 2019 were in liquid form (as determined by weight).[3] Therefore, potential aerial drift from liquid applications would be negligible. Nonetheless, the VCP modifies, postpones, or ceases pesticide application when weather parameters exceed product label specifications, such as when wind speeds exceed the velocity stated on the product label or may result in drift or when a high chance of rain is predicted and rain is a determining factor on the label of the material to be applied.

Although aircrafts may be used for aerial surveillance and source treatment, aerial applications of pesticides would be infrequent. Granular and pellet forms of larvicides are typically applied using calibrated mechanical spreaders fixed to a helicopter. Application rates depend on the density of vegetative cover and the organic content of the vector-breeding water being treated. Therefore, the application of pesticides by aircraft would result in minimal drift to surface waters.

Additionally, the use of pesticides under the Proposed Project would incorporate several BMPs. Specifically, pesticides will be applied at the lowest effective concentration and calibrated and inspected annually (BMP B16); pesticide application will be modified, postponed, or cease when weather parameters exceed product label specification (e.g., during high wind speeds or predicted rain events) (BMP B17); reporting of pesticide spills and cleanups will occur (BMP B19); maintenance of a proper pesticide spill cleanup kit at the VCP's service yard and individual vehicles will occur (BMPs B20); pesticide spill containment and recovery measures will be implemented (BMP B21 and B22); annual training on storage and disposal of pesticides will occur (BMP B23); and minimization of accidental spill or release of pesticides during field-based mixing and loading will occur (BMP B24). Adherence to IVMP BMPs and NPDES Permit requirements would ensure that significant impacts to water bodies resulting from pesticide use would not occur.

With the implementation of BMPs required by the NPDES CGP, the County WPO, and the IVMP BMPs, potential impacts on surface water quality related to the proposed source reduction and source treatment techniques under the Proposed Project would be less than significant.

[3] According to products applied in calendar year 2019 reported by the VCP *Pesticide Use State Report*, approximately 101,075 pounds of pesticides were applied, of which liquid pesticides totaled approximately 168.8 pounds. This results in 0.17% of product applied in 2019 being in liquid form.

Groundwater Quality

The potential for impacts related to groundwater quality would be limited mainly to ground disturbances associated with source reduction techniques, which could result in the excavation of soils in depths that result in temporary groundwater dewatering activities. Should these occur in areas of groundwater contamination, the dewatering activities could result in water quality degradation if discharged to surface water, as the surface water eventually recharges the groundwater aquifer. Also, during temporary dewatering, construction wastes could potentially release into groundwater if the groundwater is exposed.

Compliance with all applicable federal, State, and local requirements concerning the handling, storage, and disposal of hazardous waste, in addition to several BMPs, would reduce the potential for groundwater disturbances associated with source reduction techniques. With the implementation of BMPs required by the NPDES CGP, the County WPO, and the IVMP BMPs, potential impacts on groundwater quality related to the proposed source reduction techniques under the Proposed Project would be less than significant.

Source treatment activities resulting from the Proposed Project would not result in groundwater dewatering or degradation because pesticides would be used in accordance with label instructions, which have been approved by the CDPR for use in California. Pesticide labels are application requirements and include instructions informing users how to apply the product and identifies precautions the applicator should employ to protect human health and the environment. Additionally, the pesticides would be applied in accordance with NPDES Permit requirements and applicable federal, State, and local regulations. Further, as discussed above, pesticides in a solid form would have a low potential for aerial drift and would therefore not result in accidental contamination. Liquid pesticides would be used in a manner that would prevent significant aerial drift despite method of application. All pesticides used by the VCP would be used by Certified Vector Control Technicians, who are approved personnel that have been trained and maintain certification through continuing education on how to use, store, and dispose of such substances. Therefore, the use of pesticides would not result in groundwater degradation. Impacts would be less than significant.

Groundwater Resources

Guidelines for the Determination of Significance

The Proposed Project would have a significant impact if it would substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Proposed Project may impede sustainable groundwater management of the basin.

Impact Analysis

Anticipated actions under the Proposed Project associated with ground disturbance would generally consist of vegetation and soil removal to maximize open water areas, restore the natural flow, or provide circulation to eliminate stagnant water. Other actions associated with source reduction measures may involve physical control techniques to reduce standing water. As these physical improvements associated with the Proposed Project relate to improving water circulation, none of the Proposed Project actions would rely on groundwater usage, and would therefore not significantly decrease groundwater supply. Furthermore, none of the actions would involve the construction of structures that would increase impervious surfaces that would impede or prevent groundwater recharge. Such activities would not rely on groundwater supplies and would not

result in changes to impervious surfaces affecting groundwater recharge. Impacts to groundwater resources would not occur.

Erosion or Siltation

Guidelines for the Determination of Significance

The Proposed Project would have a significant impact if it would substantially alter the existing drainage pattern of the site or area in a manner which would result in substantial erosion or siltation on or off site.

Impact Analysis

Implementation of the Proposed Project would result in grading or earthmoving activities to implement source reduction measures and could result in vegetation removal and ground disturbance, resulting in increases in erosion or siltation. Specifically, source reduction measures could involve earthmoving or grading activities necessary to eliminate areas of standing water, remove vegetation or sediment, interrupt water flow, rotate stored water, pump and/or fill sources, improve drainage and water circulation systems, and install, improve, or remove culverts, tide gates, and other water control structures in wetlands or other water bodies. As described in Section 2.1, *Biological Resources*, these activities would be conducted in accordance with appropriate environmental regulations and in a manner that generally maintains or improves habitat values for desired species. In addition, other physical improvements within waterways associated with source reduction measures would also be designed to increase water circulation, which can increase dissolved oxygen and reduce water temperatures, and improve water quality conditions locally. Improving water circulation patterns can also increase localized areas of scour due to increased water velocities, particularly near structures. Any potential increases in erosion and siltation as a result of these activities would be temporary and short-term, and BMPs would be implemented during all stages of activity to ensure the temporary effects do not extend beyond the vicinity of the areas being improved.

As described under the first threshold above, future implementation of source reduction measures involving earthmoving activities would be required to comply with the NPDES CGP, the County WPO, and the IVMP BMPs. Adherence to existing regulations would limit erosion by minimizing site disturbance to the maximum extent practicable and requiring installation of erosion control BMPs to prevent off-site sediment discharges. As a result, impacts on erosion and siltation associated with source reduction measures of the Proposed Project would be less than significant. Surveillance and monitoring activities and source treatment activities associated with the Proposed Project would not involve grading or earthmoving activities, and their related impacts associated with erosion and siltation would be less than significant.

Flooding from Surface Runoff

Guidelines for the Determination of Significance

The Proposed Project would have a significant impact if it would substantially alter the existing drainage pattern of the site or area in a manner that would substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site.

Impact Analysis

As mentioned above, land-disturbing activities associated with the Proposed Project would be limited to source reduction measures that would involve physical control techniques to reduce standing water and the modification or construction of culverts, tide gates, and water control devices in wetlands or water bodies. These physical improvements are not anticipated to result in new or additional sources of runoff because they would be limited in size with the intent to manage standing water in streams and waterways.

Existing regulatory processes in place to protect surface water quality include the NPDES CGP program for disturbances that exceed 1 acre and the County WPO, Section 67.806, for disturbances of less than 1 acre. For disturbances exceeding 1 acre, a SWPPP must be prepared that identifies BMPs that minimize disturbance, protect slopes, reduce erosion, and limit or prevent various pollutants from entering surface water runoff. For disturbances of less than 1 acre, minimum BMPs such as silt fencing, desilting basins, sediment traps and check dams, street sweeping, stormwater inlet protection, sandbag barriers, straw bale barriers, gravel bag berms, and fiber rolls would be required to reduce the discharge of pollutants associated with smaller sites. Also, the Proposed Project includes the identification and implementation of several BMPs that would further reduce potential impacts on surface water quality. Specifically, any staging of equipment or materials associated with source reduction activities would occur in developed or disturbed areas outside existing wetlands and non-wetland waters (BMP B12); the changing of oil, refueling, or other service and maintenance activities would occur at least 100 feet from documented drainages and would be supported by the installation of barriers to prevent accidental spills (BMP B13); and minimization of the use of heavy equipment and machinery would occur (BMP B14). Impacts on runoff and flooding would be less than significant.

Stormwater Systems

Guidelines for the Determination of Significance

The Proposed Project would have a significant impact if it would substantially alter the existing drainage pattern of the site or area in a manner that would 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.

Impact Analysis

As mentioned above, land-disturbing activities associated with the Proposed Project would be limited to source reduction measures that would involve physical control techniques to reduce standing water and the modification or construction of culverts, tide gates, and water control devices in wetlands or water bodies. These physical improvements are not anticipated to result in new or additional sources of runoff as they would be limited in size with the intent to manage standing water in streams and waterways. Therefore, source reduction activities would not cause stormwater drainage systems to exceed capacity or provide substantial additional sources of polluted runoff.

Similarly, source control activities would not contribute runoff water that would exceed the capacity of stormwater drainage systems or provide substantial additional sources of polluted runoff. The Proposed Project would adhere to the existing regulatory processes that are in place to protect surface water quality, such as the NPDES CGP program for disturbances that exceed 1 acre and the County WPO, Section 67.806, for disturbances of less than 1 acre. For

disturbances exceeding 1 acre, a SWPPP must be prepared that identifies BMPs that minimize disturbance, protect slopes, reduce erosion, and limit or prevent various pollutants from entering surface water runoff. For disturbances of less than 1 acre, minimum BMPs such as silt fencing, desilting basins, sediment traps and check dams, street sweeping, stormwater inlet protection, sandbag barriers, straw bale barriers, gravel bag berms, and fiber rolls would be required to reduce the discharge of pollutants associated with smaller sites. Also, the Proposed Project includes the identification and implementation of several BMPs that would further reduce potential impacts on surface water quality. Specifically, any staging of equipment or materials associated with source reduction activities would occur in developed or disturbed areas outside existing wetlands and non-wetland waters (BMP B12); the changing of oil, refueling, or other service and maintenance activities would occur at least 100 feet from documented drainages and would be supported by the installation of barriers to prevent accidental spills (BMP B13); and minimization of the use of heavy equipment and machinery would occur (BMP B14). Impacts related to stormwater drainage systems or polluted runoff would be less than significant.

Flood Flows

Guidelines for the Determination of Significance

The Proposed Project would have a significant impact if it would substantially alter the existing drainage pattern of the site or area in a manner that would impede or redirect flood flows.

Impact Analysis

As mentioned above, land-disturbing activities associated with the Proposed Project would be limited to source reduction measures that would involve physical control techniques to reduce standing water and the modification or construction of culverts, tide gates, and water control devices in wetlands or water bodies. These physical improvements would be minimal and would not impede or redirect flood flows.

Source treatment activities include the use of pesticides for vector management, which would have no impact on flood flows. Therefore, impacts related to impeding or redirecting flood flows would be less than significant.

Inundation in Flood Hazard, Tsunami, or Seiche Zones

Guidelines for the Determination of Significance

The Proposed Project would have a significant impact if it would risk release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones.

Impact Analysis

While the Service Area includes the entire county, such as areas near or adjacent to lakes, reservoirs, and the Pacific Ocean, the Proposed Project does not include the construction of structures and would not introduce permanent sources of pollutants (whether they be sediment, hydrocarbons, or trash). Any Proposed Project-related actions involving the potential release of pollutants would be short-term and limited to specific areas targeted for grading or vegetation removal activities, or during pesticide application with the intent of reducing vectors.

While some improvements related to source reduction would include improving or removing culverts, tide gates, and other water control structures in wetlands or other water bodies, these water control structures would not involve the use of pollutants that would have a risk of release due to inundation. Furthermore, the Proposed Project would not involve the construction of habitable structures, and the risk of the release of pollutants due to inundation would be less than significant.

Water Planning

Guidelines for the Determination of Significance

The Proposed Project would have a significant impact if it would conflict with or obstruct implementation of a Water Quality Control Plan or Sustainable Groundwater Management Plan.

Impact Analysis

The Proposed Project location includes all of San Diego County, which includes 19 groundwater basins and is within the regulatory boundaries of the RWQCB Regions 7 and 9. The RWQCB is responsible for the adoption and implementation of Water Quality Control Plans. The Water Quality Control Plan for the Colorado River Basin and Water Quality Control Plan for the San Diego Basin are the applicable plans for the Proposed Project because they address RWQCB Regions 7 and 9, respectively. Each Basin Plan has been designed to characterize the water resources within a region, identify beneficial uses that exist or have the potential to exist in each waterbody, establish water quality objectives for each waterbody to protect beneficial uses or allow their restoration, and provide an implementation program that achieves water quality objectives. The Basin Plans also include numeric site-specific water quality objectives and narrative objectives for toxicity, chemical constituents, and tastes and odors. Implementation of the Proposed Project would not interfere with the characterization of water resources within a region or potential beneficial uses for any waterbody. The Proposed Project would not cause a waterbody to miss water quality objectives and would not interfere with implementation of a program to achieve the water quality objectives established in the Basin Plans. The Proposed Project would be required to comply with applicable stormwater quality standards, including implementation of BMPs required by the NPDES CGP, the County WPO, and the IVMP BMPs, which would ensure that the Proposed Project would not significantly impact water quality of waterbodies. As a result, the Proposed Project would not conflict with the Water Quality Control Plan for the Colorado River Basin or Water Quality Control Plan for the San Diego Basin.

In relation to sustainable groundwater management, there are no adopted Sustainable Groundwater Management Plans within San Diego County. Further, individual activities under the Proposed Project are not expected to result in the depletion of groundwater supplies or interference with groundwater recharge as there is no anticipated increase in the amount of impervious surfaces. Potential impacts related to conflicts with or obstruction of a Water Quality Control Plan or Sustainable Groundwater Management Plan under the Proposed Project would be less than significant.

3.1.5.4 *Cumulative Impact Analysis*

The Proposed Project includes implementation of a countywide IVMP in which individual activities would occur throughout San Diego County. The geographic scope of cumulative impact analysis for hydrology and water quality includes drainage basins, watersheds, water bodies or groundwater basins, depending on the location of the potential impact and its tributary area. Consequently, the geographic scope includes the entirety of San Diego County. Cumulative projects may include countywide residential and non-residential land development, open space and recreation, and agricultural activities that have the potential for ground disturbance, vegetation removal, and pesticide use.

Water Quality Standards and Requirements

Implementation of the Proposed Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. In addition, cumulative projects would be subject to regulations that require compliance with water quality standards, including: the CWA, Porter-Cologne Water Quality Control Act, NPDES, applicable basin plans, and local regulations. Therefore, implementation of the IVMP would not result in a cumulatively considerable contribution associated with water quality standards and requirements.

Groundwater Resources

Implementation of the Proposed Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. Cumulative projects would be required to comply with all applicable local, state, and federal regulations governing groundwater usage or interference. Additionally, cumulative projects would be subject to provisions and would be required to adhere to Sustainable Groundwater Management Plans, when adopted. Therefore, implementation of the IVMP would not result in a cumulatively considerable contribution associated with decreasing groundwater supplies or interfering with groundwater recharge.

Erosion or Siltation

Implementation of the Proposed Project would not result significant impacts associated with erosion or siltation. Any potential increases in erosion and siltation as a result of the IVMP would be temporary and short-term, and BMPs would be implemented during all stages of activity to ensure the temporary effects do not extend beyond the vicinity of the areas being improved. Furthermore, similar to the Proposed Project, cumulative projects would be required to abide by the NPDES CGP, the County WPO, and other water quality regulations to prevent off-site sediment discharges. As such, implementation of the IVMP would not result in a cumulatively considerable contribution to erosion or siltation impacts.

Flooding from Surface Runoff

Implementation of the Proposed Project would involve physical control techniques to reduce standing water through the modification or construction of facilities in wetlands or water bodies. These improvements are not anticipated to result in new or additional sources of runoff because they would be limited in size with the intent to manage standing water in streams and waterways. Whereas, cumulative projects may involve residential and non-residential land development, open space and recreation, and agricultural activities. However, cumulative projects in San Diego

County would be subject to local, state, and federal requirements, such as the County WPO, Section 67.806 which requires a SWPPP for certain projects and the NPDES CGP, both of which are existing regulatory processes that protect surface water quality. Therefore, implementation of the IVMP would not result in a cumulatively considerable contribution to increasing the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.

Stormwater Systems

As mentioned above, land-disturbing activities associated with the Proposed Project would be limited to source reduction measures that would involve physical control techniques to reduce standing water and would not cause stormwater drainage systems to exceed capacity or provide substantial additional sources of polluted runoff. Whereas, cumulative projects may involve residential and non-residential land development, open space and recreation, and agricultural activities. However, cumulative projects in San Diego County would be subject to local, state, and federal requirements, such as the County WPO, Section 67.806 which requires a SWPPP for certain projects and the NPDES CGP, both of which are existing regulatory processes that protect surface water quality. Therefore, implementation of the IVMP would not result in a cumulatively considerable contribution to runoff water that would exceed capacity or provide additional sources of polluted runoff.

Flood Flows

Implementation of the Proposed Project would include physical improvements that would be minimal in nature and would not impede or redirect flood flows. In addition, it is expected that cumulative projects in California are required to comply with applicable regulations that would prevent the construction of structures in floodways, such as the National Flood Insurance Act, National Flood Insurance Reform Act, Cobey-Alquist Floodplain Management. Therefore, it is expected that through these and other regulations, a cumulative impact would not occur. Therefore, implementation of the IVMP would not result in a cumulatively considerable contribution to impeding or redirecting flood flows.

Inundation in Flood Hazard, Tsunami, or Seiche Zones

Implementation of the Proposed Project would not risk release of pollutants in a flood hazard, tsunami, or seiche zone. While cumulative projects have the potential to place structures or other facilities within dam inundation areas multiple regulations exist, such as the National Flood Insurance Act, National Flood Insurance Reform Act, Cobey-Alquist Floodplain Management Act, and local regulations that would be expected to mitigate any potential impacts to below a level of significance. Therefore, implementation of the IVMP would not result in a cumulatively considerable contribution to inundation in flood hazard, tsunami, or seiche zones.

Water Planning

The Proposed Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. As with the Proposed Project, cumulative projects would be required to comply with applicable stormwater quality standards, including implementation of BMPs required by the NPDES CGP and the County WPO, which would ensure that the water quality of waterbodies are not significantly impacted. In relation to sustainable groundwater management, there are no adopted Sustainable Groundwater Management Plans within San Diego County. Therefore, implementation of the IVMP would not result in a

cumulatively considerable contribution to conflicting with or obstructing a water quality control plan or sustainable groundwater management plan.

3.1.5.5 *Significance of Impact Prior to Mitigation*

Impacts resulting from the Proposed Project to hydrology and water quality would be less than significant. Ground-disturbing activities would be required during IVMP's source reduction activities due to the use of equipment and vehicles, as well as minor grading during source reduction activities. As detailed above, the ground disturbance would be minimal in scope and would not require large-scale grading. Additionally, source treatment activities would be conducted in accordance with applicable regulations and NPDES Permit requirements, which would reduce impacts to hydrology and water quality to a less than significant level. Furthermore, the Proposed Project would implement the IVMP BMPs that would reduce the impacts to undeveloped and undisturbed areas. Therefore, impacts to hydrology and water quality from implementation of the Proposed Project's source reduction and source treatment activities would be less than significant prior to mitigation.

3.1.5.6 *Mitigation Measures*

Because the Proposed Project would not result in significant impacts, no mitigation is required.

3.1.5.7 *Conclusion*

As described above, direct project or cumulative impacts to hydrology and water quality resulting from IVMP activities would be less than significant.

Table 3.1.5-1
IMPAIRED WATER BODIES IN SAN DIEGO COUNTY

Watershed Management Area	Water Body	303(d) Impairment
Carlsbad	Agua Hedionda Creek	Benthic Community Effects, Pesticides (Bifenthrin, Chlorpyrifos, Cyfluthrin, Cyhalothrin [Lambda], Cypermethrin, Deltamethrin, Malathion, Pyrethroids), Indicator Bacteria, Manganese, Nitrogen, Phosphorus, Selenium, TDS, Toxicity, Turbidity
	Agua Hedionda Lagoon	Toxicity
	Batiquitos Lagoon	Toxicity
	Buena Creek	Benthic Community Effects, Indicator Bacteria, Nitrate and Nitrite, Nitrogen, Pesticides (DDT), Phosphorus, Sulfates
	Buena Vista Creek	Benthic Community Effects, Indicator Bacteria, Pesticides (Bifenthrin, Cyfluthrin, Cypermethrin, Pyrethroids), Nitrogen, Phosphorus, Selenium, TDS, Toxicity
	Buena Vista Lagoon	Indicator Bacteria, Nutrients, Sedimentation/Siltation, Toxicity
	Cottonwood Creek (San Marcos Creek Watershed)	Benthic Community Effects, Nitrogen, Pesticides (DDT), Phosphorus, Selenium, Toxicity
	Encinitas Creek	Benthic Community Effects, Indicator Bacteria, Nitrogen, Phosphorus, Selenium, Toxicity
	Escondido Creek	Benthic Community Effects, Pesticides (Bifenthrin, Cyfluthrin, Cypermethrin, DDT, Pyrethroids), Indicator Bacteria, Iron, Manganese, Nitrogen, Phosphate, Phosphorus, Selenium, Sulfates, TDS, Toxicity, Turbidity
	Lake San Marcos	Ammonia as Nitrogen, Copper, Nutrients, Phosphorus
	Loma Alta Creek	Benthic Community Effects, Indicator Bacteria, Pesticides (Bifenthrin, Cyfluthrin, Cyhalothrin [Lambda], Pyrethroids), Nitrogen, Phosphorus, Selenium, Toxicity
	Loma Alta Slough	Eutrophic, Indicator Bacteria
	Pacific Ocean Shoreline, Batiquitos HSA, at Moonlight State Beach (Cottonwood Creek outlet)	Indicator Bacteria, Trash
	Pacific Ocean Shoreline, Loma Alta HSA, at Loma Alta Creek mouth	Indicator Bacteria, Trash
	Pacific Ocean Shoreline, Los Monos HSA, Carlsbad State Beach at Tamarack Ave	Trash
	Pacific Ocean Shoreline, Rancho Santa Fe HSA, at Fletcher Cove Beach	Indicator Bacteria
	Pacific Ocean Shoreline, San Elijo HSA, at Cardiff State Beach at parking lot entrance	Indicator Bacteria, Trash
	Pacific Ocean Shoreline, San Luis Rey HU, at Tyson Way	Indicator Bacteria
	Reidy Canyon Creek	Indicator Bacteria, Phosphorus
	San Elijo Creek (San Diego County)	Indicator Bacteria
	San Elijo Creek (San Diego County), unnamed tributary at San Elijo Avenue	Indicator Bacteria
	San Elijo Lagoon	Eutrophic, Indicator Bacteria, Oxygen (Dissolved), Phosphorus, Sedimentation/Siltation, Toxicity, Turbidity

Table 3.1.5-1
IMPAIRED WATER BODIES IN SAN DIEGO COUNTY

Watershed Management Area	Water Body	303(d) Impairment
	San Marcos Creek, Lower (below San Marcos Lake)	Nitrogen, Phosphorus, Selenium, Toxicity
	San Marcos Creek, Upper (above San Marcos Lake)	Benthic Community Effects, Indicator Bacteria, Pesticides (Bifenthrin, DDE, Pyrethroids), Nitrogen, Phosphorus, Selenium, TDS, Toxicity
	San Marcos Lake, drain to central southwest fork of lake	Copper, Indicator Bacteria
Los Peñasquitos	Carmel Valley Creek	Benthic Community Effects, Indicator Bacteria, Oxygen (Dissolved), Pesticides (Bifenthrin, Pyrethroids), Phosphorus, TDS
	Carroll Canyon	Benthic Community Effects, Pesticides (Cyfluthrin, Pyrethroids), Toxicity
	Chollas Creek	Benthic Community Effects, Copper, Indicator Bacteria, Lead, Nitrogen, Oxygen (Dissolved), Pesticides (Bifenthrin, Cyfluthrin, Cyhalothrin [Lambda], Cypermethrin, Dichlorvos, Malathion, Permethrin, Pyrethroids), Phosphorus, TDS, Toxicity, Trash, Zinc
	Harbison Canyon	Indicator Bacteria
	Jamacha Creek	Indicator Bacteria
	Los Peñasquitos Creek	Benthic Community Effects, Indicator Bacteria, Nitrogen, Pesticides (Bifenthrin, Cyfluthrin, Cyhalothrin [Lambda], Cypermethrin, Permethrin, Pyrethroids), Phosphate, Phosphorus, TDS, Toxicity
	Los Peñasquitos Lagoon	Sediment/Siltation, Toxicity
	Mission Bay	Mercury, PCBs
	Mission Bay (area at mouth of Rose Creek only)	Eutrophic, Lead
	Mission Bay (area at mouth of Tecolote Creek only)	Eutrophic, Lead
	Mission Bay at Quivira Basin	Copper
	Mission Bay Shoreline, at Bonita Cove	Indicator Bacteria
	Mission Bay Shoreline, at Bonita Cove (eastern shore)	Indicator Bacteria
	Mission Bay Shoreline, at Campland	Indicator Bacteria
	Mission Bay Shoreline, at De Anza Cove	Indicator Bacteria
	Mission Bay Shoreline, at Enchanted Cove	Trash
	Mission Bay Shoreline, at Fanual Park	Indicator Bacteria
	Mission Bay Shoreline, at Fiesta Island northwest shore	Indicator Bacteria
	Mission Bay Shoreline, at Leisure Lagoon	Indicator Bacteria
	Mission Bay Shoreline, at Tecolote Shores	Indicator Bacteria
	Mission Bay Shoreline, at Visitors Center	Indicator Bacteria
	Pacific Ocean Shoreline, Scripps HA, at Avenida de la Playa at La Jolla Shores Beach	Indicator Bacteria
	Pacific Ocean Shoreline, Scripps HA, at Belmont Park at Mission Beach (near San Fernando Place)	Trash

Table 3.1.5-1
IMPAIRED WATER BODIES IN SAN DIEGO COUNTY

Watershed Management Area	Water Body	303(d) Impairment
	Pacific Ocean Shoreline, Scripps HA, at Children's Pool	Indicator Bacteria
	Pacific Ocean Shoreline, Scripps HA, at Crystal Pier	Trash
	Pacific Ocean Shoreline, Scripps HA, at La Jolla Cove	Indicator Bacteria
	Pacific Ocean Shoreline, Scripps HA, at North Lane at Windansea Beach	Trash
	Pacific Ocean Shoreline, Scripps HA, at Pacific Beach Drive, Pacific Beach	Trash
	Pacific Ocean Shoreline, Scripps HA, at Pacific Beach Point, Pacific Beach	Indicator Bacteria
	Pacific Ocean Shoreline, Scripps HA, at South Casa Beach	Indicator Bacteria
	Pacific Ocean Shoreline, Scripps HA, at Tourmaline Surf Park, Pacific Beach	Trash
	Pacific Ocean Shoreline, Scripps HA, at Vallecitos Court at La Jolla Shores Beach	Trash
	Pacific Ocean Shoreline, Scripps HA, at Whispering Sands Beach, Nicholson Point, La Jolla	Indicator Bacteria
	Pacific Ocean Shoreline, Torrey Pines State Beach, at North Beach Entrance parking lot	Trash
	Poway Creek	Nitrogen, Selenium, Toxicity
	Rose Creek	Benthic Community Effects, Indicator Bacteria, Pesticides (Bifenthrin, Cyfluthrin, Pyrethroids) Nitrogen, Phosphorus, Selenium, TDS, Toxicity
	Soledad Canyon	Benthic Community Effects, Nitrogen, Phosphorus, Sediment Toxicity, Selenium
	Tecolote Creek	Benthic Community Effects, Indicator Bacteria, Nitrogen, Pesticides (Bifenthrin, Cyfluthrin, Cyhalothrin [Lambda], Cypermethrin, Diazinon, Permethrin, Pyrethroids), pH, Phosphorus, Selenium, Toxicity, Turbidity
	Tecolote Creek, South Fork	Indicator Bacteria
San Diego Bay **(Otay, Pueblo, Sweetwater)**	Alpine Creek	Indicator Bacteria, Nitrogen
	Alvarado Creek	Nitrogen, Selenium
	Chocolate Creek	Indicator Bacteria, Nitrogen, Phosphorus
	Jamul Creek	Toxicity
	Long Canyon Creek (Lower Sweetwater Watershed)	Indicator Bacteria
	Loveland Reservoir	Aluminum, Manganese, Mercury, Oxygen (Dissolved), pH
	Mexican Canyon Creek (eastern tributary to Sweetwater River, Upper)	Indicator Bacteria
	Mexican Canyon Creek (western tributary to Sweetwater River, Upper)	Indicator Bacteria
	Otay Reservoir, Lower	Ammonia, Color, Iron, Manganese, Mercury, Nitrogen, pH, Phosphorus

Table 3.1.5-1
IMPAIRED WATER BODIES IN SAN DIEGO COUNTY

Watershed Management Area	Water Body	303(d) Impairment
	Otay River	Benthic Community Effects, Copper, Indicator Bacteria, Nitrogen, Oxygen (Dissolved), Pesticides (Bifenthrin, Cyfluthrin, Pyrethroids), Phosphorus, TDS, Toxicity, Zinc
	Pacific Ocean Shoreline, Coronado HA, at Avenida del Sol	Indicator Bacteria
	Pacific Ocean Shoreline, Coronado HA, at G Ave, Central Beach	Trash
	Pacific Ocean Shoreline, Coronado HA, at Silver Strand (north end, Oceanside)	Indicator Bacteria
	Pacific Ocean Shoreline, Otay Valley HA, at Carnation Ave and Camp Surf Jetty	Indicator Bacteria
	Pacific Ocean Shoreline, Point Loma HA, at Bermuda Ave	Indicator Bacteria
	Pacific Ocean Shoreline, Point Loma HA, at Sunset Cliffs and Froude Street	Trash
	Paleta Creek	Copper, Lead
	Poggi Canyon Creek	Nitrogen, Toxicity
	San Diego Bay	Mercury, PAHs, PCBs
	San Diego Bay Shoreline, 32nd Street Naval Station	Benthic Community Effects, Sediment Toxicity
	San Diego Bay Shoreline, at America's Cup Harbor	Copper
	San Diego Bay Shoreline, at Bayside Park (J Street)	Indicator Bacteria
	San Diego Bay Shoreline and Coronado Cays	Copper
	San Diego Bay Shoreline at Glorietta Bay	Copper
	San Diego Bay Shoreline, at Harbor Island (East Basin)	Copper
	San Diego Bay Shoreline, at Harbor Island (West Basin)	Copper
	San Diego Bay Shoreline, at Marriott Marina	Copper
	San Diego Bay Shoreline, between Sampson and 28th Streets	Copper, Mercury, PAHs, PCBs, Zinc
	San Diego Bay Shoreline, at Chula Vista Marina	Copper
	San Diego Bay Shoreline, Downtown Anchorage	Benthic Community Effects, Sediment Toxicity
	San Diego Bay Shoreline, G Street Pier	Indicator Bacteria
	San Diego Bay Shoreline, Near Chollas Creek	Benthic Community Effects, Sediment Toxicity
	San Diego Bay Shoreline, near Coronado Bridge	Benthic Community Effects, Sediment Toxicity
	San Diego Bay Shoreline, near sub base	Benthic Community Effects, Toxicity
	San Diego Bay Shoreline, Near Switzer Creek	Pesticides (Chlordane), PAHs
	San Diego Bay Shoreline, North of 24th Street Marine Terminal	Benthic Community Effects, Sediment Toxicity

Table 3.1.5-1
IMPAIRED WATER BODIES IN SAN DIEGO COUNTY

Watershed Management Area	Water Body	303(d) Impairment
	San Diego Shoreline, Seventh Street Channel	Benthic Community Effects, Sediment Toxicity
	San Diego Bay Shoreline, at Silver Strand Beach (bayside)	Indicator Bacteria
	San Diego Bay Shoreline, Shelter Island Shoreline Park	Indicator Bacteria
	San Diego Bay Shoreline, Tidelands Park	Indicator Bacteria
	San Diego Bay Shoreline, Vicinity of B Street and Broadway Piers	Benthic Community Effects, Indicator Bacteria, Sediment Toxicity
	San Diego Bay, Shelter Island Yacht Basin	Copper (Dissolved)
	Steele Canyon	Indicator Bacteria
	Sweetwater Reservoir	Mercury, Oxygen (Dissolved)
	Sweetwater River, Lower (below Sweetwater Reservoir)	Benthic Community Effects, Indicator Bacteria, Nitrogen, Oxygen (Dissolved), Pesticides (Bifenthrin, Chlorpyrifos, Pyrethroids), Phosphorus, TDS, Toxicity
	Sweetwater River, Middle (between Sweetwater and Loveland Reservoirs)	Aluminum, Benthic Community Effects, Indicator Bacteria, Nitrogen, Phosphorus, Selenium, TDS, Toxicity, Turbidity
	Sweetwater River, North Fork, unnamed tributary at Tavern Road	Indicator Bacteria, Manganese
	Sweetwater River, Upper (above Loveland Reservoir)	Toxicity
	Switzer Creek	Copper, Lead, Zinc
	Telegraph Canyon Creek	Nitrogen, Selenium
San Diego River	Cloverdale Creek	Nitrogen, Phosphorus, TDS
	El Capitan Lake	Color, Manganese, Mercury, Phosphorus, Total Nitrogen as N
	Eucalyptus Hills Creek	Indicator Bacteria, Pesticides (Diazinon)
	Famosa Slough and Channel	Eutrophic, Oxygen (Dissolved)
	Felicita Creek	1,4-Dioxane, Aluminum, Indicator Bacteria, Tetrachloroethylene/PCE, TDS, Trichloroethylene/TCE
	Forester Creek	Benthic Community Effects, Chloride, Indicator Bacteria, Nitrogen, Oxygen (Dissolved), Phosphorus, Selenium, TDS, Turbidity
	Green Valley Creek	Benthic Community Effects, Chloride, Manganese, Nitrogen, PCP, Pesticides (Bifenthrin, Chlorpyrifos, Cyfluthrin, Pyrethroids), Sulfates, Total Nitrogen as N, Toxicity
	Lake Jennings	Mercury
	Los Coches Creek	Indicator Bacteria, Nitrogen, Phosphorus, Selenium
	Murphy Canyon	Benthic Community Effects, Nitrogen, Phosphorus
	Pacific Ocean Shoreline, Mission San Diego HSA, at Newport Ave	Indicator Bacteria
	Pacific Ocean Shoreline, Mission San Diego HSA, at Ocean Beach pier at Narrangaset	Trash
	Pacific Ocean Shoreline, Otay Valley HA, north of Palm Avenue Jetty	Indicator Bacteria

Table 3.1.5-1
IMPAIRED WATER BODIES IN SAN DIEGO COUNTY

Watershed Management Area	Water Body	303(d) Impairment
	Pacific Ocean Shoreline, San Diego HU, at Stub Jetty, south of the San Diego River outlet, near Cape May Avenue	Indicator Bacteria, Trash
	Pacific Ocean Shoreline, San Diego HU, at the San Diego River outlet, at Dog Beach	Indicator Bacteria
	San Diego River (Lower)	Benthic Community Effects, Chloride, Color, Indicator Bacteria, Nitrogen, Oxygen (Dissolved), Pesticides (Bifenthrin, Chlordane, Cyfluthrin, Cypermethrin, Permethrin, Pyrethroids), Phosphorus, TDS, Toxicity, Turbidity
	San Vicente Creek (San Diego County)	Ammonia as Nitrogen, Indicator Bacteria, Phosphorus, Total Nitrogen as N, Toxicity
	San Vicente Reservoir	Chloride, Color, Nitrogen, pH, Sulfates
	Shepherd Canyon East	Nitrogen, Phosphorus
	Sycamore Canyon	Oxygen (Dissolved)
San Dieguito	Kit Carson Creek	PCP, TDS
	La Zanja Canyon	Indicator Bacteria
	Lake Hodges	Color, Manganese, Mercury, Nitrogen, pH, Phosphorus, Turbidity
	Lusardi Creek	Benthic Community Effects, Indicator Bacteria, Phosphorus
	Pacific Ocean Shoreline, Rancho Santa Fe HSA, at Powerhouse Park	Trash
	Pacific Ocean Shoreline, San Dieguito HU, at San Dieguito Lagoon Mouth at San Dieguito River Beach	Indicator Bacteria
	Pacific Ocean Shoreline, San Mateo Canyon HA, at San Mateo Creek outlet	Indicator Bacteria
	Salt Creek (Orange County)	Benthic Community Effects, Pesticides (Imidacloprid, Malathion), Toxicity
	San Dieguito River	Benthic Community Effects, Chloride, Nitrogen, Pesticides (Bifenthrin, Pyrethroids), Oxygen (Dissolved), Phosphorus, TDS, Toxicity
	San Dieguito River, unnamed tributary below Hodges Dam	Indicator Bacteria
	San Mateo Creek (San Diego County)	Indicator Bacteria, Invasive Species, Oxygen (Dissolved)
	Santa Ysabel Creek (below Sutherland Reservoir)	Benthic Community Effects, Manganese, Nitrogen, Phosphorus, TDS, Toxicity
	Sutherland Reservoir	Color, Iron, Manganese, Mercury, Nitrogen, pH, Phosphorus
San Juan	Couser Canyon Creek	Indicator Bacteria
	East Channel Creek	Indicator Bacteria
	Gopher Creek	Indicator Bacteria
San Luis Rey	Cristianitos Creek	Cadmium, Indicator Bacteria, Selenium
	De Luz Creek	Iron, Manganese, Nitrogen, Sulfates
	De Luz Creek, unnamed tributary at De Luz Murrieta Road	Chloride, Nitrogen, Sulfates
	Gomez Creek	Nitrogen

Table 3.1.5-1
IMPAIRED WATER BODIES IN SAN DIEGO COUNTY

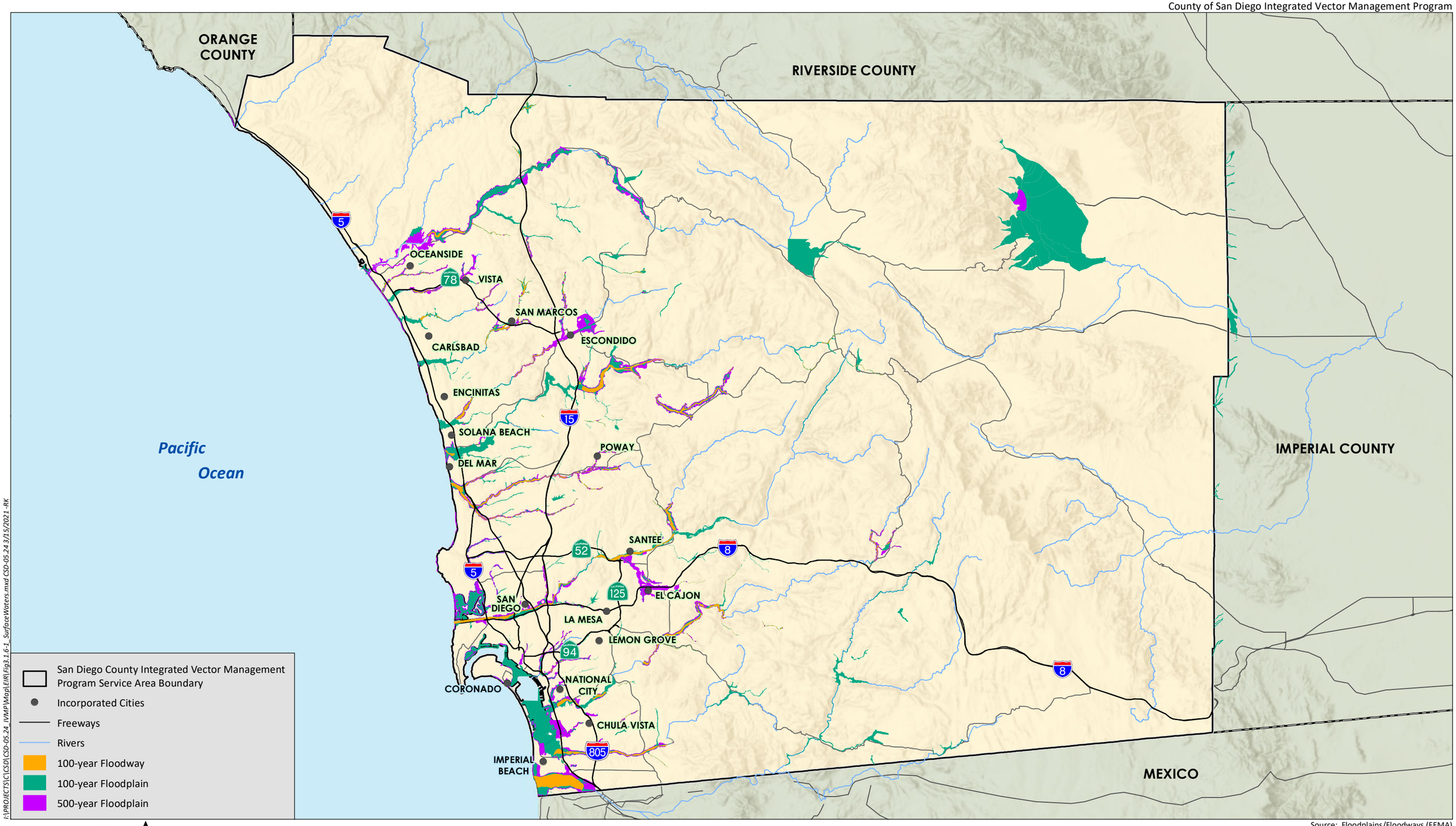
Watershed Management Area	Water Body	303(d) Impairment
	Green Canyon Creek	Indicator Bacteria
	Guajome Lake	Eutrophic
	Keys Creek	Indicator Bacteria, Nitrogen, Phosphorus, Selenium
	Live Oak Creek (San Diego County)	Indicator Bacteria
	Long Canyon Creek (tributary to Murietta Creek)	Iron, Manganese, Nitrogen, Pesticides (Chlorpyrifos), Phosphorus
	Moosa Canyon Creek	Benthic Community Effects, Indicator Bacteria, Nitrogen, Phosphorus
	Moosa Canyon South Fork	Indicator Bacteria
	Pacific Ocean Shoreline, San Luis Rey HU, at San Luis Rey River outlet	Indicator Bacteria
	Pacific Ocean Shoreline, San Luis Rey HU, Oceanside Pier at Pier View Way	Trash
	Paradise Creek, HSA 908.320	Phosphorus, Selenium
	San Luis Rey River, Lower (west of Interstate 15)	Benthic Community Effects, Chloride, Nitrogen, Oxygen (Dissolved), Pesticides (Bifenthrin, Pyrethroids), Phosphorus, TDS, Toxicity
	San Luis Rey River, Upper (east of Interstate 15)	Indicator Bacteria, Nitrogen, Phosphorus, Total Nitrogen as N
Santa Margarita	Barrett Lake	Color, Manganese, Perchlorate, pH, Phosphorus, Total Nitrogen as N
	Campo Creek	Indicator Bacteria, Nitrogen, Phosphorus, TDS
	Margarita Glen	Nitrogen, Phosphorus, Sulfates, TDS
	Oceanside Harbor	Copper, Toxicity
	Rainbow Creek	Aluminum, Benthic Community Effects, Iron, Nitrate/Nitrite (Nitrite + Nitrate as N), Nitrogen, Pesticides (Fenpyroximate, Imidacloprid) Phosphorus, Sulfates, TDS, Turbidity
	Rainbow Glen	Iron, Nitrogen, Phosphorus, Sulfates, TDS, Turbidity
	Sandia Creek	Aluminum, Ammonia (unionized), Iron, Manganese, Nitrogen, Selenium, Silver, Sulfates, TDS
	Santa Margarita Lagoon	Eutrophic
	Santa Margarita River (Lower)	Benthic Community Effects, Indicator Bacteria, Nitrogen, Pesticides (Chlorpyrifos), Phosphorus, Toxicity
	Santa Margarita River (Upper)	Benthic Community Effects, Indicator Bacteria, Iron, Manganese, Nitrogen, Pesticides (Bifenthrin, Cyhalothrin [Lambda], Pyrethroids), Phosphorus, TDS, Toxicity, Turbidity
	Temecula Creek	Benthic Community Effects, Copper, Indicator Bacteria, Iron, Manganese, Mercury, Nitrogen, Pesticides (Bifenthrin, Chlorpyrifos, Cyfluthrin, Cyhalothrin [Lambda], Permethrin, Pyrethroids), Phosphorus, Sulfates, TDS, Toxicity, Turbidity
	Via Milpas	Iron, Nitrogen, Phosphorus, Sulfates, TDS, Turbidity
	Willow Glen	Nitrogen, Phosphorus, Sulfates, TDS
Tijuana	Cottonwood Creek above Morena Reservoir	Indicator Bacteria
	Cottonwood Creek below Barrett Reservoir	Selenium

Table 3.1.5-1
IMPAIRED WATER BODIES IN SAN DIEGO COUNTY

Watershed Management Area	Water Body	303(d) Impairment
	Morena Reservoir	Ammonia, Color, Manganese, Nitrogen, pH, Phosphorus
	Pacific Ocean Shoreline, Imperial Beach Pier	Indicator Bacteria, PCBs, Trash
	Pacific Ocean Shoreline, Tijuana HU, at Border	Indicator Bacteria
	Pacific Ocean Shoreline, Tijuana HU, at Cortez Avenue	Indicator Bacteria
	Pacific Ocean Shoreline, Tijuana HU, at end of Seacoast Drive	Indicator Bacteria
	Pacific Ocean Shoreline, Tijuana HU, at Monument Road	Indicator Bacteria
	Pacific Ocean Shoreline, Tijuana HU, at Tijuana River mouth	Indicator Bacteria
	Pine Valley Creek (Lower)	Indicator Bacteria
	Tecate Creek	Nitrogen, Phosphorus, Selenium
	Tijuana River	Ammonia, Ammonia (Unionized), Ammonia as Nitrogen, Benthic Community Effects, Cadmium, Color, Eutrophic, Indicator Bacteria, Low Dissolved Oxygen, Nitrogen, Oxygen (Dissolved), Pesticides (Bifenthrin, Chlorpyrifos, Cypermethrin, Diazinon, Dichlorvos, Malathion, Permethrin, Pyrethroids, other pesticides undefined), Phosphorus, Sedimentation/Siltation, Selenium, Solids, Surfactants, Synthetic Organics, Total Nitrogen as N, Toxicity, Trace Elements, Trash, Turbidity
	Tijuana River, Upper (Cottonwood Creek confluence to 1st border crossing)	Nitrogen, Phosphorus
	Tijuana River Estuary	Eutrophic, Indicator Bacteria, Lead, Low Dissolved Oxygen, Nickel, Pesticides (undefined), Thallium, Toxicity, Trash, Turbidity

Source: SWRCB 2022.

Notes: DDE = Dichlorodiphenydichloroethylene; DDT = Dichlorodiphenyltrichloroethane; HA = hydrologic area; HSA = hydrologic sub area; HU = hydrologic unit; PAHs = polycyclic aromatic hydrocarbon; PCBs = Polychlorinated biphenyls; PCP = Pentachlorophenol; TDS = total dissolved solids

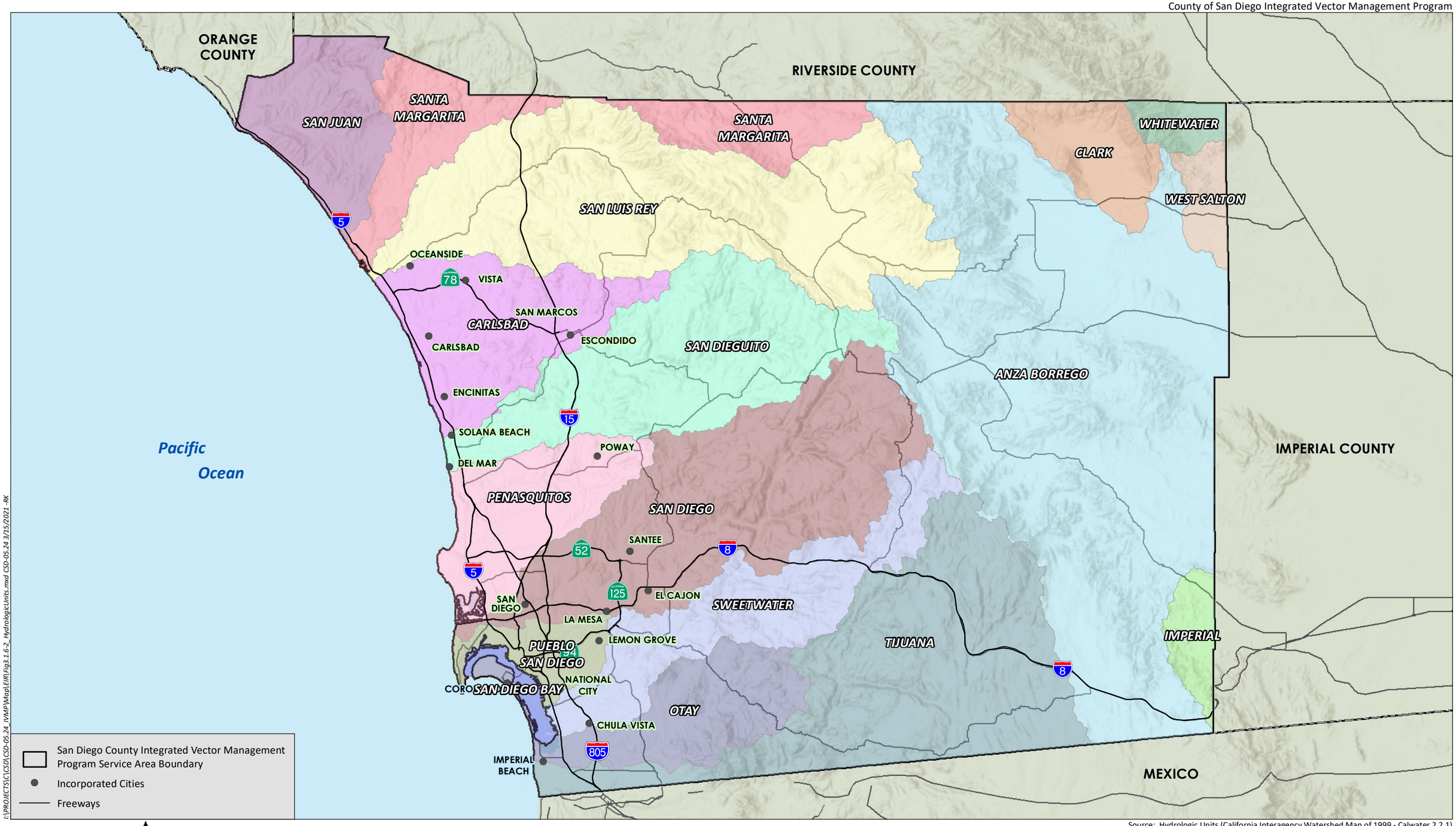


I:\PROJECTS\CLCSD\CSD-05.24_IVMP\Mxd\EIR\Fig3.1.6-1_SurfaceWaters.mxd CSD-05.24 3/15/2021 -RK

Source: Floodplains/Floodways (FEMA)

Surface Waters and Floodplains

Figure 3.1.5-1

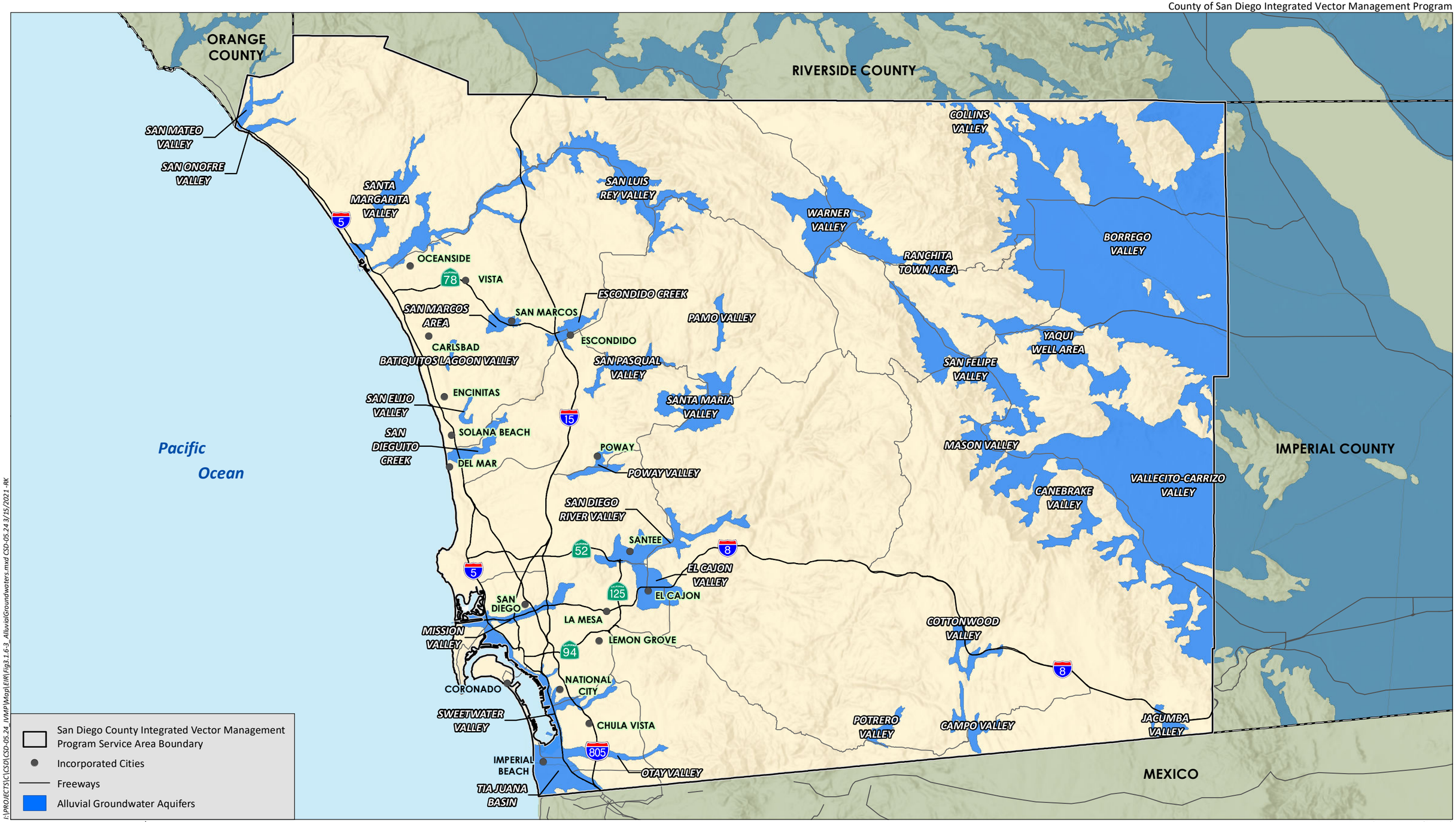


I:\PROJECTS\CLCSD\CSD-05.24_IVMP\Map\EIR\Fig3.1.6-2_HydrologicUnits.mxd CSD-05.24 3/15/2021 -RK

Source: Hydrologic Units (California Interagency Watershed Map of 1999 - Calwater 2.2.1)

Hydrologic Units

Figure 3.1.5-2



Source: Groundwater Basins (SanGIS)

I:\PROJECTS\CLCSD\CSD-05.24_IVMP\Mapl\EIR\Fig3.1.6-3_AlluvialGroundwaters.mxd CSD-05.24 3/15/2021 -RK

Alluvial Groundwater Aquifers

Figure 3.1.5-3

3.1.6 Noise

This section evaluates potential impacts associated with noise resulting from implementation of the Integrated Vector Management Program (IVMP or Proposed Project). It describes the existing ambient noise environment, including the sources of noise, in the county in relation to noise-sensitive land uses (NSLUs). In addition, relevant local noise standards and guidelines are described. This section of the Program Environmental Impact Report (PEIR) is based on the *Noise Technical Report* (HELIX 2021e; Appendix F), which was prepared in conformance with the *County of San Diego Guidelines for Determining Significance – Noise* (County 2009b) and Appendix G of the California Environmental Quality Act (CEQA) Guidelines.

3.1.6.1 *Existing Conditions*

Fundamentals of Noise

All noise level or sound level values presented herein are expressed in terms of decibels (dB), with A weighting (dBA) to approximate the hearing sensitivity of humans. Time-averaged noise levels are expressed by the symbol L_{EQ}, with a specified duration.

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a hearing organ, such as a human ear. Noise is defined as loud, unexpected, or annoying sound.

In the science of acoustics, the fundamental model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receiver contribute to the sound level and characteristics of the noise perceived by the receiver. The field of acoustics deals primarily with the propagation and control of sound.

Continuous sound can be described by frequency (pitch) and amplitude (loudness). A low frequency sound is perceived as low in pitch. Frequency is expressed in terms of cycles per second, or Hertz (Hz) (e.g., a frequency of 250 cycles per second is referred to as 250 Hz). High frequencies are sometimes more conveniently expressed in kilohertz (kHz), or thousands of Hertz. The audible frequency range for humans is generally between 20 Hz and 20,000 Hz.

The amplitude of pressure waves generated by a sound source determines the loudness of that source. A logarithmic scale is used to describe sound pressure level in terms of dBA units. The threshold of hearing for the human ear is about 0 dBA, which corresponds to 20 micro Pascals (mPa).

Because dB are logarithmic units, sound pressure level cannot be added or subtracted through ordinary arithmetic. Under the dB scale, a doubling of sound energy corresponds to a 3 dBA increase. In other words, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dBA higher than one source under the same conditions.

To place noise levels measured in dBA in context, typical noise levels for common outdoor and indoor noise sources are shown in Table 3.1.6-1, *Typical Noise Levels*.

Noise and Vibration-Sensitive Land Uses

NSLUs include areas where an excessive amount of noise would interfere with normal activities. Primary NSLUs include residential uses, public and private educational facilities, hospitals, convalescent homes, hotels/motels, daycare facilities, and passive recreational parks. Noise receptors are individual locations that may be affected by noise.

Land uses in which ground-borne vibration could potentially interfere with operations or equipment, such as research, manufacturing, hospitals, and university research operations are considered "vibration sensitive" (Caltrans 2013a). The degree of sensitivity depends on the specific equipment that would be affected by the ground-borne vibration. In addition, excessive levels of ground-borne vibration of either a regular or an intermittent nature can result in annoyance to residential uses or schools.

Environmental Setting

San Diego County is a diverse region with a variety of land uses, habitats, and climatic and topographic conditions. Because of the diversity of vector habitat within the Service Area[1], vector control activities are conducted in a wide variety of ecosystems, habitat types, and land uses throughout the region. Mosquito control activities are associated with wet areas of all types and sizes, including marshes, ponds, creeks, seasonal wetlands, wastewater ponds, stormwater detention basins, ditches, ornamental fishponds, impound areas, etc., as well as individual homes or commercial buildings. Other vectors such as fleas, ticks, and rodents are more commonly found in rural or undeveloped areas, including campgrounds and agricultural areas.

The existing transportation network consists of freeways, highways, regional arterials, local streets and roads, alternative transportation facilities, commercial and general aviation facilities, seaport facilities, and ports of entry at the U.S./Mexico border. These facilities serve the 18 cities and unincorporated areas of the county in the region.

Land uses within the San Diego County vary between the urban areas along the coast and the more rural areas in the eastern regions. The majority of the land in the unincorporated county is open space or undeveloped, while the majority of land in the incorporated cities is developed. More than 50% of the total land area in the region is not available for urban development, including public lands, dedicated parks and open space, lands constrained for environmental reasons, and military use (SANDAG 2021a). The highest population densities are found in the western (coastal) third of the county, where topography and mild coastal climatic conditions have attracted intensive development. Urban uses tend to consist of residential and commercial uses, as well as small-scale agricultural and industrial uses. Land uses that occur throughout the region include low-density residential and commercial uses, agricultural operations, mineral resources and extraction, and undeveloped habitats, as well as national forest and State park lands. Public and semi-public facilities, recreational areas, and open space conservation areas are located throughout the county.

[1] Service Area is synonymous with Assessment Area, which is defined in the *Engineer's Report* (County 2022a) as the area in which an annual levy provides funding for essential vector control services, including those properties that may request and/or receive direct and more frequent service and are located within the scope of the vector surveillance area. As such, Native American reservation land, as a Sovereign Nation, is excluded from the Service Area along with federally owned lands that receive minimal to no services.

Noise-Generating Activities

Surveillance and monitoring activities include evaluation of mosquito-breeding areas by conducting surveys via ground vehicles, aircraft (including piloted and drones[2]), watercraft, and remote sensing equipment; trapping of mosquitoes and rodents; and testing of collected samples for vector-borne diseases. The reduction of vector-breeding sources primarily involves physical control techniques that eliminate or reduce standing water that functions as mosquito-breeding habitat. These techniques include but are not limited to vegetation management, including trimming and removal of vegetation; removal of sediment; water control; and other maintenance activities.

Source treatment, which includes biological and chemical controls used to manage and reduce vectors, can include the use of natural predators, parasites, or pathogens to reduce immature mosquito numbers (biological controls) and application of pesticides (chemical controls) that target both larvae (larvicides) and adult mosquitoes (adulticides). One of the techniques used for biological control is the application of mosquito fish in artificial mosquito-breeding sources such as ornamental ponds, rain barrels, horse troughs, neglected swimming pools, and spas to reduce the abundance of mosquitoes. Pesticides are applied by handheld equipment, vehicle-mounted equipment, or watercraft by qualified certified technicians or by aircraft (including piloted and drones) when land-based methods are not practicable due to the size of the area to be treated or impediments to access. As described in Section 3.1.6.1, the IVMP and Vector Control Program follow the best management practices (BMPs) described in the *Best Management Practices for Mosquito Control in California* (CDPH 2012), *Best Management Practices for Mosquito Control on California State Properties* (CDPH 2008a), and *California Mosquito-borne Virus Surveillance and Response Plan* (CDPH 2021), which detail best integrated vector management practices for vector control and vector-borne disease prevention.

Equipment Noise Levels

The full list of equipment to be used in the IVMP is provided in Table 3.1.1-5, *Integrated Vector Management Program Equipment Usage*, of this PEIR. Some equipment would not generate elevated noise levels and were therefore excluded from this analysis. Excluded equipment includes hand operated tools, attachments, and other equipment such as battery-powered traps. A list of noise-generating equipment is provided in Table 3.1.6-2, *Integrated Vector Management Program Equipment Noise Levels*. Noise levels are based on manufacturer datasheets, referenced studies, and noise databases. Noise levels are based on a standard modeled distance of 50 feet as a reference and do not assume the incorporation of BMPs or noise attenuation measures that the IVMP may implement.

Traffic Noise

Traffic trips generated by the Proposed Project would primarily result from Certified Vector Control Technicians traveling between County offices and individual vector activity sites that require surveillance or source treatment. As a result, these traffic trips would be short-term and temporary. As described in Section 3.1.6.1, a doubling of noise-generating activity (i.e., traffic) would cause a doubling in noise (a 3 dBA increase), which would be considered a significant increase. Additionally, the types of vehicles that would be used (e.g., pickup trucks and other light

[2] For the purposes of this PEIR, “drone” is intended to generically mean a remotely piloted or unpiloted aircraft. As of this writing, the FAA’s official terminology is Unmanned Aircraft Systems; however, FAA is transitioning toward gender-neutral terminology such as drone operator, certificated remote pilot, model aircraft flyer, and advanced air mobility operator.

vehicles) do not generate noise levels that are louder than other common vehicles. Individual IVMP activities, and therefore the vehicles associated with them, would be dispersed over a large area. As such, noise level increases associated with IVMP-related traffic are anticipated to be less than double any trafficked roadway, and noise levels from the Proposed Project's traffic are not further analyzed.

3.1.6.2 *Regulatory Setting*

Federal

Federal Aviation Administration

Standards related to aircraft are contained in Code of Federal Regulations, Title 14, Aeronautics and Space; Chapter I, Federal Aviation Administration, Department of Transportation; Subchapter C, for fixed-wing aircraft noise and Subchapter H for helicopter noise.

Part 36: Noise Standards: Aircraft Type and Airworthiness Certification

Noise data from aircraft engines, propellers, and combinations of each by aircraft type is well documented because each aircraft type must be certified by the Federal Aviation Administration (FAA) under Part 36 prior to use by general and commercial aviation. The helicopters identified under IVMP for aerial surveillance and source treatment have FAA noise certifications, including Robinson R44 and Bell 206, respectively (14 CFR Part 36, Appendix J).

FAA noise standards for the issuance of certificates for propeller-driven small airplanes and propeller-driven commuter category airplanes do not include airplanes that are designed for agricultural aircraft operations, including those used for dispersing substances intended for pest control.

Part 91: Flight Operations

Aircraft not operating under an Instrument Flight Rules, emergencies, during takeoff or landing, or Part 137 are required to maintain the altitudes listed in Section 91.119, Minimum Safe Altitudes: General (a)–(d). Section 91.119(a), (b), and (c) are provided below.

Except when necessary for takeoff or landing, no person may operate an aircraft below the following altitudes:

(a) Anywhere. An altitude allowing, if a power unit fails, an emergency landing without undue hazard to persons or property on the surface.

(b) Over congested areas. Over any congested area of a city, town, or settlement, or over any open-air assembly of persons, an altitude of 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet of the aircraft.

(c) Over other than congested areas. An altitude of 500 feet above the surface, except over open water or sparsely populated areas. In those cases, the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure.

Section 137.49: Operations over Other than Congested Areas

Notwithstanding Part 91 of this chapter, during the actual dispensing operation, including approaches, departures, and turnarounds reasonably necessary for the operation, an aircraft may be operated over other than congested areas below 500 feet above the surface and closer than 500 feet to people, vessels, vehicles, and structures, if the operations are conducted without creating a hazard to people or property on the surface.

Section 137.51: Operation over Congested Areas: General

(a) Notwithstanding Part 91 of this chapter, an aircraft may be operated over a congested area at altitudes required for the proper accomplishment of the agricultural aircraft operation if the operation is conducted:

(1) With the maximum safety to persons and property on the surface, consistent with the operation, and

(2) In accordance with the requirements of paragraph (i) of this section

(i) No person may operate an aircraft over a congested area except in accordance with the requirements of this paragraph.

(3) Prior written approval must be obtained from the appropriate official or governing body of the political subdivision over which the operations are conducted.

(4) Notice of the intended operation must be given to the public by some effective means, such as daily newspapers, radio, television, or door-to-door notice.

(5) A plan for each complete operation must be submitted to and approved by appropriate personnel of the FAA Flight Standards District Office having jurisdiction over the area where the operation is to be conducted. The plan must include consideration of obstructions to flight, the emergency landing capabilities of the aircraft to be used, and any necessary coordination with air traffic control.

(6) Single engine aircraft must be operated as follows:

(i) Except for helicopters, no person may take off a loaded aircraft, or make a turnaround over a congested area.

(ii) No person may operate an aircraft over a congested area below the altitudes prescribed in Part 91 of this chapter except during the actual dispensing operation, including the approaches and departures necessary for that operation.

(iii) No person may operate an aircraft over a congested area during the actual dispensing operation, including the approaches and departures for that operation, unless it is operated in a pattern and at such an altitude that the aircraft can land, in an emergency, without endangering persons or property on the surface.

(7) Multiengine aircraft must be operated as follows:

(i) No person may take off a multiengine airplane over a congested area except under conditions that will allow the airplane to be brought to a safe stop within the effective length of the runway from any point on takeoff up to the time of attaining, with all engines operating at normal takeoff power, 105 percent of the minimum control speed with the critical engine inoperative in the takeoff configuration or 115 percent of the power-off stall speed in the takeoff configuration, whichever is greater, as shown by the accelerate stop distance data. In applying this requirement, takeoff data is based upon still-air conditions, and no correction is made for any uphill gradient of 1 percent or less when the percentage is measured as the difference between elevations at the end points of the runway divided by the total length. For uphill gradients greater than 1 percent, the effective takeoff length of the runway is reduced 20 percent for each 1 percent grade.

(ii) No person may operate a multiengine airplane at a weight greater than the weight that, with the critical engine inoperative, would permit a rate of climb of at least 50 feet per minute at an altitude of at least 1,000 feet above the elevation of the highest ground or obstruction within the area to be worked or at an altitude of 5,000 feet, whichever is higher. For the purposes of this subdivision, it is assumed that the propeller of the inoperative engine is in the minimum drag position, that the wing flaps and landing gear are in the most favorable positions, and that the remaining engine or engines are operating at the maximum continuous power available.

(iii) No person may operate any multiengine aircraft over a congested area below the altitudes prescribed in Part 91 of this chapter except during the actual dispensing operation, including the approaches, departures, and turnarounds necessary for that operation.

Section 137.53: Operation over Congested Areas: Pilots and Aircraft

(a) General. No person may operate an aircraft over a congested area except in accordance with the pilot and aircraft rules of this section.

(b) Pilots. Each pilot in command must have at least:

(1) 25 hours of pilot-in-command flight time in the make and basic model of the aircraft, at least 10 hours of which must have been acquired within the preceding 12 calendar months.

(2) 100 hours of flight experience as pilot in command in dispensing agricultural materials or chemicals.

(c) Aircraft.

(1) Each aircraft must –

(i) If it is an aircraft not specified in paragraph (c)(1)(ii) of this section, have had within the preceding 100 hours of time in service a 100-hour or annual

inspection by a person authorized by Part 65 or 145 of this chapter, or have been inspected under a progressive inspection system.

(ii) If it is a large or turbine-powered multiengine civil airplane of U.S. registry, have been inspected in accordance with the applicable inspection program requirements of Section 91.409 of this chapter.

(2) If other than a helicopter, it must be equipped with a device capable of jettisoning at least one-half of the aircraft's maximum authorized load of agricultural material within 45 seconds. If the aircraft is equipped with a device for releasing the tank or hopper as a unit, there must be a means to prevent inadvertent release by the pilot or other crewmember.

State

California Government Code, Section 65302(f), states that local governments adopt an Element in their General Plans related to noise and noise exposure. General Plan Noise Elements or equivalent sections provide guidance for land uses and the noise levels within which those land uses would be compatible. The IVMP would be implemented for countywide operations and does not identify or designate land uses as part of its program. Therefore, these State regulations do not apply to the operations identified in the IVMP.

Local

Agency Noise Regulations and Ordinances

The Service Area includes all 18 incorporated cities and unincorporated areas of San Diego County. Cities and counties in California are required to include a Noise Element in their General Plans, including policies intended to achieve noise compatibility between existing and proposed land uses. These policies typically establish average noise levels that are acceptable at different land uses and are intended to guide land use compatibility when new development is proposed. However, the IVMP would continue to comprehensively implement vector control through various techniques with the goal to protect the public from vector-borne disease and public nuisances. Therefore, the IVMP does not propose changes in land use, and noise compatibility land uses will not be further discussed.

Some jurisdictions in the Service Area specify allowable hours for construction and noise levels resulting from construction during certain times of day. Although the IVMP does not include "construction" as part of the Proposed Project, certain activities may cause temporary effects similar to construction activities. Therefore, construction noise standards are used as a method to assess allowable temporary noise. A summary of relevant regulations and conditions to the IVMP are shown in Table 3.1.6-3, *Summary of Applicable Local Temporary Noise Level Limits*.

County of San Diego Noise Ordinance

Sections 36.401 through 36.423 of the County of San Diego Code of Regulatory Ordinances (i.e., Noise Ordinance) discuss further County noise requirements. The purpose of the Noise Ordinance is to regulate noise in the unincorporated area of the county to promote the public health, comfort, and convenience of the county's inhabitants and its visitors. Section 36.408, Hours of Operation of Construction Equipment, states:

Except for emergency work, it shall be unlawful for any person to operate or cause to be operated, construction equipment:

a. Between the hours of 7:00 p.m. and 7:00 a.m.

b. On a Sunday or a holiday. For the purposes of this section a holiday means January 1, the last Monday in May, July 4, the first Monday in September, December 25, and any day appointed by the President as a special national holiday or the Governor of the State as a special State holiday. A person may, however, operate construction equipment on a Sunday or holiday between the hours of 10:00 a.m. and 5:00 p.m. at the person's residence or for the purpose of constructing a residence for himself or herself, provided that the operation of construction equipment is not carried out for financial consideration or other consideration of any kind and does not violate the limitations in Sections 36.409 and 36.410.

Section 36.409, Construction Noise, states that except for emergency work, it shall be unlawful for any person to operate construction equipment or cause construction equipment to be operated that exceeds an average sound level of 75 dBA for an 8-hour period, between 7:00 a.m. and 7:00 p.m., when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is being received.

The minimum measurement period for any measurements is 1 hour. During the measurement period, a measurement must be conducted every minute from a fixed location on an occupied property. The measurements must measure the maximum sound level during each minute of the measurement period. If the sound level caused by construction equipment or the producer of the impulsive noise exceeds the maximum sound level for any portion of any minute, it will be deemed that the maximum sound level was exceeded during that minute.

City of Carlsbad

Section 8.48.010 of the City of Carlsbad Municipal Code states that it shall be unlawful to operate equipment or perform any construction in the erection, demolition, alteration, or repair of any building or structure or the grading or excavation of land during the following hours, except as hereinafter provided:

a. After 6:00 p.m. on any day, and before 7:00 a.m., Monday through Friday, and before 8:00 a.m. on Saturday;

b. All day on Sunday; and

c. On any federal holiday.

City of Chula Vista

Section 17.24.040 of the City of Chula Vista Municipal Code prohibits the use of any tools, power machinery, or equipment or the conduct of construction and building work in residential zones so as to cause noises disturbing to the peace, comfort, and quiet enjoyment of property of any person residing or working in the vicinity between the hours of 10:00 p.m. and 7:00 a.m., Monday through Friday, and between the hours of 10:00 p.m. and 8:00 a.m., Saturday and Sunday, except when the work is necessary for emergency repairs required for the health and safety of any member of the community.

City of Coronado

Section 41.10.040 of the City of Coronado Municipal Code states that it shall be unlawful for any person, between the hours of 7:00 p.m. and 7:00 a.m. of any day or on legal holidays and Sundays to erect, construct, demolish, excavate for, alter, or repair any building or structure in such a manner as to create a disturbing, excessive or offensive noise unless a noise control permit has been applied for and granted beforehand by the Noise Control Officer.

Section 41.10.050 states that it shall be unlawful for any person, including the City of Coronado, to conduct any construction activity so as to cause, at or within the property lines of any property zoned residential, an average sound level greater than 75 dB during a 1-hour period any time between the hours of 7:00 a.m. to 7:00 p.m. unless a variance has been applied for and granted by the Noise Control Officer.

City of Del Mar

Section 9.20.050 of the City of Del Mar Municipal Code states that any person who operates powered construction or landscape equipment and/or who erects, constructs, demolishes, excavates for, alters, or repairs any building or structure within the City of Del Mar in such a manner as to cause noise to be received beyond the boundaries of the property on which the construction work is occurring shall comply with the following:

a. No construction work shall be performed on Sundays or City holidays.

b. No construction work shall be performed before 9:00 a.m. or after 7:00 p.m. on Saturday.

c. No construction work shall be performed before 7:00 a.m. or after 7:00 p.m. on Monday through Friday.

d. Construction activity shall not cause an hourly average sound level greater than 75 decibels on property zoned or used for residential purposes.

City of El Cajon

Section 17.115.130 of the City of El Cajon Municipal Code states that it is unlawful for any person within any residential zone, or within a radius of 500 feet from any residential zone, to operate equipment or perform any outside construction, maintenance or repair work on buildings, structures, landscapes or related facilities, or to operate any pile driver, power shovel, pneumatic hammer, power hoist, leaf blower, mower, or any other mechanical device, between the hours of 7:00 p.m. of 1 day and 7:00 a.m. of the next day in such a manner that a reasonable person of normal sensitivities residing in the area is caused discomfort or annoyance. This shall also apply to any property in the Mixed-Use zone having one or more residential units. This restriction does not apply to emergency work made necessary to restore property to a safe condition, restore utility service, or protect people or property from an imminent exposure to danger.

City of Encinitas

Section 9.32.410 of the City of Encinitas Municipal Code states that except for emergency work, it shall be unlawful for any person, including the City of Encinitas, to operate construction equipment at any construction site on Mondays through Saturdays except between the hours of 7:00 a.m. and 7:00 p.m.

No such equipment or combination of equipment regardless of age or date of acquisition, shall be operated so as to cause noise at a level in excess of 75 dB for more than 8 hours during any 24-hour period when measured at or within the property lines of any property which is developed and used either in part or in whole for residential purposes. In the event that lower noise limit standards are established for construction equipment pursuant to State or federal law, said lower limits shall be used as a basis for revising and amending the noise level limits specified in this subsection.

City of Escondido

Section 17-234 of the City of Escondido Municipal Code states that except for emergency work, it shall be unlawful for any person, including the City of Escondido, to operate construction equipment as follows:

a. It shall be unlawful for any person, including the City of Escondido, to operate construction equipment at any construction site, except on Monday through Friday during a week between the hours of 7:00 a.m. and 6:00 p.m. and on Saturdays between the hours of 9:00 a.m. and 5:00 p.m., and provided that the operation of such construction equipment complies with the requirements of subsection (c) of this section.

b. It shall be unlawful for any person, including the City of Escondido, to operate construction equipment at any construction site on Sundays and on days designated by the President, Governor, or City Council as public holidays.

c. No construction equipment or combination of equipment, regardless of age or date of acquisition, shall be operated so as to cause noise in excess of a one-hour average sound level limit of 75 dBA at any time, unless a variance has been obtained in advance from the City Manager.

City of Imperial Beach

Section 9.32.20 of the City of Imperial Beach Municipal Code states that it is prohibited to use any tools or power machinery so as to cause noise disturbances to anyone working or residing in the vicinity, or in excess of 75 dBA, between the hours of 10:00 p.m. and 7:00 a.m.

City of La Mesa

Section 10.80.100 of the City of La Mesa Municipal Code states that it is unlawful for any person within a residential zone or CN (neighborhood commercial) zone, or within 500 feet of these zones, to operate equipment or perform any outside construction or repair work on buildings, structures, or projects or to operate any pile driver, power shovel, pneumatic hammer, derrick, power hoist, or any other construction-type device between the hours of 10:00 p.m. of 1 day and 7:00 a.m. of the next day, or on Sundays unless a special permit authorizing the activity has been duly obtained from the chief building official.

City of Lemon Grove

Section 9.24.120 of the City of Lemon Grove Municipal Code states that it is unlawful for any person, including the City of Lemon Grove, to operate any single or combination of powered construction equipment at any construction site on Sundays on any day celebrating official state holidays. It is unlawful for any person to operate any single or combination of powered

construction equipment at any construction site on Mondays through Saturdays except between the hours of 7:00 a.m. and 7:00 p.m.

No such equipment, or combination of equipment, regardless of age or date of acquisition, shall be operated so as to cause noise at a level in excess of 75 dBA for more than 8 hours during any 24-hour period when measured at or within the property lines of any property which is developed and used either in part or in whole for residential purposes.

City of National City

Section 2.10.160 of the City of National City Municipal Code states that it is unlawful to operate or to allow or cause the operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work between weekday hours of 7:00 p.m. and 7:00 a.m. or at any time on weekends or holidays.

Noise from construction demolition activities shall not exceed the maximum noise levels at or within the boundaries of affected properties listed in the following schedule at all other times:

> Maximum noise levels for nonscheduled, intermittent, short-term operation (less than 10 days) of mobile equipment shall not exceed 75 dBA for residential areas and 85 dBA for semi-residential and commercial areas. Maximum noise levels for repetitively scheduled and relatively long-term operation (periods of 10 days or more) of stationary equipment shall not exceed 60 dBA for residential areas and 70 dBA for semi-residential/commercial areas.

City of Oceanside

The City of Oceanside does not set construction noise limits in its Municipal Code. The General Plan Noise Element for the City of Oceanside, however, states that noise generated by construction activity shall not exceed 85 dBA when measured 100 feet from the source. Construction activity shall not occur between 8:00 p.m. and 7:00 a.m. that generates noise levels exceeding 50 dBA at any property line.

City of Poway

Section 8.08.100 of the City of Poway Municipal Code states that it is unlawful for any person, including the City of Poway, to operate any single or combination of powered construction equipment at any construction site before 7:00 a.m. or after 5:00 p.m. on Mondays through Saturdays or at any time on a Sunday or holiday.

No such equipment, or combination of equipment regardless of age or date of acquisition, shall be operated so as to cause noise at a level in excess of 75 dB for more than 8 hours during any 24-hour period when measured at or within the property lines of any property that is developed and used either in part or in whole for residential purposes.

City of San Diego

Section 59.5.0404 of the San Diego Municipal Code states that it shall be unlawful for any person, including the City of San Diego, to conduct any construction activity so as to cause, at or beyond the property lines of any property zoned residential, an average sound level greater than 75 dBA during the 12-hour period from 7:00 a.m. to 7:00 p.m.

City of San Marcos

The City of San Marcos has adopted the County of San Diego Noise Ordinance for the purpose of controlling excessive noise levels, including noise from construction activities.

City of Santee

Section 8.12.290 of the City of Santee Municipal Code states that it shall be unlawful for construction equipment to be operated on Sundays and holidays or between the hours of 7:00 p.m. to 7:00 a.m., Monday through Saturday. If construction is to occur between the hours of 7:00 a.m. to 7:00 p.m., Monday through Saturday, construction equipment shall not exceed 75 dBA for more than 8 hours during any 24-hour period when measured at the property line of a residential use.

City of Solana Beach

Section 7.34.100 of the City of Solana Beach Municipal Code states that construction noise levels are not to exceed 75 dBA for more than 8 hours during any 24-hour period when measured at or within property lines of any property which is developed and used either in part or in whole for residential purposes.

Except for emergency work or other exceptions granted by the City Manager, construction noise would be limited to the following hours:

a. Before 7:00 a.m. or after 7:00 p.m., Monday through Friday, and before 8:00 a.m. or after 7:00 p.m. on Saturday;

b. All day on Sunday, New Year's Day, Martin Luther King Day, President's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, and Christmas Day.

City of Vista

The City of Vista has adopted the County of San Diego Noise Ordinance for the purpose of controlling excessive noise levels, including noise from construction activities.

Integrated Vector Management Program Best Management Practices

The IVMP follows the BMPs described in State guidance documents, such as the *Best Management Practices for Mosquito Control in California* (CDPH; 2012), *Best Management Practices for Mosquito Control on California State Properties* (CDPH 2008a), and *California Mosquito-borne Virus Surveillance and Response Plan* (CDPH 2021), which detail best integrated vector management practices for vector control and vector-borne disease prevention. In addition, the County integrates BMPs into the IVMP serving as a comprehensive management framework for implementation of individual activities. BMPs implemented as part of the IVMP demonstrate the County's commitment to avoid or minimize impacts to the maximum extent feasible. The following BMPs have been developed by the VCP in combination with the above-referenced sources and will be implemented to reduce noise levels:

- A12: For operations that require large-scale treatments that may occur in proximity to homes or heavily populated, high traffic, or other sensitive areas (including bee farms) or

other control activities that may generate noise expected to be of concern to the public, the VCP will notify the public and/or affected properties (approximately 24 to 48 hours in advance when possible) via the following communication protocols as appropriate:

- a) Provide Advance Notice. Depending on the nature and magnitude of the activities, information will be provided using press releases, social media posts, County website, mailers, hand-delivered flyers, posted signs, and/or emails. Public agencies, such as environmental health and agricultural agencies, emergency service providers, local governments, law enforcement, and airports, may also be notified of the nature and duration of the activities.

- b) Provide Mechanism to Address Questions. The County offers various methods for customers to communicate with VCP staff via online tools, email, telephone, and/or postal mail during all times of VCP activities to respond to service calls and address public inquiries.

- B3: Vehicles will only be driven on existing roadways, access roads, and existing unpaved access paths. Vehicles driven on levees to travel near aquatic areas (such as tidal marshes, sloughs, or channels) for surveillance or treatment activities will travel at speeds slow enough to avoid or minimize noise and the production of dust, typically 15 miles per hour or less.

- B7: Operation of noise-generating equipment (e.g., construction equipment, woodchipper, pesticide application equipment) will abide by the time-of-day restrictions established by the applicable local jurisdiction's Municipal Code or ordinance (e.g., city or county) if such noise activities would exceed acceptable noise levels for sensitive receptors (e.g., residential land uses, schools, hospitals, places of worship). All motorized equipment will be shut down when not in use.

- B8: Engine idling times will be minimized by shutting off equipment and vehicles when not in use to the extent feasible.

- B9: Vehicles and equipment will be maintained in accordance with manufacturer's specifications, including mufflers, engine operation, and tire inflation pressure to minimize rolling resistance.

- B10: Vegetation trimming or removal, when necessary to provide access to vector habitat for surveillance and control activities, will be conducted by hand using handheld tools rather than gas-powered equipment or heavy machinery to minimize negative environmental effects. Vegetation trimming or removal activities will be conducted outside the general bird breeding season (February 15 to September 15, including riparian for general birds; January 15 to July 15 for raptors) to the greatest extent feasible.

- B14: Where heavy equipment or machinery is necessary, measures will be taken, such as reducing turns by track-type vehicles, taking a minimum number of passes with equipment, identifying multiple points of entry, driving vehicles at low speed, and avoiding or minimizing operating on open mud and other soft areas.

3.1.6.3 *Analysis of Project Effects and Determination as to Significance*

The *County of San Diego Guidelines for Determining Significance – Noise* (County 2009b) provides guidance for evaluating impacts related to noise. However, these guidelines have not been updated to reflect the current CEQA Appendix G questions. Therefore, the impact analysis that follows relies on Appendix G of the CEQA Guidelines. Based on guidance provided in Appendix G of the CEQA Guidelines, the Proposed Project would result in a significant impact if it would lead to any of the following:

1. Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in local General Plans, Noise Ordinances, or other applicable standards;

2. Generate excessive ground-borne vibration or ground-borne noise levels;

3. Expose people residing or working in the project area to excessive noise levels, for those projects located within the vicinity of a private airstrip or 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.

Cities and counties in California are required to include Noise Elements in their General Plans, which include policies intended to achieve noise compatibility between land uses. These policies typically establish average noise levels that are acceptable at different land uses. The standards established in the noise elements for the Service Area are intended to establish land use compatibility for planning purposes and are not intended to address temporary and sporadic sources of noise such as the IVMP activities. Therefore, noise compatibility discussions in General Plan Noise Elements are not discussed further in this analysis.

Noise-generating activities associated with the IVMP would include mobile equipment that is not meant to be stationary or permanent. Noise from the IVMP would be temporary and would last only for the duration of each activity. No potential exists to produce permanent increases in noise as a result of the IVMP, and therefore, this issue is not discussed further.

Noise levels are addressed at a programmatic level based on the types of equipment that may be used during surveillance and monitoring, source reduction, and source treatment activities. Due to the programmatic nature of this document, the exact locations and extent of all activities to be conducted under the IVMP are not known at this time. As such, a site-specific evaluation of noise sources and potential effects is beyond the scope of this programmatic evaluation.

The IVMP would be implemented within a service area that includes all 18 incorporated cities and unincorporated areas of San Diego County. IVMP activities would be short-term and temporary in nature. Therefore, although the IVMP does not include construction of physical structures as part of the Proposed Project, certain activities would cause temporary effects similar to construction activities. Therefore, construction noise standards will be used as a method to describe allowable temporary noise. As described in Section 3.1.6.2 and shown in Table 3.1.6-3, Noise Ordinances vary throughout the county depending on the jurisdiction. For the jurisdictions that establish a noise level limit for construction, all except one use a volume of 75 dBA. Eight jurisdictions allow this level to be calculated on the basis of a 1-hour average, five jurisdictions (including the County) use an 8-hour average, and one (the City of San Diego) uses a 12-hour average to calculate the limit. The 1-hour average is the most restrictive, as it limits the amount of quieter time included in the calculation that would potentially lower the overall average noise level.

Because most of the jurisdictions use a 1-hour average, and because this is the most conservative, this section uses the threshold of 75 dBA L_{EQ} (1 hour) to assess significance for individual IVMP activities.

Impulsive noise is defined as any single noise event or a series of single noise events, which causes a high peak noise level of short duration (1 second or less), measured at a specific location. Impulsive noise is generated by activities such as pile impact driving and blasting. Due to the nature of the IVMP, activities that would generate impulsive noise would not occur under the Proposed Project, and impulsive noise is not discussed further.

Excessive Noise Levels

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would have a potentially significant environmental impact if it would generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Proposed Project in excess of standards established in local General Plans, Noise Ordinances, or other applicable standards.

Impact Analysis

The following sections analyze noise impacts for several components of the Proposed Project: surveillance and monitoring, source reduction (i.e., physical control), and source treatment (i.e., biological and chemical controls). Since these are the only components of the Proposed Project that would emit noise, there would be no impact from public education and outreach or disease diagnostics activities and, therefore, are not discussed further in this section.

Vector Control Equipment

BMPs would be implemented restricting the operation of noise-generating equipment to time-of-day limits established by the applicable local jurisdiction's Municipal Code or ordinance. As shown in Table 3.1.6-3, jurisdictions identify both noise level limits and time-of-day limits for construction and short-term construction-related equipment.

Vector control equipment would be used for individual surveillance and monitoring, source reduction, and source treatment activities. Equipment used includes pumps, hand sprayers and foggers, vehicle-mounted sprayers, vehicles, and construction equipment such as excavators, dump trucks, and other earthmoving equipment. As shown in Table 3.1.6-2, at 50 feet, noise levels for individual equipment have the potential to exceed the 75 dBA L_{EQ} (1 hour) limit if IVMP equipment were to operate continuously and uninterrupted during a given hour. However, due to the nature of individual IVMP activities, noise from vector control equipment would be periodic, not continuous, and noise-generating activities would be limited to brief periods of time spread out over multiple days in multiple locations. Operations would therefore minimize the amount of time any sensitive receptor was exposed to increased noise. In addition, operations at individual locations would be mobile, temporary, sporadic, and used at various distances from individual NSLUs. As a result, noise levels are not anticipated to exceed significance thresholds.

Furthermore, BMPs would be implemented that would reduce noise further. Applicable BMPs include the requirement to notify nearby properties prior to construction-type activities, speed reduction measures for vehicles, restrictions on the operation of noise-generating equipment during applicable hours, requirements of equipment to be turned off when not in use, enforcing of

maintenance of tools and equipment, and use of handheld tools for vegetation removal and trimming. Therefore, short-term noise level increases generated by vector control equipment with the incorporation of applicable BMPs would be less than significant.

Aircraft

Aircraft are anticipated to be used for aerial surveillance and source treatment (i.e., chemical control application) within difficult-to-access areas that are generally in undeveloped areas away from NSLUs. Most aircraft operations associated with source treatment would take place over open space areas that are not heavily populated. Although some of the aerial activity could occur over all land use types, the impacts on any one location would be minimized because the aircraft would continuously move to new locations. Fixed-wing aircraft would not have the capability to remain stationary over any specific location. Due to the operational requirements of aerial source treatment, helicopters would also not remain stationary over specific locations. As a result, short-term noise level increases generated by aircraft would be less than significant due to the short periods of time aircraft would be in use.

Construction Equipment

BMPs would be implemented restricting the operation of noise-generating equipment to time-of-day limits established by the applicable local jurisdiction's Municipal Code or ordinance. As shown in Table 3.1.6-3, jurisdictions identify both noise level limits and time-of-day limits for construction and short-term construction-related equipment.

Traditional construction activities, such as demolition, blasting, pile driving, or substantial compacting activities for development, are not included in the IVMP. However, IVMP activities that involve standard construction equipment, such as ground disturbance (e.g., grading), vegetation management, water control, and other maintenance activities, may be required for specific circumstances during implementation of the IVMP. As a result, large-scale construction equipment is not anticipated, but the use of an excavator, dump truck, and other earthmoving equipment may be used for operations associated with physical activities. As such, those activities would be temporary and would involve enhancing the environment to minimize vegetation overgrowth or maximizing open water areas to provide additional predator habitat and promote water circulation and/or wave action. Construction equipment would be mobile, resulting in fluctuating noise levels as the equipment travels around the site. Mobile construction equipment is not typically used at full power for the entire duration of construction activities each day, and construction equipment would not be in operation for the entire construction time frame (e.g., 7:00 a.m. to 7:00 p.m.). At 100 feet, a dozer and dump truck would generate a combined noise level of 72.8 dBA L_{EQ} (1-hour), which is less than established municipal thresholds of 75 dBA L_{EQ}.

BMPs would be implemented that would further reduce noise generated by construction equipment. Applicable BMPs include the requirement to notify nearby properties prior to construction-type activities, speed reduction measures for vehicles, restricting the operation of noise-generating equipment during applicable hours, requiring equipment to be turned off when not in use, and the maintenance of tools and equipment. Through the application of these BMPs, short-term noise level increases generated by construction equipment would be less than significant.

Excessive Vibration

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would have a significant impact if it would result in the exposure of vibration-sensitive uses to ground-borne vibration and noise equal to or in excess of the levels established by local General Plans, Noise Ordinances, or other applicable standards.

Impact Analysis

The IVMP does not propose equipment that would be a significant source of ground-borne vibration such as blasting, pile driving, or substantial compacting activities. The IVMP does not propose vibration sources that would impact existing or foreseeable future NSLUs, nor does it include new development that would create or locate NSLUs that would be impacted by ground-borne vibration and noise. Furthermore, construction and operational activities implemented under IVMP shall conform to the requirements of the applicable Noise Element and/or Municipal Code governing acceptable noise as well as ground-borne vibration levels and construction activity hours. Therefore, there would be no impacts due to ground-borne vibration.

Airport Noise Exposure

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would have a significant impact on the environment if it would be 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, and therefore result in excessive noise for people residing or working in the Service Area.

Impact Analysis

The Proposed Project includes implementation of the countywide IVMP. Activities included in the IVMP would include vector control through various techniques, including surveillance and monitoring, source reduction (i.e., physical control), and source treatment (i.e., biological and chemical controls). Individual activities would occur in a wide range of locations throughout the county, including within an airport land use plan or within 2 miles of a public airport or public use airport where such a plan has not been adopted. However, the IVMP does not propose changes in land use or improvements that would expose people to excessive noise levels associated with proximity to a public airport or private airstrip. Therefore, there would be no impacts to airport land use noise compatibility.

3.1.6.4 *Cumulative Impact Analysis*

Because noise is localized, the geographic scope of cumulative impact analysis for noise is the immediate vicinity of each IVMP activity within San Diego County. Cumulative projects include those projects adjacent to IVMP work areas. As with cumulative projects, the Proposed Project would be required to comply with applicable local regulations for noise.

Excessive Noise Levels

For a project to result in a cumulative noise impact, two projects would need to be constructed simultaneously and be in physical proximity to an NSLU for the noise levels to compound. As noted earlier, the Proposed Project would incorporate BMPs that would ensure that the noise level limit does not exceed a 1-hour average of 75 dBA, which is consistent with the majority of the jurisdictions included in this program and is more restrictive than jurisdictions that use an 8-hour average or 12-hour average or establish no construction noise limit at all. Therefore, while there is a potential for a cumulative construction noise impact to result if two or more projects are constructed at the same time and in proximity to an NSLU, the Proposed Project's contribution to that impact would not be cumulatively considerable.

Excessive Vibration

Similar to noise levels, for a project to result in a cumulative vibration impact, two projects would need to be constructed simultaneously and be in close physical proximity to a vibration-sensitive land use for the vibration levels to compound. As noted earlier, implementation of the IVMP would not result in vibration impacts and the Proposed Project's contribution to cumulative vibration impact would not be cumulatively considerable.

Airport Noise Exposure

A cumulative noise impact would occur if cumulative projects, when combined would result in the exposure of NSLUs to excessive noise from a public or private airport. The Proposed Project does not propose changes in land use or improvements that would expose people to excessive noise levels associated with proximity to a public airport or private airstrip. The Proposed Project's contribution to that impact would therefore not be cumulatively considerable.

3.1.6.5 *Significance of Impacts Prior to Mitigation*

The Proposed Project would result in elevated noise levels during implementation of the IVMP. There would be no impact from the IVMP's public education and outreach, and disease diagnostics activities. Noise levels during implementation of the Proposed Project would increase during the IVMP's surveillance and monitoring, source reduction, and source treatment activities due to the use of equipment and vehicles. As detailed above, the Proposed Project would implement the BMPs described in section 3.1.6.2, *Integrated Vector Management Program Best Management Practices* and in Chapter 1, *Project Description*, of this PEIR. Therefore, impacts to noise from implementation of the Proposed Project's surveillance and monitoring, source reduction, and source treatment activities would be less than significant.

3.1.6.6 *Mitigation Measures*

Because the Proposed Project would not result in significant impacts, no mitigation is required.

3.1.6.7 *Conclusion*

As described above, IVMP activities are not anticipated to result in direct project or cumulative impacts to noise.

Table 3.1.6-1
TYPICAL NOISE LEVELS

Common Outdoor Noise	Noise Level (dBA)	Common Indoor Noise
	110	Rock band
Jet flyover at 1,000 feet		
	100	
Gas lawn mower at 3 feet		
Diesel truck at 50 feet at 50 mph	**90**	
		Food blender at 3 feet
Noisy urban area, daytime	**80**	Garbage disposal at 3 feet
Gas lawn mower at 100 feet	**70**	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	**60**	
		Large business office
Quiet urban area, daytime	**50**	Dishwasher in next room
Quiet urban area, nighttime	**40**	Theater, large conference room (background)
Quiet suburban area, nighttime		
	30	Library
Quiet rural area, nighttime		Bedroom at night, concert hall (background)
	20	
		Broadcast/recording studio
	10	
	0	

Source: Caltrans 2013b.
Notes: dBA = A-weighted decibel; mph = miles per hour

Table 3.1.6-2
INTEGRATED VECTOR MANAGEMENT PROGRAM EQUIPMENT NOISE LEVELS

Equipment Name	Equipment Type	Distance from Receiver	dBA L_{EQ} (1 hour)
Pond Pump – WB15	Pond Pump	50 feet	70
Pond Pump – Electric Pump	Pond Pump	50 feet	70
Pioneer ULV (battery-powered)	Hand Sprayer/Fogger	50 feet	<45
Arrow ULV (gas)	Hand Sprayer/Fogger	50 feet	87
Colt ULV (gas)	Hand Sprayer/Fogger	50 feet	87
Skid Sprayer	Hand Sprayer/Fogger	50 feet	<45
Skid Sprayer (small plastic)	Hand Sprayer/Fogger	50 feet	<45
Maruyama	Granular Applicator	50 feet	<45
Mozzie	Vehicle-Mounted Sprayer	50 feet	87
DynaJet	Vehicle-Mounted Sprayer	50 feet	87
Buffalo Turbine	Vehicle-Mounted Sprayer	50 feet	87
Boat Motor – Four Stroke Engine	Motor	50 feet	85
Boat Motor – Battery-Powered Electric Motor	Motor	50 feet	70
Helicopter	Aircraft	400 feet	87
LECO ULV 1600-DP	Vehicle-Mounted Sprayer	50 feet	78
Piper Chieftain	Aircraft (fixed-wing)	N/A[1]	N/A[1]
Pickup Truck at 35 mph[2]	Vehicle	50 feet	53
Excavator[3]	Construction Equipment	100 feet	71
John Deere 6420 with Flail Mulch Mower S900*	Construction Equipment	50 feet	80
Caterpillar D3*	Construction Equipment	50 feet	62
Salsco 6” 6235BXT*	Woodchipper	50 feet	55
Marshmaster MM-1LX*	Aquatic Weed Harvester	50 feet	61

Source: Appendix F.

Notes: dBA = A-weighted decibel; L_{EQ} = time-averaged level; mph = miles per hour; ULV = Ultra Low Volume

[1] Not Applicable – agricultural aircraft are exempt under 14 CFR Part 36 1(a)(2) and 36.1583. Noise from fixed-wing aircraft used for agricultural operations, including pest control applications, is not regulated by the FAA.

[2] Noise level conservatively based on 100 passes of a singular receiver at 35 mph within a given hour.

[3] Noise level based on Roadway Construction Noise Model.

* Equipment/vehicle is not part of VCP’s existing inventory (County 2020b) but is proposed under IVMP.

Table 3.1.6-3
SUMMARY OF APPLICABLE LOCAL TEMPORARY NOISE LEVEL LIMITS

Jurisdiction	Applicable Hours[1]	Temporary Noise Level Limit[2]
County of San Diego	7:00 a.m. to 7:00 p.m.	75 dBA L_{EQ} (8 hour)
City of Carlsbad	7:00 a.m. to 6:00 p.m.	N/A
City of Chula Vista	7:00 a.m. to 10:00 p.m.	N/A
City of Coronado	7:00 a.m. to 7:00 p.m.	75 dBA L_{EQ} (1 hour)
City of Del Mar	7:00 a.m. to 7:00 p.m.	75 dBA L_{EQ} (1 hour)
City of El Cajon	7:00 a.m. to 7:00 p.m.	N/A
City of Encinitas	7:00 a.m. to 7:00 p.m.	75 dBA L_{EQ} (8 hour)
City of Escondido	7:00 a.m. to 6:00 p.m.	75 dBA L_{EQ} (1 hour)
City of Imperial Beach	7:00 a.m. to 10:00 p.m.	75 dBA L_{EQ} (1 hour)
City of La Mesa	7:00 a.m. to 10:00 p.m.	N/A
City of Lemon Grove	7:00 a.m. to 7:00 p.m.	75 dBA L_{EQ} (8 hour)
City of National City	7:00 a.m. to 7:00 p.m.	75 dBA L_{EQ} (1 hour)[3]
City of Oceanside	7:00 a.m. to 8:00 p.m.	85 dBA L_{EQ} (1 hour)[4]
City of Poway	7:00 a.m. to 5:00 p.m.	75 dBA L_{EQ} (8 hour)
City of San Diego	7:00 a.m. to 7:00 p.m.	75 dBA L_{EQ} (12 hour)
City of San Marcos[5]	7:00 a.m. to 7:00 p.m.	75 dBA L_{EQ} (8 hour)
City of Santee	7:00 a.m. to 7:00 p.m.	75 dBA L_{EQ} (1 hour)
City of Solana Beach	7:00 a.m. to 7:00 p.m.	75 dBA L_{EQ} (1 hour)
City of Vista[5]	7:00 a.m. to 7:00 p.m.	75 dBA L_{EQ} (8 hour)

Notes: dBA = A-weighted decibel; L_{EQ} = time-averaged level

[1] Applicable hours indicate the hours when construction noise is not prohibited, per each jurisdiction's Municipal Code. Hours may vary by day of week and by holidays, depending on jurisdiction. Hours listed in this table apply to typical weekdays.

[2] N/A = not applicable; indicates that the jurisdiction has not set a numerical construction noise standard.

[3] The City of National City sets different noise levels for semi-residential and for stationary equipment. This report anticipates the individual IVMP activities would fall under the limits for short-term mobile equipment at residential locations.

[4] The City of Oceanside does not set construction noise limits in its Municipal Code. The General Plan Noise Element sets the 85 dBA limit when measured at 100 feet.

[5] The City of San Marcos and City of Vista adopted the County Noise Ordinance in their Municipal Codes.

This page intentionally left blank

3.1.7 Transportation

This section of the Program Environmental Impact Report (PEIR) assesses general transportation conditions in San Diego County and identifies potential transportation impacts that could occur as a result of implementation of the Integrated Vector Management Program (IVMP or Proposed Project) in accordance with Appendix G of the California Environmental Quality Act (CEQA) Guidelines and the *County of San Diego Transportation Study Guidelines* (County 2022d).

3.1.7.1 *Existing Conditions*

Regional Overview

The San Diego regional transportation system is a complex and expansive multimodal network that facilitates the movement of people throughout the region for the purposes of traveling to places of employment, education, and recreation and for personal needs. The transportation network is also essential for the movement of goods and continued economic development. The regional roadway system is an interconnected network of interstates, freeways, highways, toll roads, arterial streets, and local streets. Nonmotorized transportation facilities generally include walkways and bikeways.

The San Diego Association of Governments (SANDAG) serves as the regional planning agency for the county and is a key partner with the County, along with other State, regional, and public agencies, in planning and funding roadways and other components of the transportation network in the county. SANDAG serves as the forum for decision-making on regional issues such as growth, transportation, land use, the economy, and the environment. SANDAG is governed by a Board of Directors composed of mayors, council members, and supervisors from each of the San Diego region's 18 local governments.

The Service Area includes all 18 incorporated cities and unincorporated areas of San Diego County. The jurisdictions in the county include the following: Carlsbad, Chula Vista, Coronado, Del Mar, El Cajon, Encinitas, Escondido, Imperial Beach, La Mesa, Lemon Grove, National City, Oceanside, Poway, San Diego, San Marcos, Santee, Solana Beach, and Vista. The County has no jurisdiction over roads within city boundaries. However, when applicable, the County's Mobility Element road network has been coordinated with adjacent cities to ensure consistency to the extent feasible. With the exception of State roads and highways, the County is responsible for the operation and maintenance of the public roadway system in unincorporated areas of San Diego County. The County's Mobility Element and other relevant regional plans are discussed in greater detail in Section 3.1.7.2, *Regulatory Setting*.

Roadway Network

The existing roadway network in San Diego County includes freeways, expressways, prime arterials, major roads, boulevards, collector roads, rural light collector roads, and rural mountain roads. The regional roadway network is a complex system that is regulated, maintained, and planned by numerous jurisdictions and agencies, such as various cities, the County, California Department of Transportation (Caltrans), Federal Highway Administration, tribal governments, SANDAG, and others.

3.1.7.2 *Regulatory Setting*

Transportation is guided by plans and policies developed by the federal government, State of California, and regional transportation programs. Applicable regulations that pertain to the Proposed Project are described below.

Federal

Americans with Disabilities Act of 1990

The Americans with Disabilities Act (ADA) prohibits discrimination based on disability in employment, State and local government, public accommodations, commercial facilities, transportation, and telecommunications. To be protected by the ADA, one must have a disability or have a relationship or association with an individual with a disability. An individual with a disability is defined by the ADA as a person who has a physical or mental impairment that substantially limits one or more major life activities, a person who has a history or record of such impairment, or a person who is perceived by others as having such impairment. The ADA does not specifically name all of the impairments that are covered. Numerous standards and guidance documents have been developed to facilitate the proper implementation of the ADA.

Highway Capacity Manual

The Highway Capacity Manual 6, prepared by the federal Transportation Research Board, is the result of a collaborative multiagency effort between the Transportation Research Board, Federal Highway Administration, and American Association of State Highway and Transportation Officials. The Highway Capacity Manual 6 contains concepts, guidelines, and computational procedures for the capacity and quality of service of various highway facilities, including freeways, signalized and unsignalized intersections, rural highways, and the effects of transit, pedestrians, and bicycles on the performance of these systems.

Title 23, Code of Federal Regulations

The Code of Federal Regulations, Title 23, Section 450.220, requires each state to carry out a continuing, comprehensive, and intermodal statewide transportation planning process. This planning process must include the development of a Statewide Transportation Plan and Transportation Improvement Program that facilitates the efficient, economic movement of people and goods in all areas of the state.

State

California Department of Transportation

Caltrans is responsible for planning, designing, building, operating, and maintaining California's State road system. Caltrans sets standards, policies, and strategic plans that aim to do the following: (1) provide the safest transportation system in the nation for users and workers, (2) maximize transportation system performance and accessibility, (3) efficiently deliver quality transportation projects and services, (4) preserve and enhance California's resources and assets, and (5) promote quality service. Caltrans has the discretionary authority to issue special permits for the use of California State highways for other than normal transportation purposes. Caltrans also reviews all requests from utility companies, developers, volunteers, nonprofit organizations, and others desiring to conduct various activities within the California Highway right-of-way.

In July 2020, Caltrans released the Interim Land Development and Intergovernmental Review Safety Review Practitioners Guidance, which provides guidance for a simplified safety analysis for all land use projects and land use plans in or near a State facility. The guidance does not establish thresholds of significance for determining safety impacts under CEQA but suggests that judgment should be used when reviewing data for the safety analysis.

Senate Bill 743

In September 2013, the Governor's Office signed Senate Bill (SB) 743 into law, starting a process that fundamentally changed the way transportation impact analyses are conducted under CEQA. In response to the passage of SB 743, the Governor's Office of Planning and Research was required to amend the CEQA Guidelines to provide a new approach to evaluating traffic impacts. These changes include the elimination of auto delay, level of service (LOS), and similar measurements of vehicular roadway capacity and traffic congestion as the basis for determining significant impacts. The mandate of SB 743 was to devise an alternative traffic impact evaluation criterion that would promote the reduction of greenhouse gas (GHG) emissions and foster the development of multimodal transportation networks and a diversity of land uses.

SB 743 further suggested that a measurement such as vehicle miles traveled (VMT) would be an appropriate method to evaluate traffic impacts (CEQA Guidelines, Section 15064.3). VMT is defined as a measurement of miles traveled by vehicles within a specified region and for a specified time period. VMTs are calculated based on individual vehicle trips generated and their associated trip lengths. The justification for this paradigm shift is that auto delay/LOS impacts may lead to improvements that increase roadway capacity and therefore sometimes induce more traffic and GHG emissions as a result. In contrast, constructing projects in VMT-efficient locations assists California in meeting GHG emissions targets. In December 2018, the California Natural Resources Agency certified and adopted the CEQA Guidelines update, including Section 15064.3 implementing Senate Bill 743.

Local

San Diego Association of Governments

SANDAG, as the Regional Transportation Commission and federally designated Metropolitan Planning Organization for the San Diego region, builds consensus, develops strategic plans, obtains and allocates resources, and provides information on a broad range of topics pertinent to the region's quality of life. As a regional Council of Governments, voting members of the association consist of the County and the 18 cities in the region. SANDAG advisory members include Imperial County, Caltrans, Metropolitan Transit System, North County Transit District, U.S. Department of Defense, San Diego Unified Port District, San Diego County Water Authority, Southern California Tribal Chairmen's Association, and the country of Mexico. In addition to SANDAG's Regional Transportation Plan/Sustainable Communities Strategy, the following plans provide transportation-related guidance for the region: *San Diego Forward: The Regional Plan*, *Regional Bicycle Plan*, and *Congestion Management Plan* (CMP).

SANDAG's San Diego Forward: The Regional Plan

SANDAG's *San Diego Forward: The Regional Plan* (*Regional Plan*) is the blueprint for a regional transportation system, serving existing and projected residents and workers in the San Diego region. The SANDAG Board of Directors adopted the final *Regional Plan* on December 10, 2021.

The *Regional Plan* includes a vision for transportation that is informed by five key strategies for mobility, collectively known as the 5 Big Moves: Complete Corridors, Transit Leap, Mobility Hubs, Flexible Fleets, and Next Operating System. The 5 Big Moves proposed by SANDAG are summarized below. The Complete Corridors strategy addresses the regional network of major roads and highways with an emphasis on travel choices and use of technology to manage how highways and major roads are used. The roadway network would connect to the regional bike network. The Transit Leap strategy envisions creating a complete network of high-speed, high-capacity, and high-frequency transit services that connect major residential areas with employment centers and attractions throughout the region, including Mobility Hubs. The Mobility Hubs strategy addresses communities with a high concentration of people, destinations, and travel choices to offer travel options and supporting infrastructure that enhance connections to high-quality transit. Mobility Hubs can span 1, 2, or a few miles based on community characteristics and are uniquely designed to fulfill a variety of travel needs while strengthening sense of place. The Flexible Fleets strategy addresses shared mobility services such as on-demand rideshare, bikeshare, and scootershare. The Next Operating System strategy envisioned by SANDAG would empower transportation officers to better manage supply and demand using information from sources like passenger vehicles, delivery trucks, e-bikes, and scooters in a centralized data hub.

Congestion Management Plan

The purpose of the State-mandated CMP is to monitor roadway congestion and assess the overall performance of the region's transportation system. Based on this assessment, the CMP contains specific strategies and improvements to reduce traffic congestion and improve the performance of a multimodal transportation system (SANDAG 2018). SANDAG provided regular updates for the CMP from 1991 through 2008. However, in October 2009, the San Diego region elected to be exempt from the State-mandated CMP. Since this decision, SANDAG has been meeting the federal congestion management provisions through existing SANDAG planning and performance monitoring activities, such as the *Regional Transportation Plan* and other multimodal performance monitoring efforts.

County of San Diego Transportation Study Guidelines

As discussed above, SB 743 changed the way that public agencies evaluate transportation impacts under CEQA. A key element of this law is the elimination of using auto delay, LOS, and other similar measures of vehicular capacity or traffic congestion as a basis for determining significant transportation impacts under CEQA. VMT is now the primary metric for evaluating transportation impacts under CEQA. VMT measures the number of vehicle trips generated and the length or distance of those trips. Typically, projects that are farther from other complementary land uses, such as jobs and commercial activities and in areas without transit or active transportation infrastructure (bike lanes, sidewalks, etc.) generate more driving than development near complementary land uses with more robust transportation options.

In response to changes in State law, the County adopted *Transportation Study Guidelines* on September 28, 2022 to identify requirements for both CEQA VMT analysis and discretionary entitlement non-CEQA *Local Mobility Analysis* (County 2022d).

The *Transportation Study Guidelines* provide screening criteria to determine whether discretionary projects need to complete a transportation study. These criteria include information on a project's consistency with the General Plan, estimated daily trips, location, and other characteristics. The requirements to prepare a detailed transportation VMT analysis apply to all

land development projects, except those that meet at least one of the screening criteria outlined in Table 3.1.7-1, *Transportation Study Guidelines Project Screening Criteria*.

In addition to text in the Mobility Element that relates to transportation, there are also related goals in the Land Use, Housing, and Conservation and Open Space Elements. The *Transportation Study Guidelines* propose a methodology to meet the County General Plan requirement for LOS D outside CEQA. The *Local Mobility Analysis* provides a methodology to identify development-related circulation and access deficiencies, and specific operational, road safety, and adequate transportation infrastructure improvements to maintain LOS D with the addition of new projects.

General Plans

As mandated by State law, General Plans must have a Mobility Element (also referred to as Circulation or Transportation Elements) that is consistent with all other elements of the General Plan. These Mobility Elements describe the individual jurisdictions' acceptable operating standards and LOS/VMT, define roadway classifications, and outline goals and policies. General Plans also typically address public transit and pedestrian and bicycle facilities. Mobility Elements and their compatibility with Land Use Plans are an important part of overall regional transportation planning because each General Plan works to harmonize local land uses and development patterns with transportation goals and needs.

County of San Diego General Plan Mobility Element

The County's Mobility Element includes goals and policies that address the safe and efficient operation, maintenance, and management of the transportation network. The goals and policies strive for a balanced multimodal transportation system with adequate capacity to support the land uses and development patterns in the Land Use Element of the General Plan. The Mobility Element provides a framework for a balanced, multimodal transportation system for the movement of people and goods within the unincorporated areas of San Diego County. A balanced system uses multiple modes of travel including motor vehicles, public transportation, bicycles, pedestrians, and to a lesser extent, rail and air transportation.

Integrated Vector Management Program Best Management Practices

The IVMP follows best management practices (BMPs) described in State guidance documents, such as the *Best Management Practices for Mosquito Control in California* (CDPH 2012), *Best Management Practices for Mosquito Control on California State Properties* (CDPH 2008a), and *California Mosquito-Borne Virus Surveillance and Response Plan* (CDPH 2021), which detail best integrated vector management practices for vector control and vector-borne disease prevention. Additionally, the Proposed Project includes BMPs intended to minimize impacts associated with IVMP activities. The BMPs assume travel on existing roadways and paths during vector control activities to minimize impacts of vehicular use. The following project design considerations and BMPs have been developed by the VCP in combination with the above-referenced sources and are applicable to transportation:

- B2: When accessing sensitive habitat, Vector Control Program staff will minimize the use of motorized vehicles to the extent feasible by conducting activities on foot with handheld equipment and remain in previously disturbed areas when vehicle use is needed. Aerial

surveillance or control (e.g., helicopter or drone[1]) will also be used when feasible and appropriate during pesticide applications and identification of potential vector sites, respectively.

- B3: Vehicles will only be driven on existing roadways, access roads, and existing unpaved access paths. Vehicles driven on levees to travel near aquatic areas (such as tidal marshes, sloughs, or channels) for surveillance or treatment activities will travel at speeds slow enough to avoid or minimize noise and the production of dust, typically 15 miles per hour or less.

3.1.7.3 *Analysis of Project Effects and Determination as to Significance*

The *County of San Diego Transportation Study Guidelines* (County 2022d) provides criteria on how projects should be evaluated for consistency related to the County's transportation goals, policies and plans, and through procedures established under CEQA. The *Transportation Study Guidelines* do not incorporate the current CEQA Guidelines Appendix G questions related to transportation; therefore, the following impact analysis relies on Appendix G of the CEQA Guidelines with incorporation of the *Transportation Study Guidelines*.

Based on guidance provided in Appendix G of the CEQA Guidelines, the Proposed Project would result in a significant impact if it would lead to any of the following:

1. Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.

2. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).

3. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

4. Result in inadequate emergency access.

Applicable Transportation Plans

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would have a significant impact on the environment if it would conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities.

Impact Analysis

The Proposed Project would include a range of activities involving surveillance of existing and potential vector threats and the application of physical, biological, and chemical control methods to reduce the spread of mosquito-borne and other vector-borne diseases and nuisances. These activities would also include public outreach and education in communities across San Diego County. The IVMP does not include the construction or renovation of habitable structures,

[1] For the purposes of this PEIR, "drone" is intended to generically mean a remotely piloted or unpiloted aircraft. As of this writing, the Federal Aviation Administration's official terminology is Unmanned Aircraft Systems; however, Federal Aviation Administration is transitioning toward gender-neutral terminology such as drone operator, certificated remote pilot, model aircraft flyer, and advanced air mobility operator.

stationary sources, or infrastructure. Therefore, the Proposed Project would not result in construction activities or construction-related trips that could conflict with a transportation program plan, ordinance, or policy.

Ongoing light truck and automobile trips associated with IVMP activities would continue to be required to transport workers, materials, and equipment during ongoing implementation of the Proposed Project. However, the IVMP is not anticipated to result in additional trip generation or demand beyond existing conditions shown in Table 3.1.7-2, *Existing Vehicle Usage*. The ongoing and continued use of vehicles to travel between County offices and vector sites, as well as construction-type equipment used for grading or earthmoving activities, would not result in a significant increase of vehicles on local roadways. Therefore, the limited nature of ongoing IVMP traffic would not result in a substantial increase in traffic volumes or result in development that could conflict with applicable transportation plans. As a result, impacts to applicable transportation plans, including transit, roadway, bicycle, and pedestrian facilities, would be less than significant.

Vehicle Miles Traveled

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would have a significant impact on the environment if it would conflict or be inconsistent with CEQA Guidelines, Section 15064.3(b).

Impact Analysis

CEQA Guidelines, Section 15064.3(b), and the County *Transportation Study Guidelines* define the criteria for analyzing transportation impacts as land use projects and transportation projects. Since the Proposed Project is programmatic and does not include any development, land use changes, or transportation improvements, the Proposed Project is not required to prepare a VMT analysis. In addition, the *Transportation Study Guidelines* do not consider or require the analysis of regional government-provided services like the IVMP (e.g., police, fire). Furthermore, traffic generated by the Proposed Project would largely consist of trips associated with ongoing monitoring efforts. The IVMP does not propose or anticipate a change in vector control response volumes, and as such, traffic volumes would be consistent with current operation levels and would not result in a substantial change in vehicle use over existing conditions. Consequently, VMT impacts would be less than significant.

Finally, the ongoing IVMP activities would not result in a substantial increase in VMT such that it could contribute to long-term adverse environmental effects from increases in GHG and criteria pollutant emissions identified in SB 743 or hinder the promotion of multimodal transportation systems or implementation of clean, efficient access to destinations. Nonetheless, to show consistency with the goals of SB 743, this PEIR's air quality and GHG analyses considered vehicle trips attributable to IVMP activities and are discussed further in Sections 3.1.1, *Air Quality*, and 3.1.2, *Climate Change/Greenhouse Gas Emissions*, respectively.

Transportation Hazards

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would have a significant impact on the environment if it would substantially increase hazards due to a geometric design

feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Impact Analysis

While the location and specifics of individual activities to be implemented under the IVMP are unknown at this time, it would not include the creation of new access points to vector control sites. The Proposed Project's design considerations and BMPs encourage the use of existing roadways to avoid sensitive habitat impacts. Per the IVMP BMPs, Vector Control Program employees are directed to minimize the use of motorized vehicles to the extent feasible by conducting activities on foot with handheld equipment and remain in previously disturbed areas, access roads, or unpaved access paths when vehicle use is needed. Project activities may require the use of flaggers or cones to park equipment, but such activities would be temporary in nature (i.e., no longer than a few minutes). Further, none of the Proposed Project activities would result in road or lane closures or detours requiring a Traffic Control Plan. Individual activities under the IVMP would not alter traffic patterns or roadway design, place incompatible uses (e.g., farm equipment) on existing roadways, or create or place curves, slopes, or walls that impede adequate site distance on a road. Therefore, a less than significant impact to transportation hazards would result from implementation of the Proposed Project.

Emergency Access

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would have a significant impact on the environment if it would result in inadequate emergency access.

Impact Analysis

The Proposed Project includes implementation of a countywide IVMP in which individual activities would occur throughout San Diego County. The IVMP consists of a range of activities involving surveillance of existing and potential vector threats and physical, biological, and chemical control methods to reduce the spread of mosquito-borne and other vector-borne diseases and nuisances. Project activities may require the use of flaggers or cones to park equipment, but such activities would be short-term, temporary, and the minimum necessary to conduct vector control treatment. Further, none of the Proposed Project activities would result in road or lane closures or detours that would impede emergency response or evacuation. Due to the programmatic nature of this analysis, the exact locations and extent of all activities to be conducted under the IVMP are not known at this time. However, individual activities under the IVMP are not anticipated to include the construction of new structures, roads, or facilities that would interfere with or otherwise affect existing emergency access. The project design considerations and BMPs encourage the use of existing roadways and access paths. Therefore, a less than significant impact to emergency access would result from implementation of the Proposed Project.

3.1.7.4 *Cumulative Impact Analysis*

The geographic scope for the cumulative transportation impact analysis is San Diego County. Past, present, and reasonably foreseeable future projects in the vicinity of individual IVMP activities have the potential to generate traffic and result in significant cumulative impacts on transportation. However, implementation of IVMP activities would not result in a net increase in transportation impacts compared to existing conditions or result in other significant transportation

impacts. Therefore, implementation of the Proposed Project would not make a cumulatively considerable contribution to any identified cumulative impact on transportation in San Diego County.

Applicable Transportation Plans

The Proposed Project would not conflict with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. In addition, cumulative projects would be subject to local municipal transportation plans or circulation system requirements. Therefore, implementation of the IVMP would not result in a cumulatively considerable contribution associated with applicable transportation plans.

Vehicle Miles Traveled

A cumulative impact would occur if future unrelated development would contribute to exceeding an applicable threshold of significance for VMT or other criteria identified in CEQA Guidelines, Section 15064.3(b), which outlines the criteria for analyzing transportation impacts. However, the Proposed Project would not conflict or be inconsistent with CEQA Guidelines, Section 15064.3(b). As discussed in Section 3.1.7.3, the Proposed Project is programmatic and does not include any development, land use changes, or transportation improvements. Furthermore, the *Transportation Study Guidelines* do not consider or require the analysis of regional government-provided services like the IVMP (e.g., police, fire). Therefore, implementation of the IVMP would not result in a cumulatively considerable contribution associated with VMT.

Transportation Hazards

Individual activities under the IVMP would not alter traffic patterns or roadway design, place incompatible uses on existing roadways, or create or place curves, slopes, or walls that impede adequate site distance on a road that would substantially increase hazards. Furthermore, cumulative projects in San Diego County would be subject to applicable road design standards pertaining to local, state, and/or federal requirements. Therefore, implementation of the IVMP would not result in a cumulatively considerable contribution associated with transportation hazards.

Emergency Access

The IVMP consists of a range of activities involving surveillance of existing and potential vector threats and physical, biological, and chemical control methods to reduce the spread of mosquito-borne and other vector-borne diseases and nuisances. Individual activities under the IVMP are not anticipated to include the construction of new structures, roads, or facilities that would interfere with or otherwise affect existing emergency access. In addition, cumulative projects would be required to comply with all local traffic regulations if activities would interrupt the normal function of a roadway. Therefore, implementation of the IVMP would not result in a cumulatively considerable contribution associated with emergency access.

3.1.7.5 *Significance of Impacts Prior to Mitigation*

Implementation of the Proposed Project would not result in an increase in traffic on roadways in the county. The Proposed Project would not result in any significant adverse transportation impacts or make a cumulatively considerable contribution to any identified cumulative impact on transportation in San Diego County.

3.1.7.6 *Mitigation Measures*

Because the Proposed Project would not result in significant impacts, no mitigation is required.

3.1.7.7 *Conclusion*

The Proposed Project will not result in a direct project or cumulative impact to transportation.

Table 3.1.7-1
TRANSPORTATION STUDY GUIDELINES PROJECT SCREENING CRITERIA

Criteria	Description
Projects Located in a VMT Efficient Area	A VMT efficient area is any area with an average VMT per service population that is 15% below the baseline average for the entire San Diego County region.
Projects Located in Infill Village Area	Projects that are located in unused and underutilized lands within existing development patterns defined by household density, intersection density, and jobs accessibility.
Small Residential and Employment Projects	Projects generating less than 110 daily vehicle trips.
Projects Located in a Transit Accessible Area	Projects located within a half mile of an existing major transit stop or an existing stop along a high-quality transit corridor.
Locally Serving Retail/Service Projects	Retail projects less than 50,000 square feet.
Locally Serving Public Facilities and Other Uses	Public facilities that serve the surrounding community or public facilities that are passive use. These do not include facilities or uses that would attract users from outside the vicinity of the use.
Redevelopment Projects with Greater VMT Efficiency	Where a project replaces existing VMT-generating land uses, if the total project VMT is less than the existing land use's total VMT, absent substantial evidence to the contrary.
Affordable Housing	An affordable housing project absent substantial evidence to the contrary if 100% of units are affordable.

Source: County 2022d.
Notes: VMT = vehicle miles traveled

Table 3.1.7-2
EXISTING VEHICLE USAGE

Equipment	No. of Vehicles	Cumulative Days Operated (per year) [1]	Frequency of Use[2] (days/year)	Total Mileage (annual)	Average Daily Mileage[3]
Fleet Vehicle (MDV)	28	2,814	101	178,447	1,767
Fleet Vehicle (LDT2)	27	2,340	87	212,310	2,440
Total	**55**	**5,154**	**188**	**390,757**	**4,207**

Source: Data based on Department of Environmental Health and Quality fleet from calendar year 2019. Data also derived from HELIX 2021c; Appendix D (Air Quality).

Note: MDV = Medium-Duty Vehicle; LDT2 = Light-Duty Truck

As discussed in Section 3.1.7.3, *Analysis of Project Effects and Determination as to Significance*, VMT analysis is not required for the Proposed Project. The data summarized here is for informational purposes only.

[1] Represents total number of days operated for every vehicle combined. For example, if Vehicle 1 operated 19 days/year + Vehicle 2 operated 33 days/year, cumulative days operated would be 52.

[2] Cumulative number of days vehicles were operated divided by number of vehicles per class (e.g., MDV = 2,814 days/yr ÷ 28 vehicles = 101 days/year).

[3] Total miles driven per year divided by frequency of use (e.g., MDV = 178,447 total miles/year ÷ 101 days/year = 1,767 miles/day).

This page intentionally left blank

3.1.8 Wildfire

This section of the Program Environmental Impact Report (PEIR) evaluates potential impacts associated with wildfire resulting from implementation of the Integrated Vector Management Program (Proposed Project or IVMP). This section is based on desktop research performed by HELIX Environmental Planning, Inc., and Appendix G of the California Environmental Quality Act (CEQA) Guidelines.

3.1.8.1 *Existing Conditions*

Regional Wildfire Risk

Wildfire, as defined in California Public Resources Code, Sections 4103 and 4104, is any uncontrolled fire spreading through vegetative fuels that threatens to destroy life, property, or resources. In the last 2 decades, wildfires in California have increased in number, acres burned, and number of structures destroyed (CAL FIRE 2019a) per year. In 2020 (the most recent year reported), San Diego County observed 179 wildfires totaling 386 acres and approximately $1.05 million of wildfire-related damage (CAL FIRE 2020).

Several factors, including climate, wind patterns, native vegetation, topography, and development patterns, make the county susceptible to wildfires. A vast amount of the county's undeveloped lands support natural habitats such as grasslands, sage scrub, chaparral, and some coniferous forest. Extended droughts, characteristic of the region's Mediterranean climate, result in large areas of dry vegetation that provide fuel for wildland fires. In addition, climate change has also contributed to soil dryness. This dry vegetation is especially vulnerable to wildfire in areas with high winds. Therefore, wildfire risk tends to be high in locations with dense vegetation, dry conditions, and steep slopes (CAL FIRE 2007). As a result, high wildfire risk occurs in the hills and mountains of the eastern areas of the county where sparse development intermingles with fire-prone native vegetation.

Wildland Fire History in San Diego County

In San Diego County, fire season is typically defined from May through November, depending on variations in weather conditions. However, the threat of a wildland fire is always present and is influenced by weather conditions throughout the year.

The 2007 San Diego County firestorms were the second largest in county history, superseded only by the devastating firestorms of October 2003. The firestorms started on October 21, 2007, near the United States-Mexico international border and burned throughout the county until the last fire was fully contained on November 9, 2007. At the height of the firestorms, there were seven separate fires burning in San Diego County. The fires resulted in seven civilian deaths, 23 civilian injuries, and 89 firefighter injuries. More than 6,200 fire personnel fought to control the wildland fires, but the fires consumed approximately 369,000 acres, or about 13% of the county's total land mass. Additionally, the fires destroyed an estimated 1,600 homes, 800 outbuildings, 253 structures, 239 vehicles, and two commercial properties. The total projected damage costs of the 2007 San Diego County firestorms are estimated to exceed $1.5 billion (EG&G 2007).

In 2020, the Valley Fire burned 16,390 acres within Cleveland National Forest in the southern portion of the county. The Valley Fire was ignited on September 5, 2020 (Cleveland National Forest 2020). This fire was intensified by dry vegetation, rugged terrain, and high temperatures and winds. The Valley Fire resulted in multiple power outages.

Fire Hazard Designations

The California Department of Forestry and Fire Protection (CAL FIRE) has mapped areas of significant fire hazards in the county through its Fire and Resource Assessment Program. CAL FIRE defines and maps Fire Hazard Severity Zones (FHSZs) to identify the potential fire hazard severity expected in different areas within the State as required by California Public Resources Code, Sections 4201 through 4205. FHSZs are determined based on an area's vegetation, topography (slope), weather (including winds), crown fire potential, and ember production and movement potential. FHSZ includes the classifications Very High, High, or Moderate in areas where the State is responsible for fire protection (State Responsibility Areas [SRAs]). The majority of San Diego County is included in an SRA for fire prevention and suppression. However, some areas, such as national forests, are within Federal Responsibility Areas, which are under the responsibility of the U.S. Forest Service for wildfire protection. FHSZ also includes the classification Very High in areas where local agencies are responsible for fire protection (Local Responsibility Areas [LRAs]). In San Diego County, local fire protection is provided by Fire Protection Districts and County Service Areas in unincorporated areas and by city fire departments and joint powers agreements within city boundaries. Local fire protection is discussed in more detail in Section 3.2.6, *Public Services*.

The majority of the county is designated as a Very High and High FHSZ, except for the Desert and eastern Mountain Empire subregions, which are in the Moderate FHSZ. There are also areas of Moderate FHSZ and un-zoned areas in the more densely populated communities around the county. Figure 3.1.8-1, *Fire Hazard Severity Zones*, identifies FHSZ in SRA regions in San Diego County.

Wildland Urban Interface

The wildland urban interface (WUI) is an area where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels (USDA and USDOI 2001) and occur in areas designated by CAL FIRE as an FHSZ. A WUI is defined as a buffer around areas of residential density greater than 0.05 dwelling units per acre and is divided into a Defense Zone (the area up to 0.25 mile from the developed area) and a Threat Zone (from 0.25 to 1.5 miles from developed areas) (USDA 2005).

The WUI creates an environment in which fire can move readily between structural and vegetation fuels. Once homes are built within (or adjacent to) natural habitat settings, fighting wildland fires becomes more complex because the goal of extinguishing the wildland fire is often superseded by protecting human life and private property.

The WUI is composed of communities that border wildlands or are intermixed with wildlands and where the minimum density exceeds one structure per 40 acres. WUI communities are created when the following conditions occur: (1) structures are built at densities greater than one unit per 40 acres, (2) the percentage of native vegetation is less than 50%, (3) the area is more than 75% vegetated, and (4) the area is within 1.5 miles of an area greater than a census block (1,325 acres). The 1.5-mile buffer distance was adopted according to the 2001 California Fire Alliance definition of vicinity, which is roughly the distance that pieces of burning wood can be carried from wildland fire to the roof of a structure (Radeloff et al. 2005). Figure 3.1.8-2, *Wildland Urban Interfaces in San Diego County*, shows areas in San Diego County mapped as WUI by CAL FIRE.

3.1.8.2 *Regulatory Setting*

Federal

International Fire Code

The International Fire Code (IFC), created by the International Code Council, is a model document that was adopted and then amended by the California Building Standards Commission and serves as the primary international means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may pose a threat to public health and safety. The IFC regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. The IFC and the International Building Code use a hazard classification system to determine what protective measures are required to protect fire and life safety. These measures may include construction standards, separations from property lines, and specialized equipment. To ensure that these safety measures are met, the IFC employs a permit system based on hazard classification. The IFC is adopted and amended every 3 years, with the most recent version published in 2021.

State

California Fire Code

The California Fire Code (CFC) is Chapter 9 of Title 24 of the California Code of Regulations (CCR). It is created by the California Building Standards Commission and is based on the IFC created by the International Code Council. It is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may pose a threat to public health and safety. The CFC regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. The CFC and the California Building Code use a hazard classification system to determine what protective measures are required to protect fire and life safety. These measures may include construction standards, separations from property lines, and specialized equipment. To ensure that these safety measures are met, the CFC employs a permit system based on hazard classification. The CFC is adopted and amended every 3 years.

The CFC includes requirements for building construction and vegetation management within areas designated as WUIs. In such areas, all new buildings must comply with the California Building Code, which defines wildfire protection building construction requirements intended to reduce wildfire exposure. In addition, buildings within the WUI must comply with California laws and regulations that require maintenance of a “defensible space” of 100 feet from structures (California Public Resources Code, Section 4291; 14 CCR 1299.03).

California Health and Safety Code

State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code and include regulations concerning building standards (as also set forth in the California Building Code), fire protection and notification systems, fire protection devices such as fire extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training. The State Fire Marshal enforces these regulations and building standards in all State-owned buildings, State-occupied buildings, and State institutions throughout California.

California Code of Regulations, Title 14, Division 1.5

CCR Title 14 Division 1.5 establishes the regulations for CAL FIRE and is applicable in all SRAs, which are areas where CAL FIRE is responsible for wildfire protection. Most of the unincorporated county is an SRA, and any development in SRAs must comply with these regulations. Among other things, CCR Title 14 Section 1270, et seq., establishes minimum standards for emergency access, fuel modification, setback to property line, signage, and water supply. San Diego County's most recent adoption of the County Consolidated Fire Code was in 2020, and the code requirements meet or exceed Title 14 Section 1270, et seq. With the recent adoption, the County Consolidated Fire Code supersedes CCR Title 14 Section 1270, et seq., in the unincorporated areas of the county.

Local

County of San Diego Consolidated Fire Code

The County of San Diego (County), in collaboration with the local fire protection districts, created the first Consolidated Fire Code in 2001. The Consolidated Fire Code contains the county and fire protection districts amendments to the CFC. The purpose of consolidation of the county and local fire districts adoptive ordinances is to promote consistency in the interpretation and enforcement of the Consolidated Fire Code for the protection of the public health and safety, which includes permit requirements for the installation, alteration, or repair of new and existing fire protection systems, and penalties for violations of the code. The Consolidated Fire Code provides the minimum requirements for access, water supply and distribution, construction type, fire protection systems, and vegetation management. Additionally, the Consolidated Fire Code regulates hazardous materials and associated measures to ensure that public health and safety are protected from incidents relating to hazardous substance releases. The Consolidated Fire Code is amended and adopted every 3 years, with the most recent version approved by the Board of Supervisors on February 25, 2020.

County of San Diego Multi-Jurisdictional Hazard Mitigation Plan

The Federal Disaster Mitigation Act of 2000 requires all local governments to create a disaster plan to qualify for hazard mitigation funding. The Multi-Jurisdictional Hazard Mitigation Plan is a countywide plan that identifies risks and ways to minimize damage by natural and human-made disasters. The plan is a comprehensive resource document that serves many purposes such as enhancing public awareness, creating a decision tool for management, promoting compliance with State and federal program requirements, enhancing local policies for hazard mitigation capability, and providing interjurisdictional coordination.

Each of the 18 cities in the county participated in the planning process, as well as the Alpine Fire Protection District, Rancho Santa Fe Fire Protection District, and Padre Dam Municipal Water District. Based on its review of jurisdictional-level hazard maps, Alpine Fire Protection District identified approximately 12,885 people, 4,814 residential structures, 1,355 commercial structures, and 142 critical facilities that are exposed to wildfire/structure fire hazards (Fire Regime classes II and IV).

The Multi-Jurisdictional Hazard Mitigation Plan addresses wildfire risk within the San Diego region by assessing the exposure to wildfire hazard of populations in the different jurisdictions within the region. The assessment includes exposure of population, residential buildings, and commercial buildings, as well as exposure of critical facilities and infrastructure such as airports, bridges, and

electric power facilities. The plan then outlines goals, objectives, and actions for each jurisdiction within the San Diego region. Goals related to wildfire typically include reducing the possibility of damage and loss due to structural/wildfire. Objectives and actions related to wildfire typically include measures such as updating fire and evacuation plans, maintaining vegetation management policies, and maintaining adequate emergency response capability. This plan was last updated in 2018.

County of San Diego General Plan

The General Plan includes goals and policies in the Land Use Element, Conservation and Open Space Element, and Safety Element applicable to wildfire in the county.

Conservation and Open Space Element

Goal COS-5 advocates the protection and maintenance of local reservoirs, watersheds, aquifer-recharge areas, and natural drainage systems to maintain high-quality water resources. This goal is supported by Policy COS-5.3 that requires development to be appropriately sited and to incorporate measures to retain natural flow regimes, thereby protecting downslope areas from erosion, capturing runoff to adequately allow for filtration and/or infiltration, and protecting downstream biological resources, which reduces the risk of flooding or landslides following wildfires.

Goal COS-12 advocates for the preservation of ridgelines and steep hillsides for their character and scenic value. Policy COS-12.1 promotes the protection of undeveloped ridgelines and steep hillsides by maintaining semi-rural or rural designation on these areas, which serves a secondary purpose of minimizing development in steep environments that are more vulnerable to wildfire.

Safety Element

Goal S-1 promotes enhanced public safety and the protection of public and private property. This goal is supported by Policies S-1.3, S-1.4, and S-1.5. Policy S-1.3 advocates for support efforts and programs that reduce both the risk of natural and human-made hazards and that reduce the time for responding to these hazards. Policy S-1.4 promotes the review and update of the County's Multi-Jurisdictional Hazard Mitigation Plan be updated every 5 years. Policy S-1.5 promotes the participation in programs and procedures that emphasize coordination between appropriate public agencies and private entities to remove debris and promote the rapid reconstruction of the county following a disaster event and facilitate the upgrading of the built environment as expeditiously as possible.

Goal S-3 and Policies S-3.1 through S-3.6 require that fire hazards be minimized through responsible development, vegetation management, and maintenance of accessible road networks for emergency services.

Goals S-4, S-5, and S-6 relate to interagency and interjurisdictional coordination of fire prevention. Policy S-4.1 also recommends that the County develop fuel management programs based on comments from neighboring fire management jurisdictions. Policies S-5.1 and S-5.2 require regional coordination and agreements between fire protection services to maximize service levels. Policies S-6.4 and S-6.5 require that new development conform to travel time standards and that appropriate fire protection services be established before or concurrent to development.

Other Agency Regulations and Plans

In addition to the unincorporated areas, there are 18 incorporated cities within the County of San Diego, including Carlsbad, Chula Vista, Coronado, Del Mar, El Cajon, Encinitas, Escondido, Imperial Beach, La Mesa, Lemon Grove, National City, Oceanside, Poway, San Diego, San Marcos, Santee, Solana Beach, and Vista. Incorporated cities within the County of San Diego may have their own plans and policies related to wildland fire hazards and emergency response plans that address these hazards.

Integrated Vector Management Program Best Management Practices

The IVMP follows vector control guidance documents and best management practices (BMPs) prepared by the California Department of Public Health that detail surveillance methods, vector control management strategies, and pesticide application procedures. These documents include the *Best Management Practices for Mosquito Control in California* (CDPH 2012), *Best Management Practices for Mosquito Control on California State Properties* (CDPH 2008b), and *California Mosquito-Borne Virus Surveillance and Response Plan* (CDPH 2021), which detail best integrated vector management practices for vector control and vector-borne disease prevention.

In addition, the County integrates BMPs into the IVMP serving as a comprehensive management framework for implementation of individual activities. The following BMPs have been developed by the VCP in combination with the above-referenced sources and would be incorporated into the IVMP, which demonstrate the County's commitment to avoid or minimize impacts to the maximum extent feasible:

- B13: The changing of oil, refueling, and other actions that could result in a release of a hazardous substance will be restricted to designated service areas, such as maintenance yards and gas stations, or when necessary, areas that are a minimum of 100 feet from any documented special status plant populations, sensitive habitats, or drainages. Equipment will be checked for leaks prior to operation and repaired as necessary. Fueling areas will be installed in the field, as applicable, by berms, sandbags, or other artificial barriers designed to prevent accidental spills.

- B17: VCP staff will modify, postpone, or cease pesticide application when weather parameters exceed product label specifications, such as when wind speeds exceed the velocity stated on the product label or may result in drift or when a high chance of rain is predicted and rain is a determining factor on the label of the material to be applied.

- B23: Staff will be trained annually on petroleum-based or other chemical-based storage and disposal regulations and procedures, including spill management protocols.

- B25: All vehicles will contain a fire extinguisher and first aid kit at all times.

3.1.8.3 *Analysis of Project Effects and Determination as to Significance*

The *County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements – Wildland Fire and Fire Protection* (County 2010c) provides guidance for evaluating adverse environmental effects associated with wildland fire. However, these guidelines have not been updated to reflect the current CEQA Appendix G questions related to wildfire. Therefore, the impact analysis that follows relies on Appendix G of the CEQA Guidelines. Based

on guidance provided in Appendix G of the CEQA Guidelines, the Proposed Project would result in a significant impact if it would lead to any of the following:

1. Be located in or near SRAs or lands classified as Very High FHSZ and would substantially impair an adopted emergency response plan or emergency evacuation plan.

2. Be located in or near SRAs or lands classified as Very High FHSZ and would exacerbate wildfire risks due to slope, prevailing winds, and other factors, and thereby expose project occupants to pollutant concentrations from wildfire or the uncontrolled spread of wildfire.

3. Be located in or near SRAs or lands classified as Very High FHSZ and would 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 result in temporary or ongoing impacts to the environment.

4. Be located in or near SRAs or lands classified as Very High FHSZ and would expose people or structures to significant risks, including downslope or downstream flooding or landslides, as result of runoff, post-fire slope instability, or drainage changes.

Adopted Emergency Response Plan or Emergency Evacuation Plan

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would have a significant impact on the environment if it would be located in or near SRAs or lands classified as Very High FHSZ and would substantially impair an adopted emergency response plan or emergency evacuation plan.

Impact Analysis

The Proposed Project involves the implementation of an IVMP to protect the public from vector-borne disease and public nuisances. Under the Proposed Project, the IVMP would continue to comprehensively approach vector control through various techniques, including surveillance and monitoring, source reduction (i.e., physical control), source treatment (i.e., biological and chemical controls), public education, outreach, and disease diagnostics. Source reduction and source treatment activities may require the ongoing and periodic use of vehicles and light trucks, such as pickup trucks and jeeps, or the use of construction-type equipment in or near SRAs and Very High FHSZ areas. The ongoing and continued use of vehicles to travel between County offices and vector activity sites, as well as construction-type equipment used for grading or earthmoving activities, would not result in a significant increase of vehicles on local roadways, and would not create roadway congestion that would interfere with emergency response or evacuation. Further, none of the Proposed Project activities would result in any road or lane closures or detours that would impede emergency response or evacuation. Intermittently, project activities may require the use of flaggers or cones to park equipment, but such activities would be temporary in nature. Also refer to the discussion under Emergency Access in Section 3.1.7, *Transportation/Traffic*, of this PEIR. Additionally, the Proposed Project would not construct new structures or residences that may significantly increase the county's population, resulting in more residents on local roadways, causing slower emergency response or evacuation times. The Proposed Project would not involve activities that could impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Impacts would be less than significant.

Expose Receptors to Pollutants from Wildfire

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would have a significant impact if it would be located in or near SRAs or lands classified as Very High FHSZ and would exacerbate wildfire risks due to slope, prevailing winds, and other factors, and thereby expose project occupants to pollutant concentrations from wildfire or the uncontrolled spread of wildfire.

Impact Analysis

The Proposed Project involves the implementation of a countywide IVMP to protect the public from vector-borne disease and public nuisances. The Proposed Project activities would occur throughout the county, including on lands classified as Very High FHSZ and in SRAs. However, the Proposed Project does not involve the construction of any buildings and would not introduce inhabitants that could thereby be exposed to pollutant concentrations from wildfire or the uncontrolled spread of wildfire. Additionally, source reduction and source treatment activities may include vegetation management, which may inadvertently lessen wildfire risk in the county. Further, the Proposed Project would implement IVMP BMPs that would ensure that the Proposed Project would not result in an increased risk of wildfire. Specifically, the changing of oil, refueling, and other actions that could result in a release of a hazardous substance would be restricted to designated service areas such as maintenance yards and gas stations or, when necessary, areas that are a minimum of 100 feet from any documented special-status plant populations, sensitive habitats, or drainages (BMP B13); pesticide application would be modified, postponed, or ceased when weather parameters exceed product label specifications (BMP B17); and all vehicles will contain a fire extinguisher and first aid kit at all times (BMP B25). The Proposed Project would not expose occupants to pollutant concentrations from wildfire or the uncontrolled spread of wildfire with implementation of safety measures and BMPs. Impacts would be less than significant.

Exacerbate Wildfire Risk from New Infrastructure

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would have a significant impact if it would be located in or near SRAs or lands classified as Very High FHSZ and would 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 result in temporary or ongoing impacts on the environment.

Impact Analysis

The Proposed Project would not involve or require the installation or maintenance of infrastructure such as roads, fuel breaks, emergency water sources, power lines, or other utilities. The components of the Proposed Project include surveillance and monitoring, source reduction (i.e., physical control), source treatment (i.e., biological and chemical controls), public education, outreach, and disease diagnostics. Surveillance and monitoring would be conducted via ground vehicles, aircraft (including drones[1]), watercraft, and remote sensing equipment using existing

[1] For the purposes of this PEIR, “drone” is intended to generically mean a remotely piloted or unpiloted aircraft. As of this writing, the Federal Aviation Administration’s official terminology is Unmanned Aircraft Systems; however,

roadways and infrastructure. Source reduction and source treatment activities would alter the environment to prevent or remove vectors through biological or chemical controls. Such methods would not require the installation or maintenance of infrastructure as biological controls include mosquito fish and bacterial larvicides, and chemical controls would be used through backpack applicators, truck-mounted equipment, or other motorized vehicles. Public education, outreach, and source treatment would occur within existing facilities. Therefore, the Proposed Project would not require the installation or maintenance of associated infrastructure that may exacerbate fire risk or result in temporary or ongoing impacts on the environment. Impacts associated with wildfire risk from new infrastructure would not occur.

Expose People or Structures to Significant Risks from Post-Wildfire Hazards

Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, the Proposed Project would have a significant impact if it would be located in or near SRAs or lands classified as Very High FHSZ and would 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.

Impact Analysis

The Proposed Project does not involve the construction of buildings or infrastructure and would not introduce inhabitants to the county. One component of the Proposed Project would include grading or earthmoving activities to implement source reduction measures that could result in increases in erosion or siltation. However, such activities would be conducted in compliance with the National Pollutant Discharge Elimination System Construction General Permit, the County's Watershed Protection Ordinance, and the IVMP BMPs, which would limit erosion by minimizing site disturbance to the maximum extent practicable and requiring installation of erosion control BMPs to prevent off-site sediment discharges. As a result, the Proposed Project would not result in significant impacts related to erosion or drainage changes related to wildfires or other vegetation removal activities. The Proposed Project involves vector management activities that would occur throughout the county and would not result in exposure of people or structures to significant risks as a result of runoff, post-fire slope instability, or drainage changes. Impacts associated with post-wildfire risks would not occur.

3.1.8.4 *Cumulative Impact Analysis*

Because of the transitory nature of wildfires, which can burn across multiple landscapes if suitable fuel is present, the geographic scope of the cumulative impact analysis for wildfire risk includes San Diego County and the surrounding regions, including Orange County, the southwest portion of Riverside County, and the western portion of Imperial County. Portions of these surrounding regions are also located in Very High FHSZs and may also be at an increased risk for wildfire. Cumulative projects include residential and non-residential land development, open space and recreation, and agricultural activities, all of which have the potential for ground disturbance, vegetation removal, and the application of pesticides. The Proposed Project and cumulative projects would be required to comply with applicable federal, State, and local regulations related to wildfires.

Federal Aviation Administration is transitioning toward gender-neutral terminology such as drone operator, certificated remote pilot, model aircraft flyer, and advanced air mobility operator.

Adopted Emergency Response Plan or Emergency Evacuation Plan

A cumulative impact would occur on adopted emergency response or evacuation plans if future activities associated with the Proposed Project combined with cumulative development would substantially impair an adopted emergency response or evacuation plan for wildfire or other natural disasters. Future population growth and changes to the mobility network could result in significant cumulative impacts associated with the following: (1) an increase in population that is induced from future development projects that are unaccounted for in existing emergency plans, (2) an increase in population that emergency response teams are unable to service adequately in the event of a disaster, or (3) evacuation route impairment if multiple development projects concurrently block multiple evacuation or access roads.

As described in Section 3.1.8.3, the Proposed Project would not involve the construction of any buildings that would result in future development. Further, the Proposed Project would not introduce new inhabitants to the region or result in any roadway closures. While new development may occur in the surrounding regions that would yield an increase in population or interfere with emergency response and evacuation, the Proposed Project would not contribute to the impairment of an emergency response plan or emergency evacuation plan. Therefore, the Proposed Project would not result in a cumulatively considerable contribution to the significant cumulative wildfire impact.

Expose Receptors to Pollutants from Wildfire

A cumulative impact would occur if future activities associated with the Proposed Project combined with cumulative projects would increase wildfire risk and pollutant exposure within San Diego County and neighboring communities. Increased development activities and residents in areas of Very High FHSZ and/or WUI, which are prevalent in the county, could expose more receptors to pollutants from wildfire risk. Additionally, increased development may result in the increased use of pesticides in these regions. The steep topography in portions of the county and neighboring communities exacerbates this risk and could lead to the rapid spread of wildfire beyond the boundaries of the county. Furthermore, particulate matter from the smoke associated with such wildfires can spread prolifically and have harmful consequences for short-term and long-term health of individuals nearby and in neighboring communities. This is a significant cumulative wildfire risk.

As described in Section 3.1.8.3, the Proposed Project would not involve the construction of any buildings that would result in future development. The Proposed Project would not result in an increased population and, therefore, would not contribute to increased population in areas of Very High FHSZ and/or WUI. While new development may occur in the regions surrounding the county that may increase populations in areas of Very High FHSZ and/or WUI, the Proposed Project would not contribute to the exposure of people or structures to pollutants from wildfire. The Proposed Project would not result in a cumulatively considerable contribution to the significant cumulative wildfire pollutant impacts.

Exacerbate Wildfire Risk from New Infrastructure

Cumulative projects in the communities adjacent to and surrounding San Diego County within areas designated as a Very High FHSZ and/or WUI would have the potential to exacerbate wildfire risk by increasing the demand for new infrastructure and, thereby, potentially increasing pesticide usage. Due to the rural nature of portions of these communities, it is anticipated that new or expanded infrastructure would be required to accommodate cumulative projects in the region.

Infrastructure improvements to serve cumulative projects could include the paving of new roads and the extension of utility services such as electrical power lines. These improvements would likely increase the chance of wildfires within neighboring regions. Providing new and/or improved roads would allow greater access to previously inaccessible, less developed areas while providing new electrical services would increase the possibility of downed power lines during Santa Ana weather events. This is a significant cumulative wildfire risk.

However, as described in Section 3.1.8.3, the Proposed Project would not result in the expansion or development of infrastructure. The Proposed Project would include vector management activities throughout San Diego County using various methods of motorized travel via the County's existing infrastructure. Therefore, the Proposed Project would not contribute to wildfire risks related to infrastructure construction or maintenance. The Proposed Project would not result in a cumulatively considerable contribution to the significant cumulative wildfire risk from new infrastructure.

Expose People or Structures to Significant Risks from Post-Wildfire Hazards

A cumulative impact would occur if future activities associated with the Proposed Project combined with cumulative projects would expose people or structures to significant risks from post-wildfire hazards in the county or neighboring communities. The most common and destructive post-wildfire hazards include downslope or downstream flooding, landslides, and debris flows, which typically result from runoff, post-fire slope instability, and/or drainage changes. Development and related activities within such areas, when combined with the cumulative growth and development in adjacent and surrounding communities, including tribal, State, and federal lands, could exacerbate wildfire risk and associated post-fire hazards in the county and neighboring communities.

As described in Section 3.1.8.3, the Proposed Project would not involve the construction of any buildings that would result in future development. The Proposed Project would not result in an increased population and, therefore, would not contribute to increased population densities in areas susceptible to post-wildfire hazards. While new development may occur in the regions surrounding the county that may increase population densities in areas of Very High FHSZ and/or WUI, the Proposed Project activities associated with pesticide use, vegetation removal, and ground disturbance would not contribute to the exposure of people or structures to post-wildfire hazards. The Proposed Project would not result in a cumulatively considerable contribution to the significant cumulative post-wildfire hazards.

3.1.8.5 *Significance of Impacts Prior to Mitigation*

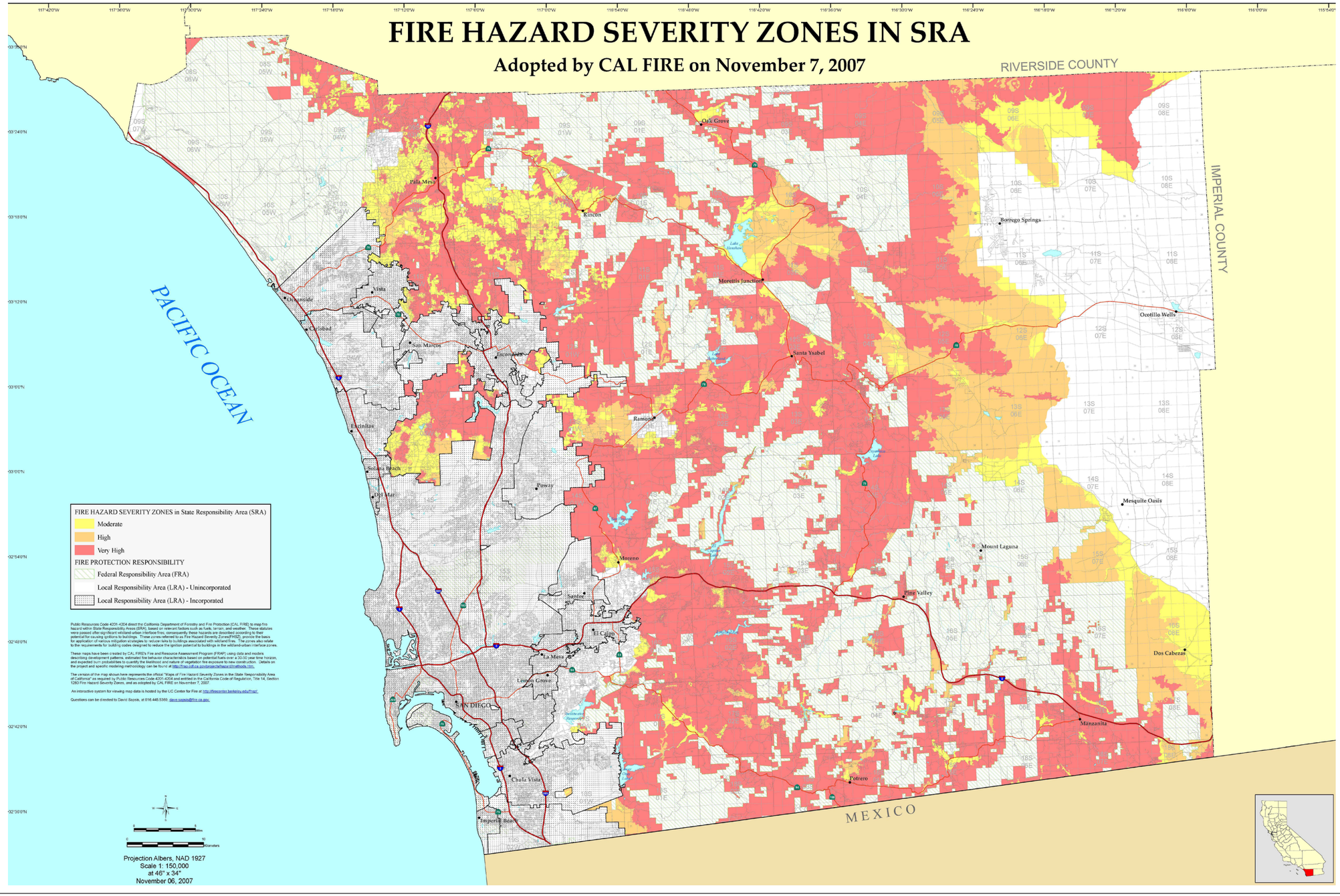
The Proposed Project involves vector management activities to protect the public from vector-borne disease and public nuisances. The vector management activities involved in the Proposed Project include surveillance and monitoring, source reduction, source treatment, public education, outreach, and disease diagnostics. The Proposed Project does not involve the construction of any structures and would not introduce any new inhabitants to the region. Additionally, the Proposed Project would not result in any road closures or require the construction or maintenance of infrastructure. Therefore, the Proposed Project would not significantly impair an emergency response plan or emergency evacuation plan, expose receptors to pollutants from wildfire, exacerbate wildfire risk from new infrastructure, or expose people or structures to significant post-wildfire risks. Further, the Proposed Project would not result in a cumulatively considerable contribution to cumulative impacts related to these issues. The Proposed Project would not result in significant direct or cumulatively considerable impacts related to wildfire.

3.1.8.6 *Mitigation Measures*

Because the Proposed Project would not result in significant impacts, no mitigation is required.

3.1.8.7 *Conclusion*

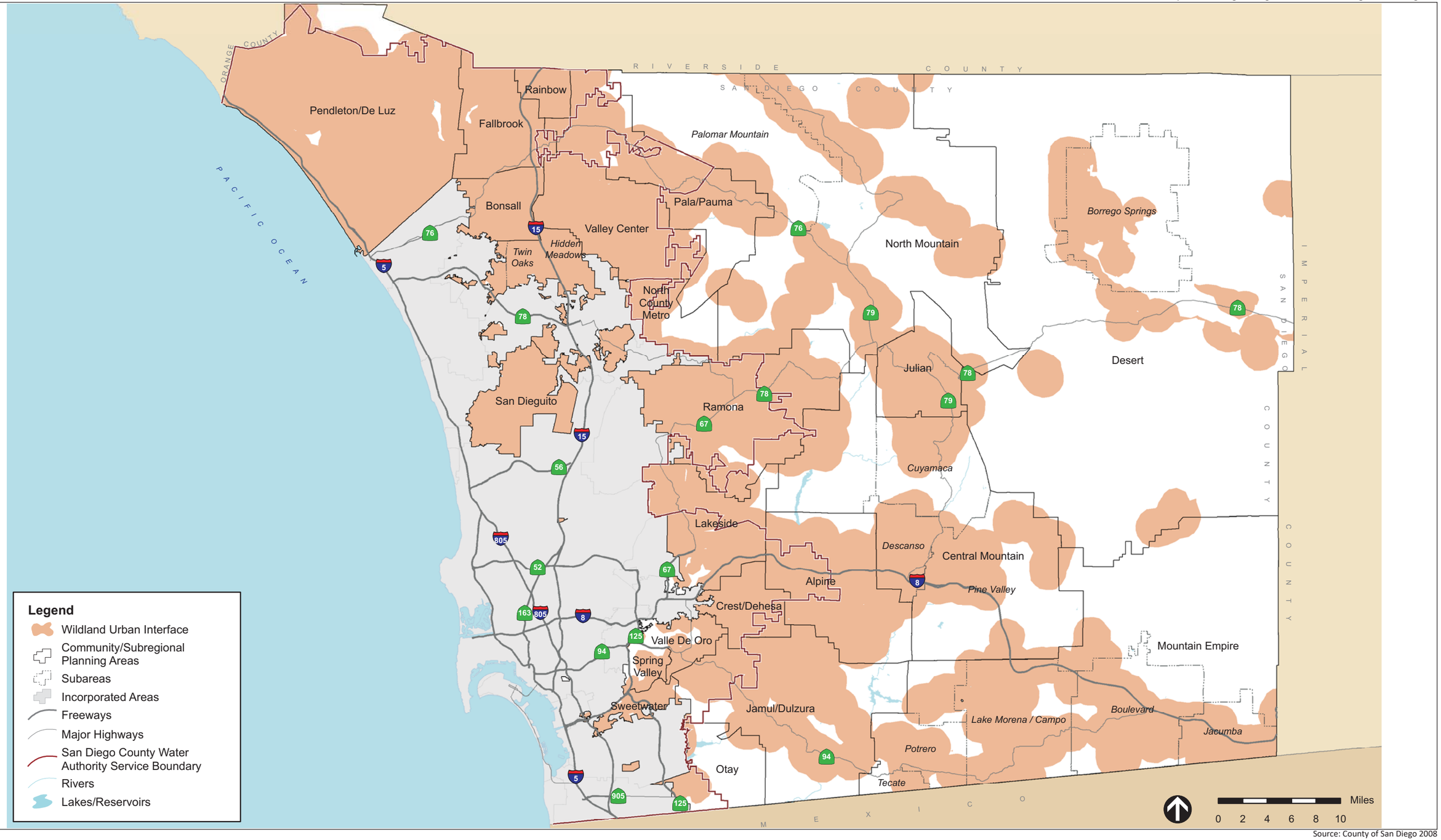
Implementation of the Proposed Project would not result in any significant project or cumulative impacts related to wildfire risk.



Source: County of San Diego 2007

Fire Hazard Severity Zones

Figure 3.1.8-1



I:\PROJECTS\CS\CSD\CSD-05.24_IVMP\Map\EIR\Fig3.1.9-2_WildUrbanInterfaces.indd CSD-05.24 03/15/21 -RK

Source: County of San Diego 2008

Wildland Urban Interfaces in San Diego County

Figure 3.1.8-2

3.2 Effects Found Not Significant During Initial Study

An Initial Study was prepared for the Proposed Project as part of the environmental scoping process. The Initial Study (Appendix A) determined that the following resources would not be significant: Aesthetics, Agriculture and Forestry Resources, Land Use and Planning, Mineral Resources, Population and Housing, Public Services, Recreation, and Utilities and Service Systems. In accordance with the California Environmental Quality Act (CEQA) Guidelines, Section 15128, a brief explanation indicating the reasons that the effects on these resources would not be significant is provided under each subheading below.

3.2.1 Aesthetics

Individual activities associated with the Proposed Project could occur in a wide range of locations in San Diego County and may be located near, within, or visible from a scenic vista or State scenic highway. However, activities are not expected to result in removal or damage of scenic resources such as trees, rock outcroppings, or historic buildings. Further, the physical activities associated with the Proposed Project have limited potential to impact the quality of scenic resources or existing visual character in the Integrated Vector Management Program (IVMP or Proposed Project) Service Area. While IVMP activities may require minor grading or dredging, no major earthwork is proposed that would significantly alter the visual character of the Service Area. In addition, no major structures or lighting are proposed that, if constructed, would be incompatible with the existing visual character of natural resource areas. IVMP monitoring equipment and other ground-level features would affect small areas near the water surface and would likely be visible only to nearby viewers. Water management systems and equipment would result in minor alterations that would not jeopardize or impact the existing visual character of project sites. Therefore, no aesthetics impacts would occur.

3.2.2 Agriculture and Forestry Resources

The activities associated with the Proposed Project would not result in a change in land use in the Service Area. Specifically, the activities would not result in the conversion of agricultural or forested lands to non-agricultural or non-forest uses. Furthermore, the activities would not install new uses that would conflict with the existing zoning of a site, including any sites designated as agriculture or under a Williamson Act contract. Pesticide application used under the IVMP would continue to be applied at the lowest effective concentration for a specific, targeted set of vectors and site conditions, as specified in Table 1-2, *IVMP Best Management Practices*, to avoid impacts to regional agricultural activities. Therefore, no agricultural or forestry resources would be impacted by the Proposed Project.

3.2.3 Land Use and Planning

The activities associated with the Proposed Project would not alter the type of land use or interfere with existing land uses and, therefore, would be consistent and not conflict with local land use plans or regulations. Furthermore, the Proposed Project would not disrupt or divide an established community by introducing new infrastructure such as major roadways, water supply systems, or utilities to the area. Therefore, the Proposed Project would not divide an established community or conflict with applicable land use plans, policies, or regulations. No impact would occur.

3.2.4 Mineral Resources

Individual project activities could occur in a wide range of locations and could potentially be on or adjacent to lands designated as Mineral Resource Zone (MRZ)-2 by the Division of Mines and Geology or in areas with active mining operations. MRZ-2 is defined as an area where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exist. Although the mountains and deserts of the eastern San Diego region are known to contain sand, gravel, and granitic rock deposits suitable for aggregate, most designated mineral resource recovery sites and MRZ-2 lands are in the western San Diego region, which has been largely developed. The physical activities associated with the Proposed Project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State. Furthermore, such activities would not affect the potential for future mining activities at these sites. Therefore, impacts would be less than significant.

3.2.5 Population and Housing

The activities associated with the Proposed Project would not result in the displacement of people or housing. Furthermore, individual activities under the IVMP would not induce population growth because they do not propose any physical or regulatory change that would involve removing a restriction to or encouraging population growth in an area. These actions include but are not limited to the following: new or extended infrastructure or public facilities; new commercial or industrial facilities; large-scale residential development; accelerated conversion of homes to commercial or multi-family use; regulatory changes including General Plan amendments, Specific Plan Amendments, zone reclassifications, sewer or water annexations; or Local Agency Formation Commission annexation actions. Since the Proposed Project would not result in these changes, no new population growth would occur. Therefore, population and housing impacts would be less than significant.

3.2.6 Public Services

Individual activities under the IVMP would not include development that would place demand on police, fire, school, park, or other public services. The intent of the IVMP is to reduce the spread of mosquito-borne and other vector-borne diseases and nuisances. Therefore, the Proposed Project would not result in the need for the provision of additional governmental facilities, and as such, no impact would occur.

3.2.7 Recreation

Individual activities under the Proposed Project would not include any development, including but not limited to a residential subdivision, mobile home park, or construction of any use that may increase the use of existing neighborhood or regional parks or other recreational facilities in the county. Furthermore, the IVMP would not result in any changes to existing land uses that would accelerate or result in the deterioration of recreational facilities. Therefore, no significant impacts to recreational facilities would occur as a result of IVMP implementation.

3.2.8 Utilities and Service Systems

The Proposed Project does not include any development or propose a use requiring water supplies or wastewater services. Project-related impacts associated with water quality and drainage are analyzed in Section 3.1.5, *Hydrology and Water Quality*. The physical activities

under the Proposed Project could require minor grading or vegetation management to survey and abate vectors and nuisances. As a result, this could potentially generate solid waste. If such activities require solid waste disposal, there are numerous solid waste disposal facilities in the San Diego region with remaining capacity. All solid waste facilities, including landfills, require solid waste facility permits to operate. In San Diego County, the County Department of Environmental Health and Quality serves as the Local Enforcement Agency that issues solid waste facility permits with concurrence from the California Department of Resources Recycling and Recovery under the authority of the California Public Resources Code (Sections 44001–44018) and California Code of Regulations, Title 27, Division 2, Subdivision 1, Chapter 4 (Section 21440 et seq.). Therefore, there would be sufficient existing permitted solid waste capacity to accommodate the Proposed Project's solid waste disposal needs. Impacts associated with the Proposed Project would be less than significant.

This page intentionally left blank

CHAPTER 4.0 PROJECT ALTERNATIVES

This chapter was prepared in accordance with California Environmental Quality Act (CEQA) Guidelines, Section 15126.6, which requires analysis of a range of reasonable alternatives. Pursuant to CEQA, an Environmental Impact Report (EIR) need consider only those alternatives necessary to permit a reasoned choice. An EIR need not consider every feasible alternative. Alternatives should be limited to those that meet most of the basic project objectives, are potentially feasible, and would avoid or substantially reduce at least one of the significant effects of the Integrated Vector Management Program (IVMP or Proposed Project).

Pursuant to CEQA Guidelines, Section 15126.6(e), the Lead Agency shall also consider a "No Project Alternative" and identification of the environmentally superior alternative from among the project alternatives. If the No Project Alternative is the environmentally superior alternative, the EIR needs to identify an environmentally superior alternative from among the other alternatives. The discussion of alternatives in this EIR satisfies these requirements.

4.1 Rationale for Alternative Selection

4.1.1 Alternative Screening Process

As indicated above, the choice of alternatives is guided primarily by the need to either avoid or substantially lessen significant impacts and to achieve project objectives. As stated in Section 1.2.2, *Program Goals and Objectives*, the overarching goal of the Vector Control Program (VCP) is to:

> Protect the public from vector-borne disease and nuisances. The existing vector control program is ongoing and currently implements vector control through various techniques, including surveillance and monitoring, source reduction (i.e., physical control), source treatment (i.e., biological and chemical controls), public education, outreach, and disease diagnostics. The VCP now proposes to enhance its existing program by including additional equipment, services, and techniques.

The objectives of the Proposed Project are as follows:

1. Protect public health and well-being and prevent economic damage from vectors throughout San Diego County by applying integrated vector management practices.

2. Implement effective and efficient integrated vector management practices in a manner that balances protecting the environment with the need to protect the public from vector-borne diseases and nuisances.

3. Allow for the inclusion and utilization of new and proven vector control techniques and strategies, including a wide range of different tools and practices to safeguard public health and safety.

4. Coordinate and continuously collaborate with other vector control districts throughout California, as well as State and federal public health and environmental agencies, to ensure the vector control program adapts as new vectors and diseases emerge.

Refer to Table 4-1, *Comparison of Project Alternatives to Vector Management Activities*, for a comparison of the various alternatives discussed below and their respective activities. Table 4-2, *Comparison of Project Alternatives to Project Objectives*, provides a comparison of each alternative to the Proposed Project's objectives. In addition, Table 4-3, *Comparison of Project Alternatives to Significant Proposed Project Impacts*, provides a comparison of each alternative's potential environmental impact in relation to the Proposed Project.

4.1.2 Alternatives Considered but Determined Infeasible and Rejected

CEQA Guidelines, Section 15126.6(c), requires an EIR to explain why other alternatives to the Proposed Project were rejected. Alternatives that were considered but not carried forward for analysis in this PEIR were eliminated for a variety of reasons, including (1) they did not meet project objectives, (2) they did not reduce or avoid project impacts, or (3) they were found to be infeasible for technical, environmental, or other reasons. This section provides an overview of the reasons why the alternatives were eliminated from further consideration.

4.1.2.1 *Abatement and Enforcement Alternative*

Under the Abatement and Enforcement Alternative, the VCP would continue to serve as the local mosquito abatement and vector control district pursuant to State law (California Health and Safety Code, Article 5, Division 3, Chapter 1) to monitor sites for potential vector activity, but the VCP would only be authorized to use its authority under County Code of Regulatory Ordinances, Section 64.101, to cite violations and undertake abatement actions requiring landowners to control vectors on their property. In other words, the Abatement and Enforcement Alternative would no longer allow the VCP to directly control vectors, including using pesticides, removing vegetation, or conducting grading, dredging, or vegetation management and, instead, would place the burden of controlling vectors on property owners. One exception to this alternative is California Health and Safety Code, Section 116110(c), which obligates the California Department of Public Health (CDPH)—and, therefore by extension, the County Department of Environmental Health and Quality VCP—to retain emergency authority to prevent a disease outbreak and practice emergency measures.

Impacts to biological resources and cultural resources resulting from vegetation removal and ground-disturbing activities by the VCP may decrease under this alternative; however, such activities would be anticipated to occur by landowners who are mandated by the VCP to control and abate vectors. Other less than significant project-related impacts, such as air quality, hazards and hazardous materials, and hydrology/water quality, would be comparable to the Proposed Project.

However, while the County's IVMP-related impacts may be reduced under this alternative, this does not necessarily mean impacts would be reduced countywide. Without a coordinated, programmatic, and integrated approach to vector management that is currently provided by the VCP, individual landowners would be obligated to conduct their own remedies to control vectors. These activities would lack regulatory oversight, including the location and timing of vegetation removal, the extent of vegetation removal and grading and/or dredging, the amount of chemical treatments applied, and the use of approved treatments in a safe manner by State-certified and trained personnel. It is also important to note that individual landowners are not required to report pesticide usage to State or local agencies like the VCP currently does. As a result, pesticide usage by private citizens would be unregulated and unmonitored. Furthermore, pesticide applications would only be used by individuals or companies who have the resources necessary to acquire the needed products. In other words, communities who cannot afford to purchase pesticides or

hire a pest control company would be at a disadvantage. In addition, in the event of a disease outbreak, the VCP would be unable to respond directly. Instead, the VCP would continuously survey vector populations to observe whether individual landowners are remediating the problem and could issue enforcement or abatement orders. The VCP would have no direct ability to manage the vectors unless the VCP used its emergency authority to prevent further outbreaks. This would also result in critical time delays to prevent further spread of disease throughout San Diego County. Lastly, while the VCP's source treatment and source reduction activities have the potential to result in significant but mitigable impacts, the same activities conducted by individual property owners would likely go unregulated, unreported, unmonitored, and unmitigated, thereby exacerbating environmental impacts that would have otherwise been minimized or mitigated by the VCP.

In conclusion, the Abatement and Enforcement Alternative would not protect public health by applying integrated vector management practices, nor would it have the ability to implement practices that balance environmental impacts since the VCP could only monitor and abate. In addition, the alternative would not allow for new techniques or strategies, and the VCP would be unable to adapt as new vectors and diseases emerge. Therefore, the Abatement and Enforcement Alternative fails to meet any of the project objectives as outlined in Section 1.2.2, and this alternative is not considered further.

4.1.2.2 *No Pesticides Alternative*

The No Pesticides Alternative would no longer allow the VCP to use any pesticides as a means of controlling vectors. The term "pesticide" used in this Program EIR (PEIR) is any substance intended to control, destroy, repel, or attract a pest and includes larvicides, which have organic or synthetic ingredients, and adulticides which are only available as synthetic at this time. All other vector management techniques planned under the Proposed Project, including surveillance and monitoring, source reduction (i.e., physical control), public education, outreach, and disease diagnostics, would be implemented under this alternative. Although this alternative would not lessen environmental impacts as discussed further below, it is being considered due to initial feedback received from the public.

Currently the VCP employs a few different forms of pesticide products that kill immature and adult mosquitoes. However, greater than 94% of all pesticides used by the VCP are organic, which includes products that contain naturally occurring bacteria that exist in the natural environment. In rare occasions, the VCP also employs adulticides, which target adult mosquitoes when larvicides would be ineffective. Although adulticides are part of the VCP's myriad of options to control vectors, they have historically been reserved for rare instances when a quantitative risk analysis shows that immediate reduction of adult mosquitoes is necessary to avert a potential disease outbreak. In addition, pesticides are subjected to numerous laboratory tests by the manufacturers and are reviewed and approved by the California Environmental Protection Agency and the U.S. Environmental Protection Agency (USEPA). The USEPA evaluates proposed pesticides to assure that its use will not pose unreasonable risks of harm to human health and the environment (USEPA 2022b). Only after passing stringent regulatory review can pesticides be approved for sale and use. When pesticides are necessary, they are applied by Certified Vector Control Technicians in a manner that minimizes risk to human and ecological health and in accordance with the legal application rates, label instructions, and federal and State guidelines. Also, pesticides applied within waterbodies must comply with the State's National Pollutant Discharge Elimination System Permit for Biological and Residual Pesticide Discharges to Waters of the U.S. from Vector Control Applications.

As discussed in Chapter 1.0, *Project Description*, the amount of pesticides used by the VCP is negligible compared to other sectors in San Diego County and compared to other counties throughout California. Specifically, it is important to note that in 2018, the VCP accounted for only 1.2% of all pesticides (by weight) in San Diego County according to the State's pesticide use reporting database (CDPR 2018a). The industries using the largest amount of pesticide in the county are agriculture, structural pest control (e.g., termites), and landscape maintenance. The VCP uses the least amount of pesticides among all other major groups. Furthermore, a Statewide comparison shows that San Diego ranked 27th out of 58 counties for total pounds of active pesticide used, which includes all sectors such as residential, commercial, industrial, agriculture, and public health (CDPR 2018b). Finally, according to the USEPA, 90% of all pesticides used in the United States are applied by the agricultural sector, 6% to 7% by the home and garden sector, and only 4% to 5% for industrial/commercial/government sectors combined (USEPA 2017). After considering this data, eliminating pesticides by the VCP would not significantly reduce the amount of pesticides used across San Diego County, but it would severely restrict the VCP's ability to carry out its mission of protecting the public from vectors and vector-borne diseases.

Accordingly, the No Pesticides Alternative would eliminate all pesticide uses by the VCP described above[1]. Because pesticides would no longer be available as an integrated tool of the VCP under this alternative, other activities must increase to compensate for the loss of pesticide usage if the VCP is to continue managing vectors effectively. This means Certified Vector Control Technicians would increase the frequency of surveillance throughout San Diego County and likely increase the amount of community education and outreach. But most notably, it would require physical management (as planned under the Proposed Project) including vegetation removal and grading/dredging to eliminate standing water and vector-breeding habitat. In fact, if pesticides are no longer available to the VCP as one of many tools in an integrated approach to controlling mosquitoes and other vectors, physical management of the environment would be required more often than anticipated under the Proposed Project. This is because additional sites would need to be physically managed and impacted that would have otherwise been minimized or avoided by applying State-approved pesticides. As a result, impacts to biological resources and cultural resources would increase compared to the Proposed Project due to vegetation removal and ground-disturbing activities necessary to compensate for the lack of State-approved pesticides.

In addition, with this shift in how the VCP would manage vectors, it is likely that the VCP would also increase its enforcement authority requiring landowners to control vectors on their properties. Similar to the Abatement and Enforcement Alternative, chemical treatments applied by private citizens would lack regulatory oversight that would have otherwise been applied by State-certified County personnel. It is also important to note that individuals are not required to report pesticide usage to State or local agencies. As a result, pesticide usage by private citizens would be unregulated, unreported, and unmonitored. Furthermore, pesticide applications would only be used by individuals or companies who have the resources necessary to acquire the needed products. In other words, communities who cannot afford to purchase pesticides or hire a pest control company would be at a disadvantage. In addition, in the event of a disease outbreak, the VCP's only direct ability to manage an outbreak would be through vegetation removal, grading/dredging, or issue enforcement or abatement orders to private landowners.

In conclusion, the No Pesticides Alternative would not protect public health by applying integrated vector management practices since this alternative would eliminate one of the VCP's integrated approaches. Nor would this alternative have the ability to implement practices that balance

[1] One exception to the No Pesticide Alternative is California Health and Safety Code, Section 116110(c), which obligates the VCP to retain emergency authority to prevent a disease outbreak and practice emergency measures.

environmental impacts since the VCP would have to increase vegetation removal and grading/dredging more than it would have if pesticides could be used as another method of vector control. In addition, this alternative would not allow for new techniques or strategies as new pesticides (including organic options) may be developed, and the VCP would be unable to adapt as new vectors and diseases emerge. Therefore, the No Pesticide Alternative fails to meet any of the project objectives as outlined in Section 1.2.2, and this alternative is not considered further.

4.1.2.3 *Other Control Measures Alternative*

In addition to the vector management techniques described in the Proposed Project and this chapter, there are several other methods in the vector control industry that were considered but ultimately not recommended. This section describes some of these techniques, tools, or methods that were not further evaluated for the VCP's use at this time.

Vector control is accomplished through coordinated efforts across the State. As such, it is common for vector districts and other agencies to evaluate potential strategies and techniques employed by other counties or vector control districts. In preparing this PEIR, the VCP reviewed and considered several options from various vector control programs throughout California to help identify other alternatives.

Specifically, the following alternative control measures were considered but rejected for the reasons described below:

- Biological Control Pathogens (bacteria and/or viruses): Involves deploying pathogens that kill mosquito larvae when ingested by the larvae. The VCP currently uses commercially available bacteria to kill mosquito larvae (larvicides). Other pathogens are not commercially available in California and will need further research prior to being considered a viable alternative.

- Biological Control Parasites: Includes using a parasitic biological organism intended to harm the host vector. Examples range from external parasites like mites, lice, and ticks to internal parasites like certain worms and single-celled organisms like amoebae. Fungi can also be parasites. Of these, only fungi are commercially available in California and need further research prior to being considered a viable alternative.

- Biological Control Predators: Includes using a predatory biological organism intended to harm the host vector. Examples may include insects, fish, birds, or bats that consume immature or adult vectors as prey. Only the mosquito fish (*Gambusia affinis*) is commercially available for use at the present time and is currently used by the VCP as discussed throughout this PEIR. However, the use of mosquito fish is limited and restricted to artificial water features such as abandoned swimming pools, ornamental ponds, horse troughs, and other water features that do not connect to a natural waterway. Modifying or expanding the VCP's program to deploy more natural predators that are already present in mosquito-breeding habitat is infeasible since no other predators are commercially available. Therefore, this measure is not proposed as part of the IVMP.

- Mass Trapping: Includes deploying a large amount of traps over a large area, which are continuously monitored and replaced. This measure requires a large volume of traps, increased number of staff, and increased amount of staff time to travel the entire county for this measure to be effective and would be cost-prohibitive. While the VCP currently has authority to conduct mass trapping for eye gnats, this authority is used infrequently

as-needed. Instead, small-scale trapping is currently used to help assess the presence and abundance of vectors and vector-borne disease to guide the VCP in selecting other integrated approaches, such as source reduction and public education and, when necessary, source treatment (i.e., pesticides).

- Attract and Kill: Involves using a bait to lure a vector to a location where it can be eliminated. Examples include electric insect management devices (i.e., bug zappers) or attractive toxic sugar baits (ATSB). Adult mosquitoes would be attracted to the ATSB, which may either be contained within a bait station allowing mosquitoes to feed on the bait or applied as a liquid spray to the foliage of plants and human-made nonporous surfaces (e.g., painted or stained wood, metal, and plastic). Mosquitoes are then killed following ingestion of the ATSB. ATSBs have been in development as a possible control strategy; however, the VCP needs to operationally test this material, as well as other potential ATSBs, to determine those circumstances where their use may be effective while also having little or no nontarget species impacts. Therefore, although currently not used, the VCP may seek to use ATSBs in the future as a part of its IVMP (which may require additional CEQA analysis).

- Genetically Modified Vectors: This control measure involves deploying vectors that have been genetically modified so that they cannot reproduce normally or transmit disease. This can be accomplished using techniques such as irradiation, bacterial infection, chemosterilization, and molecular biology. Applications could be intended for direct population suppression or to reduce the ability of a vector to harbor and transmit disease. For example, one technique is to release sterile male mosquitoes so they are unable to reproduce (Sterile Insect Technique); however, this would need to be continuously repeated to provide long-term control benefits. Another technique is to introduce vectors, whose genes have been altered. However, even with significant advances in technology and understanding of mosquito population ecology, much is still to be learned about the application and effectiveness of these techniques as a potential tool for integrated mosquito management. The circumstances by which this technology may be used with local mosquito populations require further study to determine if and where this technology can be effectively used. Therefore, at this time, the VCP does not propose to include genetically modified mosquitoes as part of its IVMP.

- Spatial Repellents: Involves deploying small devices to protect certain locations from vectors within the immediate vicinity. Repellents do not kill the vector. Instead, the repellent forces the vector (i.e., mosquito) away from the targeted areas. Different kinds of repellents have various operational needs and, therefore, varying levels of success when used. Generally speaking, repellents can be divided into two broad categories: chemical and mechanical (e.g., fans). Although repellents can be effective for small-scale use, they are not part of the overall IVMP control strategy because they merely displace the problem and do not reduce the vector population in a broader area.

In conclusion, the above measures are determined to be too speculative or would require further study and consideration before being proposed. Therefore, these measures are considered infeasible at this time and are not considered further in this PEIR. Should conditions change in the future where one or more of the methods described above becomes available and viable, the VCP may consider employing one or more of these methods, which may require additional CEQA analysis.

4.2 Alternatives Considered to Reduce a Significant Effect

CEQA Guidelines, Section 15126.6(b), requires that an EIR identify alternatives that are capable of avoiding or substantially lessening the significant environmental effects of the Proposed Project, even if the alternative would impede to some degree the attainment of all of the project objectives or would be more costly.

As identified in Chapter 2.0, *Significant Environmental Effects of the Proposed Project*, of this PEIR, the Proposed Project would have impacts related to biological resources, cultural resources, geology and soils (paleontological resources), and tribal cultural resources; however, all impacts would be reduced to less than significant with mitigation. The impacts are primarily associated with the source reduction component of the Proposed Project that includes earth moving and the physical removal of vegetation. Particularly, the movement of earth could result in direct impacts by removing special status plants; filling, removing, and or discharging into waters or wetlands; removing riparian habitat and sensitive natural communities; or disturbing or destroying unknown artifacts or fossils. It could result in indirect impacts by disturbing habitat for special status animal species. Similarly, the physical removal of plants (as opposed to trimming) could have both direct and indirect impacts on special status species.

4.2.1 No Project Alternative

4.2.1.1 *Description and Setting*

CEQA Guidelines, Section 15126.6(e), requires analysis of a No Project Alternative in all EIRs. The No Project Alternative is defined as what would reasonably be expected to occur in the foreseeable future if the Proposed Project was not approved and implemented. It provides a benchmark, enabling decision makers to compare the magnitude of environmental effects of the alternatives. Although the No Project Alternative does not satisfy the Proposed Project's objectives, its inclusion in the PEIR is intended as a basis for comparison with the Proposed Project and other reasonable alternatives.

The existing vector program is ongoing and currently implements vector control through various techniques, including surveillance and monitoring, source treatment (i.e., biological and chemical controls), public education, outreach, and disease diagnostics. The VCP proposes to enhance its existing program by including additional equipment, services, and techniques. Under CEQA, "when the project is the revision of an existing land use or regulatory plan, policy or operation, the 'no project' alternative will be the ***continuation of the existing plan, policy or operation into the future***" [emphasis added] (Section 15126.6[e][3][a]).

Therefore, for the purposes of comparing alternatives in the chapter, the No Project Alternative would be a continuation of the existing vector control program without the additional enhancements proposed under the IVMP. Specifically, the No Project Alternative would not include the following elements, which are not currently performed by the VCP but are proposed under the IVMP:

- Use of fixed-wing aircraft or drones[2] for surveillance

[2] For the purposes of this PEIR, "drone" is intended to generically mean a remotely piloted or unpiloted aircraft. As of this writing, the Federal Aviation Administration's official terminology is Unmanned Aircraft Systems; however, Federal Aviation Administration is transitioning toward gender-neutral terminology such as drone operator, certificated remote pilot, model aircraft flyer, and advanced air mobility operator."

- Grading, dredging, or vegetation removal for source reduction
- Autodissemination[3] of larvicides
- Larvicides applied over a wide area[4] via fixed-wing aircraft or drones
- Adulticides applied via drones
- Non-emergency use of adulticides

Refer to Table 4-1 for a comparison of the various alternatives discussed below and their respective activities.

It is assumed that the No Project Alternative would operate within the same parameters in relation to the existing IVMP guidance documents identified in Chapter 1.0.

4.2.1.2 *Comparison of Effects to the Proposed Project*

Biological Resources

As discussed above, the No Project Alternative would be a continuation of the existing program without the additional enhancements under the IVMP. Specifically, the No Project Alternative would not include grading, dredging, or vegetation removal for source reduction. Therefore, impacts to special status plant and animal species, riparian habitat and natural communities, and jurisdictional waters associated with these activities would be avoided[5], and the No Project Alternative would result in less impacts than the Proposed Project. The impacts of the other enhanced IVMP measures as described in Chapters 2 and 3 were found to be less than significant; therefore, there would be no additional impacts avoided under the No Project Alternative.

Cultural Resources

Source reduction activities under the Proposed Project would potentially result in significant impacts to cultural resources. Specifically, ground-disturbing activities could have the potential to cause a substantial adverse change in the significance of an archaeological resource, including the potential destruction or disturbance of an archaeological site that contains or has the potential to contain information important to history or prehistory.

Conversely, the No Project Alternative would not involve grading, dredging, and vegetation removal for source reduction, thereby negating the impacts that would occur with the Proposed Project. Therefore, impacts to cultural resources associated with these activities would be avoided, and the No Project Alternative would result in less impacts than the Proposed Project.

Tribal Cultural Resources

Similar to cultural resources, implementation of the Proposed Project would result in ground-disturbing activities that could have the potential to cause a substantial adverse change in the

[3] Autodissemination includes using mosquitoes to apply insecticides to hidden water sources where they breed.
[4] Wide-area larviciding is the technique of applying larvicides over a wide area to specifically kill mosquito larvae. It can be performed from the ground or air.
[5] Under both the No Project Alternative (existing conditions) and the Proposed Project, minor trimming of vegetation along existing access routes and paths may occasionally be necessary on a case-by-case basis to provide access to overgrown vector-breeding sources for monitoring and source treatment even if the Proposed Project is not implemented.

significance of tribal cultural resources. The No Project Alternative would not involve grading, dredging, and vegetation removal for source reduction, thereby negating the impacts that would occur with the Proposed Project. Therefore, impacts to tribal cultural resources associated with these activities would be avoided, and the No Project Alternative would result in less impacts than the Proposed Project.

Geology and Soils

The No Project Alternative would continue to use existing access routes that have already been established and are regularly maintained; however, it would not include the grading, dredging, and vegetation removal associated with the Proposed Project. Vector control activities would continue to be concentrated throughout the county in various locations, some of which may contain paleontological resources.

Although ground-disturbing activities associated with the Proposed Project are expected to generally be minor in scale, source reduction activities could potentially result in direct or indirect impacts to paleontological resources. Therefore, impacts to geology and soils (i.e., paleontological resources) associated with these activities would be avoided, and the No Project Alternative would result in less impacts than the Proposed Project.

4.2.1.3 *Conclusion*

The No Project Alternative in comparison to the Proposed Project would reduce impacts related to biological resources, cultural resources, tribal cultural resources, and geology and soils (paleontological resources).

Under existing conditions (i.e., No Project Alternative), the VCP strives to apply an integrated approach to managing vector populations. Therefore, because the No Project Alternative would continue to allow the VCP to operate in its current capacity, it would meet the Objective 1 of protecting public health by applying integrated vector management practices. In addition, because the No Project Alternative would reduce environmental impacts, it would meet Objective 2 of implementing effective and efficient integrated vector management practices in a manner that balances environmental impacts with the need to protect the public from vector-borne diseases and nuisances.

However, the No Project Alternative would not meet the other two project objectives. Specifically, this alternative would not allow for new techniques or strategies as planned under the Proposed Project as necessary to counteract new, evolving, and emerging vector risks (Objective 3). Instead, this alternative would limit the VCP's ability to incorporate different tools and practices as discussed above and significantly restrict its ability to counter new vector risks. The purpose of an integrated program is to allow the VCP to retain numerous tools and methods depending on the situational needs to remediate vectors. By not allowing the VCP to evolve and not allowing for additional enhancements as proposed in the PEIR, this alternative would prevent the VCP from including new and proven techniques and to meet new vector challenges. Lastly, the VCP could partially meet the final objective (Objective 4) by coordinating and collaborating with other vector control districts throughout California, but by not understanding and employing other techniques used by other districts, this alternative may allow vectors to find more permissive ground in San Diego County, and problems would be exacerbated. Therefore, if the VCP is unable to adapt as new vectors and diseases emerge, then it cannot meet this objective.

As a result, over time the VCP would be unable to practice more progressive forms of source reduction, and vector-breeding sources could potentially increase unless matched and managed through other adaptive techniques.

4.2.2 No Physical Management Alternative

4.2.2.1 *Description and Setting*

The No Physical Management Alternative would preclude source reduction activities as planned under the Proposed Project (e.g., grading, dredging, vegetation management). The No Physical Management Alternative would still allow the VCP to conduct surveillance and monitoring, source treatment (i.e., pesticide use), and public outreach and education.

Physical management activities such as grading, dredging, and vegetation management directly improve water circulation, remove standing water, and reduce or eliminate vector-breeding sources. As supported by the Mosquito Vector Control Association of California and as implemented by numerous vector control districts, implementing an integrated management program with multiple tools is critical to eliminating vectors and their breeding habitat. By using source reduction techniques (i.e., physical management) as planned under the Proposed Project, the VCP could potentially reduce the need for other control techniques such as pesticides.

By contrast, if the VCP does not conduct source reduction or physical management activities, this would limit the VCP's ability to use all available techniques and would not result an integrated approach to vector management. Thus, to control large vector populations, other treatment efforts would need to be employed.

4.2.2.2 *Comparison of Effects to the Proposed Project*

Biological Resources

The No Physical Management Alternative would not involve the use of grading, dredging, vegetation removal, or other ground-disturbing activities related to source reduction. This would reduce impacts to biological resources compared to the Proposed Project because grading, dredging, or vegetation management would not occur. Therefore, this alternative would reduce or avoid significant impacts to special status plant and animal species, riparian habitat and natural communities, and jurisdictional waters that would have otherwise resulted in vegetation removal or habitat modification. While the Proposed Project includes best management practices (BMPs) and mitigation to reduce these impacts to less than significant, the No Physical Management Alternative would not require such mitigation and therefore would result in less impacts than the Proposed Project.

Cultural Resources

The No Physical Management Alternative would not involve the use of grading, dredging, vegetation removal, or other ground-disturbing activities related to source reduction. This would reduce impacts to cultural resources compared to the Proposed Project. Specifically, if no source reduction activities are conducted, no ground-disturbing impacts would occur to historical or archaeological resources or human remains. While the Proposed Project includes BMPs and mitigation to reduce these impacts to less than significant, the No Physical Management Alternative would not require such mitigation and, therefore, would result in less impacts than the Proposed Project.

Tribal Cultural Resources

Similar to cultural resources, the No Physical Management Alternative would not involve the use of grading, dredging, vegetation removal, or other ground-disturbing activities related to source reduction. This would reduce impacts to tribal cultural resources compared to the Proposed Project since implementation of the Proposed Project would result in ground-disturbing activities that could potentially impact tribal cultural resources. Specifically, if no source reduction activities are conducted, no impacts would occur to tribal cultural resources. While the Proposed Project includes BMPs and mitigation to reduce these impacts to less than significant, the No Physical Management Alternative would not require such mitigation and, therefore, would result in less impacts than the Proposed Project.

Geology and Soils

Similar to cultural and tribal cultural resources, the No Physical Management Alternative would not involve the use of grading, dredging, vegetation removal, or other ground-disturbing activities related to source reduction. This would reduce impacts to geology and soils compared to the Proposed Project since implementation of the Proposed Project would result in ground-disturbing activities that could potentially destroy a unique paleontological resource or site or unique geologic feature. While the Proposed Project includes BMPs and mitigation to reduce these impacts to less than significant, the No Physical Management Alternative would not include such activities warranting mitigation and, therefore, would result in less impacts than the Proposed Project.

4.2.2.3 *Conclusion*

Under the No Physical Management Alternative, the VCP would continue implementing defensive techniques, such as ongoing larvicide and adulticide use, to control vectors rather than using proactive and preventative techniques, such as source reduction. While the VCP would still practice vector control, it would not be as effective, and over time, if breeding sources are allowed to deteriorate, the vector population could increase.

In comparison to the Proposed Project, the No Physical Management Alternative would reduce impacts related to biological, cultural/tribal cultural resources, and geology and soils (paleontological resources). However, by not implementing source reduction techniques, pesticide treatment (i.e., biological and chemical controls) would continue to serve as the primary control method to prevent vector-breeding.

Under existing conditions (i.e, VCP's existing operations), the VCP strives to apply an integrated approach to managing vector populations. Therefore, because the No Physical Management Alternative would largely appear similar to existing conditions, it would meet Objective 1 of protecting public health by applying integrated vector management practices. In addition, because the No Physical Management Alternative would reduce environmental impacts, it would meet Objective 2 of implementing effective and efficient integrated vector management practices in a manner that balances environmental impacts with the need to protect the public from vector-borne diseases and nuisances.

However, the No Physical Management Alternative would not meet the other two project objectives. Specifically, this alternative would not allow for new techniques or strategies as planned under the Proposed Project (Objective 3). Instead, this alternative would limit the VCP's ability to incorporate different tools and practices as discussed above. The purpose of an

integrated program is to allow the VCP the ability to retain numerous tools and methods depending on the situational needs to remediate vectors. By not allowing physical management, this alternative would prevent the VCP from including new and proven techniques. Lastly, the VCP could partially meet the final objective (Objective 4) by coordinating and collaborating with other vector control districts throughout California. However, one of the key purposes of coordination is to understand and employ other techniques used by those districts. Therefore, if the VCP is unable to adapt as new vectors and diseases emerge, then it cannot meet this objective.

In the short-term, the No Physical Management Alternative would appear similar to the VCP's existing operations; however, over time the VCP would be unable to practice more progressive forms of source reduction, and vector-breeding sources could potentially increase unless matched and managed through other adaptive techniques. With the VCP's continued primary control method of pesticides, there is the potential that vectors could become resistant and the VCP would continually seek new treatment methods if physical management is not an option.

4.2.3 Organic Pesticides Alternative

4.2.3.1 *Description and Setting*

The Organic Pesticides Alternative would require the VCP to only use "organic" pesticides as registered by the USEPA and U.S. Department of Agriculture (USDA). This means that the VCP would no longer be able to use larvicides or adulticides – as it currently does – if they are not registered as organic. The only exception to this alternative is California Health and Safety Code, Section 116110(c), which obligates the VCP to retain emergency authority to prevent a disease outbreak and practice emergency measures.

In the United States, the term "organic" is federally regulated as defined by the Code of Federal Regulations, Title 7, Subtitle B, Chapter I, Subchapter M, Part 205, Subpart A, as a "labeling term that refers to an agricultural product produced in accordance with the [Organic Foods Production Act of 1990]." There are multiple federal agencies and nonprofit organizations responsible for overseeing organic products.

It starts with the USDA's National Organic Program. The National Organic Program develops and enforces consistent national standards for organically produced agricultural products sold in the United States. This process involves input from the public and the National Organic Standards Board (a federal advisory committee) (USDA 2022a).

Next, to label a pesticide as organic, it must go through USEPA, whose role is to assure that the USDA's National Organic Program policies are implemented with regard to organic claims made by registered pesticide products. Specifically, USEPA is responsible for approving a pesticide's label language and provides guidance to companies looking to register a pesticide. But more importantly, USEPA is responsible for ensuring that a pesticide proposed to be organic meets the USDA's National Organic Program criteria (USEPA 2022h). Here is an image of what USEPA's recommended logo for organic pesticides looks like:

In addition to USEPA's process, food and fiber products that use the term "organic" are required by USDA to be certified by an independent third-party certifier. Although this does not apply to the VCP's operations, some of the products used by the VCP may contain an additional organic approval by the Organic Materials Review Institute (OMRI). OMRI is a trusted third-party 501(c)(3) nonprofit organization that is approved and accredited by the USDA Quality Assessment Division to ISO 17065 standards (USDA 2022b). In other words, OMRI is authorized to independently review products (including pesticides) for organic eligibility and determine whether or not a product qualifies as organic under USDA's National Organic Program. If approved, the product becomes "OMRI Listed" or certified, and it can use OMRI's logo shown below.

Now that "organic" is defined for the purpose of this discussion, the Organic Pesticides Alternative looks at the ramifications of only using organic pesticides even if other pesticides could meet the requirement of being organic, as described above. Under existing conditions, the VCP uses several pesticides that do not have an organic label but do contain the same or similar ingredients as certified organic products. Under this alternative, the VCP would no longer use those similar products because they are not officially labeled as organic by the USEPA, USDA, or OMRI.

Between calendar years 2018–2021, over 94% of all pesticides (by weight) used by the VCP were OMRI-certified organic larvicides. However, to treat adult mosquitoes, there are no organic commercially available adulticides and thus, the VCP would not be able to use adulticides to preemptively avert an increased risk to human health or well-being. Of the remaining pesticides used, approximately 4.2% contain the same or similar active ingredients and could be considered organically-viable meaning a total of 98.5% of all pesticides used are certified organic or contain similar ingredients. The remaining 1.5% of pesticides are synthetic larvicides or other products that cannot be considered organic.[6] However, the value that non-organic products bring to a multi-faceted vector program is critical. The VCP strives to use naturally occurring products or other environmentally friendly techniques as the first form of defense against vectors, but depending on the vector and site conditions, other products may be necessary where organic pesticides prove ineffective (i.e., late stage pupae or adult mosquitoes). In other words, the reason the VCP relies so little on non-organic pesticides today is because it uses a balanced and integrated approach that lends itself to considering organic or other natural methods as much as possible.

Without non-organic products, the frequency of surveillance and the volume of organic pesticides would likely need to increase to offset the loss of other effective products currently used. Under current conditions, the VCP's Certified Vector Control Technicians visit known breeding sites approximately once every 3-4 weeks to monitor vector activity and conduct various management techniques. However, if the VCP is limited to only using organic pesticides, this could potentially require technicians to revisit the same site at a much higher frequency (e.g., once per week) to continue to patrol and control a site. This could reasonably require an increase in personnel (i.e., Certified Vector Control Technicians) and the number of vehicles, equipment, and pesticides needed.

[6] Adulticides are not included in the 2018 – 2021 synthetic products since adulticides have not been used by the VCP since 2016.

Even with an assumed increase in organic pesticides to offset the loss of other products, currently there are no known or commercially available organic alternatives that effectively control adult or pupal stage mosquitoes. If pupal stage mosquitoes are not controlled effectively or in time, those pupae develop into adults, which would continue breeding and expanding the vector population. Similarly, currently there are no organic control products for adult mosquitoes; therefore, the VCP would be incapable of managing or controlling the spread of vector-borne diseases or nuisances produced by adults unless the VCP used its emergency authority to prevent further outbreaks. Instead, the public would either need to practice avoidance strategies (i.e., wait until adult populations have declined[7], died, or dispersed) or apply their own non-organic products that could include adulticides and would lack regulatory oversight that would have otherwise been conducted by State-certified County personnel. However, pesticide applications would only be used by individuals or companies who have the resources necessary to acquire the needed products. In other words, communities who cannot afford to purchase pesticides or hire a pest control company would be at a disadvantage. It is also important to note that individuals are not required to report pesticide usage to State or local agencies as the VCP currently does. As a result, pesticide usage by private citizens would be unregulated, unreported, and unmonitored.

In addition, if non-organic pesticides are not available to the VCP as one of many tools in an integrated approach to controlling mosquitoes and other vectors, physical management of the environment (i.e., grading, dredging, vegetation removal) would be required more often than anticipated under the Proposed Project. This is because additional sites would need to be physically managed and impacted that would have otherwise been minimized or avoided by applying State-approved pesticides. Therefore, the Organic Pesticides Alternative could potentially result in increased incursions into certain habitat to remediate vector-breeding sites.

4.2.3.2 *Comparison of Effects to the Proposed Project*

Biological Resources

Under the Proposed Project, source reduction activities would occur (i.e., grading, dredging, vegetation removal). However, it is reasonable that such activities would be required more often than anticipated under the Proposed Project if non-organic pesticides are not available to the VCP as one of many tools in an integrated approach. This is because additional sites would need to be physically managed and impacted that would have otherwise been minimized or avoided by applying State-approved pesticides. As a result, the Organic Pesticides Alternative would potentially increase impacts to biological resources compared to the Proposed Project. While both the Proposed Project and Organic Pesticides Alternative would implement source reduction techniques, it is anticipated that under an integrated vector management program, fewer sites may need physical management if other control techniques are available (i.e., pesticides). Accordingly, the Organic Pesticides Alternative would potentially increase significant impacts to special status plant and animal species, riparian habitat and natural communities, and jurisdictional waters. Therefore, the Organic Pesticides Alternative would result in greater impacts than the Proposed Project.

[7] A natural decline in mosquito populations would be expected to take an extended period of time since adult mosquitoes could further breed, lay additional eggs (one gravid female can lay up to 200 eggs at a time), and severely magnify the mosquito population.

Cultural Resources

The Organic Pesticides Alternative would involve the use of grading, dredging, vegetation removal, or other ground-disturbing activities more often than anticipated under the Proposed Project because non-organic pesticides would not be available under the Organic Pesticides Alternative. Accordingly, the Organic Pesticides Alternative would potentially increase significant impacts to cultural resources. Therefore, the Organic Pesticides Alternative would result in greater impacts than the Proposed Project.

Tribal Cultural Resources

The Organic Pesticides Alternative would involve the use of grading, dredging, vegetation removal, or other ground-disturbing activities more often than anticipated under the Proposed Project because non-organic pesticides would not be available under the Organic Pesticides Alternative. Accordingly, the Organic Pesticides Alternative would potentially increase significant impacts to tribal cultural resources. Therefore, the Organic Pesticides Alternative would result in greater impacts than the Proposed Project.

Geology and Soils

The Organic Pesticides Alternative would involve the use of grading, dredging, vegetation removal, or other ground-disturbing activities more often than anticipated under the Proposed Project because non-organic pesticides would not be available under the Organic Pesticides Alternative. Accordingly, the Organic Pesticides Alternative would potentially increase significant impacts to unique paleontological resources or sites or unique geologic features. Therefore, the Organic Pesticides Alternative would result in greater impacts than the Proposed Project.

4.2.3.3 *Conclusion*

Under the Organic Pesticides Alternative, the VCP would continue using larvicides that are certified as organic but would no longer use synthetic larvicides or adulticides. As a result of this, the VCP would need to increase other techniques to compensate for the loss of using synthetic larvicides or adulticides that would otherwise be available under existing conditions. Specifically, the VCP expects the need to increase the number of individual, site-specific activities requiring monitoring and source reduction (grading, dredging, vegetation management). An increase in physical management would be needed to eliminate vector breeding sources such as dense vegetation or inadequate water control structures that create standing water in order to reduce vector populations and reduce the risk of disease transmission. In comparison to the Proposed Project, the Organic Pesticides Alternative would potentially result in greater impacts to biological, cultural/tribal cultural resources, and geology and soils (paleontological resources). Although the Organic Pesticides Alternative would not lessen or avoid environmental impacts, this alternative was evaluated in detail due to anticipated public interest.

Regarding the project objectives, the VCP would continue under the Organic Pesticides Alternative to apply an integrated approach to managing vector populations (Objective 1) since it would use surveillance and monitoring, outreach and education, source reduction (i.e., physical controls), and source treatment (organic pesticides and mosquito fish).

However, the Organic Pesticides Alternative would not meet the other three project objectives (Objectives 2, 3, 4). Specifically, this alternative would result in greater environmental impacts than planned under the Proposed Project; therefore, the VCP would be unable to implement an

effective and efficient integrated vector management practices in a manner that balances environmental impacts (Objective 2).

In addition, the Organic Pesticides Alternative would not allow for new pesticides that have organic or environmentally-friendly ingredients, but are not technically labeled as organic. The purpose of an integrated program is to allow the VCP the ability to retain numerous tools and methods depending on the situational needs to remediate vectors. By not allowing the VCP to anticipate and include different tools necessary to safeguard public health (i.e., non-organic products), this alternative would prevent the VCP from including new and proven techniques (Objective 3). Lastly, the VCP could partially meet the final objective (Objective 4) by coordinating and collaborating with other vector control districts throughout California. However, one of the key purposes of coordination is to understand and employ other techniques used by those districts. Therefore, if the VCP is unable to adapt as new vectors and diseases emerge, then it cannot meet this objective.

Should the option of a commercially produced organic treatment become available that is effective in managing adult and pupal stage mosquitoes, the VCP could consider this option. However, until such time that a certified organic product can effectively control adult mosquito populations, non-organic treatments, as approved by the USEPA and applied by Certified Vector Control Technicians, remain an essential tool in implementing a balanced, integrated, and effective vector control program.

4.3 Identification of the Environmentally Superior Alternative

An EIR is required to identify the environmentally superior alternative, which is the alternative having the potential for the fewest significant environmental impacts, from among the range of reasonable alternatives that are evaluated. CEQA Guidelines, Section 15126.6(d)(2), states that if the environmentally superior alternative is the No Project Alternative, the EIR shall also identify an environmentally superior alternative from among the other alternatives. Therefore, the No Physical Management Alternative would be the environmentally superior alternative. Without physical management or source reduction techniques, such as grading, dredging, vegetation removal, or other ground-disturbing activities, impacts to biological resources, cultural/tribal cultural resources, or geology and soils (paleontological resources) would be reduced.

In the short-term, the No Physical Management Alternative would appear similar to existing conditions (i.e., VCP's existing operations); however, over time it would become increasingly difficult to control vector populations without the use of all available, new, and proven techniques such as source reduction. In addition, vector-breeding sources could potentially increase unless matched and managed through other adaptive techniques. With the VCP's continued primary use of pesticides, there is the potential that vectors could become resistant and the VCP would continually seek new treatment methods if physical management is not available. Therefore, although the No Physical Management Alternative reduces or avoids environmental impacts when compared to the Proposed Project, it would not meet or achieve the project objectives as outlined in this PEIR.

Table 4-1. Comparison of Project Alternatives to Vector Management Activities

Vector Management Activities		Alternatives			
		No Project (Existing only)	**Proposed Project (Existing + New)**	**No Physical Management**	**Organic Pesticides**
Surveillance and Monitoring	Via land or water	Included	Included	Included	Included
	Via helicopter	Included	Included	Included	Included
	Via fixed-wing aircraft or drone	***NOT Included***	Included	Included	Included
Outreach and Education		Included	Included	Included	Included
Physical Control (grading, dredging, vegetation removal)		***NOT Included***	Included	***NOT Included***	Included
Mosquito Fish		Included	Included	Included	Included
Larvicides	Via land or water	Included	Included	Included	Included
	Via helicopter	Included	Included	Included	Included
	Via fixed-wing aircraft or drone (i.e., wide area)	***NOT Included***	Included	Included	Included
Adulticides	Emergency use	Included	Included	Included	***NOT Included***
	Non-emergency use	***NOT Included***	Included	Included	***NOT Included***
	Via land or water	Included	Included	Included	***NOT Included***
	Via helicopter	Included	Included	Included	***NOT Included***
	Via fixed-wing aircraft	***NOT Included***	Included	Included	***NOT Included***
	Via drone	***NOT Included***	Included	Included	***NOT Included***

Notes:
Included = activity is (or will be) part of associated project alternative.
NOT Included = activity is not (or will not be) part of associated project alternative.

Table 4-2. Comparison of Project Alternatives to Project Objectives

Project Objective (Section 1.1)	Proposed Project (Existing + New)	No Project (Existing only)	No Physical Management	Organic Pesticides
1) Protect public health, well-being, and economic damage from vectors throughout San Diego County by applying integrated vector management practices.	☑	☑	☑	☑
2) Implement effective and efficient integrated vector management practices in a manner that balances environmental impacts with the need to protect the public from vector-borne diseases and nuisances.	☑	☑	☑	✖
3) Allow for the inclusion and utilization of new and proven vector control techniques and strategies, including a wide range of different tools and practices to safeguard public health and safety.	☑	✖	✖	✖
4) Coordinate and continuously collaborate with other vector control districts throughout California and State and federal public health and environmental agencies to ensure the vector control program adapts as new vectors and diseases emerge.	☑	✖	✖	✖

Notes:

☑ – alternative meets objective

✖ – alternative incompletely or wholly fails to meet objective

Table 4-3. Comparison of Project Alternatives to Significant Proposed Project Impacts

Resource Area	Proposed Project (Existing + New)	No Project (Existing only)	No Physical Management	Organic Pesticides
Biological Resources	Less Than Significant w/ Mitigation	Less	Less	Greater
Cultural Resources	Less Than Significant w/ Mitigation	Less	Less	Greater
Tribal Cultural Resources	Less Than Significant w/ Mitigation	Less	Less	Greater
Geology and soils	Less Than Significant w/ Mitigation	Less	Less	Greater

Similar – Alternative is likely to result in similar impacts when compared to Proposed Project.
Less – Alternative is likely to result in less impacts when compared to Proposed Project.
Greater – Alternative is likely to result in greater impacts when compared to Proposed Project.

CHAPTER 5.0 LIST OF REFERENCES

14 CCR 15000 et seq. Guidelines for Implementation of the California Environmental Quality Act.

American Mosquito Control Association (AMCA). 2021. Best Practices for Integrated Mosquito Management.

Bartkiewicz, Kronick & Shanahan. 2013. Federal, State and Local Regulation of California Mosquito and Vector Control Agencies. October.

Bean, Lowell John, and Florence C. Shipek. 1978. Luiseño. In California, edited by Robert F. Heizer, pp. 550–563. Handbook of North American Indians, vol. 8. William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Bull, Charles S. 1983. Shaking the Foundations: The Evidence for San Diego Prehistory. Casual Papers: Cultural Resource Management 1(3):15–64. Cultural Resource Management Center, San Diego State University.

California Air Pollution Control Officers Association (CAPCOA). 2018. Health Effects. Available at: http://www.capcoa.org/health-effects/.

2008. CEQA & Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act. CAPCOA. January. Available at: http://www.capcoa.org/wp-content/uploads/downloads/2010/05/CAPCOA-White-Paper.pdf.

California Air Resources Board (CARB). 2022. 2022 Scoping Plan Documents. Available at: https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents

2019. California Greenhouse Gas Inventory for 2000–2017 – By Sector and Activity. November 6.

2017. California's 2017 Climate Change Scoping Plan: The strategy for achieving California's 2030 greenhouse gas target. November. Available at: https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf.

2016. Ambient Air Quality Standards. May 4. Available at: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf.

2007. Staff Report: California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit. November 16.

2005. Air Quality and Land Use Handbook: A Community Health Perspective. Available at: https://www.arb.ca.gov/ch/handbook.pdf.

California Department of Fish and Wildlife (CDFW). 2020. California Natural Diversity Data Base (CNDDB). RareFind Database Program, Version 5.

2019. Memorandum of Understanding Between CDFW and California Department of Public Health for Salvage of Bird, Lagomorph, and Rodent Carcasses for Detection of West Nile Virus Infection. February 7.

California Department of Forestry and Fire Protection (CAL FIRE). 2020. Wildfire Activity Statistics. https://www.fire.ca.gov/media/0fdfj2h1/2020_redbook_final.pdf.

2019a. Strategic Plan. January.

2007. Fact Sheet: California's Fire Hazard Severity Zones. May.

California Department of Pesticide Regulation (CDPR). 2022a. VOC Emissions Calculator. Available at: https://apps.cdpr.ca.gov/voc-calculator/start.cfm.

2022b. Annual Report on VOC Emissions from Pesticides for 1990–2019. DPR Environmental Monitoring Branch. Available at: https://www.cdpr.ca.gov/docs/emon/vocs/vocproj/vocmenu.htm.

2021a. Annual Report on Volatile Organic Compound Emission from Pesticides for 1990-2019. October. Available at: https://www.cdpr.ca.gov/docs/emon/vocs/vocproj/2019_voc_annual_report.pdf

2021b. Manned Pest Control Aircraft Pilot. Accessed July 2021. Available at: https://www.cdpr.ca.gov/docs/license/pilot.htm.

2018a. CalPIP Application Home. Available at: https://calpip.cdpr.ca.gov/main.cfm.

2018b. Available at: https://www.cdpr.ca.gov/docs/pur/pur18rep/totals/county_rank.pdf .

2008. Memorandum of Understanding Between the California Department of Public Health and the California Department of Pesticide Regulation and the County Agricultural Commissioners for the Protection of Human Health from the Adverse Effect of Pesticides. Available at: https://www.cdpr.ca.gov/docs/enforce/mous/dhs_cac.pdf

1995. California State Plan for Protection of Endangered Species from Pesticide Exposure.

California Department of Public Health (CDPH). 2021. California Mosquito-Borne Virus Surveillance and Response Plan. May. Available at: http://westnile.ca.gov/resources.php.

2012. Best Management Practices for Mosquito Control in California. July. Available at: http://westnile.ca.gov/resources.php.

2008a. Best Management Practices for Mosquito Control on California State Properties. June. Available at: http://westnile.ca.gov/resources.php.

2008b. The Cooperative Agreement between the California Department of Public Health and Local Vector Control Agencies. Revised August.

California Department of Transportation (Caltrans). 2013a. Transportation and Construction Vibration Guidance Manual, Environmental Engineering, Hazardous Waste, Air, Noise, Paleontology Office. September.

2013b. Technical Noise Supplement. Environmental Program, Noise, Air Quality, and Hazardous Waste Management Office. Available at: http://www.dot.ca.gov/hq/env/noise/pub/tens_complete.pdf.

California Energy Commission (CEC). 2021a. Status of all Project. Available at: https://ww2.energy.ca.gov/sitingcases/all_projects_cms.html.

2021b. Supply and Demand of Natural Gas in California. Available at: https://www.energy.ca.gov/data-reports/energy-almanac/californias-natural-gas-market/supply-and-demand-natural-gas-california.

2020a. California Energy Demand 2018–2030 Revised Forecast, Commission Final Report. February. Available at: https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2019-integrated-energy-policy-report/2019-iepr.

2020b. Final 2019 Integrated Energy Policy Report. January 31. Available at: https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2019-integrated-energy-policy-report.

California Native Plant Society (CNPS). 2020. Inventory of Rare and Endangered Plants (online edition, v8-03 0.4). Rare Plant Program. California Native Plant Society, Sacramento, CA. Available at: http://www.rareplants.cnps.org/.

California Natural Resources Agency. 2009. Final Statement of Reasons for Regulatory Action. Available at: http://resources.ca.gov/ceqa/docs/Final_Statement_of_Reasons.pdf.

Cardno Entrix. 2013. Ecological & Human Health Assessment Report prepared for the Integrated Mosquito and Vector Management Programs for Nine Districts. June 2013, Revision 7. https://www.smcmvcd.org/files/3eca3f121/mvcac_dpeir_app_b_risk_assessment_jun2013_r7_0.pdf

Carrico, Richard L. 2008. Strangers in a Stolen Land: Indians of San Diego County from Prehistory to the New Deal. Sunbelt Publications, San Diego.

Center for Disease Control (CDC). 2017. Mosquito Control: What You Need to Know About Bti. Available at: https://www.cdc.gov/zika/pdfs/bti_fact_sheet.pdf

Cleveland National Forest. 2020. Valley Fire. Updated December 3, 2020. Available at: https://inciweb.nwcg.gov/incident/7150/.

Cooley, Theodore G., and Laura J. Barrie. 2004. Archaeological Excavation at the Village of Pa'Mu, Ramona Valley, California. Proceedings of the Society for California Archaeology 17:43–56.

County of San Diego (County). 2022a. County of San Diego Mosquito, Vector and Disease Control Assessment Engineer's Report – Fiscal Year 2022–2023 June.

2022b. Mosquito-borne Virus Strategic Response Plan.

2022c. Pesticide Regulation. Available at: https://www.sandiegocounty.gov/content/sdc/awm/pesticides.html.

2022d. Transportation Study Guidelines. September.

2022e. San Diego County: Regional Decarbonization Framework. Available at: https://www.sandiegocounty.gov/content/sdc/sustainability/regional-decarbonization.html

2022f. 2020-2030 County Operations Strategic Sustainability Plan. Available at: https://www.sandiegocounty.gov/content/dam/sdc/dgs/Doc/Energy_SSP.pdf

2022g. County Operations Energy and Sustainability Management Program. Available at: https://www.sandiegocounty.gov/general_services/Energy/Energy.html

2021a. Department of Agriculture, Weights and Measures: Pesticide Regulation. Accessed July 2021. Available at: https://www.sandiegocounty.gov/content/sdc/awm/pesticides.html.

2021b. Department of Environmental Health and Quality: Certified Unified Program Agency (CUPA). Accessed July 2021. Available at: https://www.sandiegocounty.gov/content/sdc/deh/hazmat/hmd_cupa.html.

2021c. County of San Diego Guidelines for Determining Significance – Hydrology and Water Quality.

2020a. SanBIOS Database. Land Use and Environment Group. Available at: http://www.sangis.org/.

2020b. Vector Control Program Equipment Inventory. Provided by County 7/14/20. Fleet vehicle data reflects calendar year 2019 inventory/usage.

2017. Regional Storm Water Resource Plan. February. Available at: https://sdirwmp.org/pdf/SWRP_DRAFT_Ch3WatershedID.pdf.

2014. County of San Diego Vector Control Program Mosquito Breeding Site Access Standard Operating Procedure. November 21.

2011a. San Diego County Code Title 8 Zoning and Land Use Regulations, Division 6. Miscellaneous Land Use Regulations. Chapter 6. Resource Protection Ordinance. October 14.

2011b. General Plan. Land Use and Environmental Group, Department of Planning and Land Use, Department of Public Works. August. Available at: https://www.sandiego.gov/planning/genplan.

2011c. County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements – Transportation and Traffic. August 24.

2010a. Guidelines for Determining Significance and Report Format and Content Requirements – Biological Resources. September 15.

2010b. Biological Mitigation Ordinance [for the South County MSCP Subarea Plan]. Ordinance No. 8845, 9246, 9632, 10039. April 2.

2010c. Guidelines for Determining Significance and Report Format and Content Requirements – Wildland Fire and Fire Protection. August 31.

2009a. County of San Diego Guidelines for Determining Significance – Paleontological Resources. January 15.

2009b. County of San Diego Guidelines for Determining Significance – Noise.

2008. Fact Sheet: Climate and Smog. July. Available at: https://www.sandiegocounty.gov/content/dam/sdc/deh/Vector/pdf/chd_VHRP_Final_PEIR_incl_Errata_Att_A.pdf.

2007a. County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements – Air Quality. March 19.

2007b. County of San Diego Guidelines for Determining Significance – Cultural Resources: Archaeological and Historic Resources. December 5.

2007c. County of San Diego Guidelines for Determining Significance – Geologic Hazards. July 30.

2007d. County of San Diego Guidelines for Determining Significance – Unique Geology. July 30.

2007e. Guidelines for Determining Significance – Hazardous Materials and Existing Contamination. July 30.

2007f. Guidelines for Determining Significance – Groundwater Resources. March 19. Available at: https://www.sandiegocounty.gov/content/dam/sdc/dplu/docs/GRWTR-Guidelines.pdf.

2006. County of San Diego Environmental Impact Report Format and General Content Requirements. September 26. Available at: https://www.sandiegocounty.gov/content/dam/sdc/pds/ProjectPlanning/docs/EIR-Format-Content-Reqs.pdf.

1998. Final Multiple Species Conservation Program, MSCP Plan. August.

1997. Multiple Species Conservation Program, County of San Diego Subarea Plan. October 22.

Csondes. 2004. Environmental Fate of Methoprene. Environmental Monitoring Branch, Department of Pesticide Regulations.

EG&G. 2007. San Diego County Firestorms After Action Report.

Ezell, Paul H. 1987. The Harris Site – An Atypical San Dieguito Site, or Am I Beating a Dead Horse? In San Dieguito–La Jolla: Chronology and Controversy, edited by Dennis Gallegos, pp. 15–22. San Diego County Archaeological Society Research Paper Number 1. San Diego.

Gallegos, Dennis R. 1987. A Review and Synthesis of Environmental and Cultural Material for the Batiquitos Lagoon Region. In San Dieguito-La Jolla: Chronology and Controversy, edited by Dennis Gallegos, pp. 23–34. San Diego County Archaeological Society, Research Paper 1.

HELIX Environmental Planning, Inc. (HELIX). 2021a. County of San Diego Integrated Vector Management Program Biological Resources Technical Report. March.

2021b. County of San Diego Integrated Vector Management Program Cultural Resources Technical Report. October.

2021c. County of San Diego Integrated Vector Management Program Air Quality Technical Report. November.

2021d. County of San Diego Integrated Vector Management Program Greenhouse Gas Emissions Technical Report. November.

2021e. County of San Diego Integrated Vector Management Program Noise Technical Report. October.

Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. State of California, The Resources Agency, 156 pp.

Lawler, Sharon P. 2017. Journal of Ecotoxicology and Environmental Safety. Volume 139, May 2017, pages 335-343. Environmental safety review of methoprene and bacterially-derived pesticides commonly used for sustained mosquito control. Available at : https://www.sciencedirect.com/science/article/pii/S014765131630553X.

Luomala, Katherine. 1978. Tipai-Ipai. In California, edited by Robert F. Heizer, pp. 592–609. Handbook of North American Indians, vol. 8. William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Maryland Department of Agriculture. 2022. Bacillus thuringiensis israelensis (Bti) Fact Sheet. Accessed December 2022. https://mda.maryland.gov/plants-pests/Documents/bti.factsheet.pdf

Mayes et al. 2003. Mayes, M.A., G.D. Thompson, B. Husband, and M.M. Miles. 2003. Spinosad toxicity to pollinators and associated risk. Reviews of Environmental Contamination and Toxicology 179:37-71.

McCord, Gordon C., Elise Hanson, Murtaza H. Baxamusa, Emily Leslie, Joseph Bettles, Ryan A. Jones, Katy Cole, Chelsea Richer, Eleanor Hunts, Philip Eash-Gates, Jason Frost, Shelley Kwok, Jackie Litynski, Kenji Takahashi, Asa Hopkins, Robert Pollin, Jeannette Wicks-Lim, Shouvik Chakraborty, Gregor Semieniuk, David G. Victor, Emily Carlton, Scott Anders, Nilmini Silva Send, Joe Kaatz, Yichao Gu, Marc Steele, Elena Crete, and Julie Topf. *San Diego Regional Decarbonization Framework: Technical Report.* County of San Diego, California. 2022. Available at: https://www.sandiegocounty.gov/content/dam/sdc/lueg/regional-decarb-frameworkfiles/RDF_Technical_Report_FINAL_2022.pdf

Moratto, Michael J. 1984. California Archaeology. Academic Press, Orlando.

Moriarty, James R., III. 1966. Cultural Phase Divisions Suggested by Typological Change Coordinated with Stratigraphically Controlled Radiocarbon Dating in San Diego. The Anthropological Journal of Canada 4(4): 20–30.

National Pesticide Information Center (NPIC). 2014. Spinosad General Fact Sheet. Available at: http://npic.orst.edu/factsheets/spinosadgen.html.

Navigant Consulting, Inc. (Navigant). 2015. Energy Efficiency Potential and Goals Study for 2015 and Beyond. July 10.

Oberbauer, T., M. Kelly, and J. Buegge. 2008. Draft Vegetation Communities of San Diego County. Based on "Preliminary Descriptions of the Terrestrial Natural Communities of California," R. F. Holland, Ph.D., October 1986. March. Revised from 1996 and 2005. July.

Office of Environmental Health Hazard Assessment (OEHHA). 2015. Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. Available at: https://oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0.

Organic Materials Review Institute (OMRI). 2022. What We Do. Available at: https://www.omri.org/what-we-do.

2017. OMRI Listed. Available at: https://www.omri.org/mfg/abb/certificate/8251.

Parker, Patricia L. and Thomas F. King. 1998. Guidelines for Evaluating and Documenting Traditional Cultural Properties. Available at: https://www.resolutionmineeis.us/documents/parker-king-1998.

Project Clean Water. 2021. San Diego Bay Watershed Management Area. Available at: http://www.projectcleanwater.org/watersheds/san-diego-bay-wma/. Accessed February 16, 2021.

Radeloff, V.C., R. B. Hammer, S.I. Stewart, J.S. Fried, S.S. Holcomb, J.F. Mckeefry. 2005. The Wildland-Urban Interface in the United States. Ecological Applications 15(3): 799–805.

Raven-Jennings, Shelly, and Brian F. Smith. 1999. Report of Excavations at CA-SDI-4608: Subsistence and Technology Transitions during the Mid-to-Late Holocene in San Diego

County. Brian F. Smith and Associates, Poway, California. Prepared for City of Poway. Report on file at the South Coastal Information Center, San Diego State University.

Regional Water Quality Control Board (RWQCB). 1994. Water Quality Control Plan for the San Diego Basin.

Rogers, Malcolm J. 1939. Early Lithic Industries of the Lower Basin of the Colorado River and Adjacent Desert Areas. San Diego Museum of Man Papers No. 3. San Diego Museum of Man.

San Diego Air Pollution Control District (SDAPCD). 2020a. Attainment Status. Available at: https://www.sdapcd.org/content/sdapcd/planning/attainment-status.html.

2020b. 2020 Plan for Attaining the National Ambient Air Quality Standards for Ozone in San Diego County. October.

San Diego Association of Governments (SANDAG). 2021a. Final Environmental Impact Report, San Diego Forward: The 2021 Regional Plan. December. Available at: https://sandag.org/regional-plan/2021-regional-plan/environmental-impact-report.

2021b. San Diego Forward: The Regional Plan. Available at: https://sandag.org/regional-plan/2021-regional-plan/final-2021-regional-plan.

2018. Congestion Management Process. Available at: http://www.sandag.org/index.asp?projectid=13&fuseaction=projects.detail.

2009. Regional Energy Strategy for the San Diego Region. December. Available at: http://www.sandag.org/uploads/publicationid/publicationid_1476_10631.pdf.

San Diego Gas and Electric Company (SDG&E). 2021. Company Information. Available at: https://www.sdge.com/more-information/our-company.

San Diego History Center. 2020. Timeline of San Diego History. Available at: https://sandiegohistory.org/archives/biographysubject/timeline/.

San Diego Regional Energy Office (SDREO). 2002. San Diego Regional Energy Infrastructure Study. Available at: http://sandiegohealth.org/sandag/sandag_pubs_2009-7-25/publicationid_1384_8419.pdf.

San Mateo County Mosquito and Vector Control District. 2018. Draft Programmatic EIR for Integrated Mosquito and Vector Management Program. July 2018. Available at: https://www.smcmvcd.org/draft-programmatic-environmental-impact-report-peir.

Sparkman, Philip Stedman. 1908. The Culture of the Luiseño Indians. University of California Publications in American Archaeology and Ethnology 8(4):187–234.

State Water Resources Control Board (SWRCB)

2022. TMDL - The Integrated Report. Available at: https://www.waterboards.ca.gov/water_issues/programs/water_quality_assessment/2020_2022_integrated_report.html.

2021. Aquatic Weed Control Permit.

2009. General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities.

1994. Water Quality Control Plan for the San Diego Basin.

True, D. L. 1980. The Pauma Complex in Northern San Diego County: 1978. Journal of New World Archaeology 3(4): 1–30. Institute of Archaeology, University of California, Los Angeles.

1970. Investigation of a Late Prehistoric Complex in Cuyamaca Rancho State Park, San Diego County, California. Monograph 1. Archaeological Survey, University of California, Los Angeles.

1958. An Early Complex in San Diego County, California. American Antiquity 23(3): 255–263.

University of San Diego School of Law Energy Policy Initiative Center (EPIC). 2017. County of San Diego 2014 Greenhouse Gas Inventory and Projections. December. Available at: https://www.sandiegocounty.gov/content/dam/sdc/pds/advance/cap/publicreviewdocuments/PostBOSDocs/CAP%20Appendix%20A%20%20-%202014%20Inventory%20and%20Projections.pdf.

URS Corporation (URS). 2004. Multi-Jurisdiction Hazard Mitigation Plan, San Diego County. Prepared for the County of San Diego, Office of Emergency Services. March 15.

U.S. Department of Agriculture (USDA). 2022a. National Organic Program. Agricultural Marketing Service. Available at: https://www.ams.usda.gov/rules-regulations/organic.

2022b. Quality Assessment Division. Available at: https://www.ams.usda.gov/services/auditing/iso-guide65.

2005. Land Management Plan, Part 3 Design Criteria for the Southern California National Forests. R5-MB-080. September.

U.S. Department of Agriculture (USDA) and United States Department of the Interior (USDOI). 2001. Urban Wildland Interface Communities Within the Vicinity of Federal Lands That Are at High Risk From Wildfire. Federal Register 66:751–777. January 4.

U.S. Environmental Protection Agency (USEPA). 2022a. Bti for Mosquito Control. Available at: https://www.epa.gov/mosquitocontrol/bti-mosquito-control#:~:text=Bti%20is%20a%20biological%20or%20a%20naturally%20occurring%20bacterium%20found%20in%20soils.&text=EPA%20has%20registered%20five%20different,for%20control%20of%20mosquito%20larvae.

2022b. Pesticides: Biopesticides. Available at: https://www.epa.gov/pesticides/biopesticides.

2022c. About Pesticide Registration. Available at: https://www.epa.gov/pesticide-registration/about-pesticide-registration.

2022d. Balancing Wildlife Protection and Responsible Pesticide Use: How EPA's Pesticide Program Will Meet its Endangered Species Act Obligations. Available at: https://www.epa.gov/system/files/documents/2022-04/balancing-wildlife-protection-and-responsible-pesticide-use_final.pdf.

2022e. Endangered Species Act Policy for New Active Ingredients: Q&A. Available at: https://www.epa.gov/system/files/documents/2022-01/esa-policy-new-active-ingredients-qa.pdf.

2022f. Workplan for Improving Outcomes for Listed Species. Available at: https://www.epa.gov/endangered-species/epas-workplan-and-progress-toward-better-protections-endangered-species#workplan.

2022g. Insect Growth Regulators: S-Hydroprene (128966), S-Kinoprene (107502), Methoprene (105401), S-Methoprene (105402) Fact Sheet. Available at: https://www3.epa.gov/pesticides/chem_search/reg_actions/registration/fs_G-107_06-Dec-01.pdf.

2022h. PRN 2003-1: Labeling of Pesticide Products under the National Organic Program. Available at: https://www.epa.gov/pesticide-registration/prn-2003-1-labeling-pesticide-products-under-national-organic-program.

2022i. Fact Sheet: Bacillus sphaericus 2362, serotype H5a5b, strain ABTS 1743 (PC Code 119803). Available at: https://www3.epa.gov/pesticides/chem_search/reg_actions/registration/fs_PC-119803_06-May-14.pdf. Accessed June.

2018. Reduced Risk and Organophosphate Alternative Decisions for Conventional Pesticides. Available at: https://www.epa.gov/pesticide-registration/reduced-risk-and-organophosphate-alternative-decisions-conventional

2017. Pesticides Industry Sales and Usage 2008–2021 Market Estimates. Available at: https://www.epa.gov/sites/default/files/2017-01/documents/pesticides-industry-sales-usage-2016_0.pdf.

2009. Definition of Volatile Organic Compounds. Available at: http://www.epa.gov/ttn/naaqs/ozone/ozonetech/def_voc.htm.

2007. Revised Reregistration Eligibility Decision for Aliphatic Solvents (Mineral Oil and Aliphatic Petroleum Hydrocarbons). Available at: https://www3.epa.gov/pesticides/chem_search/reg_actions/reregistration/red_PC-063503_29-Nov-07.pdf

1991. Reregistration Eligibility Document Isopropyl (2E, 4E)-11-Methoxy-3,7,11-Trimethyl-2,4-Dodecadienoate (Referred to as Methoprene). List A. Case 0030. Available at: https://www3.epa.gov/pesticides/chem_search/reg_actions/reregistration/red_PC-105401_1-Mar-91.pdf

U.S. Environmental Protection Agency and U.S. Department of Transportation, National Highway Traffic Safety Administration. 2012. 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards. October 15. Available at: https://one.nhtsa.gov/staticfiles/rulemaking/pdf/cafe/2017-25_CAFE_Final_Rule.pdf.

U.S. Fish and Wildlife Service (USFWS). 2022. Carlsbad Fish and Wildlife Office: Feature Species. Available at: https://www.fws.gov/office/carlsbad-fish-and-wildlife/species.

2020. National Wetlands Inventory. Available at: https://www.fws.gov/program/national-wetlands-inventory.

2010. Pacific Pocket Mouse (Perognathus longimembris pacificus) 5-Year Review: Summary and Evaluation. Carlsbad Fish and Wildlife Office. April 1. Available at: https://ecos.fws.gov/docs/five_year_review/doc3552.pdf.

U.S. Geological Survey (USGS). 2020. National Hydrography Dataset (NHD). Available at: https://www.usgs.gov/core-science-systems/ngp/national-hydrography/national-hydrography-dataset?qt-science_support_page_related_con=0#qt-science_support_page_related_con.

Valent BioScience Corporation. 2021. VectoMax FG. Accessed March 5, 2021. Available at: https://www.valentbiosciences.com/publichealth/products/vectomax/.

Wallace, William J. 1955. A Suggested Chronology for Southern California Coastal Archaeology. Southwestern Journal of Anthropology 11:214–230.

Warren, Claude N. 1968. Cultural Tradition and Ecological Adaptation on the Southern California Coast. In Archaic Prehistory in the Western United States, edited by C. Irwin-Williams, pp. 1–14. Eastern New Mexico Contributions in Anthropology 1(3). Portales, New Mexico.

1967. The San Dieguito Complex: A Review and Hypothesis. American Antiquity 32:168–185.

Warren, Claude N., Gretchen Siegler, and Frank Dittmer. 1998. Paleoindian and Early Archaic Periods. In Prehistoric and Historic Archaeology of Metropolitan San Diego: A Historic Properties Background Study. Prepared for the Metropolitan Wastewater Department, City of San Diego. ASM Affiliates, Encinitas, California.

Washington State Department of Health. 2022. Mosquito Larvicide – Bti. Available at: https://doh.wa.gov/community-and-environment/pests/mosquitoes/bti.

Weber, David. 1992. The Spanish Frontier in North America. Yale University Press.

Western Regional Climate Center (WRCC). 2020. Western U.S. Climate Summary – San Diego, Lindbergh Field (047740). Available at: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7740.

World Resources Institute (WRI). 2017. CAIT Climate Data Explorer. Available at: http://cait.wri.org/historical.

This page intentionally left blank

CHAPTER 6.0 LIST OF PROGRAM ENVIRONMENTAL IMPACT REPORT PREPARERS AND PERSONS AND ORGANIZATIONS CONTACTED

6.1 Program Environmental Impact Report (PEIR) Preparers

County of San Diego

Department of Environmental Health and Quality, Vector Control Program

Role: Preparation/Review of PEIR and Technical Expertise

Nikos Gurfield, DVM, PhD, DACVP, County Veterinarian
John-Ross Glueck, Deputy Director
Saran Grewal, Chief
Chris Conlan, Supervising Vector Ecologist
Allison Bray, Environmental Health Specialist
Dominique Edwards, Program Coordinator
Anna Kremen, Environmental Health Specialist

Department of Public Works, Environmental Services Unit

Role: Preparation/Review of PEIR

Jeff Kashak, Land Use/Environmental Planning Manager
Kimberly Jones, Land Use/Environmental Planner III

Consultant Support

Harris & Associates

Role: Peer Review of PEIR

Ryan Binns, Project Director
Kelsey Hawkins, Land Use/Environmental Planner III
Lindsey Messner, Word Processor

Helix Environmental Planning, Inc.

Role: Preparer of Technical Studies and Preliminary PEIR

Joanne Dramko, AICP, Principal-in-Charge, QA/QC
Yara Fisher, AICP, Project Manager
Aaron Brownwood, Senior Environmental Planner
Jason Runyan, Senior Environmental Planner
Vanessa Toscano, Senior Environmental Planner
Victor Ortiz, Senior Environmental Planner
Erica Harris, Technical Specialist
Stacie Wilson, Technical Specialist
Stacy Nigro, Technical Specialist
Brendan Sullivan, Environmental Planner
Kristen Garcia, Environmental Planner
Rebecca Kress, GIS
Ana Topete, Word Processor

This page intentionally left blank

CHAPTER 7.0 LIST OF MITIGATION MEASURES AND ENVIRONMENTAL DESIGN CONSIDERATIONS

7.1 Mitigation Measures

The following proposed mitigation measures would minimize potentially significant environmental impacts resulting from implementation of the Integrated Vector Management Program (IVMP or Proposed Project). The significance of impacts following implementation of the proposed mitigation measures are discussed at the end of each section in Chapter 2.0, *Significant Environmental Effects of the Proposed Project*.

7.1.1 Biological Resources

M-BI-1a Prior to conducting Integrated Vector Management Program activities that would result in vegetation removal, habitat modification, and/or ground disturbance, a qualified biologist shall conduct a biological evaluation of the individual Integrated Vector Management Program activity area. The biological evaluation shall include (1) a general reconnaissance survey; (2) a review of recent aerial imagery, topographic and soils maps, regional vegetation mapping (as available), and local, State, and federal biological databases including but not limited to County SanBIOS data, California Department of Fish and Wildlife Biogeographic Information and Observation System database, U.S. Fish and Wildlife Service National Wetland Inventory) and critical habitat databases, and U.S. Environmental Protection Agency Watershed Assessment, Tracking & Environmental Results System database to determine sensitive biological resources known to occur within and adjacent to the Integrated Vector Management Program activity area; (3) a query of sensitive species databases such as U.S. Fish and Wildlife Service occurrence records, California Department of Fish and Wildlife California Natural Diversity Database, and County SanBIOS data to determine if special status species are present or have high potential to occur within or adjacent to the individual Integrated Vector Management Program activity area; and (4) preparation of a biological resources report. The reconnaissance survey shall include an inventory of existing vegetation communities, flora and fauna resources, and potentially jurisdictional resources present within the individual Integrated Vector Management Program activity area and documentation of special status plant and animal species, if encountered during the survey. The biological resources report shall summarize existing biological resources present within the individual Integrated Vector Management Program activity area, identify sensitive biological resources that are present or have potential to occur, provide an assessment of potential impacts, and identify applicable mitigation measures if necessary.

M-BI-1b Prior to conducting Integrated Vector Management Program activities that would result in vegetation removal, permanent habitat modification, and/or ground disturbance in areas with potential to support special status plant species, a qualified biologist shall conduct a rare plant survey to confirm the presence/absence of special status plant species within or adjacent to the individual Integrated Vector Management Program activity area. The exact timing of the rare plant survey shall be determined based on the location, elevation, and flowering phenology of the special status plant species with potential to occur within and adjacent to the individual Integrated Vector Management Program activity area. If special status plant species are discovered within the individual Integrated Vector Management Program activity area, those individuals or

populations shall be avoided, or additional mitigation measures (which could include transplantation) shall be implemented that would reduce impacts to below a level of significance. Impacts to State- and/or federally listed plant species and species designated critical habitat may require additional consultation with the U.S. Fish and Wildlife Service pursuant to the federal Endangered Species Act if the individual Integrated Vector Management Program activity area occurs outside an adopted Natural Community Conservation Plan/Habitat Conservation Plan or if take of that species is not covered under the specific adopted plan. Mitigation for impacts to special status plant species shall be consistent with local jurisdictions' policies and ordinances and/or adopted Natural Community Conservation Plans/Habitat Conservation Plans where required and identified within the individual Integrated Vector Management Program activity biological resources report that shall be prepared pursuant to M-BI-1a.

M-BI-1c Prior to conducting Integrated Vector Management Program activities, a qualified biologist shall flag areas to be avoided that contain sensitive biological resources. Where indicated by the qualified biologist, these areas shall be fenced or otherwise protected from direct or indirect impacts. Specifically, temporary (i.e., exclusionary) fencing shall be installed where feasible when grubbing, clearing, or grading would be conducted within 100 feet of sensitive biological resources depending on the species or habitat present, individual Integrated Vector Management Program activities, and site constraints. Temporary fencing (such as silt or orange construction fencing) shall be installed at limits of an individual Integrated Vector Management Program activity area prior to initiation of activities. A qualified biologist shall monitor the installation of temporary (i.e., exclusionary) fencing wherever it would abut sensitive species or vegetation communities, jurisdictional wetlands and waterways, or other sensitive areas, such as environmentally designated open space.

M-BI-1d Prior to conducting Integrated Vector Management Program activities that would result in vegetation removal, permanent habitat modification, and/or ground disturbance in areas known to contain sensitive biological resources, a qualified biologist shall conduct a training session for personnel, as applicable, to inform them of the sensitive biological resources with potential to occur in the sensitive area and any mitigation and/or avoidance measures that must be implemented.

M-BI-1e When sensitive biological resources have been identified on site or adjacent to an individual Integrated Vector Management Program activity area, a qualified biologist shall monitor initial vegetation clearing, grubbing, and ground disturbance activities to ensure that activities occur within the approved limits of work and that protective measures (e.g., flagging, fencing) are in place.

M-BI-2a Integrated Vector Management Program activities that could result in vegetation removal, permanent habitat modification, and/or ground disturbance activities within potentially suitable habitat for State- and/or federally listed animal species shall occur outside a species' breeding season. If such activities are unavoidable during the respective breeding season, focused protocol surveys for each species with potential to occur shall be conducted prior to conducting Integrated Vector Management Program activities. Surveys shall follow the current U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife protocols, as appropriate. If State- and/or federally listed species are determined to occur within or adjacent to the individual Integrated Vector Management Program activity area, consultation with the

U.S. Fish and Wildlife Service and California Department of Fish and Wildlife under the Federal Endangered Species Act and California Endangered Species Act, respectively, shall be initiated, and any resulting mitigation measures (including but not limited to breeding season activity restrictions and/or habitat-based compensatory mitigation) identified during consultation shall be implemented.

M-BI-2b Clearing or grubbing of vegetation during the general bird breeding season (February 15 through September 15) or raptor breeding season (January 15 through July 15) as defined by the *County of San Diego Guidelines for Determining Significance – Biological Resources* shall be avoided except as outlined by this measure. These breeding seasons shall not supersede implementing any agreements with the wildlife agencies, Habitat Conservation Plans, Habitat/Resource Management Plans, and Special Area Management Plans. If clearing and grubbing of vegetation is unavoidable during the breeding season, a pre-construction survey shall be conducted by a qualified biologist no more than seven days prior to conducting work in an individual Integrated Vector Management Program activity area that supports suitable nesting bird habitat to determine if active bird nests are present. If no nesting birds are documented (includes nest building or other breeding or active nesting behavior) within the individual activity area, clearing, grubbing, and grading shall be allowed to proceed. If an active nest is observed within the activity area, the qualified biologist shall determine an appropriate buffer around the nest based on the biology of the species and the specific site constraints. Activities shall not occur within the buffer area until the qualified biologist has determined that the nest is no longer active, young have fledged, or determined which activities within the buffer would not jeopardize nesting success. The buffer area shall be demarcated in the field with flagging, stakes, and/or temporary fencing. The nesting buffer may be determined and adjusted depending on the species present, individual Integrated Vector Management Program activities and site constraints, and in consultation with applicable wildlife agencies.

M-BI-3 For individual Integrated Vector Management Program activities adjacent to habitat occupied by State- and/or federally listed bird species (e.g., coastal California gnatcatcher, least Bell's vireo, and southwestern willow flycatcher) in which noise would be produced in excess of 60 A-weighted decibel equivalent continuous sound level or ambient noise levels (if ambient levels are above 60 A-weighted decibel), the Integrated Vector Management Program activities shall:

a) Be postponed until a qualified biologist determines the nest(s) is no longer active or until after the respective breeding season; or

b) Not occur until a temporary noise attenuation structure or barrier is constructed at the edge of the individual Integrated Vector Management Program activity area and/or around the noise-generating equipment to ensure that noise levels are reduced to below 60 A-weighted decibels or ambient, whichever is greater.

M-BI-4a Permanent impacts to riparian habitat and other sensitive natural communities shall be offset through mitigation of habitat of equal or higher biological value at ratios commensurate with individual Integrated Vector Management Program activity impacts. Mitigation shall occur by implementing one or a combination of the following: off-site or on-site preservation, enhancement, restoration, and/or creation of habitat; deduction of habitat mitigation credits from an approved mitigation area or bank, or other location deemed acceptable by the County and applicable regulatory agencies.

Final mitigation obligations shall be determined based on the quality, quantity, and type of habitat impacted at ratios consistent with local policies and ordinances, or, for projects within the boundaries of an adopted Natural Community Conservation Plan/Habitat Conservation Plan, in accordance with the applicable mitigation ratios and measures of that specific final plan. In the event that the adopted Natural Community Conservation Plan/Habitat Conservation Plan does not stipulate mitigation ratios for temporary impacts, temporary impacts to riparian habitat and other sensitive natural communities shall be mitigated through on-site revegetation of temporarily impacted areas to pre-construction conditions and appropriate vegetation types at a minimum 1:1 ratio.

M-BI-4b For individual Integrated Vector Management Program activities resulting in permanent impacts to wetland or riparian habitats and/or upland sensitive natural communities, and whose mitigation includes enhancement, restoration, and/or creation of such habitat, a restoration plan shall be prepared by qualified personnel with experience in Southern California ecosystems and native plant restoration techniques. At a minimum, the restoration plan shall include the following information: (a) the location of the mitigation site(s); (b) a schematic depicting the mitigation areas; (c) the plant species to be used, container sizes, and seeding rates; (d) a planting schedule; (e) a description of installation requirements, irrigation sources and methodology, erosion control, maintenance and monitoring requirements; (f) measures to properly control exotic vegetation on-site; (g) site-specific success criteria; (h) a detailed monitoring program; (i) contingency measures should the success criteria not be met; (j) a summary of the annual reporting requirements; and (k) identification of the responsible party(ies) for meeting the success criteria and providing for conservation of the mitigation site in perpetuity.

M-BI-5 Individual Integrated Vector Management Program activities that would result in impacts to federal or State regulated water bodies (i.e., waters of the U.S. and State, streambeds, wetlands, and/or riparian habitat) shall obtain applicable permits from federal and State regulatory agencies prior to the commencement of such discharge or dredging activities. Such agencies may include U.S. Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife. Mitigation requirements for impacts to federal and State regulated water bodies would be determined through the permitting process.

7.1.2 Cultural Resources

M-CR-1 **Site-Specific Cultural Resources Survey.** For individual Integrated Vector Management Program source reduction activities that have been determined to have the potential to result in impacts to cultural resources, as identified in the Integrated Vector Management Program Best Management Practices (A13), a qualified archaeologist shall be retained to conduct a site-specific cultural resource survey if the site has not been surveyed in the previous 5 years. The survey shall consist of a record search of the California Historical Resources Information System housed at the South Coastal Information Center, research to identify historic land use in the area, and a pedestrian survey that includes the participation of a Native American monitor. A review of the Sacred Lands File maintained by the Native American Heritage Commission shall also be requested for the individual Integrated Vector Management Program activity. A report shall be prepared to discuss the survey and record search results.

Cultural Resources Evaluation. If potential cultural resources are identified in an individual Integrated Vector Management Program activity area where ground disturbance is proposed, a cultural resources significance evaluation shall be conducted. Specifically, a significance evaluation shall be prepared if the individual Integrated Vector Management Program activity has the potential to result in an adverse effect to (1) new cultural resources that are identified as a result of a site-specific survey, or (2) previously recorded resources that have not been previously evaluated that are re-identified during a survey, unless resources can be avoided. Per the *County of San Diego Report Format and Content Requirements, Cultural Resources: Archaeological and Historic Resources*, significance evaluations will not be required if the resource has been evaluated for California Environmental Quality Act significance or for National Register of Historic Places eligibility within the last 5 years and if there has been no change in the conditions that contributed to the determination of resource importance (County 2007b). Significance evaluation efforts may include additional research to determine whether the resource meets the criteria for listing on the California Register of Historical Resources and/or subsurface investigation. Archaeological testing programs involving subsurface investigation shall include assessing the horizontal and vertical dimensions of a site, the chronological placement, site function, artifact/ecofact density and variability, presence/absence of subsurface features, and research potential. A Native American monitor shall be retained for all subsurface investigations. Resources found to be non-significant as a result of a survey and/or assessment will require no further work beyond documentation of the resources on the appropriate California Department of Parks and Recreation site forms and inclusion of results in the survey and/or assessment report prepared for the individual Integrated Vector Control Program activity. A cultural resources report shall be prepared to discuss potential impacts associated with the individual Integrated Vector Management Program activities and identify measures to reduce all significant impacts to below a level of significance, if applicable.

Cultural Resources Data Recovery Program. If significant cultural resources are identified within an individual Integrated Vector Management Program activity area where ground disturbance is proposed, and avoidance of impacts to the resource is not possible, a data recovery program (including research design) shall be implemented. The data recovery program shall be subject to the provisions, as outlined in California Public Resources Code, Section 21083.2, and completed prior to the implementation of the individual Integrated Vector Management Program activity. Avoidance of significant cultural resources shall be sought to the extent possible.

Cultural Resources Monitoring Program. If significant cultural resources are identified or potential cultural resources are suspected to occur in an individual Integrated Vector Management Program activity area where ground disturbance is proposed, monitoring shall be required by an archaeologist and Native American monitor. If unevaluated potentially significant cultural resources are discovered, construction activities shall be diverted away from the discovery until significance evaluation can be conducted.

To mitigate potential impacts to significant cultural resources, a data recovery program for any newly discovered cultural resource would be prepared, approved by the County, and implemented using professional archaeological methods. Construction activities would be allowed to resume after the completion of the recovery of an adequate sample and the recordation of features. All cultural material collected during

the data recovery program or monitoring program would be processed and curated at a San Diego County facility that meets federal standards per Code of Federal Regulations, Title 36, Part 79, unless the Native American monitors request the collection.

After monitoring is completed, an appropriate report shall be prepared. If no significant cultural resources are discovered, a brief letter shall be prepared. If significant cultural resources are discovered, a report with the results of the monitoring and any data recovery (including the interpretation of the data within the research context) shall be prepared.

M-CR-2 **Identification of Human Remains.** In the event that human remains are discovered during individual Integrated Vector Management Program source reduction activities, work shall halt in the identified area, the County Medical Examiner[1] shall be contacted, and California Public Resources Code, Section 5097.98; CEQA Guidelines, Section 15064.5; and California Health and Safety Code, Section 7050.5, shall be followed. If the remains are determined to be of Native American origin, the most likely descendant shall be identified by the Native American Heritage Commission and contacted by the County to determine proper treatment and disposition of the remains.

7.1.3 Geology and Soils

M-GE-1a Integrated Vector Management Program activities that are within **high or moderate paleontologically sensitive areas where excavation is *greater* than 2,500 cubic yards** pursuant to *County of San Diego Guidelines for Determining Significance – Paleontological Resources* shall implement a monitoring program during excavation/grading activities. A Project Paleontologist and Paleontological Resources Monitor shall be retained as defined by the County Guidelines.

The Project Paleontologist shall attend the pre-grading/pre-construction meeting to consult with grading contractors regarding the requirement of monitoring for paleontological resources, the potential importance and uniqueness of fossils and other paleontological resources that could be found during grading and excavation for the Proposed Project, and the regulations that govern the protection of paleontological resources.

The Project Paleontologist and Paleontological Resources Monitor shall monitor the original cutting (grading and excavation activities) of previously undisturbed formations of sedimentary rocks that may contain paleontological resources for unearthed fossils. The frequency of monitoring depends upon the rate of excavation, the materials excavated, and the abundance of fossils.

In the event paleontological resources are found, construction activities shall be diverted or temporarily halted in the area where the resources were found to allow for recovery/salvage.

Upon conclusion of grading or excavation activities, a Paleontological Resources Mitigation Report shall be prepared, even if no resources are found during the

[1] For CEQA compliance, California Health and Safety Code, Section 7050.5; California Public Resources Code, Section 5097.98; and CEQA Guidelines, 15064.5, require a coroner. However, in San Diego County, this requirement is fulfilled by the Medical Examiner.

monitoring. The report shall summarize the results of the mitigation program, including field and laboratory methodology, monitoring dates, location and geologic and stratigraphic setting, monitoring efforts, conclusions, and references cited, as well as if paleontological resources were found, lists of collected fossils and their paleontological significance and descriptions of any analyses.

M-GE-1b Integrated Vector Management Program activities that are within **low or marginal** paleontologically sensitive areas or within **high or moderate paleontologically sensitive areas where excavation is *less* than 2,500 cubic yards** pursuant to *County of San Diego Guidelines for Determining Significance – Paleontological Resources* shall implement a monitoring program during excavation/grading activities. A Standard Monitor shall be retained as defined by County Guidelines.

If a fossil of greater than 12 inches in any dimension, including circumference, is encountered during excavation or grading, all excavation operations in the area where the fossil was found shall be suspended immediately, the County Department of Environmental Health and Quality shall be notified, and a Project Paleontologist shall be retained to assess the significance of the find and, if the fossil is significant, to oversee the salvage program, including salvaging, cleaning, and curating the fossils and documenting the find.

7.1.4 Tribal Cultural Resources

M-TCR-1 Mitigation would occur through mitigation measures **M-CR-1** and **M-CR-2**.

7.2 Project Design Features for Reduction in Environmental Impacts

The Proposed Project includes project design features in the form of best management practices (BMPs) applied prior to and during vector control activities. As shown in Table 7-1, *IVMP Best Management Practices*, these BMPs are intended to minimize impacts associated with the Proposed Project implementation. These BMPs provide general performance standards and specifically address air quality and greenhouse gas emissions, biology, noise, hazards and hazardous materials, and water quality.

This page intentionally left blank

Table 7-1
INTEGRATED VECTOR MANAGEMENT PROGRAM BEST MANAGEMENT PRACTICES

Best Management Practice (BMP) *A. Prior to Conducting Vector Control Activities* *B. During Vector Control Activities*	CEQA Resource					
	General	**Air Quality/ GHG**	**Biology**	**Noise**	**Hazards and Hazardous Materials**	**Water Quality**
A. PRIOR TO CONDUCTING VECTOR CONTROL ACTIVITIES						
1. The VCP performs public education and outreach activities to educate residents how to prevent mosquito breeding and other vector problems at their homes, businesses, and properties; how to protect themselves from being bitten by mosquitoes; and how to report dead birds and mosquito-breeding sources, including unmaintained pools, to prevent the spread of mosquito-borne diseases. Reducing vector breeding minimizes the need for VCP control activities.	X (All)	—	—	—	—	—
2. The VCP has cooperative, collaborative relationships with federal, State, and local agencies. The VCP regularly communicates with resource agencies, including USFWS and CDFW, and abides by all applicable permits and agreements regarding planned vector activities in sensitive habitats. Access, timing, and methods of surveillance and control are discussed. Methods to minimize impacts to special status species, habitat, and wildlife are agreed upon prior to entering protected and sensitive habitats. The VCP will continue to foster these relationships, communication, and collaboration.	—	—	X (All)	—	—	X (All)
3. To help minimize the need for pesticide application or vegetation management, surveillance and monitoring at known or suspected vector sites will continue to be performed to assess vector species abundance and distribution and if they are carrying diseases. Information obtained from surveillance is evaluated with risk-based response criteria and other factors to decide when and where to implement vector control measures, such as pesticide application, and to help form action plans that reduce the risk of disease transmission and assist in reducing environmental impacts.	X (All)	—	—	—	—	—
4. All pesticides (i.e., chemical and biological controls) applied by the VCP are approved by the CDPR, and their application will continue to abide by all label instructions and regulations of the USEPA and CDPR, including application rates and methods, storage, transportation, mixing, and container disposal. In addition, the VCP will continue to comply with all pesticide reporting, equipment calibration, and inspection requirements as regulated by the County Agricultural Commissioner.	X (Source Treatment)	—	—	—	X (Source Treatment)	—

Best Management Practice (BMP) ***A. Prior to Conducting Vector Control Activities*** ***B. During Vector Control Activities***	**CEQA Resource**					
	General	**Air Quality/ GHG**	**Biology**	**Noise**	**Hazards and Hazardous Materials**	**Water Quality**
5. In accordance with CDPH regulations, pesticides will only be applied by Certified Vector Control Technicians. VCP staff who apply pesticides or remove vegetation will continue to complete all training required by the CDPH to maintain status as a Certified Vector Control Technician and will follow the VCP's comprehensive documents, including the annual *Engineer's Report*, strategic response plans, and standard operating procedures to avoid and minimize negative environmental impacts. These activities are conducted in accordance with the BMPs described in the *Best Management Practices for Mosquito Control in California* (CDPH 2012), *Best Management Practices for Mosquito Control on California State Properties* (CDPH 2008a), and *California Mosquito-Borne Virus Surveillance and Response Plan* (CDPH 2021) which detail integrated vector best management practices for vector control and vector-borne disease prevention to ensure that pesticides are selected and applied appropriately and that potential impacts on non-targeted areas are eliminated or minimized.	X (Source Treatment)	—	—	—	X (Source Treatment)	—
6. Chemical controls applied within waterbodies defined by federal and State regulations as wetland and/or non-wetland waters of the U.S. and/or State must be used in accordance with the Statewide NPDES Permit for Biological and Residual Pesticide Discharges to Waters of the U.S. from Vector Control Applications (Order No. 2016-0039-DWQ, General Permit No. CA990004).	X (Source Treatment)	—	X (Source Treatment)	—	—	X (Source Treatment)
7. Before conducting monitoring or treatment, a Certified Vector Control Technician will review all site records in the County's enterprise database (currently Accela) used by the Vector Control Program for any applicable permits or agreements on file dictating how a site should be addressed or any other notes discussing environmental constraints/requirements, points of access, whether a qualified biological monitor is required, or any other pertinent information prior to visiting a site. Sensitive sites may include but are not limited to CDFW- or USFWS-owned or operated lands, easements, and preserves; national forests; County-owned parks and open space areas; or other lands identified by the SanGIS.	—	—	All	—	—	—

Best Management Practice (BMP) ***A. Prior to Conducting Vector Control Activities*** ***B. During Vector Control Activities***	**CEQA Resource**					
	General	**Air Quality/ GHG**	**Biology**	**Noise**	**Hazards and Hazardous Materials**	**Water Quality**
8. Prior to entering an environmentally sensitive area or other site that has the potential to contain sensitive habitat or species, VCP staff will identify suspected vector-breeding sources using satellite images, topographic maps, historical records, and on-site evaluation to help ascertain the least environmentally impactful way to access the site. If more than one access route is available, staff will prioritize the path that would minimize or avoid environmental impacts to sensitive biological resources. If site conditions warrant a qualified biologist to accompany the Certified Vector Control Technician, the VCP will arrange for a qualified biologist to accompany field staff. Certified Vector Control Technicians will strictly follow all guidance and instructions from the biologist, including where access is permissible or should be avoided near sensitive habitat.	—	—	X (All)	—	—	—
9. If a site has been flagged in the County's enterprise database (currently Accela) for potentially containing sensitive biological resources, VCP staff will review applicable sensitive species databases, such as USFWS occurrence records, CDFW's California Natural Diversity Database, and County SanBIOS data, to determine if any potentially special status species (e.g., birds, fish, insects, plants, or other animals) are present or have high potential to occur on the site and research any unfamiliar species with photographs and descriptions of biology and habitat. Staff will also discuss preferred access points, methods, and paths for reaching vector-breeding sources with the supervisor and/or land manager.	—	—	All	—	—	—
10. VCP staff will receive annual training on the identification of sensitive biological resources, including sensitive habitat and special status species (e.g., vernal pools and fairy shrimp, coastal sage scrub, bird species).	—	—	X (All)	—	—	—
11. VCP staff will receive annual training regarding techniques and procedures to avoid or minimize negative effects to protect State- and/or federally listed threatened or endangered species, listed species habitat, and wildlife/wildlife habitat. For example, training includes observation and avoidance measures when accessing areas that may serve as bird nesting habitat (e.g., watch for flushing birds that may indicate a nest is nearby).	—	—	X (All)	—	—	—
12. Prior to commencing activities that would disturb State- and/or federally listed plants or wildlife, VCP will consult and coordinate with all applicable wildlife agencies (e.g., USFWS, CDFW) and obtain all required permits.	—	—	X (Source Reduction)	—	—	—

Best Management Practice (BMP) ***A. Prior to Conducting Vector Control Activities*** ***B. During Vector Control Activities***	**CEQA Resource**					
	General	**Air Quality/ GHG**	**Biology**	**Noise**	**Hazards and Hazardous Materials**	**Water Quality**
13. For operations that require large-scale treatments that may occur in proximity to homes or heavily populated, high traffic, or other sensitive areas (including bee farms) or other control activities that may generate noise expected to be of concern to the public, the VCP will notify the public and/or affected properties (approximately 24 to 48 hours in advance when possible) via the following communication protocols as appropriate: a) Provide Advance Notice. Depending on the nature and magnitude of the activities, information will be provided using press releases, social media posts, County website, mailers, hand-delivered flyers, posted signs, and/or emails. Public agencies, such as environmental health and agricultural agencies, emergency service providers, local governments, law enforcement, and airports, may also be notified of the nature and duration of the activities. b) Provide Mechanism to Address Questions. The County offers various methods for customers to communicate with VCP staff via online tools, email, telephone, and/or postal mail during all times of VCP activities to respond to service calls and address public inquiries.	—	—	—	X (Source Reduction, Source Treatment)	—	—
14. Individual IVMP source reduction activities that involve ground disturbance (e.g., grading, earthwork, or other excavation activities) will undergo a preliminary planning review by the County to assess the degree to which each activity may potentially result in impacts to cultural and tribal cultural resources. The County will review available records documentation and determine whether known archaeological or tribal resources are present within the proposed activity area or ascertain the potential that such resources may be encountered. Per the *County of San Diego Report Format and Content Requirements, Cultural Resources: Archaeological and Historic Resources*, project sites that have been previously surveyed within 5 years or less may use the previous study (County 2007b). As such, if preliminary planning review determines that the IVMP activity area has been previously surveyed for the presence of archaeological or tribal resources within the last 5 years with negative results or has been previously disturbed (e.g., grading, earthwork, or other excavation activities), the area would be considered “low sensitivity,” and no further evaluation would be required. If the results of the review determine that the area has not previously been surveyed or disturbed or has been surveyed and archaeological and/or	X (Source Reduction)	—	—	—	—	—

Best Management Practice (BMP) *A. Prior to Conducting Vector Control Activities* *B. During Vector Control Activities*	CEQA Resource					
	General	**Air Quality/ GHG**	**Biology**	**Noise**	**Hazards and Hazardous Materials**	**Water Quality**
tribal resources have been identified, a site-specific cultural resource survey will be required.						
B. DURING VECTOR CONTROL ACTIVITIES						
1. VCP staff will minimize potential disturbance to wildlife while performing surveillance and control activities. When walking or using small equipment in sensitive habitats, existing trails, levees, and access roads will be used whenever feasible to avoid or minimize impacts to sensitive species, sensitive vegetation communities, and wetlands.	—	—	X (All)	—	—	—
2. When accessing sensitive habitat, VCP staff will minimize the use of motorized vehicles to the extent feasible by conducting activities on foot with handheld equipment and remain in previously disturbed areas when vehicle use is needed. Aerial surveillance or control (e.g., helicopter or drones) will also be used when feasible and appropriate during pesticide applications and identification of potential vector sites, respectively.	—	—	X (All)	—	—	—
3. Vehicles will only be driven on existing roadways, access roads, and existing unpaved access paths. Vehicles driven on levees to travel near aquatic areas (such as tidal marshes, sloughs, or channels) for surveillance or treatment activities will travel at speeds slow enough to avoid or minimize noise and the production of dust, typically 15 miles per hour or less.	—	X (All)	X (All)	X (All)	—	—
4. Watercraft will be used to access aquatic environments where access is permissible, including but not limited to marshes, lagoons, and estuaries, to conduct surveillance and control of vectors and when their use would reduce the risk of potential impacts that may otherwise occur from land-based vehicles. Operation of watercraft within CDFW-owned lands and easements, USFWS-owned lands and preserves, and other open space areas would be completed in coordination with the CDFW, USFWS, and/or other applicable land managers and agencies and would follow avoidance and minimization measure as required by the relevant agencies and right-of-entry permit, Special Use Permit, or other relevant permits.	—	—	X (All)	—	—	—
5. Prior to entering sensitive habitat, VCP staff will minimize the potential for the introduction and spread of invasive plant species by ensuring all equipment, vehicles, and personal gear (such as clothing and boots) are clean.	—	—	X (All)	—	—	—
6. Only staff who are certified by the CDPH as a vector control technician or staff who have received training such as proper application methods to protect the	—	—	X (All)	—	—	—

Best Management Practice (BMP) ***A. <u>Prior to</u> Conducting Vector Control Activities*** ***B. <u>During</u> Vector Control Activities***	CEQA Resource					
	General	**Air Quality/ GHG**	**Biology**	**Noise**	**Hazards and Hazardous Materials**	**Water Quality**
environment and public health will be allowed to access environmentally sensitive areas.						
7. Operation of noise-generating equipment (e.g., construction equipment, woodchipper, pesticide application equipment) will abide by the time-of-day restrictions established by the applicable local jurisdiction's municipal code or ordinance (e.g., city or county) if such noise activities would exceed acceptable noise levels for sensitive receptors (e.g., residential land uses, schools, hospitals, places of worship). All motorized equipment will be shut down when not in use.	—	—	—	X (Source Reduction, Source Treatment)	—	—
8. Engine idling times will be minimized by shutting off equipment and vehicles when not in use to the extent feasible.	—	X (All)	—	X (All)	—	—
9. Vehicles and equipment will be maintained in accordance with manufacturer's specifications, including mufflers, engine operation, and tire inflation pressure, to minimize rolling resistance.	—	X (All)	—	X (All)	—	—
10. Vegetation trimming or removal, when necessary to provide access to vector habitat for surveillance and control activities, will be conducted by hand using handheld tools rather than gas-powered equipment or heavy machinery to minimize negative environmental effects. Vegetation trimming or removal activities will be conducted outside the general bird breeding season (February 15 to September 15, including riparian for general birds; January 15 to July 15 for raptors) to the greatest extent feasible.	—	X (Source Reduction)	X (Source Reduction)	X (Source Reduction)	—	—
11. Downed trees and large vegetation that have fallen due to storm events or disease may be trimmed and/or removed to the minimum extent necessary to maintain existing access points or to allow access to for vector monitoring or control.	—	—	X (Source Reduction)	—	—	—
12. Any staging of equipment or materials will occur in developed/disturbed areas outside existing wetlands, non-wetland waters, and native or rare upland areas.	—	—	X (Source Reduction)	—	—	X (Source Reduction)
13. The changing of oil, refueling, and other actions that could result in a release of a hazardous substance will be restricted to designated service areas such as maintenance yards and gas stations or, when necessary, areas that are a minimum of 100 feet from any documented special status plant populations, sensitive habitats, or drainages. Equipment will be checked for leaks prior to operation and repaired as necessary. Fueling areas will be installed in the field,	—	—	X (Source Reduction)	—	X (Source Reduction)	X (Source Reduction)

Best Management Practice (BMP) ***A. <u>Prior to</u> Conducting Vector Control Activities*** ***B. <u>During</u> Vector Control Activities***	CEQA Resource					
	General	**Air Quality/ GHG**	**Biology**	**Noise**	**Hazards and Hazardous Materials**	**Water Quality**
as applicable, by berms, sandbags, or other artificial barriers designed to prevent accidental spills.						
14. Where heavy equipment or machinery is necessary, measures will be taken, such as reducing turns by track-type vehicles, taking a minimum number of passes with equipment, identifying multiple points of entry, driving vehicles at low speed, and avoiding or minimizing operating on open mud and other soft areas.	—	X (Source Reduction)	X (Source Reduction)	X (Source Reduction)	—	X (Source Reduction)
15. Microbial larvicides (Bti, Bs) or insect growth regulator (e.g., methoprene) will be used as primary treatment methods when necessary to control mosquito larvae due to their high effectiveness, high safety, and environmental compatibility. Only when necessary, surfactants (that are highly effective at suffocating mosquito larvae) may be used to control late-stage larvae or pupae that are resistant to microbial larvicides.	—	—	—	—	X (Source Treatment)	—
16. Pesticides will be applied at the lowest effective concentration for a specific, targeted set of vectors and site conditions. Application rates will never exceed the USEPA and CDPH-approved maximum label application rate. All pesticide application equipment is currently and will continue to be calibrated and inspected annually as required by regulating agencies, such as the CDPH and County Department of Agriculture, Weights and Measures.	—	—	X (Source Treatment)	—	X (Source Treatment)	X (Source Treatment)
17. VCP staff will modify, postpone, or cease pesticide application when weather parameters exceed product label specifications, such as when wind speeds exceed the velocity stated on the product label or may result in drift or when a high chance of rain is predicted and rain is a determining factor on the label of the material to be applied.	—	—	X (Source Treatment)	—	X (Source Treatment)	X (Source Treatment)
18. Spray nozzles for the application of pesticides will be adjusted to produce larger droplet size rather than smaller droplet size when feasible. Low-pressure nozzles will be used when appropriate. Certified Vector Control Technicians will keep spray nozzles within a predetermined maximum distance as close as feasibly possible of target weeds or pests to avoid or minimize overspray. For application of ultra-low volume adulticides, equipment will be calibrated to deliver proper droplet size per manufacturer specifications.	—	—	—	—	X (Source Treatment)	—
19. Caution will be exercised to prevent spillage of pesticides during storage, transportation, mixing, or application of pesticides. All pesticide spills and cleanups (excepting cases where dry materials may be returned to the container or application equipment) will be reported to appropriate staff and any regulatory	—	—	—	—	X (Source Treatment)	X (Source Treatment)

Best Management Practice (BMP) ***A. Prior to Conducting Vector Control Activities*** ***B. During Vector Control Activities***	**CEQA Resource**					
	General	**Air Quality/ GHG**	**Biology**	**Noise**	**Hazards and Hazardous Materials**	**Water Quality**
agencies. Application equipment will be checked for proper operation prior to use.						
20. A pesticide spill cleanup kit and proper protective equipment will be maintained at the VCP's service yard and in each vehicle for pesticide application and transport.	—	—	—	—	X (Source Treatment)	X (Source Treatment)
21. In the event of spilled pesticides, the site will be managed to prevent entry by unauthorized personnel while the spill is contained, controlled, and cleaned up by stopping it from leaking or spreading to surrounding areas. Dry spills will be covered with a polyethylene or plastic tarpaulin if they cannot be cleaned up immediately. Any liquid hazardous material spill will be contained with appropriate absorbent materials.	—	—	—	—	X (Source Treatment)	X (Source Treatment)
22. Staff will properly recover any spilled material, label the container or bag with the pesticide name, and coordinate with a VCP supervisor for disposal.	—	—	—	—	X (Source Treatment)	X (Source Treatment)
23. Staff will be trained annually on petroleum-based or other chemical-based storage and disposal regulations and procedures including spill management protocols.	—	—	—	—	X (All)	X (Source Treatment)
24. Field-based mixing and loading operations will occur in such a manner as to minimize the risk of accidental spill or release of pesticides.	—	—	—	—	X (Source Treatment)	X (Source Treatment)
25. All vehicles will contain a fire extinguisher and first aid kit at all times.	—	—	—	—	X (All)	—

Note: Table 7-1 is a duplicated copy of Table 1-2. It is provided in Chapter 1 as part of the Proposed Project and is repeated here to capture all Project Design Features.

BMP = best management practice; CDFW = California Department of Fish and Wildlife; CDPH = California Department of Public Health; CDPR = California Department of Pesticide Regulation; CEQA = California Environmental Quality Act; NPDES = National Pollutant Discharge Elimination System; SanBIOS = San Diego Biological Information and Observation System; SanGIS = San Diego Geographic Information System; USEPA = U.S. Environmental Protection Agency; USFWS = U.S. Fish and Wildlife Service; VCP = Vector Control Program. Sensitive Site = a location that is known to contain or has the potential to contain environmental resources, including unique vegetation communities and/or habitat that is either necessary to support a viable population of sensitive species, is critical to the proper functioning of a balanced natural ecosystem or which serves as a functioning wildlife corridor.

APPENDICES

Appendix A

Notice of Preparation/ Initial Study

County of San Diego

ELISE ROTHSCHILD
Director

DEPARTMENT OF ENVIRONMENTAL HEALTH
COMMUNITY HEALTH DIVISION
5570 Overland Avenue, Suite 102, San Diego, CA 92123
Phone: (858) 694-2888 FAX: (858) 571-4268
1 (800) 253-9933
www.sdcdeh.org

AMY HARBERT
Assistant Director

NOTICE OF PREPARATION
PROGRAM ENVIRONMENTAL IMPACT REPORT
INTEGRATED VECTOR MANAGEMENT PROGRAM
SAN DIEGO COUNTY, CALIFORNIA

August 23, 2018

The County of San Diego (County) Department of Environmental Health (DEH) is the lead agency in the preparation of a Program Environmental Impact Report (PEIR) for the **Integrated Vector Management Program (IVMP) (Proposed Project)** as specified by Section 15168 of the California Environmental Quality Act (CEQA) Guidelines.

This notice is issued pursuant to Section 15082 of the State CEQA Guidelines. It is intended to inform those persons and organizations that may be concerned with the environmental effects of the Proposed Project. Those public agencies with specific statutory responsibilities are requested to indicate their specific role in the project approval process. The Initial Study for the Proposed Project can be viewed at the Department of Environmental Health at two office locations: 5500 Overland Avenue, Suite 170, San Diego, CA 92123; or 5570 Overland Avenue, Suite 102, San Diego, CA 92123. It is also available at http://www.sandiegocounty.gov/content/sdc/deh/pests/vector_disease.html.

Because of time limits mandated by State law, responses should be sent at the earliest possible date, but no later than **September 21, 2018** at 5:00 P.M. Please send your response to:

County of San Diego, Department of Environmental Health
Vector Control Program, Attn: KariLyn Merlos
5570 Overland Avenue, Suite 102
San Diego, CA 92123

Or via e-mail: IVMP@sdcounty.ca.gov

SCOPING MEETING

A public meeting to discuss the Proposed Project and potential contents of the PEIR will be held on **August 30, 2018** from 6:00 P.M. to 8:00 P.M. at the County Operations Center, Conference Center located at 5520 Overland Avenue, San Diego, CA 92123.

ENVIRONMENTAL DOCUMENT

The environmental document will be a Program EIR (PEIR) as defined in Section 15168 of the CEQA Guidelines. The PEIR is intended to allow the County to examine the overall effects of implementation of the IVMP and to take steps to avoid environmental impacts. As a program within the County DEH, the Vector Control Program (VCP) is responsible for implementing the IVMP.

PROJECT LOCATION

The IVMP includes vector and vector-borne disease surveillance and control services throughout all 18 incorporated cities and the unincorporated areas of San Diego County, totaling approximately 4,261 square miles (Figure 1). This encompasses the VCP's existing service area.

BACKGROUND

The VCP has been reducing and controlling mosquitoes and other vectors, and protecting the county against vector-borne diseases for over 40 years. For the purposes of the CEQA analysis, a vector is defined as an organism that is capable of spreading disease to humans or presents a public nuisance by negatively impacting farm and other outdoor workers, outdoor recreation and tourism industries, real estate values, or the public in general. Vectors may include mosquitoes, ticks, fleas, rodents, and eye gnats. In 1989, the County Board of Supervisors (Board) assumed the powers of a Vector Control District, which is staffed by the VCP.

Since 1989, the VCP has continued to reduce the potential for the spread of diseases and the impact that vectors have on property through ongoing educational outreach, surveillance activities, source reduction (i.e., physical control), and source treatment (i.e., biological and chemical control). The VCP's five core services include (1) early detection of public health threats through comprehensive vector surveillance and testing; (2) control and reduction of vectors that transmit diseases to humans; (3) disseminating vector-borne disease information to provide county residents and property owners with tools for prevention, protection, and reporting of vectors that transmit diseases; (4) appropriate and timely response to vector-related customer complaints; and (5) detection of vector-borne pathogens.

As identified in County Code of Regulatory Ordinances Section 64.201 and the California Health and Safety Code Sections 2001 et. seq, a board of supervisors is allowed under Government Code Section 25842.5 to provide the same services and exercise the powers of a mosquito abatement and vector control district. Pursuant to this statutory authority, the Board resolved to act as a mosquito abatement and vector control district in both the incorporated cities and the unincorporated areas of the county. The city council of each incorporated city in San Diego County consented to the Board's resolution. The Board also resolved to delegate implementation and enforcement duties to the Department of Environmental Health. By Government Code section 25842.5 and County Code of Regulatory Ordinances Sections 64.201 through 64.206, the VCP is authorized to order responsible persons to control and abate disease-transmitting[1] vectors and eye gnats in San Diego County. The VCP is also authorized by Government Code section 25842.5 to directly control and abate mosquitoes and other vectors and to recover its costs to do so, in order to protect the public health, safety, and welfare of the entire San Diego County community from vector-borne diseases and vector-related public nuisances.

PROJECT DESCRIPTION

The VCP protects the public from vector-borne disease and nuisance while protecting the environment through a coordinated set of activities collectively known as the IVMP. These activities and services are described in the annual *Engineer's Report*, which provides an overview of the VCP's general practices and procedures. As the Proposed Project, the IVMP would continue to operate using a comprehensive approach by applying various techniques, including surveillance, source reduction (i.e., physical control), source treatment (i.e., biological and chemical control), public education, and outreach. Each of these techniques could be applied to the applicable vectors under the IVMP, including:

- Disease-transmitting mosquitoes (i.e., *Culex* spp. and *Aedes* spp.);
- Nuisance mosquitoes (not disease-transmitting);
- Vectors associated with mammal disease and transmission (i.e., ticks and rodents);
- Other nuisance species (e.g., eye gnats) deemed necessary for control as approved by VCP officials.

Where applicable, the Proposed Project incorporates various vector management principles and techniques from guidance documents, such as the VCP's annual *Engineer's Report*, *West Nile Virus Strategic Response Plan*, and *Aedes Transmitted Disease Strategic Response Plan.* These guidance documents are attached to the published Initial Study.

The Proposed Project will also allow for inclusion of progressive and emerging vector control activities and materials. VCP staff is in communication with other regional vector control districts as well as State and Federal agencies to identify new vector-borne diseases and outbreaks, and to share eradication techniques. New vector control methods based on scientific evidence and expert guidance may be implemented to address public risks as they

[1] "Disease-transmitting vector" means "an animal capable of transmitting the causative agent of human disease." See, County Code Section 64.202(h).

arise. These emerging vector control strategies could include increased or advanced/early source prevention, reduction, surveillance, and/or physical/biological/chemical control, depending on the assessment of public health risk.

Specifically, the IVMP would include the following activities that will be evaluated for potential environmental impacts in the PEIR:

Surveillance

The VCP currently monitors approximately 1,500 mosquito-breeding sources throughout San Diego County, including such techniques as counting and testing mosquito batches (i.e., trapping), testing dead birds, monitoring/testing sentinel chickens, and conducting aerial reconnaissance to identify sources. Surveillance is also conducted for ticks (for tularemia or Lyme disease), and rodents (for plague or hantavirus). Also, routine and complaint-based inspections are conducted to assure the prevention and abatement of flies associated with Commercial Poultry Ranches. Lastly, as part of the VCP's surveillance technology, the Vector Disease and Diagnostics Laboratory (VDDL) was added in July 2010, in which scientists use state-of-the-art molecular tests to detect vector-borne pathogens in a wide variety of samples ranging from mosquitoes and ticks, to birds, rodents, and other animals.

Source Reduction (i.e., Physical Control)

The VCP directs and assists property owners to manage mosquito habitat (breeding sources) to reduce mosquito production. The physical control method primarily targets mosquitoes in their larval stage. This may include the removal of vegetation or sediment, interruption of water flow, rotation of stored water, pumping and/or filling sources, improving drainage and water circulation systems, and installing, improving, or removing culverts, tide gates, and other water control structures in wetlands. VCP staff direct property owners to coordinate water management efforts under the guidance of Federal and State regulatory agencies.

Source Treatment (i.e., Biological and Chemical Control)

Biological Control

Mosquito fish, *Gambusia affinis*, are one of the VCP's primary biological control agents used against mosquitoes. Mosquito fish are not native to California, but have been widely established in the state since the early 1920s and now inhabit most natural and constructed water bodies. Mosquito fish are made available to property owners to control mosquito production only in artificial containers such as ornamental fishponds, water plant barrels, horse troughs, and neglected green swimming pools.

The VCP also uses natural biological larvicides registered by the Federal Environmental Protection Agency, California Environmental Protection Agency, and other environmental agencies to control mosquito populations.

Chemical Control

Many mosquito-breeding sources cannot be entirely managed with physical or biological control measures, so the use of chemical applications may be required, which may include but is not limited to pesticides such as insecticides and herbicides. Specifically, chemical controls that eradicate or target mosquito eggs (or larvae) are referred to as larvicide, while adulticide is referenced when treating adult mosquitoes; both of which are forms of pesticides. Chemical controls can be applied in a variety of methods including manual (back-pack) hand-operated devices, truck-mounted applicators, or other motorized vehicles (e.g., aircraft, watercraft) to access remote locations. Regarding rodents, although the VCP retains the ability to use chemical controls, it primarily offers advice and assists property owners with their control efforts by providing inspections and consultations, as well as educational information for control measures focusing on exclusion and elimination.

Public Education and Outreach

Health education, outreach, and raising awareness about vectors are all integral parts of the IVMP. A proactive approach is used to educate people within the County about the risks of vectors and preventive measures they can take to protect themselves and their communities. To achieve this goal, VCP staff distribute educational materials such as brochures, pamphlets, bookmarks, and tip cards in multiple languages. Social media is used to notify the public of press releases and scheduled aerial larvicide treatments. The education campaign emphasizes prevention, protection, reporting, and behavior change. A similar proactive approach is used for educating the public about diseases transmitted by rats, ticks, mice, and fleas. Educational presentations, tabletop displays, and pamphlets are used and distributed to local communities.

It should be noted that the Board also adopted a Countywide Eye Gnat Program on December 5, 2012 (03) and associated Negative Declaration (Environmental Review No. 12-00-001) dated October 31, 2012. Therefore, the program is incorporated by reference into the Proposed Project but will not be included in the PEIR analysis since it was previously approved by the Board. In addition, on March 24, 2010 (04) the Board certified a PEIR for the Vector Habitat Remediation Program, which has offered competitive and direct grants to private and public organizations with the goal of implementing long-term solutions to eliminate or reduce mosquito-breeding habitat.

POTENTIAL ENVIRONMENTAL IMPACTS

An analysis of the environmental impacts is currently being conducted. As a result of implementation of the Proposed Project, there are potentially significant environmental effects that may occur to Air Quality, Biological Resources, Cultural Resources, Geology & Soils, Greenhouse Gas Emissions, Hazards & Hazardous Materials, Hydrology & Water Quality, Noise, and Tribal Cultural Resources. These issues, along with an analysis of project alternatives, cumulative effects, and potential for growth inducement, will be analyzed and discussed in the PEIR.

Figure 1 – IVMP Service Area Vicinity Map

County of San Diego

ELISE ROTHSCHILD
Director

DEPARTMENT OF ENVIRONMENTAL HEALTH
COMMUNITY HEALTH DIVISION
5570 Overland Avenue, Suite 102, San Diego, CA 92123
Phone: (858) 694-2888 FAX: (858) 571-4268
1 (800) 253-9933
www.sdcdeh.org

AMY HARBERT
Assistant Director

August 23, 2018

CEQA Initial Study - Environmental Checklist Form
(Based on the State CEQA Guidelines, Appendix G)

1. Proposed Project Title:

   Integrated Vector Management Program

2. Lead agency name and address:

   County of San Diego, Department of Environmental Health
   Vector Control Program
   5570 Overland Avenue, Suite 102
   San Diego, CA 92123

3. a. Contact: KariLyn Merlos, Program Coordinator
   b. Phone number: (858) 495-5799
   c. E-mail: KariLyn.Merlos@sdcounty.ca.gov

4. Project location:

   The Integrated Vector Management Program (IVMP) (Proposed Project) includes vector and vector-borne disease surveillance and control services throughout all 18 incorporated cities and the unincorporated areas of San Diego County totaling approximately 4,261 square miles (Figure 1). As a program within the County Department of Environmental Health (DEH), the Vector Control Program (VCP) is responsible for implementing the IVMP, which encompasses the VCP's existing service area.

5. Project Applicant name and address: *see Lead Agency*

6. General Plan

Community Plan:	Countywide
Land Use Designation:	N/A
Density:	N/A
Floor Area Ratio (FAR):	N/A

7. Zoning

Use Regulation:	N/A
Minimum Lot Size:	N/A
Special Area Regulation:	N/A

8. Description of project:

The VCP has been reducing and controlling mosquitoes and other vectors, and protecting the county against vector-borne diseases for over 40 years. For the purposes of the California Environmental Quality Act (CEQA) analysis, a vector is defined as an organism that is capable of spreading disease to humans or presents a public nuisance by negatively impacting farm and other outdoor workers, outdoor recreation and tourism industries, real estate values, or the public in general. Vectors may include mosquitoes, ticks, fleas, rodents, and eye gnats. In 1989, the County of San Diego (County) Board of Supervisors (Board) assumed the powers of a Vector Control District, which is staffed by the DEH.

Since 1989, the VCP has continued to reduce the potential for the spread of diseases and the impact that vectors have on property through ongoing educational outreach, surveillance activities, source reduction (i.e., physical control), and source treatment (i.e., biological and chemical control). The VCP's five core services include (1) early detection of public health threats through comprehensive vector surveillance and testing; (2) control and reduction of vectors that transmit diseases to humans; (3) disseminating vector-borne disease information to provide county residents and property owners with tools for prevention, protection, and reporting of vectors that transmit diseases; (4) appropriate and timely response to vector-related customer complaints; and (5) detection of vector-borne pathogens.

As identified in County Code of Regulatory Ordinances Section 64.201 and the California Health and Safety Code Sections 2001 et. seq, a board of supervisors is allowed under Government Code Section 25842.5 to provide the same services and exercise the powers of a mosquito abatement and vector control district. Pursuant to this statutory authority, the Board resolved to act as a mosquito abatement and vector control district in both the incorporated cities and the unincorporated areas of the county. The city council of each incorporated city in San Diego County consented to the Board's resolution. The Board also resolved to delegate implementation and enforcement duties to the DEH. By Government Code section 25842.5 and County Code of Regulatory Ordinances Sections 64.201 through 64.206, the VCP is authorized to order responsible persons to control and abate disease-transmitting1 vectors and eye gnats in San Diego County. The VCP is also authorized by Government Code Section 25842.5 to directly control and abate mosquitoes and other disease-transmitting and nuisance vectors and to recover its costs to do so, in order to protect the public health, safety and welfare of the entire San Diego County community from vector-borne diseases and vector-related public nuisances.

The VCP protects the public from vector-borne disease and nuisance while protecting the environment through a coordinated set of activities collectively known as the IVMP. These activities and services are described in the annual Engineer's Report, which provides an overview of the VCP's general practices and procedures. As the Proposed Project, the IVMP would continue to operate using a comprehensive approach by applying various techniques, including surveillance, source reduction (i.e., physical control), source treatment (i.e., biological and chemical control), public education, and outreach. Each of these techniques could be applied to the applicable vectors under the IVMP, including:

- Disease-transmitting mosquitoes (i.e., *Culex* spp. and *Aedes* spp.);
- Nuisance mosquitoes (not disease-transmitting);
- Vectors associated with mammal disease and transmission (i.e., ticks and rodents);

[1] "Disease-transmitting vector" means "an animal capable of transmitting the causative agent of human disease." See, County Code Section 64.202(h).

- Other nuisance species (e.g., eye gnats and flies) deemed necessary for control as approved by VCP officials.

Where applicable, the Proposed Project incorporates various vector management principles and techniques from guidance documents, such as the VCP's annual *Engineer's Report*, *West Nile Virus Strategic Response Plan*, and *Invasive Aedes Mosquito Strategic Response Plan*. These guidance documents are attached to this Initial Study.

The Proposed Project will also allow for inclusion of progressive and emerging vector control activities and materials. VCP staff is in communication with other regional vector control districts as well as State and Federal agencies to identify new vector-borne diseases and outbreaks, and to share eradication techniques. New vector control methods based on scientific evidence and expert guidance may be implemented to address public risks as they arise. These emerging vector control strategies could include increased or advanced/early source prevention, reduction, surveillance, and/or physical/biological/ chemical control, depending on the assessment of public health risk or nuisance level.

Specifically, the IVMP would include the following activities that will be evaluated for potential environmental impacts in the Program Environmental Impact Report (PEIR):

Surveillance

The VCP currently monitors over 1,400 mosquito-breeding sources throughout San Diego County, including such techniques as counting and testing mosquito batches (i.e., trapping), testing dead birds, monitoring/testing sentinel chickens, and conducting aerial reconnaissance to identify sources. Surveillance is also conducted for ticks (for tularemia or Lyme disease), and rodents (for plague or hantavirus). Also, routine and complaint-based inspections are conducted to assure the prevention and abatement of flies associated with commercial poultry ranches. Lastly, as part of the VCP's surveillance technology, the Vector Disease and Diagnostics Laboratory was added in July 2010, allowing in-house scientists use state-of-the-art molecular tests to detect vector-borne pathogens in a wide variety of samples ranging from mosquitoes and ticks, to birds, rodents and other animals.

Source Reduction (i.e., Physical Control)

The VCP directs and assists property owners to manage vectors on their property to reduce both attractants and breeding sources. To reduce mosquito production, physical control method primarily targets mosquitoes in their larval stage. This may include the removal of vegetation or sediment, interruption of water flow, rotation of stored water, pumping and/or filling sources, improving drainage and water circulation systems, and installing, improving, or removing culverts, tide gates, and other water control structures in wetlands. VCP staff direct property owners to coordinate water management efforts under the guidance of federal and state regulatory agencies.

Source Treatment (i.e., Biological and Chemical Control)

Biological Control

Mosquito fish, *Gambusia affinis*, are one of the VCP's primary biological control agents used against mosquitoes. Mosquito fish are not native to California, but have been widely established in the state since the early 1920s and now inhabit most natural and constructed water bodies. Mosquito fish are made available to property owners to control mosquito production only in artificial containers such as ornamental fishponds, water plant barrels, horse troughs, and neglected green swimming pools.

The VCP also uses natural biological larvicides registered by the Federal Environmental Protection Agency, California Environmental Protection Agency, and other environmental agencies to control mosquito populations.

Chemical Control

Many mosquito-breeding sources cannot be entirely managed with physical or biological control measures, so the use of chemical applications may be required, which may include but is not limited to pesticides (such as insecticides) and herbicides. Specifically, chemical controls that eradicate or target mosquito eggs (or larvae) are referred to as larvicide, while adulticide is referenced when treating adult mosquitoes; both of which are forms of pesticides. Chemical controls can be applied in a variety of methods including manual (back-pack) hand-operated devices, truck-mounted applicators, or other motorized vehicles (e.g., aircraft, watercraft) to access remote locations. Regarding rodents, although the VCP retains the ability to use chemical controls, it primarily offers advice and assists property owners with their control efforts by providing inspections and consultations, as well as educational information for control measures focusing on exclusion and elimination.

Public Education and Outreach

Health education, outreach, and raising awareness about vectors are all integral parts of the IVMP. A proactive approach is used to educate people within the County about the risks of vectors and preventive measures they can take to protect themselves and their communities. To achieve this goal, VCP staff distributes educational materials such as brochures, pamphlets, bookmarks, and tip cards in multiple languages. Social media is used to notify the public of press releases and scheduled aerial larvicide treatments. The education campaign emphasizes prevention, protection, reporting, and behavior change. A similar proactive approach is used for educating the public about diseases transmitted by rats, ticks, mice, and fleas. Educational presentations, tabletop displays, and pamphlets are used and distributed to local communities.

It should be noted that the Board also adopted a Countywide Eye Gnat Program on December 5, 2012 (03) and associated Negative Declaration (Environmental Review No. 12-00-001) dated October 31, 2012. Therefore, the program is incorporated by reference into the Proposed Project but will not be included in the PEIR analysis since it was previously approved by the Board. In addition, on March 24, 2010 (04) the Board certified a Program EIR for the Vector Habitat Remediation Program, which has offered competitive and direct grants to private and public organizations with the goal of implementing long-term solutions to eliminate or reduce mosquito-breeding habitat.

9. Surrounding land uses and setting:

The IVMP applies to all 18 incorporated cities and the unincorporated areas of San Diego County. San Diego County is bounded by Orange and Riverside counties to the north, Imperial County to the east, Pacific Ocean to the west, and the United States/Mexico International Border to the south.

10. Other public agencies whose approval may be required (e.g., permits, financing approval, or participation agreement):

Permit Type/Action	Agency
Cooperative Agreement for Pesticide-related Requirements	California Department of Public Health
NPDES Order No. 2016-0039-DWQ for Vector Control (previously No. 2011-0002-DWQ)	State Water Resources Control Board
General Note: during implementation of individual IVMP activities, entry onto public or private lands will be necessary to conduct vector control activities. Coordination with applicable responsible parties will be conducted on an as-needed basis.	

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun?

YES	NO
☐	☒

Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21083.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.

Because the IVMP would be implemented countywide, all Native American tribes will be notified within San Diego County (who previously requested notification) regarding the proposed IVMP during the Initial Study/Notice of Preparation comment period. However, consultation has not begun, and it is anticipated to occur during preparation of the draft PEIR.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED: The environmental factors checked below would be potentially affected by this project and involve at least one impact that is a "Potentially Significant Impact" or a "Less Than Significant With Mitigation Incorporated," as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☑ Air Quality
☑ Biological Resources	☑ Cultural Resources	☑ Geology & Soils
☑ Greenhouse Gas Emissions	☑ Hazards & Hazardous Materials	☑ Hydrology & Water Quality
☐ Land Use & Planning	☐ Mineral Resources	☑ Noise
☐ Population & Housing	☐ Public Services	☐ Recreation
☐ Transportation/Traffic	☑ Tribal Cultural Resources	☐ Utilities & Service Systems
☑ Mandatory Findings of Significance		

DETERMINATION: (To be completed by the Lead Agency)
On the basis of this initial evaluation:

☐ On the basis of this Initial Study, the Department of Environmental Health finds that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ On the basis of this Initial Study, the Department of Environmental Health finds that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☒ On the basis of this Initial Study, the Department of Environmental Health finds that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Kari Lyn A. Merlos — 8/23/18

Signature — Date

KariLyn Merlos — Program Coordinator

Printed Name — Title

INSTRUCTIONS ON EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, Less Than Significant With Mitigation Incorporated, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4. "Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level.

5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:
   a) Earlier Analysis Used. Identify and state where they are available for review.
   b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
   c) Mitigation Measures. For effects that are "Less Than Significant With Mitigation Incorporated," describe the mitigation measures that were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7. The explanation of each issue should identify:
   a) The significance criteria or threshold, if any, used to evaluate each question; and
   b) The mitigation measure identified, if any, to reduce the impact to less than significance.

I. AESTHETICS -- Would the project:

a) Have a substantial adverse effect on a scenic vista?

☐ Potentially Significant Impact
☐ Less than Significant With Mitigation Incorporated
☒ Less than Significant Impact
☐ No Impact

Discussion/Explanation:

A vista is a view from a particular location or composite views along a roadway or trail. Scenic vistas often refer to views of natural lands, but may also be compositions of natural and developed areas, or even entirely of developed and unnatural areas, such as a scenic vista of a rural town and surrounding agricultural lands. What is scenic to one person may not be scenic to another, so the assessment of what constitutes a scenic vista must consider the perceptions of a variety of viewer groups. The items that can be seen within a vista are visual resources. Adverse impacts to individual visual resources or the addition of structures or developed areas may or may not adversely affect the vista. Determining the level of impact to a scenic vista requires analyzing the changes to the vista as a whole and to individual visual resources.

Less than Significant Impact: The Proposed Project includes implementation of the countywide Integrated Vector Management Program (IVMP). As such, individual activities could occur in a wide range of locations within San Diego County, and may be located near, within, or visible from a scenic vista. However, the proposed IVMP does not include the construction of new structures or facilities. Furthermore, none of the proposed features of the IVMP would substantially physically modify existing structures or visual features of the landscape. Therefore, the proposed IVMP would not substantially change the composition of an existing scenic vista in a way that would adversely alter the visual quality or character of the view, and the Proposed Project would have a less than significant adverse effect on a scenic vista.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?

☐ Potentially Significant Impact
☐ Less than Significant With Mitigation Incorporated
☒ Less than Significant Impact
☐ No Impact

Discussion/Explanation:

State scenic highways refer to those highways that are officially designated by the California Department of Transportation as scenic (California Scenic Highway Program). Generally, the area defined within a State scenic highway is the land adjacent to and visible from the vehicular right-of-way. The dimension of a scenic highway is usually identified using a motorist's line of vision, but a reasonable boundary is selected when the view extends to the distant horizon. The scenic highway corridor extends to the visual limits of the landscape abutting the scenic highway.

Less than Significant Impact: While it is possible that future vector control activities have the potential to occur near one of the County's officially designated State scenic highways (State Routes 52, 75, 78, 125, and 163)[2], the proposed IVMP activities are intended to reduce the spread of mosquito-borne and other vector-borne disease. The proposed IVMP includes surveillance and public education of vector threats as well as physical, biological, and chemical control methods. It is not expected to result in removal or damage of these highways other scenic resources such as

[2] http://www.dot.ca.gov/design/lap/livability/scenic-highways/2017-03DesigandEligible.xlsx (Updated March 2017)

trees, rock outcroppings, or historic buildings. Therefore, impacts to scenic resources within a State scenic highway system will be less than significant.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

- ☐ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☒ Less than Significant Impact
- ☐ No Impact

Discussion/Explanation:

Less than Significant Impact: The proposed IVMP would include surveillance of existing and potential vector threats as well as physical, biological, and chemical control methods to reduce the spread of mosquito-borne and other vector-borne disease. This would also include public outreach and education in communities across San Diego County. As a result of the various implementation methods, grading or dredging activities may occur; however, no substantial earthwork would be proposed that would significantly alter the visual character of a site. Also, no major structures would be proposed that would be incompatible or substantially degrade the existing visual character.

Specifically, physical control activities may include restricting the size of onsite native and nonnative vegetation. Where dense vegetation is present, certain activities may potentially alter the visual character of the site by reducing the vegetation present. However, such activities would not result in a landscape that would be incompatible or substantially degrade the existing visual character.

d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?

- ☐ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☒ No Impact

Discussion/Explanation:

No Impact: The Proposed Project does not propose any use of outdoor lighting or building materials with highly reflective properties such as highly reflective glass or high-gloss surface colors. Therefore, the Proposed Project will not create any new sources of light pollution that could contribute to skyglow, light trespass, or glare that would adversely affect day or nighttime views in the area.

II. AGRICULTURE AND FORESTRY RESOURCES -- Would the project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide or Local Importance (Important Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, or other agricultural resources, to non-agricultural use?

- ☐ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☒ No Impact

Discussion/Explanation:

No Impact: The proposed IVMP would include a range of activities involving surveillance of existing and potential vector threats as well as physical, biological, and chemical control methods to reduce the spread of mosquito-borne and other vector-borne disease. Because these activities would occur across the entire county, there is potential for the IVMP and its associated activities to be located on farmland pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency. However, the proposed activities would not result in a change in land use of these sites, and they would not result in the conversion of agricultural lands to a non-agricultural use. Therefore, no impacts are anticipated to occur.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

- ☐ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☒ No Impact

Discussion/Explanation:

No Impact: The Proposed Project includes implementation of the countywide IVMP with the intent to reduce the spread of mosquito-borne and other vector-borne diseases and nuisance vectors. The activities would not install new uses that would conflict with the existing zoning of a site, including any sites designated as agriculture or under a Williamson Act contract. Therefore, no impacts are anticipated to occur to agriculture zoned areas or lands under Williamson Act contract.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), or timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

- ☐ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☒ No Impact

Discussion/Explanation:

No Impact: Because these activities would occur across the entire county, there is potential for the IVMP and its associated activities to be located within forest land or timberland. However, the Proposed Project would be consistent with existing zoning because it would not propose a rezone of property. San Diego County does not contain any existing Timberland Production Zones. Therefore, implementation of the Proposed Project would not conflict with existing zoning for or cause the rezoning of forest land, timberland, or Timberland Production Zones.

d) Result in the loss of forest land, conversion of forest land to non-forest use, or involve other changes in the existing environment, which, due to their location or nature, could result in conversion of forest land to non-forest use?

- ☐ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☒ No Impact

Discussion/Explanation:

No Impact: Because these activities would occur across the entire county, there is potential for the IVMP and its associated activities to be located within forest land as defined in Public Resources Code Section 12220(g). However, the intent of the proposed IVMP is to reduce the spread of

mosquito-borne and other vector-borne disease. Implementation of IVMP would not result in the disturbance, loss or conversion of forest land resources to a non-forest use. Therefore, the Proposed Project would not result in the loss of forest land or conversion of forest land to non-forest use.

e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Important Farmland or other agricultural resources, to non-agricultural use?

☐ Potentially Significant Impact
☐ Less than Significant With Mitigation Incorporated
☐ Less than Significant Impact
☒ No Impact

Discussion/Explanation:

No Impact: While the proposed IVMP would include surveillance and physical, biological, and chemical control methods, this would not result in any land use conversions. The proposed IVMP is not expected to introduce a change to the existing environment which could ultimately result in the conversion of land use. Therefore, no Important Farmland, or other agricultural resources will be converted to a non-agricultural use. As such, no impacts would result.

III. AIR QUALITY -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

a) Conflict with or obstruct implementation of the San Diego Regional Air Quality Strategy (RAQS) or applicable portions of the State Implementation Plan (SIP)?

☐ Potentially Significant Impact
☐ Less than Significant With Mitigation Incorporated
☒ Less than Significant Impact
☐ No Impact

Discussion/Explanation:

Less than Significant Impact: The San Diego RAQS is based on population and vehicle trends as well as land use plans developed by the cities and the County as part of the development of their general plans. As such, projects that propose development consistent with the growth anticipated by the general plans and San Diego Association of Governments (SANDAG) growth forecasts would be consistent with the RAQS and SIP. The IVMP would not generate growth, increase population, or require the alteration of an existing land use designation through amendments to general plans or changes to zoning. The proposed IVMP includes surveillance and public education of vector threats as well as physical, biological, and chemical control methods. Therefore, the Proposed Project is not anticipated to conflict with the applicable land use plans nor conflict with or obstruct the implementation of the RAQS or applicable portions of the SIP. Impacts are anticipated to be less than significant; however, this will be further addressed in the PEIR.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

☒ Potentially Significant Impact
☐ Less than Significant With Mitigation Incorporated
☐ Less than Significant Impact
☐ No Impact

Discussion/Explanation:

In general, air quality impacts are the result of emissions from motor vehicles, and from short-term construction activities. The San Diego County Land Use Environment Group has established guidelines for determining significance which incorporate the Air Pollution Control District's (SDAPCD) established screening-level criteria for all new source review in SDAPCD Rule 20.2. These screening-level criteria can be used as numeric methods to demonstrate that a project's total emissions (e.g. stationary and fugitive emissions, as well as emissions from mobile sources) would not result in a significant impact to air quality. Since SDAPCD does not have screening-level criteria for emissions of volatile organic compounds (VOCs), the use of the screening level for reactive organic compounds from the South Coast Air Quality Management District for the Coachella Valley (which are more appropriate for the San Diego Air Basin) are used.

Potentially Significant Impact: The proposed IVMP would include a range of activities involving surveillance of existing and potential vector threats as well as physical, biological, and chemical control methods to reduce the spread of mosquito-borne and other vector-borne diseases and nuisance vectors. This would also include public outreach and education in communities across San Diego County. As a result, air quality emissions are anticipated to occur. This will be further analyzed in the PEIR; however, for the purpose of this Initial Study impacts could be potentially significant.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

☒ Potentially Significant Impact
☐ Less than Significant With Mitigation Incorporated
☐ Less than Significant Impact
☐ No Impact

Discussion/Explanation:

San Diego County is presently in non-attainment for the 1-hour concentrations under the California Ambient Air Quality Standard for ozone (O_3). San Diego County is also presently in non-attainment for the annual geometric mean and for the 24-hour concentrations of particulate matter less than or equal to 10 microns (PM_{10}) under the California Ambient Air Quality Standard. O_3 is formed when VOCs and nitrogen oxides (NO_X) react in the presence of sunlight. VOC sources include any source that burns fuels (e.g., gasoline, natural gas, wood, oil); solvents; petroleum processing and storage; and pesticides. Sources of PM_{10} in both urban and rural areas include motor vehicles, wood burning stoves and fireplaces, dust from construction, landfills, agriculture, wildfires, brush/waste burning, and industrial sources of windblown dust from open lands.

Potentially Significant Impact: The proposed IVMP would include a range of activities involving surveillance of existing and potential vector threats as well as physical, biological, and chemical control methods to reduce the spread of mosquito-borne and other vector-borne disease. This would also include public outreach and education in communities across San Diego County. As a

result, the IVMP has the potential to result in an increase of criteria pollutants (O_3 and PM_{10}) for which San Diego County is in non-attainment. This will be further analyzed in the PEIR; however, for the purpose of this Initial Study impacts could be potentially significant.

d) Expose sensitive receptors to substantial pollutant concentrations?

☐	Potentially Significant Impact	☒	Less than Significant Impact
☐	Less than Significant With Mitigation Incorporated	☐	No Impact

Discussion/Explanation:

Air quality regulators typically define sensitive receptors as schools (Preschool–12th Grade), hospitals, resident care facilities, or day-care centers, or other facilities that may house individuals with health conditions that would be adversely impacted by changes in air quality. The County also considers residences as sensitive receptors since they house children and the elderly.

Less than Significant Impact: The Proposed Project includes implementation of the countywide IVMP in which individual activities would occur throughout San Diego County. This could potentially include activities near sensitive receptors since mosquito control and other vector control methods are needed to protect the public health and to reduce the spread of vector-borne diseases and nuisance vectors. The proposed mosquito and other vector control activities would not include construction of new stationary sources of air emissions. Specifically, surveillance of existing and potential vector threats as well as physical, biological, and chemical control methods would be temporary and sporadic in nature depending on the location of an identified vector threat. Activities are also intended to occur over a wide geographic area. Furthermore, any application of chemical controls would be conducted in full compliance with legal application rates as regulated by the California Department of Pesticide Regulation. Therefore, while individual sites would be targeted for vector remediation, the proposed IVMP is not anticipated to result in the exposure of sensitive receptors to substantial pollutant concentrations and would not place sensitive receptors near said emission sources carbon monoxide hotspots.

e) Create objectionable odors affecting a substantial number of people?

☐	Potentially Significant Impact	☒	Less than Significant Impact
☐	Less than Significant With Mitigation Incorporated	☐	No Impact

Discussion/Explanation:

Less than Significant Impact: The proposed IVMP includes surveillance and public education of vector threats as well as physical, biological, and chemical control methods. Chemical control activities are the only component that could potentially create objectionable odors. Although all chemicals, including pesticide, larvicide, and adulticide are applied in accordance with label requirements and legal application rates, various compounds found within these chemicals could emit odors when they evaporate into the air resulting in airborne particles and vapors. Therefore, an application containing an odorous compound could potentially impact people for a period of time. However, spraying (or applying) chemical controls would be temporary and sporadic depending on the location of an identified vector risk. Therefore, while the proposed IVMP has the potential to result in odors, they are anticipated to be confined and localized to a specific area for a short period of time, and are not anticipated to affect a substantial number of people. As such, impacts from objectionable odors would be less than significant.

IV. BIOLOGICAL RESOURCES -- Would the project:

a) 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 the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

☒ Potentially Significant Impact
☐ Less than Significant With Mitigation Incorporated
☐ Less than Significant Impact
☐ No Impact

Discussion/Explanation:

Potentially Significant Impact: The Proposed Project includes implementation of the countywide IVMP in which individual activities would occur throughout San Diego County. It would include a range of activities involving surveillance of existing and potential vector threats as well as physical, biological, and chemical control methods to reduce the spread of mosquito-borne and other vector-borne diseases and nuisances. As a result, the IVMP has the potential to result in adverse effects, either directly or through habitat modifications, to special status species. This will be further analyzed in the PEIR; however, for the purpose of this Initial Study impacts could be potentially significant.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

☒ Potentially Significant Impact
☐ Less than Significant With Mitigation Incorporated
☐ Less than Significant Impact
☐ No Impact

Discussion/Explanation:

Potentially Significant Impact: The Proposed Project includes implementation of the countywide IVMP in which individual activities would occur throughout San Diego County. It would include a range of activities involving surveillance of existing and potential vector threats as well as physical, biological, and chemical control methods to reduce the spread of mosquito-borne and other vector-borne diseases and nuisances. This could potentially include, but not be limited to, removal of vegetation or sediment, interruption of water flow, rotation of stored water, pumping and/or filling sources, improving drainage and water circulation systems, and installing, removing, or improving culverts, tide gates, and other water control structures. As a result, the IVMP has the potential to result in adverse effects on riparian habitat or other sensitive natural communities. However, any potential impacts to riparian habitat or other sensitive natural communities would be avoided or minimized to the extent feasible, and would be permitted and mitigated in accordance with applicable federal, state, and local requirements. This will be further analyzed in the PEIR; however, for the purpose of this Initial Study impacts could be potentially significant.

As of November 2011, pesticides applied to Waters of the U.S. for vector control purposes must be conducted in accordance with the Statewide National Pollutant Discharge Elimination System (NPDES) Permit for *Biological and Residual Pesticide Discharges to Waters of the U.S. from Vector Control Applications*. At that time the VCP received a Notice of Authorization from the State Water Resources Control Board (SWRCB) to operate under this general permit. In 2014, the SWRCB amended the permit (2014-0106-DWQ) which: (1) added all larvicides and adulticides that are currently registered by Department of Pesticide Regulations (DPR) using the same active ingredients; (2) included additional receiving water limitations and receiving water monitoring

triggers for newly added active ingredients; and (3) included a provision for reopening the permit to include new active ingredients that DPR registers for vector control. Most recently, the SWRCB reissued the general permit (2016-0039-DWQ), which became effective on July 1, 2016. The updated permit includes the addition of minimum risk pesticides which are pesticides exempted from Federal Insecticide, Fungicide, and Rodenticide Act requirements when used only in the manner specified by federal regulations. The VCP remains an authorized enrollee under the current permit.

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

- ☒ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☐ No Impact

Discussion/Explanation:

Potentially Significant Impact: The Proposed Project includes implementation of the countywide IVMP in which individual activities would occur throughout San Diego County. It would include a range of activities involving surveillance of existing and potential vector threats as well as physical, biological, and chemical control methods to reduce the spread of mosquito-borne and other vector-borne diseases and nuisances. As a result, the IVMP has the potential to result in adverse effects on federally protected wetlands. This will be further analyzed in the PEIR; however, for the purpose of this Initial Study impacts could be potentially significant.

As discussed above in response to Biological Resources – IV(b), the VCP is a current enrollee of the SWRCB NPDES Permit 2016-0039-DWQ, which authorizes vector control application in Waters of the U.S.

d) 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?

- ☒ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☐ No Impact

Discussion/Explanation:

Potentially Significant Impact: The proposed IVMP would target identified vector threats and apply various control methods to protect the public from vector-borne disease and nuisances. The Proposed Project is not intended to interfere with the movement of any native resident or migratory fish or wildlife species. However, habitat supporting said species could potentially result in interference with wildlife movement. This will be further analyzed in the PEIR; however, for the purpose of this Initial Study impacts could be potentially significant.

e) Conflict with the provisions of any adopted Habitat Conservation Plan, Natural Communities Conservation Plan, other approved local, regional or state habitat conservation plan or any other local policies or ordinances that protect biological resources?

- ☒ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☐ No Impact

Discussion/Explanation:

Potentially Significant Impact: The Proposed Project includes implementation of the countywide IVMP in which individual activities would occur throughout San Diego County. It would include a range of activities involving surveillance of existing and potential vector threats as well as physical, biological, and chemical control methods to reduce the spread of mosquito-borne and other vector-borne diseases and nuisances. Implementation of the IVMP could potentially result in conflicts with Habitat Conservation Plans, Natural Communities Conservation Plan or other approved local, regional or state habitat conservation plan. This potential conflict with habitat conservation plans will be further discussed in the PEIR.

V. CULTURAL RESOURCES -- Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in 15064.5?

- ☐ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☒ No Impact

Discussion/Explanation:

No Impact: The proposed IVMP would include a range of activities involving surveillance of existing and potential vector threats as well as physical, biological, and chemical control methods to reduce the spread of mosquito-borne and other vector-borne diseases and nuisances. This would also include public outreach and education in communities across San Diego County. Physical control activities are the only components that may involve minor grading or vegetation management in order to survey and abate vectors and nuisances. Implementation of the IVMP would not include development or construction of new structures or facilities that would result in the disturbance or alteration of existing historical resources or structures. Therefore, no impacts to historical resources would occur.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to 15064.5?

- ☒ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☐ No Impact

Discussion/Explanation:

Potentially Significant Impact: Among other activities, the proposed IVMP may include physical control methods for the purpose of monitoring and abatement to improve water circulation in aquatic habitats. This could potentially include, but not be limited to, removal of vegetation or sediment, interruption of water flow, rotation of stored water, pumping and/or filling sources, improving drainage and water circulation systems, and installing, removing, or improving culverts, tide gates, and other water control structures. As a result, these activities may have the potential to result in an adverse change in the significance of an archeological resource. However, any potential impacts to archeological resources would be avoided or minimized to the extent feasible, and would be mitigated in accordance with applicable federal, state, and local requirements. This will be further analyzed in the PEIR; however, for the purpose of this Initial Study impacts could be potentially significant.

c) Directly or indirectly destroy a unique geologic feature?

- ☒ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☐ No Impact

Discussion/Explanation:

San Diego County has a variety of geologic environments and geologic processes which generally occur in other parts of the state, country, and the world. However, some features stand out as being unique in one way or another within the boundaries of the County.

Potentially Significant Impact: As discussed above in response to V(b), physical control activities proposed under the IVMP could potentially involve grading or earthwork-related activities. As a result, the Proposed Project has the potential to directly or indirectly destroy a unique geologic feature. Therefore, impacts to unique geologic features will be further discussed in the PEIR.

d) Directly or indirectly destroy a unique paleontological resource or site?

- ☒ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☐ No Impact

Discussion/Explanation:

Potentially Significant Impact: As discussed above in response to V(b), physical control activities proposed under the IVMP could potentially involve grading or earthwork-related activities. As a result, the Proposed Project has the potential to result in a direct or indirect impact to a unique paleontological resource. Therefore, impacts to unique paleontological resources will be further discussed in the PEIR.

e) Disturb any human remains, including those interred outside of dedicated cemeteries?

- ☒ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☐ No Impact

Discussion/Explanation:

Potentially Significant Impact: As discussed above in response to V(b), physical control activities proposed under the IVMP could potentially involve grading or earthwork-related activities. As a result, the Proposed Project has the potential to disturb human remains, including those interred outside of formal cemeteries. Therefore, this will be further discussed in the PEIR.

If implementation of the IVMP resulted in the discovery of human remains, the County Coroner would be contacted and appropriate measures implemented, consistent with State Health and Safety Code Section 7050.5, which prohibits unauthorized disinterring, disturbing, or removing of human remains from any location.

VI. GEOLOGY AND SOILS -- Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

☐ Potentially Significant Impact
☐ Less than Significant With Mitigation Incorporated
☐ Less than Significant Impact
☒ No Impact

Discussion/Explanation:

No Impact: The Proposed Project includes implementation of the countywide IVMP. As such, individual activities could occur in a wide range of locations and may be located near or within fault rupture hazard zones. However, the proposed IVMP would not involve the construction of habitable buildings or structures. Rather, the IVMP would include a range of activities involving surveillance of existing and potential vector threats as well as physical, biological, and chemical control methods. This would also include public outreach and education in communities across San Diego County. Therefore, the IVMP will not expose people or structures to the risk of loss, injury, or death involving a known fault-rupture hazard zone.

ii. Strong seismic ground shaking?

☐ Potentially Significant Impact
☐ Less than Significant With Mitigation Incorporated
☐ Less than Significant Impact
☒ No Impact

Discussion/Explanation:

No Impact: The proposed IVMP would target identified vector threats and apply various control methods to protect the public from vector-borne disease and nuisances, and it would not propose habitable buildings or structures. Therefore, the IVMP will not expose people or structures to the risk of loss, injury, or death involving strong seismic ground shaking.

iii. Seismic-related ground failure, including liquefaction?

☐ Potentially Significant Impact
☐ Less than Significant With Mitigation Incorporated
☐ Less than Significant Impact
☒ No Impact

Discussion/Explanation:

No Impact: The Proposed Project includes implementation of the countywide IVMP. Individual activities could occur in a wide range of locations and may be located near or within potential liquefaction areas. However, the proposed IVMP would not involve the construction of habitable buildings or structures. Therefore, the IVMP will not expose people or structures to the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction.

iv. Landslides?

☐ Potentially Significant Impact
☐ Less than Significant With Mitigation Incorporated
☐ Less than Significant Impact
☒ No Impact

Discussion/Explanation:

No Impact: The Proposed Project includes implementation of the countywide IVMP. Individual activities could occur in a wide range of locations and may be located near or within landslide susceptibility areas. However, the proposed IVMP would not involve the construction of habitable buildings or structures. Therefore, the IVMP will not expose people or structures to the risk of loss, injury, or death involving landslides.

b) Result in substantial soil erosion or the loss of topsoil?

- ☒ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☐ No Impact

Discussion/Explanation:

Potentially Significant Impact: Among other activities, the proposed IVMP would include physical control methods to reduce the spread of mosquito-borne and other vector-borne diseases and nuisances. As a result, minor grading activities could potentially occur resulting in soil erosion and/or the loss of topsoil. In order to minimize the potential for soil erosion, activities will consider implementation of Best Management Practices, if applicable. Therefore, the potential for IVMP activities to result in soil erosion and the loss of topsoil will be further discussed in the PEIR.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in an on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

- ☐ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☒ Less than Significant Impact
- ☐ No Impact

Discussion/Explanation:

Less than Significant Impact: The Proposed Project includes implementation of the countywide IVMP. Individual activities could occur in a wide range of locations and may be located on a geologic unit or soil that is unstable. While it is possible that IVMP activities may include physical control methods such as minor grading or vegetation management, the proposed IVMP is intended to reduce the spread of mosquito-borne and other vector-borne diseases and nuisances, and is not anticipated to include significant earthwork or other activities that would result in an unstable geologic unit or soil. For further information regarding landslides, liquefaction, and lateral spreading, refer to *VI. Geology and Soils, Question a., iii-iv* listed above. As such, impacts are expected to be less than significant.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

- ☐ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☒ Less than Significant Impact
- ☐ No Impact

Discussion/Explanation:

Less than Significant Impact: The Proposed Project includes implementation of the countywide IVMP. Individual activities could occur in a wide range of locations and may be located on expansive soils. However, the proposed IVMP is intended to reduce the spread of mosquito-borne

and other vector-borne diseases and nuisances, and is not anticipated to include installation of structures or other facilities that would create substantial risks to life or property. Therefore, impacts are anticipated to be less than significant.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

☐ Potentially Significant Impact
☐ Less than Significant With Mitigation Incorporated
☐ Less than Significant Impact
☒ No Impact

Discussion/Explanation:

No Impact: The proposed IVMP would include a range of activities involving surveillance of existing and potential vector threats as well as physical, biological, and chemical control methods to reduce the spread of mosquito-borne and other vector-borne diseases and nuisances. This would also include public outreach and education in communities across San Diego County. Activities would not include installation of any septic tanks or alternative wastewater disposal systems; therefore, no impact would result due to implementation of the Proposed Project.

VII. GREENHOUSE GAS EMISSIONS -- Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

☒ Potentially Significant Impact
☐ Less than Significant With Mitigation Incorporated
☐ Less than Significant Impact
☐ No Impact

Discussion/Explanation:

Greenhouse Gas (GHG) emissions result in an increase in Earth's average surface temperature commonly referred to as global warming. This rise in global temperature is associated with long-term changes in precipitation, temperature, wind patterns, and other elements of the earth's climate system, and is known as global climate change. These changes are now broadly attributed to GHG emissions, particularly those emissions that result from the human production and use of fossil fuels.

GHGs include carbon dioxide, methane, halocarbons, and nitrous oxide, among others. Human induced GHG emissions are a result of energy production and consumption, and personal vehicle use, among other sources. A regional GHG inventory prepared for the San Diego Region[3] identified on-road transportation (cars and trucks) as the largest contributor of GHG emissions in the region, accounting for 46% of the total regional emissions. Electricity and natural gas combustion were the second (25%) and third (9%) largest regional contributors, respectively, to regional GHG emissions.

Climate changes resulting from GHG emissions could produce an array of adverse environmental impacts including water supply shortages, severe drought, increased flooding, sea level rise, air pollution from increased formation of ground level O_3 and particulate matter, ecosystem changes,

[3] San Diego County Greenhouse Gas Inventory: An Analysis of Regional Emissions and Strategies to Achieve AB 32 Targets. University of San Diego and the Energy Policy Initiatives Center, September 2008.

increased wildfire risk, agricultural impacts, ocean and terrestrial species impacts, among other adverse effects.

In 2006, the State passed the Global Warming Solutions Act of 2006, commonly referred to as Assembly Bill 32 (AB 32), which set the GHG emissions reduction goal for the State of California into law. In 2008, the California Air Resources Board (CARB) adopted the first iteration of the Climate Change Scoping Plan: A Framework for Change (Initial Scoping Plan), which identified the main strategies California would implement to achieve the GHG reductions necessary to reduce forecasted business-as-usual emissions in 2020 to the State's historic 1990 emissions level (CARB 2008). CARB approved the first update to the Initial Scoping Plan in May 2014 (2014 Scoping Plan Update).

In 2015, Executive Order B-30-15 directed the CARB to update the Scoping Plan to establish a mid-term GHG reduction target for California of 40 percent below 1990 levels by 2030. In November 2017, CARB released the 2017 Climate Change Scoping Plan Update, the Strategy for Achieving California's 2030 GHG Target (2017 Scoping Plan Update; CARB 2017). The 2017 Scoping Plan Update identifies state strategies for achieving the state's 2020 and 2030 GHG emissions reduction targets codified by the California Global Warming Solutions Act of 2006 (AB 32) and Senate Bill (SB 32), which amended and extended the California Global Warming Solutions Act of 2006 beyond 2020 to 2030.

Senate Bill 375 (SB 375), passed in 2008, links transportation and land use planning with global warming. It requires the CARB to set regional targets for the purpose of reducing GHG emissions from passenger vehicles. Under this law, if regions develop integrated land use, housing and transportation plans that meet SB 375 targets, new projects in these regions can be relieved of certain review requirements under CEQA. SANDAG has prepared a Sustainable Communities Strategy, which is a new element of the 2050 Regional Transportation Plan (RTP). The strategy identifies how regional GHG reduction targets, as established by the CARB, will be achieved through development patterns, transportation infrastructure investments, and/or transportation measures or policies that are determined to be feasible.

It should be noted that an individual project's GHG emissions will generally not result in direct impacts under CEQA, as the climate change issue is global in nature, however an individual project could be found to contribute to a potentially significant cumulative impact. CEQA Guidelines Section 15130 states that an EIR shall discuss cumulative impacts of a proposed project when the project's incremental effect is cumulatively considerable.

On February 14, 2018, the County Board of Supervisors adopted the Climate Action Plan (CAP), which identifies specific strategies and measures to reduce GHG emissions in the largely rural, unincorporated areas of San Diego County as well as County government buildings and operations. The CAP updates and implements the County's 2011 General Plan Update goals, policies, and reduction measures to meet the State's GHG reduction targets including AB 32 (2020 goal) and SB 32 (2030 goal), and to demonstrate progress towards a 2050 GHG reduction goal (County 2018). The plan includes six chapters: (1) Introduction; (2) Greenhouse Gas Emissions Inventory, Projections, and Reductions Targets; (3) Greenhouse Gas Reduction Strategies and Measures; (4) Climate Change Vulnerability, Resiliency, and Adaptation; (5) Implementation and Monitoring; and (6) Public Outreach and Engagement.

Concurrent with adoption of the CAP, the County adopted new Guidelines for Determining Significance for Climate Change, which identifies that a proposed project would have a less than significant cumulatively considerable contribution to global climate change if it is consistent with the County's CAP. As defined in these Guidelines, consistency with the CAP is determined through the CAP Consistency Review Checklist (Checklist). The Checklist follows a two-step process to determine if projects are consistent with the CAP and whether they may have a significant

cumulative impact under the County's adopted GHG thresholds of significance. The Checklist further explains that if a project is consistent with the projections and land use assumptions in the 2011 General Plan Update and CAP, its associated growth in terms of GHG emissions would have been accounted for in the CAP's projections and project implementation of the CAP reduction measures will contribute towards reducing the County's emissions and meeting the County's reduction targets.

Potentially Significant Impact: The proposed IVMP includes a range of vector management activities involving surveillance of existing and potential vector threats as well as physical, biological, and chemical control methods to reduce the spread of mosquito-borne and other vector-borne diseases and nuisances. This would also include public outreach and education in communities across San Diego County. As a result, the IVMP would result in GHG emissions from various sources including on-road fleet vehicles, watercraft, aircraft, portable equipment (pumps, sprayers, generators), and small equipment (handheld sprayers, foggers, dusters). The dominant fuel used for these mobile sources is motor gasoline along with some diesel fuel (larger trucks), and jet fuel (turbine-powered aircraft).

As noted in the CAP Appendix B,

> the County's vehicle fleet operated on gasoline, diesel, and compressed natural gas (CNG) fuels in 2014. This included both on-road and off-road vehicle fleet and equipment, such as construction equipment and airport ground support equipment…Fuel use and mileage by vehicle type was recorded into [the Climate Registry Information System (CRIS)] from County records and fuel-specific or vehicle-specific emission factors from [The Climate Registry (TCR)] were applied to estimate vehicle fleet emissions in 2014. CO_2 emission factors for all three fuel types are based on the volume of gasoline or diesel and the total energy content of purchased CNG fuel.

As cited above, the CAP accounted for the County's vehicle fleet usage, which includes the County's DEH fleet, as part of the baseline inventory of GHG emissions. The potential for the IVMP to result in GHG impacts on the environment will be further analyzed in the PEIR, but for the purpose of this Initial Study, impacts are considered potentially significant.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

- ☒ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☐ No Impact

Discussion/Explanation:

Potentially Significant Impact: As explained above in response to Greenhouse Gas Emissions - VII(a), the IVMP would result in GHG emissions from various sources as a result of implementation of physical, biological, and chemical controls as well as surveillance and public outreach to reduce the spread of mosquito-borne and other vector-borne diseases and nuisances. Therefore, the IVMP's potential to conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions will be further analyzed in the PEIR; however, for the purpose of this Initial Study impacts could be potentially significant.

VIII. HAZARDS AND HAZARDOUS MATERIALS -- Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, storage, use, or disposal of hazardous materials or wastes or through reasonably

foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

- ☒ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☐ No Impact

Discussion/Explanation:

Potentially Significant Impact: Among other activities, the Proposed Project would include chemical control methods to reduce the spread of mosquito-borne and other vector-borne disease. This may include, but not be limited to, of insecticides, pesticides, and herbicides. Regarding mosquitoes, the frequency and extent of the chemical applications will vary depending on the type of species, mosquito abundance, water temperature, organic content, time of year, and other factors. In addition, phased risk levels have been established to identify when there is an elevated public health risk, and how the VCP would respond to each risk level (e.g., outreach, testing, treatment, etc.). The VCP strives to safeguard the public's health from West Nile Virus, Zika, and other diseases as well as to minimize harmful effects on the environment by using this risk-analysis approach to control the spread of such diseases. Public communication, education, and transparency of operations are the cornerstones of the VCP's strategy to protect the public. In addition, various federal, state, and local regulatory agencies conduct oversight of vector control activities, which must adhere to current regulations and manufacturer label requirements. Any application of chemical controls would be conducted in full compliance with legal application rates as regulated by the California Department of Pesticide Regulation.

Also, as discussed above in response to Biological Resources – IV(b), the VCP is a current enrollee of the SWRCB NPDES Permit 2016-0039-DWQ, which authorizes vector control application in Waters of the U.S.

While the IVMP would comply with all governing regulations and applicable agencies, for the purpose of this Initial Study impacts could be potentially significant. This will be further analyzed in the PEIR.

b) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

- ☒ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☐ No Impact

Discussion/Explanation:

Potentially Significant Impact: The Proposed Project includes implementation of the countywide IVMP. As such, individual activities could occur in a wide range of locations and could potentially be located within one-quarter mile of an existing or proposed school. As discussed above in response to Hazards and Hazardous Materials – VIII(a), the VCP strives to safeguard the public's health from West Nile Virus, Zika, and other diseases as well as to minimize harmful effects on the environment by using a risk-analysis approach to control the spread of such diseases. Public communication, education, and transparency of operations are the cornerstones of the VCP's strategy to protect the public. Therefore, this will be further analyzed in the PEIR.

c) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, or is otherwise known to have been

subject to a release of hazardous substances and, as a result, would it create a significant hazard to the public or the environment?

- ☒ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☐ No Impact

Discussion/Explanation:

Potentially Significant Impact: The Proposed Project includes implementation of the countywide IVMP. As such, individual activities could occur in a wide range of locations and could potentially be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, or is otherwise known to have been subject to a release of hazardous substances. As discussed above in response to Hazards and Hazardous Materials – VIII(a), for the purpose of this Initial Study impacts could be potentially significant, and this will be further analyzed in the PEIR.

d) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

- ☐ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☒ No Impact

Discussion/Explanation:

No Impact: The Proposed Project includes implementation of the countywide IVMP. As such, individual activities could occur in a wide range of locations potentially including within an airport land use planning area or within two miles of a public airport or public use airport where such a plan has not been adopted. However, the Proposed Project would not construct residential or other habitable or commercial structures that would create a safety hazard for people residing or working in the project area. Therefore, no impacts would occur.

e) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

- ☐ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☒ No Impact

Discussion/Explanation:

No Impact: The Proposed Project includes implementation of the countywide IVMP. As such, individual activities could occur in a wide range of locations potentially including within the vicinity of a private airstrip. However, the Proposed Project would not construct residential or other habitable or commercial structures that would create a safety hazard for people residing or working in the project area. Therefore, no impacts would occur.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

- ☐ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☒ Less than Significant Impact
- ☐ No Impact

Discussion/Explanation:

The following sections summarize the Proposed Project's consistency with applicable emergency response plans or emergency evacuation plans.

i. OPERATIONAL AREA EMERGENCY PLAN AND MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN:

Less than Significant Impact: The Operational Area Emergency Plan is a comprehensive emergency plan that defines responsibilities, establishes an emergency organization, defines lines of communications, and is designed to be part of the statewide Standardized Emergency Management System. The Operational Area Emergency Plan provides guidance for emergency planning and requires subsequent plans to be established by each jurisdiction that has responsibilities in a disaster situation. The Multi-Jurisdictional Hazard Mitigation Plan includes an overview of the risk assessment process, identifies hazards present in the jurisdiction, hazard profiles, and vulnerability assessments. The plan also identifies goals, objectives, and actions for each jurisdiction in San Diego County, including all cities and the County unincorporated areas. The IVMP will not interfere with this plan because it will not prohibit subsequent plans from being established or prevent the goals and objectives of existing plans from being carried out.

ii. SAN DIEGO COUNTY NUCLEAR POWER STATION EMERGENCY RESPONSE PLAN

No Impact: Implementation of the countywide IVMP will not interfere with the San Diego County Nuclear Power Station Emergency Response Plan due to the nature of the Proposed Project. The emergency plan for the San Onofre Nuclear Generating Station includes an emergency planning zone within a 10-mile radius. All land area within 10 miles of the plant is not within the unincorporated jurisdiction of the County and as such a project in the unincorporated area is not expected to interfere with any response or evacuation.

iii. OIL SPILL CONTINGENCY ELEMENT

Less than Significant Impact: The Proposed Project includes implementation of the countywide IVMP. As such, individual activities could occur in a wide range of locations and could potentially be located within the coastal zone or coastline. However, the intent of the proposed IVMP is to reduce the spread of mosquito-borne and other vector-borne disease, and will not prevent the goals and objectives from the Oil Spill Contingency Element from being implemented.

iv. EMERGENCY WATER CONTINGENCIES ANNEX AND ENERGY SHORTAGE RESPONSE PLAN

No Impact: The Emergency Water Contingencies Annex and Energy Shortage Response Plan will not be interfered with because the Proposed Project does not propose altering major water or energy supply infrastructure, such as the California Aqueduct.

v. DAM EVACUATION PLAN

Less than Significant Impact: The Proposed Project includes implementation of the countywide IVMP. As such, individual activities could occur in a wide range of locations and could potentially be located within a Dam Inundation Area. However, the intent of the proposed IVMP is to reduce the spread of mosquito-borne and other vector-borne disease, and will not prevent the goals and objectives from Dam Evacuations Plans from being implemented. Since the IVMP will not construct unique institutions in a dam inundation zone, the Proposed Project will not impair implementation of or physically interfere with the implementation of an emergency response plan.

g) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

- ☐ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☒ No Impact

Discussion/Explanation:

No Impact: The IVMP will not expose people or structures to a significant risk of loss, injury, or death involving wildland fires because individual activities would not involve the construction of habitable buildings or structures.

h) Propose a use, or place residents adjacent to an existing or reasonably foreseeable use that would substantially increase current or future resident's exposure to vectors, including mosquitoes, rats or flies, which are capable of transmitting significant public health diseases or nuisances?

- ☐ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☒ No Impact

Discussion/Explanation:

No Impact: The proposed IVMP includes a range of activities involving surveillance of existing and potential vector threats as well as physical, biological, and chemical control methods to reduce the spread of mosquito-borne and other vector-borne disease. This would also include public outreach and education in communities across San Diego County. The IVMP would not propose a use, or place residents adjacent to an existing or reasonably foreseeable use, that would substantially increase current or future resident's exposure to vectors.

IX. HYDROLOGY AND WATER QUALITY -- Would the project:

a) Violate any waste discharge requirements?

- ☒ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☐ No Impact

Discussion/Explanation:

Potentially Significant Impact: All proposed IVMP activities would comply with applicable federal, state, and local regulations. As discussed above in response to Biological Resources – IV(b), the VCP is a current enrollee of the SWRCB NPDES Permit 2016-0039-DWQ, which authorizes vector control application in Waters of the U.S. The proposed IVMP's compliance with waste discharge requirements will be further analyzed in the PEIR; however, for the purpose of this Initial Study impacts could be potentially significant.

b) Is the project tributary to an already impaired water body, as listed on the Clean Water Act Section 303(d) list? If so, could the project result in an increase in any pollutant for which the water body is already impaired?

- ☒ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☐ No Impact

Discussion/Explanation:

Potentially Significant Impact: The Proposed Project includes implementation of the countywide IVMP with the intent to reduce the spread of mosquito-borne and other vector-borne diseases and nuisances. As such, individual activities could occur in a wide range of locations and could potentially be located near an impaired water body as listed on the Clean Water Act Section 303(d) list. Therefore, the potential for the Proposed Project to result in an increase in any pollutant for which the water body is already impaired will be further analyzed in the PEIR.

c) Could the proposed project cause or contribute to an exceedance of applicable surface or groundwater receiving water quality objectives or degradation of beneficial uses?

- ☒ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☐ No Impact

Discussion/Explanation:

Potentially Significant Impact: Among other activities, the proposed IVMP would include physical, biological, and chemical control methods to reduce the spread of mosquito-borne and other vector-borne disease and nuisances. The implementation of these control methods could potentially cause or contribute to an exceedance of applicable surface or groundwater receiving water quality objectives or degradation of beneficial uses. Therefore, this will be further analyzed in the PEIR as potentially significant.

d) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

- ☐ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☒ No Impact

Discussion/Explanation:

No Impact: Among other activities, the proposed IVMP would include physical control methods; however these activities are not expected to result in the depletion of groundwater supplies or interference with groundwater recharge. Individual activities are not expected to result in increased surface runoff as they will not increase the amount of impervious areas (which will reduce recharge). The use of groundwater is not proposed as a component of the IVMP. As such, no impacts are anticipated.

e) 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 which would result in substantial erosion or siltation on- or off-site?

- ☒ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☐ No Impact

Discussion/Explanation:

Potentially Significant Impact: Among other activities, the proposed IVMP would include physical control methods. This could potentially include, but not be limited to, removal of vegetation or sediment, interruption of water flow, rotation of stored water, pumping and/or filling sources, improving drainage and water circulation systems, and installing, removing, or improving culverts, tide gates, and other water control structures. These activities could potentially alter the existing drainage pattern of a site or area, which could affect erosion or siltation on- or off-site. Therefore, the potential for the IVMP to substantially alter the existing drainage pattern of a site will be further discussed in the PEIR.

f) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

- ☒ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☐ No Impact

Discussion/Explanation:

Potentially Significant Impact: As discussed above in response to Hydrology and Water Quality – IX(e), the proposed IVMP would include physical control methods. This could potentially include, but not be limited to, removal of vegetation or sediment, interruption of water flow, rotation of stored water, pumping and/or filling sources, improving drainage and water circulation systems, and installing, removing, or improving culverts, tide gates, and other water control structures. These activities could potentially alter the existing drainage pattern of a site or area, which could increase the rate or amount of surface runoff in a manner which could result in flooding on- or off-site. Therefore, the potential for the IVMP to substantially alter the existing drainage pattern of a site will be further discussed in the PEIR.

g) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems?

- ☐ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☒ Less than Significant Impact
- ☐ No Impact

Discussion/Explanation:

Less than Significant Impact: The IVMP does not propose to create or contribute runoff water that will exceed the capacity of existing or planned storm water drainage systems. Therefore, impacts will be less than significant.

h) Provide substantial additional sources of polluted runoff?

- ☐ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☒ Less than Significant Impact
- ☐ No Impact

Discussion/Explanation:

Less than Significant Impact: The IVMP does not propose to construct any structures, facilities, or services that would result in new or additional sources of runoff. In addition, among other activities the proposed IVMP would include chemical control methods to reduce the spread of mosquito-borne and other vector-borne diseases and nuisances. This may include, but not be limited to, insecticides, pesticides, and herbicide. As such, various federal, state, and local agencies conduct oversight over vector control activities, and all activities must adhere to certain regulations and manufacturer label requirements. Any application of chemical controls would be conducted in full compliance with legal application rates as regulated by the California Department of Pesticide Regulation. Therefore, impacts would be less than significant.

i) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, including County Floodplain Maps?

- ☐ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☒ No Impact

Discussion/Explanation:

No Impact: The Proposed Project includes implementation of the countywide IVMP with the intent to reduce the spread of mosquito-borne and other vector-borne disease. The IVMP activities would not include the construction of housing or other habitable structures. Therefore, no impacts will occur.

j) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

- ☒ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☐ No Impact

Discussion/Explanation:

Potentially Significant Impact: While housing and habitable structures will not be proposed under the IVMP, water control structures or other facilities, such as water circulation systems, culverts, or tide gates, could be proposed and could potentially be placed within a 100-year flood hazard area. Therefore, the potential for IVMP activities to impede or redirect flood flows through placement within a 100-year flood hazard area will be further discussed in the PEIR.

k) Expose people or structures to a significant risk of loss, injury or death involving flooding?

- ☐ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☒ Less than Significant Impact
- ☐ No Impact

Discussion/Explanation:

Less than Significant Impact: The IVMP does not propose construction of housing or habitable structures; therefore, the Proposed Project will not expose people to a significant risk of loss, injury or death. Also, water circulation techniques (such as water control structures) may be included in the IVMP as discussed above in response to Hydrology and Water Quality - IX(f). However, the installation of such facilities are not anticipated to expose people or structures to a significant risk of loss, injury or death. This will be further analyzed in the PEIR.

l) Expose people or structures to a significant risk of loss, injury or death involving flooding as a result of the failure of a levee or dam?

- ☐ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☒ Less than Significant Impact
- ☐ No Impact

Discussion/Explanation:

Less than Significant Impact: As discussed above in response to Hydrology and Water Quality – IX(k), although individual IVMP activities could be located within dam inundation areas, activities will not include the construction of habitable buildings or structures that will be susceptible to flooding as a result of the failure of a dam or levee. Therefore, impacts will be less than significant.

m) Inundation by seiche, tsunami, or mudflow?

- ☐ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☒ No Impact

Discussion/Explanation:

i. SEICHE

No Impact: The Proposed Project includes implementation of the countywide IVMP with the intent to reduce the spread of mosquito-borne and other vector-borne diseases and nuisances. As such, individual activities could occur in a wide range of locations and could potentially be located along the shore of a lake or a reservoir subject to seiche. However, the IVMP will not result in the construction of habitable structures that will place people at risk or harm if a seiche event were to occur. Therefore, no impacts will occur.

ii. TSUNAMI

No Impact: The Proposed Project includes implementation of the countywide IVMP, and as such, individual activities could occur in a wide range of locations potentially including within a mile of the coast. However, the IVMP will not result in the construction of habitable structures that will place people at risk or harm if a tsunami event were to occur. Therefore, no impacts will occur.

iii. MUDFLOW

No Impact: The Proposed Project includes implementation of the countywide IVMP, and as such, individual activities could occur in a wide range of locations potentially including within a landslide susceptibility zone. However, the IVMP will not result in the construction of habitable structures that will place people at risk or harm if a mudflow event were to occur. Therefore, no impacts will occur.

X. LAND USE AND PLANNING -- Would the project:

a) Physically divide an established community?

- ☐ Potentially Significant Impact
- ☐ Less than Significant With Mitigation
- ☐ Less than Significant Impact
- ☒ No Impact

Incorporated

Discussion/Explanation:

No Impact: The Proposed Project would not introduce new infrastructure such as major roadways, water supply systems, or utilities to the area. Therefore, the Proposed Project will not significantly disrupt or divide the established community.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

☐ Potentially Significant Impact
☐ Less than Significant With Mitigation Incorporated
☐ Less than Significant Impact
☒ No Impact

Discussion/Explanation:

No Impact: The Proposed Project includes implementation of the countywide IVMP with the intent to reduce the spread of mosquito-borne and other vector-borne diseases and nuisances. It includes a range of activities involving surveillance of existing and potential vector threats as well as physical, biological, and chemical control methods to reduce the spread of mosquito-borne and other vector-borne disease. This would also include public outreach and education in communities across San Diego County. These activities would not alter the type of land use nor interfere with existing land uses, and therefore, would be consistent and not conflict with local land use plans or regulations.

XI. MINERAL RESOURCES -- Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

☐ Potentially Significant Impact
☐ Less than Significant With Mitigation Incorporated
☒ Less than Significant Impact
☐ No Impact

Discussion/Explanation:

Less than Significant Impact: The Proposed Project includes implementation of the countywide IVMP. As such, individual activities could occur in a wide range of locations and could potentially be located on lands designated MRZ-2 by the California Department of Conservation Division of Mines and Geology. MRZ-2 is defined as an area where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presents exist. However, the intent of the proposed IVMP is to reduce the spread of mosquito-borne and other vector-borne disease. Therefore, while it is possible that IVMP activities may include physical control methods such as minor grading or vegetation management, it would not include significant earthwork or other activities that would result in the loss of availability of a known mineral resource that will be of value to the region and the residents of the state. Furthermore, the IVMP would not result in the redesignation of existing land uses or zoning regulations, nor would it preclude future mining activities. Therefore, impacts will be less than significant.

b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

☐ Potentially Significant Impact
☐ Less than Significant With Mitigation Incorporated
☒ Less than Significant Impact
☐ No Impact

Discussion/Explanation:

Less than Significant Impact: As discussed above, the Proposed Project includes implementation of the countywide IVMP. Individual activities could occur in a wide range of locations and could potentially be located on lands designated MRZ-2 by the California Department of Conservation Division of Mines and Geology. While it is possible that IVMP activities may include physical control methods such as minor grading or vegetation management, it would not include significant earthwork or other activities that would result in the loss of availability of a known mineral resource that will locally important. Furthermore, the IVMP would not result in the redesignation of existing land uses or zoning regulations, nor would it preclude future mining activities. Therefore, impacts will be less than significant.

XII. NOISE -- Would the project result in:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

☒ Potentially Significant Impact
☐ Less than Significant With Mitigation Incorporated
☐ Less than Significant Impact
☐ No Impact

Discussion/Explanation:

Potentially Significant Impact: Among other activities, the proposed IVMP would include physical and chemical control methods to reduce the spread of mosquito-borne and other vector-borne diseases and nuisances. As a result, temporary short-term noise sources may expose people to potentially significant noise levels that exceed the allowable limits of the applicable noise ordinance and/or General Plan Noise Element, depending on the distance of activities to sensitive receptors. Noise sources could potentially include, but not be limited to, truck- or trailer-mounted gas-powered sprayers used for pesticide application, gas-powered backpack and hand-held application equipment, and other motorized vehicles (e.g., aircraft, watercraft). Therefore, noise impacts will be further discussed in the PEIR.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

☐ Potentially Significant Impact
☐ Less than Significant With Mitigation Incorporated
☐ Less than Significant Impact
☒ No Impact

Discussion/Explanation:

No Impact: Activities proposed under the IVMP will not propose any of the following land uses that can be impacted by groundborne vibration or groundborne noise levels.

1. Buildings where low ambient vibration is essential for interior operation, including research and manufacturing facilities with special vibration constraints.

2. Residences and buildings where people normally sleep including hotels, hospitals, residences and where low ambient vibration is preferred.
3. Civic and institutional land uses including schools, churches, libraries, other institutions, and quiet office where low ambient vibration is preferred.
4. Concert halls for symphonies or other special use facilities where low ambient vibration is preferred.

Also, IVMP activities will not propose any major, new, or expanded infrastructure such as mass transit, highways or major roadways or intensive extractive industry that could generate excessive groundborne vibration or groundborne noise levels on-site or in the surrounding area.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

☐ Potentially Significant Impact
☐ Less than Significant With Mitigation Incorporated
☒ Less than Significant Impact
☐ No Impact

Discussion/Explanation:

Less than Significant Impact: Among other activities, the proposed IVMP would include physical and chemical control methods to reduce the spread of mosquito-borne and other vector-borne diseases and nuisances. As discussed above, temporary short-term noise sources may expose people to potentially significant noise levels; however, no activities are proposed that are anticipated to result in a substantial permanent increase in ambient noise levels.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

☒ Potentially Significant Impact
☐ Less than Significant With Mitigation Incorporated
☐ Less than Significant Impact
☐ No Impact

Discussion/Explanation:

Potentially Significant Impact: See response to Noise – XII(a) and (c) above. Individual activities would include implementation of physical or chemical control methods that could potentially generate periodic increases in ambient noise levels in the vicinity of an individual site. Therefore, the potential noise impacts will be further addressed in the PEIR.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

☐ Potentially Significant Impact
☐ Less than Significant With Mitigation Incorporated
☒ Less than Significant Impact
☐ No Impact

Discussion/Explanation:

Less than Significant Impact: The Proposed Project does not propose to construct residential or other habitable or commercial structures. The Proposed Project includes implementation of the countywide IVMP. As such, individual activities could occur in a wide range of locations and could

potentially be located within an airport land use plan area or within two miles of a public airport or public use airport. However, based on the temporary nature of proposed IVMP activities, the Proposed Project would not expose people residing or working in the project areas to excessive noise levels.

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

- ☐ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☒ Less than Significant Impact
- ☐ No Impact

Discussion/Explanation:

Less than Significant Impact: See response to Noise – XII(e) above. Because the Proposed Project includes implementation of the countywide IVMP, individual activities could occur in a wide range of locations and could potentially be located within the vicinity of a private airstrip. However, based on the temporary nature of proposed IVMP activities, the Proposed Project would not expose people residing or working in the project areas to excessive noise levels.

XIII. POPULATION AND HOUSING -- Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

- ☐ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☒ No Impact

Discussion/Explanation:

No Impact: The intent of the proposed IVMP is to reduce the spread of mosquito-borne and other vector-borne disease. Individual activities under IVMP will not induce substantial population growth because they will not propose any physical or regulatory change that would involve removing a restriction to or encouraging population growth in an area including, but limited to the following: new or extended infrastructure or public facilities; new commercial or industrial facilities; large-scale residential development; accelerated conversion of homes to commercial or multi-family use; or regulatory changes including General Plan amendments, specific plan amendments, zone reclassifications, sewer or water annexations; or Local Agency Formation Commission annexation actions. Therefore, no impacts will occur.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

- ☐ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☒ No Impact

Discussion/Explanation:

No Impact: The proposed IVMP includes a range of activities involving surveillance of existing and potential vector threats as well as physical, biological, and chemical control methods to reduce the spread of mosquito-borne and other vector-borne diseases and nuisances. This would also include

public outreach and education in communities across San Diego County. The IVMP would not include displacement of existing housing. Therefore, no impact will occur.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

☐ Potentially Significant Impact
☐ Less than Significant With Mitigation Incorporated
☐ Less than Significant Impact
☒ No Impact

Discussion/Explanation:

No Impact: The proposed IVMP includes a range of activities involving surveillance of existing and potential vector threats as well as physical, biological, and chemical control methods to reduce the spread of mosquito-borne and other vector-borne diseases and nuisances. This would also include public outreach and education in communities across San Diego County. The IVMP would not include displacement of people. Therefore, no impact will occur.

XIV. PUBLIC SERVICES

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance service ratios, response times or other performance objectives for any of the public services:

i. Fire protection?
ii. Police protection?
iii. Schools?
iv. Parks?
v. Other public facilities?

☐ Potentially Significant Impact
☐ Less than Significant With Mitigation Incorporated
☐ Less than Significant Impact
☒ No Impact

Discussion/Explanation:

No Impact: The intent of the proposed IVMP is to reduce the spread of mosquito-borne and other vector-borne diseases and nuisances. Individual activities under IVMP will not include residential components. Therefore, the Proposed Project will not result in the need for the provision of additional governmental facilities, and as such, no impact will occur.

XV. RECREATION

a) Would the project 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?

☐ Potentially Significant Impact
☐ Less than Significant With Mitigation Incorporated
☐ Less than Significant Impact
☒ No Impact

Discussion/Explanation:

No Impact: Individual activities under IVMP will not include any residential use, included but not limited to a residential subdivision, mobile home park, or construction of a single-family residence that may increase the use of existing neighborhood or regional parks or other recreational facilities in the vicinity. Furthermore, the IVMP would not result in any changes to existing land uses that would accelerate or result in the deterioration of recreational facilities. Therefore, no impacts will occur.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

☐ Potentially Significant Impact
☐ Less than Significant With Mitigation Incorporated
☐ Less than Significant Impact
☒ No Impact

Discussion/Explanation:

No Impact: Individual activities under IVMP will not include recreational facilities or require the construction or expansion of recreational facilities. Therefore, no impact will occur.

XVI. TRANSPORTATION AND TRAFFIC -- Would the project:

a) Conflict with an applicable plan, ordinance or policy establishing measures of the effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths and mass transit?

☐ Potentially Significant Impact
☐ Less than Significant With Mitigation Incorporated
☒ Less than Significant Impact
☐ No Impact

Discussion/Explanation:

The County of San Diego Guidelines for Determining Significance for Traffic and Transportation (Guidelines) establish measures of effectiveness for the performance of the circulation system. These Guidelines incorporate standards from the County of San Diego Public Road Standards and Mobility Element, the County of San Diego Transportation Impact Fee Program and the Congestion Management Program.

Less than Significant Impact: The proposed IVMP would include a range of activities involving surveillance of existing and potential vector threats as well as physical, biological, and chemical control methods to reduce the spread of mosquito-borne and other vector-borne diseases and nuisances. This would also include public outreach and education in communities across San Diego County. As a result, light truck and automobile trips would be required to transport workers, materials, and equipment. These trips would be consistent with present traffic operation levels and not result in a substantial change in vehicle use over existing conditions. Although impacts are anticipated to be less than significant, this will be further discussed in the PEIR.

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

☐ Potentially Significant Impact
☐ Less than Significant With Mitigation Incorporated
☒ Less than Significant Impact
☐ No Impact

Discussion/Explanation:

The designated congestion management agency for the San Diego region is SANDAG. SANDAG is responsible for preparing the RTP of which the Congestion Management Program (CMP) is an element to monitor transportation system performance, develop programs to address near- and long-term congestion, and better integrate land use and transportation planning decisions. The CMP includes a requirement for enhanced CEQA review applicable to certain large developments that generate an equivalent of 2,400 or more average daily vehicle trips or 200 or more peak hour vehicle trips. These large projects must complete a traffic analysis that identifies the project's impacts on CMP system roadways, their associated costs, and identify appropriate mitigation. Early project coordination with affected public agencies, the Metropolitan Transit System and the North County Transit District is required to ensure that the impacts of new development on CMP transit performance measures are identified.

Less than Significant Impact: As discussed above, the proposed IVMP would include the ongoing and continued use of light truck and automobile trips to transport workers, materials, and equipment through San Diego County. Individual activities under IVMP would result in ongoing vehicle trips; however, trips associated with existing VCP activities have occurred since the VCP inception in 1989. Therefore, existing vehicle trips are considered part of the IVMP's baseline conditions as existing operations, and the proposed IVMP is not expected to substantially increase trips that would conflict with an applicable congestion management program.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

☐ Potentially Significant Impact
☐ Less than Significant With Mitigation Incorporated
☒ Less than Significant Impact
☐ No Impact

Discussion/Explanation:

Less than Significant Impact: The main compatibility concerns for the protection of airport airspace are related to airspace obstructions (building height, antennas, etc.) and hazards to flight (wildlife attractants, distracting lighting or glare, etc.). Because the Proposed Project includes implementation of the countywide IVMP throughout San Diego County, individual activities could potentially be located within an Airport Influence Area or within two miles of a public airport. However, the IVMP does not propose installation of structures that would contribute to or directly result in the obstruction of airspace resulting in a change to air traffic patterns. Therefore, the Proposed Project would result in less than significant impacts on air traffic patterns.

In addition, the proposed IVMP would include countywide surveillance and chemical control methods to monitor and reduce the spread of mosquito-borne and other vector-borne diseases and nuisances. As a result, this could include the use of aircraft. During the peak mosquito breeding season (April – October), aerial applications may occur routinely based on VCP surveillance and observations. However, because aircraft operations typically do not occur during off-peak mosquito season, and are infrequent during peak mosquito season, the proposed IVMP is not anticipated to result in a change in air traffic patterns. All aircraft operations would be conducted in accordance with established air traffic patterns. Therefore, the Proposed Project would result in less than significant impacts on air traffic patterns.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

- ☐ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☒ No Impact

Discussion/Explanation:

No Impact: Individual activities under IVMP will not alter traffic patterns, roadway design, place incompatible uses (e.g., farm equipment) on existing roadways, or create or place curves, slopes or walls which impede adequate site distance on a road. Therefore, no impact would result.

e) Result in inadequate emergency access?

- ☐ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☒ No Impact

Discussion/Explanation:

No Impact: The intent of the proposed IVMP is to reduce the spread of mosquito-borne and other vector-borne diseases and nuisances. Individual activities under IVMP are not anticipated to include the construction of new structures or facilities that would interfere or otherwise affect existing emergency access. Therefore, no impacts would result from implementation of the IVMP.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

- ☐ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☒ No Impact

Discussion/Explanation:

No Impact: The intent of the proposed IVMP is to reduce the spread of mosquito-borne and other vector-borne diseases and nuisances. Individual activities under IVMP are not anticipated to include the construction of new structures or facilities that would interfere with the provisions of public transit, bicycle or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. Therefore, no impact would result from implementation of the IVMP.

XVII. TRIBAL CULTURAL RESOURCES -- Would the project:

a) Cause a substantial adverse change in the significance of a tribal cultural resource, as defined in Public Resources Code §21074 as either a site, feature, place, or 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, and that is:

i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of Historical Resources as defined in Public Resources Code §5020.1(k), or

- ☒ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☐ No Impact

Discussion/Explanation:

Potentially Significant Impact: As discussed above in response to Cultural Resources – V(b), the proposed IVMP would include physical control methods for the purpose of monitoring and abatement to improve water circulation in aquatic habitats. This could potentially include, but not be limited to, removal of vegetation or sediment, interruption of water flow, rotation of stored water, pumping and/or filling sources, improving drainage and water circulation systems, and installing, removing, or improving culverts, tide gates, and other water control structures. As a result, these activities have the potential to result in a substantial adverse change in the significance of a tribal cultural resource, including sites that are listed or eligible for listing in the California or local Register of Historical Resources. However, any potential impacts to tribal cultural resources would be avoided or minimized to the extent feasible, and would be mitigated in accordance with applicable requirements. This will be further analyzed in the PEIR; however, for the purpose of this Initial Study impacts could be potentially significant.

ii. 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 Public Resources Code §5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code §5024.1, the Lead Agency shall consider the significance of the resource to a California Native American tribe.

☒ Potentially Significant Impact
☐ Less than Significant With Mitigation Incorporated
☐ Less than Significant Impact
☐ No Impact

Discussion/Explanation:

Potentially Significant Impact: As discussed above in response to Cultural Resources – V(b), the proposed IVMP would include physical control methods for the purpose of monitoring and abatement to improve water circulation in aquatic habitats. This could potentially include, but not be limited to, removal of vegetation or sediment, interruption of water flow, rotation of stored water, pumping and/or filling sources, improving drainage and water circulation systems, and installing, removing, or improving culverts, tide gates, and other water control structures. As a result, these activities have the potential to result in a substantial adverse change in the significance of a tribal cultural resource, including resources determined to be significant pursuant to criteria defined in subdivision (c) of Public Resources Code §5024.1. However, any potential impacts to tribal cultural resources would be avoided or minimized to the extent feasible, and would be mitigated in accordance with applicable requirements. This will be further analyzed in the PEIR; however, for the purpose of this Initial Study impacts could be potentially significant.

XVIII. UTILITIES AND SERVICE SYSTEMS -- Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

☐ Potentially Significant Impact
☐ Less than Significant With Mitigation Incorporated
☐ Less than Significant Impact
☒ No Impact

Discussion/Explanation:

No Impact: The Proposed Project does not involve any uses that will discharge any wastewater to sanitary sewer or on-site wastewater systems (septic). Therefore, the Proposed Project will not exceed any wastewater treatment requirements.

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

- ☐ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☒ No Impact

Discussion/Explanation:

No Impact: The intent of the proposed IVMP is to reduce the spread of mosquito-borne and other vector-borne disease. Individual activities proposed under IVMP would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. Therefore, no impacts will occur.

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

- ☐ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☒ Less than Significant Impact
- ☐ No Impact

Discussion/Explanation:

Less than Significant Impact: Among other activities, the proposed IVMP would include physical control methods. This could potentially include, but not be limited to, removal of vegetation or sediment, interruption of water flow, rotation of stored water, pumping and/or filling sources, improving drainage and water circulation systems, and installing, removing, or improving culverts, tide gates, and other water control structures. However, the Proposed Project itself would not require or result in the construction of new or expanded storm water drainage facilities.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

- ☐ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☒ No Impact

Discussion/Explanation:

No Impact: The proposed IVMP includes a range of activities involving surveillance of existing and potential vector threats as well as physical, biological, and chemical control methods to reduce the spread of mosquito-borne and other vector-borne diseases and nuisances. This would also include public outreach and education in communities across San Diego County. The IVMP would not include development nor propose a use requiring water supplies. As such, no impacts will occur.

e) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

- ☐ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☒ No Impact

Discussion/Explanation:

No Impact: As discussed above in Utilities and Services Systems – XVIII(a), the Proposed Project does not involve any uses that will generate or discharge any wastewater to sanitary sewer or on-site wastewater systems (septic). Therefore, the Proposed Project will not require a wastewater treatment provider.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

☐ Potentially Significant Impact
☐ Less than Significant With Mitigation Incorporated
☒ Less than Significant Impact
☐ No Impact

Discussion/Explanation:

Less than Significant Impact: Among other activities, the proposed IVMP would include physical control methods to reduce the spread of mosquito-borne and other vector-borne diseases and nuisances. As a result, minor grading activities could potentially occur. Specifically, physical control activities may involve minor grading or vegetation management in order to survey and abate vectors and nuisances. As a result, this could potentially generate solid waste. If such activities require solid waste disposal, there are numerous solid waste disposal facilities within San Diego County with remaining capacity. All solid waste facilities, including landfills require solid waste facility permits to operate. In San Diego County, the DEH, Local Enforcement Agency issues solid waste facility permits with concurrence from the California Integrated Waste Management Board (CIWMB) under the authority of the Public Resources Code (Sections 44001-44018) and California Code of Regulations Title 27, Division 2, Subdivision 1, Chapter 4 (Section 21440 et seq.). Therefore, there is sufficient existing permitted solid waste capacity to accommodate the Proposed Project's solid waste disposal needs.

g) Comply with federal, state, and local statutes and regulations related to solid waste?

☐ Potentially Significant Impact
☐ Less than Significant With Mitigation Incorporated
☒ Less than Significant Impact
☐ No Impact

Discussion/Explanation:

Less than Significant Impact: Implementation of the IVMP could potentially generate solid waste. All solid waste facilities, including landfills, require solid waste facility permits to operate. In San Diego County, the DEH, Local Enforcement Agency issues solid waste facility permits with concurrence from the California Integrated Waste Management Board (CIWMB) under the authority of the Public Resources Code (Sections 44001-44018) and California Code of Regulations Title 27, Division 2, Subdivision 1, Chapter 4 (Section 21440 et seq.). Individual activities under the IVMP will deposit all solid waste at a permitted solid waste facility and therefore, will comply with federal, state, and local statutes and regulations related to solid waste.

XIX. MANDATORY FINDINGS OF SIGNIFICANCE:

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

- ☒ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☐ No Impact

Discussion/Explanation:

Potentially Significant Impact: Per the instructions for evaluating environmental impacts in this Initial Study, the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory were considered in the response to each question in sections IV and V of this form. In addition to project-specific impacts, this evaluation considered the projects potential for significant cumulative effects. As a result of this evaluation, the Proposed Project was determined to have **potential significant effects related to biological, cultural, and tribal cultural resources**. While mitigation may be proposed in some instances that reduce these effects to a level below significance, the effectiveness of this mitigation to clearly reduce the impact to a level below significance is unclear. Therefore, this Proposed Project has been determined to potentially meet this Mandatory Finding of Significance.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

- ☒ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☐ No Impact

Discussion/Explanation:

Potentially significant Impact: Per the instructions for evaluating environmental impacts in this Initial Study, the potential for adverse cumulative effects was considered in the response to each question in sections I through XVIII of this form. In addition to project-specific impacts, this evaluation considered the Proposed Project's potential for incremental effects that are cumulatively considerable. As a result of this evaluation, there is a **potential for cumulative effects** associated with this Proposed Project. Therefore, cumulative impacts will be further discussed in the PEIR.

c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?

- ☒ Potentially Significant Impact
- ☐ Less than Significant With Mitigation Incorporated
- ☐ Less than Significant Impact
- ☐ No Impact

Discussion/Explanation:

In the evaluation of environmental impacts in this Initial Study, the potential for adverse direct or indirect impacts to human beings were considered in the response to certain questions in the following eight sections: Aesthetics, Air Quality, Geology and Soils, Hazards and Hazardous Materials, Hydrology and Water Quality, Noise, Population and Housing, and Transportation and Traffic. As a result of this evaluation, there were determined to be **potentially significant effects related to Air Quality, Geology and Soils, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, and Noise**. While mitigation may be proposed in some instances that reduce these significant effects to a level below significance, the

effectiveness of this mitigation to clearly reduce the impact to a level below significance is unclear. Therefore, this Proposed Project has been determined to potentially meet this Mandatory Finding of Significance.

XX. REFERENCES USED IN THE COMPLETION OF THE INITIAL STUDY CHECKLIST

All references to Federal, State and local regulation are available on the Internet. For Federal regulation refer to http://www4.law.cornell.edu/uscode/. For State regulation refer to www.leginfo.ca.gov. For County regulation refer to www.amlegal.com. All other references are available upon request.

PROJECT-SPECIFIC REFERENCES

County of San Diego. Vector Control Program. Mosquito, Vector and Disease Control Assessment: Engineer's Report. Fiscal Year 2018-2019. June 2018

County of San Diego. Vector Control Program. Invasive Aedes Mosquito Strategic Response Plan. April 2018.

County of San Diego. Vector Control Program. West Nile Virus Strategic Response Plan. April 2018.

AESTHETICS

California Street and Highways Code [California Street and Highways Code, Section 260-283. (http://www.leginfo.ca.gov/)

California Scenic Highway Program, California Streets and Highways Code, Section 260-283. (http://www.dot.ca.gov/hq/LandArch/scenic/scpr.htm)

County of San Diego, Planning & Development Services. The Zoning Ordinance of San Diego County. Sections 5200-5299; 5700-5799; 5900-5910, 6322-6326. ((www.co.san-diego.ca.us)

County of San Diego, Board Policy I-73: Hillside Development Policy. (www.co.san-diego.ca.us)

County of San Diego, Board Policy I-104: Policy and Procedures for Preparation of Community Design Guidelines, Section 396.10 of the County Administrative Code and Section 5750 et seq. of the County Zoning Ordinance. (www.co.san-diego.ca.us)

County of San Diego Light Pollution Code, Title 5, Division 9 (Sections 59.101-59.115 of the County Code of Regulatory Ordinances) as added by Ordinance No 6900, effective January 18, 1985, and amended July 17, 1986 by Ordinance No. 7155. (www.amlegal.com)

County of San Diego Wireless Communications Ordinance [San Diego County Code of Regulatory Ordinances. (www.amlegal.com)

Design Review Guidelines for the Communities of San Diego County. (Alpine, Bonsall, Fallbrook, Julian, Lakeside, Ramona, Spring Valley, Sweetwater, Valley Center).

Federal Communications Commission, Telecommunications Act of 1996 [Telecommunications Act of 1996, Pub. LA. No. 104-104, 110 Stat. 56 (1996). (http://www.fcc.gov/Reports/tcom1996.txt)

Institution of Lighting Engineers, Guidance Notes for the Reduction of Light Pollution, Warwickshire, UK, 2000

International Light Inc., Light Measurement Handbook, 1997. (www.intl-light.com)

Rensselaer Polytechnic Institute, Lighting Research Center, National Lighting Product Information Program (NLPIP), Lighting Answers, Volume 7, Issue 2, March 2003. (www.lrc.rpi.edu)

US Census Bureau, Census 2000, Urbanized Area Outline Map, San Diego, CA. (http://www.census.gov/geo/www/maps/ua2kmaps.htm)

US Department of the Interior, Bureau of Land Management (BLM) modified Visual Management System. (www.blm.gov)

US Department of Transportation, Federal Highway Administration (FHWA) Visual Impact Assessment for Highway Projects.

US Department of Transportation, National Highway System Act of 1995 [Title III, Section 304. Design Criteria for the National Highway System. (http://www.fhwa.dot.gov/legsregs/nhsdatoc.html)

AGRICULTURE RESOURCES

California Department of Conservation, Farmland Mapping and Monitoring Program, "A Guide to the Farmland Mapping and Monitoring Program," November 1994. (www.consrv.ca.gov)

California Department of Conservation, Office of Land Conversion, "California Agricultural Land Evaluation and Site Assessment Model Instruction Manual," 1997. (www.consrv.ca.gov)

California Farmland Conservancy Program, 1996. (www.consrv.ca.gov)

California Land Conservation (Williamson) Act, 1965. (www.ceres.ca.gov, www.consrv.ca.gov)

California Right to Farm Act, as amended 1996. (www.qp.gov.bc.ca)

County of San Diego Agricultural Enterprises and Consumer Information Ordinance, 1994, Title 6, Division 3, Ch. 4. Sections 63.401-63.408. (www.amlegal.com)

County of San Diego, Department of Agriculture, Weights and Measures, "2002 Crop Statistics and Annual Report," 2002. (www.sdcounty.ca.gov)

United States Department of Agriculture, Natural Resource Conservation Service LESA System. (www.nrcs.usda.gov, www.swcs.org).

United States Department of Agriculture, Soil Survey for the San Diego Area, California. 1973. (soils.usda.gov)

AIR QUALITY

CEQA Air Quality Analysis Guidance Handbook, South Coast Air Quality Management District, Revised November 1993. (www.aqmd.gov)

County of San Diego Air Pollution Control District's Rules and Regulations, updated August 2003. (www.co.san-diego.ca.us)

Federal Clean Air Act US Code; Title 42; Chapter 85 Subchapter 1. (www4.law.cornell.edu)

BIOLOGY

California Department of Fish and Wildlife (CDFW). Southern California Coastal Sage Scrub Natural Community Conservation Planning Process Guidelines. CDFW and California Resources Agency, Sacramento, California. 1993. (www.dfg.ca.gov)

County of San Diego, An Ordinance Amending the San Diego County Code to Establish a Process for Issuance of the Coastal Sage Scrub Habitat Loss Permits and Declaring the Urgency Thereof to Take Effect Immediately, Ordinance No. 8365. 1994, Title 8, Div 6, Ch. 1. Sections 86.101-86.105, 87.202.2. (www.amlegal.com)

County of San Diego, Biological Mitigation Ordinance, Ord. Nos. 8845, 9246, 1998 (new series). (www.co.san-diego.ca.us)

County of San Diego, Implementing Agreement by and between United States Fish and Wildlife Service, California Department of Fish and Wildlife and County of San Diego. County of San Diego, Multiple Species Conservation Program, 1998.

County of San Diego, Multiple Species Conservation Program, County of San Diego Subarea Plan, 1997.

Holland, R.R. Preliminary Descriptions of the Terrestrial Natural Communities of California. State of California, Resources Agency, Department of Fish and Wildlife, Sacramento, California, 1986.

Memorandum of Understanding [Agreement Between United States Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), California Department of Forestry and Fire Protection (CDF), San Diego County Fire Chief's Association and the Fire District's Association of San Diego County.

Stanislaus Audubon Society, Inc. v County of Stanislaus (5th Dist. 1995) 33 Cal.App.4th 144, 155-159 [39 Cal. Rptr.2d 54]. (www.ceres.ca.gov)

U.S. Army Corps of Engineers Environmental Laboratory. Corps of Engineers Wetlands Delineation Manual. U.S. Army Corps of Engineers, Wetlands Research Program Technical Report Y-87-1. 1987. (http://www.wes.army.mil/)

U.S. Environmental Protection Agency. America's wetlands: our vital link between land and water. Office of Water, Office of Wetlands, Oceans and Watersheds. EPA843-K-95-001. 1995b. (www.epa.gov)

U.S. Fish and Wildlife Service and National Marine Fisheries Service. Habitat Conservation Planning Handbook. Department of Interior, Washington, D.C. 1996. (endangered.fws.gov)

U.S. Fish and Wildlife Service and National Marine Fisheries Service. Consultation Handbook: Procedures for Conducting Consultation and Conference Activities Under Section 7 of the Endangered Species Act. Department of Interior, Washington, D.C. 1998. (endangered.fws.gov)

U.S. Fish and Wildlife Service. Environmental Assessment and Land Protection Plan for the Vernal Pools Stewardship Project. Portland, Oregon. 1997.

U.S. Fish and Wildlife Service. Vernal Pools of Southern California Recovery Plan. U.S. Department of Interior, Fish and Wildlife Service, Region One, Portland, Oregon, 1998. (ecos.fws.gov)

U.S. Fish and Wildlife Service. Birds of conservation concern 2002. Division of Migratory. 2002. (migratorybirds.fws.gov)

CULTURAL RESOURCES

California Health & Safety Code. §18950-18961, State Historic Building Code. (www.leginfo.ca.gov)

California Health & Safety Code. §5020-5029, Historical Resources. (www.leginfo.ca.gov)

California Health & Safety Code. §7050.5, Human Remains. (www.leginfo.ca.gov)

California Native American Graves Protection and Repatriation Act, (AB 978), 2001. (www.leginfo.ca.gov)

California Public Resources Code §5024.1, Register of Historical Resources. (www.leginfo.ca.gov)

California Public Resources Code. §5031-5033, State Landmarks. (www.leginfo.ca.gov)

California Public Resources Code. §5097-5097.6, Archaeological, Paleontological, and Historic Sites. (www.leginfo.ca.gov)

California Public Resources Code. §5097.9-5097.991, Native American Heritage. (www.leginfo.ca.gov)

City of San Diego. Paleontological Guidelines. (revised) August 1998.

County of San Diego, Local Register of Historical Resources (Ordinance 9493), 2002. (www.co.san-diego.ca.us)

Demere, Thomas A., and Stephen L. Walsh. Paleontological Resources San Diego County. Department of Paleontology, San Diego Natural History Museum. 1994.

Moore, Ellen J. Fossil Mollusks of San Diego County. San Diego Society of Natural history. Occasional; Paper 15. 1968.

U.S. Code including: American Antiquities Act (16 USC §431-433) 1906. Historic Sites, Buildings, and Antiquities Act (16 USC §461-467), 1935. Reservoir Salvage Act (16 USC §469-469c) 1960. Department of Transportation Act (49 USC §303) 1966. National Historic Preservation Act (16 USC §470 et seq.) 1966. National Environmental Policy Act (42 USC §4321) 1969. Coastal Zone Management Act (16 USC §1451) 1972. National Marine Sanctuaries Act (16 USC §1431) 1972. Archaeological and Historical Preservation Act (16 USC §469-469c) 1974. Federal Land Policy and Management Act (43 USC §35) 1976. American Indian Religious Freedom Act (42 USC §1996 and 1996a) 1978. Archaeological Resources Protection Act (16 USC §470aa-mm) 1979. Native American Graves Protection and Repatriation Act (25 USC §3001-3013) 1990. Intermodal Surface Transportation Efficiency Act (23 USC §101, 109) 1991. American Battlefield Protection Act (16 USC 469k) 1996. (www4.law.cornell.edu)

GEOLOGY & SOILS

California Department of Conservation, Division of Mines and Geology, California Alquist-Priolo Earthquake Fault Zoning Act, Special Publication 42, Revised 1997. (www.consrv.ca.gov)

California Department of Conservation, Division of Mines and Geology, Fault-Rupture Hazard Zones in California, Special Publication 42, revised 1997. (www.consrv.ca.gov)

California Department of Conservation, Division of Mines and Geology, Special Publication 117, Guidelines for Evaluating and Mitigating Seismic Hazards in California, 1997. (www.consrv.ca.gov)

County of San Diego Code of Regulatory Ordinances Title 6, Division 8, Chapter 3, Septic Ranks and Seepage Pits. (www.amlegal.com)

County of San Diego Department of Environmental Health, Land and Water Quality Division, February 2002. On-site Wastewater Systems (Septic Systems): Permitting Process and Design Criteria. (www.sdcounty.ca.gov)

County of San Diego Natural Resource Inventory, Section 3, Geology.

United States Department of Agriculture, Soil Survey for the San Diego Area, California. 1973. (soils.usda.gov)

GREENHOUSE GAS EMISSIONS

County of San Diego Climate Action Plan. February 2018. Available at: https://www.sandiegocounty.gov/pds/advance/climateactionplan.html

California Air Resources Board (CARB). Climate Change Scoping Plan a Framework for Change, December 2008.

California's 2017 Climate Change Scoping Plan, The strategy for achieving California's 2030 greenhouse gas target. November 2017. Available at: https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf

HAZARDS & HAZARDOUS MATERIALS

American Planning Association, Zoning News, "Saving Homes from Wildfires: Regulating the Home Ignition Zone," May 2001.

California Building Code (CBC), Seismic Requirements, Chapter 16 Section 162. (www.buildersbook.com)

California Education Code, Section 17215 and 81033. (www.leginfo.ca.gov)

California Government Code. § 8585-8589, Emergency Services Act. (www.leginfo.ca.gov)

California Hazardous Waste and Substances Site List. April 1998. (www.dtsc.ca.gov)

California Health & Safety Code Chapter 6.95 and §25117 and §25316. (www.leginfo.ca.gov)

California Health & Safety Code § 2000-2067. (www.leginfo.ca.gov)

California Health & Safety Code. §17922.2. Hazardous Buildings. (www.leginfo.ca.gov)

California Public Utilities Code, SDCRAA. Public Utilities Code, Division 17, Sections 170000-170084. (www.leginfo.ca.gov)

California Resources Agency, "OES Dam Failure Inundation Mapping and Emergency Procedures Program", 1996. (ceres.ca.gov)

County of San Diego, Department of Environmental Health, Hazardous Materials Division. California Accidental Release Prevention Program (CalARP) Guidelines. (http://www.sdcounty.ca.gov/, www.oes.ca.gov)

County of San Diego, Department of Environmental Health, Hazardous Materials Division. Hazardous Materials Business Plan Guidelines. (www.sdcounty.ca.gov)

Uniform Building Code. (www.buildersbook.com)

Uniform Fire Code 1997 edition published by the Western Fire Chiefs Association and the International Conference of Building Officials, and the National Fire Protection Association Standards 13 &13-D, 1996 Edition, and 13-R, 1996 Edition. (www.buildersbook.com)

HYDROLOGY & WATER QUALITY

American Planning Association, Planning Advisory Service Report Number 476 Non-point Source Pollution: A Handbook for Local Government

California Department of Water Resources, California Water Plan Update. Sacramento: Dept. of Water Resources State of California. 1998. (rubicon.water.ca.gov)

California Department of Water Resources, California's Groundwater Update 2003 Bulletin 118, April 2003. (www.groundwater.water.ca.gov)

California Department of Water Resources, Water Facts, No. 8, August 2000. (www.dpla2.water.ca.gov)

California Disaster Assistance Act. Government Code, § 8680-8692. (www.leginfo.ca.gov)

California State Water Resources Control Board, NPDES General Permit Nos. CAS000001 INDUSTRIAL ACTIVITIES (97-03-DWQ) and CAS000002 Construction Activities (No. 99-08-DWQ) (www.swrcb.ca.gov)

California Storm Water Quality Association, California Storm Water Best Management Practice Handbooks, 2003.

California Water Code, Sections 10754, 13282, and 60000 et seq. (www.leginfo.ca.gov)

Colorado River Basin Regional Water Quality Control Board, Region 7, Water Quality Control Plan. (www.swrcb.ca.gov)

County of San Diego Regulatory Ordinance, Title 8, Division 7, Grading Ordinance. Grading, Clearing and Watercourses. (www.amlegal.com)

County of San Diego, Groundwater Ordinance. #7994. (www.sdcounty.ca.gov, http://www.amlegal.com/,)

County of San Diego, Project Clean Water Strategic Plan, 2002. (www.projectcleanwater.org)

County of San Diego, Watershed Protection, Storm Water Management, and Discharge Control Ordinance, Ordinance Nos. 9424 and 9426. Chapter 8, Division 7, Title 6 of the San Diego County Code of Regulatory Ordinances and amendments. (www.amlegal.com)

County of San Diego. Board of Supervisors Policy I-68. Diego Proposed Projects in Flood Plains with Defined Floodways. (www.co.san-diego.ca.us)

Federal Water Pollution Control Act (Clean Water Act), 1972, Title 33, Ch.26, Sub-Ch.1. (www4.law.cornell.edu)

Freeze, Allan and Cherry, John A., Groundwater, Prentice-Hall, Inc. New Jersey, 1979.

Heath, Ralph C., Basic Ground-Water Hydrology, United States Geological Survey Water-Supply Paper; 2220, 1991.

National Flood Insurance Act of 1968. (www.fema.gov)

National Flood Insurance Reform Act of 1994. (www.fema.gov)

Porter-Cologne Water Quality Control Act, California Water Code Division 7. Water Quality. (ceres.ca.gov)

San Diego Association of Governments, Water Quality Element, Regional Growth Management Strategy, 1997. (www.sandag.org

San Diego Regional Water Quality Control Board, NPDES Permit No. CAS0108758. (www.swrcb.ca.gov)

San Diego Regional Water Quality Control Board, Water Quality Control Plan for the San Diego Basin. (www.swrcb.ca.gov)

LAND USE & PLANNING

California Department of Conservation Division of Mines and Geology, Open File Report 96-04, Update of Mineral Land Classification: Aggregate Materials in the Western San Diego County Production Consumption Region, 1996. (www.consrv.ca.gov)

California Environmental Quality Act, Public Resources Code 21000-21178; California Code of Regulations, Guidelines for Implementation of CEQA, Appendix G, Title 14, Chapter 3, §15000-15387. (www.leginfo.ca.gov)

California State Mining and Geology Board, SP 51, California Surface Mining and Reclamation Policies and Procedures, January 2000. (www.consrv.ca.gov)

County of San Diego, Board of Supervisors Policy I-84: Project Facility. (www.sdcounty.ca.gov)

County of San Diego, Board Policy I-38, as amended 1989. (www.sdcounty.ca.gov)

County of San Diego, General Plan as adopted August 3, 2011. (ceres.ca.gov)

County of San Diego. Resource Protection Ordinance, compilation of Ord.Nos. 7968, 7739, 7685 and 7631. 1991.

Design Review Guidelines for the Communities of San Diego County.

MINERAL RESOURCES

National Environmental Policy Act, Title 42, 36.401 et. seq. 1969. (www4.law.cornell.edu)

Subdivision Map Act, 2011. (ceres.ca.gov)

U.S. Geologic Survey, Causey, J. Douglas, 1998, MAS/MILS Mineral Location Database.

U.S. Geologic Survey, Frank, David G., 1999, (MRDS) Mineral Resource Data System.

NOISE

California State Building Code, Part 2, Title 24, CCR, Appendix Chapter 3, Sound Transmission Control, 1988. . (www.buildersbook.com)

County of San Diego Code of Regulatory Ordinances, Title 3, Div 6, Chapter 4, Noise Abatement and Control, effective February 4, 1982. (www.amlegal.com)

County of San Diego General Plan, Noise Element, effective August 3, 2011. (ceres.ca.gov)

Federal Aviation Administration, Federal Aviation Regulations, Part 150 Airport Noise Compatibility Planning (revised January 18, 1985). (http://www.access.gpo.gov/)

Harris Miller Miller and Hanson Inc., *Transit Noise and Vibration Impact Assessment*, April 1995. (http://ntl.bts.gov/data/rail05/rail05.html)

International Standard Organization (ISO), ISO 362; ISO 1996 1-3; ISO 3095; and ISO 3740-3747. (www.iso.ch)

U.S. Department of Transportation, Federal Highway Administration, Office of Environment and Planning, Noise and Air Quality Branch. "Highway Traffic Noise Analysis and Abatement Policy and Guidance," Washington, D.C., June 1995. (http://www.fhwa.dot.gov/)

POPULATION & HOUSING

Housing and Community Development Act of 1974, 42 USC 5309, Title 42--The Public Health And Welfare, Chapter 69--Community Development, United States Congress, August 22, 1974. (www4.law.cornell.edu)

National Housing Act (Cranston-Gonzales), Title 12, Ch. 13. (www4.law.cornell.edu)

San Diego Association of Governments Population and Housing Estimates, November 2000. (www.sandag.org)

US Census Bureau, Census 2000. (http://www.census.gov/)

RECREATION

County of San Diego Code of Regulatory Ordinances, Title 8, Division 10, Chapter PLDO, §810.101 et seq. Park Lands Dedication Ordinance. (www.amlegal.com)

TRANSPORTATION/TRAFFIC

California Aeronautics Act, Public Utilities Code, Section 21001 et seq. (www.leginfo.ca.gov)

California Department of Transportation, Division of Aeronautics, California Airport Land Use Planning Handbook, January 2002.

California Department of Transportation, Environmental Program Environmental Engineering – Noise, Air Quality, and Hazardous Waste Management Office. "Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects," October 1998. (www.dot.ca.gov)

California Public Utilities Code, SDCRAA. Public Utilities Code, Division 17, Sections 170000-170084. (www.leginfo.ca.gov)

California Street and Highways Code. California Street and Highways Code, Section 260-283. (www.leginfo.ca.gov)

County of San Diego, Alternative Fee Schedules with Pass-By Trips Addendum to Transportation Impact Fee Reports, March 2005. (http://www.sdcounty.ca.gov/dpw/land/pdf/TransImpactFee/attacha.pdf)

County of San Diego Transportation Impact Fee Report. January 2005. (http://www.sdcounty.ca.gov/dpw/permits-forms/manuals.html)

Fallbrook & Ramona Transportation Impact Fee Report, County of San Diego, January 2005. (http://www.sdcounty.ca.gov/dpw/permits-forms/manuals.html)

Office of Planning, Federal Transit Administration, Transit Noise and Vibration Impact Assessment, Final Report, April 1995.

San Diego Association of Governments, 2020 Regional Transportation Plan. Prepared by the San Diego Association of Governments. (www.sandag.org)

San Diego County Regional Airport Authority ALUCP'S http://www.san.org/sdcraa/airport_initiatives/land_use/adopted_docs.aspx

US Code of Federal Regulations, Federal Aviation Regulations (FAR), Objects Affecting Navigable Airspace, Title 14, Chapter 1, Part 77. (www.gpoaccess.gov)

UTILITIES & SERVICE SYSTEMS

California Code of Regulations (CCR), Title 14. Natural Resources Division, CIWMB Division 7; and Title 27, Environmental Protection Division 2, Solid Waste. (ccr.oal.ca.gov)

California Integrated Waste Management Act. Public Resources Code, Division 30, Waste Management, Sections 40000-41956. (www.leginfo.ca.gov)

County of San Diego, Board of Supervisors Policy I-78: Small Wastewater. (www.sdcounty.ca.gov)

Unified San Diego County Emergency Services Organization Annex T Emergency Water Contingencies, October 1992. (www.co.san-diego.ca.us)

United States Department of Agriculture, Natural Resource Conservation Service LESA System.

United States Department of Agriculture, Soil Survey for the San Diego Area, California. 1973.

US Census Bureau, Census 2000.

US Code of Federal Regulations, Federal Aviation Regulations (FAR), Objects Affecting Navigable Airspace, Title 14, Chapter 1, Part 77.

US Department of the Interior, Bureau of Land Management (BLM) modified Visual Management System.

US Department of Transportation, Federal Highway Administration (FHWA) Visual Impact Assessment for Highway Projects.

STATE OF CALIFORNIA

GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

EDMUND G. BROWN JR.
GOVERNOR

KEN ALEX
DIRECTOR

Notice of Preparation

August 22, 2018

To: Reviewing Agencies

Re: Integrated Vector Management Program
SCH# 2018081060

Attached for your review and comment is the Notice of Preparation (NOP) for the Integrated Vector Management Program draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

KariLyn Merlos
San Diego County
5570 Overland Ave, Suite 102
San Diego, CA 92123

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Attachments
cc: Lead Agency

Document Details Report
State Clearinghouse Data Base

SCH# 2018081060
Project Title Integrated Vector Management Program
Lead Agency San Diego County

Type NOP Notice of Preparation

Description The County Dept. of Environmental Health Vector Control Program protects the public from vector-borne disease and nuisance while protecting the environment through a coordinated set of activities collectively known as the Integrated Vector Management Program. These activities and services are described in the annual Engineer's Report, which provides an overview of the VCP's general practices and procedures. As the proposed project, the IVMP would continue to operate using a comprehensive approach by applying various techniques, including surveillance, source reduction (i.e., physical control), source treatment (i.e., biological and chemical control), public education, and outreach.

Lead Agency Contact

Name KariLyn Merlos
Agency San Diego County
Phone (858) 495-5799 **Fax**
email
Address 5570 Overland Ave, Suite 102
City San Diego **State** CA **Zip** 92123

Project Location

County San Diego
City
Region
Cross Streets
Lat / Long
Parcel No.
Township **Range** **Section** **Base**

Proximity to:

Highways
Airports
Railways
Waterways
Schools
Land Use

Project Issues Air Quality; Archaeologic-Historic; Biological Resources; Drainage/Absorption; Geologic/Seismic; Noise; Soil Erosion/Compaction/Grading; Toxic/Hazardous; Vegetation; Water Quality; Wetland/Riparian

Reviewing Agencies Resources Agency; Department of Conservation; Cal Fire; Department of Parks and Recreation; Department of Fish and Wildlife, Region 5; Office of Emergency Services, California; Caltrans, Division of Aeronautics; Native American Heritage Commission; Caltrans, District 11; Department of Toxic Substances Control; Department of Pesticide Regulation; California Department of Justice, Attorney General's Office; San Diego River Conservancy; Regional Water Quality Control Board, Region 9

Date Received 08/22/2018 **Start of Review** 08/22/2018 **End of Review** 09/20/2018

Note: Blanks in data fields result from insufficient information provided by lead agency.

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH # 2018081060

Project Title: Integrated Vector Management Program

Lead Agency: County of San Diego - Department of Environmental Health | Contact Person: KariLyn Merlos

Mailing Address: 5570 Overland Avenue, Suite 102 | Phone: (858) 495-5799

City: San Diego | Zip: 92123 | County: San Diego

Project Location: County: San Diego | City/Nearest Community: countywide

Cross Streets: n/a | Zip Code: n/a

Longitude/Latitude (degrees, minutes and seconds): ____° ____′ ____″ N / ____° ____′ ____″ W | Total Acres: n/a

Assessor's Parcel No.: n/a | Section: ____ | Twp.: ____ | Range: ____ | Base: ____

Within 2 Miles: State Hwy #: ____ | Waterways: ____

Airports: ____ | Railways: ____ | Schools: ____

Document Type:

CEQA: ☒ NOP ☐ Early Cons ☐ Neg Dec ☐ Mit Neg Dec ☐ Draft EIR ☐ Supplement/Subsequent EIR (Prior SCH No.) ____ ☐ Other: ____

NEPA: ☐ NOI ☐ EA ☐ Draft EIS ☐ FONSI Other: ☐ Joint Document ☐ Final Document ☐ Other: ____

Governor's Office of Planning & Research

AUG 22 2018

STATE CLEARINGHOUSE

Local Action Type:

☐ General Plan Update ☐ General Plan Amendment ☐ General Plan Element ☐ Community Plan
☐ Specific Plan ☐ Master Plan ☐ Planned Unit Development ☐ Site Plan
☐ Rezone ☐ Prezone ☐ Use Permit ☐ Land Division (Subdivision, etc.)
☐ Annexation ☐ Redevelopment ☐ Coastal Permit ☐ Other: ____

Development Type:

☐ Residential: Units ____ Acres ____
☐ Office: Sq.ft. ____ Acres ____ Employees ____
☐ Commercial: Sq.ft. ____ Acres ____ Employees ____
☐ Industrial: Sq.ft. ____ Acres ____ Employees ____
☐ Educational: ____
☐ Recreational: ____
☐ Water Facilities: Type ____ MGD ____
☐ Transportation: Type ____
☐ Mining: Mineral ____
☐ Power: Type ____ MW ____
☐ Waste Treatment: Type ____ MGD ____
☐ Hazardous Waste: Type ____
☒ Other: see Project Description below

Project Issues Discussed in Document:

☐ Aesthetic/Visual
☐ Agricultural Land
☒ Air Quality
☒ Archeological/Historical
☒ Biological Resources
☐ Coastal Zone
☒ Drainage/Absorption
☐ Economic/Jobs
☐ Fiscal
☐ Flood Plain/Flooding
☐ Forest Land/Fire Hazard
☒ Geologic/Seismic
☐ Minerals
☒ Noise
☐ Population/Housing Balance
☐ Public Services/Facilities
☐ Recreation/Parks
☐ Schools/Universities
☐ Septic Systems
☐ Sewer Capacity
☒ Soil Erosion/Compaction/Grading
☐ Solid Waste
☒ Toxic/Hazardous
☐ Traffic/Circulation
☒ Vegetation
☒ Water Quality
☐ Water Supply/Groundwater
☒ Wetland/Riparian
☐ Growth Inducement
☐ Land Use
☐ Cumulative Effects
☐ Other: ____

Present Land Use/Zoning/General Plan Designation:

Project Description: *(please use a separate page if necessary)*

The County Department of Environmental Health (DEH) Vector Control Program (VCP) protects the public from vector-borne disease and nuisance while protecting the environment through a coordinated set of activities collectively known as the Integrated Vector Management Program (IVMP). These activities and services are described in the annual Engineer's Report, which provides an overview of the VCP's general practices and procedures. As the Proposed Project, the IVMP would continue to operate using a comprehensive approach by applying various techniques, including surveillance, source reduction (i.e., physical control), source treatment (i.e., biological and chemical control), public education, and outreach.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

NOP Distribution List MS

County: San Diego

SCH# 2018081060

Resources Agency

- [■] **Resources Agency**
  Nadell Gayou
- [ ] **Dept. of Boating & Waterways**
  Denise Peterson
- [ ] **California Coastal Commission**
  Allyson Hitt
- [ ] **Colorado River Board**
  Elsa Contreras
- [■] **Dept. of Conservation**
  Crina Chan
- [■] **Cal Fire**
  Dan Foster
- [ ] **Central Valley Flood Protection Board**
  James Herota
- [ ] **Office of Historic Preservation**
  Ron Parsons
- [■] **Dept of Parks & Recreation**
  Environmental Stewardship Section
- [ ] **S.F. Bay Conservation & Dev't. Comm.**
  Steve Goldbeck
- [ ] **Dept. of Water Resources**
  Resources Agency
  Nadell Gayou

Fish and Game

- [ ] **Depart. of Fish & Wildlife**
  Scott Flint
  Environmental Services Division
- [ ] **Fish & Wildlife Region 1**
  Curt Babcock
- [ ] **Fish & Wildlife Region 1E**
  Laurie Harnsberger
- [ ] **Fish & Wildlife Region 2**
  Jeff Drongesen
- [ ] **Fish & Wildlife Region 3**
  Craig Weightman
- [ ] **Fish & Wildlife Region 4**
  Julie Vance
- [■] **Fish & Wildlife Region 5**
  Leslie Newton-Reed
  Habitat Conservation Program
- [ ] **Fish & Wildlife Region 6**
  Tiffany Ellis
  Habitat Conservation Program
- [ ] **Fish & Wildlife Region 6 I/M**
  Heidi Calvert
  Inyo/Mono, Habitat Conservation Program
- [ ] **Dept. of Fish & Wildlife M**
  William Paznokas
  Marine Region

Other Departments

- [ ] **California Department of Education**
  Lesley Taylor
- [■] **OES (Office of Emergency Services)**
  Monique Wilber
- [ ] **Food & Agriculture**
  Sandra Schubert
  Dept. of Food and Agriculture
- [ ] **Dept. of General Services**
  Cathy Buck
  Environmental Services Section
- [ ] **Housing & Comm. Dev.**
  CEQA Coordinator
  Housing Policy Division

Independent Commissions,Boards

- [ ] **Delta Protection Commission**
  Erik Vink
- [ ] **Delta Stewardship Council**
  Anthony Navasero
- [ ] **California Energy Commission**
  Eric Knight
- [■] **Native American Heritage Comm.**
  Debbie Treadway
- [ ] **Public Utilities Commission**
  Supervisor
- [ ] **Santa Monica Bay Restoration**
  Guangyu Wang
- [ ] **State Lands Commission**
  Jennifer Deleong
- [ ] **Tahoe Regional Planning Agency (TRPA)**
  Cherry Jacques

Cal State Transportation Agency CalSTA

- [■] **Caltrans - Division of Aeronautics**
  Philip Crimmins
- [ ] **Caltrans – Planning HQ LD-IGR**
  Christian Bushong
- [ ] **California Highway Patrol**
  Suzann Ikeuchi
  Office of Special Projects

Dept. of Transportation

- [ ] **Caltrans, District 1**
  Rex Jackman
- [ ] **Caltrans, District 2**
  Marcelino Gonzalez
- [ ] **Caltrans, District 3**
  Susan Zanchi - North
- [ ] **Caltrans, District 4**
  Patricia Maurice
- [ ] **Caltrans, District 5**
  Larry Newland
- [ ] **Caltrans, District 6**
  Michael Navarro
- [ ] **Caltrans, District 7**
  Dianna Watson
- [ ] **Caltrans, District 8**
  Mark Roberts
- [ ] **Caltrans, District 9**
  Gayle Rosander
- [ ] **Caltrans, District 10**
  Tom Dumas
- [■] **Caltrans, District 11**
  Jacob Armstrong
- [ ] **Caltrans, District 12**
  Maureen El Harake

Cal EPA

Air Resources Board

- [ ] **Airport & Freight**
  Jack Wursten
- [ ] **Transportation Projects**
  Nesamani Kalandiyur
- [ ] **Industrial/Energy Projects**
  Mike Tollstrup
- [ ] **California Department of Resources, Recycling & Recovery**
  Kevin Taylor/Jeff Esquivel
- [ ] **State Water Resources Control Board**
  Regional Programs Unit
  Division of Financial Assistance
- [ ] **State Water Resources Control Board**
  Cindy Forbes – Asst Deputy
  Division of Drinking Water
- [ ] **State Water Resources Control Board**
  Div. Drinking Water #_____
- [ ] **State Water Resources Control Board**
  Student Intern, 401 Water Quality Certification Unit
  Division of Water Quality
- [ ] **State Water Resouces Control Board**
  Phil Crader
  Division of Water Rights
- [■] **Dept. of Toxic Substances Control Reg. #**_____
  CEQA Tracking Center
- [■] **Department of Pesticide Regulation**
  CEQA Coordinator

Regional Water Quality Control Board (RWQCB)

- [ ] **RWQCB 1**
  Cathleen Hudson
  North Coast Region (1)
- [ ] **RWQCB 2**
  Environmental Document Coordinator
  San Francisco Bay Region (2)
- [ ] **RWQCB 3**
  Central Coast Region (3)
- [ ] **RWQCB 4**
  Teresa Rodgers
  Los Angeles Region (4)
- [ ] **RWQCB 5S**
  Central Valley Region (5)
- [ ] **RWQCB 5F**
  Central Valley Region (5)
  Fresno Branch Office
- [ ] **RWQCB 5R**
  Central Valley Region (5)
  Redding Branch Office
- [ ] **RWQCB 6**
  Lahontan Region (6)
- [ ] **RWQCB 6V**
  Lahontan Region (6)
  Victorville Branch Office
- [ ] **RWQCB 7**
  Colorado River Basin Region (7)
- [ ] **RWQCB 8**
  Santa Ana Region (8)
- [■] **RWQCB 9**
  San Diego Region (9)

- [■] **Other** Attorney General Officer
- [■] San Diego River Conservancy

Last Updated 5/22/18

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
South Coast Region
3883 Ruffin Road
San Diego, CA 92123
(858) 467-4201
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

September 19, 2018

KariLyn Merlos
Vector Control Program
County of San Diego, Department of Environmental Health
5570 Overland Avenue, Suite 102
San Diego, CA 92123
(858) 694-2888
IVMP@sdcounty.ca.gov

Subject: Comments on the Notice of Preparation of a Draft Program Environmental Impact Report for the Integrated Vector Management Program Project SCH# 2018081060

Dear Ms. Merlos:

The California Department of Fish and Wildlife (CDFW) has reviewed the above-referenced Notice of Preparation (NOP) for the Integrated Vector Management Program (IVMP) Project Draft Program Environmental Impact Report (PEIR).
Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

CDFW ROLE

CDFW is California's Trustee Agency for fish and wildlife resources, and holds those resources in trust by statute for all the people of the State. (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; California Environmental Quality Act [CEQA] Guidelines § 15386, subd. (a).) CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (*Id.*, § 1802.) Similarly for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

CDFW is also a Responsible Agency under CEQA. (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381.) CDFW may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority. (Fish & G. Code, § 1600 et seq.) Likewise, to the extent implementation of the Project as proposed may

result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), related authorization as provided by the Fish and Game Code will be required.
CDFW also administers the Natural Community Conservation Planning (NCCP) program. San Diego County (County) participates in the NCCP program through implementation of its Subarea Plan (SAP) and preparation of its draft North County Subarea Plan (NC-MSCP).

Project Location:
The IVMP includes vector and vector-borne disease surveillance and control services throughout all 18 incorporated cities and the unincorporated areas of San Diego County, totaling approximately 4,261 square miles.

Project Description/Objective:
The Proposed Project would include progressive and emerging vector control activities and materials. New vector control methods based on scientific evidence and expert guidance may be implemented to address public risks as they arise. These emerging vector control strategies could include increased or advanced early source prevention, source reduction, surveillance, and physical or biological chemical control, depending on the assessment of public health risk. Activities would also include public education and outreach.

COMMENTS AND RECOMMENDATIONS
CDFW offers the following comments and recommendations to assist the County in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources.

1. CDFW has responsibility for wetland and riparian habitats. It is the policy of CDFW to strongly discourage development in wetlands or conversion of wetlands to uplands. We oppose any development or conversion that would result in a reduction of wetland acreage or wetland habitat values, unless, at a minimum, project mitigation assures there will be "no net loss" of either wetland habitat values or acreage. Development and conversion include but are not limited to conversion to subsurface drains, placement of fill or building of structures within the wetland, and channelization or removal of materials from the streambed. All wetlands and watercourses, whether ephemeral, intermittent, or perennial, should be retained and provided with substantial setbacks that preserve the riparian and aquatic values and maintain their value to on-site and off-site wildlife populations. Mitigation measures to compensate for impacts to mature riparian corridors must be included in the PEIR and must compensate for the loss of function and value of a wildlife corridor.

    a) The project area supports aquatic, riparian, and wetland habitats; therefore, a jurisdictional delineation of the creeks and their associated riparian habitats should be included in the PEIR. The delineation should be conducted pursuant

to the U. S. Fish and Wildlife Service wetland definition adopted by CDFW.1 Please note that some wetland and riparian habitats subject to CDFW's authority may extend beyond the jurisdictional limits of the U.S. Army Corps of Engineers.

b) The CDFW also has regulatory authority over activities in streams and/or lakes that will divert or obstruct the natural flow, or change the bed, channel, or bank (which may include associated riparian resources) of any river, stream, or lake or use material from a river, stream, or lake. For any such activities, the project applicant (or "entity") must provide written notification to CDFW pursuant to section 1600 et seq. of the Fish and Game Code. Based on this notification and other information, CDFW determines whether a Lake and Streambed Alteration Agreement (LSAA) with the applicant is required prior to conducting the proposed activities. CDFW's issuance of a LSAA for a project that is subject to CEQA will require CEQA compliance actions by CDFW as a Responsible Agency. CDFW as a Responsible Agency under CEQA may consider the local jurisdiction's (lead agency) Negative Declaration or Environmental Impact Report for the project. To minimize additional requirements by CDFW pursuant to section 1600 *et seq.* and/or under CEQA, the document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for issuance of the LSAA.2

2. CDFW considers adverse impacts to a species protected by the California Endangered Species Act (CESA), for the purposes of CEQA, to be significant without mitigation. As to CESA, take of any endangered, threatened, or candidate species that results from the project is prohibited, except as authorized by state law (Fish & G. Code, §§ 2080, 2085). Consequently, if the Project, Project construction, or any Project-related activity during the life of the Project will result in take of a species designated as endangered or threatened, or a candidate for listing under CESA, CDFW recommends that the project proponent seek appropriate take authorization under CESA prior to implementing the project. Appropriate authorization from CDFW may include an incidental take permit (ITP) or a consistency determination in certain circumstances, among other options (Fish and G. Code §§ 2080.1, 2081, subds. (b),(c)). Early consultation is encouraged, as significant modification to a project and mitigation measures may be required in order to obtain a CESA Permit. Revisions to the Fish and Game Code, effective January 1998, may require that CDFW issue a separate CEQA document for the issuance of an ITP unless the project CEQA document addresses all project impacts to CESA-listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of an ITP. For these reasons, biological mitigation

---

1 Cowardin, Lewis M., et al. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service.

2 A notification package for a LSA may be obtained by accessing the Department's web site at http://www.wildlife.ca.gov/Conservation/LSA.

monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for a CESA ITP.

3. To enable CDFW to adequately review and comment on the proposed project from the standpoint of the protection of plants, fish, and wildlife, we recommend the following information be included in the PEIR.

   a) The document should contain a complete discussion of the purpose and need for, and description of, the proposed project, including all staging areas and access routes to the construction and staging areas.

   b) A range of feasible alternatives should be included to ensure that alternatives to the proposed project are fully considered and evaluated; the alternatives should avoid or otherwise minimize impacts to sensitive biological resources, particularly wetlands. Specific alternative locations should be evaluated in areas with lower resource sensitivity where appropriate.

Biological Resources within the Project's Area of Potential Effect

4. The document should provide a complete assessment of the flora and fauna within and adjacent to the project area, with particular emphasis upon identifying endangered, threatened, sensitive, and locally unique species and sensitive habitats. This should include a complete floral and faunal species compendium of the entire project site, undertaken at the appropriate time of year. The PEIR should include the following information.

   a) CEQA Guidelines, section 15125(c), specifies that knowledge on the regional setting is critical to an assessment of environmental impacts and that special emphasis should be placed on resources that are rare or unique to the region.

   b) A thorough, recent floristic-based assessment of special status plants and natural communities, following CDFW's Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (see https://www.wildlife.ca.gov/Conservation/Plants/Info). CDFW recommends that floristic, alliance-based and/or association-based mapping and vegetation impact assessments be conducted at the Project site and neighboring vicinity. The Manual of California Vegetation, second edition, should also be used to inform this mapping and assessment (Sawyer et al. 20083). Alternately, for assessing vegetation communities located in western San Diego County, the Vegetation Classification Manual for Western San Diego County (Sproul et al. 20114) may

---

3 Sawyer, J. O., T. Keeler-Wolf and J.M. Evens. 2009. A Manual of California Vegetation, Second Edition. California Native Plant Society Press, Sacramento.

4 Sproul, F., T. Keeler-Wolf, P. Gordon-Reedy, J. Dunn, A. Klein and K. Harper. 2011. Vegetation Classification Manual for Western San Diego County. First Edition. Prepared by AECOM, California Department of Fish and Game Vegetation Classification and Mapping Program and Conservation Biology Institute for San Diego

be used. Adjoining habitat areas should be included in this assessment where site activities could lead to direct or indirect impacts off-site. Habitat mapping at the alliance level will help establish baseline vegetation conditions.

c) A current inventory of the biological resources associated with each habitat type on site and within the area of potential effect. CDFW's California Natural Diversity Data Base in Sacramento should be contacted at www.wildlife.ca.gov/biogeodata/ to obtain current information on any previously reported sensitive species and habitat, including Significant Natural Areas identified under Chapter 12 of the Fish and Game Code.

d) An inventory of rare, threatened, endangered and other sensitive species on site and within the area of potential effect. Species to be addressed should include all those which meet the CEQA definition (see CEQA Guidelines, § 15380). This should include sensitive fish, wildlife, reptile, and amphibian species. Seasonal variations in use of the project area should also be addressed. Focused species-specific surveys, conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, are required. Acceptable species-specific survey procedures should be developed in consultation with CDFW and the U.S. Fish and Wildlife Service.

Analyses of the Potential Project-Related Impacts on the Biological Resources

5. To provide a thorough discussion of direct, indirect, and cumulative impacts expected to adversely affect biological resources, with specific measures to offset such impacts, the following should be addressed in the PEIR.

   a) A discussion of potential adverse impacts from lighting, noise, human activity, exotic species, and drainage should also be included. The latter subject should address: project-related changes on drainage patterns on and downstream of the project site; the volume, velocity, and frequency of existing and post-project surface flows; polluted runoff; soil erosion and/or sedimentation in streams and water bodies; and post-project fate of runoff from the project site. The discussions should also address the proximity of the extraction activities to the water table, whether dewatering would be necessary, and the potential resulting impacts on the habitat, if any, supported by the groundwater. Mitigation measures proposed to alleviate such impacts should be included.

   b) Discussions regarding indirect project impacts on biological resources, including resources in nearby public lands, open space, adjacent natural habitats, riparian ecosystems, and any designated and/or proposed or existing reserve lands (e.g., preserve lands associated with any NCCP in San Diego County). Impacts on, and maintenance of, wildlife corridor/movement areas, including access to

---

Association of Governments.

undisturbed habitats in adjacent areas, should be fully evaluated in the PEIR.

c) The zoning of areas for development projects or other uses that are nearby or adjacent to natural areas may inadvertently contribute to wildlife-human interactions. A discussion of possible conflicts and mitigation measures to reduce these conflicts should be included in the environmental document.

d) A cumulative effects analysis should be developed as described under CEQA Guidelines, section 15130. General and specific plans, as well as past, present, and anticipated future projects, should be analyzed relative to their impacts on similar plant communities and wildlife habitats.

Mitigation for the Project-related Biological Impacts

6. The PEIR should include measures to fully avoid and otherwise protect Rare Natural Communities from project-related impacts. CDFW considers these communities as threatened habitats having both regional and local significance.

7. The PEIR should include mitigation measures for adverse project-related impacts to sensitive plants, animals, and habitats. Mitigation measures should emphasize avoidance and reduction of project impacts. For unavoidable impacts, on-site habitat restoration or enhancement should be discussed in detail. If on-site mitigation is not feasible or would not be biologically viable and therefore not adequately mitigate the loss of biological functions and values, off-site mitigation through habitat creation and/or acquisition and preservation in perpetuity should be addressed.

8. For proposed preservation and/or restoration, the PEIR should include measures to perpetually protect the targeted habitat values from direct and indirect negative impacts. The objective should be to offset the project-induced qualitative and quantitative losses of wildlife habitat values. Issues that should be addressed include restrictions on access, proposed land dedications, monitoring and management programs, control of illegal dumping, water pollution, increased human intrusion, etc.

9. CDFW recommends that measures be taken to avoid project impacts to nesting birds. Migratory nongame native bird species are protected by international treaty under the Federal Migratory Bird Treaty Act (MBTA) of 1918 (Title 50, § 10.13, Code of Federal Regulations. Sections 3503.5 and 3513 of the California Fish and Game Code prohibit take of all raptors and other migratory nongame birds and section 3503 prohibits take of the nests and eggs of all birds. Proposed project activities (including, but not limited to, staging and disturbances to native and nonnative vegetation, structures, and substrates) should occur outside of the avian breeding season which generally runs from February 1- September 1 (as early as January 1 for some raptors) to avoid take of birds or their eggs. If avoidance of the avian

breeding season is not feasible, CDFW recommends surveys by a qualified biologist with experience in conducting breeding bird surveys to detect protected native birds occurring in suitable nesting habitat that is to be disturbed and (as access to adjacent areas allows) any other such habitat within 300 feet of the disturbance area (within 500 feet for raptors). Project personnel, including all contractors working on site, should be instructed on the sensitivity of the area. Reductions in the nest buffer distance may be appropriate depending on the avian species involved, ambient levels of human activity, screening vegetation, or possibly other factors.

10. CDFW generally does not support the use of relocation, salvage, and/or transplantation as mitigation for impacts to rare, threatened, or endangered species. Studies have shown that these efforts are experimental in nature and largely unsuccessful.

11. Plans for restoration and revegetation should be prepared by persons with expertise in southern California ecosystems and native plant revegetation techniques. Each plan should include, at a minimum: (a) the location of the mitigation site; (b) the plant species to be used, container sizes, and seeding rates; (c) a schematic depicting the mitigation area; (d) planting schedule; (e) a description of the irrigation methodology; (f) measures to control exotic vegetation on site; (g) specific success criteria; (h) a detailed monitoring program; (i) contingency measures should the success criteria not be met; and (j) identification of the party responsible for meeting the success criteria and providing for conservation of the mitigation site in perpetuity.

CONCLUSION

CDFW appreciates the opportunity to comment on the NOP to assist the County in identifying and mitigating Project impacts on biological resources.

Questions regarding this letter or further coordination should be directed to Eric Hollenbeck, Senior Environmental Scientist Specialist at (858) 467-2720 or Eric.Hollenbeck@wildlife.ca.gov.

Sincerely,

Gail K. Sevrens
Environmental Program Manager

cc: Office of Planning and Research, State Clearinghouse, Sacramento
Doreen Stadtlander, USFWS

State of California • Natural Resources Agency
Edmund G. Brown Jr., *Governor*

DEPARTMENT OF PARKS AND RECREATION
Lisa Ann L. Mangat, *Director*

San Diego Coast District
4477 Pacific Highway
San Diego, CA 92110
(619) 688-3260 FAX (619) 688-3229

September 21, 2018

County of San Diego, Department of Environmental Health
Vector Control Program, Attn: KariLyn Merlos
5570 Overland Avenue, Suite 102
San Diego, CA 92123
IVMP@sdcounty.ca.gov

RE: NOP of Program Environmental Impact Report for Integrated Vector Management Program

Dear Ms. Merlos,

Thank you for the opportunity to comment on the Integrated Vector Management Program (IVMP) Notice of Preparation of Program Environmental Impact Report. California State Parks (CSP) is a Trustee Agency responsible for the protection of natural, cultural and historical resources within the units of the CSP system. The mission of CSP is to provide for the health, inspiration and education of the people of California by helping to preserve the state's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high-quality outdoor recreation. Invasive mosquito species that are known to carry pathogens are present at Los Peñasquitos Lagoon Natural Preserve, a sub-unit of Torrey Pines State Natural Reserve, and at Tijuana Estuary Natural Preserve. The VCP currently coordinates with CSP on an ongoing basis to gain access to habitats at these park units for the purposes of vector monitoring and control. We are providing comments to ensure that the proposed IVMP incorporates measures to avoid and minimize direct and indirect impacts associated with monitoring and controlling disease-carrying mosquito species to threatened and endangered species and sensitive habitats on CSP lands.

Potential impacts to sensitive natural communities and species

The IVMP has the potential to result in adverse effects on sensitive natural communities, such as salt marsh, riparian, and transitional habitats. The habitats of Torrey Pines SNR and Los Peñasquitos Natural Preserve have been afforded the highest level of resource protection in the State Parks system, and natural resource protection is a primary management goal for park units classified as State Reserves and for sub-units classified as Natural Preserves (DOM 0304.2). Natural Preserves (Public Resource Code § 5019.71) are distinct areas of outstanding natural or scientific significance established within the boundaries of other State Park System units, whose purpose is to preserve rare or endangered plant and animal species and their supportive ecosystems (DOM 0304.2.5). The Tijuana Estuary Natural Preserve has been designated as a Wetland of International Importance by the Ramsar Convention. State and federally listed bird species at these units include the Light-footed Ridgway's rail, Belding's savannah sparrow, least Bell's Vireo, Western Snowy plover, California Least Tern, and coastal California gnatcatcher. CSP generally restricts access to sensitive habitats, including riparian, coastal sage scrub and salt marsh, during nesting season to avoid disturbance to nesting birds.

The Proposed PEIR must analyze potential impacts to listed species and sensitive vegetation that may result from the IVMP. Minimization, avoidance, and/or mitigation measures must be proposed to reduce potential significant impacts from IVMP (for example, foot traffic, boating, or aerial treatment during bird breeding season). These potential impacts will need to be permitted in accordance with applicable federal, state and local requirements. Additionally, the County's plan for proceeding with VCP activities at Torrey Pines SNR, including the testing of longer lasting larvicide options and the use of aerial applications to avoid the need to enter sensitive habitats by foot during nesting season should be incorporated in the IVMP.

Nuisance species

During warm summer months, conditions may become favorable for nuisance species like the black salt marsh mosquito to proliferate in salt marshes. While the VCP considers nuisance species in their list of vector species (Initial Study, page 2), the black salt marsh mosquito is not known to transmit disease to humans and its status as a vector species is questionable. Its aggressive day biting elicits a vocal response from residents living near lagoons and estuaries, and CSP is aware of the high volume of complaints fielded by the VCP when black salt marsh mosquitoes are breeding. Nonetheless, the CSP Department of Operations Manual states that pest control by other public agencies on Department lands is permissible for disease vectoring mosquitoes, not those considered to be nuisance (i.e., non-disease carrying) species.

CSP does not support the VCP accessing the salt marsh at park units for the control of nuisance species, particularly during bird breeding season. Nuisance species do not pose a significant threat to public health, while monitoring and treatment activities have the potential to harm sensitive habitats and species.

In conclusion, a thorough analysis of potentially significant impacts to biological resources including special status species and wetlands should be included in the PEIR. CSP is supportive of establishing phased risk levels to identify when there is an elevated public health risk and how the VCP would respond to each risk level (Section VIII). This tool would better our understanding of VCP activities and thresholds for treatment of vector species. Thank you again for the opportunity to comment. Please feel free to contact me (darren.smith@parks.ca.gov) for questions or further discussion of our concerns.

Sincerely,

Darren Smith
District Services Manager

cc: Garratt Aitchison, San Diego Coast District Superintendent
Lisa Urbach, North Sector Superintendent
Chris Peregrin, Senior Environmental Scientist
Cara Stafford, Environmental Scientist
Lorena Warner-Lara, Park and Recreation Specialist
Reading File

STATE OF CALIFORNIA Edmund G. Brown Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone (916) 373-3710
Email: nahc@nahc.ca.gov
Website: http://www.nahc.ca.gov
Twitter: @CA_NAHC

August 31, 2018

KariLyn Merlos
San Diego County
5570 Overland Ave, Suite 102
San Diego, CA 92123

RE: SCH# 2018081060 Integrated Vector Management Program, San Diego County

Dear Ms. Merlos:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:
   a. A brief description of the project.
   b. The lead agency contact information.
   c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
   d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).
   a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:
   a. Alternatives to the project.
   b. Recommended mitigation measures.
   c. Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:
   a. Type of environmental review necessary.
   b. Significance of the tribal cultural resources.
   c. Significance of the project's impacts on tribal cultural resources.
   d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:
   a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
   b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:
    a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
    b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:
    a. Avoidance and preservation of the resources in place, including, but not limited to:
        i. Planning and construction to avoid the resources and protect the cultural and natural context.
        ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
    b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
        i. Protecting the cultural character and integrity of the resource.
        ii. Protecting the traditional use of the resource.
        iii. Protecting the confidentiality of the resource.
    c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
    d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).
    e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).
    f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
    a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.
    b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
    c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
    a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
    b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
    a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
    b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
    c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Frank.Lienert@nahc.ca.gov.

Sincerely,

Frank Lienert
Associate Governmental Program Analyst

cc: State Clearinghouse

VIEJAS
TRIBAL GOVERNMENT

P.O Box 908
Alpine, CA 91903
#1 Viejas Grade Road
Alpine, CA 91901

Phone: 6194453810
Fax: 6194455337
viejas.com

August 28, 2018

KariLyn Merlos
Vector Control Program
County of San Diego, Department of Environmental Health
5570 Overland Avenue, Suite 102
San Diego, CA 92123

RE: Integrated Vector Management Program

Dear Ms. Merlos,

In reviewing the above referenced project the Viejas Band of Kumeyaay Indians ("Viejas") would like to comment at this time.

The project area may contain many sacred sites to the Kumeyaay people. We request that these sacred sites be avoided with adequate buffer zones.

Additionally, Viejas is requesting, as appropriate, the following:

- All NEPA/CEQA/NAGPRA laws be followed
- Immediately contact Viejas on any changes or inadvertent discoveries.

Thank you for your collaboration and support in preserving our Tribal cultural resources. I look forward to hearing from you. Please call me at 619-659-2312 or Ernest Pingleton at 619-659-2314, or email, rteran@viejas-nsn.gov or epingleton@viejas-nsn.gov, for scheduling. Thank you.

Sincerely,

Ray Teran, Resource Management
VIEJAS BAND OF KUMEYAAY INDIANS

LOS PEÑASQUITOS

LAGOON FOUNDATION

P.O. Box 940
Cardiff by the Sea
CA, 92007

September 21, 2018

County of San Diego, Dept. of Environmental Health
Vector Control Program, Attn: KariLyn Merlos
5570 Overland Avenue, Suite 102
San Diego, California 92123

Subject: Notice of Preparation – Program EIR, Integrated Vector Management Program

Dear Ms. Merlos,

Thank you for this opportunity to provide input during the Notice of Preparation (NOP) for the Program EIR for the County's proposed Integrated Vector Management Program. The Los Peñasquitos Lagoon Foundation appreciates both past and ongoing partnerships and collaboration with staff from the County's Vector Control Program (VCP) to explore alternative methods for vector management in Los Peñasquitos Lagoon, a State Marsh Natural Preserve, that prioritize restoration and enhancement of the Lagoon's natural systems with emphasis on tidal circulation for effective vector management in this fragile and unique coastal lagoon while avoiding impacts to its Environmentally Sensitive Habitat Areas and the sensitive/rare plants and rare/endangered animals that rely on it. I have attached our comments with regard to the NOP and look forward to working with you and other VCP staff to develop the Integrated Vector Management Program and, eventual, site-specific plan for Los Peñasquitos Lagoon and adjacent areas around the Lagoon.

If you have any questions, please feel free to contact me at (760) 271-0574 or mikehastings1066@gmail.com.

Sincerely,

Mike Hastings

Mike Hastings
Executive Director
Los Peñasquitos Lagoon Foundation

Cc:
Darren Smith, California Department of Parks and Recreation (San Diego Coastal District)
Cara Stafford, California Department of Parks and Recreation (San Diego Coastal District)
Eric Hollenbeck, California Department of Fish and Wildlife (San Diego Office)
Toni Ross, California Coastal Commission (San Diego Office)
Carolyn Lieberman, United States Fish & Wildlife Service (San Diego Office)
Patrick Gower, United States Fish & Wildlife Service (San Diego Office)
Dennis Ridz, Torrey Pines Community Planning Board (president)

DESCRIPTION OF PROJECT

1. **Definition of "vector" needs to be revised** – Current definition is too broad and needs to differentiate between disease carrying species that pose threats to public safety (e.g. *Culex tarsalis* and West Nile virus) and species that are considered a nuisance as the former is objective and latter very subjective. 4 of 5 Vector Control Program's core services identified in the Initial Study relate specifically to Disease Carrying Species and only 1 related to "customer complaints." References to "vector" within the Initial Study are either "vector-borne disease" or "vector-related public nuisance" and therefore, should be addressed separately since grouping the two together under one definition misleads the need and intent to perform treatments which could include virtually any insect that is considered bothersome.

   A State Marsh Natural Preserve, Los Peñasquitos Lagoon has numerous insect species that are vital to the wetland's ecology and only ones that pose a direct threat to public health should be prioritized for treatment within the Lagoon to avoid impacts that could damage sensitive flora and fauna in Los Peñasquitos Lagoon and other coastal protected areas. While treating specific types of nuisance species may be permitted within Los Peñasquitos Lagoon on a case by case basis, it should not be assumed that treatment is mandatory and justified regardless of impacts. This distinction was made by Robin Greene (Superintendent, San Diego Coastal District of State Parks) at a meeting with County Vector Program (VCP) staff and upper management in Old Town, San Diego, on July 19 2016.

   Suggested Correction – Separate definition and protocols/plans for vector into 1) Disease Carrying and 2) Nuisance Species to allow better interpretation and understanding of treatment priority, needs, methods and potential impacts for vector management in a State Marsh Natural Preserve.

2. **Surveillance** – Work with State Parks and the Los Peñasquitos Lagoon Foundation to develop a monitoring and vector management plan that can be implemented within a State Marsh Natural Preserve by establishing impact avoidance measures and meeting other requirements of the associated Right of Entry Permit or related permits and/or agreements. Any surveillance activities conducted on foot within Los Peñasquitos Lagoon will require a trained biologist to accompany VCP staff in order to avoid impacts to sensitive plant species that could be easily trampled by uniformed individuals. Any surveillance activities conducted on foot or by boat along or within Los Peñasquitos Lagoon during nesting season of listed bird species (Feb 15th – Sept 15th) will require the services of a permitted biologist accompanying VCP staff to avoid "take" of listed species and to minimize any indirect impacts (e.g. noise) that cannot be avoided. Consultation with regulatory staff from California Department of Fish & Wildlife (CDFW) and United States Fish & Wildlife (USFW) will be needed to ensure compliance with recovery plans prepared for listed species beyond what is conditioned by State Parks through an agreement and/or Right of Entry Permit.

SOURCE REDUCTION

1. **Source Reduction.** Coordinate outreach efforts to community planning groups (e.g., Torrey Pines Community Planning Board) to improve efforts and increase opportunities for comprehensive approaches (e.g., educate/inform planning boards so they can respond accordingly during review of planned development projects) as well as threats/concerns over vector populations. Have VCP staff attend board meetings for local planning boards to provide updates on vector issues, VCP needs and priorities.

SOURCE TREATMENT (BIOLOGICAL AND CHEMICAL CONTROL)

1. Mosquito fish (*Gambusa affinis*) are invasive species that greatly impact native species within coastal lagoons in San Diego that include Los Peñasquitos Lagoon due to their aggressive behavior and should never be introduced directly into coastal lagoons without prior consultation with reserve managers or into water bodies or facilities (e.g. storm water detention basins) that are tributary (i.e. drain) to these systems. Improve methods for tracking and following up on public distribution to ensure that they comply with allowed uses for this approach in vector management (e.g. ponds, horse troughs).

2. **Chemical Control.** Chemical controls should always be a last resort to protect public health and never used for nuisance species within a State Natural Marsh Preserve (and related protected coastal lagoons) or in areas that are tributary to these receiving water bodies and/or through aerial dispersal from prevailing winds. Impact avoidance measures should include selecting chemical treatments that do not harm aquatic species or plants native to Los Peñasquitos Lagoon and conducted by trained staff that are certified and experienced in applying chemical controls near sensitive areas.

PUBLIC EDUCATION AND OUTREACH

1. Better coordinate outreach efforts to community planning groups (e.g., Torrey Pines Community Planning Board) to proactively improve public outreach and education efforts and increase opportunities for comprehensive approaches (e.g., educate/inform planning boards so they can respond accordingly during review of planned development projects). Have VCP staff attend board meetings for local planning boards to provide updates on vector issues, VCP needs, management efforts and priorities.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

1. Need to "check" recreation as applications of chemicals my impact recreation (exposure) and/or access for passive recreation.

IV. BIOLOGICAL RESOURCES

1. <u>Substantial adverse effects on any riparian habitat or other sensitive natural community – plans, policies, regulation, CDFW, USFW.</u> (General Comment) The PEIR needs to acknowledge and consider potential impacts to sensitive species (flora and fauna) for implementing the IVMP within or adjacent to protected coastal marshes within the County. The PEIR should also reference the need to prepare individual monitoring and management plans for disease carrying vectors and for nuisance species that will need to approved by

landowners and management entities to set the stage for project-level design and CEQA determination for the IVMP. The County already has monitoring and management plan in place for the Tijuana Estuary in conjunction with USFW which could be used as a general template to help guide the development of a similar plans for each coastal marsh within the County and their associated tributaries and/or facilities that drain into them.

2. Substantial adverse effects on any riparian habitat or other sensitive natural community – plans, policies, regulation, CDFW, USFW. (Specific to Los Peñasquitos Lagoon) VCP staff will need to work with State Parks and the Los Peñasquitos Lagoon Foundation to develop a monitoring and management plan that can be implemented within a State Marsh Natural Preserve and that, at the very least, establishes impact avoidance measures and meets other requirements of the associated Right of Entry Permit or related agreements. Any surveillance and/or treatment activities conducted on foot within Los Peñasquitos Lagoon will require a trained biologist to avoid impacts to sensitive plant species that could be easily trampled by uniformed individuals. Any surveillance and/or treatment activities conducted on foot or by boat along or within Los Peñasquitos Lagoon during nesting season of listed bird species (Feb 15th – Sept 15th) will require a permitted biologist to avoid "take" of listed species and minimize indirect impacts (e.g. noise) that cannot be avoided. Consultation with State Parks (landowner), Los Peñasquitos Lagoon Foundation (land manager), California Coastal Commission (ESHA, Listed Species), CDFW (State-Listed Species), SDRWQCB (401 Certification), USFW (Federally-Listed Species) and Army Corps (404 permit) will be needed for comprehensive and coordinated resource protection.

3. Adverse Effects on federally protected wetlands. Please identify within the PEIR how SWRCB NPDES Permit 2016-0039-DWQ applies to discharges directly or indirectly to protected water bodies such as Los Peñasquitos Lagoon.

4. Impede Use of Native Wildlife Nursery Sites. PEIR needs to acknowledge and consider supporting ongoing sensitive species surveys and associated mapping in protected habitats to improve understanding of species health and temporal/spatial characteristics during nesting season. For Los Peñasquitos Lagoon, this effort would include (but not be limited to) the following listed species: Belding's savannah sparrow (*Passerculus sandwhichensis*), CA Gnatcatcher (*Polioptila californica*), and Ridgway Rail (*Rallus obsoletus*). Mapping of individual sensitive plant species, Environmentally Sensitive Habitat Areas, active nesting areas and historic nesting areas will be needed to determine mitigation avoidance measures during hand and/or boat distribution of larvicide in Los Peñasquitos Lagoon.

5. Conflict with provisions of adopted Habitat Conservation Plan, Natural Communities Conservation Plan, etc. Impacts to sensitive species (flora and fauna), including but not limited to "take," for implementing the IVMP within Los Peñasquitos Lagoon would conflict with provisions set by the Lagoon's status as a designated State Marsh Natural Preserve under Public Resource Code § 5019.71 and adopted resource management and protection plans that include:

Local Level

- Wildlife Management Plan for Torrey Pines State Natura Reserve
- Torrey Pines State Natural Reserve Vegetation Management Statement (2009)
- Los Peñasquitos Lagoon Enhancement Plan
- Los Peñasquitos Lagoon Sediment Total Maximum Daily Load (TMDL) – Lagoon Compliance Target
- City of San Diego Multi-Habitat Planning Area (MHPA)
- City of San Diego Multiple Species Conservation Program (MSCP)
- Community Plans that include Torrey Pines, Carmel Valley, Del Mar Mesa, and Sorrento Hills

Regional Level

- San Diego Basin Plan, San Diego Water Quality Control Board
- San Diego Coastal State Park System General Plan, California Department Parks & Recreation
- Southern California Wetlands Recovery Project's Work Plan
- Southern California Wetlands Recovery Project's Regional Strategy

State and National Level

- Natural Resources Handbook, California Department Parks & Recreation
- General Plan, California Department Parks & Recreation
- Public Resources Code, ESHA requirements of the California Coastal Act of 1976
- Species Conservation and Recovery Programs, CA Department of Fish & Wildlife
- U.S. Fish & Wildlife Service Recovery Plans for least Bell's vireo, light-footed Ridgeway's rail, and western snowy plover

IX. HYDROLOGY AND WATER QUALITY

1. **Degradation of Beneficial Uses.** Trampling of sensitive/rare plant species, disturbance of listed species during nesting season, unauthorized "take" of listed bird species and/or use of chemicals harmful to aquatic species within or tributary to Los Peñasquitos Lagoon would be considered degradation of its Beneficial Uses as identified in the San Diego Basin Plan and may conflict with attempts to meet the Lagoon Compliance Target of the Los Peñasquitos Lagoon Sediment Total Maximum Daily Load.

From: Lynne Blackman
To: IVMP
Subject: Mosquito Control
Date: Friday, September 07, 2018 9:45:19 AM

We are in favor of early (pre-disease)
elimination of mosquitos. The infestation in Del Mar area is intolerable. All outdoor activity impossible.
Lynne and Vernon Blackman
13591 Nogales Drive
Del Mar 92014
Sent from my iPhone

From: Home
To: IVMP
Subject: Mosquitos in Del Mar
Date: Thursday, September 06, 2018 9:42:47 PM

Dear Sir or Madam,

I grew up around North County and have never experienced mosquitos in this area as I have this year. As a physician, I recognize that mosquitos actually are a serious health threat and without getting into a political discussion about climate, may become more of a problem in the coming years. We recently purchased a home in Del Mar Heights, and moved in around August 10. We have literally stepped out the door of our home and been swarmed by at least 5-10 mosquitos during all hours of the day. At times during the month, I have had 10-15 bites on my legs and arms at any given time. These have fortunately been a nuisance only, but for older adults and children who do not fight infection as well, they could certainly become serious. My father-in-law, who is more allergic, developed huge welts while visiting us during the month.

It has come to my attention that the city has been treating with a chemical that will kill the mosquito larvae, but will not affect the adult mosquitos. This will likely need to change, given the ongoing problem this year. Other areas of the country have used foggers for treatment of these adults, and this may become necessary should the current weather patterns continue. I would urge you to please consider further measures in the future, for the health and safety of your residents. Your consideration is most appreciated.

Sincerely,

Lisa M. Coles, M.D.

From:	Andrew Cunningham
To:	IVMP
Subject:	Mosquito control in Del Mar area
Date:	Sunday, September 09, 2018 7:48:14 PM

Hi,

I would be in favor of larvicide being applied preemptively to the lagoons when it is suspected conditions are ‘ripe’ for a mosquito infestation.

Andrew

From: Faye Detsky-Weil
To: IVMP
Subject: Mosquitoes
Date: Thursday, September 06, 2018 11:21:07 PM

It is important that you be proactive in preventing and eliminating the upsurge of mosquitoes in the Del Mar area. I am particularly sensitive to mosquitoes and they seem to find me quickly and easily. For example, I was outside for five minutes and found a bite when I returned inside the house. My body reacts by swelling up in the bite area. I hope that you can curtail the mosquitoes breeding by using non-breeding mosquitoes/larvae and keeping spraying to a minimum.

Is there something you suggest that homeowners spray or lay down to help eliminate mosquitoes, besides removing standing water?

Thank you.

Faye Detsky-Weil
13464 Calais Drive
Del Mar, CA 92014

From: robie faulkner
To: IVMP
Cc: diannejacob@sdcounty.ca.gov
Subject: Comments on vcp environmental review
Date: Thursday, August 30, 2018 3:45:25 PM

The vector control propaganda information concerning the proposed air spraying of poisonous chemicals to kill larva is not convincing. The County of San Diego should use medical experts to determine if the secret chemicals to be used will endanger the health of the people they are representing. They should do their job and not just rest on vector control rhetoric to promote genocide.

Robie Faulkner 619-445-5748

From: nina ho
To: IVMP
Subject: mosquitoes near the racetrack lagoon
Date: Saturday, August 25, 2018 8:24:20 AM

This year especially now there seems to be a huge infestation of mosquitoes. We cannot open our doors in spite of the heat and high humidity. We are being bitten all over both inside and outside the house that it is getting to be intolerable. There is no stagnant water anywhere in or around the house. PLEASE spray more often around the lagoon. All my neighbors are complaining.Desperately need help.

This is the first time the situation has been so bad.

Sent from my iPhone

From: Kathy Montgomery
To: IVMP
Subject: Vector Management Program - Mosquitoes - Torrey Pines Lagoon
Date: Friday, September 07, 2018 1:42:31 PM

I appreciate all that you do in the treating of the mosquitoes however, this year the mosquito problems were much worse than previous years. There should be more treatments when Vector is aware that there is an issue. We were basically held hostage in our homes this summer due to the mosquitoes. We could not leave our doors open without screens therefore, were in a hot atmosphere in our own homes. We live in a beautiful city and it's a shame that we cannot enjoy it due to these pesky insects. I feel that Vector should spray more often or treat the lagoon more often.

Thanks,

Kathy Montgomery

PSBUSINESSPARKS.

Kathy Montgomery | Sr. Director of Leasing
6440 Lusk Blvd., Suite D200 | San Diego, CA 92121
t. 858-452-9660 X 301 f.858-558-8285 c.858-335-2655

www.psbusinessparks.com

Please click the YouTube link to see video tours of our available properties in San Diego, CA.

From:	Mary Sasso
To:	IVMP
Cc:	Mary Sasso
Subject:	Saltmarsh mosquitos
Date:	Friday, September 07, 2018 9:44:36 PM

I live in the Del Mar Heights area which was badly hit with the salt marsh mosquitoes this summer. I have lived at this location for over 45 years and have never seen the mosquitoes in the numbers we had this year, nor do I remember them being so active in the day time. Even if they do not carry disease, they are troublesome. Having received multiple bites over several weeks, which sometimes calm down only to return to their very itchy state multiple times. I think that when weather and super high tides are known factors that increase their breeding, it would be advisable to Vector Control to move more quickly to controlling the population.

From: Leslie Shaw
To: IVMP
Subject: Vector Control in Del Mar
Date: Thursday, September 06, 2018 9:59:56 PM

I am a Del Mar resident. I cannot go out after 6 pm without getting eaten alive even through some thin clothing. Please take action before the problem gets out of hand.

Leslie S. Shaw, Esq.
Law Office of Leslie S. Shaw A P.C.
7860 Mission Center Court, Ste 111
San Diego, CA 92108
Ph: 619-683-2346 Fax: 619-683-2457
****

****

From:	Jocie Van Reusen
To:	IVMP
Subject:	Del Mar mosquitoes
Date:	Thursday, September 06, 2018 9:39:00 PM

Hi there
I am in favor of not spraying or treating with more insecticides/larvacides especially if they carry no known disease - the salt marsh mosquitoes.

We live in Del Mar and have been very affected by lots of bites and limited time outside. While not understanding the full nature of what made them disrupted, I do believe it's better to let nature take its course and not have more toxins in the air/ground/water. It is merely an inconvenience of nature that we will have to deal with.

Thank you
Jocie Van Reusen
Del Mar, CA

Sent from my iPhone

From: Karen Vaughan
To: IVMP
Subject: mosquitoes Del Mar Heights
Date: Saturday, August 25, 2018 4:35:32 PM

To whom it may concern:

Having been a resident of Del Mar for 29 years, I have never seen such an explosion of mosquitoes as we are having right now. I cannot use my backyard at all, and cannot even let the dog out, as she is getting attacked. I am resorting to driving her across the freeway to Carmel Valley just to walk her.

Please consider stepping up the spraying, and include treatment for mature mosquitoes, not just larvae. I realize the environmental implications, but this is getting ridiculous. We should not be captive in our own homes. And I am greatly fearful of the poor children down the street at Del Mar Heights on the first day of school in just two short days. Spraying the field is just a bandaid on a hemorrhage; the mosquitoes will be right back.

Please help us!

Karen Vaughan

Del Mar Heights

Appendix B

Biological Technical Report

HELIX Environmental Planning

County of San Diego Integrated Vector Management Program

Biological Resources Technical Report

March 2021 | CSD-05.24

Prepared for:

County of San Diego
Department of Environmental Health and Quality
Vector Control Program
5510 Overland Avenue, Suite 102 San Diego, CA 92123

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

This page intentionally left blank

County of San Diego Integrated Vector Management Program

Biological Resources Technical Report

Prepared for:

County of San Diego
Department of Environmental Health and Quality
Vector Control Program
5510 Overland Avenue, Suite 102
San Diego, CA 92123

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

March 2021 | CSD-05.24

This page intentionally left blank

TABLE OF CONTENTS

TABLE OF CONTENTS (cont.)

LIST OF APPENDICES

TABLE OF CONTENTS (cont.)

LIST OF FIGURES

LIST OF TABLES

ACRONYMS AND ABBREVIATIONS

°F	degrees Fahrenheint
AMSL	above mean sea level
BMO	Biological Mitigation Ordinance
BMP	Best Management Practice
CalEPA	California Environmental Protection Agency
Camp Pendleton	Marine Corps Base Camp Pendleton
CCA	California Coastal Act
CCC	California Coastal Commission
CDC	Centers for Disease Control and Prevention
CDFW	California Department of Fish and Wildlife
CDPH	California Department of Public Health
CDPR	California Department of Pesticide Regulation
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFG	California Fish and Game
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
County	County of San Diego
CPA	Communitiy Planning Area
CRPR	California Rare Plant Rank
CWA	Clean Water Act
DEHQ	Department of Environmental Health and Quality
DPR	Department of Pesticide Regulations
ESA	Environmentally Sensitive Areas
FESA	Federal Endangered Species Act
GIS	Geographic Information System
HCP	Habitat Conservation Plan
HELIX	HELIX Environmental Planning, Inc.
HPS	Hantavirus Pulmonary Syndrome
IVMP	Integrated Vector Management Program

ACRONYMS AND ABBREVIATIONS (cont.)

MBTA	Migratory Bird Treaty Act
MHCP	Multiple Habitat Conservation Program
MHPA	Multi-Habitat Planning Area
MOU	Memorandum of Understanding
MSCP	Multiple Species Conservation Program
NCCP	Natural Communities Conservation Planning
NDH	National Hydrography Dataset
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elmination System
NPPA	Native Plant Protection Act
NRCS	Natural Resource Conservation Service
NWI	National Wetland Inventory
PAMA	Pre-Approved Mitigation Area
PEIR	Program Environmental Impact Report
ROE	Right-of-Entry
RPO	Resource Protection Ordinance
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SANDAG	San Diego Association of Governments
SanGIS	San Diego Geographic Information Source
SCW	South Coast Wildlands
SDG&E	San Diego Gas & Electric
SDWCA	San Diego County Water Authority
SOP	Standard Operating Procedures
Subregions	Subregional Planning Areas
SWRCB	State Water Resources Control Board
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VCP	Vector Control Program
VDDL	Vector Disease and Diagnostic Laboratory
WDR	Waste Discharge Requirements
WNV	West Nile Virus

This page intentionally left blank

SUMMARY

At the request of the County of San Diego (County) Department of Environmental Health and Quality (DEHQ), HELIX Environmental Planning, Inc. (HELIX) has completed this biological resources technical report for the proposed Integrated Vector Management Program (IVMP). The IVMP carries out a full range of vector control activities, practices, and procedures to protect the public from vector-borne diseases and public nuisances while simultaneously protecting the environment. For the purposes of this analysis, the Proposed Project is the ongoing implementation of the IVMP, which would continue to comprehensively approach vector control through various techniques, including surveillance and monitoring, source reduction (i.e., physical control), source treatment (i.e., biological and chemical controls), public education and outreach, and disease diagnostics. The IVMP is managed by County staff, governed by the County Board of Supervisors, and implemented within a service area that includes all unincorporated areas within the county, as well as the 18 incorporated cities. The purpose of this report is to document the existing biological conditions within the study area and provide an analysis of potential impacts to sensitive biological resources with respect to local, state, and federal policy. This report provides the biological resources technical documentation necessary for review under the California Environmental Quality Act.

HELIX conducted a desktop assessment of baseline biological resource information within the IVMP service area. Several resources were reviewed and compiled as part of this assessment, including regional conservation plans, general plans, sensitive species databases, state and federal agency resource programs, and regional geographic information system (GIS) databases containing spatial data of biological resources throughout the county. In addition, County and State guidance documents directing vector control activities, existing approvals and permits, and annual reports summarizing vector control activities were consulted.

San Diego County is a diverse region with a variety of land uses, habitats, and climatic and topographic conditions. Because of the diversity of vector habitat within the IVMP service area, vector control activities are conducted in a wide variety of ecosystems, habitat types, and land uses throughout the county. Various wetlands, riparian habitat, and sensitive upland vegetation communities occur throughout the service area. These communities support a large number of special status plant and animal species, including state- and/or federally-listed species, many of which are endemic to California. Additionally, the U.S. Fish and Wildlife Service (USFWS) has designated critical habitat for nine federally listed plant species and 11 federally listed animal species. USFWS-designated critical habitat occurs throughout the county.

Numerous drainages, creeks, rivers, wetlands, and riparian habitat occur within the IVMP service area, which support waters of the U.S. subject to the regulatory jurisdiction of the U.S. Army Corps of Engineers (USACE), pursuant to Section 404 of the federal Clean Water Act (CWA); waters of the State subject to the regulatory jurisdiction of the Regional Water Quality Control Board (RWQCB), pursuant to Section 401 of the CWA and/or Porter-Cologne Water Quality Act; and unvegetated stream channels and riparian habitat, subject to the regulatory jurisdiction of the CDFW to Section 1600 *et seq*. of California Fish and Game (CFG) Code.

Several conservation-planning efforts have been completed, or are in progress, throughout the county. These efforts consist of region-wide Natural Community Conservation Plans (NCCP) and Habitat Conservation Plans (HCP) with the long-term goal of establishing regional reserve systems that will protect native habitats and ensure the long-term survival of sensitive plant and animal species that

inhabit them. There are several NCCPs/HCPs in effect or under development within the IVMP service area. These include the San Diego Multiple Species Conservation Program (MSCP) covering the County of San Diego and other city jurisdictions in the southwestern portion of county, the North County Multiple Habitat Conservation Program (MHCP) covering the northwestern portion of the county, and respective MSCP and MHCP subarea plans. Adopted subarea plans under these programs include the County of San Diego (South County) MSCP Subarea Plan, City of San Diego MSCP Subarea Plan, and City of San Diego Vernal Pool HCP, City of Chula Vista MSCP Subarea Plan, City of La Mesa MSCP Subarea Plan, and City of Carlsbad Habitat Management Plan. Additionally, the San Diego County Water Authority (SDCWA) and San Diego Gas & Electric (SDG&E) have each developed and adopted their own respective NCCP/HCPs covering new projects and ongoing activities along existing SDCWA and SDG&E infrastructure which occurs throughout the county.

Implementation of the IVMP could result in potential significant impacts to special status plant and animal species, riparian habitat and sensitive vegetation communities, and jurisdictional waters and wetlands. These impacts may be associated with surveillance and monitoring, source reduction, and/or source treatment activities. Other vector control techniques (i.e., public education and outreach and disease diagnostics) would be unlikely to result in impacts to biological resources. The IVMP would follow state and local guidance documents for conducting inspections and vector treatment abatement activities and would implement Best Management Practices (BMPs) to avoid and minimize impacts to sensitive biological resources. Mitigation measures are proposed to fully mitigate potential significant impacts on special status species, sensitive vegetation communities/habitats, and jurisdictional waters and wetlands. Implementation of these mitigation measures would reduce potential impacts to below a level of significance.

1.0 INTRODUCTION

1.1 PURPOSE OF REPORT

HELIX Environmental Planning, Inc. (HELIX) has completed this biological resources technical report for the County of San Diego (County) Department of Environmental Health and Quality (DEHQ) Integrated Vector Management Program (IVMP; Proposed Project). The IVMP carries out a full range of vector control activities, practices, and procedures to protect the public from vector-borne diseases and public nuisances while simultaneously protecting the environment. For the purposes of this analysis, the Proposed Project consists of the ongoing implementation of the IVMP. The purpose of this report is to document the existing biological conditions within the study area and provide an analysis of potential impacts to sensitive biological resources with respect to local, state, and federal policy. This report provides the biological resources technical documentation necessary for review under the California Environmental Quality Act (CEQA).

1.2 PROJECT BACKGROUND, LOCATION, AND DESCRIPTION

1.2.1 Project Background

The County's DEHQ Vector Control Program (VCP) is a public health program that was established to monitor and control vectors that transmit diseases and create public nuisances within San Diego County. For the purposes of the Proposed Project, a vector is defined as any animal capable of spreading disease or producing human discomfort or injury, including, but not limited to, mosquitoes, flies, mites, ticks, other arthropods, and rodents and other vertebrates (California Health and Safety Code Section 2002[k]).

The VCP is managed by County staff, governed by the County Board of Supervisors, and implemented within a service area that includes all 18 incorporated cities and unincorporated areas of San Diego County. The VCP serves to reduce exposure to vectors and vector-borne diseases in a manner that minimizes risks to people, property, and the environment through a coordinated set of activities collectively known as the IVMP. The IVMP carries out a full range of vector control activities, practices, and procedures to protect the public from vector-borne diseases and public nuisances while allowing for the inclusion of progressive and emerging vector control techniques, tools, and materials. The IVMP would continue to operate using a comprehensive approach by applying such techniques as surveillance, source reduction, source treatment, public education, and outreach. These techniques would be applied to the various vectors and nuisance species covered under the IVMP, including but not limited to mosquitoes, ticks, rodents, eye gnats, and flies.

Vector-Borne Diseases in the Service Area

Commonly encountered species of mosquitoes (*Culex tarsalis*, *Culex quinquefasciatus*, *Culex erythrothorax*, *Culex stigmatosoma*, *Culex thriambus*, *Culex restuans*, *Culiseta inornata*, *Anopheles hermsi*, *Aedes sierrensis*, and *Aedes taeniorhynchus*) detected in San Diego County have the ability to transmit endemic diseases such as encephalitis, malaria, canine heartworm, and/or West Nile virus. Two invasive *Aedes* species detected in the county since 2014 and 2015 (*Aedes aegypti* and *Aedes albopictus*, respectively) can transmit viruses such as dengue, Zika, and chikungunya. A third invasive *Aedes* species, *Aedes notoscriptus*, has also been detected, and has the potential to transmit viruses and heartworm as

well. Potential breeding sources may include private and public lands containing rivers, streams, marshlands, lagoons, ponds, and various other human-made and natural sources of standing water.

In addition to mosquito-borne diseases, the VCP also conducts surveys and tests for diseases carried by other insects and small mammals. This includes tick-borne illnesses such as tularemia, Lyme disease, and Rocky Mountain Spotted Fever; plague, a disease caused by the bacterium *Yersinia pestis*, transmitted by the bite of infected fleas and infected rodents, particularly California ground squirrel (*Otospermophilus beecheyi*); and rodent-borne illnesses such as Hantavirus Pulmonary Syndrome (HPS).

1.2.2 Project Location

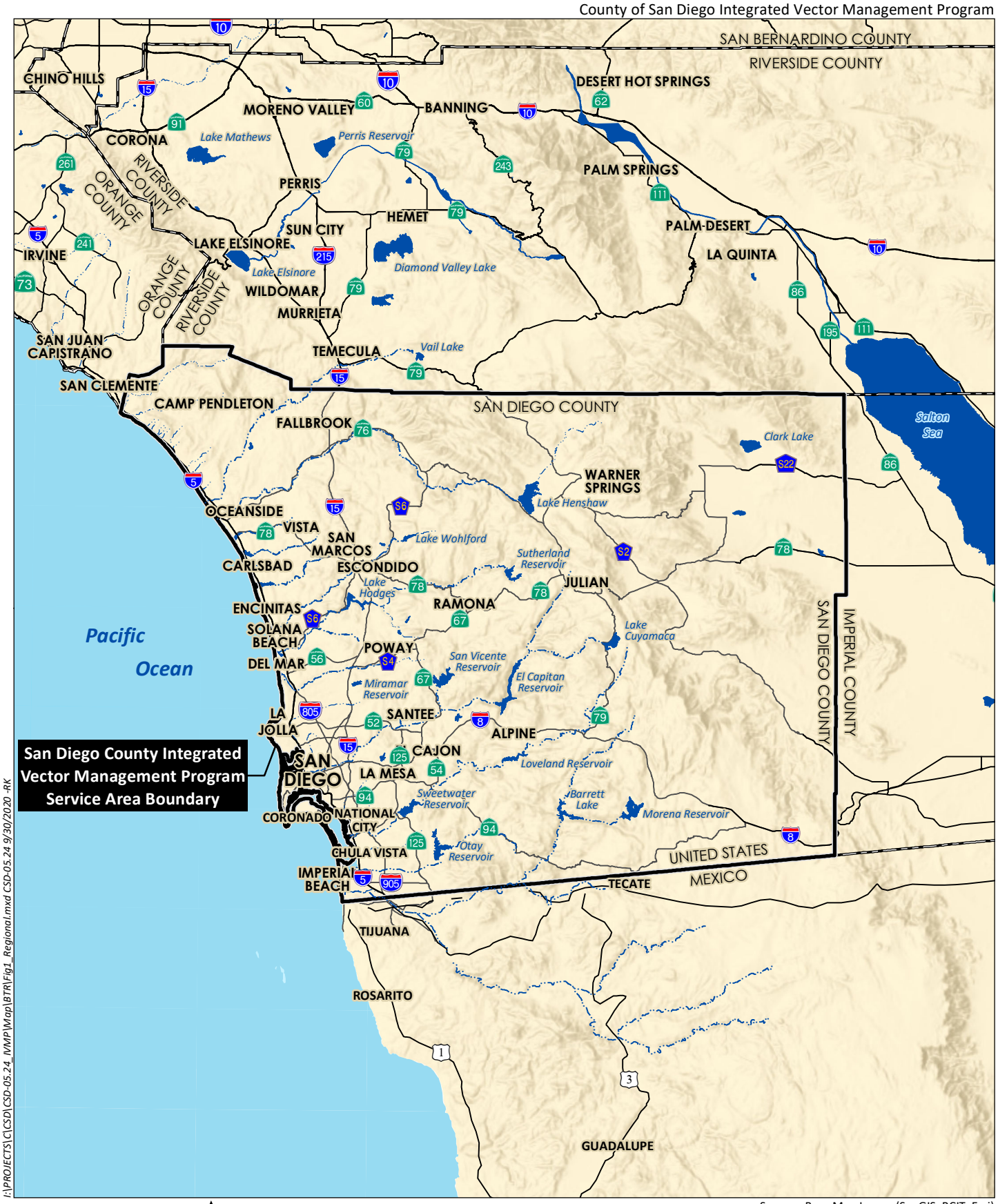
The IVMP service area is located in southwestern California and is defined by the boundaries of San Diego County (Figure 1, *Regional Location*; Figure 2, *Integrated Vector Management Program Service Area*). The county is bordered by Orange and Riverside counties to the north, Imperial County to the east, the Pacific Ocean to the west, and the U.S./Mexico International Border to the south. The service area encompasses approximately 4,261 square miles, and includes all unincorporated areas within the county, as well as the 18 incorporated cities (Carlsbad, Chula Vista, Coronado, Del Mar, El Cajon, Encinitas, Escondido, Imperial Beach, La Mesa, Lemon Grove, National City, Oceanside, Poway, San Diego, San Marcos, Santee, Solana Beach, and Vista). The unincorporated portion of the county is divided into 23 planning areas. Fourteen of the planning areas are referred to as Community Planning Areas (CPAs), and nine areas are called Subregional Planning Areas (Subregions). The CPAs are Alpine, Bonsall, County Islands, Fallbrook, Julian, Lakeside, Pendleton/De Luz, Rainbow, Ramona, San Dieguito, Spring Valley, Sweetwater, Valle de Oro, and Valley Center. The nine Subregions are Central Mountain, Crest/Dehesa/Harbison Canyon/Granite Hills, Desert, Jamul/Dulzura, Mountain Empire, North County Metropolitan, North Mountain, Otay, and Pala/Pauma Valley. The location and extent of specific activities implemented under the IVMP are evaluated based on the site-specific situation and dictated by the targeted vector, regulatory requirements, and applicable management approaches.

1.2.3 Project Description

Under the Proposed Project, the IVMP would continue to comprehensively implement vector control through various techniques, including surveillance and monitoring, source reduction (i.e., physical control), source treatment (i.e., biological and chemical controls), public education and outreach, and disease diagnostics. Each of these techniques would be applied to the applicable vectors under the IVMP, including disease-transmitting mosquitoes (i.e., *Culex* spp. and *Aedes* spp.); nuisance mosquitoes (i.e., not disease-transmitting); vectors associated with mammalian disease reservoirs (i.e., ticks and rodents); and other nuisance species (e.g., eye gnats not on commercial organic farms) deemed necessary for control as approved by the VCP. The five core services of the IVMP include: (1) early detection of public health risks through comprehensive vector surveillance and testing; (2) control and reduction of vectors that transmit diseases to humans or create public nuisance; (3) dissemination of information regarding tools for prevention, protection, and reporting of vectors that transmit diseases; (4) appropriate and timely response to vector-related customer complaints; and (5) detection of vector-borne pathogens.

The objectives of the IVMP are to:

1. Protect public health, well-being, and economic effects from vectors throughout San Diego County by applying integrated vector management practices.

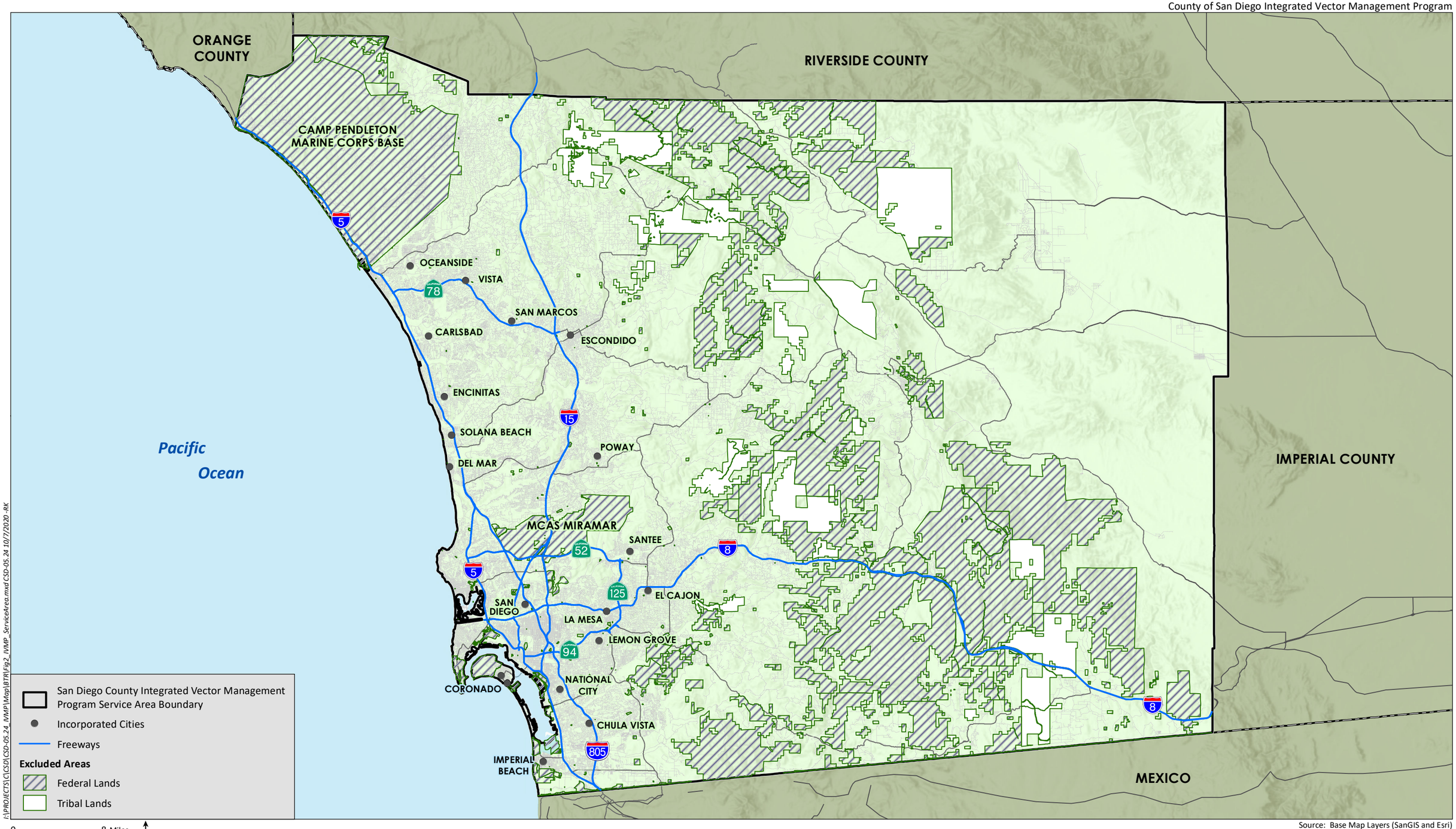


HELIX Environmental Planning

Regional Location

Figure 1

County of San Diego Integrated Vector Management Program



Source: Base Map Layers (SanGIS and Esri)

I:\PROJECTS\CLCSD\CSD-05.24_IVMP\Map\BTR\Fig2_IVMP_ServiceArea.mxd CSD-05.24 10/7/2020 -RK

HELIX Environmental Planning

Integrated Vector Management Program Service Area

Figure 2

2. Implement effective and efficient integrated vector management practices in a manner that balances environmental impacts with the need to protect humans from vector-borne diseases and public nuisances.

3. Coordinate with other regional vector control districts throughout California as well as state and federal public health and environmental protection agencies to allow for the inclusion of new, innovative, and improved vector control activities and technologies.

Vector control and surveillance activities are conducted by VCP staff under standard operating procedures (SOPs) and use a risk-based approach to determine appropriate levels of response to each vector of concern. The IVMP incorporates various vector management principles and techniques from guidance documents that are regularly updated, such as the VCP's annual *Mosquito, Vector, and Disease Control Assessment Engineer's Report* (hereafter referred to as Engineer's Report); West Nile Virus Strategic Response Plan; and Aedes Transmitted Disease Strategic Response Plan (County 2018a, 2018b and 2018c, respectively), as well as procedural documents such as the *Mosquito Breeding Site Access Standard Operating Procedure* (County 2014). The Engineer's Report describes the VCP's general practices and procedures and is updated annually. A general discussion of the key IVMP activities is discussed below.

Surveillance and Monitoring

Vector surveillance, monitoring, and diagnostics are needed to assess location and abundance of vector populations and species so that data-informed decisions can be made. Vector surveillance involves monitoring vector populations and habitat, their disease pathogens, and human/vector interactions. Vector surveillance provides the VCP with valuable information about which vector species are present or likely to occur, locations in which they may occur, abundance, and if they are carrying disease(s). The information obtained from surveillance is evaluated against treatment and risk-based response criteria to decide when and where to implement vector control measures, and to help form action plans that can also assist in reducing the risk of contracting disease or causing nuisance. Vector surveillance can help minimize the area to which control techniques may be applied by directing activities to the areas where it is needed.

The VCP monitors disease-carrying animals such as mosquitoes, ticks, and rodents, as well as other pests, including flies on commercial poultry ranches, within the IVMP service area. Monitoring includes such techniques as setting traps to determine abundance and species of mosquitoes; testing mosquitoes for presence of disease; collecting and testing dead birds for West Nile virus; and conducting surveys via ground vehicles, aircraft (including piloted and unmanned), watercraft, and remote sensing equipment to evaluate mosquito-breeding sources. Surveillance is also conducted for ticks and rodents.

The VCP operates the Vector Disease and Diagnostic Laboratory (VDDL), which provides diagnostic testing to support the VCP, helps evaluate public health risk, and determines the appropriate response or treatment. The VDDL tests vector specimens from the field for numerous diseases that could be a risk to public health.

Source Reduction

Source reduction (i.e., environmental modification) techniques are used to reduce vector-breeding sources such as habitat and other areas of harborage. Source reduction also involves physical control techniques that eliminate or reduce standing water, including but not limited to, ground disturbance

(e.g., grading), vegetation management (including physical removal and/or herbicide application), water control, and other maintenance activities. Trapping and removal of vectors is also a form of source reduction.

Source Treatment

Source treatment includes biological and chemical controls of vectors. Specifically, this includes the use of mosquito fish (*Gambusia affinis*) and application of pesticides, such as larvicides and adulticides to reduce larval and adult mosquito populations, respectively. Larvicides can include either naturally-occurring bacteria or synthetic products. For this reason, certain larvicides may be considered either a biological or chemical control. However, for the purpose of this technical report, the following analysis considers the physical act of applying pesticides since all pesticides used by the program have already been approved by the EPA as being safe for the environment when applied according to label directions (which the IVMP adheres to). The type and location of biological and chemical control varies based on different factors, including, but not limited to, the vector species and growth stage, environment, disease presence, and risk level to public health. Any pesticides applied within waterbodies defined by federal and state regulations as waters of the U.S. and/or State are conducted in accordance with the Statewide National Pollutant Discharge Elimination System (NPDES) Permit for Biological and Residual Pesticide Discharges to Waters of the U.S. from Vector Control Applications (Order No. 2016-0039-DWQ, General Permit No. CAG990004). Methods of application include, but are not limited to, backpack applicators, truck-mounted equipment, or other motorized vehicles (e.g., piloted and unmanned aircraft, watercraft). Source treatment of non-mosquito vectors can include, but are not limited to, chemical controls applied to mammal vectors such as rodents and mammal-related disease carriers such as ticks, fleas, and other arthropods. When pesticides are applied, label requirements are followed by VCP staff.

Public Education and Outreach

Public education and outreach activities are conducted to increase prevention and protection against disease-carrying vectors. VCP staff distribute educational materials, provide informational displays and presentations, use social media and informational emails, and conduct media campaigns.

Vector Control Strategies

Vector management strategies are updated as new information becomes available and are adapted and applied to new or emerging vectors as they arise. New vector control methods are based on empirical data, scientific evidence, published research, current state and federal guidelines, expert guidance, and the VCP's experience conducting vector control activities. The IVMP would allow for the integration of new and improved vector control activities and materials established in coordination with other regional vector control districts and research institutions throughout California, as well as state and federal agencies such as the California Department of Public Health (CDPH), California Environmental Protection Agency (CalEPA), the U.S. Environmental Protection Agency (USEPA), and the Centers for Disease Control and Prevention (CDC). Emerging safe and effective vector control strategies that may be implemented to address future public health risks and public nuisances could include, but not be limited to, increased or advanced/early source prevention and/or reduction, surveillance, or physical/biological/chemical controls, depending on the assessment.

1.3 METHODS

1.3.1 Literature Review

Baseline biological resources information for the service area was reviewed and compiled from several sources including the Final Multiple Species Conservation Program (MSCP) Plan (County 1998), County MSCP Subarea Plan (County 1997), the U.S. Fish and Wildlife Service (USFWS) species records (USFWS 2020a), California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB; CDFW 2020a), County's SanBIOS data (County 2020), and California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (CNPS 2020). Recent aerial imagery, topographic maps, soils maps (Natural Resource Conservation Service [NRCS] 2020), regional vegetation mapping (San Diego Geographic Information Source [SanGIS] 2020), and other maps of the service area were acquired and reviewed to obtain updated information on the natural environmental setting.

1.3.2 Nomenclature

Nomenclature used in this report generally comes from Holland (1986) and Oberbauer (2008) for vegetation; Jepson eFlora (2020) and Baldwin et al. (2012) for plants; NatureServe (2020) for insects; Pelham (2020) and Davenport (2018) for butterflies; Society for the Study of Amphibians and Reptiles (2020) for reptiles and amphibians; American Ornithological Society (2020) for birds; and Tremor et al. (2017) for mammals. Plant species status is from the CNPS Rare Plant Inventory (CNPS 2020), CDFW (2020b), and County (2010a). Animal species status is from the CDFW (2020c) and County (2010a).

1.4 ENVIRONMENTAL SETTING

1.4.1 Regional Context

The county is generally a semi-arid environment and supports a wide range of habitats and biological communities that vary greatly depending on the eco-region, soils and substrate, elevation, and topography. Representative habitats within the county include beaches, tidal marshes, and lagoons along the coast; coastal sage scrub, chaparral, grassland, riparian scrub and forests, oak woodlands, and freshwater lakes (both natural and artificial) throughout the lowlands and foothills; mixed chaparral, oak woodlands, and coniferous forest associated with the higher elevation mountain ranges in the east; and desert scrub and badlands located in the eastern portion of the county within the Colorado Desert. These communities provide habitat for a vast assemblage of flora and fauna, many of which are endemic to California.

Several conservation-planning efforts have been completed, or are in progress, throughout the county. These efforts consist of region wide Natural Community Conservation Plans (NCCP) and Habitat Conservation Plans (HCP) with the long-term goal of establishing regional preserve systems that will protect native habitats and ensure the long-term survival of sensitive plant and animal species that inhabit them. There are several NCCPs/HCPs in effect or under development within the IVMP service area as summarized in Table 1, *Natural Community Conservation Plans/Habitat Conservation Plans within San Diego County*. These include the San Diego County MSCP covering the County and other city jurisdictions in the southwestern portion of county, the North County Multiple Habitat Conservation Program (MHCP) covering the northwestern portion of the county, and respective MSCP and MHCP subarea plans (Figure 3, *Natural Community Conservation Plans/Habitat Conservation Plans*). Additionally, the San Diego County Water Authority (SDWCA) and San Diego Gas & Electric (SDG&E)

have each developed and adopted their own respective NCCP/HCPs covering new projects and ongoing activities along existing infrastructure which occurs throughout the county. These plans are specific to activities conducted by the SDWCA and SDG&E and are not applicable to other agencies and projects.

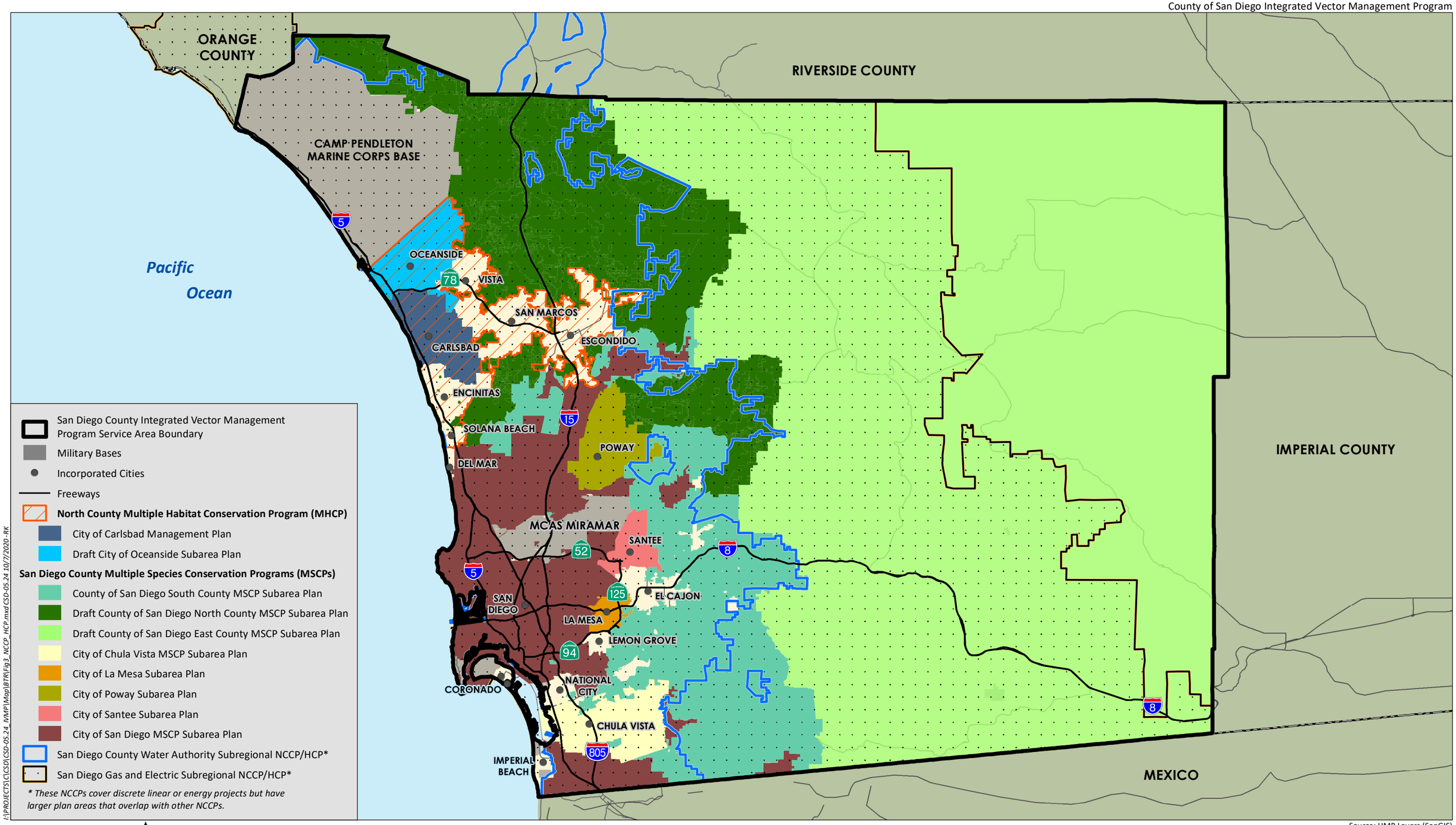
Table 1
NATURAL COMMUNITY CONSERVATION PLANS/
HABITAT CONSERVATION PLANS WITHIN SAN DIEGO COUNTY

NCCP/HCP
North County Multiple Habitat Conservation Program (MHCP)
Final Plans
City of Carlsbad Habitat Management Plan
In Development
City of Encinitas MHCP Subarea Plan
City of Escondido MHCP Subarea Plan
City of Oceanside MHCP Subarea Plan
City of San Marcos MHCP Subarea Plan
City of Vista MHCP Subarea Plan
San Diego County Multiple Species Conservation Program (MSCP)
Final Plans
County of San Diego (South County) MSCP Subarea Plan
City of Chula Vista MSCP Subarea Plan
City of La Mesa MSCP Subarea Plan
City of Poway MSCP Subarea Plan
City of San Diego MSCP Subarea Plan
City of San Diego Vernal Pool Habitat Conservation Plan
In Development
County of San Diego (North County) MSCP Subarea Plan
County of San Diego (East County) MSCP Subarea Plan
City of Coronado MSCP Subarea Plan
City of Del Mar MSCP Subarea Plan
City of El Cajon MSCP Subarea Plan
City of Santee MSCP Subarea Plan
San Diego County Water Authority Subregional NCCP/HCP (Final Plan)[1]
San Diego Gas & Electric Subregional NCCP (Final Plan)[1]

[1] These NCCPs cover discrete linear or energy projects but have larger plan areas that overlap with other NCCPs.

These NCCPs/HCPs have been designed to protect and preserve native habitats and sensitive plants and animal species by delineating areas of high biological value for conservation. Areas targeted for preservation include the County Pre-Approved Mitigation Areas (PAMA) and Hardline Preserve Areas, City of San Diego's Multi-Habitat Planning Area (MHPA), and other preserve areas associated with the various MSCP and MHCP subarea plans (Figure 4, *Open Space, Preserves, and Conserved Areas*). Additionally, various open space and other conserved lands occur throughout the county including private preserves; state preserves, ecological reserves, and wildlife areas; and federal national wildlife refuges.

Within the county, USFWS has designated critical habitat for nine federally listed plant species and 11 federally listed animal species (Figure 5, *USFWS-Designated Critical Habitat*; USFWS 2020b). Critical habitat includes specific areas that contain physical and biological features that are essential to the



I:\PROJECTS\C\CSD\CSD-05.24_WMP\Map\BTR\Fig3_NCCP_HCP.mxd CSD-05.24 10/7/2020 -RK

Source: HMP Layers (SanGIS)

HELIX Environmental Planning

Natural Community Conservation Plans/Habitat Conservation Plans

Figure 3

ORANGE COUNTY

RIVERSIDE COUNTY

IMPERIAL COUNTY

MEXICO

Pacific Ocean

CAMP PENDLETON MARINE CORPS BASE

MCAS MIRAMAR

OCEANSIDE

VISTA

SAN MARCOS

ESCONDIDO

CARLSBAD

ENCINITAS

SOLANA BEACH

DEL MAR

POWAY

SANTEE

EL CAJON

LA MESA

LEMON GROVE

SAN DIEGO

NATIONAL CITY

CORONADO

CHULA VISTA

IMPERIAL BEACH

5 78 15 52 8 125 94 805

San Diego County Integrated Vector Management Program Service Area Boundary

Military Bases

Incorporated Cities

Freeways

Conserved Lands*

North County Multiple Habitat Conservation Program (MHCP) Preserve Areas

City of Carlsbad HMP Hardline Preserve

City of Encinitas MHCP Softline and Hardline Preserves

City of Oceanside Preserves

San Diego County Multiple Species Conservation Programs (MSCPs)

City of Chula Vista MSCP Preserves

City of San Diego Multi-Habitat Planning Area

County of San Diego South County MSCP Subarea Plan PAMA and Hardline Preserve

Draft County of San Diego North County MSCP PAMA and Preserve Areas

Draft County of San Diego East County MSCP Open Space and Preserve Areas

**Conserved Lands come from SanGIS, as created by SANDAG, and represent open space areas including those located inside and outside NCCP areas.*

I:\PROJECTS\CLCSD\CSD-05.24_IVMP\Map\BTR\Fig4_OpenSpace.mxd CSD-05.24 10/7/2020 RK

0 8 Miles

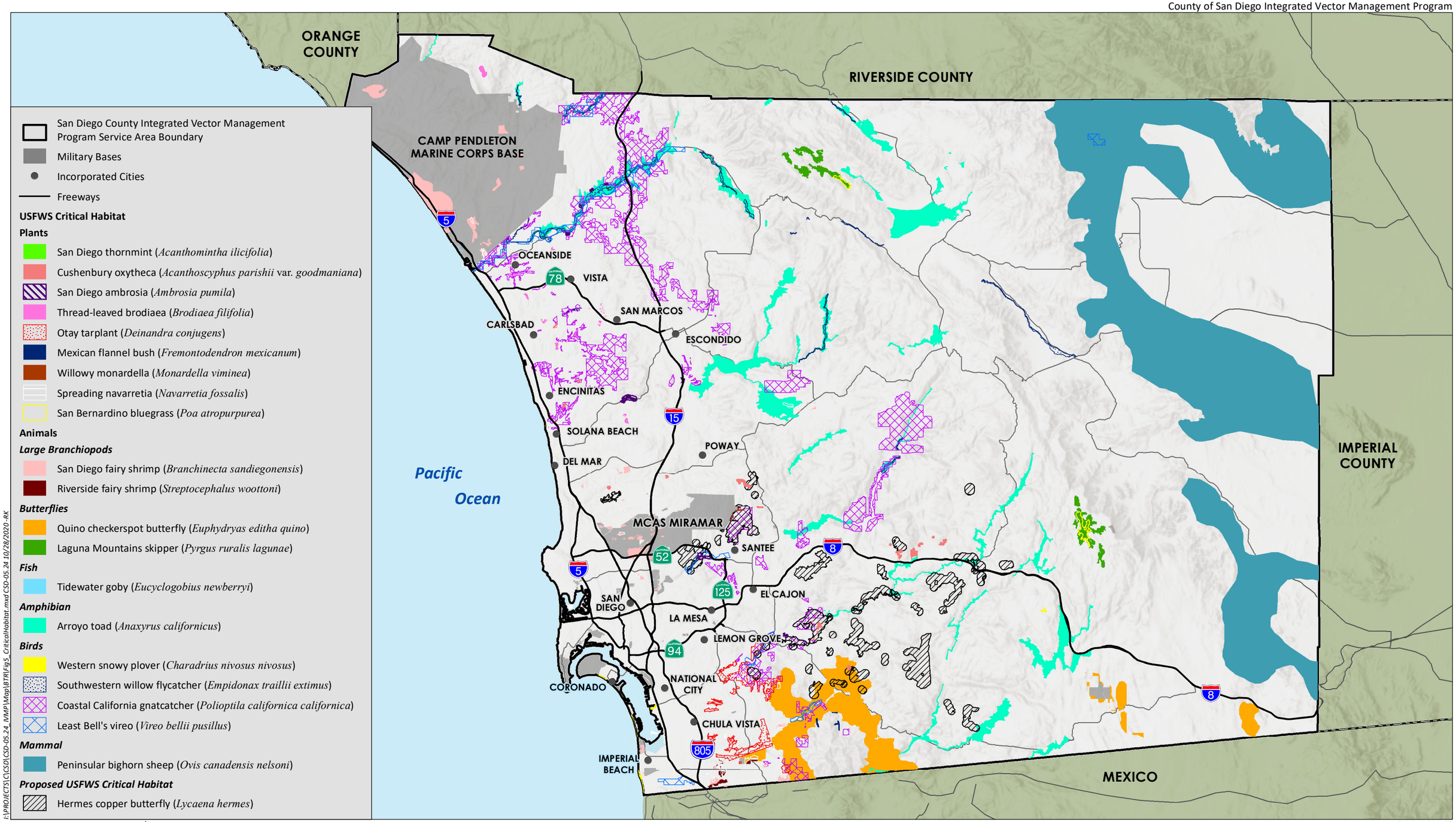
N

Source: Open Space/Preserve Layers (SanGIS, City of Chula Vista, City of Carlsbad, City of Encinitas, City of Oceanside)

HELIX Environmental Planning

Open Space, Preserves, and Conserved Lands

Figure 4



I:\PROJECTS\CSD\CSD-05.24_NMP\Mxd\BTR\Fig5_CriticalHabitat.mxd CSD-05.24 10/28/2020 -RK

Source: Critical Habitat (USFWS 2020b)

HELIX Environmental Planning

USFWS - Designated Critical Habitat

Figure 5

conservation and recovery of federally listed species. USFWS-designated critical habitat for the following species occurs within the IVMP service area:

1. Plants: San Diego thornmint (*Acanthomintha ilicifolia*), cushenbury oxytheca (*Acanthoscyphus parishii* var. *goodmaniana*), San Diego ambrosia (*Ambrosia pumila*), thread-leaved brodiaea (*Brodiaea filifolia*), Otay tarplant (*Deinandra conjugens*), Mexican flannel bush (*Fremontodendron mexicanum*), willowy monardella (*Monardella viminea*), spreading navarretia (*Navarretia fossalis*), and San Bernardino bluegrass (*Poa atropurpurea*);

2. Large brachiopods: San Diego fairy shrimp (*Branchinecta sandiegonensis*) and Riverside fairy shrimp (*Streptocephalus woottoni*);

3. Butterflies: quino checkerspot butterfly *(Euphydryas editha quino*) and Laguna Mountains skipper (*Pyrgus ruralis lagunae*);

4. Fish: tidewater goby (*Eucyclogobius newberryi*);

5. Amphibian: arroyo toad (*Anaxyrus californicus*);

6. Birds: western snowy plover (*Charadrius nivosus nivosus*), southwestern willow flycatcher (*Empidonax traillii extimus*), coastal California gnatcatcher (*Polioptila californica californica*), and least Bell's vireo (*Vireo bellii pusillus*);

7. Mammal: Peninsular bighorn sheep (*Ovis canadensis nelsoni*).

Additionally, on January 8, 2020 the USFWS proposed listing the Hermes copper butterfly (*Lycaena hermes*) and designating its associated critical habitat. The public comment period closed on March 9, 2020. As of the date of this report, no ruling has been issued by USFWS classifying the species as threatened or designated its critical habitat.

1.4.2 General Land Uses

Land uses within the county vary between the urban areas along the coast and the more rural areas in the eastern regions. The majority of the land in the unincorporated county is open space or undeveloped, while the majority of land in the incorporated cities is developed. More than 50 percent of the total land area in the region is not available for urban development, including public lands, dedicated parks and open space, lands constrained for environmental reasons, and military use (SANDAG 2015). The highest population densities are found in the western (coastal) third of the county, where topography and mild coastal climatic conditions are more inducive to development. Urban uses tend to consist of residential and commercial uses, as well as small-scale agricultural and industrial uses. Land uses that occur throughout the county include low-density residential and commercial uses, agricultural operations, mineral resources and extraction, and undeveloped habitats, as well as national forest and state park lands. Public and semi-public facilities, recreational areas, and open space conservation areas are located throughout the county.

The existing transportation network consists of freeways, highways, regional arterials, local streets and roads, alternative transportation facilities, commercial and general aviation facilities, seaport facilities, and ports of entry at the U.S./Mexico border. These facilities serve the 18 cities and unincorporated areas of the county.

1.4.3 Topography

The county is bisected by the Laguna Mountain Range which extends roughly north to south and generally parallel to the coast and is located approximately 45 miles inland. The Laguna Mountains have peaks reaching over 6,000 feet above mean sea level (AMSL) and separates the western coastal area from the eastern desert portion of the county. The coastal region is made up of coastal terraces that rise from the ocean into wide mesas that transition into the Laguna Foothills to the east. Farther east, the topography gradually rises to the rugged mountains, then drops rapidly to the Anza-Borrego Desert, which is characterized by several broken mountain ranges with desert valleys in between. To the north of the county are the Santa Ana Mountains, which trend along the coast of Orange County, turning east to join with the Laguna Mountains near the San Diego-Orange County border (County 2011).

1.4.4 Climate

The climate of the San Diego region varies by location, but is generally classified as a Mediterranean climate, with warm, dry summers and mild, wet winters. Temperatures in the region are typically moderate on the coast, with an average high temperature of 69.9 degrees Fahrenheit (°F) and an average low temperature of 56.5°F. Average monthly temperatures rarely exceed 75°F. Average annual precipitation on the coast is approximately 10.1 inches. In contrast, the average high temperature within the desert subregion (e.g., unincorporated community of Borrego Springs) is 88.3°F, and the average low is 63.6°F. Average monthly temperatures in the desert subregion typically exceed 100°F in summer months, which are very dry and see little precipitation. Average annual precipitation in the desert subregion is 5.3 inches (SANDAG 2015).

1.4.1 Habitat Types/Vegetation Communities

Several vegetation communities are present within the IVMP service area, including vegetated wetlands such as freshwater marsh, tidal marshes, sloughs, wet meadows, riparian scrub, and riparian forest, unvegetated open waters such as lakes and ponds, and upland vegetation communities such as oak woodland, sage scrub, chaparral, desert scrub, and grassland habitats (Figure 6*, Regional Vegetation Mapping*). Due to the programmatic nature of this document and the vast size of the IVMP service area, vegetation communities are only described in generalized terms. Table 2, *Vegetation Communities within San Diego County*, lists representative vegetation communities that are mapped on a regional scale according to publicly available data available through the SanGIS website (SanGIS 2020) and are separated into three categories: wetlands and waters, sensitive uplands, and non-sensitive uplands. The numeric codes in parentheses following each community/land use type name are from the Holland classification system (Holland 1986) as added to by Oberbauer (2008). A comprehensive list and description of vegetation communities within county is included in the *Draft Vegetation Communities of San Diego County* (Oberbauer 2008).

Table 2
VEGETATION COMMUNITIES WITHIN SAN DIEGO COUNTY

Vegetation Community[1]		
Wetlands and Waters	**Sensitive Uplands**	**Non-Sensitive Uplands**
Disturbed Wetland (11200)	Coastal Dunes (21000)	Non-Native Vegetation (11000)
Vernal Pool (44000)	Desert Dunes (22000)	Disturbed Habitat (11300)
Meadows and Seeps (45000)	Coastal Bluff Scrub (31000)	Urban/Developed (12000)
Alkali Playa (46000)	Coastal Scrub (32000)	Agriculture (18000)
Coastal Salt Marsh (52100)	Sonoran Desert Scrub (33000)	Badlands/Mudhills (25000)
Freshwater Marsh (52400)	Chaparral (37000)	Eucalyptus Woodland (79100)
Herbaceous Wetland (52510)	Native Grassland (42100)	
Riparian Forest (61000)	Non-native Grassland (42200)	
Riparian Woodland (62000)	Oak Woodlands (71100)	
Riparian Scrub (63000)	Oak Forest (81310)	
Open Water (64100)	Closed-Cone Coniferous Forest (83000)	
Non-Vegetated Floodplain or Channel (64200)	Lower Montane Coniferous Forest (84000)	
Saltpan/Mudflats (64300)		
Beach (64400)		
Non-Native Riparian (65000)		

[1] Vegetation categories and numerical codes are from Holland (1986) and Oberbauer (2008).

Sensitive vegetation communities/habitat types are defined as land that supports unique vegetation communities or the habitats of rare or endangered species or subspecies of animals or plants as defined by Section 15380 of the state CEQA Guidelines. Sensitive vegetation communities within the county include those that have been identified within the County Guidelines for Determining Significance of Biological Resources (County 2010a), various MSCP and MHCP subarea plans, and are protected by local jurisdictions and ordinances.

Sensitive vegetation communities/habitat types within the IVMP service area include all waters and wetland habitat, coastal and desert dunes, coastal and desert scrub habitats, chaparral, native and non-native grasslands, oak woodlands and forests, and coniferous forests.

1.4.2 Special Status Plant Species

Special status plant species have been afforded special status and/or recognition by the USFWS, CDFW, and/or the County and may also be included in the CNPS Inventory of Rare and Endangered Plants. Their status is often based on one or more of three distributional attributes: geographic range, habitat specificity, and/or population size. A species that exhibits a small or restricted geographic range (such as those endemic to the region) is geographically rare. A species may be abundant but occur only in very specific habitats. Lastly, a species may be widespread but exist naturally in small populations.

Based on a review of CNPS (2020), CNDDB (CDFW 2020a), and USFWS species occurrence data (USFWS 2020a), a total of 296 special status plant species have been documented within the IVMP service area. Of these, 36 are federally and/or state listed or candidate species. A list of special status plant species and habitat associations is included in Appendix A, *Special Status Plant Species with Potential to Occur within the IVMP Service Area*. Status codes are defined in Appendix C, *Explanation of Status Codes for Plant and Animal Species*. Due to the programmatic nature of this document and the vast size of the IVMP service area, only special status plant species that are state- and/or federally-listed have a

California Rare Plant Rank (CRPR) of 1 or 2, as designated by CNPS, or are considered sensitive by the County (County 2010a) are included in Appendix A.

USFWS has designated critical habitat for nine federally listed plant species within the county (Figure 5), including San Diego thornmint, cushenbury oxytheca, San Diego ambrosia, thread-leaved brodiaea, Otay tarplant, Mexican flannel bush, willowy monardella, spreading navarretia, and San Bernardino bluegrass.

1.4.3 Special Status Animal Species

Special status animal species include those that have been afforded special status and/or recognition by the USFWS, CDFW, and/or the County. In general, the principal reason an individual taxon (species or subspecies) is given such recognition is the documented or perceived decline or limitations of its population size or geographical extent and/or distribution, resulting in most cases from habitat loss.

Based on a review of CNDDB (CDFW 2020a), USFWS species occurrence data (USFWS 2020a), and SanBIOS (County 2020), a total of 192 special status animal species have been documented within the IVMP service area consisting of 16 invertebrates, 6 fish, 7 amphibians, 27 reptiles, 107 birds, and 29 mammals. Of these, 41 are federally and/or state listed or candidate species. These species and habitat associations are included in Appendix B, *Special Status Animal Species with Potential to Occur within the IVMP Service Area*. Status codes are defined in Appendix C.

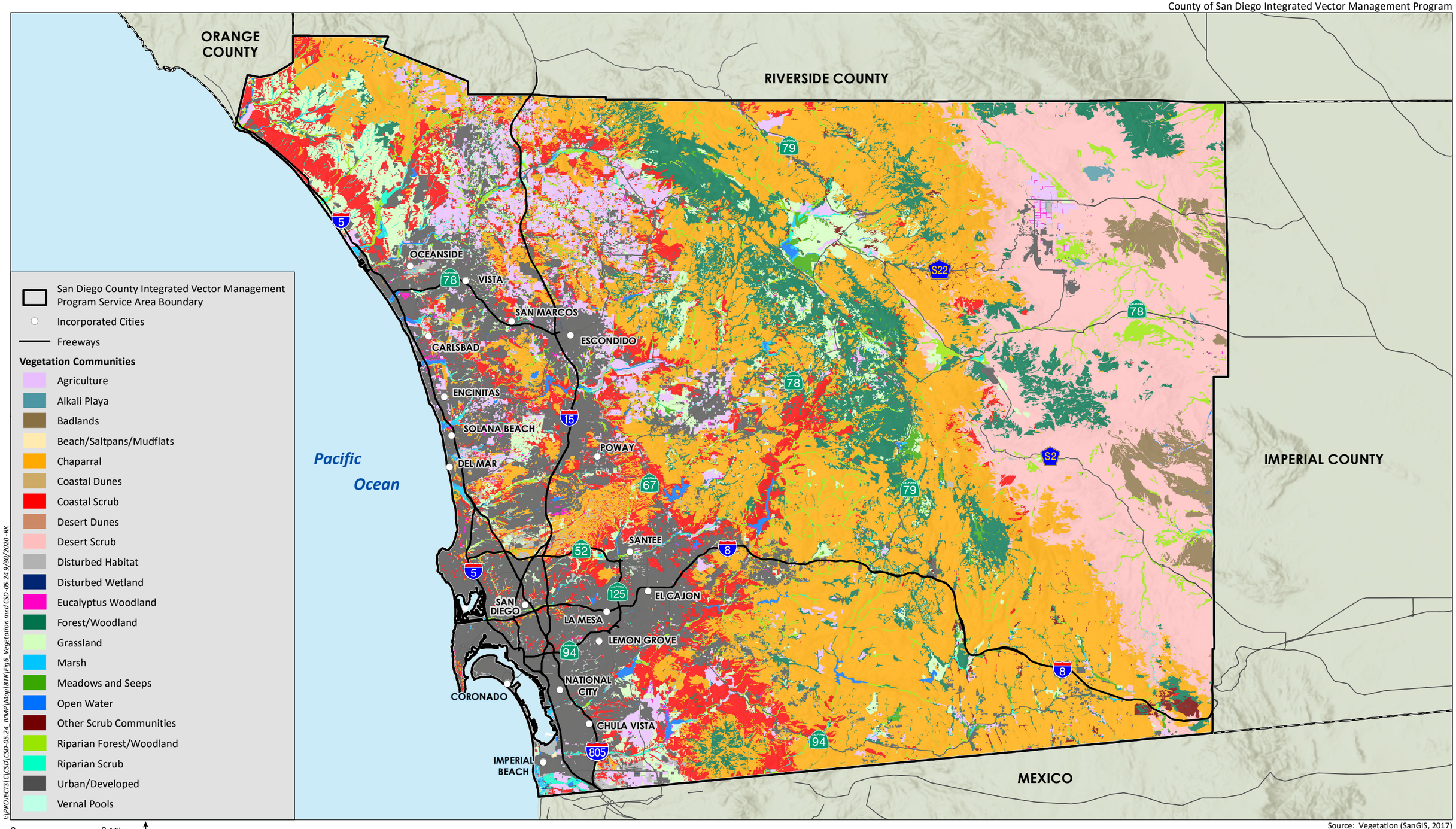
USFWS has designated critical habitat for 11 federally listed animal species within the county (Figure 5), including San Diego fairy shrimp, Riverside fairy shrimp, quino checkerspot butterfly, Laguna Mountains skipper, tidewater goby, arroyo toad, western snowy plover, southwestern willow flycatcher, coastal California gnatcatcher, least Bell's vireo, and Peninsular bighorn sheep. Additionally, proposed critical habitat for the proposed threatened Hermes copper butterfly is present within the county.

Raptor Foraging Habitat

The County (2010a) defines raptor foraging habitat as, "Land that is a minimum of five acres (not limited to project boundaries) of fallow or open areas with any evidence of foraging potential (i.e., burrows, raptor nests, etc.)." Suitable raptor foraging habitat occurs in a wide distribution across the county, typically consisting of grasslands, marshes, and fallow agricultural fields. There are several hawk and raptor species that are resident and migratory to San Diego County. Common species found within both urban, rural, and undeveloped areas include Cooper's hawk (*Accipiter cooperii*), red-tailed hawk (*Buteo jamaicensis*), and red-shouldered hawk (*Buteo lineatus*). Northern harrier (*Circus hudsonius*) and white-tailed kite (*Elanus leucurus*) are commonly found within wetland and riparian areas and forage over adjacent grasslands and open fields. Golden eagle (*Aquila chrysaetos*) tend to occur within the more rural and undeveloped eastern portions of the county where suitable nesting habitat, i.e., steep slopes and cliff ledges, is present and human disturbances are low.

1.4.4 Jurisdictional Waters and Wetlands

There are numerous waters and wetlands within the county which support waters of the U.S. subject to the regulatory jurisdiction of the U.S. Army Corps of Engineers (USACE), pursuant to Section 404 of the federal Clean Water Act (CWA); waters of the State, subject to the regulatory jurisdiction of the Regional Water Quality Control Board (RWQCB), pursuant to Section 401 of the CWA and/or Porter-Cologne Water Quality Act; and unvegetated stream channels and riparian habitat, subject to the regulatory jurisdiction of the CDFW to Section 1600 *et seq*. of California Fish and Game (CFG) Code. National



I:\PROJECTS\C\CSD\CSD-05.24_IVMP\Map\BTR\Fig6_Vegetation.mxd CSD-05.24 9/30/2020 -RK

Source: Vegetation (SanGIS, 2017)

HELIX Environmental Planning

Regional Vegetation Mapping

Figure 6

datasets from the U.S. Geological Survey's (USGS 2020) National Hydrography Dataset (NHD) and the USFWS's National Wetland Inventory (NWI; USFWS 2020c) depicting the approximate location of these resources are shown on Figure 7, *Potential Jurisdictional Resources*. Though these datasets provide a representative depiction of the location and abundance of potential jurisdictional resources present within the county, they are not considered a final determination on the extent and jurisdictional status of waters and wetlands within the IVMP service area. Instead, these datasets are used as references to help inform the potential for jurisdictional resources in an area, which would then require field verification and/or a formal delineation to determine the actual extent of potential jurisdictional resources. Potential jurisdictional resources within the IVMP service area consists of streams and rivers, ephemeral drainages, ponds and lakes, lagoons and estuaries, and associated wetland and riparian habitat.

1.4.5 Habitat Connectivity and Wildlife Corridors

Wildlife corridors connect otherwise isolated pieces of habitat and allow movement or dispersal of plants and animals. Local wildlife corridors allow access to resources such as food, water, and shelter within the framework of their daily routine. Regional corridors provide these functions over a larger scale and link two or more large habitat areas, allowing the dispersal of organisms and the consequent mixing of genes between populations. A corridor is a specific route that is used for the movement and migration of species and may be different from a linkage in that it represents a smaller or narrower avenue for movement. A linkage is an area of land that supports or contributes to the long-term movement of animals and genetic exchange by providing live-in habitat that connects to other habitat areas. Many linkages occur as stepping-stone linkages that are made up of a fragmented archipelago arrangement of habitat over a linear distance.

Local and regional wildlife movement corridors within the county primarily consist of riparian corridors and larger blocks of undeveloped habitat containing rugged terrain that provide sufficient vegetative cover to facilitate movement of both small and large mammals. These areas contain vital resources, such as food and water and conceal wildlife from anthropogonic influences that would otherwise deter wildlife usage. Movement corridors can provide both live-in habitat as well as a temporary refuge for wildlife when moving between more expansive blocks of habitat or areas of higher biological value. Wildlife movement within the western portion of the county, particularly along the coast, is heavily impaired and constrained by urban and residential development. Riparian corridors, preserves, and open space areas function as local movement corridors for smaller mammals, such as coyote (*Canis latrans*) and bobcat (*Lynx rufus*), and provide stepping-stone linkages for birds between key habitat blocks of upland and riparian habitat providing important breeding, foraging and dispersal functions. Movement of larger mammals, such as mule deer (*Odocoileus hemionus*), within the western portion of the county is concentrated within larger blocks of undeveloped habitat and open space areas such as Los Peñasquitos Canyon Preserve. Further inland, these wildlife movement corridors increase in function and support a wider range of species as development is largely rural, fewer major highways and roadways are present, and there are larger blocks of undeveloped land.

Regional movement corridors within the county have been identified in regional planning documents such as the San Diego MSCP and North County MHCP. The San Diego MSCP and North County MHCP delineated biological core and linkage areas which represent areas of high biological value that support sensitive resources and the identified linkages connecting these areas together (Figure 8, *Wildlife Movement Corridors and Linkages*; San Diego Management and Monitoring Program 2020). These linkages tend to be formed by rivers and valleys, mesa tops, and ridgelines such as San Diego River,

San Luis Rey River, San Dieguito River, Los Peñasquitos Creek, Sweetwater River, Otay River, Del Mar Mesa, Jamul Mountains, Otay Mountain, Lakes Hodges, and Lyons Valley. Areas targeted for conservation under the individual MSCP and MHCP subarea plans are based on the core and linkage concept of landscape-level conservation. The configuration of preserve lands includes large, contiguous areas of habitat supporting important species populations or habitat areas and important functional linkages and movement corridors between them. Additional linkage studies conducted by South Coast Wildlands (SCW), a nonprofit organization, have aimed to identify and conserve the highest-priority linkages in the South Coast Ecoregion, including San Diego region, known as the South Coast Missing Linkages (SCW 2008; Figure 8). SCW has identified linkages within the northern and eastern portions of the county connecting large blocks of habitat within Marine Corps Base Camp Pendleton (Camp Pendleton) and Laguna Mountains with the San Jacinto Mountains in Riverside County to the north.

1.5 APPLICABLE REGULATIONS

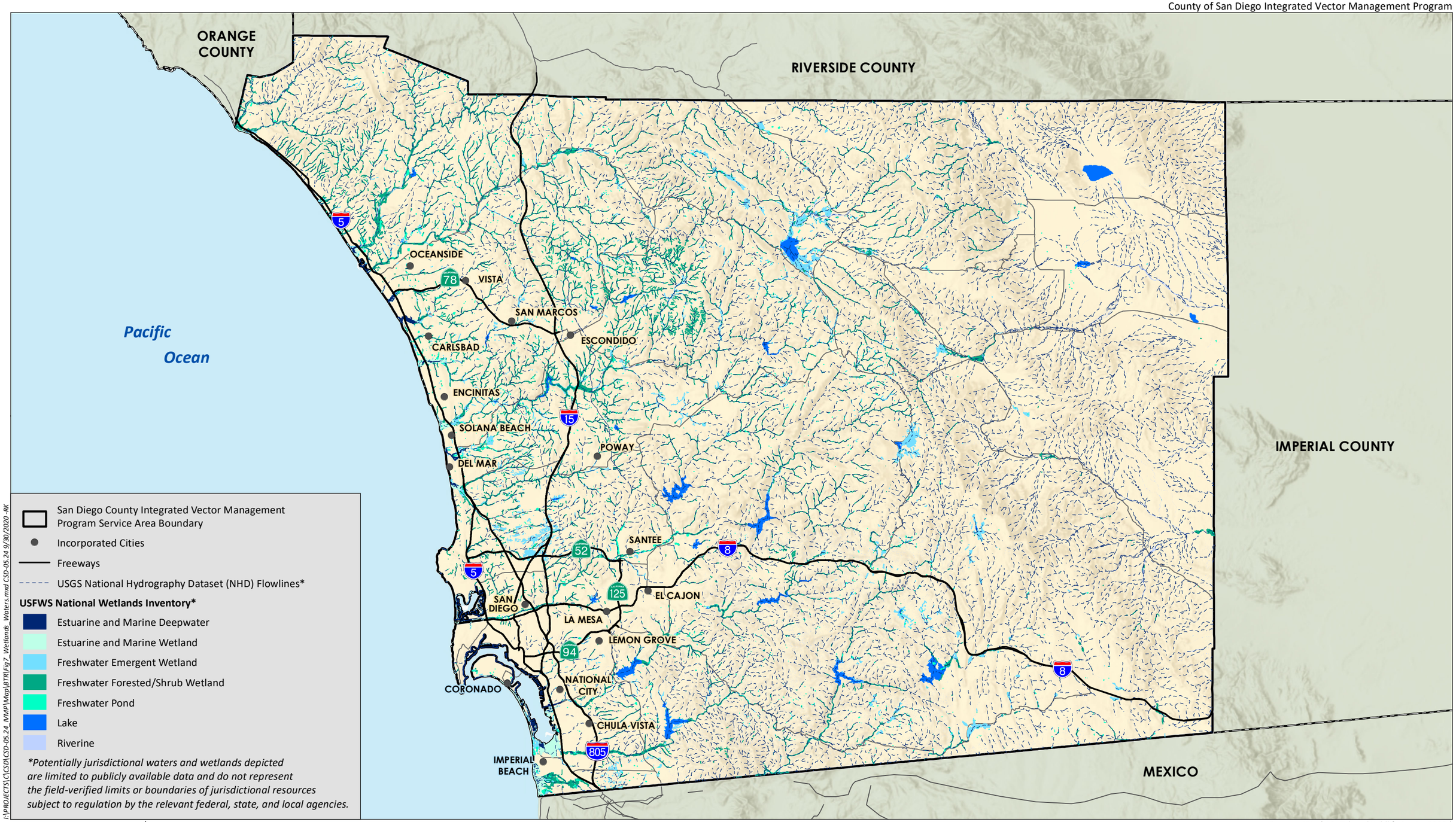
Biological resources in the IVMP service area are subject to regulatory review by federal, state, and local agencies. This section summarizes the program approvals/permits in Section 1.5.1 and describes the overall regulatory framework for the program in Section 1.5.2 (federal), Section 1.5.3 (state), and Section 1.5.4 (local).

1.5.1 Program Approvals/Permits

The VCP operates under the authority of the Mosquito Abatement and Vector Control District Law of the State of California (Health and Safety Code Section 2000-2093), which details the need and rationale for creating Mosquito Abatement and Vector Control Districts in the State. In July 1989, the County Board of Supervisors assumed the powers of a Vector Control District. The city council of each incorporated city consented to the Board's resolution, and the County's service area was formed, which includes all 18 incorporated cities and unincorporated areas of San Diego County. The Board delegated implementation and enforcement duties to the VCP, which continues to provide countywide vector prevention and control services to this day. The VCP's authority is further established in the California Government Code, California Health and Safety Code, California Civil Code, California Penal Code, San Diego County Code of Regulatory County Ordinances, San Diego County Code of Administrative County Ordinances, and CEQA.

Aside from the VCP's regulatory authority to monitor and control vectors, individual IVMP activities would be subject to applicable federal, state, and local environmental regulations, such as the Endangered Species Acts, Migratory Bird Treaty Act, Clean Water Act and Rivers and Harbors Act, Statewide General NPDES Permit for Vector Control, CFG Code, Porter-Cologne Water Quality Control Act, and others.

For individual IVMP activities located within federal, state, or local wildlife refuges, preserves, or conservation areas, DEHQ will continue to coordinate, review activities, and collaborate with applicable agencies including the USFWS, CDFW, and other local agencies, municipalities, and property owners. DEHQ will also continue to coordinate with various land managers and Resource Agencies (USACE, RWQCB, and CDFW) as needed to minimize the impacts of IVMP activities on jurisdictional waters and biological resources within designated reserves and refuges. IVMP activities will continue to be conducted in accordance with all current and future regulatory permits, right-of-entry agreements, and guidance documents including, but not limited to, those included in Table 3, *Regulatory Permits, Approvals, and Guidance Documents for Activities Implemented Under the IVMP*:



San Diego County Integrated Vector Management Program Service Area Boundary

Incorporated Cities

Freeways

USGS National Hydrography Dataset (NHD) Flowlines*

USFWS National Wetlands Inventory*

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine

**Potentially jurisdictional waters and wetlands depicted are limited to publicly available data and do not represent the field-verified limits or boundaries of jurisdictional resources subject to regulation by the relevant federal, state, and local agencies.*

0 8 Miles

N

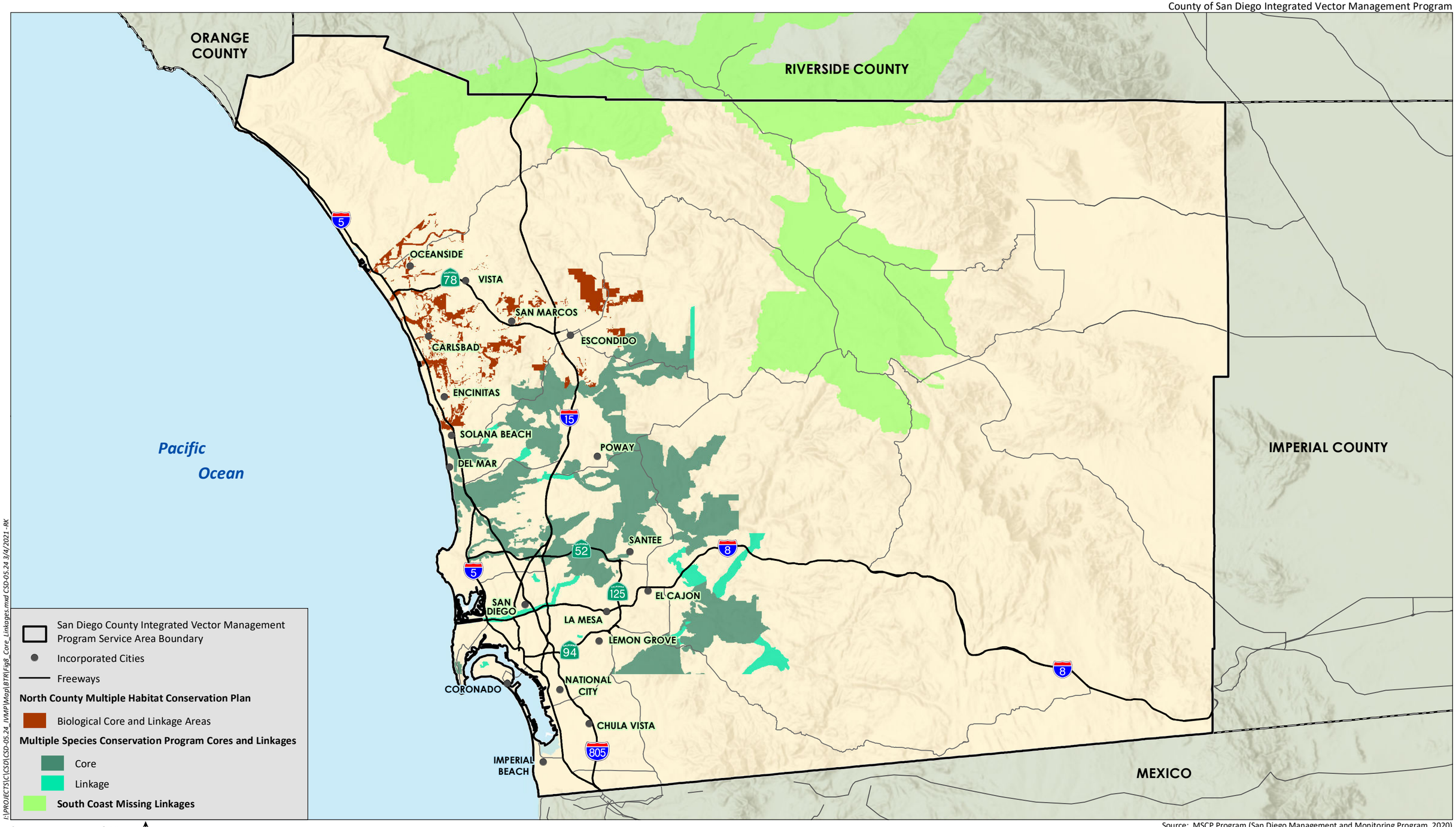
Sources: NWI (U.S. Fish and Wildlife Service 2020c)

I:\PROJECTS\CLCSD\CSD-05.24_IVMP\Map\BTR\Fig7_Wetlands_Waters.mxd CSD-05.24 9/30/2020 -RK

HELIX Environmental Planning

Potential Jurisdictional Waters and Wetlands

Figure 7



I:\PROJECTS\C\CSD\CSD-05.24_IVMP\Mxd\BTR\Fig8_Core_Linkages.mxd CSD-05.24 3/4/2021 - RK

Source: MSCP Program (San Diego Management and Monitoring Program, 2020)

HELIX Environmental Planning

Wildlife Movement Corridors and Habitat Linkages

Figure 8

Table 3
REGULATORY PERMITS, APPROVALS, AND GUIDANCE DOCUMENTS FOR ACTIVITIES IMPLEMENTED UNDER THE IVMP[1]

Title	Document (Permit/Guidance)	Agency	Summary
Federal Permits			
USFWS Special Use Permit - San Diego County Department of Environmental Health and Quality Vector Control Program	Special Use Permit	USFWS	Updated annually. Permits the County to access and conduct IVMP activities on USFWS-owned lands, such as the Tijuana Slough National Wildlife Refuge and San Diego Bay National Refugee, in coordination with USFWS Refuge staff.
State Permits			
Cooperative Agreement between CDPH and County of San Diego	n/a	CDPH	Renewed annually. Authorizes the County to conduct pest and vector prevention activities pursuant to California Health and Safety Code, Section 116180.
Statewide National Pollutant Discharge Elimination System (NPDES) Permit for Biological and Residual Pesticide Discharges to Waters of the United States from Vector Control Applications	General Permit No. CAG990004 Order No. 2016-0039-DWQ Enrollee No. 937AP00009	State Water Resources Control Board	Permits the use and discharge of biological and residual pesticides, including larvicides and adulticides, that are currently registered by the California Department of Pesticide Regulation, within waters of the U.S.
Memorandum of Understanding (MOU) between California Department of Fish and Wildlife (CDFW) and California Department of Public Health (CDPH) for Salvage of Bird, Lagomorph, and Rodent Carcasses for Detection of West Nile Virus Infection	MOU	CDFW	Renewed every five years. Allows for the salvage of dead birds, dead lagomorphs (rabbits and hares), and dead rodents (e.g., tree squirrels) for the detection of West Nile virus.
Local Permits			
Unified Program Facility Permit	DEH2010-HUPFP-211944	County DEHQ	Permit is required since the VCP stores/handles hazardous materials and generates hazardous waste.

Table 3 (cont.)
REGULATORY PERMITS, APPROVALS, AND GUIDANCE DOCUMENTS FOR ACTIVITIES IMPLEMENTED UNDER THE IVMP[1]

Title	Document (Permit/Guidance)	Agency	Summary
Guidance Documents			
California Mosquito-Borne Virus Surveillance and Response Plan (CDPH 2020)	Guidance	CDPH	Provides statewide guidelines and information on the surveillance and control of endemic mosquito-borne viruses in California, provides local and state agencies with a decision support system, and outlines the roles and responsibilities of local and state agencies involved with mosquito-borne virus surveillance and response.
Best Management Practices for Mosquito Control in California (CDPH 2012)	Guidance	CDPH	Provides property owners and land managers with Best Management Practices (BMPs) to control and reduce mosquito populations.
Best Management Practices for Mosquito Control on California State Properties (CDPH 2008)	Guidance	CDPH	Provides State agencies with BMPs to control and reduce mosquito populations on state-owned properties.
Mosquito Breeding Site Access and Proper Pesticide Treatment Standard Operating Procedure	Guidance	County	Establishes uniform procedures for accessing non-domestic mosquito breeding sources by VCP staff and safely applying pesticides according to the label in sensitive areas.
County of San Diego Department of Environmental Health and Quality Community Health Division Vector Control Program "Sensitive Species Site Access Guidance"	Guidance	CDPH	Provides guidance for technicians conducting inspections and treatments for mosquito abatement in habitats with sensitive species in order to minimize potential negative environmental impacts.

[1] Note: this table is not intended to be an exhaustive list of all permits or guidance documents currently utilized. Furthermore, all permits and guidance documents identified in this table are subject to change/revision.

1.5.2 Federal Government

Federal Endangered Species Act

Depending on the location and nature of individual IVMP activities, DEHQ may be required to consult with the USFWS under Section 7 of the federal Endangered Species Act (FESA) to address potential

impacts to sensitive species and habitats. DEHQ maintains a Special Use Permit for performing vector control activities on USFWS-owned land, including the Tijuana Estuary and the Sweetwater Marsh Unit.

Administered by the USFWS, the FESA provides the legal framework for the listing and protection of species (and their habitats) that are identified as being endangered or threatened with extinction. Actions that jeopardize endangered or threatened species and the habitats upon which they rely are considered a "take" under the FESA. Section 9(a) of the FESA defines take as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." "Harm" and "harass" are further defined in federal regulations and case law to include actions that adversely impair or disrupt a listed species' behavioral patterns.

The USFWS designates critical habitat for endangered and threatened species. Critical habitat is a term defined and used in the FESA and refers to specific geographic areas that contain features considered necessary for endangered or threatened species to recover. Critical habitat designations can include areas that are not currently occupied by the species, as the ultimate goal is to restore healthy populations of listed species within their native habitats so they can be removed from the list of threatened or endangered species. Once an area is designated as critical habitat pursuant to the FESA, all federal agencies must consult with the USFWS to ensure that any action they authorize, fund, or carry out is not likely to result in destruction or adverse modification of the critical habitat. Only activities that involve a federal permit, license, or funding require consultation with the USFWS.

Sections 7 and 10(a) of the FESA regulate actions that could jeopardize endangered or threatened species. Section 7 describes a process of federal interagency consultation for use when federal actions may adversely affect listed species. In this case, take can be authorized via a letter of biological opinion issued by the USFWS for non-marine related listed species issues. A Section 7 consultation (formal or informal) is required when there is a nexus between endangered species' use of a site and an associated federal action for a proposed impact (e.g., the USACE would initiate a Section 7 consultation with the USFWS for impacts proposed to USACE jurisdictional areas that may also affect listed species or their critical habitat). Section 10(a) allows issuance of permits for incidental take of endangered or threatened species with preparation of an HCP when there is no federal nexus. The term "incidental" applies if the taking of a listed species is incidental to, and not the purpose of, an otherwise lawful activity. An HCP demonstrating how the taking would be minimized and how steps taken would ensure the species' survival must be submitted for issuance of Section 10(a) permits. The San Diego MSCP and North County MHCP are regional HCPs that were developed pursuant to Section 10(a) of the FESA.

Migratory Bird Treaty Act

All migratory bird species that are native to the United States or its territories are protected under the federal Migratory Bird Treaty Act (MBTA), as amended under the Migratory Bird Treaty Reform Act of 2004 (FR Doc. 05-5127). The MBTA is generally protective of migratory birds but does not actually stipulate the type of protection required. In common practice, the MBTA is used to place restrictions on disturbance of active bird nests during the breeding season. The general bird breeding season is February 15 to September 15 (includes riparian birds). In addition, the USFWS commonly places restrictions on disturbances allowed near active raptor nests. The raptor breeding season is generally January 15 through July 15. These breeding seasons are further corroborated in the County Guidelines for Determining Significance, Biological Resources (County 2010a).

Clean Water Act and Rivers and Harbors Act

Federal wetland regulation (non-marine issues) is guided by the Rivers and Harbors Act of 1899 and the CWA. The Rivers and Harbors Act deals primarily with discharges into navigable waters, while the purpose of the CWA is to restore and maintain the chemical, physical, and biological integrity of all waters of the U.S. Permitting for projects filling waters of the U.S. is overseen by the USACE under Section 404 of the CWA. A CWA Section 401 Water Quality Certification administered by the State Water Resources Control Board (SWRCB) must be issued prior to any 404 Permit. If individual IVMP activities would affect waters of the U.S. or State, coordination and potential permits may be required from the USACE and RWQCB.

1.5.3 State of California

California Environmental Quality Act

Primary environmental legislation in California is found in CEQA and its implementing guidelines (State CEQA Guidelines), which require that projects with potential adverse effects (or impacts) on the environment undergo environmental review. Adverse environmental impacts are typically mitigated as part of the environmental review process in accordance with existing laws and regulations.

Under CEQA, impacts associated with a proposed project or program are assessed with regard to significance criteria determined by the CEQA lead agency, pursuant to CEQA Guidelines. The County is the lead agency for the CEQA environmental review process of the IVMP, in accordance with state law and local ordinances.

Statewide General NPDES Permit for Vector Control

Under the requirements of the Porter-Cologne Act and the federal Clean Water Act, the SWRCB is delegated authority for protection of surface and groundwater. The application of pesticides at, near, or over waters of the U.S. that would result in discharges of pollutants requires coverage under a National Pollutant Discharge Elimination System permit. The VCP and IVMP are subject to the following permit: Statewide NPDES Permit for Biological and Residual Pesticide Discharges to Waters of the U.S. from Vector Control Applications (State Water Quality Order No. 2016-0039-DWQ, General Permit No. 990004). The General Permit covers the point source discharge of biological and residual pesticides resulting from direct to water and spray applications for vector control using larvicides and adulticides with active ingredients that are currently registered in California and allowed for use. The County VCP submitted a Notice of Intent to the SWRCB to operate under the General Permit in 2016 (enrollee number 937AP00009) and submits annual reports to the SWRCB regarding pesticide use in compliance with the permit.

California Department of Fish and Wildlife – California Fish and Game Code

Assembly Bill 896

On September 20, 2014, the State approved Assembly Bill 896, which updated Section 1506 of the CFG Code, relating to wildlife management. Assembly Bill 896 clarifies the intent of the Legislature to control mosquito production on managed wetland habitat owned or managed by CDFW and to increase coordination and communication between CDFW, local mosquito abatement and vector control districts, and County CDPH.

Streambed Alteration Agreement

The CFG Code provides specific protection and listing for several types of biological resources. Section 1600 of CFG Code requires a Streambed Alteration Agreement (SAA) for any activity that would alter the flow, change, or use any material from the bed, channel, or bank of any perennial, intermittent, or ephemeral river, stream, and/or lake. Typical activities that require an SAA include excavation or fill placed within a channel, vegetation clearing, structures for diversion of water, installation of culverts and bridge supports, cofferdams for construction dewatering, and bank reinforcement. Notification is required prior to any such activities.

Nesting Birds

Pursuant to CFG Code Section 3503, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Raptors and owls and their active nests are protected by CFG Code Section 3503.5, which states that it is unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird unless authorized by the CDFW. Section 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the MBTA. These regulations could require that program activities (particularly vegetation removal or vector control near nests) be reduced or eliminated during critical phases of the nesting cycle unless surveys by a qualified biologist demonstrate that nests, eggs, or nesting birds will not be disturbed, subject to approval by CDFW and/or USFWS.

California Endangered Species Act

The CESA established that it is state policy to conserve, protect, restore, and enhance state endangered species and their habitats. Under state law, plant and animal species may be formally designated rare, threatened, or endangered by official listing by the California Fish and Game Commission. The CESA authorizes that private entities may "take" plant or wildlife species listed as endangered or threatened under the FESA and CESA, pursuant to a federal Incidental Take Permit if the CDFW certifies that the incidental take is consistent with CESA (CFG Code Section 2080.1[a]). For state-only listed species, Section 2081 of CFG Code authorizes the CDFW to issue an Incidental Take Permit for state listed threatened and endangered species if specific criteria are met. Approved MSCP and MHCP subarea plans (refer to Table 1) are regional NCCPs that have been granted take coverage under Section 2081 of the CESA.

Native Plant Protection Act

Sections 1900–1913 of the CFG Code (Native Plant Protection Act; NPPA) direct the CDFW to carry out the state legislature's intent to "…preserve, protect, and enhance endangered or rare native plants of this state." The NPPA gives the California Fish and Game Commission the power to designate native plants as "endangered" or "rare" and protect endangered and rare plants from take.

Natural Communities Conservation Planning Act

The NCCP program is a cooperative effort to protect habitats and species. It began under the state's NCCP Act of 1991, legislation broader in its orientation and objectives than the CESA or FESA. These laws are designed to identify and protect individual species that have already declined significantly in number. The NCCP Act of 1991 and the associated Southern California Coastal Sage Scrub NCCP Process

Guidelines (1993), Southern California Coastal Sage Scrub NCCP Conservation Guidelines (1993), and NCCP General Process Guidelines (1998) have been superseded by the NCCP Act of 2003.

The primary objective of the NCCP program is to conserve natural communities at the ecosystem level while accommodating compatible land use. The program seeks to anticipate and prevent the controversies and gridlock caused by species' listings by focusing on the long-term stability of wildlife and plant communities and including key interests in the process.

This voluntary program allows the state to enter into planning agreements with landowners, local governments, and other stakeholders to prepare plans that identify the most important areas for a threatened or endangered species, and the areas that may be less important. These NCCP plans may become the basis for a state permit to take threatened and endangered species in exchange for conserving their habitat. The CDFW and USFWS worked to combine the NCCP program with the federal HCP process to provide take permits for state and federal listed species. Under the NCCP, local governments, such as the County, can take the lead in developing these NCCP plans and become the recipients of state and federal take permits. The County MSCP Subarea Plan is an NCCP plan adopted for South County. Other NCCP plans adopted within the IVMP service area include the City of Carlsbad Habitat Management Plan, City of Chula Vista MSCP Subarea Plan, City of La Mesa MSCP Subarea Plan, City of San Diego MSCP Subarea Plan, and City of San Diego Vernal Pool HCP.

Porter-Cologne Water Quality Control Act

The SWRCB and the RWQCB regulate the discharge of waste to waters of the State via the 1969 Porter-Cologne Water Quality Control Act (Porter-Cologne) as described in the California Water Code. The California Water Code is the State's version of the Federal CWA. Waste, according to the California Water Code, includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal.

State waters that are not federal waters (i.e., areas not regulated by the CWA) may be regulated under Porter-Cologne. A Report of Waste Discharge must be filed with the RWQCB for projects that result in discharge of waste into waters of the State. The RWQCB will issue Waste Discharge Requirements (WDRs) or a waiver. The WDRs are the Porter-Cologne version of a CWA 401 Water Quality Certification.

California Coastal Act

The California Coastal Commission (CCC) regulates coastal wetlands under the California Coastal Act (CCA). Certain IVMP activities conducted within the coastal zone may be subject to regulation under the CCA.

1.5.4 County of San Diego

The County regulates natural resources (among other resources) via the MSCP, Biological Mitigation Ordinance (BMO), and Resource Protection Ordinance (RPO), as discussed below.

Multiple Species Conservation Program

The California NCCP Act of 1991 (Section 2835) allows the CDFW to authorize take of species covered by plans in agreement with NCCP guidelines. A Natural Communities Conservation Program initiated by the State of California focuses on conserving coastal sage scrub, and in concert with the USFWS and the FESA, is intended to avoid the need for future federal and state listing of coastal sage scrub-dependent species.

The San Diego MSCP Plan for the southwestern portion of San Diego County was approved in August 1998 and covers 85 species (County 1998). The City of San Diego, portions of the unincorporated County, and 10 additional city jurisdictions make up the San Diego MSCP Plan area. It is a comprehensive, long-term habitat conservation plan that addresses the needs of multiple species by identifying key areas for preservation as open space in order to link core biological areas into a regional wildlife preserve.

County MSCP Subarea Plan

The County (South County) MSCP Subarea Plan (County 1997) implements the MSCP within the unincorporated areas under County jurisdiction. It was adopted by the Board of Supervisors in March 1998. The County MSCP Subarea Plan is divided into three Segments: Lake Hodges, Metropolitan-Lakeside-Jamul, and South County. The Plan addresses areas authorized for take and planned for conservation, including portions of the South County Segment that are conserved subject to agreements with the Wildlife Agencies. Take of covered species and their habitat is authorized for projects that satisfy the requirements of the County's BMO.

Biological Mitigation Ordinance

The BMO (County 2010b) is the ordinance by which the County implements the County MSCP Subarea Plan at the project level within the unincorporated area to attain the goals set forth in the County MSCP Subarea Plan. The BMO contains design criteria and mitigation standards that, when applied to projects requiring discretionary permits, protect habitats and species and ensure that a project does not preclude the viability of the MSCP Preserve System. In this way, the BMO promotes the preservation of lands that contribute to contiguous habitat core areas or linkages.

Resource Protection Ordinance

The County regulates natural resources (among other resources) as sensitive biological resources via the RPO (County 2011), the regulations of which cover wetlands, wetland buffers, sensitive plant and animal species, sensitive vegetation communities/habitat types, and habitats containing sensitive animals or plants. It is the intent of the RPO to increase the preservation and protection of the County's unique topography, natural beauty, biological diversity, and natural and cultural resources.

Pursuant to Section 86.603 of the RPO, the RPO is applicable to discretionary applications such as Tentative Map, Tentative Parcel Map, Revised Tentative Map and Revised Tentative Parcel Map, Rezone, Major Use Permit, Major Use Permit Modification, and Site Plan, Vacation of Open Space Easement Expired Map, Certificate of Compliance, or Administrative Permit. The Proposed Project is a program that would allow the County authority to control vectors; it is not a discretionary application. Therefore, the RPO is not applicable in this case and is not discussed further in this report.

1.5.5 Other Local Jurisdictions

The IVMP is a countywide program that will occur within the boundaries of other local jurisdictions that have also adopted local zoning ordinances to protect and preserve biological resources including native habitats, sensitive plant and animal species, waters and wetlands, trees, and open space areas. Depending on the location and nature of individual IVMP activities, DEHQ may be required to consult with local jurisdictions to address potential impacts to sensitive species and habitats.

1.6 BEST MANAGEMENT PRACTICES

The IVMP follows vector control guidance documents and BMPs prepared by the CDPH that detail surveillance methods, vector control management strategies, and pesticide application procedures. These documents include Best Management Practices for Mosquito Control in California (California Department of Public Health [CDPH]; 2012), Best Management Practices for Mosquito Control on California State Properties (CDPH 2008), and in the California Mosquito-Borne Virus Surveillance and Response Plan (CDPH 2020), among other management practices and guidance documents that are regularly updated and published on the CDPH website (https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/VBDS.aspx).

In addition, the County integrates BMPs into the IVMP serving as a comprehensive management framework for implementation of individual activities. The following BMPs will be incorporated into the IVMP, which demonstrate the County's commitment to avoid or minimize impacts to the maximum extent feasible:

General BMPs

- All pesticides or herbicides (i.e., chemical and biological controls) applied by the VCP are approved by the California Department of Pesticide Regulation (CDPR) and their application shall continue to abide by all label instructions and regulations of the USEPA and CDPH, including application rates and methods, storage, transportation, mixing, and container disposal. In addition, the VCP will continue to comply with all pesticide reporting, equipment calibration, and inspection requirements as regulated by the County Agricultural Commissioner.
- In accordance with CDPH regulations, pesticides or herbicides shall only be applied by Certified Vector Control Technicians. VCP staff who apply pesticides or remove vegetation will continue to complete all training required by CDPH to maintain status as a Certified Vector Control Technician and will follow the VCP's comprehensive documents, including the annual Engineer's Report, strategic response plans, and Standard Operating Procedures to avoid and minimize negative environmental impacts. These activities are conducted in accordance with the BMPs described in the Best Management Practices for Mosquito Control in California (CDPH 2012), Best Management Practices for Mosquito Control on California State Properties (CDPH 2008), and in the California Mosquito-Borne Virus Surveillance and Response Plan (CDPH 2020), or as updated, in order to ensure pesticides are selected and applied appropriately and potential impacts on non-targeted areas are eliminated or minimized.
- Pesticides will be applied at the lowest effective concentration for a specific, targeted set of vectors and site conditions. Application rates will never exceed the USEPA and CDPH-approved maximum label application rate. All pesticide application equipment is currently and will continue to be

calibrated and inspected annually as required by regulating agencies, such as CDPH and County Department of Agriculture, Weights, and Measures.

- Pesticide application shall be modified, postponed, or ceased when weather parameters exceed product label specifications, such as when wind speeds exceed the velocity stated on the product label or may result in drift, or when a high chance of rain is predicted and rain is a determining factor on the label of the material to be applied.
- Microbial larvicides (Bti, Bs) or insect growth regulator (e.g., methoprene) will be used as the primary treatment method when necessary to control mosquito larvae. Only when necessary, surfactants may be used to control late stage larvae or pupae.
- Vehicles will only be driven on existing roadways, access roads, and existing unpaved access paths. Vehicles driven on levees to travel near aquatic areas (such as tidal marshes, sloughs, or channels) for surveillance or treatment activities will travel at speeds slow enough to avoid or minimize noise and the production of dust, typically 15 miles per hour or less.
- Watercraft will be utilized to access aquatic environments where access is permissible, including but not limited to marshes, lagoons, and estuaries, to conduct surveillance and control of vectors and when their use would reduce the risk of potential impacts that may otherwise occur from land-based vehicles. Operation of watercraft within CDFW-owned lands and easements, USFWS-owned lands and preserves, and other open space areas would be completed in coordination with CDFW, USFWS, and/or other applicable land managers and agencies and would follow avoidance and minimization measure as required by the relevant agencies and right-of-entry (ROE), Special Use, and other relevant permits.

BMPs Pertaining to Biological Resources

- VCP staff shall receive annual training regarding techniques and procedures to avoid or minimize negative effects to protect state- and/or federally-listed threatened or endangered species, listed species habitat, and wildlife/wildlife habitat. For example, training includes observation and avoidance measures when accessing areas that may serve as bird nesting habitat (e.g., watch for flushing birds that may indicate a nest is nearby).
- VCP staff shall receive annual training on the identification of sensitive biological resources, including sensitive habitat and special status species (e.g., vernal pools and fairy shrimp, coastal sage scrub, bird species, etc.).
- VCP staff has cooperative, collaborative relationships with federal, state, and local agencies. The VCP regularly communicates with resource agencies and wildlife agencies, including USFWS and CDFW, and abides by all applicable permits and agreements regarding planned vector activities in sensitive habitats. Access, timing, and methods of surveillance and control are discussed. Methods to minimize impacts to special status species, habitat, and wildlife are agreed upon prior to entering protected and sensitive habitats. The VCP will continue to foster these relationships, communication, and collaboration.
- Before conducting monitoring or treatment, a Certified Vector Control Technician will review all site records in the County's enterprise database (currently Accela) used by the Vector Control Program for any applicable permits or agreements on file dictating how a site should be addressed, or any other notes discussing environmental constraints/requirements, points of access, whether a qualified biological monitor is required, or any other pertinent information prior to visiting a site. An

ESA is defined as a location with potential environmentally sensitive species and habitats. Sensitive sites may include, but are not limited to, CDFW or USFWS-owned or operated lands, easements, and preserves; National Forests; County-owned parks and open space areas; or other lands identified by the SanGIS. Potential ESAs are generically depicted on Figure 9, *Environmentally Sensitive Areas*.

- Prior to entering an ESA or other site that has the potential to contain sensitive habitat or species, VCP staff will identify suspected vector breeding sources using satellite images, topographic maps, historical records, and on-site evaluation to help ascertain the least environmentally impactful way to access the site. If more than one access route is available, staff will prioritize the path that would minimize or avoid environmental impacts to sensitive biological resources. If site conditions warrant a qualified biologist to accompany the Certified Vector Control Technician, the VCP will arrange for a qualified biologist to accompany field staff. Certified Vector Control Technicians will strictly follow all guidance and instructions from the biologist, including where access is permissible or should be avoided near sensitive habitat.

- If a site has been flagged in the County's enterprise database (currently Accela) for potentially containing sensitive biological resources, staff will review applicable sensitive species databases such as USFWS occurrence records, CDFW's California Natural Diversity Database, and County SanBIOS data, in order to determine if any potentially special-status species (i.e. birds, fish, insects, plants, or other animals) are present or have high potential to occur at the site and research any unfamiliar species with photos and descriptions of biology and habitat. Also discuss preferred access points, methods, and paths for reaching vector breeding source(s) with supervisor and/or land manager.

- Prior to commencing activities that would disturb state- and/or federally-listed plants or wildlife, VCP will consult and coordinate with all applicable wildlife agencies (e.g., USFWS, CDFW) and obtain all required permits.
- VCP staff will minimize potential disturbance to wildlife while performing surveillance and control activities. When walking or using small equipment in sensitive habitats, existing trails, levees, and access roads will be used whenever feasible to avoid or minimize impacts to wetlands, sensitive vegetation communities, and special status species.
- When accessing sensitive habitat, VCP staff will minimize the use of motorized vehicles to the extent feasible by conducting activities on foot with handheld equipment and remain on existing roads when vehicle use is needed. Aerial surveillance or control (e.g., helicopter or unmanned aircraft) will also be utilized when feasible and appropriate during pesticide applications and identification of potential vector sites, respectively.
- Prior to entering sensitive habitat, VCP staff will minimize the potential for the introduction and spread of invasive plant species by ensuring all equipment, vehicles, and personal gear (such as clothing and boots) are washed and disinfected, as appropriate.
- Vegetation trimming or removal, when necessary to provide access to vector habitat for surveillance and control activities, will be conducted by hand using handheld tools rather than gas-powered equipment or heavy machinery to minimize negative environmental effects. Vegetation trimming to maintain existing paths or create safe access points through dense vegetation will be of the minimum extent necessary and may include minor trimming of overhanging limbs, brush and other vegetation that obstruct access to the vector site. Vegetation trimming or removal activities will be

ORANGE COUNTY

RIVERSIDE COUNTY

IMPERIAL COUNTY

MEXICO

Pacific Ocean

OCEANSIDE
VISTA
SAN MARCOS
CARLSBAD
ESCONDIDO
ENCINITAS
SOLANA BEACH
DEL MAR
POWAY
SANTEE
EL CAJON
SAN DIEGO
LA MESA
LEMON GROVE
NATIONAL CITY
CORONADO
CHULA VISTA
IMPERIAL BEACH

5
78
15
52
125
8
94
805

San Diego County Integrated Vector Management Program Service Area Boundary
Incorporated Cities
Freeways
Environmentally Sensitive Areas
CDFW Lands and Conservation Easements
USFWS National Wildlife Refuges
USDA National Forest

Note: Environmentally Sensitive Areas come from SanGIS and include areas targeted for conservation under regional conservation plans (such as the County's MSCP Plan) and areas of biological concern. Additional ESAs and areas containing sensitive biological resources that are not depicted on this figure may be present. Program activities may also occur in additional lands owned and/or managed by federal, state, or local agencies that are not depicted here.

0 8 Miles

N

Source: Environmentally Sensitive Areas (SanGIS)

I:\PROJECTS\C\CSD\CSD-05.24_IVMP\Map\BTR\Fig9_ESA.mxd CSD-05.24 10/1/2020 -RK

HELIX Environmental Planning

Environmentally Sensitive Areas

Figure 9

conducted outside of the general bird breeding season (February 15 to September 15 for general birds, including riparian species; January 15 to July 15 for raptors) to the greatest extent feasible.

- Downed trees and large vegetation that have fallen due to storm events or disease may be trimmed and/or removed to the minimum extent necessary to maintain existing access points or to allow access to for vector monitoring or control.
- Any staging of equipment or materials will occur in developed/disturbed areas outside of existing wetland and non-wetland waters of the U.S./State, wetland and riparian habitats, and native or rare upland areas.
- The changing of oil, refueling, and other actions that could result in a release of a hazardous substance shall be restricted to designated service areas such as maintenance yards and gas stations or, when necessary, areas that are a minimum of 100 feet from any documented special status plant populations, sensitive habitats, or drainages. Equipment shall be checked for leaks prior to operation and repaired as necessary. Fueling areas shall be installed in the field, as applicable, by berms, sandbags, or other artificial barriers designed to prevent accidental spills.
- Chemical controls applied within waterbodies defined by federal and state regulations as wetland and/or non-wetland waters of the U.S. and/or State must be used in accordance with the Statewide NPDES Permit for Biological and Residual Pesticide Discharges to Waters of the U.S. from Vector Control Applications (Order No. 2016-0039-DWQ, General Permit No. CA990004).
- Only staff that are certified by the CDPH as a Vector Control Technician, or staff who have received training such as proper application methods to protect the environment and public health, shall be allowed to access ESAs.

2.0 GUIDELINES FOR DETERMINING SIGNIFICANCE

The following guidance is used to determine potential significance of impacts on biological resources pursuant to County Guidelines (County 2010a). A project would result in a significant or potentially significant biological resources impact if it would result in:

1. A substantial adverse effect, either directly or through habitat modifications, on a candidate, sensitive, or special status species listed in local or regional plans, policies, or regulations, or by the CDFW or USFWS;

2. A substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the USFWS or CDFW;

3. A substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

4. Substantial interference 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; or

5. A conflict with one or more local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, and/or would conflict with the provisions of an adopted

Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

3.0 PROJECT EFFECTS

This section describes potential direct and indirect impacts associated with the implementation of the IVMP. Direct impacts immediately alter the affected biological resources such that those resources are eliminated temporarily or permanently. Indirect impacts are actions that are not direct removal of habitat but affect the surrounding biological resources either as a secondary effect of the direct impacts (e.g., construction noise, runoff, nighttime lighting, fugitive dust, etc.), or as the cause of degradation of a biological resource over time (e.g., edge effects and adjacency issues). Cumulative impacts are those caused by numerous projects in the region and their additive effect of multiple direct and indirect impacts to biological resources over time.

Under the proposed project, the IVMP would continue the use of the following vector control techniques: surveillance and monitoring, source reduction (i.e., physical control), source treatment (i.e., biological and chemical controls), public education and outreach, and disease diagnostics. Emerging vector control strategies that may be implemented to address future public health risks and public nuisances could include, but not be limited to, increased or advanced/early source prevention and/or reduction, surveillance, or physical/biological/chemical controls. Of these, surveillance and monitoring, source reduction, and source treatment are the only vector control techniques evaluated in this analysis, as the other techniques (i.e., public education and outreach and disease diagnostics) would be unlikely to result in impacts to biological resources.

3.1 SPECIAL STATUS SPECIES

3.1.1 Guidelines for the Determination of Significance

Would the project 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 the CDFW or USFWS?

3.1.2 Analysis of Project Effects

Special Status Plant Species

Surveillance and Monitoring

Surveillance and monitoring activities include evaluation of mosquito-breeding areas by conducting surveys via ground vehicles, aircraft (including piloted and unmanned), watercraft, and remote sensing equipment; trapping of mosquitoes and rodents; and testing of collected samples for vector-borne diseases. Surveillance activities generally occur along existing access routes that have already been established and are regularly maintained. In order to avoid or minimize potential adverse environmental impacts, the IVMP follows CDPH and County guidance documents for conducting inspections and vector treatment abatement activities and employs BMPs, as detailed in Section 1.6, in areas with potential to support sensitive biological resources. These BMPs include coordination with the appropriate land managers and agency staff to determine the least environmentally impactful way to access the site and conduct IVMP activities. As part of surveillance and monitoring activities, minor trimming of vegetation

along existing access routes and paths may be required to provide access to the mosquito breeding source. Trimming of vegetation would only be implemented on an as-needed basis, would be the minimum amount necessary to provide safe access, and whenever feasible would not impact native trees and shrubs. Impacts from minor trimming of vegetation would be less than significant due to the negligible area involved, selective nature of the trimming, and the temporary nature of the action as vegetation would grow back, and no individual plants would be removed. Therefore, impacts to special status plant species would be less than significant as part of surveillance and monitoring activities, and no mitigation is required.

Source Reduction

The reduction of vector-breeding sources also involves physical control techniques that eliminate or reduce standing water that functions as mosquito breeding habitat. These techniques include, but are not limited to, vegetation management including trimming and removal of vegetation and application of herbicides; removal of sediment; water control; and other maintenance activities. Minor trimming of vegetation would be a less than significant impact as detailed above in *Surveillance and Monitoring*. Application of herbicides would follow State and County guidance documents and be conducted in accordance with all applicable BMPs, as detailed in Section 1.6, in order to avoid or minimize potential adverse environmental impacts. These BMPs include application of approved herbicides by Certified Vector Control Technicians pursuant to all instructions, applications rates and methods, and regulations of the USEPA and CDPH. Additionally, IVMP activities within sensitive areas are coordinated with the appropriate land managers and agencies to ensure that activities avoid and minimize potential impacts to sensitive biological resources to the greatest extent feasible. Therefore, impacts to special status plant species from herbicide application would be less than significant and no mitigation is required.

Source reduction activities that involve the removal of vegetation could result in potentially significant impacts to special status plant species if they are found to be present within a project-specific IVMP activity area and significant impacts would require mitigation. Generally, impacts to plant species with a CRPR of 1 or 2 are considered potentially significant; whereas CRPR 3 and 4 species are relatively widespread and impacts to such species would not substantially reduce their populations in the region and are not typically significant. It is anticipated that impacts to special status plant species from source reduction would be avoided to the extent feasible with implementation of BMPs and other design considerations, as detailed in Section 1.6, and that unavoidable impacts would be minimized and unlikely to affect large numbers of individuals. Although the significance of impacts would be assessed on an individual project basis for CRPR 1 and 2 plant species, for purposes of this programmatic analysis, impacts to special status plant species from source reduction would have a potentially significant impact (BIO-1) and require mitigation. Mitigation would include species-specific or habitat-based compensation.

Source Treatment

Biological Control

Biological controls used to manage and reduce vectors can include the use of naturally-occurring bacterial larvicides, natural predators, parasites, or pathogens to reduce immature mosquito numbers. One of the techniques employed by the IVMP is the application of mosquito fish in artificial mosquito breeding sources such as ornamental ponds, rain barrels, horse troughs, neglected swimming pools, and spas to reduce the abundance of mosquitoes. Special status plant species would not be impacted by the

use of mosquito fish as mosquito fish are used only within contained water sources that do not connect to natural waterways.

The other biological control technique employed by the IVMP includes the application of naturally-occurring bacterial larvicides. As a form of pesticide, bacterial larvicides are applied through on-ground techniques such as by foot with backpack applicators, truck-mounted equipment, or watercraft by Certified Vector Control Technicians , or by aircraft (including piloted and unmanned) when land-based methods are not practicable due to the size of the area to be treated or impediments to access. As outlined in the following section, routine maintenance of existing access paths may involve minor trimming of native vegetation which would only be implemented on an as-needed basis, would be the minimum necessary to provide access to the mosquito breeding source, and, whenever feasible, would not impact native trees or shrubs. Minor trimming of vegetation would be a less than significant impact, as detailed in *Surveillance and Monitoring.*

As such, impacts to special status plant species from biological control activities would be less than significant and no mitigation is required.

Chemical Control

In addition to the above methods, the IVMP controls mosquito populations through the application of chemical controls that target both larvae (larvicides) and adult mosquitos (adulticides), both of which are forms of pesticides[1]. Pesticides are applied through on-ground techniques such as by foot with backpack applicators, truck-mounted equipment, or watercraft by Certified Vector Control Technicians , or by aircraft (including piloted and unmanned) when land-based methods are not practicable due to the size of the area to be treated or impediments to access. As detailed in Section 1.6, the IVMP follows CDPH and County guidance documents for conducting inspections and vector treatment abatement activities and employs BMPs in order to avoid or minimize potential adverse environmental impacts. These BMPs include application of CDPR-approved pesticides by Certified Vector Control Technicians in strict accordance with all label instructions, applications rates and methods, and regulations of the USEPA and CDPH. Additionally, IVMP activities within sensitive areas are coordinated with the appropriate land managers and agencies, and activities are conducted in such a manner to ensure site access and abatement activities avoid and minimize potential impacts to sensitive biological resources to the greatest extent feasible. Application of pesticides through land-based methods would prioritize utilization of existing access routes and avoid creation of new pedestrian access paths unless no other alternatives are present. Routine maintenance of existing access paths may involve minor trimming of native vegetation which would only be implemented on an as-needed basis, would be the minimum necessary to provide access to the mosquito breeding source, and, whenever feasible, would not impact native trees or shrubs. Minor trimming of vegetation would be a less than significant impact, as detailed in *Surveillance and Monitoring*. No removal of vegetation or other ground-disturbing activities would occur as part of chemical control activities. As such, impacts to special status plant species from chemical control activities would be less than significant and no mitigation is required.

[1] As discussed in Section 1.2.3, larvicides can include either naturally-occurring bacteria or synthetic products. For this reason, certain larvicides may be considered either a biological or chemical control. However, for the purpose of this technical report, the following analysis considers the physical act of applying pesticides since all pesticides used by the program have already been approved by the EPA as being safe for the environment when applied according to label directions (which the IVMP adheres to).

Special Status Animal Species

Surveillance and Monitoring

The VCP monitors mosquito-breeding sources throughout the county utilizing various techniques such as setting traps to determine abundance and species of mosquitoes; testing mosquitoes for presence of disease; conducting surveys via ground vehicles, aircraft (including piloted and unmanned), watercraft, and remote sensing equipment to evaluate mosquito-breeding sources; and collecting and testing dead birds for West Nile virus (WNV). Monitoring and testing of sentinel chicken flocks for virus exposure is another technique that the VCP has previously used and may continue to use in the future to detect viruses in the environment[2]. Surveillance is also conducted for rodents (for plague and hantavirus) and ticks (for tularemia, Lyme disease, Rocky Mountain spotted fever, and other spotted fever rickettsia). Surveillance and monitoring techniques according to taxon and the potential effect of these activities on special status animal species with potential to occur within the IVMP service area are discussed below.

Mosquitoes

Surveillance and monitoring activities related to mosquito detection and control include evaluation of mosquito-breeding areas by conducting surveys via ground vehicles, aircraft (including piloted and unmanned), watercraft, and remote sensing equipment; trapping of mosquitoes; and testing of collected samples for vector-borne diseases. Surveillance activities generally occur along existing access routes that have already been established and are regularly maintained. In order to minimize potential adverse environmental impacts, the IVMP follows CDPH and County guidance documents for conducting inspections and vector treatment abatement activities and employs BMPs, as detailed in Section 1.6, in areas with potential to support sensitive biological resources. These BMPs include coordination with the appropriate land managers and agency staff to determine the least environmentally impactful way to access the site and conduct IVMP activities.

As part of surveillance and monitoring activities, minor trimming of vegetation along existing access routes and paths may be required to provide access to the mosquito breeding source. Trimming of vegetation would only be implemented on an as-needed basis, would be the minimum necessary to provide safe access, and, whenever feasible, would not impact native trees and shrubs. With the exception of potential impacts to nesting birds (further discussed below), impacts to sensitive animal species from trimming of vegetation would be less than significant due to the negligible area involved, selective nature of the trimming, and the temporary nature of the action as vegetation would grow back, and no individual plants would be removed. However, if minor trimming were to occur during the general bird breeding season (February 15 to September 15, including riparian birds; January 15 to July 15 for raptors) potential direct impacts to nesting individuals would be considered potentially significant (BIO-2) and would require mitigation.

Operation of ground vehicles, watercrafts, and piloted and unmanned aircraft within the IVMP service area is not anticipated to have a significant impact on special status animal species with potential to occur within the IVMP service area. Vehicles would only be operated on existing roadways, access roads, and existing unpaved access paths. Watercrafts would be operated in open water environments where access is currently permissible. Any surveillance activities via watercraft on CDFW-owned lands and

[2] Sentinel chickens are used primarily for detection of the mosquito-borne West Nile and Saint Louis Encephalitis viruses. If bitten by infected mosquitoes, chickens develop antibodies to the virus but do not develop symptoms. Sentinel chickens may be placed in various locations throughout the IVMP service area and regularly tested to detect these viruses.

easements, USFWS-owned lands and preserves, and other open space areas would be completed in coordination with CDFW, USFWS, and/or other applicable land managers and agencies and would follow avoidance and minimization measure as required by the relevant agencies and ROE, Special Use, and other relevant permits. Though the operation of piloted and unmanned aircraft may result in temporary noise disturbances to animal species, including special status species, activities would consist of sporadic events of short duration. If wildlife were to avoid or move away from the area as a result of surveillance and monitoring activities, they would be anticipated to move back within the area once activities ceased and the likelihood of wildlife abandoning the area would be negligible. Therefore, impacts on special status animal species from the operation of ground vehicles, watercraft, and aircraft for surveillance and monitoring activities would be less than significant and no mitigation would be required.

Trapping of mosquitos would be completed at known and suspected breeding sources such as slow-moving streams, stagnant water sources, ponds, and lakes. Surveillance devices include carbon dioxide baited traps and Reiter Gravid traps, as well as other species-specific traps such as BG Sentinel traps that target invasive *Aedes* mosquito species. Reiter Gravid traps are used for collecting female mosquitoes searching for a place to lay their eggs. The traps are strategically placed to measure mosquito levels throughout the county and are used to determine disease infection levels and help locate mosquito breeding sources. As these are species-specific traps, the mosquito trapping program would not result in significant impacts to special status animal species (specifically insects) present within the IVMP service area such as the Crotch bumble bee (*Bombus crotchii*) and quino checkerspot butterfly, and no mitigation would be required.

Birds

Deceased birds that are reported by the public to the VCP are collected and tested by VCP for WNV. Species of particular importance include those previously shown to be susceptible to WNV such as crows, ravens, jays, hawks, and owls. The salvage of dead birds, and other species such as rabbits and hares and other rodents, is permitted under the authority of the CDPH in accordance with the provisions detailed in an MOU between the CDFW and CDPH authorizing said activities. No significant impacts to special status animal species would occur through the salvaging and testing dead birds, as authorized under the CDPH's MOU, and no mitigation is required.

Mammals

Trapping of rodents and other small mammals would occur as part of surveillance and monitoring activities associated with the IVMP. Within the IVMP service area, trapping activities are restricted to ports of entry and developed campgrounds and utilize non-lethal capture and release methods; therefore, no individuals are intentionally killed or salvaged as part of the IVMP. Targeted species for trapping at ports of entry include non-native species such as Norway rat (*Rattus norvegicus*) and black rat (*Rattus rattus*), and California ground squirrel at developed campgrounds. Captured individuals are combed for fleas (which are collected for further testing) and blood samples are collected which are tested for plague at the County's VDDL. Any trapping activities proposed to occur on CDFW-owned lands and easements, USFWS-owned lands and preserves, and other open space areas would be completed in coordination with CDFW, USFWS, and/or other applicable land managers and agencies and would follow avoidance and minimization measure as required by the relevant agencies and ROE, Special Use, and other relevant permits. Staff conducting trapping activities will possess the required federal and state permits, as applicable to specific activities.

Several special status small mammal species have potential to occur within the IVMP service area including two state- and federally-listed species: Stephens' kangaroo rat (*Dipodomys stephensi*) and Pacific pocket mouse (*Perognathus longimembris pacificus*). Stephens' kangaroo rat occurs within the northern portions of the county, particularly at Camp Pendleton in the northwestern portion of the county, and the Vista, Bonsall, and San Luis Rey River valley regions in the north-central portion of the county. Pacific pocket mouse has been extirpated from the vast majority of the county in localities where the species historically occurred (USFWS 2010). Currently, the species is restricted to the Oceanside area in the northwestern portion of the county at Camp Pendleton. Trapping activities associated with implementation of the IVMP primarily occur within higher elevation developed campgrounds outside of the known range of both of these species, and developed regions along the coast at ports of entry which do not support suitable habitat for either species; therefore, no adverse effects would occur to Stephens' kangaroo rat and Pacific pocket mouse as part of surveillance and monitoring activities. Furthermore, trapping activities are unlikely to result in adverse effects on other special status mammal species with potential to occur within the IVMP service area as activities are generally confined to developed areas lacking suitable habitat (sparse native scrub habitats and grasslands with sandy, friable soils) that support these species. Therefore, no significant impacts to special status animal species would occur through trapping activities, and no mitigation is required.

Source Reduction

The reduction of vector-breeding sources also involves physical control techniques that eliminate or reduce standing water that functions as mosquito breeding habitat. These techniques include, but are not limited, to vegetation management including trimming and removal of vegetation and application of herbicides; removal of sediment; water control; and other maintenance activities. Minor trimming of vegetation would be a less than significant impact if conducted outside of the bird breeding season, as detailed above in *Surveillance and Monitoring.* Application of herbicides would follow State and County guidance documents and be conducted in accordance with all applicable BMPs, as detailed in Section 1.6, in order to avoid or minimize potential adverse environmental impacts. These BMPs include application of approved herbicides by Certified Vector Control Technicians pursuant to all instructions, applications rates and methods, and regulations of the USEPA and CDPH. Additionally, IVMP activities within sensitive areas are coordinated with the appropriate land managers and agencies to ensure that activities avoid and minimize potential impacts to sensitive biological resources to the greatest extent feasible. Therefore, impacts to special status animal species from herbicide application would be less than significant and no mitigation is required.

Source reduction activities that involve the removal of vegetation could result in significant direct impacts to nesting birds and raptors present within project-specific IVMP activity area s if activities were to occur during the general bird breeding season (February 15 to September 15, including riparian birds; January 15 to July 15 for raptors) and would require mitigation (BIO-2). Additionally, potentially significant indirect noise impacts could occur (BIO-3) and require mitigation if activities were to take place within 500 feet of nesting raptors or state- and/or federally-listed species including, but not limited to, coastal California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, and light-footed Ridgway's rail (*Rallus obsoletus levipes*).

Habitat modification and ground disturbance activities also have the potential to adversely affect state- and/or federally-listed species (such as arroyo toad), USFWS-designated critical habitat, and raptor foraging habitat (i.e., grasslands) within the IVMP service area if activities were to occur within areas containing habitat suitable to support these species and/or USFWS-designated critical habitat. These

impacts would be considered significant and require mitigation. Impacts to these communities are anticipated to be localized and limited to the smallest footprint necessary to eliminate or reduce mosquito-breeding sources. For example, drainage improvements for slow-moving and/or stagnant areas would be limited in scope to the removal of sediment and debris jams to increase flows. Due the programmatic nature of this document, the specific location and quantity of impacts cannot be assessed at this time. However, project-specific impacts would be assessed through future project approvals; impacts to riparian habitat and sensitive natural communities would be mitigated in accordance with local policies and ordinances and/or adopted NCCPs/HCPs (see Section 3.2).

Source Treatment

Biological Control

Biological controls used to manage and vectors can include the use of naturally-occurring bacterial larvicides, natural predators, parasites, or pathogens to reduce immature mosquito numbers. One of the techniques employed by the IVMP is the application of mosquito fish in artificial mosquito breeding sources such as ornamental ponds, rain barrels, horse troughs, neglected swimming pools, and spas to reduce the abundance of mosquitoes. Special status animal species would not be impacted by the use of mosquito fish as mosquito fish are used only within contained water sources that do not connect to natural waterways.

The other biological control technique employed by the IVMP includes the application of naturally-occurring bacterial larvicides. As a form of pesticide, bacterial larvicides are applied through on-ground techniques such as by foot with backpack applicators, truck-mounted equipment, or watercraft by Certified Vector Control Technicians , or by aircraft (including piloted and unmanned) when land-based methods are not practicable due to the size of the area to be treated or impediments to access. As outlined in the following section, routine maintenance of existing access paths may involve minor trimming of native vegetation which would only be implemented on an as-needed basis, would be the minimum necessary to provide access to the mosquito breeding source, and, whenever feasible, would not impact native trees or shrubs. Minor trimming of vegetation would be a less than significant impact, as detailed in *Surveillance and Monitoring.*

As such, impacts to special status animal species from biological control activities would be less than significant and no mitigation is required.

Chemical Control

In addition to the above methods, the IVMP controls mosquito populations through the application of chemical controls that target both larvae (larvicides) and adult mosquitos (adulticides), both of which are forms of pesticides. Pesticides are applied through on-ground techniques such as by foot with backpack applicators, truck-mounted equipment, or watercraft by Certified Vector Control Technicians, or by aircraft (including piloted and unmanned) when land-based methods are not practicable due to the size of the area to be treated or impediments to access. As detailed in Section 1.6, the IVMP follows CDPH and County guidance documents for conducting inspections and vector treatment abatement activities and employs BMPs in order to avoid or minimize potential adverse environmental impacts. These BMPs include application of CDPR-approved pesticides by Certified Vector Control Technicians in strict accordance all label instructions, applications rates and methods, and regulations of the USEPA and CDPH. Therefore, use of chemical controls would not have a significant impact on non-target and special status animal species and no mitigation is required. Operation of ground vehicles, watercrafts,

and aircraft (piloted and unmanned) within the IVMP service area is not anticipated to have a significant impact on special status animal species with potential to occur within the IVMP service area. Vehicles can only be operated on existing roadways, access roads, and existing unpaved access paths. Watercrafts would be operated in open water environments where access is currently permissible. Any chemical application activities conducted via watercraft on CDFW-owned lands and easements, USFWS-owned lands and preserves, and other open space areas would be completed in coordination with CDFW, USFWS, and/or other applicable land managers and agencies and would follow avoidance and minimization measure as required by the relevant agencies and ROE, Special Use, and other relevant permits. Though piloted and unmanned aircraft may result in temporary noise disturbances to animals, including special status species, within the vicinity of operation, activities would consist of sporadic events of short duration. If wildlife were to avoid or move away from the area as a result of chemical control activities, they would be anticipated to move back within the area once activities ceased and the likelihood of wildlife abandoning the area would be negligible. Therefore, no significant impacts to special status animal species would occur from chemical control activities and no mitigation would be required.

Although application of chemical controls would not result in significant impacts to special status animal species, minor vegetation trimming along associated access paths could result in a significant impact to breeding birds if conducted during the bird breeding season. Application of pesticides through land-based methods would prioritize utilization of existing access routes and avoid creation of new pedestrian access paths unless no other alternatives are present. Routine maintenance of existing access paths may involve the minor trimming of native vegetation which would only be implemented on an as-needed basis, would be the minimum necessary to provide access to the mosquito breeding source, and whenever feasible would not impact native trees and shrubs. Minor trimming of vegetation would be less than significant as detailed in *Surveillance and Monitoring*. However, if minor trimming were to occur during the general bird breeding season (February 15 to September 15, including riparian birds; January 15 to July 15 for raptors) potential direct impacts to nesting individuals would be considered potentially significant (BIO-2) and would require mitigation.

3.1.3 Mitigation Measures and Design Considerations

Regarding special status plant species, Source Reduction is the only IVMP activity with potential to result in significant impacts.

Regarding special status animal species, Surveillance and Monitoring, Source Reduction, and Source Treatment (Chemical Control) activities have potential to result in significant impacts. Project-specific activities have not yet been identified and therefore cannot be specifically quantified in this programmatic document. However, mitigation for impacts to special status plant and animal species would be consistent with requirements by the County, CDFW, USFWS, and other local jurisdictions where applicable.

Significant impacts to special status plant species would be mitigated through the implementation of the following measures **BIO-1a** through **BIO-1e:**

M-BIO-1a: Prior to conducting IVMP activities that would result in vegetation removal, habitat modification, and/or ground disturbance, a qualified biologist shall conduct a biological evaluation of the individual IVMP activity area. The biological evaluation shall include (1) a general reconnaissance survey; (2) a review of recent aerial imagery, topographic and

soils maps, regional vegetation mapping (as available), and local, state, and federal biological databases including, but not limited to, County SanBIOS data, California Department of Fish and Wildlife (CDFW) Biogeographic Information and Observation System (BIOS) database, U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) and critical habitat databases, and Environmental Protection Agency (EPA) Watershed Assessment, Tracking & Environmental Results System (WATERS) database to determine sensitive biological resources known to occur within and adjacent to the IVMP activity area; (3) a query of sensitive species databases such as U.S. Fish and Wildlife Service occurrence records, California Department of Fish and Wildlife California Natural Diversity Database, and County SanBIOS data to determine if special status species are present or have high potential to occur within or adjacent to the individual IVMP activity area; and (4) preparation of a biological resources report. The reconnaissance survey shall include an inventory of existing vegetation communities, flora and fauna resources, and potentially jurisdictional resources present within the individual IVMP activity area; and documentation of special status plant and animal species, if encountered during the survey. The biological resources report shall summarize existing biological resources present within the individual IVMP activity area; identify sensitive biological resources that are present or have potential to occur; provide an assessment of potential impacts; and identify applicable mitigation measures, if necessary.

M-BIO-1b: Prior to conducting IVMP activities that would result in vegetation removal, permanent habitat modification, and/or ground disturbance in areas with potential to support special status plant species, a qualified biologist shall conduct a rare plant survey to confirm the presence/absence of special status plant species within or adjacent to the individual IVMP activity area. The exact timing of the rare plant survey shall be determined based on the location, elevation, and flowering phenology of the special status plant species with potential to occur within and adjacent to the individual IVMP activity area. If special status plant species are discovered within the individual IVMP activity area, those individuals or populations shall be avoided, or additional mitigation measures (which could include transplantation, etc.) shall be implemented that would reduce impacts to below a level of significance. Impacts to state- and/or federally-listed plant species and species' designated critical habitat may require additional consultation with the U.S. Fish and Wildlife Service, pursuant to the Federal Endangered Species Act if the individual IVMP activity area occurs outside of an adopted NCCP/HCP, or if take of that species is not covered under the specific adopted plan. Mitigation for impacts to special status plant species shall be consistent with local jurisdictions' policies and ordinances, and/or adopted NCCPs/HCPs where required, and identified within the individual IVMP activity biological resources report that shall be prepared pursuant to M-BIO-1a.

M-BIO-1c: Prior to conducting IVMP activities, a qualified biologist shall flag areas to be avoided that contain sensitive biological resources. Where indicated by the biologist, these areas shall be fenced or otherwise protected from direct or indirect impacts. Specifically, temporary (i.e., exclusionary) fencing shall be installed where feasible when grubbing, clearing, or grading would be conducted within 100 feet of sensitive biological resources depending on the species or habitat present, individual IVMP activities, and site constraints. Temporary fencing (such as silt or orange construction fencing) shall be

installed at limits of an individual IVMP activity area prior to initiation of activities. A qualified biologist shall monitor the installation of temporary (i.e., exclusionary) fencing wherever it would abut sensitive species or vegetation communities, jurisdictional waters or wetlands, or other sensitive areas such as environmentally-designated open space.

M-BIO-1d: Prior to conducting IVMP activities that would result in vegetation removal, permanent habitat modification, and/or ground disturbance in areas known to contain sensitive biological resources, a qualified biologist shall conduct an environmental training session for personnel, as applicable, to inform them of the sensitive biological resources with potential to occur and any mitigation and/or avoidance measures that must be implemented.

M-BIO-1e: When sensitive biological resources have been identified on-site or adjacent to an individual IVMP activity area, a qualified biologist shall monitor initial vegetation clearing, grubbing, and ground disturbance activities to ensure that activities occur within the approved limits of work and that protection measures (e.g., flagging, fencing, etc.) are in place.

Significant direct and indirect impacts to special status animal species would be mitigated through the implementation of the following measures **M-BIO-2a** through **M-BIO-2f**, and **M-BIO-3:**

M-BIO-2a: see **M-BIO-1a**

M-BIO-2b: IVMP activities that could result in vegetation removal, permanent habitat modification, and/or ground disturbance activities within potentially suitable habitat for state- and/or federally-listed animal species shall occur outside a species' breeding season. If such activities are unavoidable during the respective breeding season, focused protocol surveys for each species with potential to occur shall be conducted prior to conducting IVMP activities. Surveys shall follow the current U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife protocols, as appropriate. If state- and/or federally-listed species are determined to occur within or adjacent to the individual IVMP activity area, consultation with the U.S. Fish and Wildlife Service and the California Department of Fish and Game under the Federal Endangered Species Act and California Endangered Species Act, respectively, shall be initiated and any resulting mitigation measures (including, but not limited to, breeding season activity restrictions) identified during consultation shall be implemented.

M-BIO-2c: see **M-BIO-1c**

M-BIO-2d: see **M-BIO-1d**

M-BIO-2e: see **M-BIO-1e**

M-BIO-2f: Clearing or grubbing of vegetation during the general avian breeding season (February 15 through September 15) or raptor breeding season (January 15 through July 15) as defined by the County Guidelines for Determining Significance of Biological Resources shall be avoided except as outlined by this measure. These breeding seasons shall not supersede implementing any agreements with the Wildlife Agencies, Habitat

Conservation Plans (HCPs), Habitat/Resource Management Plans (HMPs/RMPs), and Special Area Management Plans (SAMPs). If clearing and grubbing of vegetation is unavoidable during the breeding season, a pre-construction survey shall be conducted by a qualified biologist no more than seven days prior to conducting work in an individual IVMP activity area that supports suitable nesting bird habitat to determine if active bird nests are present. If no nesting birds are documented (includes nest building or other breeding or active nesting behavior) within the individual activity area, clearing, grubbing, and grading shall be allowed to proceed. If an active nest is observed within the activity area, the biologist shall flag the nest and an appropriate buffer, which shall be determined by the biologist based on the biology of the species and the specific site constraints. Activities shall not occur within the buffer area until the biologist has determined that the nest is no longer active, young have fledged, or determined that limited activities within the buffer would not jeopardize nesting success. The buffer area shall be demarcated in the field with flagging, stakes, and/or temporary fencing. The nesting buffer may be determined and adjusted depending on the species present, individual IVMP activities and site constraints, and in consultation with applicable wildlife agencies.

M-BIO-3: For individual IVMP activities located adjacent to habitat occupied by state- and/or federally-listed avian species (e.g., California gnatcatcher, least Bell's vireo, and southwestern willow flycatcher) in which noise would be produced in excess of 60 dB(A)L_{eq} or ambient noise levels (if ambient levels are above 60 dB), the IVMP activities shall:

a) Be postponed until a qualified biologist determines the nest(s) is no longer active or until after the respective breeding season; or

b) Not occur until a temporary noise attenuation structure or barrier is constructed at the edge of the individual IVMP activity area and/or around the noise-generating equipment to ensure that noise levels are reduced to below 60 dBA or ambient, whichever is greater.

3.1.4 Conclusion

Implementation of the IVMP could result in significant impacts to special status plant and animal species through the removal of vegetation, habitat modification, application of chemical controls, and/or noise. A combination of avoidance through project design and implementation of mitigation measures **M-BIO-1a** through **M-BIO-1e, M-BIO-2a** through **M-BIO-2f,** and **M-BIO-3** would reduce impacts to special status plant and animal species to less than significant.

3.2 RIPARIAN HABITAT AND SENSITIVE NATURAL COMMUNITIES

3.2.1 Guidelines for the Determination of Significance

Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the USFWS or CDFW?

3.2.2 Analysis of Project Effects

Surveillance and Monitoring

Surveillance and monitoring activities include evaluation of mosquito-breeding areas by conducting surveys via ground vehicles, aircraft (including piloted and unmanned), watercraft, and remote sensing equipment; trapping of mosquitoes and rodents; and testing of collected samples for vector-borne diseases. Surveillance activities generally occur along existing access routes that have already been established and are regularly maintained. In order to minimize potential adverse environmental impacts, the IVMP follows CDPH and County guidance documents for conducting inspections and vector treatment abatement activities and employs BMPs, as detailed in Section 1.6, in areas with potential to support sensitive biological resources. These BMPs include coordination with the appropriate land managers and agency staff to determine the least environmentally impactful way to access the site and conduct IVMP activities, including the avoidance of physical modification to sensitive habitats to the greatest extent feasible. As part of surveillance and monitoring activities, minor trimming of vegetation along existing access routes and paths may be required to provide access to the mosquito breeding source. Trimming of native vegetation would only be implemented on an as-needed basis, would be the minimum amount necessary to provide access, and whenever feasible would not impact native trees and shrubs. Impacts from minor trimming of vegetation would be less than significant due to the negligible area involved, selective nature of the trimming, and the temporary nature of the action as vegetation would grow back and no individual plants would be removed. Therefore, impacts to riparian habitat and other sensitive natural communities would be less than significant as part of surveillance and monitoring activities and no mitigation is required.

Source Reduction

The reduction of vector-breeding sources also involves physical control techniques that eliminate or reduce standing water that function as mosquito breeding habitat. These techniques include, but are not limited to, vegetation management including trimming and removal of vegetation and application of herbicides; removal of sediment; water control; and other maintenance activities. Minor trimming of vegetation would be a less than significant impact as detailed above in *Surveillance and Monitoring.* Application of herbicides would follow State and County guidance documents and be conducted in accordance with all applicable BMPs, as detailed in Section 1.6, in order to avoid or minimize potential adverse environmental impacts. These BMPs include application of approved herbicides by Certified Vector Control Technicians pursuant to all instructions, applications rates and methods, and regulations of the USEPA and CDPH. Additionally, IVMP activities within sensitive areas are coordinated with the appropriate land managers and agencies to ensure that activities avoid and minimize potential impacts to sensitive biological resources to the greatest extent feasible. Therefore, impacts to riparian habitat and sensitive natural communities from herbicide application would be less than significant and no mitigation is required.

Sources reduction activities that involve the removal of vegetation have potential to result in significant impacts to riparian habitat and sensitive natural communities (BIO-4) and significant impacts would require mitigation. Due the programmatic nature of this document, the specific location and quantity of impacts cannot be assessed at this time. However, project-specific impacts would be assessed through future project approvals; impacts to riparian habitat and sensitive natural communities would be mitigated in accordance with local policies and ordinances and/or adopted NCCPs/HCPs.

Source Treatment

Biological Control

Biological controls used to manage and reduce vectors can include the use of naturally-occurring bacterial larvicides, natural predators, parasites, and/or pathogens to reduce immature mosquito numbers. One of the techniques employed by the IVMP is the application of mosquito fish in artificial mosquito breeding sources such as ornamental ponds, rain barrels, horse troughs, neglected swimming pools, and spas to reduce the abundance of mosquitoes. Riparian habitat and other sensitive natural communities would not be impacted by the use of mosquito fish as mosquito fish are used only within contained water sources that do not connect to natural waterways.

The other biological control technique employed by the IVMP includes the application of naturally-occurring bacterial larvicides. As a form of pesticide, bacterial larvicides are applied through on-ground techniques such as by foot with backpack applicators, truck-mounted equipment, or watercraft by Certified Vector Control Technicians , or by aircraft (including piloted and unmanned) when land-based methods are not practicable due to the size of the area to be treated or impediments to access. As outlined in the following section, routine maintenance of existing access paths may involve minor trimming of native vegetation which would only be implemented on an as-needed basis, would be the minimum necessary to provide access to the mosquito breeding source, and, whenever feasible, would not impact native trees or shrubs. Minor trimming of vegetation would be a less than significant impact, as detailed in *Surveillance and Monitoring.*

As such, impacts to riparian habitat and sensitive natural communities from biological control activities would be less than significant and no mitigation is required.

Chemical Control

In addition to the above methods, the IVMP controls mosquito populations through the application of chemical controls that target both larvae (larvicides) and adult mosquitos (adulticides), both of which are forms of pesticides. Pesticides are applied through on ground techniques such as by foot or watercraft by Certified Vector Control Technicians, or by aircraft (including piloted and unmanned) when land-based methods are not practicable based on the size of the area to be treated or impediments to access. As detailed in Section 1.6, the IVMP follows CDPH and County guidance documents for conducting inspections and vector treatment abatement activities and employs BMPs in order to avoid or minimize potential adverse environmental impacts. These BMPs include application of CDPR-approved pesticides by Certified Vector Control Technicians in strict accordance all label instructions, applications rates and methods, and regulations of the USEPA and CDPH. Application of pesticides through land-based methods would prioritize utilization of existing access routes and avoid creation of new pedestrian access paths unless no other alternatives are present. Routine maintenance of existing access paths may involve the minor trimming of native vegetation which would be implemented only on an as-needed basis, would be the minimum necessary to provide safe access to the mosquito breeding source, and whenever feasible would not impact native trees and shrubs. Minor trimming of vegetation would be less than significant as detailed in *Surveillance and Monitoring*. No removal of vegetation or other ground-disturbing activities would occur as part of chemical control activities. Therefore, impacts to riparian habitat and sensitive natural communities would be less than significant as part of chemical control activities, and no mitigation is required.

3.2.3 Mitigation Measures and Design Considerations

Source reduction (vegetation removal) is the only IVMP activity with potential to result in significant impacts to riparian habitat or sensitive natural communities. Project-specific activities have not been identified and therefore cannot be quantified in this programmatic document. However, mitigation for impacts to riparian habitat and sensitive natural communities would occur at ratios consistent with the County Guidelines (County 2010a), Wildlife Agencies (CDFW and USFWS), and other local jurisdictions, where applicable. Table 5 of the County Guidelines (County 2010a) provides a list of habitat mitigation ratios for each vegetation community type.

Significant impacts to riparian habitats and sensitive natural communities would be mitigated through implementation of the mitigation measures **M-BIO-4a** through **M-BIO-4f** below:

M-BIO-4a: see **M-BIO-1a**

M-BIO-4b: see **M-BIO-1c**

M-BIO-4c: see **M-BIO-1d**

M-BIO-4d: see **M-BIO-1e**

M-BIO-4e: Permanent impacts to riparian habitat and other sensitive natural communities shall be offset through mitigation of habitat of equal or higher biological value at ratios commensurate with individual IVMP activity impacts. Mitigation shall occur by implementing one or a combination of the following: off-site or on-site preservation, enhancement, restoration, and/or creation of habitat; deduction of habitat mitigation credits from an approved mitigation area or bank, or other location deemed acceptable by the County and applicable regulatory agencies. Final mitigation obligations shall be determined based on the quality, quantity, and type of habitat impacted at ratios consistent with local policies and ordinances, or for projects within the boundaries of an adopted Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP), in accordance with the applicable mitigation ratios and measures of that specific final plan. In the event that the adopted NCCP/HCP does not stipulate mitigation ratios for temporary impacts, temporary impacts to riparian habitat and other sensitive natural communities shall be mitigated through the on-site revegetation of temporarily impacted areas to pre-construction conditions and appropriate vegetation types at a minimum 1:1 ratio.

M-BIO-4f: For individual IVMP activities resulting in permanent impacts to wetland or riparian habitats and/or upland sensitive natural communities, and whose mitigation includes enhancement, restoration, and/or creation of such habitat, a restoration plan shall be prepared by qualified personnel with experience in southern California ecosystems and native plant restoration techniques. At a minimum, the restoration plan shall include the following information: (a) the location of the mitigation site(s); (b) a schematic depicting the mitigation areas; (c) the plant species to be used, container sizes, and seeding rates; (d) a planting schedule; (e) a description of installation requirements, irrigation sources and methodology, erosion control, maintenance and monitoring requirements; (f) measures to properly control exotic vegetation on-site; (g) site-specific success criteria; (h) a detailed monitoring program; (i) contingency measures should the success criteria

not be met; (j) a summary of the annual reporting requirements; and (k) identification of the responsible party(ies) for meeting the success criteria and providing for conservation of the mitigation site in perpetuity.

3.2.4 Conclusion

Implementation of the IVMP could result in significant impacts to sensitive natural communities and riparian habitat; however, a combination of avoidance through project design and implementation of project mitigation measures to fully compensate the loss of habitat would reduce impacts to below a level of significance. Mitigation would occur at ratios consistent with County Guidelines, Wildlife Agencies, Resource Agencies, and other local jurisdictions where applicable. With the implementation of mitigation measures **M-BIO-4a** through **M-BIO-4f**, impacts to sensitive natural communities, including riparian habitat, would be less than significant.

3.3 JURISDICTIONAL WETLANDS AND WATERWAYS

3.3.1 Guidelines for the Determination of Significance

Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

3.3.2 Analysis of Project Effects

Surveillance and Monitoring

Surveillance and monitoring activities include evaluation of mosquito-breeding areas by conducting surveys via ground vehicles, aircraft (including piloted and unmanned), watercraft, and remote sensing equipment; trapping of mosquitoes and rodents; and testing of collecting samples for vector-borne diseases. Surveillance activities generally occur along existing access routes that have already been established and are regularly maintained. In order to avoid or minimize potential adverse environmental impacts, the IVMP follows CDPH and County guidance documents for conducting inspections and vector treatment abatement activities and employs BMPs, as detailed in Section 1.6, in areas with potential to support sensitive biological resources. These BMPs include coordination with the appropriate land managers and agency staff to determine the least environmentally impactful way to access the site and conduct IVMP activities. These activities would not result in discharge into, or the removal, filling, or other physical disturbance to waters or wetlands subject to CDFW, RWQCB, and/or USACE jurisdiction. As part of surveillance and monitoring activities, minor trimming of vegetation along existing access routes and paths may be required to provide access to the mosquito breeding source. Trimming of native vegetation would only be implemented on an as-needed basis, would be the minimum amount necessary to provide safe access, and whenever feasible would not impact native trees and shrubs. Impacts from minor trimming of vegetation would be less than significant due to the negligible area involved, selective nature of the trimming, and the temporary nature of the action as vegetation would grow back, and no individual plants would be removed. Therefore, no significant impacts to state and/or federally protected waters or wetlands would occur from surveillance and monitoring, and no mitigation is required.

Source Reduction

The reduction of vector-breeding sources also involves physical control techniques that eliminate or reduce standing water that function as mosquito breeding habitat. These techniques include but are not limited to vegetation management including trimming and removal of habitat and application of herbicides; removal of sediment; water control; installing, removing, or improving culverts, tide gates, and other water control structures; and other maintenance activities. Minor trimming of vegetation would be a less than significant impact as detailed above in *Surveillance and Monitoring*. Application of herbicides would follow State and County guidance documents and be conducted in accordance with all applicable BMPs, as detailed in Section 1.6, in order to avoid or minimize potential adverse environmental impacts. These BMPs include application of approved herbicides by Certified Vector Control Technicians pursuant to all instructions, applications rates and methods, and regulations of the USEPA and CDPH. Additionally, IVMP activities within sensitive areas are coordinated with the appropriate land managers and agencies to ensure that activities avoid and minimize potential impacts to sensitive biological resources to the greatest extent feasible. Therefore, impacts to CDFW, RWQCB, and/or USACE jurisdictional waters and wetlands from herbicide application would be less than significant and no mitigation is required.

Source reduction activities that result in the filling, removal, and or discharge into waters, wetlands, or riparian habitat, such as sediment and vegetation removal, have potential to result in significant impacts to CDFW, RWQCB, and/or USACE jurisdictional waters and wetlands if they are found to be present within a project-specific IVMP activity area (BIO-5). Significant impacts to waters and wetlands subject to CDFW, RWQCB, and/or USACE jurisdiction would require mitigation, in addition to coordination and potential permitting through the appropriate regulatory agencies. Due the programmatic nature of this document, the specific location and quantity of impacts cannot be assessed at this time. However, project-specific impacts would be assessed through future project approvals and permits. Wetland permits that may be required include a CWA Section 404 permit from the USACE, CWA Section 401 Water Quality Certification or State Porter-Cologne Water Quality Control Act Waste Discharge requirements from the RWQCB, and CFG Code Section 1602 Streambed Alteration Agreement from CDFW. Final mitigation requirements for impacts to waters and wetlands under the jurisdiction of the wetland permitting agencies (USACE, RWQCB, and CDFW) would be determined through consultation with these agencies, as applicable.

Source Treatment

Biological Control

Biological controls used to manage and reduce vectors can include the use of naturally-occurring bacterial larvicides, natural predators, parasites, or pathogens to reduce immature mosquito numbers. One of the techniques employed by the IVMP is the application of mosquito fish in artificial mosquito breeding sources such as ornamental ponds, rain barrels, horse troughs, neglected swimming pools, and spas to reduce the abundance of mosquitoes. Waters and wetlands subject to the jurisdiction of the CDFW, RWQCB, and/or USACE would not be impacted by the use of mosquito fish as mosquito fish are used only within contained water sources that do not connect to natural waterways.

The other biological control technique employed by the IVMP includes the application of naturally-occurring bacterial larvicides. As a form of pesticide, bacterial larvicides are applied through on-ground techniques such as by foot with backpack applicators, truck-mounted equipment, or watercraft by Certified Vector Control Technicians , or by aircraft (including piloted and unmanned) when land-based

methods are not practicable due to the size of the area to be treated or impediments to access. As outlined in the following section, routine maintenance of existing access paths may involve minor trimming of native vegetation which would only be implemented on an as-needed basis, would be the minimum necessary to provide access to the mosquito breeding source, and, whenever feasible, would not impact native trees or shrubs. Minor trimming of vegetation would be a less than significant impact, as detailed in *Surveillance and Monitoring.*

As such, impacts to state and/or federally protected waters or wetlands from biological control activities would be less than significant and no mitigation is required.

Chemical Control

In addition to the above methods, the VCP controls mosquito populations through the application of chemical controls that target both larvae (larvicides) and adult mosquitoes (adulticides), both of which are forms of pesticides. Pesticides are applied through on-ground techniques such as by foot or watercraft by Certified Vector Control Technicians, or by aircraft (including piloted and unmanned) when land-based methods are not practicable based on the size of the area to be treated or impediments to access. As detailed in Section 1.6, the IVMP follows CDPH and County guidance documents for conducting inspections and vector treatment abatement activities and employs BMPs in order to avoid or minimize potential adverse environmental impacts. These BMPs include application of CDPR-approved pesticides by Certified Vector Control Technicians in strict accordance all label instructions, applications rates and methods, and regulations of the USEPA and CDPH. Additionally, IVMP activities within sensitive areas are coordinated with the appropriate land managers and agencies, and activities are conducted in such a manner to ensure site access and abatement activities avoid and minimize potential impacts to sensitive biological resources to the greatest extent feasible.

Chemical control activities would not result in the removal, filling, or alteration of waters or wetlands subject to CDFW, RWQCB, and/or USACE jurisdiction. Application of pesticides through land-based methods would prioritize utilization of existing access routes and avoid creation of new pedestrian access paths unless no other alternatives are present. Routine maintenance of existing access paths may involve the minor trimming of native vegetation which would only be implemented on an as-needed basis, would be the minimum necessary to provide access to the mosquito breeding source, and whenever feasible would not impact native trees and shrubs. Minor trimming of vegetation would be less than significant as detailed in *Surveillance and Monitoring*. No removal of vegetation or other ground-disturbing activities would occur as part of chemical control activities.

In November 2011, the SWRCB issued the Statewide NPDES Permit for Biological and Residual Pesticide Discharges to Waters of the U.S. from Vector Control Applications. The NPDES allows pesticides to be applied to waters of the U.S. for vector control purposes. The County VCP submitted a Notice of Intent to the SWRCB to operate under the General Permit in 2011 (enrollee number 937AP00009) and submits annual reports to the SWRCB regarding pesticide use in compliance with the permit. The General Permit covers the point source discharge of biological and residual pesticides resulting from direct to water and spray applications for vector control using larvicides and adulticides with active ingredients that are currently registered in California and allowed for use. In 2013, the SWRCB amended the permit (State Water Quality Order No. 2014-0106-DWQ) which: (1) added all larvicides and adulticides that are currently registered by the Department of Pesticide Regulations (DPR) using the same active ingredients; (2) included additional receiving water limitations and receiving water monitoring triggers for newly added active ingredients; and (3) included a provision for reopening the permit to include new active

ingredients that DPR registers for vector control. Most recently, the SWRCB reissued the general permit (2016-0039-DWQ), which became effective on July 1, 2016. The updated permit includes the addition of minimum risk pesticide which are pesticides exempted from Federal Insecticide, Fungicide, and Rodenticide Act requirements when used only in the manner specified by federal regulations. Accordingly, the County VCP submitted a new Notice of Intent to the SWRCB to operate under the General Permit in 2016. The IVMP and VCP activities are conducted in accordance with these permits and annual reports are submitted to the SWRCB regarding pesticide use in compliance with the permit.

The application of pesticides would not result in the unlawful discharge into, or the removal, filling, alteration of waters or wetlands subject to the jurisdiction of the CDFW, RWQCB, and/or USACE, and would be completed pursuant to the CDPH guidance and state permits. Therefore, no significant impacts will occur to state and/or federally protected waters or wetlands from chemical control activities and no mitigation is required.

3.3.3 Mitigation Measures and Design Considerations

Source reduction is the only IVMP activity with potential to result in significant impacts to state and federally protected waters and wetlands that would be subject to the regulatory jurisdiction of the CDFW, RWQCB, and/or USACE. Impacts to CDFW, RWQCB, and/or USACE jurisdictional waters and wetlands would be mitigated through implementation of mitigation measures **M-BIO-5a through M-BIO-5g** below:

M-BIO-5a: see **M-BIO-1a**

M-BIO-5b: see **M-BIO-1c**

M-BIO-5c: see **M-BIO-1d**

M-BIO-5d: see **M-BIO-1e**

M-BIO-5e: Individual IVMP activities that would result in impacts to federal or State regulated water bodies (i.e., waters of the U.S. and State, streambeds, wetlands, and/or riparian habitat) shall obtain applicable permits from federal and State regulatory agencies prior to the commencement of such discharge or dredging activities. Such agencies may include U.S. Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife. Mitigation requirements for impacts to federal and State regulated water bodies would be determined through the wetland permit process.

M-BIO-5f: see **M-BIO-4e**

M-BIO-5g: see **M-BIO-4f**

3.3.4 Conclusion

Implementation of the proposed project may result in impacts to federally or state protected wetlands and waters through the filling, removal, and/or alteration of waters of the U.S., waters of the State, and/or CDFW riparian or stream habitat. Mitigation measures, as determined in consultation with the USACE, RWQCB, and/or CDFW would be required. Impacts to jurisdictional areas would require permitting through the appropriate regulatory agencies. Wetland permits that may be required include a CWA Section 404 permit from the USACE, CWA Section 401 Water Quality Certification or State Porter-

Cologne Water Quality Control Act Waste Discharge requirements from the RWQCB, and CFG Code Section 1602 Streambed Alteration Agreement from CDFW. Final mitigation requirements would be determined through consultation with the USACE, RWQCB, and CDFW, and would reduce impacts to less than significant.

3.4 WILDLIFE MOVEMENT AND NURSERY SITES

3.4.1 Guidelines for the Determination of Significance

Would the project 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?

3.4.2 Analysis of Project Effects

The proposed IVMP would target identified vector threats and apply various methods to protect the public from vector-borne disease and nuisances and is not intended to interfere with the movement of any native resident or migratory fish or wildlife species. The majority of IVMP activities would focus on the surveillance and monitoring of potential vector breeding sources and populations through non-invasive methods (i.e., aerial surveys, trapping of insects and rodents, etc.), and control of vector populations through application of larvicides and adulticides. Surveillance and monitoring activities would not result in the removal or alteration of native habitats. Surveillance and source treatment activities may temporarily be located near local wildlife movement areas due the presence of personnel and equipment, but any potential disruptive effects would be minimal and generally last no longer than a few hours in any given location. Wildlife would be expected to move back into the area once activities have ceased and no habitat or ground disturbance would occur. Therefore, these activities would not impede the movement of native, resident, or migratory fish or wildlife species; interfere with established native, resident, or migratory wildlife corridors, including linkages identified in the County MSCP Plan and North County MHCP; and would not impede the use of native wildlife nursery sites. Impacts would be less than significant, and no mitigation is required.

Source reduction activities to reduce or eliminate vector-breeding sources could potentially result in the removal of native habitats. However, these activities would be localized, and the individual IVMP activities areas would be restricted to the greatest extent feasible such that the width of existing wildlife corridors and linkages would not be affected or reduced. Though these activities have the potential to temporarily be located near local wildlife movement areas, potential disruptive effects would be minimal, and wildlife would be expected to move back into the area once activities have ceased. Existing wildlife corridors and linkages would continue to function in their current capacity. Impacts would be less than significant, and no mitigation is required.

3.4.3 Mitigation Measures and Design Considerations

No mitigation measures are required.

3.4.4 Conclusion

Implementation of the IVMP would not result in significant impacts on wildlife movement and nursery sites. No impact would occur, and mitigation is not required.

3.5 LOCAL POLICIES, ORDINANCES, AND ADOPTED PLANS

3.5.1 Guidelines for the Determination of Significance

Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? Would the project conflict with the provisions of an adopted HCP, NCCP plan, or other approved local, regional or state HCP?

3.5.2 Analysis of Project Effects

Implementation of the IVMP will be consistent with local policies and ordinances protecting biological resources. There are seven city or County-adopted conservation plans that occur within the IVMP service areas and several plans that are still in development as detailed in Table 1 (see Section 1.4.1). The IVMP will not conflict with any of the policies and conservation goals of these NCCP/HCPs. The VCP will consult with local jurisdictions, land managers, and regulatory agencies prior to conducting activities that have potential to result to impacts to sensitive biological resources within adopted NCCP/HCP areas to ensure that impacts are minimized to the greatest extent feasible and mitigated in accordance with local requirements when required. Therefore, no significant impact on local policies, ordinances, and adopted plans would occur through implementation of the IVMP.

3.5.3 Mitigation Measures and Design Considerations

No mitigation measures are required.

3.5.4 Conclusion

Implementation of the IVMP would not result in conflicts with local policies, ordinances, and adopted plan. No impact would occur, and mitigation is not required.

3.6 CUMULATIVE IMPACT ANALYSIS

The Proposed Project includes implementation of a countywide IVMP in which individual localized activities would occur throughout San Diego County. The IVMP consists of a range of activities involving surveillance of existing and potential vector threats as well as physical, biological, and chemical control methods to reduce the spread of mosquito-borne and other vector-borne diseases and nuisances. Due to the programmatic nature of this document, the exact locations and extent of all activities to be conducted under the IVMP are not known at this time. Activities anticipated to be implemented under the IVMP will be required to comply with all federal, state, and location regulations including various NCCPs/HCPs; conform with project design features and SOPs dictating approved activities; and implement all project mitigation measures as summarized in Section 4.0, *Summary of Project Impacts and Mitigation*, to reduce potential impacts to sensitive biological resources to below a level of significance. Therefore, the IVMP would not have a cumulatively significant impact on biological resources within the IVMP service area.

4.0 SUMMARY OF PROJECT IMPACTS AND MITIGATION

The proposed project has the potential to cause significant impacts to special status plant and animal species, sensitive natural communities, jurisdictional wetlands and/or riparian habitats as defined by the USACE, RWQCB, and CDFW (Table 4, *Summary of Potentially Significant Biological Resources Impacts*). In each case, however, the identified significant impact can be mitigated to a less than significant level. Table 5, *Summary of Biological Resources Mitigation Measures*, provides a summary of the proposed mitigation measures.

Table 4
SUMMARY OF POTENTIALLY SIGNIFICANT BIOLOGICAL RESOURCES IMPACTS

Criteria	IVMP Activity[1]			
	Surveillance and Monitoring	Source Reduction	Source Treatment[2]	
			Biological Control	Chemical Control
Special Status Plant Species	Less than Significant Impact	**Potentially Significant Impact (BIO-1)**	Less than Significant Impact	Less than Significant Impact
Special Status Animal Species	**Potentially Significant Impact (BIO-2)**	**Potentially Significant Impact (BIO-2 & BIO-3)**	**Potentially Significant Impact (BIO-2)**	**Potentially Significant Impact (BIO-2)**
Riparian Habitat and Sensitive Natural Communities	Less than Significant Impact	**Potentially Significant Impact (BIO-4)**	Less than Significant Impact	Less than Significant Impact
Jurisdictional Wetlands and Waterways	Less than Significant Impact	**Potentially Significant Impact (BIO-5)**	Less than Significant Impact	Less than Significant Impact
Wildlife Movement and Nursery Sites	Less than Significant Impact	Less than Significant Impact	No Impact	No Impact
Local Policies, Ordinances, and Adopted Plans	No Impact	No Impact	No Impact	No Impact

[1] Surveillance and monitoring, source reduction, and source treatment are the only vector control techniques evaluated. Other techniques (i.e., public education and outreach and disease diagnostics) would not result in impacts to biological resources and therefore are not discussed further.

[2] For the purpose of this technical report, Source Treatment activities are defined as the physical act of applying pesticides, which may include vegetation trimming. As a result, impact conclusions shown here for Source Treatment are based on the potential to conduct vegetation trimming.

Table 5
SUMMARY OF BIOLOGICAL RESOURCES MITIGATION MEASURES

Impact Summary	Impact No.	Mitigation Measure	Level of Significance After Mitigation
Direct impacts to special status plant species due to habitat modification (Guideline Number 3.1)	**BIO-1**	**M-BIO-1a:** Prior to conducting IVMP activities that would result in vegetation removal, habitat modification, and/or ground disturbance, a qualified biologist shall conduct a biological evaluation of the individual IVMP activity area. The biological evaluation shall include (1) a general reconnaissance survey; (2) a review of recent aerial imagery, topographic and soils maps, regional vegetation mapping (as available), and local, state, and federal biological databases including, but not limited to, County SanBIOS data, California Department of Fish and Wildlife (CDFW) Biogeographic Information and Observation System (BIOS) database, U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) and critical habitat databases, and Environmental Protection Agency (EPA) Watershed Assessment, Tracking & Environmental Results System (WATERS) database to determine sensitive biological resources known to occur within and adjacent to the IVMP activity area; (3) a query of sensitive species databases such as U.S. Fish and Wildlife Service occurrence records, California Department of Fish and Wildlife California Natural Diversity Database, and County SanBIOS data to determine if special status species are present or have high potential to occur within or adjacent to the individual IVMP activity area; and (4) preparation of a biological resources report. The reconnaissance survey shall include an inventory of existing vegetation communities, flora and fauna resources, and potentially jurisdictional resources present within the individual IVMP activity area; and documentation of special status plant and animal species, if encountered during the survey. The biological resources report shall summarize existing biological resources present within the individual IVMP activity area; identify sensitive biological resources that are present or have potential to occur; provide an assessment of potential impacts; and identify applicable mitigation measures, if necessary.	Less than significant

Table 5 (cont.)
SUMMARY OF BIOLOGICAL RESOURCES MITIGATION MEASURES

Impact Summary	Impact No.	Mitigation Measure	Level of Significance After Mitigation
Direct impacts to special status plant species due to habitat modification (Guideline Number 3.1)	**BIO-1**	**M-BIO-1b:** Prior to conducting IVMP activities that would result in vegetation removal, permanent habitat modification, and/or ground disturbance in areas with potential to support special status plant species, a qualified biologist shall conduct a rare plant survey to confirm the presence/absence of special status plant species within or adjacent to the individual IVMP activity area. The exact timing of the rare plant survey shall be determined based on the location, elevation, and flowering phenology of the special status plant species with potential to occur within and adjacent to the individual IVMP activity area. If special status plant species are discovered within the individual IVMP activity area, those individuals or populations shall be avoided, or additional mitigation measures (which could include transplantation, etc.) shall be implemented that would reduce impacts to below a level of significance. Impacts to state- and/or federally-listed plant species and species' designated critical habitat may require additional consultation with the U.S. Fish and Wildlife Service, pursuant to the Federal Endangered Species Act if the individual IVMP activity area occurs outside of an adopted NCCP/HCP, or if take of that species is not covered under the specific adopted plan. Mitigation for impacts to special status plant species shall be consistent with local jurisdictions' policies and ordinances, and/or adopted NCCPs/HCPs where required, and identified within the individual IVMP activity biological resources report that shall be prepared pursuant to M-BIO-1a.	Less than significant
		M-BIO-1c: Prior to conducting IVMP activities, a qualified biologist shall flag areas to be avoided that contain sensitive biological resources. Where indicated by the biologist, these areas shall be fenced or otherwise protected from direct or indirect impacts. Specifically, temporary (i.e., exclusionary) fencing shall be installed where feasible when grubbing, clearing, or grading would be conducted within 100 feet of sensitive biological resources depending on the species or habitat present, individual IVMP activities, and site constraints. Temporary fencing (such as silt or orange construction fencing) shall be installed at limits of an individual IVMP activity area prior to initiation of activities. A qualified biologist shall monitor the installation of temporary (i.e., exclusionary) fencing wherever it would abut sensitive species or vegetation communities, jurisdictional waters or wetlands, or other sensitive areas such as environmentally-designated open space.	

Table 5 (cont.)
SUMMARY OF BIOLOGICAL RESOURCES MITIGATION MEASURES

Impact Summary	Impact No.	Mitigation Measure	Level of Significance After Mitigation
Direct impacts to special status plant species due to habitat modification (Guideline Number 3.1)	**BIO-1**	**M-BIO-1d:** Prior to conducting IVMP activities that would result in vegetation removal, permanent habitat modification, and/or ground disturbance in areas known to contain sensitive biological resources, a qualified biologist shall conduct an environmental training session for personnel, as applicable, to inform them of the sensitive biological resources with potential to occur and any mitigation and/or avoidance measures that must be implemented.	Less than significant
		M-BIO-1e: When sensitive biological resources have been identified on-site or adjacent to an individual IVMP activity area, a qualified biologist shall monitor initial vegetation clearing, grubbing, and ground disturbance activities to ensure that activities occur within the approved limits of work and that protection measures (e.g., flagging, fencing, etc.) are in place.	
Direct impacts to special status animal species (Guideline Number 3.1)	**BIO-2**	**M-BIO-2a:** see **M-BIO-1a**	Less than significant
		M-BIO-2b: IVMP activities that could result in vegetation removal, permanent habitat modification, and/or ground disturbance activities within potentially suitable habitat for state- and/or federally-listed animal species shall occur outside a species' breeding season. If such activities are unavoidable during the respective breeding season, focused protocol surveys for each species with potential to occur shall be conducted prior to conducting IVMP activities. Surveys shall follow the current U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife protocols, as appropriate. If state- and/or federally-listed species are determined to occur within or adjacent to the individual IVMP activity area, consultation with the U.S. Fish and Wildlife Service and the California Department of Fish and Game under the Federal Endangered Species Act and California Endangered Species Act, respectively, shall be initiated and any resulting mitigation measures (including, but not limited to, breeding season activity restrictions) identified during consultation shall be implemented.	
		M-BIO-2c: see **M-BIO-1c**	
		M-BIO-2d: see **M-BIO-1d**	
		M-BIO-2e: see **M-BIO-1e**	

Table 5 (cont.)
SUMMARY OF BIOLOGICAL RESOURCES MITIGATION MEASURES

Impact Summary	Impact No.	Mitigation Measure	Level of Significance After Mitigation
Direct impacts to special status animal species (Guideline Number 3.1)	**BIO-2**	**M-BIO-2f:** Clearing or grubbing of vegetation during the general avian breeding season (February 15 through September 15) or raptor breeding season (January 15 through July 15) as defined by the County Guidelines for Determining Significance of Biological Resources shall be avoided except as outlined by this measure. These breeding seasons shall not supersede implementing any agreements with the Wildlife Agencies, Habitat Conservation Plans (HCPs), Habitat/Resource Management Plans (HMPs/RMPs), and Special Area Management Plans (SAMPs). If clearing and grubbing of vegetation is unavoidable during the breeding season, a pre-construction survey shall be conducted by a qualified biologist no more than seven days prior to conducting work in an individual IVMP activity area that supports suitable nesting bird habitat to determine if active bird nests are present. If no nesting birds are documented (includes nest building or other breeding or active nesting behavior) within the individual activity area, clearing, grubbing, and grading shall be allowed to proceed. If an active nest is observed within the activity area, the biologist shall flag the nest and an appropriate buffer, which shall be determined by the biologist based on the biology of the species and the specific site constraints. Activities shall not occur within the buffer area until the biologist has determined that the nest is no longer active, young have fledged, or determined that limited activities within the buffer would not jeopardize nesting success. The buffer area shall be demarcated in the field with flagging, stakes, and/or temporary fencing. The nesting buffer may be determined and adjusted depending on the species present, individual IVMP activities and site constraints, and in consultation with applicable wildlife agencies.	Less than significant
Indirect impacts to special status animal species (Guideline Number 3.1)	**BIO-3**	**M-BIO-3:** For individual IVMP activities located adjacent to habitat occupied by state- and/or federally-listed avian species (e.g., California gnatcatcher, least Bell's vireo, and southwestern willow flycatcher) in which noise would be produced in excess of 60 dB(A)L_{eq} or ambient noise levels (if ambient levels are above 60 dB), the IVMP activities shall: a) Be postponed until a qualified biologist determines the nest(s) is no longer active or until after the respective breeding season; or b) Not occur until a temporary noise attenuation structure or barrier is constructed at the edge of the individual IVMP activity area and/or around the noise-generating equipment to ensure that noise levels are reduced to below 60 dBA or ambient, whichever is greater.	Less than significant

Table 5 (cont.)
SUMMARY OF BIOLOGICAL RESOURCES MITIGATION MEASURES

Impact Summary	Impact No.	Mitigation Measure	Level of Significance After Mitigation
Direct impacts to riparian habitat and sensitive natural communities due to habitat modification (Guideline Number 3.2)	**BIO-4**	**M-BIO-4a:** see **M-BIO-1a**	Less than significant
		M-BIO-4b: see **M-BIO-1c**	
		M-BIO-4c: see **M-BIO-1d**	
		M-BIO-4d: see **M-BIO-1e**	
		M-BIO-4e: Permanent impacts to riparian habitat and other sensitive natural communities shall be offset through mitigation of habitat of equal or higher biological value at ratios commensurate with individual IVMP activity impacts. Mitigation shall occur by implementing one or a combination of the following: off-site or on-site preservation, enhancement, restoration, and/or creation of habitat; deduction of habitat mitigation credits from an approved mitigation area or bank, or other location deemed acceptable by the County and applicable regulatory agencies. Final mitigation obligations shall be determined based on the quality, quantity, and type of habitat impacted at ratios consistent with local policies and ordinances, or for projects within the boundaries of an adopted Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP), in accordance with the applicable mitigation ratios and measures of that specific final plan. In the event that the adopted NCCP/HCP does not stipulate mitigation ratios for temporary impacts, temporary impacts to riparian habitat and other sensitive natural communities shall be mitigated through the on-site revegetation of temporarily impacted areas to pre-construction conditions and appropriate vegetation types at a minimum 1:1 ratio.	

Table 5 (cont.)
SUMMARY OF BIOLOGICAL RESOURCES MITIGATION MEASURES

Impact Summary	Impact No.	Mitigation Measure	Level of Significance After Mitigation
Direct impacts to riparian habitat and sensitive natural communities due to habitat modification (Guideline Number 3.2)	**BIO-4**	**M-BIO-4f:** For individual IVMP activities resulting in permanent impacts to wetland or riparian habitats and/or upland sensitive natural communities, and whose mitigation includes enhancement, restoration, and/or creation of such habitat, a restoration plan shall be prepared by qualified personnel with experience in southern California ecosystems and native plant restoration techniques. At a minimum, the restoration plans shall include the following information: (a) the location of the mitigation site(s); (b) a schematic depicting the mitigation areas; (c) the plant species to be used, container sizes, and seeding rates; (d) a planting schedule; (e) a description of installation requirements, irrigation sources and methodology, erosion control, maintenance and monitoring requirements; (f) measures to properly control exotic vegetation on-site; (g) site-specific success criteria; (h) a detailed monitoring program; (i) contingency measures should the success criteria not be met; (j) a summary of the annual reporting requirements; and (k) identification of the responsible party(ies) for meeting the success criteria and providing for conservation of the mitigation site in perpetuity.	Less than significant
Direct impacts to jurisdictional wetlands and waterways due to habitat modification (Guideline Number 3.3)	**BIO-5**	**M-BIO-5a:** see **M-BIO-1a**	Less than significant
		M-BIO-5b: see **M-BIO-1c**	
		M-BIO-5c: see **M-BIO-1d**	
		M-BIO-5d: see **M-BIO-1e**	
		M-BIO-5e: Individual IVMP activities that would result in impacts to federal or State regulated water bodies (i.e., Waters of the U.S. and State, streambeds, wetlands, and/or riparian habitat) shall obtain applicable permitting from federal and State regulatory agencies prior to the commencement of such discharge or dredging activities. Such agencies may include U.S. Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife. Mitigation requirements for impacts to federal and State regulated water bodies would be determined through the wetland permit process.	
		M-BIO-5f: see **M-BIO-4e**	
		M-BIO-5g: see **M-BIO-4f**	

5.0 REFERENCES

American Ornithological Society (AOS). 2020. AOU Checklist of North and Middle American Birds (online checklist). Retrieved from: http://checklist.aou.org/taxa/.

Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, editors. 2012. The Jepson Manual: Vascular Plants of California, second edition. University of California Press, Berkeley.

California Department of Fish and Wildlife (CDFW). 2020a. California Natural Diversity Data Base (CNDDB). RareFind Database Program, Version 5.

2020b. California Natural Diversity Database (CNDDB). Special Vascular Plants, Bryophytes, and Lichens List. January. Retrieved from: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109383&inline.

2020c. California Natural Diversity Database (CNDDB). Special Animal List. July. Retrieved from: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109406&inline.

California Department of Public Health (CDPH). 2020. California Mosquito-Borne Virus Surveillance & Response Plan. May. Retrieved from: http://westnile.ca.gov/resources.php.

2012. Best Management Practices for Mosquito Control in California. July. Retrieved from: http://westnile.ca.gov/resources.php.

2008. Best Management Practices for Mosquito Control on California State Properties. June. Retrieved from: http://westnile.ca.gov/resources.php.

California Native Plant Society (CNPS). 2020. Inventory of Rare and Endangered Plants (online edition, v8-03 0.4). Rare Plant Program. California Native Plant Society, Sacramento, CA. Retrieved from: http://www.rareplants.cnps.org/.

County of San Diego (County). 2020. SanBIOS Database. Land Use and Environment Group. Retrieved from: http://www.sangis.org/.

2018a. County of San Diego Vector Control Program Mosquito, Vector and Disease Control Assessment: Engineer's Report. Fiscal Year 2018-2019. June.

2018b. County of San Diego Aedes Transmitted Disease Strategic Response Plan. April.

2018c. County of San Diego West Nile Virus Strategic Response Plan. April.

2014. County of San Diego Vector Control Program Mosquito Breeding Site Access Standard Operating Procedure. November 21.

County of San Diego (cont.)

2011a. San Diego General Plan Update Final Environmental Impact Report. Department of Planning and Land Use. August. Retrieved from: https://www.sandiegocounty.gov/content/sdc/pds/gpupdate/environmental.html.

2011b. San Diego County Code Title 8 Zoning and Land Use Regulations, Division 6. Miscellaneous Land Use Regulations. Chapter 6. Resource Protection Ordinance. October 14.

2010a. Guidelines for Determining Significance and Report Format and Content Requirements, Biological Resources. Fourth Revision, September 15. Retrieved from: https://www.sandiegocounty.gov/content/dam/sdc/pds/ProjectPlanning/docs/Biological_Report_Format.pdf

2010b. Biological Mitigation Ordinance [for the South County MSCP Subarea Plan]. Ordinance No. 8845, 9246, 9632, 10039. April 2.

1998. Final Multiple Species Conservation Program, MSCP Plan. August.

1997. Multiple Species Conservation Program, County of San Diego Subarea Plan. October 22.

Davenport, Ken. 2018. Lepidoptera of North America 15. Butterflies of southern California in 2018: updating Emmel and Emmel's 1973 Butterflies of southern California. Colorado State University. Department of Bioagricultural Sciences and Pest Management; C.P. Gillette Museum of Arthropod Diversity. April 20. Retrieved from: https://mountainscholar.org/handle/10217/187314.

Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. State of California, The Resources Agency, 156 pp.

Jepson Flora Project (eds.) 2020. *Jepson eFlora*. Retrieved from: http://ucjeps.berkeley.edu/eflora/.

NatureServe. 2020. NatureServe Explorer. Retrieved from: https://explorer.natureserve.org/.

Natural Resources Conservation Service (NRCS). 2020. Web Soil Survey. U.S. Department of Agriculture, Natural Resource Conservation Service. Retrieved from: https://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/survey/.

Oberbauer, T., M. Kelly, and J. Buegge. 2008. Draft Vegetation Communities of San Diego County. Based on "Preliminary Descriptions of the Terrestrial Natural Communities of California," R. F. Holland, Ph.D., October 1986. March. Revised from 1996 and 2005. July.

Pelham, Jonathon P. 2020. A Catalogue of Butterflies of the United States and Canada. University of Florida. Florida Museum of Natural History, McGuire Center for Lepidoptera and Biodiversity; University of Washington. Burke Museum of Natural History and Culture. Revised June 3. Retrieved from: https://www.butterfliesofamerica.com/US-Can-Cat.htm.

San Diego Association of Governments (SANDAG). 2015. San Diego Forward: The Regional Plan. October 2. Available at: http://www.sdforward.com/pdfs/EIR_Final/FinalEnvironmentalImpactReport-completedocument.pdf.

San Diego Geographic Information Source. 2020. Regional Data Warehouse. Retrieved from: http://www.sangis.org/download/.

San Diego Management and Monitoring Program. 2020. Library. MSP Core and Linkages Shapefile. Retrieved from: https://sdmmp.com/library.php.

Society for the Study of Amphibians and Reptiles (SSAR). 2020. North American Standard English and Scientific Names Database. Retrieved from: https://ssarherps.org/cndb/.

South Coast Wildlands (SCW). 2008. South Coast Missing Linkages: A Wildlife Network for the South Coast Region. March. Retrieved from: http://www.scwildlands.org/reports/SCMLRegionalReport.pdf.

Tremor, S., D. Stokes, W. Spencer, J. Diffendorfer, H. Thomas, S. Chives, and P. Unitt. 2017. San Diego Mammal Atlas. San Diego Natural History Museum.

U.S. Fish and Wildlife Service (USFWS). 2020a. Occurrence Information for Multiple Species within Jurisdiction of the Carlsbad Fish and Wildlife Office (CFWO). Retrieved from: http://www.fws.gov/carlsbad/gis/cfwogis.html.

2020b. National Wetlands Inventory. Retrieved from: https://www.fws.gov/wetlands/index.html.

2010. Pacific Pocket Mouse (*Perognathus longimembris pacificus*) 5-Year Review: Summary and Evaluation. Carlsbad Fish and Wildlife Office. April 1. Retrieved from: https://ecos.fws.gov/docs/five_year_review/doc3552.pdf.

U.S. Geological Survey (USGS). 2020. National Hydrography Dataset (NHD). Retrieved from: https://www.usgs.gov/core-science-systems/ngp/national-hydrography/national-hydrography-dataset?qt-science_support_page_related_con=0#qt-science_support_page_related_con.

6.0 LIST OF PREPARERS

The following individuals contributed to the preparation of this report.

Linda Garcia	M.A., English, National University, 2012 B.A., Literatures in English, University of California, San Diego, 2003
Erica Harris‡	B.S., Biology, Emphasis in Zoology, San Diego State University, 2009
Rebecca Kress	B.A., Geography, State University of New York, Geneseo, 1999
Stacy Nigro*†	B.S., Forest Resources and Conservation (emphasis in Wildlife Ecology, minor in Botany), University of Florida, 1994
Vanessa Toscano	B.A, Biology, University of San Diego, 2006

‡ Primary report author
* Contributing author
† County-approved Biological Consultant

This page intentionally left blank

Appendix A

Special Status Plant Species with Potential to Occur within the VCP Service Area

Appendix A
Special Status Plant Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habit, Ecology and Life History
Red sand verbena (*Abronia maritima*)	--/-- CRPR 4.2 County List D	Perennial herb. Grows on coastal dunes from San Luis Obispo County south to San Diego County and on the Channel Islands. Flowering period: February to November. Elevation: below 330 feet (100 meters).
Chaparral sand-verbana *(Abronia villosa* var. *aurita)*	--/-- CRPR 1B.1 County List A	Annual herb. Grows on desert dunes and in sandy areas within coastal scrub, chaparral. Found along the coast from Ventura County south to San Diego County, and east to San Bernardino, Riverside, and Imperial Counties. Flowering period: March to September. Elevation: 245 to 5,250 feet (75 to 1,600 meters).
Shrubby Indian mallow (*Abutilon abutiloides*)	--/-- CRPR 2B.1	Perennial herb. Occurs within Sonoran desert scrub on rocky or granitic soil in San Diego County. Flowering period: August to November. Elevation: 2,805 to 2,955 feet (855 to 900 meters).
San Diego thorn-mint *(Acanthomintha ilicifolia)*	FT/CE CRPR 1B.1 County List A MSCP Covered NE	Annual herb. Typically grows on clay soils within chaparral, coastal scrub, valley and foothill grassland, and vernal pools. Found in San Diego County. Flowering period: April to June. Elevation: below 30 to 3,150 feet (10 to 960 meters).
Pygmy lotus (*Acmispon haydonii*)	--/-- CRPR 1B.3 County List A	Perennial herb. Occurs in pinyon-juniper woodland and Sonoran desert scrub on rocky outcrops. Found in Riverside, Imperial, and San Diego Counties. Flowering period: January to June. Elevation: 1705 to 3935 feet (520 to 1200 meters).
Nuttall's lotus (*Acmispon prostratus*)	--/-- CRPR 1B.1 County List A MSCP Covered	Annual herb. Grows on coastal dunes and sandy areas coastal scrub in San Diego County. Flowering Period: March to June. Elevation: below 35 feet (10 meters).
California adolphia (*Adolphia californica*)	--/-- CRPR 2B.1 County List B	Perennial shrub. Most often found in coastal scrub but occasionally occurs in peripheral chaparral habitats, particularly hillsides near creeks on clay soils. Found in San Diego County. Flowering period: December to May. Elevation: 30 to 2,430 feet (10 to 740 meters).
Shaw's agave (*Agave shawii* var. *shawii*)	--/-- CRPR 2B.1 County List B MSCP Covered NE	Perennial succulent. Most often found on coastal bluffs and along mesas and foothill within coast bluff scrub, coastal scrub. Maritime succulent scrub, and chaparral. Found in San Diego County. Flowering period: September to May. Elevation: below 395 feet (120 meters).
San Diego bur-sage (*Ambrosia chenopodiifolia*)	--/-- CRPR 2B.1 County List B	Perennial shrub. Found in coastal scrub within southwestern San Diego County. Flowering period: April to June. Elevation: 180 to 510 feet (55 to 155 meters).

Appendix A (cont.)
Special Status Plant Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habit, Ecology and Life History
Singlewhorl burrobrush (*Ambrosia monogyra*)	--/-- CRPR 2B.2	Perennial shrub. Found on sandy soils within washes and dry riverbeds within chaparral and Sonoran desert scrub. Flowering period: August to November. Found in San Bernardino, Riverside, and San Diego Counties Elevation: 30 to 1,640 feet (10 to 500 meters).
San Diego ambrosia (*Ambrosia pumila*)	FE/-- CRPR 1B.1 County List A NE	Perennial herb. Occurs on sandy loam or clay, sometimes alkaline, soils within grasslands, dry drainages, stream floodplain terraces, and vernal pool margins. Also occurs on slopes, disturbed places, and in coastal sage scrub or chaparral. Found in Riverside and San Diego Counties. Flowering period: April to October. Elevation: 65 to 1,360 feet (20 to 415 meters).
California rockjasmine (*Androsace elongata* ssp. *acuta*)	--/-- CRPR 4.2 County List D	Annual herb. Occurs within meadows and seeps, grasslands, coastal scrub, chaparral, cismontane woodlands, and pinyon-juniper woodland. Found along the Cascade Range and foothills; North and South Coast Ranges; Sacrament and San Joaquin Valleys; foothills of southern Sierra Nevada; western Transverse and Peninsular Ranges; San Bernardino and San Jacinto mountains; and along the coast of southern California. Flowering period: March to June. Elevation: 490 to 1,000 feet (150 to 305 meters).
Aphanisma (*Aphanisma blitoides*)	--/-- CRPR 1B.2 County List A MSCP Covered	Annual herb. Occurs on sandy or gravelly soils within coastal dunes, coastal bluff scrub, and coastal scrub. Found along the coast from Santa Barbara County south to San Diego County and the Channel Islands. Flowering period: June to September. Elevation: below 656 feet (305 meters).
Del Mar manzanita (*Arctostaphylos glandulosa* ssp. *crassifolia*)	FE/-- CRPR 1B.1 County List A MSCP Covered	Perennial shrub. Occurs within relatively open, coastal chaparral and maritime chaparral on sandy soils. At occasional inland sites it occurs in denser mixed chaparral vegetation. Found in San Diego County. Flowering Period: December to June. Elevation: below 1,200 feet (365 meters).
Otay manzanita (*Arctostaphylos otayensis*)	--/-- CRPR 1B.2 County List A MSCP Covered	Perennial shrub. Grows on metavolcanics soils within chaparral and cismontane woodland in San Diego County. Flowering period: January to April. Elevation: 900 to 5,580 feet (275 to 1,700 meters).
Rainbow manzanita (*Arctostaphylos rainbowensis*)	--/-- CRPR 1B.1 County List A	Perennial shrub. Occurs among granitic outcrops within chaparral. Found in Riverside and San Diego Counties. Flowering period: December to March. Elevation: 670 to 2,200 feet (205 to 670 meters).
San Diego sagewort (*Artemisia palmeri*)	--/-- CRPR 4.2 County List D	Perennial herb. Typically found along stream courses, often beneath riparian woodland, on sandy and mesic soils. May occur in coast live oak woodland, coastal sage scrub, and southern mixed chaparral. Found in San Diego County Flowering period: June to October. Elevation: 50 to 3,000 feet (15 to 915 meters).

Appendix A (cont.)
Special Status Plant Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habit, Ecology and Life History
Western spleenwort (*Asplenium vespertinum*)	--/-- CRPR 4.2 County List D	Perennial rhizomatous herb. Occurs in chaparral, cismontane woodland, and coastal scrub along rocky bluffs. Found along the coastal regions from Ventura south San Diego County and east to San Bernardino and Riverside Counties. Flowering period: February to June. Elevation: 590 to 3,280 feet (180 to 1,000 meters).
Salton milk-vetch (*Astragalus crotalariae*)	--/-- CRPR 4.3 County List D	Perennial herb. Grows on sandy or gravelly soils within Sonoran desert scrub. Found in Riverside, Imperial, and San Diego Counties. Flowering period: January to April. Elevation: below 820 feet (250 meters).
Dean's milk-vetch (*Astragalus deanei*)	--/-- CRPR 1B.1 County List A	Perennial herb. Grow on open, shrubby slopes in chaparral. Also occurs within coastal scrub, cismontane woodland, and riparian forest. Found in San Diego County. Flowering period: February to May. Elevation: 245 to 2,280 feet (75 to 695 meters).
Jacumba milk-vetch (*Astragalus douglasii* var. *perstrictus*)	--/-- CRPR 1B.2 County List A	Perennial herb. Grows on rocky outcrops within grasslands, chaparral, cismontane woodland, pinyon- juniper woodland, and riparian scrub. Found in San Diego County. Flowering period: April to June. Elevation: 2,950 to 4,495 feet (900 to 1,370 meters).
Harwood's milk-vetch (*Astragalus insularis* var. *harwoodii*)	--/-- CRPR 2B.2 County List B	Annual herb. Grows on desert dunes and sandy or gravelly soils within Mojave desert scrub. Found in San Bernardino, Riverside, Imperial, and San Diego Counties. Flowering period: January to May. Elevation: below 2,330 feet (710 meters).
Borrego milk-vetch (*Astragalus lentiginosus* var. *borreganus*)	--/-- CRPR 4.3 County List D	Annual herb. Grows on sandy soils within Mojave and Sonoran desert scrub. Found in San Bernardino, Riverside, Imperial, and San Diego Counties. Flowering period: February to May. Elevation: 95 to 2,935 feet (30 to 895 feet).
Big Bear Valley woollypod (*Astragalus leucolobus*)	--/-- CRPR 1B.2	Perennial herb. Occurs within pebble plain, pinyon-juniper woodland, montane coniferous forest on rocky soils. Found in San Benito, Inyo, Kern, Los Angeles, Ventura San Bernardino, Riverside, and San Diego Counties. Flowering period: May to July. Elevation: 3605 to 9465 feet (1100 to 2885 meters).
Peirson's milk-vetch (*Astragalus magdalenae* var. *peirsonii*)	FT/SE CRPR 1B.2 County List A	Perennial herb. Grows on desert dunes within Imperial and San Diego Counties. Flowering period: December to April. Elevation: 195 to 740 feet (60 to 225 meters).
San Diego milk-vetch (*Astragalus oocarpus*)	--/-- CRPR 1B.2 County List A	Perennial herb. Grows in openings of chaparral and oak woodlands in San Diego County. Flowering period: May to August. Elevation: 1,000 to 5,000 feet (305to 1,524 meters).
Jaeger's bush milk-vetch (*Astragalus pachypus* var. *jaegeri*)	--/-- CRPR 1B.1 County List A	Perennial shrub. Grows on sandy or rocky soils within chaparral, cismontane woodland, coastal scrub, and grasslands. Found in Riverside and San Diego Counties. Flowering period: December to June. Elevation: 1,195 to 3,200 feet (365 to 975 meters).

Appendix A (cont.)
Special Status Plant Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habit, Ecology and Life History
gravel milk-vetch (*Astragalus sabulonum*)	--/-- CRPR 2B.2	Perennial herb. Grows on desert dunes and sandy, sometimes gravelly, soils within Mojave and Sonoran desert scrub. Also occurs on flats, washes, and along road sides. Found in Inyo, Riverside, Imperial, and San Diego Counties. Flowering period: February to June. Elevation: below 3,050 feet (930 meters).
Coastal dunes milk vetch (*Astragalus tener* var. *titi*)	FE/SE CRPR 1B.1 County List A MSCP Covered	Annual herb. Occurs in coastal bluff scrub, coastal dunes, and coastal prairie. Associated with moist, sandy depressions of bluffs or dunes near the Pacific Ocean. Found in Monterey, Los Angeles, and Sn Diego Counties. Flowering period: March to May. Elevation: below 165 feet (50 meters).
Coulter's saltbush (*Atriplex coulteri*)	--/-- CRPR 1B.2 County List A	Perennial herb. Occurs on alkaline or clay soils within coastal dunes, coastal bluffs, coastal sage scrub, and grasslands. Found along the coastal regions from Santa Luis Obispo County south to San Diego County, western portions of San Bernardino and Riverside Counties, and the Channel Islands. Flowering period: March to October. Elevation: below 1,510 feet (460 meters).
South coast saltscale (*Atriplex pacifica*)	--/-- CRPR 1B.2 County List A	Annual herb. Found coastally on dunes and within playas in alkali sinks, sage scrub and wetland riparian communities. Found along the coastal regions from Santa Barbara County south to San Diego County, western portions of San Bernardino and Riverside Counties, and the Channel Islands. Flowering period: March to October. Elevation: below 460 feet (140 meters).
Parish's brittlescale (*Atriplex parishii*)	--/-- CRPR 1B.1 County List A	Annual herb. Occurs in chenopod scrub, playas, and vernal pools on alkaline soils. Found in San Bernardino, Los Angeles, Orange, Riverside, and San Diego Counties. Flowering period: June to October. Elevation: 80 to 6,235 feet (25 to 1,900 meters).
Davidson's saltscale (*Atriplex serenana* var. *davidsonii*)	--/-- CRPR 1B.2 County List A	Annual herb. Occur in alkaline soils within coastal sage scrub and coastal bluff scrub. Found in the coastal regions from San Luis Obispo County south to Orange County, western portions of San Bernardino and Riverside County, and the Channel Islands. Not known from San Diego County. Flowering Period: April to October. Elevation: 30 to 655 feet (10 to 200 meters).
Mexican mosquito fern (*Azolla microphylla*)	--/-- CRPR 4.2 County List D	Annual to perennial herb. Occurs within marsh and swamps habitats associated with ponds and slow-moving waters. Found in Sacramento and San Joaquin Valleys; Sierra Nevada and eastern valley; White and Inyo Mountains; San Bernardino Mountains; San Francisco Bay Area, and along the central coast. Not known from San Diego County. Flowering period: August. Elevation: feet (30 to 100 meters).
California ayenia (*Ayenia compacta)*	--/-- CRPR 2B.3 County List B	Perennial herb. Grows in Mojave and Sonoran desert scrub on rocky soils. Found in San Bernardino, Riverside, and San Diego Counties. Flowering period: March to April. Elevation: 490 to 3595 feet (150 to 1095 meters).

Appendix A (cont.)
Special Status Plant Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habit, Ecology and Life History
Encinitas baccharis (*Baccharis vanessae*)	FT/SE CRRP 1B.1 County List A MSCP Covered NE	Perennial shrub. Grows on sandstone within chaparral, maritime chaparral, woodlands, and Torrey-pine forest understory. Found in San Diego County. Flowering period: August to December. Elevation: 195 to 2,360 feet (60 to 720 meters).
San Diego County viguiera (*Bahiopsis laciniata*)	--/-- CRPR 4.3 County List D	Perennial shrub. Occurs on a variety of soil types within coastal sage scrub in San Diego County. Generally, shrub cover is more open than at mesic, coastal locales supporting sage scrub. Found along the coastal regions from Ventura County south to San Diego County and western Riverside County. Flowering period: February to August. Elevation: 295 to 2,461 feet (90 to 750 meters).
Fremont barberry (*Berberis fremontii*)	--/-- CRPR 2B.3 County List C	Perennial evergreen shrub. Occurs in Joshua tree, pinyon, and juniper woodland on rocky or granitic soils. Found in San Bernardino and San Diego Counties. Flowering period: March to May. Elevation: 3,755 to 5,645 feet (1,145 to 1,720 meters).
Nevin's barberry (*Berberis nevinii*)	FE/SE CRPR 1B.1 County List A NE	Perennial evergreen shrub. Occurs in chaparral, cismontane woodland, coastal scrub, and riparian scrub on sandy or gravelly soils. Found in Los Angeles, San Bernardino, Riverside, and San Diego Counties. Flowering period: March to June. Elevation: 225 to 2,705 feet (70 to 825 meters).
Golden-spined cereus (*Bergerocactus emoryi*)	--/-- CRPR 2B.2 County List B	Stem succulent shrub. Occurs coastally on sandy open hills within chaparral, coastal scrub, and closed-cone pine forests. Found in Los Angeles and San Diego Counties, and San Clemente and Santa Catalina Islands. Flowering period: May to June. Elevation: below 1,295 feet (395 meters).
San Diego goldenstar (*Bloomeria clevelandii*)	--/-- CRPR 1B.1 County List A MSCP Covered	Perennial bulbiferous herb. Occurs in valley grasslands and coastal scrub, particularly near mima mound topography or in the vicinity of vernal pools, on clay soils. Found in Riverside and San Diego Counties. Flowering period: April to May. Elevation: 160 to 1,525 feet (50 to 465 meters).
Hirshberg's rockcress (*Boechera hirshbergiae*)	--/-- CRPR 1B.2 County List A	Perennial herb. Occurs on pebble plain within San Diego County. Flowering period: March to May. Elevation: 4,590 to 4,640 feet (1,400 to 1,415 meters).
Thread-leaved brodiaea (*Brodiaea filifolia*)	FT/SE CRPR 1B.1 County List A MSCP Covered NE	Perennial herb. Often associated with vernal pools. Also occurs within playas, grasslands, coastal scrub, openings in chaparral, and cismontane woodland; often on clay soils. Found in Los Angeles, Orange, San Bernardino, Riverside, and San Diego Counties. Flowering period: March to June. Elevation: 80 to 3,675 feet (25 to 1,120 meters).

Appendix A (cont.)
Special Status Plant Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habit, Ecology and Life History
Orcutt's brodiaea (*Brodiaea orcuttii*)	--/-- CRPR 1B.1 County List A MSCP Covered	Perennial bulbiferous herb. Occurs within closed-cone coniferous forest, chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, and vernal pools. Prefers mesic or clay soils. Found in Riverside San Diego Counties. Flowering period: May to July. Elevation: 98 to 5,550 feet (30 to 1,692 meters).
Santa Rosa Basalt brodiaea (*Brodiaea santarosae*)	--/-- CRPR 1B.2	Perennial herb. Occurs within grassland son basaltic soils. Found in Riverside and San Diego Counties. Flowering period: May to June. Elevation: 1,850 to 3,430 feet (565 to 1,045 meters).
little-leaf elephant tree (*Bursera microphylla*)	--/-- CRPR 2B.3 County List B	Perennial deciduous tree. Occurs within Sonoran desert scrub on rocky soils. Found in Riverside, Imperial, and San Diego Counties. Flowering period: June to July. Elevation: 655 to 2,295 feet (200 to 700 meters).
Fire reedgrass (*Calamagrostis koelerioides*)	--/-- MSCP Covered	Perennial herb. Grows on dry slopes, hills, and ridges within meadows. Found along the along the north and central coast; Klamath, North Coast, and South Coast Ranges; San Francisco Bay Area; San Jacinto Mountains; and Peninsular Ranges. Flowering period: June to August. Elevation: below 7,545 feet (2,300 meters).
Brewer's calandrinia (*Calandrinia breweri*)	--/-- CRPR 4.2 County List D	Annual herb. Occurs within chaparral or coastal scrub on sandy or loamy soil, disturbed sites, and after burns. Flowering Period: January to June. Elevation: 32 to 4,000 feet (10 to 1,220 meters).
Seaside calandrinia (*Calandrinia maritima*)	--/-- CRPR 4.2 County List D	Annual herb. Grows on sandy soils within grasslands, coastal bluff scrub, and coastal scrub. Found along the coastal regions from Santa Barbara south to San Diego County and the Channel Islands. Flowering period: March to June. Elevations: 15 to 985 feet (5 to 300 meters).
Round leaved filaree (*California macrophylla*)	--/-- County List B	Annual herb. Occurs in open sites on clay, occasionally serpentine, soils within grasslands and cismontane woodlands. Found along the central and southern coast; Sacramento and San Joaquin Valleys; North Coast, South Coast, western Transverse, and Peninsular Ranges; San Francisco Bay area; southern Sierra Nevada foothills; Tehachapi and San Jacinto mountains; and the Channel Islands. Flowering Period: March to July. Elevation: below 3,940 feet (1,200 meters).
pink fairy-duster (*Calliandra eriophylla*)	--/-- CRPR 2B.3 County List B	Perennial shrub. Occurs within Sonoran desert scrub on sandy or rocky soils. Found in Riverside, Imperial, and San Diego Counties. Flowering period: January to March. Elevation: 390 to 4,920 feet (120 to 1,500 meters).
Cataline mariposa (*Calochortus catalinae*)	--/-- CRPR 4.2 County List D	Perennial herb. Occurs within grasslands, coastal scrub, chaparral, and cismontane woodlands. Found along the coastal regions from San Luis Obispo County south to San Diego County and east to western San Bernardino and Riverside Counties. Flowering period: March to June. Elevation: 50 to 2,300 feet (15 to 700 meters).

Appendix A (cont.)
Special Status Plant Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habit, Ecology and Life History
Dunn's mariposa lily (*Calochortus dunnii*)	--/-- CRPR 1B.2 County List A MSCP Covered NE	Perennial herb. Found in closed-cone coniferous forest, chaparral, and valley and foothill grassland, typically on gabbroic, metavolcanics, or rocky soils. Found in San Diego County. Flowering Period: Feb to June. Elevation: 605 to 6,005 feet (185 to 1,830 meters).
San Jacinto mariposa lily (*Calochortus palmeri* var. *munzii*)	--/-- CRPR 1B.2	Perennial herb. Occurs within chaparral, lower montane coniferous forest, meadows and seeps. Found in Riverside and San Diego Counties. Flowering Period: April to July. Elevation: 2,805 to 7,220 feet (855 to 2,200 meters).
Arizona pussypaws (*Calyptridium arizonicum*)	--/-- CRPR 1B.1	Annual herb. Grows in washes on metamorphic soils within Sonoran desert scrub in San Diego County. Flowering Period: April to July. Elevation: 2,000 to 2,590 feet (610 to 790 meters).
Lewis' evening-primrose (*Camissoniopsis lewisii*)	--/-- CRPR 3 County List C	Annual herb. Occurs on sandy or clay soils within grasslands, coastal scrub, cismontane woodland, and coastal bluffs and dunes. Found in Los Angeles, Orange, and San Diego Counties. Flowering period: March to June. Elevation: below 985 feet (300 meters).
San Luis Obispo sedge (*Carex obispoensis*)	--/-- CRPR 1B.2	Perennial herb. Occurs along springs and streams within chaparral, coastal sage scrub, and grasslands. Often associated with serpentine, gabbro, and clay soils. Found within Monterey, San Luis Obispo, San Diego Counties. Flowering period: April to June. Elevation: 30 to 2,690 feet (10 to 820 meters).
Arizona carlowrightia (*Carlowrightia arizonica*)	--/-- CRPR 2B.2 County List B	Perennial deciduous shrub. Occurs within Sonoran desert scrub on sandy, granitic alluvium soils in San Diego County. Flowering period: March to May. Elevation: 935 to 1,410 feet (285 to 430 meters).
San Bernardino Mountains owl's-clover (*Castilleja lasiorhyncha*)	--/-- CRPR 1B.2	Annual (hemiparasitic) herb. Grows in mesic areas within meadows and seeps, pebble plain, chaparral, riparian woodlands, upper montane coniferous forests in mesic areas. Found in San Bernardino, Riverside, and San Diego Counties. Flowering period: May to August. Elevation: 4,265 to 7,840 feet (1,300 to 2,390 meters).
Slender pod jewelflower (*Caulanthus heterophyllus*)	--/-- MSCP Covered	Annual herb. Grows on dry sites within open coastal scrub and chaparral. Often occurs in burned and disturbed areas. Found along the coast of southern California; South Coast, western Transverse, and Peninsular Ranges; San Gabriel and San Bernardino mountains; and the Channel Islands. Flowering period: March to May. Elevation: below 4,600 feet (1,400 meters).
Payson's jewelflower (*Caulanthus simulans*)	--/-- CRPR 4.2 County List D	Annual herb. Occurs within coastal sage scrub, chaparral, and pinyon-juniper woodlands on sandy and granitic soils. Found in Riverside and San Diego Counties. Flowering period: February to June. Elevation: 295 to 7,220 feet (90 to 2,200 meters).

Appendix A (cont.)
Special Status Plant Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habit, Ecology and Life History
Lakeside ceanothus (*Ceanothus cyaneus*)	--/-- CRPR 1B.2 County List A MSCP Covered NE	Perennial shrub. Occurs on slopes and ridgelines in closed-cone coniferous forests and chaparral. Found in Riverside and San Diego Counties. Flowering period: April to June. Elevation: 770 to 2,540 feet (235 to 755 meters).
Viejas Mountain ceanothus (*Ceanothus foliosus* var. *viejasensis*)	--/-- CRPR 1B.2	Perennial shrub. Occurs within chaparral on gabbro soils in San Diego County. Flowering period: March to June. Elevation: 2,575 to 4,495 feet (785 to 1,370 meters).
Otay Mountain ceanothus (*Ceanothus otayensis*)	--/-- CRPR 1B.2	Perennial shrub. Found in chaparral dominated by chamise and ceanothus species on metavolcanics or gabbroic soils. Mild soil disturbances may enable this plant to pioneer on road cuts and in burn areas. Only known from Otay Mountain in San Diego County. Flowering Period: January to April. Elevation: 1,965 to 3,610 feet (600 to 1,100 meters).
Pendleton ceanothus (*Ceanothus pendletonensis*)	--/-- CRPR 1B.2 County List B	Perennial shrub. Found within chaparral and cismontane woodlands with granitic soils in San Diego County. Flowering period: March to June. Elevation: 360 to 2,855 feet (110 to 870 meters).
Wart-stemmed ceanothus (*Ceanothus verrucosus*)	--/-- CRPR 2B.2 County List B MSCP Covered	Perennial shrub. Found on rocky slopes within chaparral, particularly southern maritime chaparral. Found in Riverside and San Diego Counties. Flowering period: December to May. Elevation: below 1,245 feet (380 meters).
Southern tarplant (*Centromadia parryi* ssp. *australis*)	--/-- CRPR 1B.1 County List A	Annual herb. Found at the margins of salt marshes, vernally mesic areas within grasslands, and vernal pools. Found in the coastal regional from Santa Barbara County south to San Diego County and the Channel Islands. Flowering Period: May to November. Elevation: below 1,575 feet (480 meters).
Smooth tarplant (*Centromadia pungens* ssp. *laevis*)	--/-- CRPR 1B.1 County List A	Annual herb. Occurs on alkaline soils in chenopod scrub, meadows and seeps, playas, riparian woodland, and valley and foothill grassland. Found in San Bernardino, Los Angeles, Riverside, and San Diego Counties. Flowering Period: April to September. Elevation: below 2,100 feet (640 meters).
Peirson's pincushion (*Chaenactis carphoclinia* var. *peirsonii*)	--/-- CRPR 1B.3 County List A	Annual herb. Found on sandy soils within Sonoran desert scrub. Found in Riverside, Imperial, and San Diego Counties. Flowering Period: March to April. Elevation: 5 to 1,640 feet (3 to 500 meters).
Orcutt's pincushion (*Chaenactis glabriuscula* var. *orcuttiana*)	--/-- CRPR 1B.1 County List A	Annual herb. Found on coastal dunes and sandy areas within coastal bluff scrub. Typically, in proximity to moist ocean breezes from Ventura County south to San Diego County. Elevation: below 330 feet (100 meters). Flowering Period: January to August.

Appendix A (cont.)
Special Status Plant Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habit, Ecology and Life History
Parish's chaenactis (*Chaenactis parishii*)	--/-- CRPR 1B.3 County List A	Perennial herb. Found within chaparral on rocky outcroppings. Flowering Period: May to July. Found in Riverside and San Diego Counties. Elevation: 4,265 to 8,200 feet (1,300 to 2,500 meters).
Southern mountain misery (*Chamaebatia australis*)	--/-- CRPR 4.2 County List D	Perennial shrub. Occurs in chaparral on gabbroic or metavolcanics soils. Found in Los Angeles and San Diego Counties. Blooms November to May. Elevation: 980 to 3,350 feet (300 to 1,020 meters).
Salt marsh bird's-beak (*Chloropyron maritimum* ssp. *maritimum*)	FE/SE CRPR 1B.2 County List A MSCP Covered	Annual herb. Found in coastal salt marshes and swamps, particularly on slightly raised hummocks, and on coastal dunes. Found along the coastal regions from San Luis Obispo south to San Diego County and east to San Bernardino County. Flowering Period: May to October. Elevation: below 100 feet (30 meters).
Peninsular spineflower (*Chorizanthe leptotheca*)	--/-- CRPR 4.2 County List D	Annual herb. Occurs on alluvial fans and sandy and gravelly soils within coastal sage scrub, chaparral, and coniferous forests. Found within San Bernardino, Riverside, and San Diego Counties. Flowering period: May to August. Elevation: 980 to 6,235 feet (300 to 1,900 meters).
Orcutt's spineflower (*Chorizanthe orcuttiana*)	FE/SE CRPR 1B.1 County List A	Annual herb. Found in sandy openings of coastal sage scrub, maritime chaparral, and closed-cone coniferous forests. Known from only three occurrences in Encinitas and Point Loma within San Diego County. Flowering period: March to May. Elevation: 5 to 410 feet (3 to 125 meters).
Long-spined spineflower *(Chorizanthe polygonoides* var. *longispina)*	--/-- CRPR 1B.2 County List A	Annual herb. Occurs in chaparral, coastal scrub, and native grassland, often on clay soils. Found within Orange, Riverside, San Bernardino, and San Diego Counties. Flowering period: April to July. Elevation: 95 to 5,020 feet (30 to 1,530 meters).
White-bracted spineflower *(Chorizanthe xanti* var. *leucotheca)*	--/-- CRPR 1B.2	Annual herb. Occurs within coastal scrub, Mojave desert scrub, and pinyon-juniper woodland, especially on alluvial fans and sandy or gravelly soils. Found within Los Angeles, Riverside, San Bernardino, and San Diego Counties. Flowering period: April to June. Elevation: 980 to 3,935 feet (300 to 1,200 meters).
Delicate clarkia (*Clarkia delicata*)	--/-- CRPR 1B.2 County List A	Annual herb. Occurs in shaded areas or the periphery of oak woodlands and cismontane chaparral, often on gabbroic soils. Found in San Diego County. Flowering period: April to June. Elevation: 770 to 3,280 feet (235 to 1,000 meters).
San Miguel savory (*Clinopodium chandleri*)	--/-- CRPR 1B.2 County List A MSCP Covered	Perennial shrub. Occurs within chaparral, cismontane woodland, coastal scrub, riparian woodland, and valley and foothill grassland on rocky, gabbroic, or metavolcanic soils. Flowering Period: March to July. Found in Orange, Riverside, and San Diego Counties. Elevation: 390 to 3,525 feet (120 to 1,075 meters.
Las Animas colubrina (*Colubrina californica*)	--/-- CRPR 2B.3 County List B	Perennial shrub. Occurs in Mojave and Sonoran desert. Found in Riverside, Imperial, and San Diego Counties. Flowering period: April to June. Elevation: 30 to 3,280 feet (10 to 1,000 meters).

Appendix A (cont.)
Special Status Plant Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habit, Ecology and Life History
Summer holly (*Comarostaphylis diversifolia* ssp. *diversifolia*)	--/-- CRPR 1B.2 County List A	Perennial shrub. Occurs in chaparral and cismontane woodland. Found in Santa Barbara, Orange, Riverside, and San Diego Counties. Flowering period: April to June. Elevation: 95 to 2,590 feet (30 to 790 meters).
Small-flowered morning-glory (*Convolvulus simulans*)	--/-- CRPR 4.2 County List D	Annual herb. Occurs on clay soils and serpentinite seeps in openings within chaparral, coastal scrub, and native grassland. Found within the San Francisco Bay area, San Joaquin Valley, western Sierra Nevada foothills, along the coast of southern California, the Channel Islands, and the western Transverse and Peninsular Ranges. Flowering period: April to June. Elevation: 95 to 2,430 feet (30 to 740 meters).
small-flowered bird's-beak (*Cordylanthus parviflorus*)	--/-- CRPR 2B.3	Annual (hemiparasitic) herb. Occurs within Joshua tree woodland, Mojave desert scrub, and pinyon-juniper woodland. Found in San Bernardino and San Diego Counties. Flowering period: August to October. Elevation: 2,295 to 7,220 feet (700 to 2,200 meters).
San Diego sand aster (*Corethrogyne filaginifolia* var. *incana*)	--/-- CRPR 1B.1 County List A	Perennial herb. Occurs within grasslands, coastal bluff scrub, coastal scrub, and chaparral in San Diego County. Flowering period: June to September. Elevation: 5 to 375 feet (3 to 115 meters).
Del Mar Mesa sand aster (*Corethrogyne filaginifolia* var. *linifolia*)	--/-- CRPR 1B.1 MSCP Covered	Perennial herb. Found on sandy soils and disturbed areas within southern maritime chaparral, coastal sage scrub, and coastal bluffs. Found in San Diego County. Flowering Period: May to September. Elevation: 45 to 490 feet (15 to 150 meters).
Gander's cryptantha (*Cryptantha ganderi*)	--/-- CRPRP 1B.1 County List A	Annual herb. Grows in desert dunes and sandy areas within Sonoran desert scrub. Found in Imperial and San Diego Counties. Flowering period: February to May. Elevation: 520 to 1310 feet (160 to 400 meters).
Wiggins' croton (*Croton wigginsii*)	--/SR CRPR 2B.2 County List C	Perennial shrub. Grows in sand dunes and sandy soils of desert scrub in the southeastern portion of Sonoran Desert. Found in Los Angeles, Riverside, Imperial, and San Diego Counties. Flowering period: February to June. Elevation: 65 to 900 feet (20 to 275 meters).
Snake cholla (*Cylindropuntia californica* var. *californica*)	--/-- CRPR 1B.1 County List A MSCP Covered NE	Perennial succulent. Occurs within coastal sage scrub and coastal chaparral communities in San Diego County. Flowering period: April to May. Elevation: 95 to 490 feet (30 to 150 meters).
pink teddy-bear cholla (*Cylindropuntia fosbergii*)	--/-- CRPRP 1B.3	Perennial succulent. Occurs within Sonoran desert scrub in San Diego County. Flowering period: March to May. Elevation: 275 to 2,790 feet (85 to 850 meters).

Appendix A (cont.)
Special Status Plant Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habit, Ecology and Life History
Otay tarplant (*Deinandra conjugens*)	FT/SE CRPR 1B.1 County List A MSCP Covered NE	Annual herb. Grows in clay soils within coastal scrub openings and grasslands in San Diego County. Flowering period: May to June. Elevation: 80 to 985 feet (25 to 300 meters).
Tecate tarplant (*Deinandra floribunda*)	--/-- CRPR 1B.2 County List A	Annual herb. Occurs within coastal sage scrub and chaparral in San Diego County. Flowering period: August to October. Elevation: 225 to 4,005 feet (70 to 1,220 meters).
Mojave tarplant (*Deinandra mohavensis*)	--/SE CRPR 1B.3 County List A	Annual herb. Grows in mesic areas of coastal scrub, chaparral, and riparian scrub. Found in Inyo, Tulare, Keren, Los Angles, San Bernardino, Riverside, and northern San Diego Counties. Flowering period: June to October. Elevation: 2,095 to 5,250 feet (640 to 1,600 meters).
Paniculate tarplant (*Deinandra paniculata*)	--/-- CRPR 4.2 County List D	Annual herb. Occurs in vernally mesic areas, sometimes sandy soils, in coastal scrub, valley and foothill grassland, and vernal pools with sandy soil. Found along the coastal regions from San Luis Obispo County south to San Diego County and east to western San Bernardino and Riverside Counties. Flowering Period: March to December. Elevation: 80 to 3,100 feet (25 to 940 meters).
Cuyamaca larkspur (*Delphinium hesperium* ssp. *cuyamacae*)	--/SR CRPR 1B.2 County List A	Perennial herb. Grows in vernal pools and other mesic areas of meadows and seeps and lower montane coniferous forests. Found in Riverside and San Diego Counties. Flowering period: May to July. Elevation: 4,000 to 5,350 feet (1,220 to 1,631 meters).
Colorado Desert larkspur (*Delphinium parishii* ssp. *Subglobosum*)	--/-- CRPR 4.3 County List D	Perennial herb. Occurs within chaparral, cismontane woodlands, pinyon-juniper woodland, and Sonoran desert scrub. Found in Riverside, Imperial, and San Diego Counties. Flowering period: March to June. Elevation: 1,970 to 5,905 feet (600 to 1,800 meters).
Western dichondra (*Dichondra occidentalis*)	--/-- CRPR 4.2 County List D	Perennial herb. Found among rocks and shrubs within grasslands, coastal sage scrub, chaparral, and oak woodlands. Often proliferates on recently burned slopes. Found along the coastal regions from San Luis Obispo County south to San Diego County. Flowering period: March to July. Elevation: 165 to 1,640 feet (50 to 500 meters).
Orcutt's bird's-beak (*Dicranostegia orcuttiana*)	--/-- CRPR 2B.1 County List B MSCP Covered	Annual herb. Found coastally within coastal sage scrub in San Diego County. Flowering period: April to July. Elevation: below 30 to 1,150 feet (10 to 350 meters).
Mt. Laguna aster (*Dieteria asteroides* var. *lagunensis)*	--/SR CRPR 2B.1 County List B	Perennial herb. Occurs within cismontane woodlands and lower montane coniferous forests in San Diego County. Flowering period: July to August. Elevation: 2,590 to 7,875 feet (790 to 2,400 meters).

Appendix A (cont.)
Special Status Plant Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habit, Ecology and Life History
Arizona cottontop (*Digitaria californica* var. *california*)	--/-- CRPR 2B.3	Perennial herb. Grows on rocky hillsides within Mojave and Sonoran desert scrub. Found within San Bernardino, Imperial, and San Diego Counties. Flowering period: July to November. Elevation: below 5,250 feet (1,500 meters).
low bush monkeyflower (*Diplacus aridus*)	--/-- CRPR 4.3 County List D	Perennial shrub. Grows in rocky areas of chaparral and Sonoran desert scrub. Found within Imperial and San Diego Counties. Flowering period: April to July. Elevation: 2,460 to 3,940 feet (750 to 1,200 meters).
Cleveland's bush monkeyflower (*Diplacus clevelandii*)	--/-- CRPR 4.2 County List D	Perennial herb. Grows on rocky and gabbroic soils within openings of chaparral, cismontane woodland, and lower montane coniferous forests. Often in disturbed places. Found in Orange, Riverside and San Diego Counites. Flowering period: April to July. Elevation: 1,475 to 6,560 feet (450 to 2,000 meters).
California ditaxis (*Ditaxis serrata* var. *californica*)	--/-- CRPR 3.2 County List C	Perennial herb. Occurs within Sonoran desert scrub in San Bernardino, Riverside, Imperial, and San Diego Counties. Flowering period: March to December. Elevation: feet 95 to 3,280 feet (30 to 1,00 meters).
Cuyamaca Lake downingia (*Downingia concolor* var. *brevior*)	--/SE CRPR 1B.1 County List A	Annual herb. Grows in vernal pools and other vernally mesic areas of meadows and seeps within San Diego County. Flowering period: May to July. Elevation: 3,375 to 4,920 feet (1,030 to 1,500 meters).
Orcutt's dudleya (*Dudleya attenuata* ssp. *attenuata*)	--/-- CRPR 2B.1 County List B	Perennial herb. Grows on rocky or gravelly soils within coastal bluff scrub, coastal scrub, and chaparral. Found in San Diego County. Flowering period: May to July. Elevation: 5 to 165 feet (3 to 50 meters).
Blochman's dudleya (*Dudleya blochmaniae* ssp. *blochmaniae*)	--/-- CRPR 1B.1 County List A MSCP Covered	Perennial herb succulent. Grows on open, rocky slopes, often on serpentine or clay dominated soils in coastal sage scrub and valley grassland communities. Found along the coast from San Luis Obispo south to San Diego County. Flowering period: April to June. Elevation: 15 to 1,475 feet (5 to 450 meters).
Santa Rosa Island dudleya (*Dudleya blochmaniae* ssp. *insularis*)	--/-- CRPR 1B.1	Perennial herb. Occurs within coastal bluff scrub of San Diego County and Santa Rosa Island. Flowering period: March to April. Elevation: 5 to 35 feet (3 to 10 meters).
Short-leaved dudleya (*Dudleya brevifolia*)	--/SE CRPR 1B.1 County List A MSCP Covered NE	Perennial herb. Occurs in open areas and sandstone bluffs of coastal scrub, maritime chaparral, and Torrey pine forest. Found in San Diego County. Flowering Period: April to May. Elevation: 95 to 820 feet (30 to 250 meters).
Many-stemmed dudlyea (*Dudleya multicaulis*)	--/-- CRPR 1B.2 County List A	Perennial herb. Found in clay soils and sandstone outcrops associated with coastal sage scrub, chaparral, and valley grasslands. Found in along the coastal regions from Los Angeles south to San Diego County, and western Riverside and San Bernardino Counties. Flowering Period: April to July. Elevation: 45 to 2,590 feet (15 to 790 meters).

Appendix A (cont.)
Special Status Plant Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habit, Ecology and Life History
Variegated dudleya (*Dudleya variegata*)	--/-- CRPR 1B.2 County List A MSCP Covered NE	Perennial herb succulent. Occurs on clay soils of dry hillsides and mesas within chaparral, valley grassland, foothill woodland and coastal sage scrub communities. Found in San Diego County. Flowering period: April to June. Elevation: 5 to 1,905 feet (3 to 580 meters).
Sticky dudleya (*Dudleya viscida*)	--/-- CRPR 1B.2 County List A MSCP Covered	Perennial herb. Occurs in rocky areas within coastal bluffs, coastal sage scrub, chaparral, and woodlands. Grows primarily on very steep north-facing slopes. Found in Orange, Riverside, and San Diego Counties. Flowering period: May to June. Elevation: 30 to 1,805 feet (10 to 550 meters).
Harwood's eriastrum (*Eriastrum harwoodii*)	--/-- CPRP 1B.2	Annual herb. Grows on desert dunes within San Bernardino, Riverside, Imperial, and San Diego Counties. Flowering period: March to June. Elevation: 410 to 3,000 feet (125 to 915 meters).
Laguna Mountains goldenbush (*Ericameria cuneata* var. *macrocephala*)	--/-- CRPR 1B.3	Perennial shrub. Grows on granitic soils within chaparral in San Diego County. Flowering period: September to December. Elevation: 3,920 to 6,070 feet (3,920 to 6,070 meters).
Palmer's goldenbush (*Ericameria palmeri* var. *palmeri*)	--/-- CRPR 1B.1 County List B MSCP Covered NE	Perennial Shrub. Grows in mesic areas within coastal sage scrub and chaparral in San Diego County. Flowering period: September to November. Elevation: 95 to 1,960 feet (30 to 600 meters).
sessile-leaved yerba stanta (*Eriodictyon sessilifolium*)	--/-- CRPR 1B.2 2B.1	Perennial shrub. Occurs within coastal sage scrub in San Diego County. Flowering period: July. Elevation: 560 feet (170 meters).
vanishing wild buckwheat (*Eriogonum evanidum*)	--/-- CRPR 1B.1 County List A	Annual herb. Grows in gravelly and sandy areas of chaparral, pinyon-juniper woodland, cismontane woodland, lower montane coniferous forests. Found in San Bernardino, Riverside, and San Diego Counties. Flowering period: July to October. Elevation: 3,605 to 7,300 feet (1,100 to 2,225 meters).
Hoover's button-celery (*Eryngium aristulatum* var. *hooveri*)	--/-- CRPR 1B.1	Annual to perennial herb. Grows within vernal pools. Found in the San Francisco Bay and South Coast Ranges; not known from San Diego County. Flowering period: July. Elevation: 5 to 150 feet (3 to 45 meters).
San Diego button celery (*Eryngium aristulatum* var. *parishii*)	FE/SE CRPR 1B.1 County List A MSCP Covered	Annual or perennial herb. Grows in vernal pools and other mesic areas, such as marshes. Found in Los Angeles, Orange, Riverside, and San Diego Counties. Flowering period: April to June. Elevation: 65 to 2,035 feet (20 to 620 meters).

Appendix A (cont.)
Special Status Plant Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habit, Ecology and Life History
Pendleton button-celery (*Eryngium pendletonense*)	--/-- CRPR 1B.1 County List A	Perennial herb. Grows in vernal pools and on clay soils within vernally mesic areas of grasslands and coastal bluff scrub. Found in San Diego County. Flowering period: April to June. Elevation: 45 to 360 feet (15 to 110 meters).
Sand-loving wallflower (*Erysimum ammophilum*)	--/-- CRPR 1B.2 MSCP Covered	Perennial herb. Found in open areas and sandy soils within coastal dunes, coastal strand, coastal sage scrub, and maritime chaparral. Found within northern Monterey County, San Diego County, and the northern Channel Islands. Flowering Period: February to June. Elevation: below 195 feet (60 meters).
Palomar monkeyflower (*Erythranthe diffusua*)	--/-- CRPR 4.3 County List D	Annual herb. Grows in sandy or gravelly areas within chaparral and lower montane coniferous forests. Found in Riverside, Orange, and San Diego Counties. Flowering period: April to June. Elevation: 4,000 to 6,005 feet (1,220 to 1,830 meters).
annual rock-nettle (*Eucnide rupestris*)	--/-- CRPR 2B.2 County List B	Annual herb. Occurs within Sonoran desert scrub in Imperial and San Diego Counites. Flowering period: December to April. Elevation: 1,640 to 1,970 feet (500 to 600 meters).
Abrams' spurge (*Euphorbia abramsiana*)	--/-- CRPR 2B.2	Perennial shrub. Grows in rocky areas of coastal bluffs, coastal sage scrub, and Mojave desert scrub. Found in San Bernardino, Riverside, Imperial and San Diego Counties. Flowering period: December to August. Elevation: below 4,300 feet (1,310 meters).
Arizona spurge (*Euphorbia arizonica*)	--/-- CRPR 2B.3 County List B	Perennial herb. Grows in sandy soils of Sonoran desert scrub. Found in Riverside, Imperial, and San Diego Counties. Flowering period: March to April. Elevation: 160 to 985 feet (50 to 300 meters).
Cliff spurge (*Euphorbia misera*)	--/-- CRPR 2B.2 County List B	Perennial shrub. Found in rocky areas of coastal bluffs, coastal sage scrub, and Mojave desert scrub. Found along in Riverside, Orange, and San Diego Counties and the Channel Islands. Flowering period: December to August. Elevation: 30 to 1,640 feet (10 to 500 meters).
Flat-seeded spurge (*Euphorbia platysperma*)	--/-- CRPR 1B.2 County List A	Annual herb. Grows on desert dunes and sandy areas within Sonoran desert scrub. Found in San Bernardino, Riverside, Imperial and San Diego Counties. Flowering period: February to September. Elevation: 210 to 330 feet (65 to 100 meters).
Revolute spurge (*Euphorbia revoluta*)	--/-- CRPR 4.3 County List D	Annual herb. Grows in rocky areas of Mojave desert scrub. Found in San Bernardino, Riverside, and San Diego Counties. Flowering period: August to September. Elevation: 3,590 to 10,170 feet (1,095 to 3,100 meters).
San Diego barrel cactus (*Ferocactus viridescens*)	--/-- CRPR 2B.1 County List B MSCP Covered	Perennial (stem succulent) shrub. Grows in sandy to rocky areas within chaparral, valley grassland and coastal sage scrub communities. Found in San Diego County Flowering period: May to June. Elevation: 5 to 492 feet (3 to 450 meters).

Appendix A (cont.)
Special Status Plant Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habit, Ecology and Life History
Palmer's frankenia (*Frankenia palmeri*)	--/-- CRPR 2B.1 County List B	Perennial herb. Found in coastal salt marshes and swamps, playas, and coastal dunes. Found in San Diego County. Flowering period: May to July. Elevation: below 35 feet (10 meters).
Chaparral ash (*Fraxinus parryi*)	--/-- CRPR 2B.2	Perennial shrub. Grows in canyons, slopes, margins of mixed chaparral. Found I San Diego County. Flowering period: March to May. Elevation: 695 to 2,035 feet (213 to 20 meters).
Mexican flannelbush (*Fremontodendron mexicanum*)	FE/SR CRPR 1B.1 County List A	Perennial shrub. Occurs on gabbroic, metavolcanic, and serpentinite soils within chaparral, foothill woodland and closed-cone pine forest communities. Found in San Diego County. Flowering period: March to June. Elevation: 30 to 2,350 feet (10 to 716 meters).
Chocolate lily (*Fritillaria biflora* var. *biflora*)	--/-- County List D	Perennial herb. Grows on grassy slopes, mesas, and serpentine barrens. Found along the coastal regions from primarily form Mendocino County south to San Diego County. Flowering period: March to May. Elevation: below 4,265 feet (1,300 meters)
Roderick's chocolate lily (*Fritillaria roderickii*)	--/-- CRPR 1B.1	Perennial herb. Occurs within coastal prairies, grasslands, and coastal bluff scrub. Found along the coast form Mendocino County south to San Diego County. Flowering period: March to May. Elevation: 50 to 1,315 feet (15 to 400 meters).
Utah vine milkweed (*Funastrum utahense*)	--/-- CRPR 4.2 County List D	Perennial herb. Grows on gravelly or sandy soils within Mojave and Sonoran desert scrub. Found within San Bernardino, Riverside, Imperial, and San Diego Counties. Flowering period: April to June. Elevation: feet 325 to 4,710 feet (100 to 1,435 meters).
Borrego bedstraw (*Galium angustifolium* ssp. *borregoense*)	--/SR CRPR 1B.3 County List A	Perennial herb. Grows in rocky areas of Sonoran desert scrub. Found in Imperial and San Diego Counties. Flowering period: March. Elevation: 1,145 to 4,100 feet (350 to 1,250 meters).
San Jacinto Mountains bedstraw (*Galium angustifolium* ssp. *jacinticum*)	--/-- CRPR 1B.3 County List A	Perennial herb. Grows in lower montane coniferous forests within Riverside and San Diego Counties. Flowering period: June to August. Elevation: 4,425 to 6,890 feet (1,350 to 2,100 meters).
desert bedstraw (*Galium proliferum*)	--/-- CRPR 2B.2	Annual herb. Grows on rocky, carbonate, and limestone soils within Joshua tree woodland, Mojave desert scrub, and pinyon-juniper woodland. Found within San Bernardino and San Diego Counties. Flowering period: March to June. Elevation: 3,900 to 5,350 feet (1,190 to 1,630 meters).
Fremont's gentian (*Gentiana fremontii*)	--/-- CRPR 2B.3	Annual herb. Grows in mesic areas of meadows and seeps and upper montane coniferous forests. Found within San Bernardino and San Diego Counties. Flowering period: June to August. Elevation: 7,870 to 8,860 feet (2,400 to 2,700 meters).

Appendix A (cont.)
Special Status Plant Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habit, Ecology and Life History
Campbell's liverwort (*Geothallus tuberosus*)	--/-- CRPR 1B.1	Liverwort. Grows in vernal pools and mesic areas of coastal scrub. Found in Riverside and San Diego Counties. Flowering period: none. Elevation: 30 to 1,970 feet (10 to 600 meters).
sticky geraea (*Geraea viscida*)	--/-- CRPR 2B.2 County List B	Perennial herb. Often grows in disturbed areas of chaparral within Imperial and San Diego Counties. Flowering period: May to June. Elevation: 1,475 to 5,575 feet (450 to 1,700 meters).
El Paso gilia (*Gilia mexicana*)	--/-- CRPR 2B.3	Annual herb. Grows within pinyon-juniper woodland in San Diego County. Flowering period: May. Elevation: 4,840 feet (1,475 meters).
Mission Canyon bluecup (*Githopsis diffusa* ssp. *filicaulis*)	--/-- CRPR 3.1 County List C	Annual herb. Grows in mesic and disturbed areas within chaparral. Found in Riverside and San Diego Counties. Flowering period: April to June. Elevation: 1,475 to 2,300 feet (450 to 700 meters).
San Diego gumplant (*Grindelia hallii*)	--/-- CRPR 1B.2 County List A	Perennial herb. Typically occurs with sunny openings of chaparral and lower montane coniferous forests. Also grows in meadows and seeps, and grasslands. Prefers very wet locales in early spring, although such places usually dry quickly as spring turns to summer. Found in San Diego County Flowering Period: May to October. Elevation: 605 to 5,725 feet (185 to 1,745 meters).
Palmer's grapplinghook (*Harpagonella palmeri*)	--/-- CRPR 4.2 County List D	Annual herb. Found in clay soils in annual grasslands and coastal sage scrub. Flowering Period: March to May. Elevation: 65 to 3,100 feet (20 to 955 meters).
Orcutt's hazardia (*Hazardia orcuttii*)	--/ST CRPR 1B.1 County List A	Perennial shrub. Often grows on clay soils within coastal sage scrub and southern maritime chaparral. Found in San Diego County. Flowering period: August to October. Elevation: 260 to 280 feet (80 to 85 meters).
Algodones Dunes sunflower (*Helianthus niveus* ssp. *tephrodes*)	--/SE CRPR 1B.2	Perennial herb. Grows on desert dunes within Imperial and San Diego Counties. Flowering period: September to May. Elevation: 160 to 330 feet (50 to 100 meters).
curly herissantia (*Herissantia crispa*)	--/-- CRPR 2B.3 County List B	Annual to perennial herb. Occurs within Sonoran desert scrub in San Diego County. Flowering period: August to September. Elevation: 2,295 to 2,380 feet (700 to 725 meters).
Tecate cypress (*Hesperocyparis forbesii*)	--/-- CRPR 1B.1 County List A MSCP Covered	Perennial tree. Occurs within closed-cone coniferous forest and chaparral on clay, gabbroic, or metavolcanics soils. Found within Orange, Riverside, and San Diego Counties. Flowering period: none. Elevation: 260 o 4,920 feet (80 to 1,500 meters).
Cuyamaca cypress (*Hesperocyparis stephensonii*)	--/-- CRPR 1B.1 County List A	Perennial Tree. Grows on gabbroic soils within chaparral, riparian forests, cismontane woodland, and closed-cone coniferous forests in San Diego County. Flowering period: none. Elevation: 3,395 to 5,595 feet (1,035 to 1,705 meters).

Appendix A (cont.)
Special Status Plant Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habit, Ecology and Life History
Beach goldenaster (*Heterotheca sessiliflora* ssp. *sessiliflora*)	--/-- CRPR 1B.1 County List D	Perennial herb. Occurs in coastal chaparral, coastal dunes, and coastal scrub. Found in San Bernardino and San Diego Counites. Flowering Period: March to December. Elevation: below 4,020 feet (1,225 meters).
Laguna Mountains alumroot (*Heuchera brevistaminea*)	--/-- CPRP 1B.3 County List A	Perennial herb. Occurs in rocky areas of chaparral, riparian forest, cismontane woodland, and upland forests. Found in San Diego County. Flowering period: April to July. Elevation: 4,490 to 6,560 feet (1,370 to 2,000 meters).
San Diego County alumroot (*Heuchera rubescens* var. *versicolor*)	--/-- CRPR 3.3 Count List B	Perennial herb. Occurs within rocky areas of chaparral and lower montane coniferous forests in San Diego County. Flowering period: May to June. Elevation: 4,920 to 13,125 feet (1,500 to 4,000 meters).
Graceful tarplant (*Holocarpha virgata* ssp. *elongata*)	--/-- CRPR 4.2 County List D	Annual herb. Occurs in grasslands, coastal scrub, chaparral, and cismontane woodland. Found along the southern coast of California and Peninsular Ranges. Flowering period: May to November. Elevation: 195 to 3,600 feet (60 to 1,100 meters).
Vernal barley (*Hordeum intercedens*)	--/-- CRPR 3.2 County List C	Annual herb. Occurs in vernal pools, alkaline flats, and dry, saline streambeds. Also found in saline flats and depressions within grasslands. Found in the San Joaquin Valley, South Coast and Peninsular Ranges, San Jacinto Mountains, and southern coast of California. Flowering period: March to June. Elevation: below 3,280 feet (1,000 meters).
Mesa horkelia (*Horkelia cuneata* var. *puberula*)	--/-- CRPR 1B.1 County List A	Perennial herb. Occurs in sandy or gravelly soils of maritime chaparral, coastal sage scrub, and woodlands. Found along the southern coast of California, Coast and Peninsular Ranges, and San Jacinto mountains. Flowering Period: February to July. Elevation: 225 to 2,655 feet (70 and 810 meters).
Ramona horkelia (*Horkelia truncata*)	--/-- CRPR 1B.3 County List A	Perennial herb. Occurs on clay and gabbroic soils within chaparral and woodlands in San Diego County. Flowering period: May to June. Elevation: 1,310 to 4,265 feet (400 to 1,300 meters).
Newberry's velvet-mallow (*Horsfordia newberryi*)	--/-- CRPR 4.3 County List D	Perennial shrub. Occurs within rocky areas of Sonoran desert scrub in Riverside, Imperial, and San Diego Counties. Flowering period: February, April, November, December. Elevation: below 2,625 feet (800 meters).
Otay Mountain lotus (*Hosackia crassifolia* var. *otayensis*)	--/-- CRPR 1B.1 County List A	Perennial herb. Occurs on metavolcanic soils within chaparral; often in disturbed areas. Found in San Diego County. Flowering period: May to August. Elevation: 1,245 to 3,295 feet (380 to 1,005 meters).
San Diego sunflower (*Hulsea californica*)	--/-- CRPR 1B.3 County List A	Perennial herb. Occurs within openings and burned areas of chaparral and montane coniferous forests. Found in Riverside and San Diego Counties. Flowering period: April to June. Elevation: 3,000 to 9,565 feet (915 to 2,915 meters).

Appendix A (cont.)
Special Status Plant Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habit, Ecology and Life History
Mexican hulsea (*Hulsea mexicana*)	--/-- CRPR 2B.3 County List B	Annual to Perennial herb. Occurs within volcanic soils of chaparral, often on burns or disturbed areas. Found in Imperial and San Diego Counites. Flowering period: April to June. Elevation: 3,395 feet (1,200 meters).
Beautiful helsea (*Hulsea vestita* ssp. *callicarpha*)	--/-- CRPR 4.2 County List D	Perennial herb. Grows on rocky, gravelly, and granitic soils within chaparral and cismontane woodland. Found in Riverside and San Diego Counties. Flowering period: May to October. Elevation: 3,000 to 10,005 feet (915 to 3,050 meters).
Wright's hymenothrix (*Hymenothrix wrightii*)	--/-- CPRP 4.3 County List D	Perennial herb. Occurs within grasslands, cismontane woodland, and lower montane coniferous forests within San Diego County. Flowering period: June to October. Elevation: 4,595 to 5,085 feet (1,400 to 1,550 meters).
slender-leaved ipomopsis (*Ipomopsis tenuifolia*)	--/-- CRPR 2B.3 County List B	Perennial herb. Grows on rocky or gravelly soils within chaparral, Sonoran desert scrub, and pinyon-juniper woodland. Found in Imperial and San Diego Counties. Flowering period: March to May. Elevation: 325 to 3,935 feet (100 to 1,200 meters).
Decumbent goldenbush (*Isocoma menziesii* var*. decumbens*)	--/-- CRPR 1B.2 County List A	Perennial shrub. Occurs in sandy soil and disturbed areas on the inland side of dunes, hillsides, and arroyos within coastal sage scrub and chaparral communities. Found in along the coast of southern California, Peninsular Ranges, and Channel Islands. Flowering period: July to November. Elevation: below 656 feet (200 meters).
San Diego marsh-elder (*Iva hayesiana*)	--/-- CRPR 2B.2 County List B	Perennial herb. Found in alkaline flats, depressions, and streambanks within wetland communities in San Diego County. Flowering period: April to October. Elevation: 30 to 1,640 feet (10 to 500 meters).
Ribbed cryptantha (*Johnstonella costata*)	--/-- CRPR 4.3 County List D	Annual herb. Grows on desert dunes and sandy areas within Mojave and Sonoran desert scrub. Found in Inyo, San Bernardino, Riverside, Imperial, and San Diego Counties. Flowering period: February to May. Elevation: below 1,640 feet (500 meters).
Winged cryptantha (*Johnstonella holoptera*)	--/-- CRPR 4.3 County List D	Annual herb. Grows within Mojave and Sonoran desert scrub. Found in Inyo, San Bernardino, Riverside, Imperial, and San Diego Counties. Flowering period: March to April. Elevation: 325 to 5,545 feet (100 to 1,690 meters).
Southern California black walnut (*Juglans californica*)	--/-- CRPR 4.2 County List D	Perennial tree. Grows in alluvial soils within coast sage scrub, chaparral, riparian woodlands, and cismontane woodlands. Found along the southern California coast; Coast , western Transverse, and Peninsular Ranges; and San Gabriel and San Jacinto mountains. Flowering period: March to August. Elevation: 165 to 2,955 feet (50 to 900 meters).
Southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*)	--/-- CRPR 4.2 County List D	Perennial herb. Found in moist saline environments such as alkaline seeps and meadows, and coastal salt marshes and swamps. Found along the coastal regions from San Luis Obispo south to San Diego County. Flowering period: May to June. Elevation: below 984 feet (300 meters).

Appendix A (cont.)
Special Status Plant Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habit, Ecology and Life History
Cooper's rush (*Juncus cooperi*)	--/-- CRPR 4.3 County List D	Perennial herb. Occurs within mesic, alkaline, and saline meadows and seeps. Found within Inyo, San Bernardino, Riverside, Imperial, and San Diego Counties. Flowering period: April to May. Elevation: 850 to 5,810 feet (260 to 1,770 meters).
Santa Lucia dwarf rush (*Juncus luciensis*)	--/-- CRPR 1B.2	Annual herb. Found on wet, sandy soils of seeps, meadows, streams, and roadsides. Also occurs within vernal pools. Found in northeastern California in the Cascade and northern Sierra Nevada Ranges, Modoc Plateau, and Warner Mountains; and along the Coast, Transverse and Peninsular Ranges of central and southern California. Flowering period: April to July. Elevation: 980 to 6,695 feet (300 to 2,040 meters).
Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*)	--/-- CRPR 1B.1 County List A	Annual herb. Grows in vernal pools, playas, and saline habitats within alkali sinks, coastal salt marshes, and wetland communities. Found along the Coast, Sierra Nevada, and Peninsular Ranges; Sacramento and San Joaquin Valleys; central and southern coasts; Mojave Desert, and north Channel Islands. Flowering period: April to May. Elevation: below 4,005 feet (1,220 meters).
Pride-of-California (*Lathyrus splendens*)	--/-- CRPR 4.3 County List D	Perennial herb. Found within chaparral. Found along the coast and Peninsular Ranges of southern California. Flowering period: March to June. Elevation: 650 to 5,000 feet (200 to 1,525 meters).
heart-leaved pitcher sage (*Lepechinia cardiophylla*)	--/-- CRPR 1B.2 County List A MSCP Covered NE	Perennial shrub. Occurs within chaparral, cismontane woodland, and close-cone coniferous forests within Orange, Riverside, and San Diego Counties. Flowering period: April to July. Elevation: 1,705 to 4,495 feet (520 to 1,370 meters).
Gander's pitcher sage (*Lepechinia ganderi*)	--/-- CRPR 1B.3 County List A MSCP Covered NE	Perennial shrub. Occurs on gabbroic or metavolcanic soils within coastal sage scrub, chaparral, coniferous forest, and grasslands in San Diego County. Flowering period June to July. Elevation: 1,000 to 3,295 feet (305 to 1,005 meters).
Blair Valley pepper-grass (*Lepidium flavum* var. *felipense*)	--/-- CRPR 1B.2 County List A	Annual herb. Grows in sandy areas of Sonoran desert scrub and pinyon-juniper woodland in San Diego County. Flowering period: March to May. Elevation: 1,490 to 2,755 feet (455 to 840 meters).
Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*)	--/-- CRPR 4.3 County List A	Annual herb. Grows in openings of sage scrub and chaparral at the coastal and foothill elevations throughout California. Typically observed in relatively dry, exposed locales rather than beneath a shrub canopy. Also, found in disturbed areas. Flowering period: March to June. Elevation: below 9,186 feet (2,800 meters).

Appendix A (cont.)
Special Status Plant Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habit, Ecology and Life History
Santa Rosa Mountains leptosiphon (*Leptosiphon floribundus* ssp. *hallii*)	--/-- CRPR 1B.3 County List A	Perennial herb. Occurs within Sonoran desert scrub and pinyon-juniper woodland in Riverside and San Diego Counties. Flowering period: May to July. Elevation: 3,280 to 6,560 feet (1,000 to 2,000 meters).
Sea dahlia (*Leptosyne maritima*)	--/-- CRPR 2B.2 County List B	Perennial herb. Occurs within coastal scrub and coastal bluffs scrub in San Diego County. Flowering period: March to May. Elevation: below 490 feet (150 meters).
Warner Springs lessingia (*Lessingia glandulifera* var. *tomentosa*)	--/-- CRPR 1B.1 County List A	Annual herb. Grows in sandy areas of chaparral in San Diego County. Flowering period: August and October. Elevation: 2,850 to 4,005 feet (870 to 1,220 meters).
short-sepaled lewisia (*Lewisia brachycalyx*)	--/-- CRPR 2B.2 County List B	Perennial herb. Grows in meadows and seeps and mesic areas of lower montane coniferous forests. Found in San Bernardino and San Diego Counties. Flowering period: April to June. Elevation: 4,490 to 7,545 feet (1,370 to 2,300 meters).
ocellated Humboldt litly (*Lilium humboldtii* ssp. o*cellatum*)	--/-- CRPR 4.2 County List D	Perennial herb. Grows in openings of coastal scrub, chaparral, riparian woodlands, cismontane woodland, and coniferous forests. Found along the coastal regions from Santa Barbara County south to San Diego County, western Riverside and San Bernardino Counties, and the northern Channel Islands. Flowering period: March to July. Elevation: 98 to 5,905 feet (30 to 1,800 meters).
lemon lily (*Lilium parryi*)	--/-- CRPR 1B.2 County List A	Perennial herb. Occurs within meadows and seeps and mesic areas of riparian forests and montane coniferous forests. Found in the San Gabriel, San Bernardino, and San Jacinto mountains, and western Transverse and Peninsular Ranges. Flowering period: July to August. Elevation: 4,000 to 9,005 feet (1,220 to 2,745 meters).
Parish's meadowfoam (*Limnanthes alba* ssp. *parishii*)	--/SE CRPR 1B.2 County List A	Annual herb. Occurs within vernal mesic areas including vernal pools and meadows and seeps. Found within the Riverside and San Diego Counties. Flowering period: April to June. Elevation: 1,965 to 6,560 feet (600 to 2,000 meters).
desert beauty (*Linanthus bellus*)	--/-- CRPR 2B.1 County List B	Annual herb. Occurs within sandy areas of chaparral in San Diego County. Flowering period: April to May. Elevation: 3,280 to 4,595 feet (1,000 to 1,400 meters).
Jacumba Mountains linanthus (*Linanthus maculatus* ssp. *emaculatus*)	--/-- CRPR 1B.1	Annual herb. Occurs on the edges of desert dunes and Sonoran desert scrub. Associated with sandy or course, opaque-white, decomposed granite soils of washes and on flats near wash margins. Found in Imperial and San Diego Counites. Flowering period: April. Elevation 1,295 to 1,920 feet (395 to 585 meters).
Orcutt's linanthus (*Linanthus orcuttii*)	--/-- CRPR 1B.3 County List A	Annual herb. Grows in the openings of chaparral, lower montane coniferous forests, and pinyon-juniper woodland. Found within the Mojave and Sonoran Deserts, San Jacinto Mountains, and Peninsular Ranges. Flowering period: May to June. Elevation: 3,000 to 7,035 feet (915 to 2,145 meters).

Appendix A (cont.)
Special Status Plant Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habit, Ecology and Life History
Mountain Springs bush lupine (*Lupinus albifrons* var. *medius*)	--/-- CRPR 1B.3 County List A	Perennial shrub. Occurs within Sonoran desert scrub and pinyon-juniper woodland. Found within San Diego and Imperial Counties. Flowering period: March to May. Elevation: 1,390 to 4,495 feet (425 to 1,370 meters).
California box-thorn (*Lycium californicum*)	--/-- CRPR 4.2 County List D	Perennial shrub. Occurs within coastal bluff and coastal sage scrub. Found along the coast from Los Angeles County south to San Diego County, western Riverside and San Bernardino Counties, and the Channel Islands. Flowering period: March to August. Elevation: below 495 feet (150 meters).
Parish's desert-thorn (*Lycium parishii*)	--/-- CRPR 2B.3 County List B	Perennial shrub. Occurs within coastal scrub and Sonoran desert scrub. Found within San Bernardino, Riverside, San Diego, and Imperial Counties. Flowering period: March to April. Elevation: 440 to 3,280 feet (135 to 1,000 meters).
Palmer's lyrepod (*Lyrocarpa coulteri*)	--/-- CRPR 4.3 County List D	Perennial herb. Grows in gravelly or rocky areas within Sonoran desert scrub. Found in Imperial and San Diego Counties. Flowering period: December to April. Elevation: 390 to 2,610 feet (120 to 795 feet).
Indian Valley bush-mallow (*Malacothamnus aboriginum*)	--/-- CRPR 1B.2 County List A	Perennial shrub. Occurs in rocky and granitic soils within chaparral and cismontane woodland. Often occurs in burned areas. Found within around the San Francisco Bay area and Monterey, and San Diego Counties. Flowering period: April to October. Elevation: 490 to 5,580 feet (150 to 1,700 meters).
brown turbans (*Malperia tenuis*)	--/-- CRPR 2B.3 County List B	Annual herb. Occurs on sandy or gravelly soils within Sonoran desert scrub. Found within San Diego and Imperial Counties. Flowering period: March to April. Elevation: 45 to 1,100 feet (15 to 335 meters).
Spearleaf (*Matelea parvifolia*)	--/-- CRPR 2B.3 County List B	Perennial herb. Occurs within rocky areas of Mojave and Sonoran desert scrub. Found within San Bernardino, Riverside, San Diego, and Imperial Counties. Flowering period: March to May. Elevation: 1,440 to 3,595 feet (440 to 1,095 meters).
hairy stickleaf (*Mentzelia hirsutissima*)	--/-- CRPR 2B.3 County List B	Annual herb. Occurs within rocky soils of Sonoran desert scrub. Found in San Diego and Imperial Counties. Flowering period: March to May. Elevation: below 2,295 feet (700 meters).
spiny-hair blazing star (*Mentzelia tricuspis*)	--/-- CRPR 2B.1	Annual herb. Grows on sandy or gravelly slopes and washes within Mojave desert scrub. Found within the Mojave and Sonoran Deserts and desert mountains. Flowering period: March to May. Elevation: 490 to 4,200 feet (150 to 1,280 meters).
creamy blazing star (*Mentzelia tridentata*)	--/-- CRPR 1B.3	Annual herb. Grows on sandy, gravelly, or rocky soils within Mojave desert scrub. Found within the Mojave Desert and desert mountains. Flowering period: March to May. Elevation: 2,295 to 3,855 feet (700 to 1,175 meters).

Appendix A (cont.)
Special Status Plant Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habit, Ecology and Life History
Small-flowered microseris (*Microseris douglasii* ssp. *platycarpha*)	--/-- CRPR 4.2 County List D	Annual herb. Found on clay soils within coastal sage scrub, woodlands, and grasslands. Often near vernal pools or serpentine outcrops. Found within Los Angeles, Orange, Riverside, and San Diego Counties and the Channel Islands. Flowering period: March to May. Elevation: 49 to 3,510 feet (15 to 1,070 meters).
slender-lobed four o'clock (*Mirabilis tenuiloba*)	--/-- CRPR 4.3 County List D	Perennial herb. Occurs within Sonoran desert scrub within San Bernardino, Riverside, Imperial, and San Diego Counties. Flowering period: March to May. Elevation: 755 to 3,595 feet (230 to 1,095 meters).
intermediate monardella (*Monardella hypoleuca* ssp. *intermedia*)	--/-- CRPR 1B.3	Perennial herb. Usually occurs within the understory of chaparral, cismontane woodland, and lower montane coniferous forests within Orange, Riverside, and San Diego Counties. Flowering period: April to September. Elevation: 1,310 to 4,100 feet (400 to 1,250 meters).
Felt-leaved monardella (*Monardella hypoleuca* ssp. *lanata*)	--/-- CRPR 1B.2 County List A MSCP Covered	Perennial herb. Occurs on rocky, granitic slopes or hilltops within chaparral and woodlands. Found within Orange and San Diego Counties. Flowering period: June to August. Elevation: 980 to 5,165 feet (300 to 1,575 meters).
Hall's monardella (*Monardella macrantha* ssp. *hallii*)	--/-- CRPR 1B.3 County List A	Perennial herb. Occurs within grasslands, chaparral, woodlands, and forests. Found in the San Bernardino and San Jacinto Mountains, and Peninsular Ranges of southern California. Flowering period: June to October. Elevation: 2,395 to 7,200 feet (730 to 2,195 meters).
San Felipe monardella (*Monardella nana* ssp. *leptosiphon*)	--/-- CRPR 1B.2 County List A	Perennial herb. Occurs within chaparral and lower montane coniferous forests within Riverside and San Diego Counties. Flowering period: June to July. Elevation: 3,935 to 6,085 feet (1,200 to 1,855 meters).
Jennifer's monardella (*Monardella stoneana*)	--/-- CRPR 1B.2 County List A	Perennial herb. Usually grows in rocky intermittent streambeds within coastal scrub, chaparral, riparian scrub, or close-cone coniferous forests. Found within San Diego County. Flowering period: June to September. Elevation: 30 to 2,590 feet (10 to 790 meters).
Willowy monardella (*Monardella viminea*)	FE/SE CRPR 1B.1 County List A MSCP Covered NE	Perennial herb. Associated with riparian scrub, usually at sandy locales in seasonally dry washes. Generally, there is no canopy cover and river cobbles may lie in close proximity. Found in San Diego County Flowering period: June to August. Elevation: 160 to 740 feet (50 to 225 meters).

Appendix A (cont.)
Special Status Plant Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habit, Ecology and Life History
California spineflower (*Mucronea californica*)	--/-- CRPR 4.2 County List D	Annual herb. Grows in sandy areas of coastal dunes, grasslands, coastal scrub, chaparral, and cismontane woodland. Found along the central and southern coasts; San Francisco Bay area; South Coast, western Transverse, and Peninsular Ranges; San Gabriel, San Bernardino, and San Jacinto mountains; and Channel Islands. Flowering period: March to July. Elevation: below 4,595 feet (1,400 meters).
appressed muhly (*Muhlenbergia appressa*)	--/-- CRPR 2B.2	Annual herb. Grows on rocky soils in grasslands, coastal scrub, and Mojave desert scrub. Found in San Bernardino, Riverside, and San Diego Counties and the Channel Islands. Flowering period: April to May. Elevation: 65 to 5,250 feet (20 to 1,600 meters).
Little mousetail (*Myosurus minimus* ssp. *apus*)	--/-- CRPR 3.1 County List C	Annual herb. Occurs in alkaline vernal pools within native grassland. Flowering period: March to June. Found within San Joaquin Valley south to San Diego County and east to western Riverside and San Bernardino Counties. Elevation: 65 to 2,100 feet (20 to 640 meters).
Mud nama (*Nama stenocarpa*)	--/-- CRPR 2B.2 County List B	Annual herb. Occurs in intermittently wet areas such as streambanks and muddy lake edges. Found in the San Joaquin Valley, southern coast, Peninsular Ranges, Sonoran Desert, and Channel Islands. Flowering period: January to July. Elevation: 15 to 1,640 feet (5 to 500 meters).
Gambel's water cress (*Nasturtium gambelii*)	FE/ST CRPR 1B.1 County List A	Perennial herb. Occurs within freshwater or brackish marshes and swamps. Found along the central and southern coasts from the San Francisco Bay area south to San Diego County. Flowering period: April to October. Elevation: 15 to 1,085 feet (5 to 330 feet).
Spreading navarretia (*Navarretia fossalis*)	FT/-- CRPR 1B.1 County List A	Annual herb. Occurs in vernal pools, vernal swales, roadside depressions, playas, marshes and swamps, and chenopod scrub. Population size is strongly correlated with rainfall. Depth of pool appears to be a significant factor as this species is rarely found in shallow pools. Found in the Mojave Desert, desert mountains, Channel Islands, and the Transverse and Peninsular Ranges. Flowering period: April to June. Elevation: 98 to 4,265 feet (30 to 1,300 meters).
Baja navarretia (*Navarretia peninsularis*)	--/-- CRPR 1B.2 County List A	Annual herb. Grows within the openings of chaparral, meadows and seeps, lower montane coniferous forest, and pinyon-juniper woodland. Found in the Tehachapi, San Gabriel, San Bernardino, and San Jacinto mountains, and the western Transverse and Peninsular Ranges. Flowering period: June to August. Elevation: 4,920 to 7,545 feet (1,500 to 2,300 meters).

Appendix A (cont.)
Special Status Plant Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habit, Ecology and Life History
Prostrate navarretia (*Navarretia prostrata*)	--/-- CRPR 1B.1 County List A MSCP covered	Annual herb. Occurs in mesic soil within vernal pools in coastal scrub, meadows, seeps, valleys, and foothill grasslands. Grows at mid-levels within the deeper pools to the basin bottoms of the shallower pools. Found in along the central and southern coasts, San Francisco Bay Area, San Joaquin Valley, and the South Coast and Peninsular Ranges. Flowering period: April to July. Elevation: 5 to 3,970 feet (3 to 1,210 meters).
Coast woolly-heads (*Nemacaulis denudata* var. *denudata*)	--/-- CRPR 1B.2 County List A	Annual herb. Occurs within coastal dunes; seems to prefer the back dunes in mildly protected areas. Flowering Period: April to September. Elevation: below 330 feet (100 meters).
slender cottonheads (*Nemacaulis denudata* var. *gracilis*)	--/-- CRPR 2B.2 County List B	Annual herb. Grows on desert dunes and sandy areas of Sonoran desert scrub within San Bernardino, Riverside, Imperial, and San Diego Counties. Flowering period: April to May. Elevation: below 1,310 feet (400 meters).
Twisselmann's nemacladus (*Nemacladus twisselmannii*)	--/SR CRPR 1B.2	Annual herb. Grows on sandy, rocky, granitic soils within upper montane coniferous forests. Found in Tulare, southern San Luis Obispo, and San Diego Counties. Flowering period: July. Elevation: 7,345 to 8,040 feet (2,240 to 2,450 meters).
chaparral nolina (*Nolina cismontana*)	--/-- CRPR 1B.2 County List A	Perennial shrub. Grows on sandstone or gabbro soils within coastal scrub and chaparral. Found in the coastal regions of southern California from Ventura south to San Diego County and extreme western Riverside County. Flowering period: May to July. Elevation: 455 to 4,185 feet (140 to 1,275 meters)
Dehesa nolina (*Nolina interrata*)	--/SE CRPR 1B.1 County List A MSCP Covered NE	Perennial herb. Grows on gabbroic, metavolcanics, or serpentine soils within chaparral. Found in San Diego County. Flowering period: June to July. Elevation: 605 to 2,805feet (185 to 855 meters).
California adder's-tongue (*Ophioglossum californicum*)	--/-- CRPR 4.2 County List D	Perennial herb. Grows on the marginals of vernal pools and mesic areas within grasslands and chaparral. Found within the Sacramento and San Joaquin Valleys, Sierra Nevada and Peninsular Ranges, and along the central and southern coasts. Flowering period: January to June. Elevation: 195 to 1,725 feet (60 to 525 meters)
California Orcutt grass (*Orcuttia californica*)	FE/SE CRPR 1B.1 County List A MSCP Covered	Annual herb. Occurs in vernal pools. Tends to grow in wetter portions of the vernal pool basins but does not show much growth until the basins become somewhat desiccated. Found in the coastal regions of southern California from Ventura County south to San Diego county and in western Riverside County. Flowering period: April to August. Elevation: 45 to 2,165 feet (15 to 660 meters).

Appendix A (cont.)
Special Status Plant Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habit, Ecology and Life History
Baja California birdbush (*Ornithostaphylos oppositifolia*)	--/SE CRPR 2B.1 County List B	Perennial shrub. Grow in chaparral within San Diego County. Flowering period: January to April. Elevation: 180 to 2,625 feet (55 to 800 meters).
short-lobed broomrape (*Orobanche parishii* ssp. *brachyloba*)	--/-- CRPR 4.2 County List D	Perennial (parasitic) herb. Grows on shrubs such as *Isocoma menziesii* found on sandy oils within coastal dunes, coastal buff scrub, and coast scrub. Found within southwestern San Diego County and Channel Islands. Flowering period: April to October. Elevation: below 1,000 feet (305 meters).
Gander's ragwort (*Packera ganderi*)	--/SR CRPR 1B.2 County List A MSCP Covered	Perennial herb. Occurs on gabbroic soils within the understory of chaparral and recently burned chaparral slopes. Found in Riverside and San Diego Counties. Flowering period: April to June. Elevation: 1,310 to 3,935 feet (400 to 1,200 meters).
Baja pectocarya (*Pectora peninsularis*)	--/-- County List D	Annual herb. Grows in washes, roadsides, and clearings within Sonoran desert scrub. Found within San Bernardino, Riverside, Imperial, and San Diego Counties. Flowering period: February to April. Elevation: 98 to 985 feet (30 to 300 meters).
San Jacinto beardtongue (*Penstemon clevelandii* var. *connatus*)	--/-- CRPR 4.3 County List D	Perennial herb. Occurs within rocky areas of chaparral, pinyon-juniper woodland, and Sonoran desert scrub. Found within Riverside, Imperial, and San Diego Counties. Flowering Period: March to May. Elevation: 1,310 to 4,925 feet (400 to 1,500 meters)
Thurber's beardtongue (*Penstemon thurberi*)	--/-- CRPR 4.2 County List D	Perennial herb. Occurs within chaparral, Joshua tree woodland, pinyon-juniper woodland, and Sonoran desert scrub. Found within San Bernardino, Riverside, Imperial, and San Diego Counties. Flowering Period: May to July. Elevation: 1,640 to 4,005 feet (500 to 1,220 meters)
Golden-rayed pentachaeta (*Pentachaeta aurea* ssp. *aurea*)	--/-- CRPR 4.2 County List D	Annual herb. Occurs in grassy areas within coastal scrub, chaparral, cismontane woodland, lower montane coniferous forest, riparian woodland. Found within Riverside and San Diego Counties. Flowering period: March to July. Elevation: 260 to 6,100 feet (80 and 1,850 meters).
Gairdner's yampah (*Perideridia gairdneri* ssp. *gairdneri*)	--/-- CRPR 4.2 County List D	Perennial herb. Grows in vernal pools and other vernally mesic places within grasslands, chaparral, and upland forests. Found along the coast and the North Coast Ranges in northwestern California. Flowering period: June to October. Elevation: below 2,000 feet (610 feet).
narrow-leaf sandpaper-plant (*Petalonyx linearis*)	--/-- CRPR 2B.3	Perennial shrub. Grows in sandy or rocky canyons within Mojave and Sonoran desert scrub. Found within San Bernardino, Riverside, Imperial, and San Diego Counties. Flowering Period: March to May. Elevation: below 3,660 feet (1,115 meters)
Santiago Peak phacelia (*Phacelia keckii*)	--/-- CRPR 1B.3	Annual herb. Occurs within chaparral and closed-cone coniferous forests within Orange, Riverside, and San Diego Counties. Flowering period: May to June. Elevation: 1,780 to 5,250 feet (545 to 1,600 meters).

Appendix A (cont.)
Special Status Plant Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habit, Ecology and Life History
Brand's star phacelia (*Phacelia stellaris*)	--/-- CRPR 1B.1 County List A	Annual herb. Occurs in sandy openings within coastal dunes and coastal scrub. Found within Los Angeles, Orange, and San Diego Counties, and western San Bernardino and Riverside Counties. Flowering Period: March to June. Elevation: below 1,310 feet (400 meters).
Arizona pholistoma (*Pholistoma auritum* var. *arizonicum*)	--/-- CRPR 2B.3	Annual herb. Grows within Mojave desert scrub within San Bernardino, Imperial, and San Diego Counties. Flowering period: March. Elevation: 900 to 2,740 feet (275 to 835 meters).
Thurber's pilostyles (*Pilostyles thurberi*)	--/-- CRPR 4.3 County List D	Perennial (parasitic) herb. Occurs within Sonoran desert scrub within Riverside, Imperial, and San Diego Counties. Grows inside the stems of *Psorothamnus*, especially *P. emoryi*; flowers on the stems of its host. Flowering period: December to April. Elevation: below 1,200 feet (365 meters).
Torrey pine (*Pinus torreyana* ssp. *torreyana*)	--/-- CRPR 1B.2 County List A MSCP Covered	Perennial evergreen tree. Grows on sandstone soils within chaparral and closed-cone coniferous forest. Found in San Bernardino and San Diego Counties. Flowering period: none. Elevation: 95 to 525 feet (30 to 160 meters).
Chaparral rein orchid (*Piperia cooperi*)	--/-- CRPR 4.2 County List D	Perennial herb. Typically grows on dry sites within grasslands, chaparral, and cismontane woodland. Found along the coast, San Gabriel and San Jacinto Mountains, Peninsular Ranges of southern California and the Channel Islands. Flowering period: March to June. Elevation: 50 to 5,200 feet (15 to 1,585 meters).
Narrow-petaled rein orchid (*Piperia leptopetala*)	--/-- CRPR 4.3 County List D	Perennial herb. Grows on generally dry sites within cismontane woodland and coniferous forests. Found in the Coast, Klamath, Cascade, and Sierra Nevada Ranges and associated foothills; Tehachapi mountains; San Francisco Bay area; South Coast, western Transverse, and Peninsular Ranges; and the San Gabriel, San Bernardino, and San Jacinto mountains. Flowering period: May to July. Elevation: feet (380 to 2,225 meters).
San Bernardino blue grass (*Poa atropurpurea*)	FE/-- CRPR 1B.2 County List A	Perennial herb. Occurs within mesic areas of meadows and seeps within San Bernardino and San Diego Counties. Flowering Period: April to August. Elevation: 4,460 to 8,055 feet (1,360 to 2,455 meters).
San Diego mesa mint (*Pogogyne abramsii*)	FE/SE CRPR 1B.1 County List A MSCP Covered	Annual herb. Occurs within vernal pools of San Diego County. Flowering period: March to July. Elevation: 295 and 665 feet (90 to 200 meters).

Appendix A (cont.)
Special Status Plant Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habit, Ecology and Life History
Otay mesa mint (*Pogogyne nudiuscula*)	FE/SE CRPR 1B.1 County List A MSCP Covered	Annual herb. Grows in vernal pools of San Diego County. Flowering period: May to July. Elevation: 295 to 820 feet (90 to 820 meters).
thorny milkwort (*Polygala acanthoclada*)	--/-- CRPR 2B.3	Perennial shrub. Occurs within chenopod scrub, Joshua tree woodland, and pinyon-juniper woodland. Found in San Bernardino, Riverside, Imperial, and San Diego Counties. Flowering period: May to August. Elevation: 2,490 to 7,495 feet (760 to 2,285 meters).
Fish's milkwort (*Polygala cornuta* var. *fishiae*)	--/-- CRPR 4.3 County List D	Perennial shrub. Occurs within chaparral and oak woodlands. Found along the coastal regions from Santa Barbara County south to San Diego County. Flowering period: May to August. Elevation: 320 to 3,280 feet (100 to 1,000 meters).
desert unicorn plant (*Proboscidea althaeifolia*)	--/-- CRPR 4.3 County List D	Perennial herb. Grows on gently sloping sandy flats and washes within Sonoran desert scrub. Found in San Bernardino, Riverside, Imperial, and San Diego Counties. Flowering period: May to September. Elevation: 275 to 3,280 feet (85 to 1,000 meters)
White rabbit-tobacco (*Pseudognaphalium leucocephalum*)	--/-- CRPR 2B.2 County List B	Perennial herb. Occurs on sandy or gravelly soils of benches, dry stream bottoms, and canyon bottoms within coastal scrub, chaparral, cismontane woodland, and riparian woodland. Found within southern California from Ventura County south to San Diego County and western Riverside and San Bernardino Counties. Flowering period: July to November. Elevation: below 6,890 feet (2,100 meters).
Deep Canyon snapdragon (*Pseudorontium cyathiferum*)	--/-- CRPR 2B.3	Annual herb. Found in rocky areas of Sonoran desert scrub within Riverside, Imperial, and San Diego Counties. Flowering period: February to April. Elevation: below 2,625 feet (800 meters).
Cedros Island oak (*Quercus cedrosensis*)	--/-- CRPR 2B.2 County List B	Perennial tree. Occurs within closed-cone coniferous forest, chaparral, and coastal scrub of San Diego County. Flowering period: April to May. Elevation: 835 to 3,150 feet (255 to 960 meters).
Nuttall's scrub oak (*Quercus dumosa*)	--/-- CRPR 1B.1 County List A	Perennial shrub. Occurs on sandy or clay loam soils near the coast within coastal scrub, chaparral, cismontane woodland, and riparian woodland. Found along the coast, San Jacinto Mountains, and Peninsular Ranges of southern California. Flowering period: March to May. Elevation: below 1,310 feet (400 meters).
Engelmann oak (*Quercus engelmannii*)	--/-- CRPR 4.2 County List D	Perennial tree. Occurs on slopes and foothills within grasslands, chaparral, oak woodland, and riparian woodlands. Found from Los Angeles County south to San Diego County, western Riverside and San Bernardino Counties, and the Channel Islands. Flowering period: March to June. Elevation: 160 to 4,300 feet (50 to 1,300 meters).

Appendix A (cont.)
Special Status Plant Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habit, Ecology and Life History
single-leaved skunkbrush (*Rhus aromatica* var. *simplicifolia*)	--/-- CRPR 2B.3 County List B	Perennial shrub. Occurs on granitic soils within pinyon-juniper woodlands of San Diego County. Flowering Period: March to April. Elevation: 4,000 to 4,495 feet (1,220 to 1,370 meters).
Moreno currant (*Ribes canthariforme*)	--/-- CRPR 1B.3 County List A	Perennial shrub. Occurs within chaparral and riparian scrub. Flowering period: February to April. Elevation: 1,115 to 3,935 feet (340 to 1,200 meters).
Santa Catalina Island currant (*Ribes viburnifolium*)	--/-- CRPR 1B.2 County List A	Perennial shrub. Occurs in chaparral and cismontane woodland. Found in southwestern San Diego County and the Channel Islands. Flowering period: February to April. Elevation: 95 to 1,150 feet (30 to 350 meters).
Coulter's matilija poppy (*Romneya coulteri*)	--/-- CRPR 4.2 County List D	Perennial herb. Occurs in dry washes and canyons coastal scrub chaparral, often in burned areas. Fond along the coastal regions from San Luis Obispo County south San Diego County and east to western Riverside and San Bernardino Counties. Flowering period: March to August. Elevation: 65 to 3,900 feet (20 to 1,200 meters).
small-leaved rose (*Rosa minutifolia*)	--/SE CRPR 2B.1 County List B MSCP Covered	Perennial shrub. Occurs within coastal sage scrub and chaparral of San Diego County. Flowering period: January to June. Elevation: 490 to 525 feet (150 to 160 meters).
Cuyamaca raspberry (*Rubus glaucifolius* var. *ganderi*)	--/-- CRPR 3.1 County List A	Perennial shrub. Occurs on gabbroic soils within lower montane coniferous forests in San Diego County. Flowering period: May to June. Elevation: 3,935 to 5,495 feet (1,200 to 1,675 meters).
Parish's California tea (*Rupertia rigida*)	--/-- CRPR 4.3 County List D	Perennial herb. Occurs within pebble plan, grasslands, meadows and seeps, chaparral, cismontane woodland, and lower montane coniferous forests. Found in Los Angeles, San Bernardino, Riverside, and San Diego Counties. Flowering period: 2,295 to 8,205 feet (700 to 2,500 meters).
desert sage (*Salvia eremostachya*)	--/-- CRPR 4.3 County List D	Perennial shrub. Grows on gravelly or rocky soils within Sonoran desert scrub. Found in Riverside and San Diego Counties. Flowering period: March to May. Elevation: feet 2,295 to 4,595 feet (700 to 1,400 meters).
Munz's sage (*Salvia munzii*)	--/-- CRPR 2B.2 Count List B	Perennial shrub. Occurs within chaparral and coastal scrub of San Diego County. Flowering period: February to April. Elevation: 370 and 3,500 feet (115 to 1,065 meters).
southern mountains skullcap (*Scutellaria bolanderi* ssp. *austromontana*)	--/-- CRPR 1B.2 County List A	Perennial herb. Occurs in mesic areas of chaparral, cismontane woodland, and lower coniferous forests from Los Angeles County south to San Diego and east to Riverside and San Bernardo counties. Flowering period: June to August. Elevation: 1,390 to 6,560 feet (200 to 1,295 feet).

Appendix A (cont.)
Special Status Plant Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habit, Ecology and Life History
blueish spike-moss (*Selaginella asprella*)	--/-- CRPR 4.3 County List D	Perennial herb. Grows on rocky and granitic soils within cismontane woodland, coniferous forests, and pinyon-juniper woodland. Found in Tulare, Kern, Los Angeles, Orange, San Diego, Riverside, and San Diego Counties. Flowering period: July. Elevation: 5,250 to 8,860 feet (1,600 to 2,700 meters).
Ashy spike-moss (*Selaginella cinerascens*)	--/-- CRPR 4.1 County List D	Perennial herb. Grows in sunny spots or under shrubs within coastal sage scrub and chaparral. Often associated with "red clay" soils. Found in coastal regions from southern Los Angeles County south to San Diego County. Flowering period: none. Elevation: below 1,804 feet (550 meters).
desert spike-moss (*Selaginella eremophila*)	--/-- CRPR 2B.2 County List B	Perennial herb. Occurs in gravelly or rocky areas of chaparral and Sonoran desert scrub. Found in Riverside and San Diego Counties. Flowering period: May to July. Elevation: 655 to 4,250 feet (200 to 1,295 meters).
Chaparral ragwort (*Senecio aphanactis*)	--/-- CRPR 2B.2 County List B	Annual herb. Occurs on alkali flats and dry, open, rocky areas within grasslands, coastal scrub, and cismontane woodland. Found along the coastal regions from San Francisco Bay south to San Diego County and eastern Riverside and San Bernardino Counties. Flowering period: February to May. Elevation: 45 to 2,625 feet (15 to 800 meters).
Coves' cassia (*Senna covesii*)	--/-- CRPR 2B.2 County List B	Perennial herb. Occurs in dry, sandy desert washes and slopes within Sonoran desert scrub. Found in eastern San Bernardino County southwest to eastern San Diego County. Flowering Period: March to June (August). Elevation: 735 to 4,250 feet (225 to 1,295 meters).
Hammitt's clay-cress (*Sibaropsis hammittii*)	--/-- CRPR 1B.2 County List A	Annual herb. Occurs on clay soils grasslands and openings of chaparral. Found within Riverside and San Diego Counties. Flowering period: March to April. Elevation: 2,360 to 3,495 feet (720 to 1,065 feet).
Salt spring checkerbloom (*Sidalcea neomexicana*)	--/-- CRPR 2B.1 County List B	Perennial herb. Occurs within chaparral, lower montane coniferous woodland, Mojave desert scrub, playas, and coastal scrub Found within Mojave Desert and desert mountains, and along the coast and Transverse and Peninsular Ranges of southern California. Flowering period: March to June. Elevation: 50 and 5,020 feet (15 to 1,530 meters).
Purple nightshade (*Solanum xanti*)	--/-- MSCP Covered	Perennial herb or shrub. Occurs within coastal scrub, chaparral, oak and pine woodlands, and coniferous forests. Found along the entire coast of California; Klamath, North and South Coast Ranges; Sierra Nevada, western Transverse, and Peninsular Ranges; Tehachapi, San Gabriel, San Bernardino, and San Jacinto Mountains and the Channel Islands. Flowering period: February to June. Elevation: below 8,860 feet (2,700 meters).

Appendix A (cont.)
Special Status Plant Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habit, Ecology and Life History
Hellhole scaleseed (*Spermolepis infernensis*)	--/-- CRPR 1B.2 County List B	Annual herb. Grows on sandy or rocky soils within Sonoran desert scrub in San Diego County. Flowering period: March to April. Elevation: 750 to 2,200 feet (230 to 670 meters).
western bristly scaleseed (*Spermolepis lateriflora*)	--/-- CRPR 2A County List B	Annual herb. Grows on sandy or rocky soils within Sonoran desert scrub within San Diego and Los Angeles Counties. Flowering period: March to April. Elevation: 1,195 to 2,200 feet (365 to 670 meters).
bottle liverwort (*Sphaerocarpos drewei*)	--/-- CRPR 1B.1	Liverwort. Occurs in the opening of coastal scrub and chaparral within Riverside and San Diego Counties. Flowering period: none. Elevation: 295 to 1,970 feet (90 to 600 meters).
prairie wedge grass (*Sphenopholis obtusata*)	--/-- CRPR 2B.2	Perennial herb. Occurs in wet meadows, streambanks, and ponds. Found in the Sierra Nevada, White and Inyo Mountains, and great basin region of central-east California and along the south coast, San Bernardino Mountains, and Peninsular Ranges of southern California. Flowering period: April to July. Elevation: 980 to 6,560 feet (300 to 2,000 meters).
Purple stemodia (*Stemodia durantifolia*)	--/-- CRPR 4.2 County List B	Perennial herb. Grows on wet sand or rocks and drying streambeds within riparian habitats. Found in the San Jacinto Mountains and Peninsular Ranges of southern California and Sonoran Desert. Flowering period: year-round. Elevation: 590 to 985 feet (180 to 300 meters).
Laguna mountain jewelflower (*Streptanthus bernardinus*)	--/-- CRPR 4.3 County List D	Perennial herb. Occurs within chaparral and lower montane coniferous forests in San Bernardino, Riverside, and San Diego Counties. Flowering period: May to August. Elevation: 2,200 to 8,200 feet (670 to 2,500 meters).
southern jewelflower (*Streptanthus campestris*)	--/-- CRPR 1B.3 County List A	Perennial herb. Occurs in open, rocky areas of chaparral, lower montane coniferous forests, and pinyon-juniper woodlands. Found in the western Transverse and Peninsular Ranges, and San Gabriel, San Bernardino, and San Jacinto Mountains of southern California. Flowering period: April to July. Elevation: 2,950 to 7,545 feet (900 to 2,300 meters).
San Diego County needle grass (*Stipa diegoensis*)	--/-- CRPR 4.2 County List D	Perennial herb. Occurs in rocky, mesic soils near streams or along the coast within coastal scrub and chaparral. Found in Santa Barbara, Orange, and San Diego Counties and the Channel Islands. Flowering period: February to June. Elevation: 30 to 2,600 feet (10 and 800 meters).
Oil neststraw (*Stylocline citroleum*)	--/-- CRPR 1B.2 County List A	Annual herb. Occurs on clay soils within coastal scrub, chenopod scrub, valleys, and foothill grasslands. Found in western Kern County and southern San Diego County. Flowering Period: March to April. Elevation: 160 and 1,310 feet (50 to 1,310 meters).

Appendix A (cont.)
Special Status Plant Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habit, Ecology and Life History
Estuary seablite (*Suaeda esteroa*)	--/-- CRPR 1B.2 County List A	Perennial herb. Found in coastal salt marshes and swamps from Ventura County south to San Diego County. Flowering period: May to October. Elevation: below 15 feet (5 meters).
Woolly seablite (*Suaeda taxifolia*)	--/-- CRPR 4.2 County List D	Shrub. Occurs in the margins of coastal salt marshes, coastal dunes, and coastal bluff scrub from San Luis Obispo County south San Diego County. Flowering period: all year. Elevation: below 49 feet (15 meters).
San Bernardino aster (*Symphyotrichum defoliatum*)	--/-- CRPR 1B.2 County List A MSCP Covered	Perennial herb. Occurs near ditches, streams, and springs within grasslands, meadows, coastal scrubs, cismontane woodland, and lower montane coniferous forests. Also grows in disturbed areas. Found in southern California from San Luis Obispo County south to San Diego County and east to Kern and western San Bernardino and Riverside Counties. Flowering period July to November. Elevation: 2 to 6,695 feet (2 to 2,040 meters).
Parry's tetracoccus (*Tetracoccus dioicus*)	--/-- CRPR 1B.2 County List A MSCP Covered	Perennial shrub. Occurs on dry slopes within coastal sage scrub and chaparral within southern Orange County and San Diego County. Usually, conditions are quite xeric with only limited annual growth. Flowering period: April to May. Elevation: 540 to 3,280 feet (165 to 1,000 meters).
velvety false lupine (*Thermopsis californica* var. *semota*)	--/-- CRPR 1B.2 County List A	Perennial herb. Occurs within meadows and seeps, grasslands, cismontane woodlands, and lower montane coniferous forests within San Diego County. Flowering period: March to June. Elevation: 3,280 to 6,135 feet (1,000 to 1,870 meters).
rigid fringepod (*Thysanocarpus rigidus*)	--/-- CRPR 1B.2	Annual herb. Grows on dry rocky slopes within pinyon-juniper woodlands. Found in southern California from Los Angeles County south to San Diego County and east into San Bernardino County. Flowering period: February to May. Elevation: 1,965 to 7,200 feet (600 to 2,220 meters).
California screw-moss (*Tortula californica*)	--/-- CRPR 1B.2	Moss. Occurs within sandy soils of grasslands and chenopod scrub. Found within southern California from Kern County south to San Diego County and the Channel Islands. Flowering period: none. Elevation 30 to 4,790 feet (10 to 1,460 meters).
coastal triquetrella (*Triquetrella californica*)	--/-- CRPR 1B.2	Moss. Found within coastal bluff scrub and coastal scrub. Mainly found along the coast from Del Norte County south to San Mateo County; also reported from San Diego County. Flowering period: none. Elevation: 30 to 330 feet (10 to 100 meters).
La Purisima viguiera (*Viguiera purisi*mae)	--/-- CRPR 2B.3 County List A	Perennial shrub. Occurs within coastal bluff scrub and chaparral of the Peninsular Ranges. Found on Marine Corps Air Station Camp Pendleton in northwestern San Diego County. Flowering period: April to September. Elevation: 1,195 to 1,395 feet (365 to 425 meters).

Appendix A (cont.)
Special Status Plant Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habit, Ecology and Life History
golden violet (*Viola purpurea* ssp. *aurea*)	--/-- CRPR 2B.2 County List B	Perennial herb. Occurs on sandy slopes within great basin scrub and pinyon-juniper woodland. Found within the Mojave Desert, desert mountains, White and Inyo Mountains, and east of the Sierra Nevada. Flowering period: April to June. Elevation: 3,280 to 8,200 feet (1,000 to 2,500 meters).
Palmer's jackass clover (*Wislizenia refracta* ssp. *palmeri*)	--/-- CRPR 2B.2	Perennial shrub. Grows in sandy washes and desert dunes within chenopod scrub and Sonoran desert scrub. Found within San Diego and Riverside Counties. Flowering period: January to December. Elevation: below 985 feet (300 meters).
Rush-like bristleweed (*Xanthisma junceum*)	--/-- CRPR 4.3 County List D	Perennial herb. Grows on dry hillsides within coastal sage scrub and chaparral within San Diego County. Flowering period: May to January. Elevation: 785 to 3,280 feet (240 to 1,000 meters).
Orcutt's woody-aster (*Xylorhiza orcuttii*)	--/-- CRPR 1B.2 County List A	Perennial herb. Occurs in arid canyons and baren slopes within creosote bush scrub and Sonoran desert scrub. Found within eastern San Diego County and western Imperial County with scattered individuals reported from Riverside County. Flowering Period: March to April. Elevation: below 1,200 feet (365 meters).

[1] Listing codes as follows: F = Federal; S = State of California; E = Endangered; T = Threatened; CE = Candidate Endangered; R = Rare

CRPR = California Native Plant Society Rare Plant Rank: 1A – presumed extirpated in California and either rare or extinct elsewhere; 1B – rare, threatened, or endangered in California and elsewhere; 2A – presumed extirpated in California, but more common elsewhere; 2B – rare, threatened, or endangered in California, but more common elsewhere; 3 – more information needed; 4 – watch list for species of limited distribution. Extension codes: .1 – seriously endangered; .2 – moderately endangered; .3 – not very endangered.

County of San Diego Sensitivity Status: Plant species are divided into Lists A through D on the County Rare Plant List. **Lists A and B** Plants include those that have a very high level of sensitivity, either because they are listed as threatened or endangered or because they have very specific natural history requirements that must be met. **Lists C and D** Plants include those species that are becoming less common but are not yet so rare that extirpation or extinction is imminent without immediate action. These species tend to be prolific within their suitable habitat types.

MSCP Covered Species: Covered Species under County of San Diego Multiple Species Conservation Plan (MSCP) Subarea Plan; NE = Narrow Endemic Species.

This page intentionally left blank

Appendix B

Special Status Animal Species with Potential to Occur within the VCP Service Area

Appendix B
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
INVERTEBRATES		
Peninsular Ranges metalmark (*Apodemia virgulti peninsularis*)	--/-- County Group 1	Found within the San Jacinto Mountains in Riverside County and the Laguna and Palomar Mountains of San Diego County. Occurs within large, open, dry meadows areas surrounding by sparse Jeffrey pine forest.
Palomar banana slug (*Ariolimax columbianus stramineus*)	--/-- County Group 2	Small, isolated southern-most population found in the Palomar Mountain Range of San Diego County, specifically within Palomar Mountain State Park. Occurs within moist forests habitats seeking shelter beneath trees and detritus.
Crotch bumble bee (*Bombus crotchii*)	--/SCE	Found throughout southwestern California from the Central Valley south to the U.S./Mexico border. Inhabits open grasslands and scrub habitats. Primarily nests underground and forages on a wide variety of flowers, but a short tongue renders it best suited to open flowers with short corollas. Most commonly observed on flowering species in the Fabaceae, Asteraceae, and Lamiaceae families. Occurrence has also been linked to habitats containing *Asclepias, Chaenactis, Lupinus, Medicago, Phacelia,* and *Salvia* genera.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT/--	Restricted to cool water vernal pools or other ephemeral basins from Tehama County in northern California south to the Central Valley. Disjunct populations also found within Riverside County and the Coastal Ranges. Though found over a large geographical range, has a sporadic distribution and is seldom abundant where found, especially where it co-occurs with other large branchiopod species.
San Diego fairy shrimp (*Branchinecta sandiegonensis*)	FE/-- County Group 1 MSCP Covered NE	Restricted to vernal pools and other ephemeral basin in southern California from coastal Orange County south to San Diego County. Found in seasonally astatic pools which occur in tectonic swales or earth slump basins and other areas of shallow, standing water often in patches of grassland and agriculture interspersed in coastal sage scrub and chaparral.
Belkin's dune tabanid fly (*Brennania belkini*)	--/-- County Group 2	Found within sand dunes of California.
Thorne's hairstreak (*Callophrys gryneus thornei*)	--/-- County Group 1 MSCP Covered NE	Occupies Tecate cypress forests, which larvae exclusively feed upon. Tecate cypress (*Hesperocyparis forbesii*) is a relict species from a time when southern California's climate was cooler and wetter. There are five remaining populations of the species, all are located in the Otay Mountain wilderness of southern San Diego County.
Western tidal-flat tiger beetle (*Cicindela gabbii*)	--/-- County Group 2	Occurs on mudflats and dry saline flats of estuaries along the southern California coast.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
INVERTEBRATES (cont.)		
Sandy beach tiger beetle (*Cicindela hirticollis gravida*)	--/-- County Group 2	Found in moist sand near the ocean, such as swales behind dunes or upper beaches above the average high tide, along the immediate coast of California from Marin County south to San Diego County.
Western beach tiger beetle (*Cicindela latesignata latesignata*)	--/-- County Group 2	Inhabits mudflats and beaches in coastal San Diego County.
Senile tiger beetle (*Cicindela senilis frosti*)	--/-- County Group 2	Occurs within western California, as far north as Sonoma and Lake Counties, south San Diego County. Currently known in from only a few protected coastal populations and two interior population (one near Lake Elsinore in western Riverside County and one near Jacumba in San Diego County). Occurs in coastal salt marshes and tidal mud flats, as well as interior mud flats.
Mudflat tiger beetle (*Cicindela trifasciata sigmoidea*)	--/-- County Group 2	Occurs along the Pacific coast of southern California. Most common at salt water-edge habitats close the coast but also found in tidal mudflats, marshes, bays, and inlets. Can occur hundred of miles inland in freshwater environments.
Sandy beach tiger beetle (*Cicindela hirticollis gravida*)	--/-- County Group 2	Limited to sandy beaches along the Pacific coast within southern California.
Oblivious tiger beetle (*Cicindela latesignata obliviosa*)	--/-- County Group 2	Occurs along the coast of southern California occupying salt marshes, mud flats, and other estuarine habitats, usually near beaches.
Globose dune beetle (*Coelus globosus*)	--/-- County Group 1	Occurs in low beach foredunes and coastal strand. Lives and feeds on dead vegetation that accumulates in sand under plants. Cannot survive under dune grass (*Ammophila arenaria*).
Monarch (*Danaus plexippus*)	--/-- County Group 2	Population west of the Rocky Mountains migrates to, and overwinters, along the coast of central and southern California. Inhabits a wide variety of open habitats including fields, meadows, marshes, and roadsides and roosting on wind-protected tree groves (such as eucalyptus [*Eucalyptus* spp.], Monterey pine [*Pinus radiata*], cypress [*Hesperocyparis* sp.]), with nectar and water sources nearby. Breeds in areas that have a suitable abundance of their host plant, milkweed (*Asclepias* sp.).

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
INVERTEBRATES (cont.)		
Quino checkerspot butterfly (*Euphydryas editha quino*)	FE/-- County Group 1 NE	Occurs in California from western Riverside County southwards to southern San Diego County. Inhabits open and sparsely vegetated areas that contain larval host plant species (principally dot-seed plantain [*Plantago erecta*], woolly plantain [*Plantago patagonia*] but also Coulter's snapdragon [*Antirrhinum coulterianum*], Chinese houses [*Collinsia* spp.], and rigid bird's beak [*Cordylanthus rigidus*]) and nectar sources. Often found on rounded hilltops, ridgelines, and occasionally rocky outcrops. Occurs within a wide range of open-canopied habitats including vernal pools, sage scrub, chaparral, grassland, and open oak and juniper woodland communities.
Harbison's dun skipper (*Euphyes vestris harbisoni*)	--/-- County Group 1 NE	Occurs in the foothills of San Diego County, extreme western Riverside County, and southern Orange County. Prefers oak woodlands but is also found within chaparral or riparian areas that have narrow canyons or drainages where the species host plant, San Diego sedge (*Carex spissa*), is found. Generalist feeder with a preference for milkweeds and thistle. Nectaring resources include morning glory (*Calystegia macrostegia*), red thistle (*Cirsium occidentale*), loosestrife (*Lythrum californicum*), and less frequently golden yarrow (*Eriophyllum confertiflorum*) and black mustard (*Brassica nigra*).
Mesa shoulderedband snail (*Helminthoglypta traskii*)	--/-- County Group 2	Only known from a few locations in coastal San Diego County. Found beneath bark and rotten logs, in rock slides, and among coastal vegetation.
Hilda Blue (*Icaricia saepiolus hilda*)	--/-- County Group 1	Occurs near streams and in wet meadows within Orange, San Bernardino, Riverside, and San Diego Counties.
California linderiella (*Linderiella occidentalis*)	--/-- County Group 1	Currently known to occur in a wide range of vernal pool habitats in the Central Valley and Coast Ranges of California as far north as Shasta County and as far south as Monterey County with isolated occurrences in Santa Barbara and Ventura Counties. Likely historically present in available vernal pool habitats in Riverside, Los Angeles, Ventura, and Orange Counties. Found within vernal pools up to elevations of 3,800 feet.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
INVERTEBRATES (cont.)		
Hermes copper butterfly (*Lycaena hermes*)	FC/-- County Group 1	Found in coastal sage scrub and southern mixed chaparral habitats of San Diego County where mature specimens of its larval host plant, spiny redberry (*Rhamnus crocea*), are present. Ranges from Pine Valley west to the coastal mesas of southwestern San Diego County, and northeast towards Bonsall. Appears to utilize redberry stands growing in deeper, well drained soils of canyon bottoms and north-facing hillsides. Nectaring resources include California buckwheat (*Eriogonum fasciculatum*), chamise (*Adenostoma fasciculatum*), and California sunflower (*Encelia californica*), among others. Typically, a sedentary species with limited movement capabilities.
Harbinson's giant skipper (*Megathymus yuccae harbisoni*)	--/-- County Group 2	Occurs throughout San Diego County extending north into Riverside County and east to the eastern slopes of the Santa Rosa Mountains. Occurs within dry desert scrubs and chaparral on east facing slopes where their host plant, yucca (*Hesperoyucca* spp.; *Yucca* ssp.), is present.
Two-tailed tiger swallowtail (*Papilio multicaudata pusillus*)	--/-- County Group 1	Found near streams in dry montane canyons within Tulare, Kern, San Bernardino, Ventura, Los Angeles, Imperial, and San Diego Counties.
Wandering (saltmarsh) skipper (*Panoquina errans*)	--/-- County Group 1 MSCP Covered	Occurs along coastal southern California. Inhabits salt marshes that contain its larval host plant salt grass (*Distichlis spicata)*. May be observed on ocean bluffs, salt marshes, or open areas along the ocean.
Robinson's rain scarab beetle (*Phobetus robinsoni*)	--/-- County Group 2	Only known from three localities in San Diego (Scissor's crossing) and Orange County (O'Neill Park and Laguna Beach).
Alkali skipper (*Pseudocopaeodes eunus eunus*)	--/-- County Group 1	Occurs within riparian areas where host plant, salt grass, is present. Nectars on heliotrope (*Heliotropium* spp.) flowers. Currently found near the South Fork of the Kern River. Previously documented along the Mojave River near Victorville in San Bernardino County and Puite Ponds in Los Angeles County. Extirpated from San Diego County.
Laguna Mountains skipper (*Pyrgus ruralis lagunae*)	FE/--	Historically found in meadow habitats of the Laguna and Palomar Mountains of San Diego County. Currently known from four occurrences on Palomar Mountain: Doane Valley, French Valley, Mendenhall Valley, and the Pine Hills. Occurs in bare to open mountain meadows with sufficient populations of the species' primary larval host plant, Cleveland's horkelia (*Horkelia clevelandii*).

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
INVERTEBRATES (cont.)		
Riverside fairy shrimp (*Streptocephalus woottoni*)	FE/-- County Group 1 MSCP Covered NE	In California, occurs from Los Angeles County south to coastal San Diego County, and east to western Riverside County. Found in deep seasonal vernal pools, ephemeral ponds, stock ponds, and other human modified depressions at least 30 centimeters deep. Associated with grasslands, which may be interspersed through chaparral or coastal sage scrub vegetation.
Blaisdell trigonoscuta weevil (*Trigonoscuta blaisdelli*)	--/-- County Group 2	Occurs within coastal, inland, and desert dunes of California.
Mimic tryonia (*Tryonia imitator*)	--/-- County Group 2	Very small water snail occurring along coastal California from Sonoma County south to San Diego County. Inhabits brackish waters of coastal lagoons, creeks, sloughs, and marshes.
VERTEBRATES		
Fish		
Desert pupfish (*Cyprinodon macularius*)	FE/SE County Group 2	In California, historically occurred in several springs, seeps and slow-moving streams in the Salton Sink Basin, as well as in backwaters and sloughs along the lower Colorado River. Naturally occurring populations are currently restricted to the Salton Sea and nearby shoreline pools, freshwater ponds, and irrigation drains, as well as in portions of creeks and washes that are tributary to the Salton Sea. Habitats generally consist of shallow, clear water with soft substrates found within springs, small streams, shoreline pools, irrigation drains and ditches, and pond margins at elevations below 5,200 feet.
Tidewater goby (*Eucyclogobius newberryi*)	FE/SSC County Group 1 NE	Occurs along the California coast from Tillas Slough near the Oregon border south to Agua Hedionda Lagoon in northern San Diego County. Inhabits discrete locations of brackish water including coastal lagoons, estuaries, and estuaries, typically where water is less than one meter deep. Generally, occupies habitat in the upper estuary within the fresh-saltwater interface, though may occur upstream a short distance into freshwater.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Fish (cont.)		
Unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*)	FE/SE, FP County Group 2	Historically found throughout the Los Angeles, San Gabriel, and Santa Ana Rivers, but have since been extirpated from much of its former range. Currently restricted to three localities: (1) upper Santa Clara River and associated tributaries in northern Los Angeles County; (2) San Antonio Creek drainage on Vandenberg Air Force Base in Santa Barbara County; and (3) Shay Creek vicinity including Shay Pond, Sugarloaf Pond, Juniper Springs, Motorcycle Pond, Shay Creek, Wiebe Pond, and Baldwin Lake in San Bernardino County. Transplanted population (moved from Soledad Canyon in Los Angeles County in 1981) occurs in eastern San Diego County along San Felipe Creek. Inhabits slow-moving reaches and creeks preferring areas shaded by vegetation.
Arroyo chub (*Gila orcutti*)	--/SSC County Group 1	Found in streams and rivers of southern California including the Los Angeles, San Gabriel, San Luis Rey, Santa Ana, and Santa Margarita Rivers, Malibu, and San Juan Creeks. Historic range has been expanded through the introduction to streams along the coast as far north as Chorro Creek in San Luis Obispo County. Additional introductions have occurred within the Santa Ynez, Ventura, Santa Maria, Cuyama, Santa Clara, and Mojave River systems. Habitats include slow-moving or backwater environments with mud or sand substrates, though can also occur in pools habitats with gravel, cobble, or boulder substrates.
Rainbow trout - steelhead form (*Oncorhynchus mykiss irideus*)	FE/-- County Group 1	This distinct population segment includes naturally occurring populations inhabiting coastal stream networks from the Santa Maria River system in Santa Barbara County south to the U.S./Mexico Border. Highly migratory species travelling from the ocean to freshwater lakes and streams where individuals spawn and then migrate back to the ocean. Offspring typically spend time rearing within freshwater for one to three years before migrating to the ocean where they spend several more years maturing before returning to freshwater to spawn. Requires cool water free of contaminants, places to rest and hide from predators, and rearing and migration corridors which allow for passage to various habitats required to complete their life cycle. Adults exhibit high site fidelity migrating to their natal streams to spawn, though some individuals stray from their non-natal streams. Individuals may also complete their life history cycle (incubating, hatching, rearing, maturing, reproducing, and dying) completely in freshwater.
Mohave tui chub (*Siphateles bicolor mohavensis*)	FE/SE, FP	Endemic to the Mojave River in San Bernardino and Kern Counties. Inhabits deep pools and slough-like areas. Extirpated from much of its former range, currently occurring in highly modified refuge sites in San Bernardino County.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Amphibians		
Arroyo toad (*Anaxyrus californicus*)	FE/SSC County Group 1 MSCP Covered NE	Inhabits low gradient, medium to large streams and rivers with intermittent and perennial flow in coastal and desert drainages of central and southern California. Breeding habitat specialists that require slow-moving streams composed of sandy soils with sandy streamside terraces. In some areas, may occupy first-order streams, although most populations inhabit second-sixth-order streams that have extensive braided channels and sediment deposits of sand, gravel, or pebbles that are occasionally redistributed by flooding. Utilizes shallow pools (at least 1-inch deep) for breeding, egg-laying, and tadpole development. Vulnerable to habitat destruction and alteration due to changes in hydrology, including construction of dams and water diversions, and further impacted by the presence of non-native predators such as American bullfrog (*Lithobates catesbeianus*).
Desert slender salamander (*Batrachoseps major aridus*)	FE/SE County Group 1	Rare species historically known from only two canyons in Riverside County: Hidden Palm Canyon located within the Santa Rosa Mountains, and Guadalupe Canyon located in the San Jacinto Mountains National Monument area. Lungless amphibian that requires adequate moisture to absorb all the oxygen it needs through its skin. Inhabits rock crevices and holes in moist soils of canyon walls, and the talus on the canyon floor during wetter months. Associated with shaded areas that do not get much direct sunlight.
Large-blotched ensatina (*Ensatina eschscholtzii klauberi*)	--/WL County Group 1	Occurs in the Peninsular Ranges of southern California and part of the eastern San Bernardino Mountains. Lungless amphibian that conducts respiration through its skin and the tissues lining the mouth which requires them to live in damp environments. Suitable habitat includes moist shaded forests and woodlands with lots of coarse woody debris. Typically found beneath rocks, logs, and other debris, especially peeled off bark.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Amphibians (cont.)		
California red-legged frog (*Rana draytonii*)	FT/SSC County Group 1 MSCP Covered NE	Has been extirpated from 70 percent of its former range within California which historically included coastal drainages from Marin County south to San Diego County, and isolated drainages in the Sierra Nevada, northern Coast Ranges, and northern Transverse Ranges at elevations below 5,000 feet. Currently known from only a few drainages in the Sierra Nevada foothills. In southern California, has been extirpated from the Los Angeles area south to the U.S./Mexican border; only known population in Los Angeles County is in San Francisquito Canyon on the Angeles National Forest. Inhabits a variety of aquatic habitats including sheltered backwaters of ponds, marshes, springs, streams, and reservoirs. Optimal habitat consists of deep pools with dense stands of overhanging willows (*Salix* spp.) bordered by cattails (*Typha* spp.).
Southern mountain yellow-legged frog (*Rana muscosa*)	FE/SE, WL County Group 1	Historically found within creeks and drainages in the San Gabriel, San Bernardino, San Jacinto, and Palomar Mountains of Los Angeles, San Bernardino, Riverside, and San Diego counties at elevations between 1,200 and 7,500 feet. Extirpated from much of its former range and is currently known to occupy only nine locations within the San Gabriel, San Bernardino, and San Jacinto Mountains. Inhabits rocky and shaded streams with an open to semi-open riparian canopy. Individuals most often found in drainages with permanent (perennial) water in at least some portion of the reach. Occupied streams vary from having steep gradients with numerous pools, rapids, and small waterfalls, to low gradients with slow flows, marshy edges, and sod banks. Favors large clear pools up to three feet deep.
Western spadefoot toad (*Spea hammondii*)	--/SSC County Group 2	Occurs from northern California southward to San Diego County, west of the Sierra Nevada, at elevations below 4,500 feet. Terrestrial species requiring temporary pools for breeding. Suitable upland habitats include coastal sage scrub, chaparral, and grasslands. Most common in grasslands with vernal pools or mixed grassland-coastal sage scrub areas. Breeds in temporary pools formed by heavy rains but may also be found in riparian habitats with suitable water resources. Breeding pools must lack exotic predators such fish, bullfrogs, and crayfish for the species to successfully reproduce. Estivates in burrows within upland habitats adjacent to potential breeding sites.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Amphibians (cont.)		
California newt (*Taricha torosa*)	--/SSC County Group 2	Found along the coast and coastal range mountains from Mendocino County south to San Diego County; species endemic to California. Populations appear to be highly fragmented. An isolated population occurs in the southern Sierra Nevada from the Kaweah River in Tulare County south to Breckenridge Mountain in northern Kern County. Inhabits wet forests, oak woodlands, grasslands, and chaparral at elevations below 4,200 feet.
Reptiles		
Southwestern Pond Turtle (*Actinemys pallida*)	--/SSC County Group 1 MSCP Covered NE	In California, occurs in most major coast-facing drainages below 4,700 feet from the San Francisco Bay area south to San Diego County, including the Mojave River (San Bernardino County) and Andreas Canyon (Riverside County). Habitat generalist that occurs within many types of aquatic habitats from freshwater to brackish environments and permanent to intermittent waterbodies. Inhabit creeks, slow moving rivers, marshes, ponds, lakes, reservoirs, vernal pools, canals and even sewage treatment plants. Prefers habitats with slow flowing water, particularly where basking sites (such as rocks, downed logs, or emergent vegetation), deep water retreats, and egg laying areas are readily available. Leaves water and travels to surrounding upland habitats to nest, over-winter, and aestivate.
San Diegan legless lizard (*Anniella stebbinsi*)	--/SSC County Group 2	Found throughout southern California from the Transverse Ranges south to the U.S./Mexico border. Occurs in sparsely vegetated areas with moist warm, loose soil with plant cover; moisture is essential. Common in several habitats but especially in beach dunes, coastal scrub, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces. Found primarily in areas with sandy or loose organic soils or where there is plenty of leaf litter. Sometimes found in suburban gardens.
California glossy snake (*Arizona elegans occidentalis*)	--/SSC	Occurs along the coastal regions of California from San Francisco south to San Diego County; though it is absent along the central coast. Inhabits arid scrub, rocky washes, grasslands, and chaparral. Prefers open areas and areas with soils loose enough for easy burrowing.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Reptiles (cont.)		
Belding's orange-throated whiptail (*Aspidoscelis hyperythra beldingi*)	--/WL County Group 2 MSCP Covered	Found within the southwestern portion of California in southern San Bernardino, western Riverside, Orange, and San Diego Counties on the western slopes of the Peninsular Ranges at elevations below 3,500 feet. Suitable habitat includes coastal sage scrub, chaparral, juniper woodland, oak woodland, and grasslands along with alluvial fan scrub and riparian areas. Occurrence of the species correlated with the presence perennial plants which provides a food base for its major food source, termites.
San Diego tiger whiptail (*Aspidoscelis tigris stejnegeri*)	--/SSC County Group 2	Occurs along the coastal region of southern California from San Luis Obispo south to San Diego County. Inhabits a wide variety of habitats, primarily in hot and dry open areas with sparse vegetation, from sea level up to 4,900 feet. Suitable habitat includes coastal sage scrub, chaparral, riparian areas, woodlands, and rocky areas with sandy or gravelly substrates.
Green Sea Turtle (*Chelonia mydas)*	FT/--	Found world-wide in tropical waters but uncommon along the California coast. More often seen along the California coast during El Niño years when the ocean temperature is higher than normal. A small population previously took up residence in the San Diego Bay near a warm water effluent channel off the San Diego Gas & Electric power plant; however, the plant was shut down in 2013. Inhabits shallow waters of lagoons, bays, estuaries, mangroves, eelgrass and seaweed beds preferring areas with abundant aquatic vegetation, such as pastures of sea grasses and algae.
Switak's banded gecko (*Coleonyx switaki*)	--/ST, SSC County Group 2	In California, found on desert slopes of the eastern side of the Peninsular Ranges from Borrego Springs of San Diego County south to the U.S./Mexico border. An isolated population also occurs in the Coyote Mountains of Imperial County. Inhabits arid rocky areas on flatlands and canyons, especially where large boulders and rock outcrops are present and vegetation is sparse.
San Diego banded gecko (*Coleonyx variegatus abbotti*)	--/SSC County Group 1	Occurs in the coastal regions of southern California from interior Ventura County south to San Diego County, although the species is absent from the extreme outer coast. Inhabits coastal sage scrub and chaparral habitats, most often occurring in granite or rocky outcrops.
Baja California coachwhip (*Coluber fuliginosus*)	--/SSC	Occurs from extreme southern San Diego County at elevations below 7,700 feet. Habitat generalist found in open terrain but more common in grasslands, scrublands, and coastal sand dunes.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Reptiles (cont.)		
Red diamond rattlesnake (*Crotalus ruber*)	--/SSC County Group 2	Occurs in the southwestern California from San Bernardino County south to San Diego County at elevations below 5,000 feet. Has a wide tolerance for varying environments including the desert, dense foothill chaparral, warm inland mesas and valleys, and cool coastal zones. Most commonly found near heavy brush with large rocky microhabitats. Chamise and red shank chaparral associations may offer better structural habitat for refuges and food resources.
San Diego ring-necked snake (*Diadophis punctatus similis*)	--/-- County Group 2	This subspecies is found mainly along the coast to the west of the mountain and desert regions of San Diego County, and in extreme southwestern Riverside County. Prefers moist habitats and is often found near intermittent streams. Suitable habitat includes wet meadows, rocky hillsides, farmland, grassland, chaparral, mixed coniferous forests, and woodlands. Usually found under the cover of rocks, wood, boards and other surface debris, but occasionally seen moving on the surface on cloudy days, dusk, or at night.
Cope's leopard lizard (*Gambelia copeii*)	--/SSC	In California, found around Cameron Corner, Campo, and Portero in southern San Diego County. Inhabits coastal sage scrub, chaparral, and oak woodland preferring open areas.
Mohave desert tortoise (*Gopherus agassizii*)	FT/ST	In California, found throughout the Mojave and Sonoran Deserts of southern California at elevations below 3,500 feet. Generally, occurs north and west of the Colorado River and along the east side of the Salton Basin; absent from Coachella Valley. Occupies a variety of habitats including creosote scrub flats, rocky foothills, riverbanks, washes, alluvial fans, sandy dunes, canyon bottoms, and desert oases where suitable sandy or gravelly soils for den construction occur. Spends up to 95 percent of life within underground burrows which they dig. Most active during the spring when they mate and forage for food.
Coast mountain kingsnake (*Lampropeltis multifasciata*)	--/-- County Group 2	In California, occurs in the coastal mountain ranges from Monterey Bay south through the Peninsular and Transverse Ranges of southern California; also found on Catalina Island. Occupies a variety of habitats including forests, oak and riparian woodlands, coastal sage scrub, and chaparral. Most common near streams or lakeshores with rock outcrops, talus, or rotting logs.
Rosy boa (*Lichanura orcutti*)	--/-- County Group 2	Occurs within southern California from Los Angeles County south to San Diego County, from the coast east towards the Mojave and Colorado deserts; though absent from most of Imperial County. Inhabits arid scrublands, semi-arid shrublands, rocky shrublands, rocky deserts, canyons, and other rocky areas. Common in riparian areas but does not require permanent water.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Reptiles (cont.)		
Blainville's horned lizard (*Phrynosoma blainvillii*)	--/SSC County Group 2 MSCP Covered	In California, predominately occurs from Kern County south to San Diego County, west of the desert at elevations below 8,000 feet. Inhabits a wide variety of vegetation types including sagebrush scrub, chaparral, grasslands, forests, and woodlands but is restricted to areas with suitable sandy, loose soils with open areas for basking. Diet primarily composed of native harvester ants (*Pogonmyrmex* spp.) and are generally excluded from areas invaded by Argentine ants (*Linepithema humile*).
Flat-tailed Horned Lizard (*Phrynosoma mcallii*)	--/SSC County Group 1	Occurs throughout the Colorado Desert in southeastern California from Coachella Valley (San Bernardino County) south through Imperial Valley (Imperial County) at elevations below 1,000 feet. Specialized sand-dweller found in a variety of desert scrub habitats with shifting sand and scattered sparse vegetation of low species diversity; rarely occurs on sand dunes. Most common in areas with a high density of harvester ants.
Coronado skink (*Plestiodon skiltonianus interparietalis*)	--/WL County Group 2	Occurs in coastal and inland portions of southern San Diego County; though can occur up into Riverside County where it intergrades with Skilton's skink (*Plestiodon skiltonianus skiltonianus*). Suitable habitats include grassland, woodlands, pine forests, and chaparral, especially in open sunny areas such as clearings and edges of creeks or rivers. Prefers rocky areas near streams with lots of vegetation but can also be found in areas away from water. Occasionally seen foraging in leaf litter but more commonly found underneath surface objects, such as bark or rocks, where it lives in extensive burrows.
Coast patch-nosed snake (*Salvadora hexalepis virgultea*)	--/SSC County Group 2	Occurs in the coastal regions of California from the northern Carrizo Plains in San Luis Obispo County south to San Diego County at elevations below 7,000 feet. Inhabits semi-arid shrubby areas such as chaparral and desert scrub. Also found along washes, sandy flats, canyons, and rocky areas. Takes refuge and overwinters in burrows and woodrat nests.
Chuckwalla (*Sauromalus ater*)	--/-- County Group 2	In California, occurs within the Mojave and Colorado Deserts as far north as the White Mountains in Mono County and then south through Owens Valley and east to the Colorado River. Inhabits rocky flats and hillsides, lava flows, and large rock outcrops.
Southern sagebrush lizard (*Sceloporus vandenburgianus*)	--/-- County Group 2	Found in the Transverse and Peninsular Ranges of southern California between elevations of 500 to 10,500 feet. Occupies chaparral and forests preferring open areas with scattered shrubs and lots of sun.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Reptiles (cont.)		
Two-striped garter snake (*Thamnophis hammondii*)	--/SSC County Group 1	Found in California from Monterey County south along the coast to San Diego County at elevations below 7,000 feet. Commonly inhabits perennial and intermittent streams with rocky beds bordered by riparian habitats dominated by willows and other dense vegetation. Has also been found in stock ponds, and other artificially created aquatic habitats, if bordered by dense vegetation and potential prey, such as amphibians and fish, are present.
South Coast garter snake (*Thamnophis sirtalis infernalis*)	--/SSC County Group 2	This unformal subspecies occurs within scattered localities of California from Ventura County south San Diego County at elevations below 2,880 feet. Inhabits marsh and uplands habits near permanent water sources and suitable riparian habitats.
Colorado desert fringe-toed lizard (*Uma notata*)	--/SSC County Group 1	Occurs in the Colorado and Sonoran Deserts of southern California from the Salton Sea and Imperial sand dunes east to the Colorado River. Suitable habitats include sparsely vegetated arid areas with fine wind-blown sand such as flats with sandy hummocks, dunes, washes, and riverbanks. Requires fine, loose sand for burrowing.
Mojave fringe-toed lizard (*Uma scoparia*)	--/SSC	Occurs within the Mojave Desert from the southern end of Death Valley south to the Colorado River around Blythe in Riverside County. Inhabits sparsely vegetated arid areas with fine windblown sand including dunes, flats with sandy hummocks, washes, and riverbanks. Requires fine, loose sand for burrowing.
Sandstone Night Lizard (*Xantusia gracilis*)	--/SSC	Endemic species to California only known to occur in the Anza-Borrego Desert near the Truckhaven Rocks area at elevations between 790 and 1,000 feet. Inhabits sandstone and mudstone areas.
Birds		
Cooper's Hawk (*Accipiter cooperii*)	--/WL County Group 1 MSCP Covered	In California, breeds from Siskiyou County south to San Diego County and eastwards to Owens Valley at elevations below 9,000 feet. Inhabits forests, riparian areas, and more recently suburban and urban areas. Nests within dense woodlands and forests and isolated trees in open areas.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Birds (cont.)		
Northern Goshawk (*Accipiter gentilis*)	--/SSC	Year-round resident of California from the Oregon border south through the Cascade and Sierra Nevada Ranges, west along the Coast Ranges, and south into the Transverse and Peninsular Ranges. Southern-most breeding record is located in the Cuyamaca Mountains of San Diego County from 1937, though the species is extremely rare in southern California. Nests in mature and old-growth forests in both lowlands and mountainous areas up to 10,000 feet.
Sharp-shinned Hawk (*Accipiter striatus*)	--/WL County Group 1	Primarily winters and migrates throughout California. Breeding records located in the northern and central portions of the state, but breeding range in California is poorly known. Breeds within most closed-canopy woodlands and forests, including riparian habitats, from sea level to near alpine elevation nesting in trees near openings. Wintering habitat similar to breeding habitat but more expansive to include suburban and agricultural areas.
Western Grebe (*Aechmophorus occidentalis*)	--/-- County Group 1	Occurs throughout California where suitable lakes for breeding are present. Breeding habitat includes freshwater lakes and marshes with extensive areas of open water bordered by emergent vegetation. Winters along the Pacific coast from British Columbia south through Baja California and Mexico, though coastal California represents the species' core wintering area. Wintering habitat includes bays, estuaries, and sheltered seacoasts as well as freshwater lakes and occasionally rivers.
Tricolored Blackbird (*Agelaius tricolor*)	BCC/SCE, SSC County Group 1 MSCP Covered	Highly colonial, nomadic species occurring as a year-round resident of California from Sonoma County to San Diego. Common locally in the Central Valley and sporadically throughout the state. Breeds in dense colonies. Breeding habitat typically characterized by emergent freshwater marsh dominated by tall, dense cattails and bulrush (*Schoenoplectus* spp.; *Scirpus* ssp.), though also utilizes willows, blackberries (*Rubus* spp.), thistles (*Cirsium* and *Centaurea* spp.), nettles (*Urtica* sp.), and agricultural crops. Forages in grasslands and cropland habitats adjacent to breeding areas.
Southern California Rufous-crowned Sparrow (*Aimophila ruficeps canescens*)	--/WL County Group 1 MSCP Covered	Year-round resident of southwestern California occurring from Santa Barbara County south to San Diego County at elevations below 5,000 feet. Generally found on moderate to steep slopes vegetated with grassland, coastal sage scrub, and chaparral. Prefer areas with California sagebrush (*Artemisia californica*). Generally absent from areas with dense stands of coastal sage scrub or chaparral. May occur on steep grassy slopes without shrubs if rock outcrops are present.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Birds (cont.)		
Grasshopper Sparrow (*Ammodramus savannarum*)	--/SSC County Group 1	Occurs west of the Cascade and Sierra Nevada Ranges from Mendocino County south to San Diego County at elevations below 5,000 feet. Prefers moderately open grasslands and prairies with scattered shrubs, generally avoiding grasslands with extensive shrub cover.
Snow Goose (*Anser caerulescens*)	--/-- County Group 2	In California, primarily present as a winter visitor, though isolated breeding records occur at Tule Lake in northern California just south of the Oregon border. Winters in the Sacramento, San Joaquin, Imperial, and Lower Colorado River Valleys, and rarely along the coast of southern California. Wintering habitat includes estuaries, marine inlets and bays, shallow tidal waters, freshwater and brackish marshes, and croplands.
Lesser Sandhill Crane (*Antigone canadensis canadensis*)	--/SSC County Group 2	Winter resident and migrant in California generally present from mid-September through early April. Winters in the San Joaquin and Imperial Valleys. Wintering habitat includes pastures, moist grasslands, alfalfa fields, and shallow wetlands.
Greater Sandhill Crane (*Antigone canadensis tabida*)	--/ST, SSC, FP County Group 2	Occurs as a summer and winter resident in California. Breeds in northeastern California (Lassen, Modoc, Plumas, Shasta, Sierra, and Siskiyou Counties) and winters in Sacramento and San Joaquin Valleys from Tehama County south to Kings County, and along the Lower Colorado River in Imperial County. Nests in wet meadows and shallows lakes with emergent wetland vegetation. Wintering habitat includes grasslands, moist croplands (such as rice or corn), and open, emergent wetlands.
Golden Eagle (*Aquila chrysaetos*)	BCC/WL, FP County Group 1 MSCP Covered NE	Uncommon year-round resident and migrant throughout California, except the center of the Central Valley. More common in southern California than in northern regions. Inhabits a variety of habitats over rugged terrain. Nests on cliffs or trees. Forages over plains, grasslands, and low and open shrublands including chaparral and coastal sage scrub. Typically absent from heavily forested areas or on the immediate coast, and almost never detected in urbanized environments.
Great Blue Heron (*Ardea herodias*)	--/-- County Group 2	Year-round resident of California occurring throughout most of the state in saline and freshwater wetlands and shallow estuaries. Nests as single pairs and in small colonies. Nests located on the ground, in trees and bushes, and on artificial structures that are usually adjacent to water and secluded from human disturbance. Forages in a wide range of habitats including various wetlands, water bodies, and occasionally uplands.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Birds (cont.)		
Bell's sparrow (*Artemisiospiza belli belli*)	BCC/WL County Group 1	Non-migratory year-round resident on the coastal ranges of California and western slopes of the central Sierra Nevada mountains. Occurs year-round in southern California. Breeds in dry coastal sage scrub and chaparral, desert scrub, and similar other open, scrubby habitats. In foothill chaparral, tends toward younger, less dense stands that are recovering from recent fires; less common in older, taller stands that have remained unburned.
Short-eared Owl (*Asio flammeus*)	--/SSC County Group 2	Year-round resident in certain areas of California. Small resident populations occur in northeastern California and locally in the Sacramento–San Joaquin River Delta. Also breeds in Sacramento Valley, San Joaquin Valley, and coastal central California. Breeding in southern California rare. Inhabits open areas such as salt and freshwater marshes, alfalfa and grain fields, grasslands, and pastures. Nests on the ground within marshes and grasslands.
Long-eared Owl (*Asio otus*)	--/SSC County Group 1	Occurs throughout California, particularly in the Central Valley and southern California deserts. Found in dense riparian habitats and oak woodlands adjacent to open foraging areas. Typically nests in abandoned raptor nests in willows and oaks, and atop woodrat nests and accumulations of debris trapped in the crotches of large oaks. Winters in communal roosts in dense willow thickets, tamarisk groves, palo verde, and conifers.
Burrowing Owl (*Athene cunicularia*)	BCC/SSC County Group 1 MSCP Covered NE	Found from central California east to the Mojave Desert and south to coastal San Diego County. Primarily a grassland species that prefers areas with level to gentle topography and well-drained soils. Also occupies agricultural areas, vacant lots, and pastures. Requires underground burrows for nesting and roosting that are typically dug by other species such as the California ground squirrel (*Spermophilus beecheyi*). Will also utilize natural rock cavities, debris piles, culverts, and pipes for nesting and roosting.
Redhead (*Aythya americana*)	--/SSC County Group 2	Occurs year-round in California breeding in northeastern California, the Central Valley, southern California coast, and southern deserts. Nests in freshwater emergent wetlands where dense stands of marsh habitat are interspersed with areas of deep, open water.
Oak Titmouse (*Baeolophus inornatus*)	BCC/--	Year-round resident of California occurring throughout most of state but generally absent from the northwestern coastal region and San Joaquin Valley. Inhabits dry oak and oak-pine woodlands. May also use scrub oaks and other scrub habitat near woodlands, and juniper woodlands and open pine forests.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Birds (cont.)		
Marbled Murrelet (*Brachyramphus marmoratus*)	FT/SE	In California, occurs along the Pacific coast from the Oregon border south to central California. Forages in nearshore marine environments but flies inland to breed. Nests on large tree branches within mature and old-growth conifer forests at elevations up to 5,020 feet. Suitable breeding habitat characterized by large trees, moderate to high canopy cover, and multiple stories. Some wintering birds found in southern California.
Brant (*Branta bernicla*)	--/SSC	Winters along the California coast within well-protected, shallow marine waters such as bays and estuaries. Feeds primarily on eel-grass (*Zostera marina*). Also winters at Salton Sea in Imperial Valley where it feeds primarily on bulrush.
Canada Goose (*Branta canadensis*)	--/-- County Group 2 MSCP Covered	Winters in southern California within mixed fresh and brackish water habitats with low grass or succulent leaves. Typically roosts on open water of lakes or ponds. Feeds mainly on cultivated grains, wild grasses, and forbs, but also aquatic plants. Often seen in flocks.
Barrow's Goldeneye (*Bucephala islandica*)	--/SSC County Group 2	Uncommon winter resident along the central California coast. Winters primarily in San Francisco Bay and surrounding areas, Marin and Sonoma Counties, and along the Colorado River in southern California. Occurs within estuaries, lagoons, and bays. Also wintering locally on rivers and lakes. Historically nested on high lakes in the southern Cascades and Sierra Nevada Ranges, but there have been breeding records of the species since 1940.
Red-shouldered Hawk (*Buteo lineatus*)	--/-- County Group 1	Year-round resident in California, occurs to the west of Sierra Nevada occupying mature oak and riparian woodlands, eucalyptus groves, and suburban areas near forested areas. Nests in trees, both native and non-native, often located near a water source such as stream or pond.
Ferruginous Hawk (*Buteo regalis*)	BCC/WL County Group 1 MSCP Covered	Occurs as a winter visitor in California. Found within open grasslands at lower elevations within the Modoc Plateau, Central Valley, and Coast Ranges. Fairly common in grasslands and agricultural areas in southwestern California. Suitable wintering habitat includes grasslands, shrub habitats, and deserts over flat or rolling terrain.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Birds (cont.)		
Swainson's Hawk (*Buteo swainsoni*)	BCC/ST County Group 1 MSCP Covered	Uncommon breeding resident and migrant within California. Migrates from breeding grounds in North American to wintering areas in South America and forages in flocks, sometimes numbering up into the thousands. In California, breeds locally in the Central Valley and Great Basin regions within Shasta Valley, Owens Valley, and the Mojave Desert. Inhabits open grasslands and shrub habitats as well as canyons, foothills, and smaller interior valleys in otherwise mountainous regions. Increasingly becoming more dependent on agriculture, especially alfalfa crops. Nests in stands with few trees, often on the edge of riparian habitats, though also uses lone trees in agriculture fields and pastures, and along roadsides with suitable foraging habitat nearby.
Green Heron (*Butorides virescens*)	--/-- County Group 2	Year-round resident of California found generally west of the Sierra Nevada and within the southern deserts. Occurs in a wide variety of wetland habitats such as swamps, marshes, ponds, lake edges, man-made ditches, canals, and riparian habitat along creeks and streams. Prefers thick vegetation generally avoiding open areas.
Costa's Hummingbird (*Calypte costae*)	BCC/--	Occurs year-round in deserts and xeric habitats of southern California. Breeds along the coast in sage scrub and chaparral habitats from Santa Barbara County south to San Diego County, and east to desert regions of Inyo County and south to Imperial County. Breeding habitat includes desert scrub, coastal sage scrub, and chaparral.
Coastal Cactus Wren (*Campylorhynchus brunneicapillus sandiegensis*)	BCC/SSC (San Diego and Orange Counties) County Group 1 MSCP Covered NE	One of seven subspecies occurring restricted to southern California from southern Orange County and San Diego County. Occupies native scrub vegetation with thickets of mature cacti consisting of cholla (*Cylindropuntia* spp.) or prickly-pear cactus (*Opuntia littoralis*). Cacti must be tall enough to support and protect the bird's nest (typically 3 feet or more in height). Surrounding vegetation usually consists of coastal sage scrub habitat with shrubs normally below the level of nest placement.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Birds (cont.)		
Turkey Vulture (*Cathartes aura*)	--/-- County Group 1	In California, occurs as a year-round resident along the coastal regions breeding throughout the entire state. Preferred habitat includes farmland and forests. Also found at pastures and agricultural areas in the west and has an increased presence in urban areas during the winter. Nests in partly forested to forested areas isolated from humans on rock outcrops, fallen trees, and abandoned buildings. Roosts communally preferring stands of large trees or hilly areas, usually away from human disturbance. Opportunistic feeders of domestic and wild carrion, primarily mammals but also non-mammals, foraging and locating food through both sight and smell.
Rhinoceros Auklet (*Cerorhinca monocerata*)	--/WL County Group 2	Winter visitor in marine pelagic waters off the northern and central California coasts, and south of the Channel Islands. Small portion of wintering population remain in California to breed. Breeding has been confirmed at Castle rock and Price Island off Del Norte County and the Farallon Islands off San Francisco. Suspected breeding off Humboldt County, Sonoma County, San Mateo County, and Santa Barbara County. Breeds colonially on undisturbed forested or unforested islands in burrows and cliff caves. At sea, found mainly in continental-shelf waters along the continental slope; rarely close to land.
Vaux's Swift (*Chaetura vauxi*)	--/SSC	Occurs as a migrant and summer resident of California occurring along a narrow coast belt from the Oregon border south to Santa Cruz County, and in the Cascades and Sierra Nevada Ranges. Found in redwood and Douglas-fire forest habitats. Nests in tree cavities but can also be found on artificial structures such as chimneys. Fairly common spring and fall migrant throughout the state, though a few individuals may winter irregularly in the coastal lowlands of southern California.
Mountain Plover (*Charadrius montanus*)	BCC/SSC County Group 2 MSCP Covered	Winters visitor in central and southern California, primarily in the Central and Imperial Valleys. Strongly associated with short-grass habitats such as fallow, grazed, or burned areas. Rare in San Diego County.
Western Snowy Plover (*Charadrius nivosus nivosus*)	FT, BCC/SSC County Group 1 MSCP Covered	Breeds and winters along the coast of California. Nesting habitat includes sand spits, dune-backed beaches, beaches at creek and river mouths, and salt pans at lagoons and estuaries within 50 miles of the ocean. Usually prefer sand, silt or dry mud with even surface, avoiding rocky or broken ground. Exhibits high breeding site fidelity. In winter, found on many of the beaches used for nesting, as well as others where they do not nest. Also occurs in man-made salt ponds and on estuarine sand and mud flats.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Birds (cont.)		
Black Tern (*Chlidonias niger*)	--/SSC County Group 2	Occurs as migrant and summer resident in California breeding in the Modoc Plateau region and mountain valleys of northeastern California and lowlands of the Central Valley. Nests semi-colonially in marshes with emergent vegetation and flooded agricultural fields (such as rice fields). A large portion of the population migrates through the Salton Sea in Imperial Valley.
Northern Harrier (*Circus cyaneus*)	--/SSC County Group 1 MSCP Covered	Occurs as a year-round resident in California breeding throughout most of the state at elevations below 9,000 feet; though generally absent from the eastern desert regions. Inhabits open areas including wetlands, marshes, marshy meadows, grasslands, riparian woodlands, desert scrub, and pastures and agricultural areas. Nests on the ground in wetlands and uplands within patches of dense, often tall, vegetation in undisturbed areas. Breeding populations in southern California occurring from Ventura County to San Diego County are highly fragmented with many local populations extirpated, mostly likely as a result of habitat loss and degradation.
Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*)	FT, BCC/SE County Group 1 NE	Uncommon summer resident of California. Current breeding range is restricted to isolated sites in Sacramento, Amargosa, Kern, Santa Ana, and Colorado River Valleys. Riparian obligates that nest in riparian woodlands with native broadleaf trees and shrubs, such as cottonwoods (*Populus* ssp.) and willows at least 50 acres or more in size within arid to semiarid landscapes. Most likely found in patches of riparian habitat greater than 200 acres.
Olive-sided Flycatcher (*Contopus cooperi*)	BCC/SSC County Group 2	Occurs as a migrant and summer resident in California breeding in conifer forests at elevations up to 9,400 feet. Breeding range extends from the Oregon border south along the coast and near-coastal mountains west of the Central Valley to Santa Barbara County, Modoc Plateau and Cascade Range in northeastern California, south along the Sierra Nevada Range to Tulare County, east to the White Mountains, and in higher elevations of the Transverse and Peninsular Ranges south to San Diego County. Suitable habitat consists of late-successional conifer forests with open canopies.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Birds (cont.)		
Yellow Rail (*Coturnicops noveboracensis*)	BCC/SSC	Extremely rare year-round resident in California. Breeds locally in the northeastern interior of the state with recent records at Cowhead Slough in Modoc County and Mt. Shasta in Siskiyou County; historical records also occur at Long and Bridgeport Valleys in Mono County. Historically wintered along the central California Coast from Humboldt County south to Newport Bay in Orange County. Recent records suggest that a small number currently winter in a few coastal marshes and the Suisun Marsh region in Solano County. Additional inland winter records occur in San Joaquin Valley, near Corona in Riverside County, and Santee in San Diego County. Inhabits densely vegetated marshes. Breeds in sedge marshes and meadows with moist soils or shallow standing water. Winters in wet meadows and coastal tidal marshes.
Black Swift (*Cypseloides niger*)	BCC/SSC County Group 2	Occurs as a migrant and summer resident in California. Breeds locally along the central coast in Santa Cruz, San Mateo, Monterey, and San Luis Obispo Counties; along the Cascade and Sierra Nevada Ranges; and within the San Gabriel, San Bernardino, and San Jacinto Mountains of southern California. Nests behind or besides permanent or semi-permanent waterfalls, on cliffs near water, and in sea caves.
Fulvous Whistling-Duck (*Dendrocygna bicolor*)	--/-- County Group 2	Occurs as a migrant and summer resident in California. Historically bred at the south end of San Francisco Bay in Santa Clara County and in the San Joaquin and Imperial Valleys, and coastal slope of southern California. Currently restricted to the southern end of the Salton Sea in Imperial Valley at Finney and Ramer Lakes and the Alamo River Delta. Wintering birds occasionally seen in the Central Valley and annually in Imperial Valley. Suitable habitat includes freshwater and coastal marshes, rice fields, and tall grass flooded areas.
Reddish Egret (*Egretta rufescens*)	--/-- County Group 2 MSCP Covered	Rare wintering visitor San Diego County representing the northern-most limit of the species' known range. Occurs in coastal wetlands with two to three individuals typically occurring annually.
White-tailed Kite (*Elanus leucurus*)	--/FP County Group 1	Year-round resident of California residing along the coasts and valleys west of the Sierra Nevada foothills and southeast deserts; has also been documented breeding in arid regions east of the Sierra Nevada and within Imperial County. Inhabits low elevation grasslands, wetlands, oak woodlands, open woodlands, and is often associated with agricultural areas. Breeds in riparian areas adjacent to open spaces nesting in isolated trees or relatively large stands.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Birds (cont.)		
Southwestern Willow Flycatcher (*Empidonax traillii extimus*)	FE/SE County Group 1 MSCP Covered NE	In California, breeds from the central portion of the state in Owens Valley (Inyo County) south to San Diego County. Riparian obligates that breed in relatively dense riparian habitats along rivers, streams, or other wetlands where surface water is present, or soils are very saturated. Breeding habitat can consist of monotypic stands of willows, a mixture of native broadleaf trees and shrubs, monotypic stands of exotics such as tamarisk (*Tamarix* spp.) or Russian olive (*Elaeagnus angustifolia*), or mixture of native broadleaf trees and shrubs with exotics. Restricted in San Diego County to two modest colonies at San Luis Rey River and Santa Margarita River, with a few scattered pairs.
California Horned Lark (*Eremophila alpestris actia*)	--/WL County Group 2	In California occurs along the coastal ranges of from San Joaquin Valley south to U.S./Mexico border. Inhabits a wide variety of open habitats with low, sparse vegetation where trees and large shrubs are generally absent. Suitable habitats include grasslands along the coast, deserts within the inland regions, shrub habitat at higher elevations, and agricultural areas.
Merlin (*Falco columbarius*)	--/WL County Group 2	Uncommon winter migrant in California occurring from September to May at elevations below 5,000 feet. Often found in open woodland, grasslands, cultivated fields, marshes, estuaries and seacoasts; rarely found in heavily wooded areas or over open deserts.
Prairie Falcon (*Falco mexicanus*)	BCC/WL County Group 1	Uncommon permanent resident and migrant of California ranging from the Sierra Nevada southwest along the inner coastal mountains and east to the southeastern deserts but absent from northern coastal fog belt. Primary habitats include grasslands, savannahs, alpine meadows, some agricultural fields during the winter season, and desert scrub areas where suitable cliffs or bluffs are present for nest sites. Requires sheltered cliff ledges for cover and nesting which may range in height from low rock outcrops of 30 feet to cliffs up to and higher than 400 feet.
American Peregrine Falcon (*Falco peregrinus anatum*)	BCC/FP County Group 1 MSCP Covered NE	In California, breeds and winters throughout the state except for desert areas. Active nesting sites are known from along the coast north of Santa Barbara, in the Sierra Nevada, and other mountains of northern California. Few nest sites are known anecdotally for southern California mostly at coastal estuaries and inland oases. Inhabits a large variety of open habitats including marshes, grasslands, coastlines, and woodlands. Typically nest on cliff faces in remote rugged sites where adequate food is available nearby, but the species can also be found in urbanized areas nesting on man-made structures.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Birds (cont.)		
Tufted Puffin (*Fratercula cirrhata*)	--/SSC County Group 2	Occurs year-round off the coast central and northern California from the Oregon border south to the Channel Islands. Largest breeding colonies are found on the Farallon Islands off San Francisco and Castle Rock off Del Norte County. Breeds on offshore rocks and islands, and rarely on steep mainland cliffs, free from human disturbance and mammalian predators. Nest in earthen burrows or rock crevices on steep slopes, cliffs, or cliff stops. Rare in southern California with most individuals occurs in midwinter and spring.
Common Loon (*Gavia immer*)	--/SSC County Group 2	Overwinters along the California coast within estuaries and subtidal marine habitats avoiding river mouths and turbid waters. Uncommon on large lakes, reservoirs, and rivers in valleys and foothills; rarely observed far from shore. Historically breed in the northern portion of the state in mountain lakes east of Mt. Lassen in Shasta and Lassen Counties but has since been extirpated.
Gull-billed Tern (*Gelochelidon nilotica*)	BCC/SSC	Occurs as a summer resident within southern California; rarely observed in the winter. Breeding colonies occur at Salton Sea in Imperial and Riverside Counties, and San Diego Bay in San Diego County. Nesting habitat includes small, bare islets of fine clay within impoundments at the Salton Sea or isolated sections of earthen levees at the salt works in south San Diego Bay.
California Condor (*Gymnogyps californianus*)	FE/SE, FP	Occurs year-round within semi-arid, rugged mountain ranges of California. Current distribution includes the Coast Range from Santa Clara County south to Los Angeles County, southern San Joaquin Valley, Transverse Range and Tehachapi Mountains of southern California, and southern Sierra Nevada. Nests in caves, crevices, behind rocks slabs, or on large ledges on high cliffs at elevations between 2,000 and 6,500 feet. Roosts on cliff ledges and cavities and in large trees and snags. Forages over wide-open areas of rangeland, grasslands, and chaparral.
Bald Eagle (*Haliaeetus leucocephalus*)	FE, BCC/SE, FP County Group 1 MSCP Covered	Occurs as a permanent resident or uncommon winter migrant within California. Breeds primarily in northern California (Butte, Lake, Lassen, Modoc, Plumas, Shasta, Siskiyou, and Trinity Counties) but also nests in scattered locations in the Sierra Nevada mountains and foothills, in several locations from the central coast to inland southern California, and on Santa Catalina Island. Associated with large bodies of waters including estuaries, rivers, lakes, and reservoirs. Nests in mature, old growth forests adjacent to large bodies of water development.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Birds (cont.)		
Caspian Tern (*Hydroprogne caspia*)	BCC/--	In California, occurs commonly to very commonly along the coast and at scattered inland locations. Primarily a summer visitor but may also winter and occur year-round in southern California regions. Nests in dense colonies at a wide variety of habitats ranging from coastal estuarine, salt marsh, and barrier islands to beaches and freshwater islands in inland rivers and salt lakes. Breeding adults often fly substantial distances to forage at rivers lakes, and fresh or saltwater wetland habitats. Nesting colonies occur at Humboldt Bay, San Francisco Bay, San Pablo Bay, San Diego Bay, Elkhorn Slough, and several lakes in Modoc and Lassen Counties. Present in large numbers at the Salton Sea during the breeding season, no longer nests there.
Yellow-breasted Chat (*Icteria virens*)	--/SSC County Group 1	In California, occurs as a migrant and summer resident breeding from the coastal regions in northern California, east of the Cascades, and throughout the central and southern portions of the state. Breeds in early successional riparian habitats with well-developed shrub layer and an open canopy nesting on the borders of streams, creeks, rivers, and marshes.
Least Bittern (*Ixobrychus exilis*)	BCC/SCC County Group 2	Primarily a summer resident in California breeding in the Sacramento Valley, San Joaquin Valley, Central Valley, Salton Sink, lower Colorado River Valley, and coastal Orange and San Diego counties. Occurs year-round in the southern California. Breeds in low-lying areas associated with large rivers, ponds, lakes, and estuaries and is largely absent from higher elevations. Inhabits freshwater and brackish marshes with dense, tall growths of aquatic or semiaquatic vegetation such as cattails, sedges (*Carex* ssp.), bulrush, and arrowhead (*Sagittaria* ssp.) interspersed with clumps of woody vegetation and open water, although they also occasionally occur in salt marshes.
Gray-headed Junco (*Junco hyemalis caniceps*)	--/WL County Group 2	Occurs as a breeding and wintering species in the White and Grapevine Mountains of central-eastern California, and on Clark Mountains in southeastern California; rare but regulator visitor to San Diego County. Occurs within forests and woodlands in the mountains.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Birds (cont.)		
Loggerhead Shrike (*Lanius ludovicianus*)	BCC/SSC County Group 1	Found year-round within California throughout the foothills and lowlands with winter migrants found coastally north of Mendocino County. Inhabits a variety of habitats and forages over open ground within areas of short vegetation, pastures with fence rows, old orchards, mowed roadsides, cemeteries, golf courses, riparian areas, open woodland, agricultural fields, desert washes, desert scrub, grassland, broken chaparral and beach with scattered shrubs. Forages by perching to search for prey (such as large insects, small mammals, amphibians, reptiles, and fish) and using impaling as a means of handling prey.
California Gull (*Larus californicus*)	--/WL County Group 2	In California, winters along coastal regions with breeding populations localized at Mono Lake and southern San Francisco Bay. Breeding colonies nearly always occur on islands in natural lakes, rivers, or reservoirs. In the winter, the species is found along coastal California at beaches, rocky coasts, mudflats, coastal estuaries, and deltas of rivers and streams.
California Black Rail (*Laterallus jamaicensis coturniculus*)	BCC/ST, FP County Group 2 NE	In California, breeds in the Sacramento-San Joaquin River delta, San Francisco Bay area, Bolinas Lagoon and Tomales Bay in Marin County, Morro Bay in San Luis Obispo County, White Slough in San Joaquin County, the Salton Sea in Imperial County, and the Lower Colorado River Valley. Inhabits salt and freshwater marshes and wet meadows. Associated with pickleweed (*Salicornia* ssp.), bulrush, alkali heath (*Frankenia salina*), and cordgrass (*Spartina* ssp.). Requires dense cover of upland vegetation in tidal areas for protection when rails must leave marsh habitats during high tide events.
Lucy's Warbler (*Leiothlypis luciae*)	BCC/SSC County Group 1	Occurs as a breeding summer visitor in California but can also occur as a rare fall and winter vagrant. Breeds along the lower Colorado River Valley in eastern San Bernardino, Riverside, and Imperial Counties. Local populations also occur in Coachella Valley and Mojave Desert, Borrego Valley in San Diego County, and Furnace Creek Ranch (Death Valley) in Inyo County. Almost exclusively inhabits honey mesquite (*Prosopis glandulosa*) but also found within blue paloverde (*Parkinsonia florida*), desert ironwood (*Olneya tesota*), and riparian woodlands.
Laughing Gull (*Leucophaeus atricilla*)	--/WL County Group 2	Rare vagrant along the Pacific coast of California; also found at the Salton Sea in Imperial County. A few pairs previously nested at Salton Sea from 1928 to 1957 but no longer nest there. Non-breeding adults still summer at Salton Sea.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Birds (cont.)		
Gadwall (*Mareca strepera*)	--/-- County Group 2	Winters and breeds within California occupying interior valleys, wetlands, ponds, and streams. Nests in short, dense herbaceous habitats adjacent to suitable shallow water feeding areas, such as islands surrounded by open water.
Lewis's Woodpecker (*Melanerpes lewis*)	BCC/-- County Group 1	In California, breeds locally from Siskiyou and Modoc Counties south through the Warner Mountains, Cascades and Sierra Nevada Ranges; inner Coast Ranges from Tehama County south to central San Luis Obispo County; and occasionally south to San Bernardino Mountains and east to the Big Pine Mountains in Inyo County. Uncommon, winter visitor in the Central Valley, Modoc Plateau, and the Transverse and other Ranges in southern California. Occurs within open ponderosa pine forest, open riparian woodland dominated by cottonwood, and logged or burned pine forest. Breeding birds are also found in oak woodland, nut and fruit orchards, piñon pine-juniper woodland, pine and fir forests, and agricultural areas.
Gila Woodpecker (*Melanerpes uropygialis*)	BCC/SE	Permanent resident in southeast California in the Imperial and lower Colorado River Valleys. Inhabits desert with large cacti and trees, dry subtropical forests, and riparian woodlands at elevations below 5,300 feet. Prefers cottonwood-dominated habitat along lower Colorado River in winter and summer. Nests in cavities typically created in saguaro cacti (*Carnegiea gigantea*), mesquite, and fan palms (*Washingtonia* ssp.).
Wood Stork (*Mycteria americana*)	--/SSC County Group 2	Post-breeding visitor to southern California occurring from late-May to mid-September. Historical occurrences located primarily along the coast (mainly north to Ventura County), Salton Sea in Imperial Valley, and the lower Colorado River Valley north to Needles in San Bernardino County. Currently almost entirely limited to the southeastern portion of the Salton Sea with scattered occurrences in other locations. Though isolated pairs have attempted nesting in San Diego during the late 1980s early 1990s, none have been successful. Foraging habitat includes shallow bays, marshy areas, flooded fields, and canals.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Birds (cont.)		
Brown-crested Flycatcher (*Myiarchus tyrannulus*)	--/WL	Breeds locally in desert riparian habitats of southeast California along the Colorado River. A few pairs have nested at Morongo Valley in San Bernardino County and other mays nest locally at other desert oases and riparian habitats northwest to the Mojave River near Victorville. Vagrants have been recorded west to the South Fork Kern River in Kern County, north to Furnace Creek Ranch (Death Valley) in Inyo County, and on the Farallon Islands off San Francisco. Inhabits mature riparian woodland dominated by cottonwood, mesquite, and willow. Nests in cavities created by other species.
Long-billed Curlew (*Numenius americanus*)	BCC/WL County Group 2 MSCP Covered	Uncommon to fairly common breeder in northeastern California. Nests on elevated interior grasslands and wet meadows, usually adjacent to lakes or marshes, within Siskiyou, Modoc, and Lassen Counties. Locally common winter visitor along most of the California coast, and in Central and Imperial Valleys. Preferred wintering habitat includes estuaries, herbaceous areas, and croplands. Small numbers of non-breeding individuals remain along the coast in the summer, and larger numbers may remain in the Central Valley.
Fork-tailed Storm-Petrel (*Oceanodroma furcata*)	--/SSC County Group 2	Occur year-round in offshore waters of the California coast. Breeds on offshore rocks and islands largely free of mammalian predators off northern California. Nests in natural crevices and earthen burrows. Forages over waters of the continental slope and shelf break.
Ashy-tailed Storm-Petrel (*Oceanodroma homochroa*)	BCC/SSC County Group 2	Occurs year-round in waters off the California coast, just seaward of the continental slope. Breeds on offshore islands from Mendocino County south to San Diego County. Largest known colonies occur at the South Farallon, Santa Barbara, Prince, and Santa Cruz islands. Nests in crevices of talus slopes, rock walls, sea caves, cliffs, and driftwood.
Black Storm-Petrel (*Oceanodroma melania*)	--/SSC County Group 2	Occurs year-round in waters overlying the continental shelf off southern California. Found farther north in the fall. Breeds on offshore islands from San Barbara County south to San Diego County. Nests in cavities located on cliff crevices. Rarely seen inland.
Mountain Quail (*Oreortyx pictus*)	--/-- County Group 2	Year-round resident found throughout California at elevations below 10,000 feet. Inhabits shrublands including chaparral, mixed desert scrub, and occasionally woodlands if shrubs are present.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Birds (cont.)		
Osprey (*Pandion haliaetus*)	--/WL County Group 1	Within California, breeding populations reside in the Cascade and Sierra Nevada Ranges, though small numbers of the species also breed within San Diego County. Although widely seen on the coast, rare transients can occur in the interior portions of southern California. Restricted to large water bodies such as rivers, lakes, and reservoirs supporting fish with suitable nesting habitat such as rocky pinnacles or large trees and snags. Build their large nests, often in dead tops of older trees and man-made structures.
Harris's Hawk (*Parabuteo unicinctus*)	--/WL	Occurs irregularly in southeastern California. Inhabits semi-open desert scrub, grassland, and wetland habitats. Breeds in groups of two to seven hawks which includes a dominant breeding pair with both related and unrelated helpers. In San Diego County, nesting and breeding activity has been documented within the McCain Valley and Anza-Borrego Desert.
Belding's Savannah Sparrow (*Passerculus sandwichensis beldingi*)	--/SE County Group 1 MSCP Covered NE	Year-round resident of coastal salt marshes within southern California from Santa Barbara County south to San Diego County. Particularly associated with salt marsh habitat dominated by dense pickleweed within which most nests are found.
Large-billed Savannah Sparrow (*Passerculus sandwichensis rostratus*)	--/SSC County Group 2 MSCP Covered	Non-breeding visitor of southern California occurring in small pockets along the coast from San Luis Obispo County south to San Diego County, and east at the Salton Sea in Imperial County. Wintering habitat almost entirely restricted to shorelines occurring at beaches and salt marshes and can be numerous along constructed seawalls and rocky shoreline outcroppings. At Salton Sea, found in low halophytic scrub, dominated by iodine bush (*Allenrolfea occidentalis*) and saltbush (*Atriplex* spp.), and in introduced stands of young tamarisk.
American White Pelican (*Pelecanus erythrorhynchos*)	--/SSC County Group 2	Mainly an overwintering visitor to California along the coast and lowlands of central California, although also winters at the Salton Sea in Imperial County. Breeds at lakes and marshes in the Klamath Basin, Modoc Plateau, and Great Basin Desert in the northeastern California. Nests in colonies on isolated islands of freshwater lakes and overwinters at marine estuaries and inland lakes where suitable habitat for feeding, loafing, and roosting is present.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Birds (cont.)		
California Brown Pelican (*Pelecanus occidentalis californicus*)	FD/SD,FP County Group 2 MSCP Covered	Found year-round in estuarine, marine subtidal, and marine pelagic waters along the California coast. Rare to uncommon visitor at the Salton Sea in Imperial County from July to September. Nests on undisturbed islands adjacent to marine fishing areas. Rests on water or inaccessible rocks offshore or on the mainland, but also uses mudflats, sandy beaches, wharfs, and jetties.
Double-crested Cormorant (*Phalacrocorax auritus*)	--/WL County Group 2	Year-round resident along the entire coast of California also occurring east of the coast within the Central Valley, lower Colorado River, and Salton Sea. Inhabits fresh and saltwater estuaries, and inland lakes requiring suitable places for feeding, resting, loafing, and nighttime roosts. Breeds in colonies safe from predators and adjacent to feeding areas such as rocky or sandy islands, bridges, docks, nesting towers, trees, emergent marsh vegetation, and on the ground.
Hepatic Tanager (*Piranga flava*)	--/WL	Rare summer resident of California breeding in the arid mountain ranges of the San Bernardo Mountains and eastern Mojave Desert. Nests in forests dominated by piñon pine (*Pinus edulis*), Jeffrey pine (*Pinus jeffreyi*), and white fir (*Abies concolor*); also found in mature piñon-pine woodland. Winter and fall vagrant in San Diego County.
Summer Tanager (*Piranga rubra*)	--/SSC County Group 2	In California, occurs along the lower Colorado River from the Nevada state line south to the U.S./Mexican border. Inhabits mature riparian woodland dominated by cottonwood and willow at lower elevations, and mesquite and tamarisk at higher elevations. Tends to occur in broader riparian zones over narrower ones.
White-faced Ibis (*Plegadis chihi*)	--/WL County Group 1 MSCP Covered	Uncommon summer resident in sections of southern California, rare visitor in the Central Valley, and local wintering visitor along coast. Prefers to feed in fresh emergent wetlands, shallow lacustrine waters, muddy ground of wet meadows, and irrigated or flooded pastures and croplands. Nests in dense, fresh emergent wetland. In San Diego County, two nesting colonies have been documented at Guajome Lake and at a pond along the San Luis Rey River located near Keys Canyon.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Birds (cont.)		
Coastal California Gnatcatcher (*Polioptila californica californica*)	FT/SSC County Group 1 MSCP Covered	Year-round resident of California occurring from Ventura County south to San Diego County, and east to the western portions of San Bernardino and Riverside Counties. Typically occurs in arid, open sage scrub habitats on gently slopes hillsides to relatively flat areas at elevations below 3,000 feet. Composition of sage scrub in which gnatcatchers are found varies though California sagebrush present as dominant or co-dominant species. Mostly absent from areas dominated by black sage (*Salvia mellifera*), white sage (*Salvia apiana*), or lemonade berry (*Rhus integrifolia*), though may occur more regularly in inland regions dominated by black sage.
Black-tailed Gnatcatcher (*Polioptila melanura*)	--/WL	Year-round resident of California ranging from southern Inyo County south through Imperial County and west to Barstow and Morongo Valley San Bernardino County, San Gorgonio Pass Riverside County, and Anza-Borrego Desert in San Diego County. Inhabits semiarid and desert scrub communities below elevations of 6,900 feet. Prefers nesting and foraging in densely lined arroyos and washes dominated by creosote bush (*Larrea tridentata*) and salt bush with scattered bursage (*Ambrosia dumosa*), ocotillo (*Fouquieria splendens*), and various cacti species. Tends to avoid areas composed of the introduced tamarisk and has become less common in irrigated agricultural areas of the Coachella, Imperial, and Lower Colorado River Valleys.
Purple Martin (*Progne subis*)	--/SSC County Group 1	Occurs as a summer resident and migrant throughout California at elevations below 5,900 feet. Widely but irregularly distributed. Breeds locally west of the Cascades and Sierra Nevada Ranges and interior foothills; rare in the Transverse and Peninsular Ranges of southern California. Inhabits forest and woodlands areas. Nests in cavities in a variety of substrates where canopy cover is low at the nest height.
Flammulated Owl (*Psiloscops flammeolus*)	BCC/--	In California, occurs as a summer resident throughout the Cascade and Sierra Nevada Ranges, interior coast ranges, and other mountain areas of southern California where suitable habitat is present at elevation between 6,000 and 10,000 feet. Inhabits open, mature to old ponderosa pine (*Pinus ponderosa*) forests or other mixed coniferous forests. Nests in previously excavated cavities and will also occupy nest boxes.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Birds (cont.)		
Cassin's Auklet (*Ptychoramphus aleuticus*)	BCC/SSC	In California, occurs on offshore island located along the coast. Nests in burrows, rocky crevices, debris piles, cracks under buildings, and large caves located on both steep cliffs and level ground. At sea, associated with the subarctic waters of the inner California current, where features are influenced by seasonal upwellings, and waters of the outer continental shelf and slope.
Vermilion Flycatcher (*Pyrocephalus rubinus*)	--/SSC County Group 1	Scare breeding records occur in southern California with a few individuals wintering regularly along the coast from Ventura County south to San Diego County. Suitable habitat includes arid scrub, farmlands, parks, golf courses, desert, savanna, cultivated lands, and riparian woodland, usually near water. Wintering individuals can be found in open and semi-open areas with hedges, scattered trees and bushes, and often near water. The species is known to both breed and winter at selected sites within San Diego County.
Light-footed Ridgway's Rail (*Rallus obsoletus levipes*)	FE/SE, FP County Group 1 MSCP Covered NE	One of six recognized subspecies occurring as a resident in coastal salt marshes and lagoons from Santa Barbara County south to Baja California. The species is found primarily in tall, dense cordgrass and occasionally pickleweed in the low marsh zone. Also found in freshwater marshes in winter.
Yuma Ridgway's Rail (*Rallus obsoletus yumanensis*)	FE/ST, FP	One of six subspecies occurring from southeastern California and southwestern Arizona along the lower Colorado River and tributaries (Virgin River, Bill Williams River, lower Gila River) and Salton Sea in California. Inhabits freshwater marshes dominated by cattails and bulrush.
Bank Swallow (*Riparia riparia*)	--/ST County Group 1	In California, occurs as a locally common to uncommon breeding resident in northern and central California. Extirpated from historical breeding sites in southern California. Breeds in lowland areas along the coast, rivers, streams, lakes, reservoirs, and wetlands. Nesting colony sites occur on vertical banks, bluffs, or cliffs in alluvial, friable soils suitable for burrowing.
Black Skimmer (*Rynchops niger*)	BCC/SSC County Group 1	Year-round resident in southern California breeding in localized areas along coast from San Francisco Bay south to San Diego County, and east at the Salton Sea. Nests in mixed species colonies on open sandy areas, or gravel and shell bars, with sparse vegetation. In winter, roosts communally on urban beaches or on mud flats in estuaries. In San Diego County, primarily observed in Mission Bay during winter and at salt works in San Diego Bay during summer.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Birds (cont.)		
Rufous Hummingbird (*Selasphorus rufus*)	BCC/--	Spring and summer migrant in California, though may occur as a rare winter visitor in southern California. Travels through the state, primarily between March and April, as part of the species annual migration route between its wintering grounds in Mexico and breeding grounds up north. Often confused with the visually similar Allen's Hummingbird (*Selasphorus sasin*). No confirmed breeding records of the species occur within California.
Yellow Warbler (*Setophaga petechia*)	BCC/SSC County Group 2	Common to locally abundant species breeding throughout California at elevations below 8,500 feet; excluding most of the Mojave Desert and all of the Colorado Desert. Breeds in riparian areas dominated by willows and cottonwoods, near rivers, streams, lakes, and wet meadows. Also breeds in montane shrub and conifer forests in higher elevation areas.
Western Bluebird (*Sialia mexicana*)	--/-- County Group 2 MSCP Covered	Common year-round resident throughout California but absent from the higher mountains and eastern deserts. Breeds in open woodlands, riparian habitats, grasslands, and farmlands. Nests and roosts in cavities of trees and snags, often in holes previously created by woodpeckers, and nest boxes. Winters in a wider variety of habitats.
Lawrence's Goldfinch (*Spinus lawrencei*)	BCC/--	Resident of California breeding from Tehama, Shasta, and Trinity Counties to the foothills surrounding Central Valley, south through the southern Coast Range to Santa Barbara County continuing into San Diego County, and east to the western edge of the southern Mojave and Colorado Deserts. Found year-round in areas south of Kern County with wintering individuals observed further east into the desert regions and Colorado River Valley. Inhabits arid and open woodlands adjacent to scrub or chaparral habitats, grasslands or meadows, and water resources such as a stream, pond, or lake from sea level up to 10,000 feet. Highly nomadic species.
Brewer's Sparrow (*Spizella breweri*)	BCC/--	In California, breeds east of the Cascade and Sierra Nevada Ranges and in the mountains and high valleys of Mojave Desert. Breeding habitat includes shrublands often dominated by big sagebrush. Winters in open desert scrub habitat and croplands of southern Mojave and Colorado Deserts. Uncommon fall transient and rare spring transient in the coastal regions of southern California.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Birds (cont.)		
California Least Tern (*Sternula antillarum browni*)	FE/SE, FP County Group 1 MSCP Covered NE	Occurs locally along California coastal regions breeding in colonies from San Francisco Bay south to San Diego County. Nests on relatively bare or sparsely vegetation beaches and mudflats near water. Forages in the bays and estuaries near their colonies, on the ocean near shore, and at inland lakes in the coastal lowland. In San Diego nesting sites occur at Aliso Creek, the Santa Margarita River mouth, Batiquitos Lagoon, San Elijo Lagoon, Mission Bay, Naval Training Center in the San Diego Bay, salt works, and Tijuana River mouth.
California Spotted Owl (*Strix occidentalis occidentalis*)	BCC/SSC	One of three subspecies occurring from the southern Cascade Range of northern California, south along the west slope of the Sierra Nevada to Kern County, coastal mountain ranges from Monterey County south to Santa Barbara County, and the Transverse and Peninsular Ranges of southern California. Found at elevations below 6,600 feet. Inhabits old-growth or late-seral-sage habitats with a complex structure such as large old trees and snags, multiple canopy layers, dense canopies, and downed wood debris. The presence of large, old trees is a key component to species' habitat. Nests in broken-top trees and tree cavities, and on platforms (abandoned raven and raptor nests, squirrel nests, mistletoe brooms, or debris accumulations in trees); rarely nests on cliffs.
Scripps's Murrelet (*Synthliboramphus scrippsi*)	FC, BCC/ST County Group 2	Nests on the Channel Islands (San Miguel, Santa Cruz, Anacapa, Santa Barbara, Santa Catalina, and San Clemente Islands) off the southern California coast. Largest breeding colonies occur on Santa Barbara Island. Nesting habitat includes sea slopes, canyons, and cliffs with a sparse cover of herbaceous and shrubby plants. Winters offshore along the California coast occupying warm pelagic waters and is rarely seen from the mainland.
Elegant Tern (*Thalasseus elegans*)	--/WL County Group 1 MSCP Covered	Migrates along the coastal regions of California with three known breeding colonies located in the extreme southwestern portion of the state: Los Angeles harbor (Los Angeles County), Bolsa Chica Ecological Reserve (Orange County), and San Diego Bay (San Diego County). Nests on generally low, flat, and sandy areas with little vegetation. Found in bays, harbors, estuaries, and inshore coastal waters. Rarely found inland.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Birds (cont.)		
Bendire's Thrasher (*Toxostoma bendirei*)	BCC/SSC County Group 2	In California, rare and irregular breeder in Mojave and northern Colorado Deserts of Inyo, Kern, San Bernardino, and Riverside Counties. Inhabits desert scrub dominated by yucca and cacti (*Opuntia* spp.) species. Generally, avoids areas with steep slopes and rocky terrain. In San Diego County, species occurs as an outlier with a single breeding occurrence near Ocotillo Wells within the Anza-Borrego Desert in 1993.
Crissal Thrasher (*Toxostoma crissale*)	--/SSC County Group 1	Permanent resident of the Mojave, Colorado, and Sonoran Deserts of southeastern California. Inhabits a large variety of desert riparian and scrub habitats from below 6,000 feet. Prefers areas of dense, low shrubby vegetation but has also been found foraging at agricultural edges (e.g., citrus orchards) when adjacent to native habitat patches.
LeConte's Thrasher (*Toxostoma lecontei*)	BCC/SSC County Group 2	Permanent resident found in the in southern California from San Joaquin Valley south through the Mojave and Colorado Desert to the U.S./Mexico border. Inhabits sparsely vegetated desert flats, dunes, alluvial fans, or gently rolling hills dominated by saltbush and cholla.
Barn Owl (*Tyto alba*)	--/-- County Group 2	Common, yearlong resident of California found in open habitats such as grassland, chaparral, riparian, and wetlands avoiding dense forests and open desert habitats. Also found in urban and suburban areas. Nest in sheltered areas of cliffs or man-made structures, on ledges, in crevices, culverts, nest boxes, and in cavities in trees. Roosts in dense vegetation, cliffs, and buildings and other man-made structures.
Least Bell's Vireo (*Vireo bellii pusillus*)	FE/SE County Group 1 MSCP Covered NE	In California, breeds along the coast and western edge of the Mojave Desert from Santa Barbara County south to San Diego County, and east to Inyo, San Bernardino, and Riverside Counties. Breeding habitat consists of early to mid-successional riparian habitat, often where flowing water is present, but also found in dry watercourses within the desert. A structurally diverse canopy and dense shrub cover is required for nesting and foraging. Dominant species within breeding habitat includes cottonwood and willows with mule fat (*Baccharis salicifolia*), oaks (*Quercus* ssp.), and sycamore (*Platanus racemosa*), and mesquite and arrowweed (*Pluchea sericea*) within desert habitats. Can be tolerant of the presence of non-native species such as tamarisk.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Birds (cont.)		
Gray Vireo (*Vireo vicinior*)	BCC/SSC County Group 1	In California, breeds in arid montane habitats from Inyo County south to San Diego County. Prefers mixed juniper/pinon, oak scrub, and chaparral dominated by redshanks (*Adenostoma sparsifolium*), chamise, and ceanothus (*Ceanothus* spp.) in hot arid mountains and high plain scrublands with continuous shrub cover.
Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*)	--/SSC	Migrant and summer resident of California. Breeds within the Klamath Basin and Modoc Plateau of northeastern California from the Oregon border south to Owens valley; Central Valley from Tehama County south to Kern County; east of the Sierra Nevada within Mono Basin and Owens Valley; and locally within southern California from Ventura County south San Diego County, western Riverside County, and Imperial County along lower Colorado River and Salton Sea. Winters in small numbers within southern Central Valley, and the Imperial and Colorado River Valleys of southern California. Nests almost exclusively in marshes with tall emergent vegetation preferring deep water wetlands. Breeding marshes often located at the edges of lakes, reservoirs, or larger ponds. Forages over adjacent wetlands, grasslands, or agricultural areas.
Mammals		
Pallid bat (*Antrozous pallidus*)	--/SSC County Group 2	Locally common species found at low elevations in California. Associated with arid and open habitats including grasslands, shrublands, woodlands, and forests, often with open water nearby. Prefers rocky outcrops, cliffs, and crevices with access to open habitats for foraging. Day roosts in caves, crevices, mines, and occasionally hollow trees and buildings. Appears to be intolerant of most human disturbances, being mostly absent from urban and suburban areas.
Ringtail (*Bassariscus astutus*)	--/FP County Group 2	Wide-ranging species found throughout California. Inhabits riparian areas and stands of most forest and shrub habitats in close association with rocky areas or riparian habitats.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Mammals (cont.)		
Dulzura pocket mouse (*Chaetodipus californicus femoralis*)	--/SSC County Group 2	Occurs in the foothills and mountains of San Diego County, although can also be found on the upper portions of mountain slopes extending into the desert regions. Ranges from the coastal regions (Oceanside to Del Mar, and possibly south to the Tijuana River Valley), eastwards to the Palomar and Cuyamaca Mountains, and extends to the desert slopes of San Felipe Valley, Cigarette Hills, and McCain Valley. Prefers gravelly substrates with sun exposure and can be found within open to dense vegetation. Inhabits chaparral habitats, but is occurs within coastal sage scrub, oak woodland, and at the edge of grasslands.
Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*)	--/SSC County Group 2	Occurs throughout southwestern California from western Riverside County to northern Baja California at elevations below 6,000 feet. Inhabits coastal sage scrub, grasslands, and chaparral communities, and generally exhibits a strong microhabitat affinity for moderately gravelly and rocky substrates. Forages for seeds from California sagebrush, California buckwheat, lemonade berry, and grasses under shrub and tree canopies, or around rock crevices.
Pallid San Diego pocket mouse (*Chaetodipus fallax pallidus*)	--/SSC County Group 2	Occurs on the desert slopes of San Diego County from Anza-Borrego Desert northwards to San Bernardino and San Gabriel Mountains into the Mojave Desert and Joshua Tree National Park. Prefers rocky habitat near shrubs but also inhabits grasslands and scrub habitats.
Mexican long-tongued bat (*Choeronycteris mexicana*)	--/SSC County Group 2	Found in southern California from Ventura County south to San Diego County. Occurs in arid habitats below 7,900 feet. Suitable habitats include grasslands, scrub, mixed forest, and canyons in mountain ranges rising from the desert. Primarily found in urban and suburban areas in San Diego County. Roosts in in caves and mines, and man-made structures such as garages, office buildings, under porches, and warehouses.
Townsend's big-eared bat (*Corynorhinus townsendii pallescens*)	--/SSC County Group 2	Occurs throughout California but distribution is strongly correlated with the availability of caves and cave-like roosting habitat. Found in a variety of habitats with presence of caves or cave-like structures (such as buildings). In San Diego County, presumed absent from coastal areas being found more commonly in historic mining districts and boulder-strewn regions (i.e., Escondido, Lakeside, Dulzura, Jacumba, etc.).

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Mammals (cont.)		
Stephens' kangaroo rat (*Dipodomys stephensi*)	FE/ST County Group 1	Occurs in southern California within the San Jacinto Valley, western Riverside County, and southwestern San Bernardino County, and northwestern San Diego county at elevations between 4,100 feet. Inhabits native to open grasslands and sparse coastal sage scrub (less than 30 percent cover) on relatively flat or gently sloping ground. Dominant species include native and non-native herbaceous species such as filaree (*Erodium* spp.), non-native grasses (*Bromus* ssp.), California sagebrush, and California buckwheat.
Spotted bat (*Euderma maculatum*)	--/SSC County Group 2	In California, found in a small number of localities in the foothills, mountains, and desert regions at elevations below 10,000 feet. Inhabits rocky arid and semi-arid environments including forested mountains, open shrublands, and deserts. Roosts in rock crevices along cliffs adjacent to wide expanses of open habitat. Occasionally roosts in caves and buildings.
Western mastiff bat (*Eumops perotis californicus*)	--/SSC County Group 2	In California, occurs from Monterey County to San Diego County from the coast eastward to the Colorado Desert. Found in open, semi-arid to arid habitats including coastal and desert scrub, grasslands, woodlands, and palm oases. Prefers to roost in high situations above the ground on vertical cliffs, rock quarries, outcrops of fractured boulders, and occasionally tall buildings.
Mountain lion (*Felis concolor*)	--/-- County Group 2 MSCP Covered	Uncommon permanent resident found throughout California in nearly all habitats, expect xeric regions of Mojave and Colorado Deserts. Requires extensive riparian vegetation and brushy habitats with interspersed irregular terrain, rocky outcrops, and tree or brush edges. Main prey is mule deer.
Western red bat (*Lasiurus blossevillii*)	--/SSC County Group 2	In California, locally common occurring from Shasta County south to San Diego County and west of the Cascade and Sierra Nevada Ranges and deserts. Mainly occurs in riparian woodlands populated by willows, cottonwoods, sycamores, and oak trees but can be found in non-native vegetation such as tamarisk, eucalyptus, and orchards. Primarily roosts in trees preferring heavily shaded areas which are open underneath.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Mammals (cont.)		
Western yellow bat (*Lasiurus xanthinus*)	--/SSC	Occurs from southern California from in Los Angeles, San Bernardino, and San Diego Counties. In San Diego, commonly found in Anza-Borrego Desert but is also established west of the desert within rural to suburban areas including Escondido, Vista, Ramona, Lakeside, El Cajon, and La Mesa. Roosts primarily on dead palm frond skirts of native and non-native fan palms but has also been observed in cottonwoods and yuccas. Occurs within a variety of habitats where palms are present including desert riparian, desert washes, palm oasis, cottonwood-willow riparian forest, and developed areas.
Lesser long-nosed bat (*Leptonycteris yerbabuenae*)	FD/SSC	Primarily found within the desert regions of southwestern U.S. with only two locations reported in California: one in San Bernardino County and one in San Diego County. Roosts primarily in caves and cave-like structures. Feeds on flowers of various agave and cacti species. Species likely subsidized by landscaping with nectar-producing plants near man-made structures that function as cave-root analogs.
San Diego black-tailed jackrabbit (*Lepus californicus bennettii*)	--/SSC County Group 2	Occurs along the coastal regions of southern California. Found in arid regions preferring grasslands, agricultural fields, and sparse scrub. Typically absent from areas with high-grass or dense brush, such as closed-canopy chaparral, primarily occupying short-grass and open scrub habitats.
California leaf-nosed bat (*Macrotus californicus*)	--/SSC County Group 2	In California, ranges from Ventura County south to the U.S./Mexico Border. Within San Diego County, primarily occurs as a desert species within the Anza-Borrego Desert, but has also been documented in the western foothills along the Santa Margarita River and inland valley of Dulzura. Uses caves and similar structures for roosting including buildings, bridges, and fallen palm trunks. Forages along desert washes and floodplains in the east, and sandy river valleys along the coast.
Small-footed myotis (*Myotis ciliolabrum*)	--/-- County Group 2	Found throughout California occurring in desert, chaparral, riparian areas, and forests. Presence of riparian areas and waters appears to be important in distribution. Strongly associated with chaparral and montane habitats in San Diego County. Roosts solitarily or in small numbers in rocky crevices, caves, mines, snags, buildings, and bridges.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Mammals (cont.)		
Long-eared myotis (*Myotis evotis*)	--/-- County Group 2	Widespread in California, but generally believed to be uncommon in most of its range. Avoids the arid Central Valley and hot deserts, occurring along the entire coast and in the Sierra Nevada, Cascades, and Coast Ranges below 9,000 feet. Occurs in riparian zones and chaparral but is found primarily in oak woodlands and pine forests in the foothills and mountains. It roosts in crevices and cavities in rocks and trees and is sometimes found in man-made structures such as buildings, bridges, and mines.
Yuma myotis (*Myotis yumanensis*)	--/-- County Group 2	Widespread in California but uncommon in the Mojave and Colorado Deserts, except in the mountain ranges bordering Colorado River Valley. Found in a variety of habitats including juniper and riparian woodlands, riparian forests, and desert regions where bodies of water (i.e., rivers, streams, ponds, lakes, etc.) are present. Closely associated with water which it uses for foraging and sources of drinking water. Roosts in caves, attics, buildings, mines, underneath bridges, and other similar structures.
San Diego Bryant's (formerly desert) woodrat (*Neotoma bryanti [formerly lepida] intermedia*)	--/SSC County Group 2	Occurs along the coastal regions of California from San Luis Obispo County south to San Diego County, and in the western portions of San Bernardino and Riverside Counties. Inhabits a variety of shrub and desert habitats such as coastal sagebrush scrub, chaparral, pinyon-juniper woodland, and Joshua tree woodland among others. Often associated with rock outcroppings, boulders, cacti patches, and areas with dense understories. Construct dens used for shelter, food storage, and nesting around rock outcroppings and cacti using various materials such as twigs, sticks, and other debris.
Pocketed free-tailed bat (*Nyctinomops femorosaccus*)	--/SSC County Group 2	Rare in California occurring from Los Angeles County east to San Bernardino County and south to San Diego County. Closely associated with their preferred roosting habitats consisting of vertical cliffs, quarries, and rocky outcrops. Sometimes roosts under tiled roofs and observed utilizing bat boxes. Habitat generalists foraging in grasslands, shrublands, riparian areas, oak woodlands, forests, meadows, and ponds favoring larger water bodies for drinking.
Big free-tailed bat (*Nyctinomops macrotis*)	--/SSC County Group 2	Rare in California with species found in urban areas of San Diego County. Closely associated with their preferred roosting habitats consisting of vertical cliffs, quarries, and rocky outcrops. Also roosts in buildings and occasionally holes in trees. Associated with coastal and desert scrub, forests, riparian zones, and montane woodlands. Probably does not breed in California.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Mammals (cont.)		
Mule deer (*Odocoileus hemionus*)	--/-- County Group 2 MSCP Covered	Found throughout California lacking from only completely urbanized areas and the desert floor. Distribution determined by vegetation type, water availability, and quality and quantity of foraging habitat. Inhabits a wide array of habitats from grasslands, meadows, coastal sage scrub, chaparral, riparian and montane forests. Crepuscular activity and movements are along routes that provide the greatest amount of protective cover.
Southern grasshopper mouse (*Onychomys torridus ramona*)	--/SSC County Group 2	Ranges from the San Joaquin Valley of Los Angeles County south to northwest Baja California. Typically found in open valleys on the coastal side of the mountains but may extend a short distance onto the eastern desert slopes. Within San Diego County, has only been found on the eastern desert slopes within Dameron Valley, San Felipe Valley, and Scissors Crossing. Prefers open habitats with soft terrain and friable soils within grasslands, coastal sage scrub, alluvial fans, and desert scrub.
Peninsular bighorn sheep (*Ovis canadensis nelsoni*)	FE/ST, FP County Group 1	Found on east facing, lower elevation slopes of the Peninsular Ranges within Riverside, Imperial, and San Diego Counties at elevations below 4,600 feet along the northwestern edge of the Sonoran Desert. Found in steep, rugged, sparsely vegetation montane slopes where food and water resources are available but will also utilize alluvial fans, washes, and valley floors to forage, access water, and move between neighboring mountainous regions. Steep slopes are required for lambing and rearing habitat.
Palm Springs pocket mouse (*Perognathus longimembris bangsi*)	--/SSC	Found within the Anza-Borrego Desert region of San Diego County at elevations below 1,500 feet. Occupies dunes and sparse desert scrub environments dominated by creosote, saltbush, and mesquite.
Los Angeles pocket mouse (*Perognathus longimembris brevinasus*)	--/SSC County Group 2	Historically occurred from the San Fernando Valley of Los Angeles County east to Cabazon in the San Gorgonio Pass and southeast to north-central San Diego County. Only known San Diego localities are in Dameron Valley and Warner Pass. Possibly intergrades with the Palm Springs pocket mouse in San Felipe Valley. Found in sandy washes, grasslands, disturbed sage scrub, and oak woodland habitats.

Appendix B (cont.)
Special Status Animal Species with Potential to Occur in the IVMP Service Area

Species	Status[1]	Habitat Associations
Mammals (cont.)		
Jacumba pocket mouse (*Perognathus longimembris internationalis*)	--/SSC County Group 2	Limited in range to the central and southern portions of San Diego County. Occurs on eastern mountain slopes leading to the desert within San Felipe Valley, Earthquake Valley, Blair Valley, Mason Valley, McCain Valley and Jacumba. Occupies higher elevation areas between 2,000 and 3,600 feet than other low desert subspecies. Occurs on steep and rock slopes, sandy washes and valley floors with low vegetative cover, and sites previously disturbed by grazing and cultivation.
Pacific pocket mouse (*Perognathus longimembris pacificus*)	FE/SSC County Group 1 NE	Historically occurred in coastal southern California from Los Angeles County south to San Diego County. Current distribution is within one mile of the coast with three known populations still present: Dana Point Headlands (Orange County, San Mateo Creek (northern San Diego County), and Camp Pendleton (southern San Diego County). Occurs on fine-grained, sandy or gravelly substrates in coastal strand, coastal dunes, river alluvium, and coastal sage scrub growing on marine terraces.
American badger (*Taxidea taxus*)	--/SSC County Group 2 MSCP Covered	Uncommon, permanent resident found through California, except for the extreme north coast areas. Associated with large blocks of undeveloped land composed of open valleys, alluvial fans, meadows, grasslands, and sandy desert. Dens function as sites for resting and parturition. Friable, easily crumbled soils are important for denning.

[1] Listing codes are as follows: F = Federal; S = State of California; E = Endangered; T = Threatened; CE = Candidate Endangered; R = Rare; BCC = Federal Bird of Conservation Concern; SSC = State Species of Special Concern; FP = State Fully Protected; WL = Watch List

County of San Diego Sensitivity Status: Animals are divided into Groups 1 and 2 on the Sensitive Animal List. **Group 1** Animals include those that have a very high level of sensitivity, either because they are listed as threatened or endangered or because they have very specific natural history requirements that must be met. **Group 2** Animals include those species that are becoming less common but are not yet so rare that extirpation or extinction is imminent without immediate action. These species tend to be prolific within their suitable habitat types.

MSCP Covered Species: Covered Species under County of San Diego Multiple Species Conservation Plan (MSCP) Subarea Plan; NE = Narrow Endemic Species under County's MSCP Subarea Plan.

Appendix C

Explanation of Status Codes for Plant and Animal Species

Appendix C
Explanation of Status Codes for Plant and Animal Species

FEDERAL AND STATE CODES

U.S. Fish and Wildlife Service (USFWS)

BCC	Bird of Conservation Concern
BGEPA	Bald and Golden Eagle Protection Act
FC	Federal candidate species
FD	Federal delisted species
FE	Federally listed endangered
FPD	Federally proposed for delisting
FPE	Federally proposed endangered
FPT	Federally proposed threatened
FT	Federally listed threatened

USFWS Birds of Conservation Concern (BCC)

The primary legal authority for Birds of Conservation Concern (2008) is the Fish and Wildlife Conservation Act of 1980 (FWCA), as amended. Other authorities include the Endangered Species Act, Fish and Wildlife Act (1956) and 16 USC §701. A FWCA 1988 amendment (Public Law 100-653, Title VIII) requires the Secretary of the Interior through the USFWS to "identify species, subspecies, and populations of all migratory non-game birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act of 1973." The 2008 BCC report is the most recent effort by the USFWS to carry out this proactive conservation mandate.

The BCC report aims to identify accurately the migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent the USFWS' highest conservation priorities and draw attention to species in need of conservation action. The USFWS hopes that by focusing attention on these highest priority species, the report will promote greater study and protection of the habitats and ecological communities upon which these species depend, thereby ensuring the future of healthy avian populations and communities. Birds of Conservation Concern 2008 lists are available online at https://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php.

USFWS Federal Candidate (FC) Species

Federal candidate species are those for which the USFWS has on file "sufficient information on biological vulnerability and threats to support a proposal to list as endangered or threatened, but for which preparation and publication of a proposal is precluded by higher-priority listing actions. [The USFWS] maintain[s] this list for a variety of reasons: to notify the public that these species are facing threats to their survival; to provide advance knowledge of potential listings that could affect decisions of environmental planners and developers; to provide information that may stimulate conservation efforts that will remove or reduce threats to these species; to solicit input from interested parties to help us identify those candidate species that may not require protection under the [Endangered Species Act] or additional species that may require the Act's protections; and to solicit necessary information for setting priorities for preparing listing proposals" (Federal Register 70:90 [May 11, 2005]).

Appendix C (cont.)
Explanation of Status Codes for Plant and Animal Species

USFWS Federal Proposed Endangered (FPE) Species

Any species the Service has determined is in danger of extinction throughout all or a significant portion of its range and the Service has proposed a draft rule to list as endangered. Proposed endangered species are not protected by the take prohibitions of section 9 of the ESA until the rule to list is finalized. Under section 7(a)(4) of the ESA, federal agencies must confer with the Service if their action will jeopardize the continued existence of a proposed species.

USFWS Federal Proposed Threatened (FPT) Species

Any species the Service has determined is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and the Service has proposed a draft rule to list as threatened. Proposed threatened species are not protected by the take prohibitions of section 9, consistent with any protective regulations finalized under section 4(d) of the ESA, until the rule to list is finalized. Under section 7(a)(4) of the ESA, federal agencies must confer with the Service if their action will jeopardize the continued existence of a proposed species.

USFWS Bald and Golden Eagle Protection Act (BGEPA)

In 1782, Continental Congress adopted the bald eagle as a national symbol. During the next one and a half centuries, the bald eagle was heavily hunted by sportsmen, taxidermists, fisherman, and farmers. To prevent the species from becoming extinct, Congress passed the Bald Eagle Protection Act in 1940. The Act was extremely comprehensive, prohibiting the take, possession, sale, purchase, barter, or offer to sell, purchase, or barter, export or import of the bald eagle "at any time or in any manner."

In 1962, Congress amended the Eagle Act to cover golden eagles, a move that was partially an attempt to strengthen protection of bald eagles, since the latter were often killed by people mistaking them for golden eagles. The golden eagle, however, is accorded somewhat lighter protection under the Act than the bald eagle. Another 1962 amendment authorizes the Secretary of the Interior to grant permits to Native Americans for traditional religious use of eagles and eagle parts and feathers.

California Department of Fish and Wildlife (CDFW)

SCE	State candidate for listing as endangered
SCT	State candidate for listing as threatened
SE	State listed endangered
SR	State listed rare
ST	State listed threatened
SSC	State species of special concern
WL	Watch List
FP	Fully Protected species refers to all vertebrate and invertebrate taxa of concern to the Natural Diversity Data Base regardless of legal or protection status. These species may not be taken or possessed without a permit from the Fish and Game Commission and/or CDFW.
Special Animal	Refers to all vertebrate and invertebrate taxa of concern to the Natural Diversity Database regardless of legal or protection status.

Appendix C (cont.)
Explanation of Status Codes for Plant and Animal Species

California Environmental Quality Act (CEQA)

For plants with no current federal or state legal standing, "CEQA" refers to the fact that under the Act, impacts to species may be found significant under certain circumstances (e.g., the species are regionally sensitive and/or are protected by a local policy, ordinance, or habitat conservation plan; or the impact involves interference with certain movements or migrations, with wildlife corridors or with nursery sites).

OTHER CODES AND ABBREVIATIONS

California Native Plant Society California Rare Plant Rank (CRPR) Codes

Lists

1A = Presumed extirpated in California and either rare or extinct elsewhere. Eligible for state listing.

1B = Rare, threatened, or endangered in California and elsewhere. Eligible for state listing.

2A = Presumed extirpated in California but common elsewhere. Eligible for state listing.

2B = Rare, threatened, or endangered in California but more common elsewhere. Eligible for state listing.

3 = Review List: Plants about which more information is needed. Some eligible for state listing.

4 = Watch List: Plants of limited distribution. Needs monitoring for changes in population status. Few (if any) eligible for state listing.

List/Threat Code Extensions

.1 = Seriously threatened in California (over 80 percent of occurrences threatened/high degree and immediacy of threat)

.2 = Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

.3 = Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

A "CA Endemic" entry corresponds to those taxa that only occur in California.

All List 1A (presumed extinct in California) and some List 3 (need more information; a review list) plants lacking threat information receive no extension. Threat Code guidelines represent only a starting point in threat level assessment. Other factors, such as habitat vulnerability and specificity, distribution, and condition of occurrences, are considered in setting the Threat Code.

Appendix C (cont.)
Explanation of Status Codes for Plant and Animal Species

County of San Diego

Plant Sensitivity

Group A Plants rare, threatened, or endangered in California and elsewhere
Group B Plants rare, threatened, or endangered in California but more common elsewhere
Group C Plants that may be quite rare but need more information to determine true rarity status
Group D Plants of limited distribution and are uncommon but not presently rare or endangered

Animal Sensitivity

Group 1 Animals that have a very high level of sensitivity either because they are listed as threatened or endangered or because they have very specific natural history requirements.

Group 2 Animal species that are becoming less common, but are not yet so rare that extirpation or extinction is imminent without immediate action. These species tend to be prolific within their suitable habitat types.

Multiple Species Conservation Program (MSCP) Covered

Multiple Species Conservation Program covered species for which the County of San Diego and City of San Diego have take authorization within the MSCP (South County) subarea and City of San Diego subarea.

MSCP Narrow Endemic

Narrow endemic species are native species that have “restricted geographic distributions, soil affinities, and/or habitats.” The MSCP participants’ subarea plans have specific conservation measures to ensure impacts to narrow endemics are avoided to the maximum extent practicable.

Appendix C

Cultural Technical Report

HELIX Environmental Planning

County of San Diego Integrated Vector Management Program

Cultural Resources Technical Report

October 2021 | 00187.00005.024

Prepared for:

County of San Diego
Department of Environmental Health
Vector Control Program
5570 Overland Avenue, Suite 102
San Diego, CA 92123

Prepared by:

Stacie Wilson
Senior Archaeologist

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

County of San Diego Integrated Vector Management Program

Cultural Resources Technical Report

Prepared for:

County of San Diego
Department of Environmental Health
Vector Control Program
5570 Overland Avenue, Suite 102
San Diego, CA 92123

Prepared by:

Stacie Wilson, M.S., RPA

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

October 2021 | 00187.00005.024

National Archaeological Database Information

Authors:	Stacie Wilson, M.S., RPA, Theodore Cooley, M.A., RPA, and Annie McCausland, M.A.
Consulting Firm:	HELIX Environmental Planning, Inc.
Client:	County of San Diego, Department of Environmental Health
Report Date:	September 2021
Report Title:	Cultural Resources Technical Report: County of San Diego Integrated Vector Management Program
Type of Study:	Technical Report in support of a Program Environmental Impact Report
New Sites:	N/A
Updated Sites:	N/A
USGS Quad:	Multiple
Acreage:	N/A
Key Words:	San Diego County; Townships 8 through 18 South, Ranges 6 West through 8 East; incorporated cities (Carlsbad, Chula Vista, Coronado, Del Mar, El Cajon, Encinitas, Escondido, Imperial Beach, La Mesa, Lemon Grove, National City, Oceanside, Poway, San Diego, San Marcos, Santee, Solana Beach, and Vista); Community Planning Areas (Alpine, Bonsall, County Islands, Fallbrook, Julian, Lakeside, Pendleton/De Luz, Rainbow, Ramona, San Dieguito, Spring Valley, Sweetwater, Valle de Oro, and Valley Center); Subregional Planning Areas (Central Mountain, Crest/Dehesa/Harbison Canyon/Granite Hills, Desert, Jamul/Dulzura, Mountain Empire, North County Metropolitan (Metro), North Mountain, Otay, and Pala/Pauma Valley)

This page intentionally left blank

TABLE OF CONTENTS

LIST OF FIGURES

ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
BMPs	best management practices
BP	Before Present
CalEPA	California Environmental Protection Agency
CCR	California Code of Regulations
CDPH	California Department of Public Health
CEQA	California Environmental Quality Act
CHRIS	California Historical Resources Information System
CPA	Community Planning Area
CRHR	California Register of Historical Resources
DEH	Department of Environmental Health
DPR	California Department of Parks and Recreation
HELIX	HELIX Environmental Planning, Inc.
IVMP	Integrated Vector Management Program
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
NRHP	National Register of Historic Places
PRC	Public Resources Code
RPO	Resource Protection Ordinance
SCIC	South Coastal Information Center
TCP	Traditional Cultural Properties
TCR	Tribal Cultural Resources
USEPA	U.S. Environmental Protection Agency
VCP	Vector Control Program

EXECUTIVE SUMMARY

This report presents an assessment of potential impacts to cultural resources associated with the proposed County of San Diego (County) Department of Environmental Health (DEH), Vector Control Program's (VCP) Integrated Vector Management Program (IVMP; Proposed Project). This report details the existing conditions (environmental, cultural, and regulatory settings) of the IVMP service area, which includes all 18 incorporated cities and unincorporated areas of San Diego County. It provides an analysis of potential impacts the IVMP activities may have on cultural resources and recommends measures to mitigate potential adverse impacts to cultural resources that may result from ongoing implementation of the IVMP.

Under the Proposed Project, the IVMP would continue the use of surveillance and monitoring, source reduction (i.e., physical control), source treatment (i.e., biological and chemical controls), public education and outreach, and disease diagnostics vector control techniques. Of these, only source reduction would potentially result in tangible impacts to cultural resources, due to the potential ground-disturbing or physical impacts the possible environmental modifications may entail. Since specific site locations cannot be defined at this time, it is anticipated that ground-disturbing activities associated with implementation of the Proposed Project could have the potential to cause a substantial adverse change in the significance of an archaeological resource.

The Proposed Project would not cause substantial adverse changes to built environment resources (historic buildings, structures, or objects), as source reduction activities would primarily involve techniques such as ground disturbance, vegetation management, water control, and other maintenance activities within primarily undeveloped areas.

This report supports the preparation of a Program Environmental Impact Report for a countywide service area; therefore, site-specific analysis is infeasible at this time. However, over the course of the Proposed Project, potentially significant impacts may occur to archaeological resources, Tribal Cultural Resources (including archaeological sites, traditional gathering areas, or other areas of traditional use), or human remains. Ground-disturbing activities (such as grading or vegetation removal requiring grubbing) have the potential to damage or destroy resources, or unintentionally disturb human remains, that may be present on or below the ground surface.

Mitigation measures have been recommended to guide the identification, evaluation, and mitigation of potential impacts to cultural resources for individual activities that would involve ground-disturbing work related to the Proposed Project. With these measures, the impacts to cultural resources would be reduced to below a level of significance.

This page intentionally left blank

1.0 INTRODUCTION

HELIX Environmental Planning, Inc. (HELIX) was contracted by the County of San Diego (County) to provide cultural resources services for the County's Department of Environmental Health (DEH) Vector Control Program (VCP), a public health program that was established to monitor and control vectors that transmit diseases and create public nuisances within San Diego County. For the purposes of this project, a vector is defined as any animal capable of spreading disease or producing human discomfort or injury, including, but not limited to, mosquitoes, flies, mites, ticks, other arthropods, and rodents and other vertebrates (California Health and Safety Code Section 2002[k]).

The VCP is managed by County staff, governed by the County Board of Supervisors, and implemented within a service area that includes all 18 incorporated cities and unincorporated areas of San Diego County. The VCP serves to reduce exposure to vectors and vector-borne diseases in a manner that minimizes risks to people, property and the environment through a coordinated set of activities collectively known as the Integrated Vector Management Program (IVMP). The IVMP carries out a full range of vector control activities, practices, and procedures to protect the public from vector-borne diseases and public nuisances while allowing for the inclusion of progressive and emerging vector control techniques, tools, and materials. For the purposes of this analysis, the Proposed Project consists of the ongoing implementation of the IVMP.

This report details the existing conditions (environmental, cultural, and regulatory settings) of the IVMP service area, provides an analysis of the impacts the IVMP activities may have on cultural resources, and recommends measures to mitigate any potential adverse impacts to cultural resources that may result from the Proposed Project.

1.1 PROJECT DESCRIPTION

1.1.1 Project Location

The IVMP service area is defined by the boundaries of San Diego County (Figure 1, *Regional Map*; Figure 2, *Integrated Vector Management Program Service Area*). The county is bordered by Orange and Riverside counties to the north, Imperial County to the east, the Pacific Ocean to the west, and the U.S./Mexico International Border to the south. The IVMP service area encompasses approximately 4,261 square miles, and includes all unincorporated areas within the county, as well as the 18 incorporated cities (Carlsbad, Chula Vista, Coronado, Del Mar, El Cajon, Encinitas, Escondido, Imperial Beach, La Mesa, Lemon Grove, National City, Oceanside, Poway, San Diego, San Marcos, Santee, Solana Beach, and Vista). The unincorporated portion of the county is divided into 23 planning areas. Fourteen of the planning areas are referred to as Community Planning Areas (CPAs), and nine areas are called Subregional Planning Areas (Subregions). The CPAs are Alpine, Bonsall, County Islands, Fallbrook, Julian, Lakeside, Pendleton/De Luz, Rainbow, Ramona, San Dieguito, Spring Valley, Sweetwater, Valle de Oro, and Valley Center. The nine Subregions are Central Mountain, Crest/Dehesa/Harbison Canyon/Granite Hills, Desert, Jamul/Dulzura, Mountain Empire, North County Metropolitan (Metro), North Mountain, Otay, and Pala/Pauma Valley. The location and extent of specific activities implemented under the IVMP are evaluated based on the site-specific situation and dictated by the targeted vector, regulatory requirements, and applicable management approaches.

1.1.2 Project Description

Under the Proposed Project, the IVMP would continue to comprehensively implement vector control through various techniques, including surveillance and monitoring, source reduction (i.e., physical control), source treatment (i.e., biological and chemical controls), public education and outreach, and disease diagnostics. Each of these techniques would be applied to the applicable vectors under the IVMP, including disease-transmitting mosquitoes (i.e., *Culex* spp., *Aedes* spp., and *Anopheles* spp.); nuisance mosquitoes (i.e., not disease-transmitting); vectors associated with mammalian disease reservoirs (i.e., ticks and rodents); and other nuisance species (e.g., eye gnats not on commercial organic farms) deemed necessary for control as approved by the VCP. The five core services of the IVMP include: (1) early detection of public health risks through comprehensive vector surveillance and testing; (2) control and reduction of vectors that transmit diseases to humans or create public nuisance; (3) dissemination of information regarding tools for prevention, protection, and reporting of vectors that transmit diseases; (4) appropriate and timely response to vector-related customer complaints; and (5) detection of vector-borne pathogens. The objectives of the IVMP are to:

1. Protect public health, well-being, and economic effects from vectors throughout San Diego County by applying integrated vector management practices.

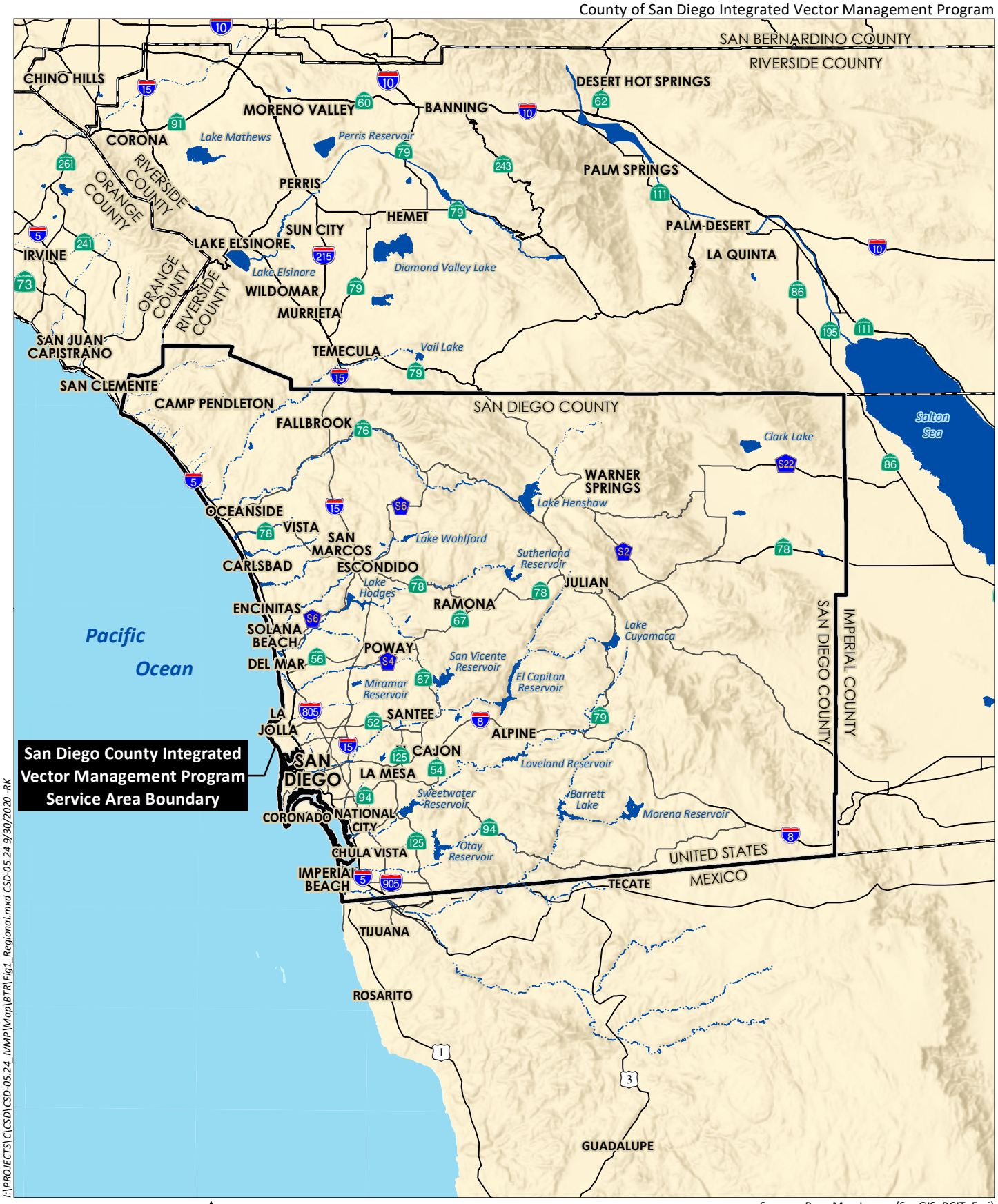
2. Implement effective and efficient integrated vector management practices in a manner that balances environmental impacts with the need to protect the public from vector-borne diseases and nuisances.

3. Coordinate with other regional vector control districts throughout California as well as state and federal public health and environmental protection agencies to allow for the inclusion of progressive and emerging vector control activities and technologies.

Vector control and surveillance activities are conducted by VCP staff under standard operating procedures and use a risk-based approach to determine appropriate levels of response to each vector of concern. The IVMP incorporates various vector management principles and techniques from guidance documents that are regularly updated, such as the VCP's annual *Mosquito, Vector and Disease Control Assessment Engineer's Report* (hereafter referred to as Engineer's Report); *West Nile Virus Strategic Response Plan*; and *Aedes Transmitted Disease Strategic Response Plan* (County 2020, 2018a and 2018b, respectively), as well as procedural documents such as the *Mosquito Breeding Site Access Standard Operating Procedure* (County 2014). A general discussion of the key IVMP activities is discussed below.

Surveillance and Monitoring

Vector surveillance, monitoring, and diagnostics are needed to assess location and abundance of vector populations and species so that data-informed decisions can be made. Vector surveillance involves monitoring vector populations and habitat, their disease pathogens, and human/vector interactions. Vector surveillance provides the VCP with valuable information about which vector species are present or likely to occur, locations in which they may occur, abundance, and if they are carrying disease(s). The information obtained from surveillance is evaluated against treatment and risk-based response criteria to decide when and where to implement vector control measures, and to help form action plans that can also assist in reducing the risk of contracting disease or causing nuisance. Vector surveillance can help minimize the area to which control techniques may be applied by directing activities to the areas where they are needed.

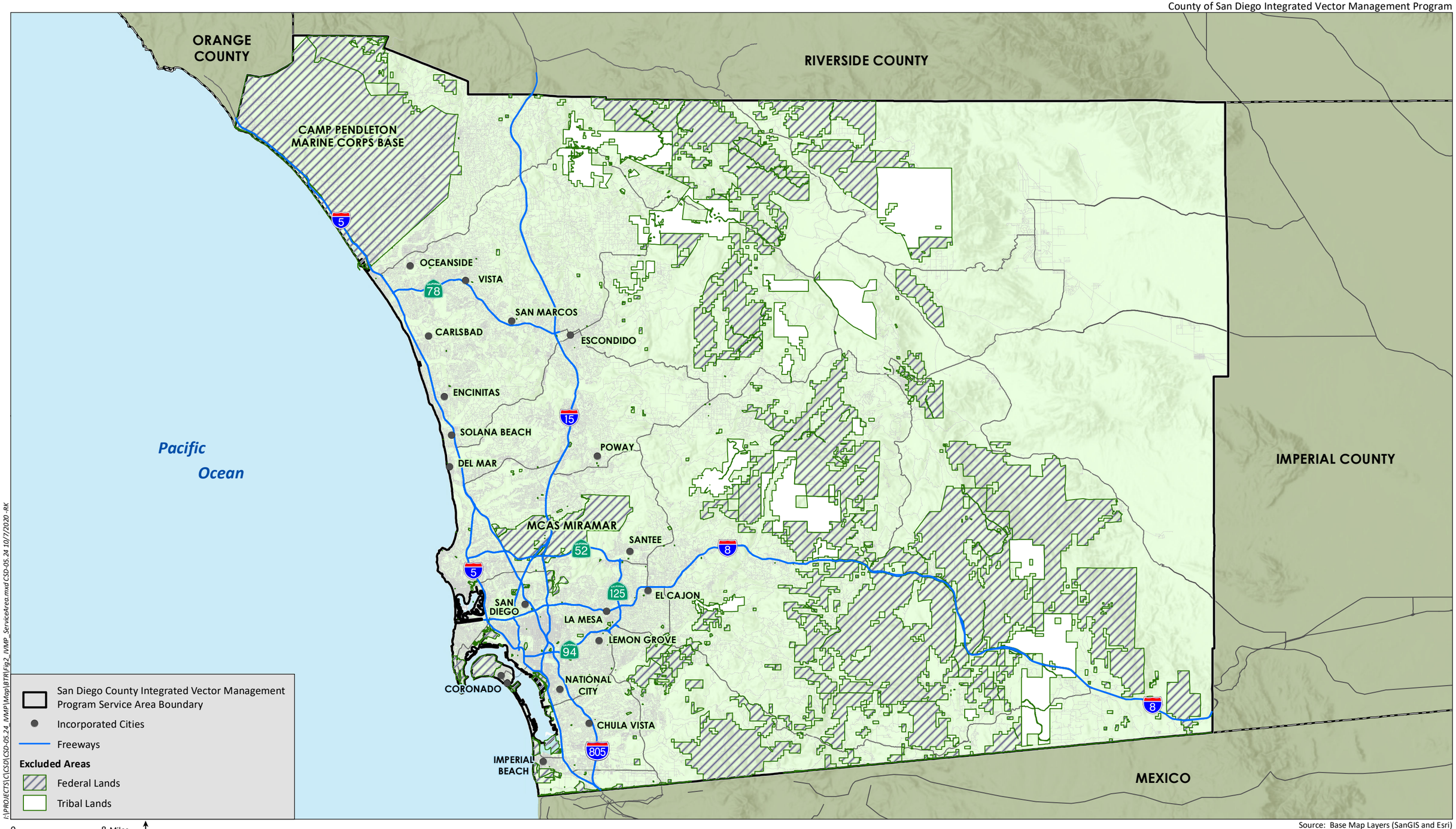


HELIX Environmental Planning

Regional Location

Figure 1

County of San Diego Integrated Vector Management Program



Source: Base Map Layers (SanGIS and Esri)

I:\PROJECTS\CLCSD\CSD-05.24_IVMP\Map\BTR\Fig2_IVMP_ServiceArea.mxd CSD-05.24 10/7/2020 -RK

HELIX Environmental Planning

Integrated Vector Management Program Service Area

Figure 2

The VCP monitors disease-carrying animals such as mosquitoes, ticks, and rodents, as well as other pests including flies on commercial poultry ranches, within the IVMP service area. Monitoring includes such techniques as setting traps to determine abundance and species of mosquitoes; testing mosquitoes for presence of disease; collecting and testing dead birds for West Nile virus; and conducting surveys via ground vehicles, aircraft (including piloted and unmanned aircraft), watercraft, and remote sensing equipment to evaluate mosquito-breeding sources. Surveillance is also conducted for ticks and rodents.

The VCP operates the Vector Disease and Diagnostic Laboratory that provides diagnostic testing to support the VCP, which helps in the evaluation of public health risk and appropriate responses and treatments. The VCP tests vector specimens from the field for numerous diseases that could be a risk to public health.

Source Reduction

Source reduction (i.e., environmental modification) techniques are used to reduce vector-breeding sources, such as habitat and other areas of harborage. Source reduction primarily involves physical control techniques that eliminate or reduce standing water including, but not limited to, ground disturbance (e.g., grading), vegetation management (including physical removal and/or herbicide application), water control, and other maintenance activities. Trapping and removal of vectors is also a form of source reduction.

Source Treatment

Source treatment includes biological and chemical controls of vectors. Specifically, this includes the use of mosquito fish (*Gambusia affinis*) and application of pesticides, such as larvicides and adulticides to reduce larval and adult mosquito populations, respectively. The type and location of biological and chemical controls vary based on different factors, including, but not limited to, the vector species and growth stage, environment, disease presence, and risk level to public health. Any pesticides applied within waterbodies defined by federal and state regulations as Waters of the U.S. and/or State are conducted in accordance with the Statewide National Pollutant Discharge Elimination System (NPDES) Permit for Biological and Residual Pesticide Discharges to Waters of the U.S. from Vector Control Applications (Order No. 2016-0039-DWQ, General Permit No. CA990004). Methods of application include, but are not limited to, backpack applicators, truck-mounted equipment, or other motorized vehicles (e.g., piloted and unmanned aircraft, watercraft). Source treatments of non-mosquito vectors can include, but are not limited to, chemical controls applied to mammalian vectors such as rodents and mammal-related disease carriers such as ticks, fleas, and other arthropods. When pesticides are applied, label requirements are followed by VCP staff.

Public Education and Outreach

VCP staff conduct public education and outreach activities to increase public awareness of steps to prevent and protect against disease-carrying vectors. VCP staff distribute educational materials, provide informational displays and presentations, use social media and informational emails, and conduct media campaigns to provide the public with this knowledge.

Emerging Vector Control Strategies

Vector management strategies are updated as new information becomes available and are adapted and applied to new or emerging vectors as they arise. All vector control methods are based on empirical

data, scientific evidence, published research, current state and federal guidelines, expert guidance, and the VCP's experience conducting vector control activities. The IVMP integrates progressive and emerging vector control activities and materials established in coordination with other regional vector control districts and research institutions throughout California, as well as state and federal agencies, such as the California Department of Public Health, California Environmental Protection Agency (CalEPA), the United States Environmental Protection Agency (USEPA), and the Centers for Disease Control and Prevention (CDC). Emerging vector control strategies that may be implemented to address future public health risks and public nuisances could include, but not be limited to, increased or early source prevention and/or reduction, surveillance, or physical/biological/chemical controls, depending on the assessment.

1.2 EXISTING CONDITIONS

1.2.1 Natural Environmental Setting

The mountains of the Peninsular Ranges are the predominant landform in San Diego County (Hall 2007). Several peaks in the county reach elevations over 6,000 feet, and from the crest of the mountains, the foothills extend west to almost the coast in many parts of the county. To the east, the foothills of the Peninsular Ranges form the western boundary of the Colorado Desert. Within the county, granitic rocks of Mesozoic age are the predominantly occurring bedrock within the Peninsular Ranges, with older metavolcanic and metamorphic rocks also present (Rogers 1965; Strand 1962; Weber 1963). Prehistorically, the abundant granitic bedrock in the county was well suited and frequently utilized for the creation of bedrock milling stations containing elements such as mortars, basins, and slicks for the processing of vegetal foodstuffs such as seeds and acorns. This utility is evidenced by the recorded presence of several thousand such features in the county. The relative abundance of metavolcanic stone in the county also provided material well-suited, and frequently used prehistorically, for the manufacture of flaked stone tools.

The western side of the mountains receives the most rainfall, with the eastern side receiving significantly less, resulting in desert conditions in the eastern area of the county. All of the major drainages in the county originate in these mountains and flow, either west, to the Pacific Ocean, or east into the Salton Basin. Major drainages flowing west include the Santa Margarita, San Luis Rey, San Dieguito, San Diego, Sweetwater, and Otay rivers; and the Buena Vista, Agua Hedionda, Escondido, Peñasquitos/Poway, and Cottonwood creeks. On the east side of the mountains, due to the lesser rainfall, most of the drainages are creeks or washes rather than rivers. These include San Felipe Creek, Bow Willow Creek, Carrizo Creek Wash, Fish Creek Wash, Borrego Wash, Tule Wash, Arroyo Salada, Tarantula Wash, and Palm Wash. The mountains in San Diego County also contain numerous springs. Prehistorically, these drainages and springs, along with the coastline, were the principal locations in the county for prehistoric habitation as well as for food resource procurement and processing activities (True 1990).

The natural vegetation communities in the county vary, principally by elevation and distance from the coast, as well as by association with different types of hydrological features. In the highest elevations in the county (circa 6,000 feet), alpine vegetation is present. In the upper elevations of the western foothills, the natural vegetation consists mostly of plants of the chaparral and/or coastal sage scrub communities. In the lower elevation foothills and near coastal areas, plants of the coastal sage scrub community, interspersed with areas of native plants of the grassland community predominate. Along the coast and in coastal lagoon and slough areas, freshwater and saltwater marsh vegetation are

present. Along the river and creek stream courses, plants of the riparian and riparian woodland communities, as well as freshwater marsh plants, are present. In the lower elevation foothill desert areas in the east county, creosote bush scrub is the most widespread vegetation type, but other plant communities are also present such as mesquite woodland, desert ironwood woodland, palo verde woodland, four-wing saltbush scrub, creosote bush-burrow weed scrub, brittle bush scrub, ocotillo scrub, and desert buckwheat scrub (Beauchamp 1986; Munz 1974).

Plants of the chaparral community include laurel sumac (*Malosma laurina*), lemonade berry (*Rhus integrifolia*), sugarbush (*Rhus ovata*), California lilac *(Ceanothus* spp.), toyon (*Heteromeles arbutifolia*), chamise (*Adenostoma fasiculatum*), manzanita (*Arctostaphylos glauca*), coast live oak (*Quercus agrifolia*), yucca (*Yucca schidigera*), scrub oak (*Quercus dumosa*), and bush poppy (*Paeonia brownie*). Plants of the coastal sage scrub community include California sagebrush (*Artemisia californica*), white sage (*Salvia apiana*), flat-top buckwheat (*Eriogonum fasiculatum*), broom baccharis (*Baccharis sarothroides*), wild onion (*Allium haematochiton*), laurel sumac (*Malosma laurina*), San Diego sunflower *(Bahiopsis laciniata*), golden-yarrow (*Eriophyllum confertiflorum*), sawtooth goldenbush (*Hazardia squarrosa*), yucca (*Yucca schidigera*, *Hesperoyucca whipplei*), prickly pear cactus (*Opuntia* sp.), and scrub oak (*Quercus dumosa*). Native grassland plants include *Stipa*, *Elymus*, *Poa*, and *Muhlenbergia* species. Plants of the riparian and riparian woodland communities include western sycamore (*Platanus racemosa*), willow (*Salix* sp.), Fremont cottonwood (*Populus fremontii*), coast live oak (*Quercus agrifolia*), cattail (*Typha latifolia*), bulrush (*Scirpus* spp.), mule fat (*Baccharis* spp.), and poison oak (*Toxicodendron diversiloba*) (Beauchamp 1986; Munz 1974). Plants common to fresh-water marsh include reed grass (*Phragmites australis*), marsh mallow (*Kosteletzkya virginic*), soft rush (*Juncus effusus*), pickerelweed (*Pontederia cordata*), narrow-leaved cattail (*Typha angustifolia*), and button bush (*Cephalanthus occidental*). Plants common to salt-water marshes include alkali heath (*Frankenia* sp.), seashore saltgrass (*Distichlis spicata*), marsh jaumea (*Jaumea* sp.), Salicornia (*Salicornia* sp.), and seepweed (*Suaeda* sp.). In the desert areas, the creosote bush scrub community is dominated by creosote bush (*Larrea tridentata*) and salt bush (*Atriplex canescens*), and it occurs where the soil is more alkaline, while only sparse creosote scrub, ocotillo (*Fouquieria splendens*), and brittle bush (*Encelia farinose*) are present in surface-exposed sandstone areas. Small shrubs such as mesquites (*Prosopis* sp.), burrobush (*Hymenoclea salsola* var. *pentalepis*), desert ironwood (*Olneya tesota*), desert broom (*Baccaris sarothroide*), and introduced tamarisk are present along valleys and dry water courses, with ocotillo sparsely present on alluvial fans (Beauchamp 1986; Hall 2007; Munz 1974).

Major wildlife species found in the western county environments include mammals such as coyote (*Canis latrans*), mule deer (*Odocoileus hemionus*), grizzly bear (*Ursus arctos*), mountain lion (*Puma concolor*), desert cottontail (*Sylvilagus audubonii*), jackrabbit (*Lepus californicus*); reptiles such as western pond turtle (*Actinemys marmorata*), southern pacific diamondback rattlesnake (*Crotalus oreganus helleri*), gopher snake (*Pituophis melanoleucus catenifer*), and several lizard species; and various rodents, the most notable of which are the valley pocket gopher (*Thomomys bottae*), California ground squirrel (*Otospermophilus beecheyi),* and dusky footed woodrat (*Neotoma fuscipes*) (Head 1972; Burt and Grossenheider 1976). Desert mammal species include kit fox (*Vulpes macrotis*), desert cottontail (*Sylvilagus audoboni*), black-tailed jackrabbit (*Lepus californicus*), white-tailed antelope squirrel (*Ammosphermophilus leucurus*), round-tailed ground squirrel (*Spermophilus tereticaudus*), desert and Merriam kangaroo rats (*Dipodomys merriami*), desert pocket mouse (*Perognathus penicillatus*), coyote (*Canis latrans*), and desert bighorn sheep (*Ovis Canadensis nelson*). Desert reptiles include the fringed-toed lizard (*Uma inornata, U. notate*), flat-tailed horned lizard (P*hrynosoma m'calli*), desert tortoise (*Gopherus cinctus*), chuckwalla (*Sauromalus obesus*), desert iguana (*Dipsosaurus*

dorsalis), banded sandsnake (*Chilomeniscus cinctus*), sidewinder (*Crotalus cerastes*), and rosy boa (*Lichanura trivirgata gracia*) (Burt and Grossenheider 1976; Stebbins 1966).

These plant communities, as well as the native plant resources supported by these habitats, would have been used by Native American populations for clothing, food, tools, decorative, and ceremonial purposes (Bean and Saubel 1972; Bean and Shipek 1978; Cuero 1970; Hedges and Beresford 1986; Luomala 1978). Many of the animal species living within these vegetation communities (such as rabbits, deer, small mammals, and pond turtles, as well as birds and fish) would have been utilized by native inhabitants as well. Desert cottontails, jackrabbits, and rodents were very important to the prehistoric diet; deer were somewhat less significant for food, but were an important source of leather, bone, and antler (Bean 1978; Bean and Shipek 1978; Christenson 1990; Luomala 1978).

Modern Environmental Conditions and Land Use

Land uses within the county vary between the urban areas along the coast and the more rural areas in the eastern regions. The majority of the land in the unincorporated county is open space or undeveloped, while the majority of land in the incorporated cities is developed. More than 50 percent of the total land area in the region is not available for urban development, including public lands, dedicated parks and open space, lands constrained for environmental reasons, and military use (SANDAG 2015). The highest population densities are found in the western (coastal) third of the county, where topography and mild coastal climatic conditions are more inducive to development. Urban uses tend to consist of residential and commercial uses, as well as small-scale agricultural and industrial uses. Land uses that occur throughout the county include low-density residential and commercial uses, agricultural operations, mineral resources and extraction, and undeveloped habitats, as well as national forest and state park lands. Public and semi-public facilities, recreational areas, and open space conservation areas are located throughout the county.

The existing transportation network within the county consists of freeways, highways, regional arterials, local streets and roads, alternative transportation facilities, commercial and general aviation facilities, seaport facilities, and ports of entry at the U.S./Mexico border. These facilities serve the 18 cities and the unincorporated areas of the county.

The undeveloped portions of the county consist of a generally semi-arid environment and support a wide range of habitats and biological communities that vary greatly depending on the eco-region, soils and substrate, elevation, and topography. Still existing natural habitats and vegetation communities include vegetated wetlands, oak woodlands, riparian scrub, meadows, freshwater marsh, tidal marshes, sloughs, lakes, ponds, sage scrub, chaparral, grassland habitats, and a variety of other upland and wetland habitats. Sensitive habitats and unique resources within the IVMP service area require special consideration due to the potential presence of endangered plants and animals. These include, but are not limited to, active coastal dunes; vernal pools; southern maritime scrub; maritime succulent scrub; southern coastal bluff scrub; riparian scrub, woodland, and forest; and salt marsh. Additionally, artificially created structures that may be served by the IVMP include stormwater detention basins, flood control channels, roadside ditches, and liquid waste detention ponds.

Because the county is a diverse region with a variety of land uses, habitats, and climatic and topographic conditions, and given the diversity of vector habitat within the IVMP service area, vector control activities are conducted in a wide variety of ecosystems, habitat types, and land uses throughout the county. Mosquito control activities are associated with wet areas of all types and sizes, including

marshes, ponds, creeks, seasonal wetlands, wastewater ponds, stormwater detention basins, ditches, ornamental fishponds, impound areas, etc., as well as individual residential or commercial properties where standing water may occur. Other vectors such as fleas, ticks, and rodents are more commonly found in rural or undeveloped areas, including campgrounds and agricultural areas.

1.2.2 Cultural Setting

Prehistoric Period

The following culture history outlines and describes the known prehistoric background for the San Diego area with references to cultural traditions of potential relevance to prehistoric resources throughout the county. The approximately 12,000 years of documented prehistory of the San Diego region has often been divided into three periods: Early Prehistoric Period (San Dieguito Tradition/complex), Archaic Period (Milling Stone Horizon, Encinitas Tradition, La Jolla and Pauma complexes), and Late Prehistoric Period (Cuyamaca and San Luis Rey complexes).

Early Prehistoric Period

The Early Prehistoric Period represents the time period of the first known inhabitants in California. In some areas of California, it is referred to as the Paleo-Indian period and is associated with the Big-Game-Hunting activities of the peoples of the last Ice Age, occurring during the Terminal Pleistocene (pre-10,000 years ago) and the Early Holocene, beginning circa 12,000 years ago (Erlandson 1994, 1997; Erlandson et al. 2007). In the western United States, most evidence for the Paleo-Indian or Big-Game-Hunting peoples, derives from finds of large fluted spear and projectile points (Fluted-Point Tradition) in places such as Clovis and Folsom in the Great Basin and the Desert southwest (Moratto 1984:79–88). In California, most evidence for the Fluted-Point Tradition derives principally from areas along the margins of the Great Basin and the Desert southwest such as the Sierras, the southern Central Valley, and the deserts of southeastern California (Moratto 1984:79–88), with several, mostly isolated, occurrences of fluted spear points encountered on or near the coast of California (Dillon 2002; Rondeau et al. 2007). Three of these isolated fluted points or point fragments have occurred in San Diego County, all occurring in the mountainous or eastern areas, one approximately 7.5 miles northeast of Warner Springs (Kline and Kline 2007), one in Cuyamaca Pass (Dillon 2002; Rondeau et al. 2007), and one near Ocotillo Wells (Rondeau et al. 2007). Several others have occurred in proximity to the county including one along the coast in adjacent Orange County to the northwest (Fitzgerald and Rondeau 2012), and two in Baja California to the south (Des Lauriers 2008; Hyland and Gutierrez 1995).

Results from recent archaeological investigations on the northern Channel Islands west of Santa Barbara have revealed that humans who were apparently not Big Game hunters (i.e., no fluted points have been found on the islands, to date) were occupying the islands as early as the terminal Pleistocene, roughly 12,000 years ago (Erlandson et al. 2007:57). These results, instead, document a fully maritime-adapted population on the islands at this early date that were exploiting shellfish, and using seaworthy boats to navigate the channel waters. Fishing has also been documented in the islands as early as 10,000 years ago by the presence of bone-gorge fishhooks (Erlandson et al. 2007:57). Such early dates, however, for a similar cultural pattern are still lacking for the adjacent southern California mainland. This absence on the mainland may be due to the rise in sea level brought about by post-Pleistocene deglaciation that possibly inundated sites located along this lower elevation coastline during the late Pleistocene/early Holocene. At this time in San Diego County, the shoreline stood 2 to 6 kilometers (km) farther seaward than today's coast (Masters and Aiello 2007).

Despite the occurrence of isolated of fluted points in the San Diego area and vicinity, the earliest archaeological sites documented to be at least 10,000 years old belong to the San Dieguito Tradition (Warren et al. 1998; Warren and Ore 2011). The San Dieguito Tradition, with an artifact assemblage distinct from that of the Fluted Point Tradition, has been documented mostly in the coastal and near coastal areas in San Diego County (Carrico et al. 1993; Rogers 1966; True and Bouey 1990; Warren 1966; Warren and True 1961), as well as in the southeastern California deserts (Rogers 1939, 1966; Warren 1967), but with some evidence for it recently proposed in the eastern Mountains of San Diego County (Pigniolo 2005) and in the coastal area north of San Diego County (Sutton and Grenda 2012). This tradition shares a similarity to Fluted Point Tradition, in that it is characterized by an artifact inventory suggestive of an emphasis on hunting, but it lacks the distinctive fluted points associated with the Fluted Point Tradition. Diagnostic artifact types and categories associated with the San Dieguito Tradition include elongated bifacial knives; large leaf-shaped projectile points; scraping tools; crescentics; and in the desert, Silver Lake and Lake Mojave projectile points (Knell and Becker 2017; Rogers 1939; Vaughan 1982; Warren 1966, 1967). The content of the earliest component of the C.W. Harris Site (CA-SDI-149/316/4935B), located along the San Dieguito River, southwest of Lake Hodges, formed the basis upon which Warren and others (Rogers 1966; Warren 1966, 1967; Warren and True 1961) originally identified the "San Dieguito complex," and which Warren later reclassified as the San Dieguito Tradition (1968).

The subsistence system or emphasis of the San Dieguito Tradition, while not as yet entirely agreed upon, has, as previously noted, been suggested by Warren (1967) as having an orientation toward a hunting rather than a gathering economy. This characterization is based on an artifact assemblage of primarily hunting associated tools, in contrast to the more gathering-oriented complexes that were to follow in the Archaic Period (Warren 1967, 1968, 1987; Warren et al. 1998). Other researchers, however, have interpreted the San Dieguito subsistence system to be possibly ancestral to, or a developmental stage for, the predominantly gathering-oriented "La Jolla/Pauma complex" of the subsequent Archaic Period (e.g., Bull 1983; Ezell 1987; Gallegos 1985, 1987, 1991; Koerper et al. 1991). Based on uncalibrated radiocarbon dates, Warren originally indicated the San Dieguito Tradition to have begun sometime prior to 9000 years before present (BP) and to have ended sometime between 8500 and 7500 BP (1967; 1968:4). Recent calibrations of these dates, however, have indicated that some are significantly earlier, i.e., exceeding 10,000 BP (Warren et al. 1998; Warren and Ore 2011).

Archaic Period

In the southern coastal region, the subsequent Archaic Period dates from circa 8600 BP to circa 1300 BP (Warren et al. 1998). A large number of archaeological site assemblages dating to this period have been identified at a range of coastal and inland sites. This appears to indicate that a relatively stable, sedentary hunting and gathering complex, possibly associated with one people, was present in the coastal and immediately inland areas of what is now San Diego County for more than 7000 years. These assemblages, designated as the La Jolla/Pauma complexes, are considered part of Warren's (1968) "Encinitas Tradition" and Wallace's (1955) "Milling Stone Horizon." In general, the content of these site assemblages includes manos and metates; shell middens; terrestrial and marine mammal remains; burials; rock features; bone tools; doughnut stones; discoidals; stone balls; plummets; biface points/knives; beads made of stone, bone, or shell; and cobble-based tools at coastal sites and increased hunting equipment and quarry-based tools at inland sites. As defined by True (1958), the "Pauma complex" aspect of this culture is associated with sites located in inland areas that lack shellfish remains but are otherwise similar in content to the La Jolla complex. The Pauma complex may, therefore, simply represent a non-coastal expression of the La Jolla complex (True 1980; True and Beemer 1982). During the latter half of the Archaic Period, artifacts such as dart points and mortars and pestles, which are

essentially absent during the early Archaic Period, begin to occur in site assemblages dating after circa 5500 BP. Also noted by Warren (2012), was an increase in the presence of larger mammal remains in La Jolla complex faunal assemblages during the latter part of the Archaic Period. This new and subsequently increasing use of these resources represents a significant shift in the Encinitas/La Jolla/ Pauma complex subsistence system in the southern coastal region (Warren et al. 1998; Warren 2012).

In the inland, western foothill area of San Diego County, archaeological sites dating to the Archaic Period are generally less numerous than along the coast (Gross and Robbins-Wade 2010: 26; Warren et al. 1998; McDonald 1995: 14), but are not unknown (e.g., Chace and Sutton 1990; Cooley and Barrie 2004; Gross and Robbins-Wade 1992, 2010; Raven-Jennings and Smith 1999; True 1980; Warren et al. 1961:10). However, similar to the Early Period San Dieguito Tradition, most of the substantiating archaeological evidence for the Archaic Period Encinitas Tradition/La Jolla/Pauma complex (Milling Stone Horizon) in present-day San Diego County is derived from sites in near-coastal valleys, estuaries, and/or embayments that are present along the San Diego coast south of the San Luis Rey River (e.g., Cooley et al. 2000; Cooley and Mitchell 1996; Gallegos 1995:200; Pigniolo et al. 1991; Shumway et al. 1961; Smith and Moriarty 1985).

While not plentiful, sites in inland foothill circumstances with evidence for exclusively Archaic Period occupation are rare. Instead, many inland sites with evidence for Archaic Period occupation also have evidence for subsequent late prehistoric occupation as well. One such site located along the San Diego River in Mission Gorge area, approximately 14 miles from the ocean, CA-SDI-9243, has produced radiocarbon dates of circa 5400 and 5700 BP and Elko-eared style projectile points (Cooley 1995). The artifact assemblage and the radiocarbon results from the site also appear to indicate that it was repeatedly occupied over a period of nearly 6,000 years, with the last occupation occurring during the Late Prehistoric Period (Carrico et al. 1994; McDonald et al. 1994). Sites in the foothills along Santa Maria Creek, near Ramona, have produced an Elko-eared style projectile point and a radiocarbon date of circa 2000 BP, documenting an occupation during the late Archaic Period, but with subsequent occupation occurring during the Late Prehistoric Period (Cooley and Barrie 2004). In the foothill Alpine area, radiocarbon dates of 2550 BP and 2900 BP, from two of the sites, also suggested a late Archaic Period occupation of these sites with subsequent occupation occurring during the Late Prehistoric Period (Gross and Robbins-Wade 2010). Similar to the long and repeated occupation at site CA-SDI-9243, the Scripps Poway Parkway Site (CA-SDI-4608), located along the Beeler Canyon drainage, and situated approximately 15 miles from the ocean, has been radiocarbon dated to as early as 5800 BP, and is described as associated with the "transitional periods between the San Dieguito and La Jolla complexes and the later Archaic/Late Prehistoric transition" (Raven-Jennings and Smith 1999:3.0-5). La Jolla complex artifacts recovered from the site included doughnut stones; discoidals; and Pinto, Elko, and large side-notched points. Also, in the Poway area, archaeological investigations along Poway/ Peñasquitos Creek, have produced both radiocarbon dates and projectile points (Elko, Gypsum Cave, large side-notched, and Pinto points) that indicate there was an Archaic occupation with subsequent occupation occurring during the Late Prehistoric Period (Gross and Robbins-Wade 1992).

Unlike the western part of the county, in the western Colorado Desert area of the east county, only limited archaeological evidence has yet been encountered that can be definitely attributed to the Archaic Period (Schaefer 1994:64; Schaefer and Laylander 2007:247). While evidence of possible Archaic Period occupation in the western Colorado Desert is minimal, recently, site CA-SDI-7074, located in the southeast corner of the county, approximately 22 miles to the southwest of Carrizo Creek, was found to contain more than 100 subsurface thermal features, most of which were likely earth ovens associated with agave roasting activity. While radiocarbon dating indicated that most of these oven features dated

to the Late Prehistoric Period, five more deeply buried features were discovered to date between 8590 and 9600 BP (Williams 2014). These results not only indicate the utilization of this vegetal food resource much earlier in time than was previously realized but may also suggest a reappraisal of the dating for the inception of the early Archaic Period in the area, as Williams states that the thermal features "spanned the Early Archaic to Late Prehistoric periods" (Williams 2014:325). Also recovered from the site was an Elko style projectile point, suggestive of an early to mid-Archaic Period occupation (Williams 2014:151). One other site of note dating to the late Archaic consists of deposits at the Indian Hill Rockshelter site (CA-SDI-2537), in the foothill areas of Anza-Borrego Desert State Park (McDonald 1992). The site contained distinctive dart-sized projectile points, ground stone implements, rock-lined caches, and inhumations, one of which was radiocarbon dated to 4070 ± 100 years BP (McDonald 1992; Schaefer 1994; Wilke and McDonald 1989).

Late Prehistoric Period

While there has been considerable debate about whether San Dieguito and La Jolla traditions might represent the same people using different environments and subsistence techniques, or whether they are separate cultural patterns (e.g., Bull 1983; Ezell 1987; Gallegos 1987; Warren et al. 1998), abrupt shifts in subsistence practices and the use of new tool technologies are documented in the archaeological record to have occurred at the onset of the Late Prehistoric Period (ca. 1500 to 1300 BP). The Late Prehistoric Period is also characterized by higher population densities and intensification of social, political, and technological systems. The technological changes observed include a shift from the use of atlatl and dart to the bow and arrow and the manufacture and use of ceramics. Subsistence shifts included a reduction in shellfish gathering in some areas (possibly due to silting of the coastal lagoons), and the storage of vegetal foodstuff such as acorns. A shift in burial practices from inhumation to cremation of the dead also occurred during the Late Prehistoric Period.

Movements of people during the last 2,000 years can account for at least some of these changes. Yuman-speaking people had occupied the Gila/Colorado River drainages of what is now western Arizona by 2,000 years ago (Moriarty 1968) and then continued to migrate westward. An analysis by Moriarty (1966, 1967) of materials recovered from the Spindrift site in La Jolla indicated a preceramic Yuman phase. Based on this analysis and a limited number of radiocarbon samples, Moriarty concluded that Yumans, lacking ceramic technology, penetrated into and occupied what is now the San Diego coastline circa 2000 BP. Subsequently, approximately 1200 to 1300 BP, ceramic technology diffused into the coastal area from the eastern deserts. Although these Yuman speakers may have shared cultural traits with the people occupying what is now eastern San Diego County before 2000 BP, their influence is better documented throughout present-day San Diego County after 1300 BP, with the introduction of small points, ceramics, Obsidian Butte obsidian, and the practice of cremation of the dead.

Based on early research by Meighan (1954) and True (1970), two distinct archaeological complexes have been proposed for the Late Prehistoric Period in what is now San Diego County. The Cuyamaca complex is based on analysis by True of archaeological excavations within Cuyamaca Rancho State Park and of San Diego Museum of Man collections. Based on the results of this analysis, True (1970) defined a Late Prehistoric Period complex for southern San Diego County that was distinct from Meighan's (1954) San Luis Rey complex in the northern county area. The presence or absence, or differences in the relative occurrence, of certain diagnostic artifacts in site assemblages provide the principal distinctions between these archaeological complexes. Cuyamaca complex sites, for example, generally contain both Cottonwood Triangular-style points and Desert Side-notched arrow points, while Desert Side-notched points are less common in San Luis Rey complex sites (Pigniolo 2004). Other examples include Obsidian

Butte obsidian, which is far more common in Cuyamaca complex sites than in San Luis Rey complex sites, and ceramics; while ceramics are present during the Late Prehistoric Period throughout what is now San Diego County, they are more common in the southern or Cuyamaca complex portions of San Diego County where they occur earlier in time and appear to be somewhat more specialized in form. Both complexes have produced a variety of ceramic vessel types, along with straight and bow-shaped ceramic pipes and effigies. Interment of the dead at Cuyamaca complex sites is almost exclusively by cremation, often in special burial urns, while archaeological evidence from San Luis Rey complex sites indicates both inhumation and cremation. Based on ethnographic data, including the areas defined for the Hokan-based Yuman-speaking peoples (Diegueño/Kumeyaay) and the Takic-speaking peoples (Luiseño) at the time of contact, it is generally accepted that the Cuyamaca complex is associated with the Diegueño/Kumeyaay people and the San Luis Rey complex with the Luiseño people (True 1970; True and Waugh 1982).

As noted above, it has been previously observed in San Diego County, that during the Late Prehistoric Period sites attributable to the San Luis Rey or Cuyamaca complexes occur in greater frequency in inland areas of the county. McDonald (1995:14), for example, has stated that "most sites in the Laguna Mountains can be expected to date from late prehistoric or ethnohistoric occupation of the region, and Archaic Period remains, while not unknown, are relatively rare", and Gallegos (1995:200) states that "for San Diego County, there is temporal patterning, as the earliest sites are situated in coastal valleys and around coastal lagoons. Late Prehistoric Period sites are also found in coastal settings but are more common along river valleys and interior locations." It is also possible, now, to observe, however, that while a number of examples of Late Prehistoric Period sites that appear to be attributable exclusively to the San Luis Rey or Cuyamaca complexes have been identified for the near-coastal inland foothill areas of the county through diagnostic artifacts and/or radiocarbon dating (e.g., Chace and Hightower 1979:48; McCown 1945), a number of sites containing evidence for both Late Prehistoric Period and Archaic Period occupations have also been documented (Carrico and Cooley 2005; Carrico et al. 1994; Cooley and Barrie 2004; Gross and Robbins-Wade 1992, 2010; McDonald et al. 1994; Raven-Jennings and Smith 1999; Willey and Dolan 2004). It appears possible, therefore, that as more archaeological data accumulates, this geographic dichotomy of site locations between the Archaic and Late Prehistoric periods within the county may be found to not be completely valid.

In the far east county, most resources in the archaeological record for the western Colorado Desert that date to the Late Prehistoric Period are associated with the prehistoric Lake Cahuilla shorelines in the Salton Basin, and, consequently, are located to the east of the county (Apple et al. 1997; Laylander 1997; Schaefer 2006; Wilke 1978). Late Prehistoric Period cultural resources located within the county are usually associated with springs, major drainages, rock shelters, and adjacent seasonally occupied montane areas. In these latter categories, in addition to the late Archaic Period occupation described above, evidence of Late Prehistoric occupation was also noted at CA-SDI-2537, the Indian Hill Rockshelter site, located in the foothills of the east county (McDonald 1992). Also, though located in Riverside County, Tahquitz Canyon in the mountainous area just north of the northeastern corner of the county, has been documented as having been an important population center during the Late Prehistoric Period (Bean et al. 1995).

Native American Perspective

In addition to the point of view discussed in the culture history above, it is recognized that other perspectives exist to explain the presence of Native Americans in the region. The Native American perspective is that they have been here from the beginning, as described by their creation stories.

Similarly, they do not necessarily agree with the distinction that is made between different archaeological cultures or periods, such as "La Jolla" and "San Dieguito." They instead believe that there is a continuum of ancestry from the first people to the present Native American populations of San Diego (County of San Diego 2011).

Ethnohistory

The Ethnohistoric Period, sometimes referred to as the ethnographic present, commenced with the earliest European arrival in what is now the San Diego county area and continued through the Spanish and Mexican periods and into the American period. Based on early ethnographic data, four linguistically distinct indigenous peoples inhabited the San Diego County area at the time of first European contact: the Hokan-based Yuman-speaking Kumeyaay or Diegueño in the southern part of the county, the Takic-speaking Luiseño in the northwestern portion of the county, the Takic-speaking Cupeño, in the north-central area of the county, and the Takic-speaking Cahuilla in the northeastern portion of the county. The Kumeyaay people are also known as Ipai, Tipai, or Diegueño (named for Mission San Diego de Alcala), while the term Luiseño derives from Mission San Luis Rey de Francia as they were originally associated by the Spaniards with that mission. Agua Hedionda Creek is often described as the division between the territories of the Kumeyaay people and the Luiseño (Bean and Shipek 1978; Luomala 1978), although various archaeologists and ethnographers use slightly different boundaries. The territorial boundaries between the Cahuilla and their Luiseño and Kumeyaay neighbors were apparently somewhat fluid at the time of European contact and were, therefore, difficult for ethnographers to definitely delineate. The territorial boundary, for example, between the Luiseño and Cahuilla as shown by Kroeber (1925) and Bean (1978) varies considerably, and, according to Schaefer (2006), the Ocotillo Wells area in the east county was the boundary between the Kumeyaay (Tipai/Kamia) to the south and the Cahuilla to the north, and he states that although both groups "consider the cultural resources of the general area as part of their cultural and historical legacy," tribal boundaries likely shifted through time (2006:21).

At the time of Spanish contact, the Luiseño occupied northwestern San Diego County and western Riverside County (Bean and Shipek 1978; Kroeber 1925). This territory was subdivided and occupied by different families or bands. Family groups were known as *tunglam* or *kamalum*. Chiefs acted as religious leaders of clans and directed religious ceremonies. This position was hereditary (Sparkman 1908). Kroeber estimates that the Luiseño population was approximately 3,000 to 4,000 (Kroeber 1925) during the Mission era. More than 80 family groups were known in the early twentieth century (Kroeber 1925). The Luiseño lived in semi-sedentary villages usually located along major drainages, in valley bottoms, and also on the coastal strand, with each family controlling gathering areas (Sparkman 1908; White 1963; Bean and Shipek 1978). True (1990) indicated that the predominant determining factor for placement of villages and campsites was locations where water was readily and consistently available. The Luiseño followed a seasonal gathering cycle, with bands occupying a series of campsites within their territory (Bean and Shipek 1978; White 1963). One band could have multiple areas depending on the season such as in the mountains or valley areas (Sparkman 1908). Each band was typically restricted to their territory for hunting and resource gathering. The Luiseño subsisted on seeds, acorns, fruits, and berries, as well as meat caught by hunting and fishing (Kroeber 1925; Sparkman 1908). The resources used depended on the seasons, as the Luiseño moved through the coastal, mountain, or desert zones (Lightfoot and Parrish 2009). While most of the major Luiseño villages known ethnohistorically were located closer to the coast along the Santa Margarita River Valley and the San Luis Rey River Valley (Bean and Shipek 1978; Kroeber 1925; White 1963), Kroeber (1925) does indicate general locations for ethnohistoric Luiseño villages in more inland areas as well.

At the time of Spanish contact, southern San Diego County, southwestern Imperial County, and northern Baja California was the traditional territory of the Kumeyaay people. The population of the Kumeyaay people in San Diego in 1770 was estimated by Kroeber (1925:883) to be 3,000, but Luomala (1978:596) believes it was likely double or triple that estimate. The Kumeyaay were territorial, with bands that lived in semi-sedentary, politically autonomous villages or rancherias (Carrico 1998). Each village was comprised of many households, and groups of villages were part of a larger social kinship system. The basic unit of the system "appears to have been kin groups referred to by a variety of names including sib, shimulls, cimuLs, gens, and gentes. These clans were organized into exogamous groups based on patrilineal (male) descent" (Carrico 2017:9). Most rancherias were the seat of a clan, although it is thought that, aboriginally, some clans had more than one rancheria and some rancherias contained more than one clan, often depending on the season within the year (Luomala 1978). Villages and larger campsites were generally chosen based on proximity to water, boulder outcrops, environmental protection, and availability of plants and animals (Luomala 1978; True 1990). Consequently, many of the Kumeyaay villages or rancherias were located in river valleys and along the shoreline of coastal estuaries (Carrico 1998; Kroeber 1925; Luomala 1978). They subsisted on a hunting and foraging economy, exploiting San Diego's diverse ecology throughout the year; coastal bands exploited marine resources while inland bands might move from the desert, ripe with agave and small game, to the acorn and pine nut rich mountains in the fall (Cline 1984; Kroeber 1925; Luomala 1978).

At the time of Spanish contact, the Cahuilla occupied northeastern San Diego County and portions of western Riverside County (Bean 1978; Kroeber 1925). This territory included portions of the Santa Rosa, Santa Jacinto, and San Bernardino mountains as well as portions of the western Colorado Desert including the northern Salton Basin (Bean 1978). The earliest Spanish contact with the Cahuilla may have been when the Anza expedition trips in 1774 and 1777 traversed the area (Schaefer 2006:23). The origin of the term Cahuilla is uncertain, but it has been suggested that it may derive from their own word *Káwiya,* which translates as 'master or boss' (Bean 1978:575; Kroeber 1925:693). The Cahuilla territory contained a diverse range of environmental habitats. Topographically, their territory ranged from the summit of the San Bernardino Mountains, in excess of 11,000 feet, to the Coachella Valley and Salton Sink, well below sea level. Ecological habitats included the full range of mountains, valleys, passes, foothills, and desert area. Villages were typically situated in canyons or on alluvial fans near water and food resources, and a village's lineage owned the immediately surrounding land (Bean 1978). Well-developed trails were used for hunting and travel to other villages. Village houses ranged from brush shelters to large huts 15–20 feet long. Important plant foods exploited from the Cahuilla's diverse habitat included mesquite and screw beans, piñon nuts, and various cacti. Other important plant foods included acorns (six oak varieties), various seeds, wild fruits and berries, tubers, roots, and greens. Women were instrumental in the collection and preparation of vegetal foods (Bean 1978). It has been suggested that when the large prehistoric Lake Cahuilla was present in the Salton Basin, it affected the settlement and subsistence patterns, with the desert area becoming a more productive resource area. Schaefer (2006:22) states that "Cahuilla mythology and oral tradition also indicate that when Lake Cahuilla dried up, it was the mountain people who resettled the desert floor. The time of Lake Cahuilla is also best documented in the oral traditions of the Cahuilla, both with regard to settlement patterns, song cycles, and the effects of Lake Cahuilla on patrilineal clan segmentation."

The Cupeño were one of the smallest linguistically distinct native groups in southern California, with an estimated population of 500 to 750 people at the time of first European contact in 1795 (Bean and Smith 1978: 589; Kroeber 1925:689). The Cupeño occupied a small area (approximately 10 square miles) in the mountains of north-central San Diego County and within the upper reaches of the San Luis Rey River watershed (Bean and Smith 1978; Kroeber 1925). This territory extended east from Lake Henshaw,

along both sides of the Agua Caliente drainage, to just east of Hot Springs Mountain (Bean and Smith 1978:558). The term Cupeño is of Spanish origin consisting of the native place-name *Kúpa* (a principal Cupeño village) and the Spanish appendage *-eño,* which means a person who lives in or comes from *Kúpa* (Bean and Smith 1978:590). While the Cupeño social organization and cosmology were largely the same as their neighbors the Cahuilla, with the social organization consisting of exogamous moieties, patrilineal clans, ceremonial exchange parties, they also acquired various religious and ceremonial rituals from their other neighbors, the Luiseño and Kumeyaay. Within their territory, the most productive food gathering locations were owned by clans, with the intervening areas available to all for both hunting and gathering (Bean and Smith 1978:588).

The founding of Mission San Diego de Alcalá in 1769, in the southern county, and Mission San Luis Rey in 1798, in the northern county, brought about profound changes in the lives of the Kumeyaay and Luiseño peoples. The coastal populations of the Kumeyaay and Luiseño, in particular, died from introduced diseases or were brought into the mission system, while inland areas, and inland tribes such as the Cahuilla and Cupeño, were less immediately affected; these groups were eventually also substantially impacted as Spanish activities and settlement expanded into their territories. Earliest accounts of Native American life in what is now San Diego County were recorded as a means to salvage scientific knowledge of native lifeways. These accounts were often based on limited interviews or biased data collection techniques. Later researchers and local Native Americans began to uncover and make public significant contributions in the understanding of native culture and language. These studies have continued to the present day and involve archaeologists and ethnographers working in conjunction with Native Americans to address the continued cultural significance of sites and landscapes across San Diego County.

Historic Period

Spanish Period (1769 to 1821)

While Juan Rodriguez Cabrillo visited San Diego briefly in 1542, the beginning of the historic period in the San Diego area is generally given as 1769. In the mid-eighteenth century, Spain had escalated its involvement in California from exploration to colonization (Weber 1992), and in that year, a Spanish expedition headed by Gaspar de Portolá and Junípero Serra established the Royal Presidio of San Diego. Portolá then traveled north from San Diego seeking suitable locations to establish military presidios and religious missions in order to extend the Spanish Empire into Alta California.

Initially, both a mission and a military presidio were located on Presidio Hill overlooking the San Diego River. A small pueblo, now known as Old Town San Diego, developed below the presidio. The Mission San Diego de Alcalá was constructed in its current location in 1769, and in the northern portion of the county, Mission San Luis Rey de Francia was established in 1798. The missions and presidios stood, literally and figuratively, as symbols of Spanish colonialism, importing new systems of labor, demographics, settlement, and economies to the area. Animal husbandry and agriculture were the main pursuits of the missions, utilizing large swaths of land. Animals raised included cattle, horses, pigs, sheep, and goats (Wade et al. 2009).

Mexican Period (1821 to 1848)

Although Mexico gained its independence from Spain in 1821, Spanish patterns of culture and influence remained for a time. The missions continued to operate as they had in the past, and laws governing the

distribution of land were also retained throughout the 1820s. Following secularization of the missions in 1834, large ranchos were granted to prominent and well-connected individuals, ushering in the Rancho Era, with the society making a transition from one dominated by the church and the military to a more civilian population, with people living on ranchos or in pueblos. With the numerous new ranchos in private hands, cattle ranching expanded and prevailed over agricultural activities, remaining the base economy of California until the 1840s (Wade et al. 2009).

Rancho Santa Maria de Los Peñasquitos, located in Peñasquitos Canyon, was the first rancho granted by the Mexican government in San Diego county. This rancho included 8,486 acres granted to Captain Francisco María Ruíz. During the Mexican Period, land was also granted to pueblos with locally elected town councils. In 1833, San Diego submitted a petition to Governor Figueroa asking for formal recognition as a pueblo, and in 1834, was granted permission to establish a municipal government. However, partially due to the establishment of the ranchos in the back-county areas and the subsequent population shift to the ranchos, San Diego's population shrunk from nearly 500 people in 1834 to 150 in 1841 (Crane 1991). Consequently, the town council was replaced by a justice of the peace in 1838. A few years later, in 1845, the town was allowed a governor-appointed sub-prefect, Santiago Arguello, who commissioned a survey of the pueblo lands; the resulting map was signed by Governor Pio Pico in 1846, establishing the pueblo as over 48,000 acres of land.

American Period (1848 to Present)

On May 13, 1846, the United States of America declared war on Mexico. General Stephen Watts Kearny's "Army of the West" engaged with General Andres Pico and his Mexican-Californian army in a bloody battle at the Valley of San Pasqual, near present-day Escondido. The battle was victorious for the Mexican Californios; however, in the end they lost the Mexican–American War. American governance began in 1848, when Mexico signed the Treaty of Guadalupe Hidalgo, ceding California to the United States at the conclusion of the war. The following years saw a great influx of settlers to California and the San Diego region. The increase in population resulted from several factors, including the discovery of gold in the state in 1848, the end of the Civil War, the availability of free land through passage of the Homestead Act, and later, the importance of San Diego County as an agricultural area supported by roads, irrigation systems, and connecting railways.

On September 9, 1850, California was granted statehood by the United States of America, with San Diego County being established as one of the original 27 counties within California. The original county boundaries included much of the Colorado and Mojave deserts, extending from the Pacific Ocean to the Colorado River and all present-day Imperial County and much of San Bernardino, Riverside, and Inyo counties. San Diego County then had more than 37,000 square miles of area. In 1851, Los Angeles County was given the north half of San Diego County, which thereby was left with but 14,800 of its original 37,000 square miles. In 1872, Riverside County was formed, reducing San Diego County to 8,400 square miles (Moore 1955).

While the American system required that the newly acquired land be surveyed prior to settlement, the Treaty of Guadalupe Hidalgo bound the United States to honor the land claims of Mexican citizens who were granted ownership of ranchos by the Mexican government. The Land Act of 1851 established a board of commissioners to review land grant claims, and land patents for the land grants were issued throughout the following years. Eventually, more than 30 land grants covering almost 1,000 square miles were established within San Diego County. In 1874, San Diego received a land patent for

47,323 acres, which was slightly less than the size of the original pueblo lands, due to 1,233 acres within Point Loma being assigned as a military reservation (Crane 1991).

Many farms and ranches were established within many of the former ranchos; large tracts such as Jamul, Santa Maria (Ramona), San Vicente, San Jose (Warner's), San Felipe, Laguna, and Cuyamaca, continued as large cattle enterprises into the twentieth century (Wade at al. 2009). The confirmation of ranchos' boundaries in the late 1860s and early 1870s also drew additional settlers as land became officially conveyable. Under the Homestead Act of 1862 settlers could claim up to 160 acres of public land for the cost of a filing fee of $10, on condition that the land was occupied for at least five years and that certain improvements were made. The increase of land claims significantly reduced the remaining lands within the county which sustained the Native American populations as settlers marked, surveyed, and fenced property. The increase of land claims contributed to the push for Native American reservations to be established, often in what were lands of poorer subsistence (Carrico 2008).

In the early years of the American Period, Old Town had remained the center of civic life in the area; however, the San Diego River was prone to major floods, and in the 1870s, downtown San Diego, then known as Horton's Addition, became the urban center (AECOM 2015). In San Diego County, the 1880s were characterized by "boom and bust" cycles that brought thousands of additional people to the region. In 1885, the Transcontinental Railroad reached San Diego, making the journey of American settlers from the east and Midwest easier. By the end of the decade, many of the new settlers had left after the development bust; however, some remained to form the foundations of small communities based on dry farming, orchards, dairies, and livestock ranching. During the late nineteenth and early twentieth centuries, rural areas of San Diego County developed small agricultural communities centered on one-room schoolhouses. Such rural farming communities consisted of individuals and families tied together through geographical boundaries, a common schoolhouse, and a church.

As with the rural portions of the county, by the 1890s, the City of San Diego had also entered a time of steady growth and subdivisions such as Golden Hill, Sherman Heights, Logan Heights, Banker's Hill, and University Heights were developed. As the City continued to grow in the early twentieth century, the downtown's residential character changed. Streetcars and the introduction of the automobile allowed people to live farther from their downtown jobs, and new suburbs were developed. By 1900 the population of the City of San Diego was 17,700 and San Diego County was 35,090 (San Diego History Center 2020).

The influence of military development, beginning in 1916 and 1917 during World War I, and the need to fight a two-ocean war during World War II resulted in substantial development in infrastructure and industry to support the military and accommodate soldiers, sailors, and defense industry workers. In 1917, the U.S. Army established Camp Kearny on the site of what is now MCAS Miramar, located in the central portion of the County. San Diego Bay became the home of the United States Navy Pacific Fleet in 1919. Marine Corps Base Camp Pendleton was established within Rancho Santa Margarita y Las Flores in 1942, which became the largest Marine Corps base in the United States. Many military bases and military industrial operations were established across San Diego County due to World War II, resulting in an economic shift away from agricultural industries in San Diego County.

After World War II, San Diego County experienced massive development. San Diego State University, established in the 1920s, spurred the development of the eastern portion of the City of San Diego and new roadways, freeways, infrastructure, tract housing and multi-family housing developments, commercial and recreational developments were constructed in the 1950s, 1960s, and 1970s. In 1954

the University of San Diego was founded in Linda Vista, and in 1964 the University of California established a 1,000-acre San Diego campus in La Jolla. San Diego Stadium opened in Mission Valley as home to the San Diego Chargers in 1967 and San Diego–Coronado Bay Bridge opened in 1969, replacing ferry service across San Diego Bay. By 1970 San Diego became California's second-largest city, with a population of 696,474, with the overall county population being greater than 1.3 million by this time (San Diego History Center 2020). San Diego County continued to grow in population and development into the last decades of the twentieth century.

1.3 APPLICABLE REGULATIONS

Cultural resources are defined as buildings, sites, structures, objects, or districts each of which may have historical, architectural, archaeological, cultural, and/or scientific importance. Resource importance is assigned to those cultural resources that possess exceptional value or quality illustrating or interpreting the heritage of San Diego County in history, architecture, archaeology, engineering, and culture.

A number of criteria are used in demonstrating resource importance. Specifically, criteria outlined in the California Environmental Quality Act (CEQA), Assembly Bill (AB) 52, the San Diego County Local Register, and the County of San Diego Resource Protection Ordinance (RPO) provide the guidance for making such a determination. The following sections detail the criteria that a resource must meet in order to be determined important.

1.3.1 State Guidelines and Regulations

California Environmental Quality Act

CEQA Public Resources Code (PRC) 21084.1, and California Code of Regulations (CCR) Title 14 Section 15064 discuss significant cultural resources as "historical resources," which are defined as:

- Resource(s) listed or determined eligible by the State Historical Resources Commission for listing in the California Register of Historical Resources (CRHR) (14 CCR Section 15064.5[a][1]);

- Resource(s) either listed in the National Register of Historic Places (NRHP) or in a "local register of historical resources" or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the PRC, unless "the preponderance of evidence demonstrates that it is not historically or culturally significant" (14 CCR Section 15064.5[a][2]); or

- Resource(s) determined by the Lead Agency to meet the criteria for listing on the CRHR (14 CCR Section 15064.5[a][3]).

For listing in the CRHR, a historical resource must be significant at the local, state, or national level under one or more of the following four criteria:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;

2. It is associated with the lives of persons important to local, California, or national history;

3. It 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. It has yielded or has the potential to yield information important to the prehistory or history of the local area, California, or the nation.

Under 14 CCR Section 15064.5(a)(4), a resource may also be considered a "historical resource" for the purposes of CEQA at the discretion of the lead agency.

All resources that are eligible for listing in the CRHR must have integrity, which is the authenticity of a historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Resources, therefore, must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. In an archaeological deposit, integrity is assessed with reference to the preservation of material constituents and their culturally and historically meaningful spatial relationships. A resource must also be judged with reference to the particular criteria under which it is proposed for nomination.

According to CEQA (§15064.5b), a project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. CEQA defines a substantial adverse change as:

(1) Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.

(2) The significance of an historical resource is materially impaired when a project:

   (a) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register of Historical Resources; or

   (b) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

   (c) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.

Section 15064.5 of CEQA applies to effects on archaeological sites and contains additional provisions regarding archaeological sites. If an archaeological site does not meet the criteria defined in subsection (a) as a historical resource, but does meet the definition of a unique archaeological resource in Section 21083.2 of the PRC, the site shall be treated in accordance with the provisions of

section 21083.2. The time and cost limitations described in Public Resources Code Section 21083.2 (c-f) do not apply to surveys and site evaluation activities intended to determine whether the project location contains unique archaeological resources. If an archaeological resource is neither a unique archaeological nor an historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment. It shall be sufficient that both the resource and the effect on it are noted in the environmental document, if one is prepared to address impacts on other resources, but they need not be considered further in the CEQA process.

Section 15064.5 (d) & (e) contain additional provisions regarding human remains. Regarding Native American human remains, paragraph (d) provides the following:

> When an initial study identifies the existence of, or the probable likelihood, of Native American human remains within the project, a lead agency shall work with the appropriate Native Americans as identified by the Native American Heritage Commission as provided in Public Resources Code §5097.98. The applicant may develop an agreement for treating or disposing of, with appropriate dignity, the human remains and any items associated with Native American burials with the appropriate Native Americans as identified by the Native American Heritage Commission.

California Assembly Bill 52

California AB 52 revised PRC Section 21074 to include Tribal Cultural Resources (TCRs) as an area of CEQA environmental impact analysis. Further, per new PRC Section 21080.3, a CEQA lead agency must consult with any California Native American tribe that requests consultation and that is traditionally and culturally affiliated with the geographic area of a proposed project to identify resources of cultural or spiritual value to the tribe, even if such resources are already eligible as historical resources as a result of cultural resources studies. A TCR may be considered significant if it is (i) included in a local or state register of historical resources; (ii) determined by the lead agency to be significant pursuant to criteria set forth in PRC Section 5024.1; (iii) a geographically defined cultural landscape that meets one or more of these criteria; (iv) a historical resource described in PRC Section 21084.1 or a unique archaeological resource described in PRC Section 21083.2; or (v) a non-unique archaeological resource if it conforms with the above criteria.

1.3.2 Local Guidelines and Regulations

San Diego County Local Register of Historical Resources

The County requires that resource importance be assessed not only at the state level as required by CEQA, but at the local level as well. If a resource meets any one of the following criteria as outlined in the Local Register, it will be considered an important resource.

1. Resource(s) associated with events that have made a significant contribution to the broad patterns of California or San Diego County's history and cultural heritage;

2. Resource(s) associated with the lives of persons important to the history of San Diego County or its communities;

3. Resource(s) that embody the distinctive characteristics of a type, period, San Diego County region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

4. Resource(s) that have yielded, or may be likely to yield, information important in prehistory or history.

The purpose of the San Diego County Local Register of Historical Places is to develop and maintain "an authoritative guide to be used by State agencies, private groups, and citizens to identify the County's historical resources and to indicate which properties are to be protected, to the extent prudent and feasible, from substantial adverse change." Sites, places, or objects that are eligible to the NRHP or the CRHR are automatically included in the San Diego County Local Register of Historical Places.

Resource Protection Ordinance

The County of San Diego's RPO requires that cultural resources be evaluated as part of the County's discretionary environmental review process, and if resources are determined to be significant under the RPO, they must be preserved. Pursuant to Section 86.603, the RPO is applicable to discretionary applications such as Tentative Map, Tentative Parcel Map, Revised Tentative Map and Revised Tentative Parcel Map, Rezone, Major Use Permit, Major Use Permit Modification, Site Plan, Vacation of Open Space Easement Expired Map, Certificate of Compliance, or Administrative Permit. The Proposed Project is a countywide program that protects the public from vector-borne disease and public nuisances, and it would continue to comprehensively implement vector control through various techniques. As such, it is not a discretionary application. Therefore, the RPO is not applicable to the Proposed Project.

1.3.3 Native American Heritage Values

Federal and state laws mandate that consideration be given to the concerns of contemporary Native Americans with regard to potential ancestral human remains, associated funerary objects, and items of cultural patrimony. Potentially relevant to prehistoric archaeological sites is the category termed Traditional Cultural Properties (TCP) in discussion of cultural resource management performed under federal auspices. According to Patricia L. Parker and Thomas F. King (1998), "Traditional" in this context refers to those beliefs, customs, and practices of a living community of people that have been passed down through the generations, usually orally or through practice. The traditional cultural significance of a historic property, then, is significance derived from the role the property plays in a community's historically rooted beliefs, customs, and practices.

The County of San Diego Guidelines identify that cultural resources can include TCPs, such as gathering areas, landmarks, and ethnographic locations in addition to archaeological districts (County of San Diego 2007). These guidelines incorporate both state and federal definitions of TCPs. Generally, a TCP may consist of a single site, or group of associated archaeological sites (district or traditional cultural landscape), or an area of cultural/ethnographic importance.

1.4 BEST MANAGEMENT PRACTICES

The IVMP follows the best management practices (BMPs) described in the Best Management Practices for Mosquito Control in California (California Department of Public Health [CDPH]; 2012), Best Management Practices for Mosquito Control on California State Properties (CDPH 2008), and in the

California Mosquito-Borne Virus Surveillance and Response Plan (CDPH 2020), which detail vector control and pesticide application procedures. In addition, the County integrates BMPs into the IVMP serving as a comprehensive management framework for implementation of individual activities. The following BMP will be implemented as part of the IVMP, which demonstrate the County's commitment to avoid or minimize impacts to the maximum extent feasible.

Assessment of IVMP Activities

Individual IVMP source reduction activities that involve ground disturbance (e.g., grading, earthwork, or other excavation activities) will undergo a preliminary planning review by the County to assess the degree to which each activity may potentially result in impacts to cultural resources. The County shall review available records documentation and determine whether known archaeological or tribal resources are present within the proposed activity area, or ascertain the potential that such resources may be encountered. Per the *County of San Diego Report Format and Content Requirements, Cultural Resources: Archaeological and Historic Resources*, project sites that have been previously surveyed within 5 years or less may use the previous study (County 2007a). As such, if preliminary planning review determines that the IVMP activity area has been previously surveyed for the presence of archaeological or tribal resources within the last 5 years with negative results or has been previously disturbed (e.g., grading, earthwork, or other excavation activities), the area would be considered "low sensitivity" and no further evaluation would be required. If the results of the review determine that the area has not previously been surveyed or disturbed, or has been surveyed and archaeological and/or tribal resources have been identified, a site-specific cultural resource survey will be required.

2.0 GUIDELINES FOR DETERMINING SIGNIFICANCE

The significance thresholds for cultural resources are based specifically on criteria provided in the County's Guidelines for Determining Significance (2007b). For the purposes of the Proposed Project, any of the following will be considered a potentially significant environmental impact to cultural resources:

1. The Proposed Project causes a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the State CEQA Guidelines. This shall include the destruction, disturbance, or any alteration of characteristics or elements of a resource that cause it to be significant in a manner consistent with the Secretary of Interior Standards.

2. The Proposed Project causes a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the State CEQA Guidelines. This shall include the destruction or disturbance of an important archaeological site or any portion of an important archaeological site that contains or has the potential to contain information important to history or prehistory.

3. The Proposed Project disturbs any human remains, including those interred outside of formal cemeteries.

4. The project proposes activities or uses damaging to significant cultural resources as defined by the Resource Protection Ordinance and fails to preserve those resources.

As state above, the Proposed Project is a countywide program that protects the public from vector-borne disease and public nuisances, and it would continue to comprehensively implement vector control

through various techniques. As such, it is not a discretionary application. Therefore, the RPO is not applicable to the Proposed Project and is not discussed further in this report.

In addition, in December 2018 the State CEQA Guidelines were updated to include Tribal Cultural Resources. Per State CEQA Guidelines Appendix G, a potentially significant environmental impact would occur if the following tribal cultural resources are affected:

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

b) 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 Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

3.0 ANALYSIS OF PROJECT EFFECTS

3.1 METHODS

The evaluation of cultural resources presented in this report has been prepared in conformance with PRC Section 21083.2 and the State CEQA Guidelines. Statutory requirements of CEQA (Section 15064.5) are followed in evaluating the significance of cultural resources. As this report is being prepared to support a program-level document and the site-specific locations of IVMP activities cannot be defined at this time, record searches and field surveys cannot be conducted for this evaluation. As such, the analysis is qualitative in nature and does not provide specific locations of resources. The potential impacts that the Proposed Project may have on cultural resources are discussed in a broader context relative to the various IVMP components for each cultural resources-related CEQA significance criterion.

Under the Proposed Project, the IVMP would continue the use of the following vector control techniques: surveillance and monitoring, source reduction (i.e., physical control), source treatment (i.e., biological and chemical controls), public education and outreach, and disease diagnostics. Emerging vector control strategies that may be implemented to address future public health risks and public nuisances could include, but not be limited to, increased or advanced early source prevention and/or reduction, surveillance, or physical/biological/chemical controls. Of these, only source reduction would potentially result in tangible impacts to cultural resources, due to the potential ground disturbing or physical impacts that environmental modifications could entail. Physical controls could potentially include, but not be limited to removal of vegetation or sediment, interruption of water flow, rotation of stored water, pumping and/or filling water sources, improving drainage and water circulation systems; and installing, removing, or improving culverts, tide gates, or other water control structures. No new structures or buildings associated with vector control are anticipated to be constructed.

3.2 NATIVE AMERICAN CONSULTATION

In accordance with AB 52, consultation with tribal governments was conducted by the County. On August 23, 2018 at the start of the Notice of Preparation (NOP)/Initial Study review period for the Proposed Project, the County notified all Native American tribes of the NOP (who at the time requested to be notified of upcoming County projects).The list of tribes who were notified include: Barona Group

of the Capitan Grande, Campo Band of Diegueno Mission Indians, Iipay Nation of Santa Ysabel, Jamul Indian Village, Kwaaymii Laguna Band of Mission Indians, Pala Band of Mission Indians, Pechanga Band of Luiseno Indians, Rincon Band of Luiseno Indians, San Luis Rey Band of Mission Indians, Soboba Band of Luiseno Indians, Sycuan Band of the Kumeyaay Nation, and Viejas Band of Kumeyaay Indians.

On August 28, 2018, the Viejas Band of Kumeyaay Indians provided a response letter requesting compliance with CEQA, National Environmental Policy Act, and Native American Graves Protection and Repatriation Act; in addition to immediately contacting Viejas of any changes or inadvertent discoveries.

3.3 IMPACT IDENTIFICATION

3.3.1 Historical Resources

PRC Section 21083.2 and State CEQA Guidelines Section 15064.5 recommend evaluating historical resources to determine whether or not a proposed action would have a significant effect on unique historical resources (refer to Guideline for Determining Significance 1 in Section 3.0). A project that would have an adverse impact (direct, indirect, or cumulative) on significant historical resources as defined by these guidelines would be considered a significant impact. As source reduction activities would primarily involve techniques such as vegetation management (including trimming and removal of vegetation and application of herbicides), water control, and other maintenance activities, the Proposed Project would not result in impacts to built environment resources (historic buildings, structures, or objects). However, physical control techniques associated with the IVMP source reduction activities could potentially result in direct or indirect impacts to archaeological resources; unrecorded or unevaluated archaeological sites may require research or testing programs to determine their eligibility for inclusion in the CRHR or San Diego County Local Register. If an archaeological resource is found to eligible for inclusion in the CRHR or San Diego County Local Register, it would be considered a 'historical resource,' per CEQA. As such, the Proposed Project could have the potential to cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5 of the State CEQA Guidelines.

3.3.2 Archaeological Resources

PRC Section 21083.2 and State CEQA Guidelines Section 15064.5 recommend evaluating archaeological resources to determine whether a proposed action would have a significant effect on unique archaeological resources (refer to Guideline for Determining Significance 2 in Section 3.0). A project that would have an adverse impact (direct, indirect, or cumulative) on significant archaeological resources as defined by these guidelines would be considered a significant impact. Unrecorded or unevaluated archaeological sites may require research or testing programs to determine their eligibility for inclusion in the CRHR or San Diego County Local Register. Adverse effects to known significant or unique archaeological resources may result in a loss of valuable information that could be gained from the resources or prevent potentially eligible sites from being listed on a register of cultural resources.

Source reduction activities involving ground-disturbing work that may occur within or near archaeological resources, within previously undisturbed areas, or within previously disturbed areas with known cultural resource sensitivity, could result in potential impacts if archaeological resources present on or below the ground surface are damaged or destroyed. Accordingly, since specific site locations cannot be defined at this time, it is anticipated that ground-disturbing activities associated with implementation of the Proposed Project could have the potential to cause a substantial adverse change

in the significance of an archaeological resource pursuant to §15064.5 of the State CEQA Guidelines, and result in a potentially significant impact.

3.3.3 Human Remains

Pursuant to State CEQA Guidelines Section 15064.5, a project must be evaluated for its potential to disturb any human remains, including those interred outside of formal cemeteries (refer to Guideline for Determining Significance 3 in Section 3.0). A project that would have an adverse impact (direct, indirect, or cumulative) on human remains as defined by this guideline would be considered a significant impact, regardless of archaeological significance or association. Archaeological materials, including human burials, have been found throughout unincorporated San Diego County and incorporated cities serviced by the IVMP. Human burials have occurred outside of formal cemeteries, usually associated with archaeological resource sites and prehistoric people. While some burials have been uncovered, the potential exists for unknown burials to be present within areas potentially requiring physical control activities associated with the IVMP. Ground-disturbing activities associated with implementation of the Proposed Project could have the potential to disturb human remains and result in a potentially significant impact.

3.3.4 Tribal Cultural Resources

A project would have a potentially significant environmental impact (direct, indirect, or cumulative) if it would cause a substantial adverse change in the significance of a TCR, defined in PRC Section 21074 as a site, feature, place, or 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, and that is:

a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC Section 5020.1(k), or

b. 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 PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Ground-disturbing activities associated with the Proposed Project have the potential to affect TCRs, including archaeological sites, traditional gathering areas, or other areas of traditional use. Per AB 52, the County initiated consultation with California Native American tribes that are traditionally and culturally affiliated with the service area of the Proposed Project to identify resources of cultural value to the tribe.

Accordingly, since specific site locations cannot be defined at this time, it is anticipated that ground-disturbing activities associated with implementation of the Proposed Project could have the potential to cause a substantial adverse change in the significance of a tribal cultural resource pursuant to §21074 of the State CEQA Guidelines, and result in a potentially significant impact.

Subsequent discretionary projects that are not evaluated under the Program Environmental Impact Report would be required to prepare site-specific project-level analysis to fulfill CEQA requirements, which may include additional AB 52 consultation with the culturally-affiliated Native American tribes that could lead to the identification of TCRs.

3.3.5 Cumulative Impacts

The geographic scope of the cumulative impact analysis for cultural resources (including historical and archaeological resources), human remains, and TCRs, is the entirety of San Diego County, including both incorporated and unincorporated areas.

Cumulative projects located in the southern California region would have the potential to result in cumulative impacts associated with the loss of historical resources, archaeological resources, human remains, and TCRs through the physical disturbance, relocation, or alteration of these resources. Discretionary projects located in the southern California region would be required to comply with applicable federal, state, and local regulations for the protection of unique or significant cultural resources. Such regulations include PRC Section 5097, California Penal Code 622, the Mills Act, State Health and Safety Code (HSC) Sections 18950-1896, and the Secretary of the Interior's Standards for Rehabilitation and Standards for the Treatment of Historic Properties for historical resources; the federal and California Native American Graves Protection and Repatriation Acts (NAGPRA), Section 106 of the National Historic Preservation Act, PRC Section 5079, CEQA Section 21083.2, and the County RPO for archaeological resources and TCRs; and PRC Section 5097.9-5097.991, Cal NAGPRA, and HSC Section 7050.5 for human remains. Even with regulations in place, individual resources would still have the potential to be impacted or degraded as a result of development of cumulative projects, and the loss of resources at a regional level may not be adequately mitigable through the data recovery and collection methods specified in these regulations. Therefore, potential combined cultural resources effects from all projects within the geographic scope for the cultural resources analysis is considered cumulatively considerable.

As discussed in Section 3.3.1, built environment resources would not be impacted by the Proposed Project; therefore, implementation of the IVMP would not result in a cumulatively considerable contribution to historic resources impacts. The Proposed Project has the potential to cause impacts to unknown archaeological resources, human remains, and TCRs during ground-disturbing activities. Due to the nature and scale of the activities that could be implemented under the IVMP; the requirement to comply with all applicable federal, state, and local regulations; and the requirement to implement the mitigation measures (identified in Section 4.1, below) and standard operating procedures and protocols, the Proposed Project would not have a cumulatively considerable contribution to potentially significant impacts to cultural resources that may occur within the IVMP service area.

4.0 MANAGEMENT CONSIDERATIONS

4.1 MITIGATION MEASURES AND DESIGN CONSIDERATIONS

Although ground-disturbing activities associated with the Proposed Project are expected to generally be minor in scale, physical control techniques associated with the IVMP source reduction activities could potentially result in direct or indirect impacts to archaeological resources, TCRs, and human remains. As such, the following mitigation measures are recommended for individual activities related to the Proposed Project that would involve ground-disturbing work to guide the identification, evaluation, and mitigation of potential impacts to cultural resources, if encountered.

CUL-1 **Site-specific Cultural Resources Survey.** For individual IVMP source reduction activities that have been determined to have the potential to result in impacts to archaeological or tribal

resources, as identified in the IVMP Best Management Practices (Assessment of IVMP Activities), a qualified archaeologist shall be retained to conduct a site-specific cultural resource survey if the site has not been surveyed in the previous 5 years. The survey shall consist of a record search of the California Historical Resources Information System (CHRIS) housed at the South Coastal Information Center (SCIC), research to identify historic land use in the area, and pedestrian survey that includes the participation of a Native American monitor. A review of the Sacred Lands File maintained by the NAHC shall also be requested for the individual IVMP activity. A report shall be prepared to discuss the survey and record search results.

CUL-2 **Cultural Resources Evaluation.** If potential cultural resources are identified within an individual IVMP activity area where ground disturbance is proposed, a cultural resources significance evaluation shall be conducted. Specifically, a significance evaluation shall be prepared if the individual IVMP activity has the potential to result in an adverse effect to (1) new cultural resource(s) that are identified as a result of a site-specific survey, or (2) previously recorded resource(s) that have not been previously evaluated that are reidentified during a survey, unless resource(s) can be avoided. Per the *County of San Diego Report Format and Content Requirements, Cultural Resources: Archaeological and Historic Resources*, significance evaluations will not be required if the resource has been evaluated for CEQA significance or for NRHP eligibility within the last five years and if there has been no change in the conditions that contributed to the determination of resource importance (County of San Diego 2007a). Significance evaluation efforts may include additional research to determine whether the resource meets the criteria for listing on the CRHR and/or subsurface investigation. Archaeological testing programs involving subsurface investigation shall include assessing the horizontal and vertical dimensions of a site, the chronological placement, site function, artifact/ecofact density and variability, presence/absence of subsurface features, and research potential. A Native American monitor shall be retained for all subsurface investigations. Resources found to be non-significant as a result of a survey and/or assessment will require no further work beyond documentation of the resources on the appropriate California Department of Parks and Recreation (DPR) site forms and inclusion of results in the survey and/or assessment report prepared for the individual IVMP activity. A cultural resources report shall be prepared to discuss potential impacts associated with the individual IVMP activities and identify measures to reduce all significant impacts to below a level of significance, if applicable.

CUL-3 **Cultural Resources Data Recovery Program.** If significant cultural resources are identified within an individual IVMP activity area where ground disturbance is proposed, and avoidance of impacts to the resource is not possible, a data recovery program (including research design) shall be implemented. The data recovery program shall be subject to the provisions, as outlined in PRC Section 21083.2 and completed prior to the implementation of the individual IVMP activity. Avoidance of significant cultural resources shall be sought to the extent possible.

CUL-4 **Cultural Resources Monitoring Program.** If significant cultural resources are identified or potential cultural resources are suspected to occur within an individual IVMP activity area where ground disturbance is proposed, monitoring shall be required by an archaeologist and Native American monitor. If unevaluated potentially significant cultural resources are

discovered, construction activities shall be diverted away from the discovery until significance evaluation can be conducted.

To mitigate potential impacts to significant cultural resources, a Data Recovery Program for any newly discovered cultural resource would be prepared, approved by the County, and implemented using professional archaeological methods. Construction activities would be allowed to resume after the completion of the recovery of an adequate sample and the recordation of features. All cultural material collected during the Data Recovery Program or Monitoring Program would be processed and curated at a San Diego County facility that meets federal standards per 36 Code of Federal Regulations Part 79 unless the tribal monitors request the collection.

After the completion of monitoring, an appropriate report shall be prepared. If no significant cultural resources are discovered, a brief letter shall be prepared. If significant cultural resources are discovered, a report with the results of the monitoring and any data recovery (including the interpretation of the data within the research context) shall be prepared.

CUL-5 **Identification of Human Remains**. In the event that human remains are discovered during individual IVMP source reduction activities, work shall halt in the identified area, the County Coroner shall be contacted, and Public Resources Code Section 5097.98, CEQA Section 15064.5 and Health & Safety Code Section 7050.5 shall be followed. If the remains are determined to be of Native American origin, the Most Likely Descendant (MLD) shall be identified by the NAHC and contacted by the County in order to determine proper treatment and disposition of the remains.

5.0 CONCLUSION

The Proposed Project has the potential to cause impacts to unknown archaeological resources, human remains, and TCRs during ground-disturbing activities. With implementation of the IVMP BMP addressing assessment of IVMP activities, as well as mitigation measures CUL-1 through CUL-5, potential direct and indirect impacts to archaeological resources, human remains, and TCRs would be less than significant.

Relative to the potential for the Proposed Project to result in cumulative impacts, compliance with applicable federal, state, and local regulations for the protection of unique or significant archaeological resources is employed during CEQA review of all discretionary projects within the County and surrounding counties. The Proposed Project has the potential to result in significant cumulative effects on cultural resources; however, due to the nature and scale of the activities that could be implemented under the IVMP; the requirement to comply with all applicable federal, state, and local regulations; and the requirement to implement standard operating procedures and protocols, BMPs, and mitigation measures CUL-1 through CUL-5; cumulative impacts to cultural resources resulting from the Proposed Project would be less than significant. Therefore, the Project would not result in a cumulatively considerable contribution to regional cultural resources impacts.

6.0 LIST OF PREPARERS

Stacie Wilson, M.S., RPA	Senior Archaeologist, Primary Author
Theodore Cooley, M.A., RPA	Senior Archaeologist, Report Contributor
Annie McCausland, M.A.	Architectural Historian, Report Contributor
Yara Fisher	Project Manager
Mary Robbins-Wade, M.A., RPA.	Cultural Resources Group Manager, Senior Review

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

7.0 REFERENCES

AECOM
2015 Community Plan Update for the Community of Old Town, Prehistoric Cultural Resources, City of San Diego, California. Available at: https://www.sandiego.gov/sites/default/files/cultural_constraints_analysis_old_town.pdf, accessed July 2020.

Apple, Rebecca, Andrew York, James H. Cleland, and Stephen Van Wormer
1997 *Archaeological Survey and Evaluation Program for the Salton Sea Test Base, Imperial County, California.* Report prepared for the Department of the Navy SOUTHWESTDIV, Naval Facilities Engineering Command, San Diego, California. Prepared by KEA Environmental, Inc., San Diego, California.

Bean, Lowell J.
1978 Cahuilla. In *California*, edited by R. F. Heizer, pp. 575–587. Handbook of North American Indians, Vol. 8, W. C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Bean, Lowell John, and Katherine S. Saubel
1972 *Temalpakh (from the earth): Cahuilla Indian Knowledge and Usage of Plants*. Banning California; Malki Museum Press.

Bean, Lowell John, and Florence C. Shipek
1978 Luiseño. In *California*, edited by Robert F. Heizer, pp. 550-563. Handbook of North American Indians, vol. 8. William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Bean, Lowell John, and Charles R. Smith
1978 Cupeño. In *California*, edited by Robert F. Heizer, pp. 588-591. Handbook of North American Indians, vol. 8. William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Bean, Lowell John, Jerry Schaefer, and Sylvia Brakke Vane
1995 *Archaeological, Ethnographic, and Ethnohistoric Investigations at Tahquitz Canyon, Palm Springs, California.* Prepared by Cultural Systems Research, Inc., Menlo Park, California, for Riverside County Flood Control and Water Conservation District.

Beauchamp, R. Mitchell
1986 *A Flora of San Diego County, California*. Sweetwater River Press, National City.

Bull, Charles S.
1983 Shaking the Foundations: The Evidence for San Diego Prehistory. *Casual Papers: Cultural Resource Management* 1(3):15-64. Cultural Resource Management Center, San Diego State University.

Burt, William H., and Richard P. Grossenheider
1976 *A Field Guide to the Mammals of America North of Mexico*. Houghton Mifflin Company, Boston.

Carrico, Richard L.
1998 Ethnohistoric Period. In *Prehistoric and Historic Archaeology of Metropolitan San Diego: A Historic Properties Background Study*. Prepared for the Metropolitan Wastewater Department, City of San Diego. ASM Affiliates, Encinitas, California.

2008 *Strangers in a Stolen Land: Indians of San Diego County from Prehistory to the New Deal.* Sunbelt Publications, San Diego.

2017 Clans and Shimulls/Sibs of Western San Diego County. *Proceedings of the Society for California Archaeology* 31:9-16.

Carrico, Richard L., and Theodore G. Cooley
2005 *Cultural Resources Report of the Survey and Testing Programs for the Oak Country Estates Development in Ramona, San Diego County, California.* ICF Jones & Stokes, San Diego.

Carrico, Richard L., Theodore G. Cooley, and Joyce M. Clevenger
1993 *Archaeological Excavations at the Harris Site Complex, San Diego County, California.* Ogden Environmental and Energy Services, San Diego. Report on file at the South Coastal Information Center, San Diego State University.

Carrico, Richard L., Theodore G. Cooley, and Brian K. Glenn
1994 *East Mission Gorge Interceptor Pump Station and Force Main Project Cultural Resources Data Recovery for Site CA-SDI-9243*, *San Diego County, California*. Ogden Environmental and Energy Services Company, San Diego.

Chace, Paul G., and Janet Hightower
1979 *The Archaeology of the Nelson Site SDI-5680 Near Poway and a Test Assessment Program of the Cultural Remains of the C.B.N. Corporation Property (E.A.D. Log #78-14-19.* Report on file at the South Coastal Information Center, San Diego State University.

Chace, Paul G., and Mark Q. Sutton
1990 The Kelly Site Complex: An Inland Encinitas Tradition Settlement in San Diego County. *Pacific Coast Archaeological Society Quarterly* 26(1):42–59.

Christenson, Lynne E.
1990 *The Late Prehistoric Yuman People of San Diego County, California: Their Settlement and Subsistence System.* Ph.D. dissertation, Department of Anthropology, Arizona State University, Tempe. University Microfilms, Ann Arbor.

Cline, Lora L.
1984 *Just Before Sunset.* J and L Press, Jacumba, California.

Cooley, Theodore G.
1995 Early Period Results from Data Recovery Conducted on a Portion of Stratified Prehistoric Site SDI-9243, San Diego County, California. *Proceedings of the Society for California Archaeology* 8:227–238.

Cooley, Theodore G., and Laura J. Barrie
2004 Archaeological Excavation at the Village of *Pa'Mu*, Ramona Valley, California. *Proceedings of the Society for California Archaeology* 17:43–56.

Cooley, Theodore G., and Patricia T. Mitchell
1996 *Limited Data Recovery Investigations at Site CA-SDI-11,767, a La Jolla Complex Site Along the Lower San Diego River Valley, Mission Valley West Light Rail Transit Project, San Diego, California*. Ogden Environmental and Energy Services Company, San Diego. Report on file at the South Coastal Information Center, San Diego State University, San Diego.

Cooley, Theodore G., Richard L. Carrico, and Carol Serr
2000 *Data Recovery Excavations Conducted at Archaeological Site CA-SDI-10,238 (SDM-W-36) Locus B, Solana Beach, San Diego County, California*. Mooney & Associates, San Diego. Prepared for the City of Solana Beach. Report on file at ICF Jones & Stokes, San Diego.

County of San Diego
2007a County of San Diego Report Format and Content Requirements, Cultural Resources: Archaeological and Historic Resources. County of San Diego, Department of Planning and Land Use, Department of Public Works. First Revision, December 5, 2007.

2007b County of San Diego Guidelines for Determining Significance, Cultural Resources: Archaeological and Historic Resources. County of San Diego, Department of Planning and Land Use, Department of Public Works. First Revision, December 5, 2007.

2011 Final Program Environmental Impact Report (EIR) for the General Plan Update. Certified on August 3, 2011.

2014 County of San Diego Vector Control Program Mosquito Breeding Site Access Standard Operating Procedure. November 21. [Subject to continuous revision.]

2018a County of San Diego Aedes Transmitted Disease Strategic Response Plan. April.

2018b County of San Diego West Nile Virus Strategic Response Plan. April.

2020 County of San Diego Vector Control Program Mosquito, Vector and Disease Control Assessment: Engineer's Report. Fiscal Year 2020-2021. June.

Crane, Clare B.
1991 The Pueblo Lands. *The Journal of San Diego History* 37(2), edited by Richard W. Crawford. Electronic document available at: https://sandiegohistory.org/journal/1991/april/pueblo-2/, accessed July 2020.

Cuero, Delfina
1970 *The Autobiography of Delfina Cuero, A Diegueño Indian* as told to Florence C. Shipek. Malki Museum Press, Morongo Indian Reservation.

Des Lauriers, Matthew R.
2008 A Paleoindian Fluted Point from Isla Cedros, Baja, California. *Journal of Island & Coastal Archaeology* 3:271–276.

Dillon, Brian D.
2002 California Paleo-Indians: Lack of Evidence, or Evidence of a Lack? In *Essays in California Archaeology: A Memorial to Franklin Fenenga*. Edited by William J. Wallace and Francis A. Riddell. Contributions of the University of California Archaeological Research Facility, No. 60. Berkeley, California.

Erlandson, Jon M.
1994 Early Hunter-Gatherers of the California Coast. New York, Plenum Press.

1997 The Middle Holocene along the California Coast. In *Archaeology of the California Coast during the Middle Holocene*, edited by J. M. Erlandson and M. A. Glassow. pp. 61–72. Perspectives in California Archaeology, Vol. 4, J. E. Arnold, series editor. Institute of Archaeology, University of California, Los Angeles.

Erlandson, Jon M., Torben C. Rick, Terry L. Jones, and Judith F. Porcasi
2007 One If by Land, Two If by Sea: Who Were the First Californians? In *California Prehistory: Colonization, Culture, and Complexity*, edited by T. L. Jones and K. A. Jones, pp. 53–62. Altamira Press, Lanham, Maryland.

Ezell, Paul H.
1987 The Harris Site – An Atypical San Dieguito Site, or Am I Beating a Dead Horse? In *San Dieguito–La Jolla: Chronology and Controversy*, edited by Dennis Gallegos, pp. 15-22. San Diego County Archaeological Society Research Paper Number 1. San Diego.

Fitzgerald, Richard T., and Michael F. Rondeau
2012 A Fluted Projectile Point from Crystal Cove State Park, Orange County, Alta California. *California Archaeology* 4(2):247-256.

Gallegos, Dennis R.
1985 Batiquitos Lagoon Revisited*. Casual Papers Cultural Resource Management* 2(1). Department of Anthropology, San Diego State University, California.

1987 A Review and Synthesis of Environmental and Cultural Material for the Batiquitos Lagoon Region. In *San Dieguito-La Jolla: Chronology and Controversy*, edited by Dennis Gallegos, pp. 23-34. San Diego County Archaeological Society, Research Paper 1.

1991 Antiquity and Adaptation at Agua Hedionda, Carlsbad, California. In *Hunter-Gatherers of Early Holocene Coastal California*, edited by J. M. Erlandson and R. H. Colten., pp. 19–42. Perspectives in California Archaeology, Vol. 1, J. E. Arnold, series editor. Institute of Archaeology, University of California, Los Angeles.

Gallegos, Dennis R. (cont.)
1995 A Review and Synthesis of the Archaeological Record for the Lower San Diego River Valley. *Proceedings of the Society for California Archaeology* 8:195–206.

Gross, G. Timothy, and Mary Robbins-Wade
1992 *Investigations at Sabre Springs (CA-SDi-6669, SDM-W-230): A Multicomponent Site Located near Poway, San Diego County, California*. Report prepared for Pardee Construction Company, San Diego, by Affinis, El Cajon.

2010 *Cultural Resources Survey and Evaluation Report: Lazy A Ranch, Alpine, San Diego County, California GPA 07-010, REZ 07-011, LOG NO. 07-15-003, SP 07-002, TM 5546, P 07-016.* Affinis, El Cajon, California. Draft report submitted to County of San Diego Department of Planning and Land Use. On file at HELIX Environmental Planning, Inc., La Mesa, California.

Hall, Clarence A., Jr.
2007 *Introduction to the Geology of Southern California and its Native Plants*. University of California Press, Berkeley.

Hedges, Ken, and Christina Beresford
1986 *Santa Ysabel Ethnobotany*. San Diego Museum of Man Ethnic Technology Notes No. 20.

Head, Winfield S.
1972 *The California Chaparral: An Elfin Forest*. Naturegraph Publishers, Healdsburg, California.

Hyland, Justin R., and Maria De La Luz Gutierrez
1995 An Obsidian Fluted Point from Central Baja California. *The Journal of California and Great Basin Anthropology* 17(1): 126–128.

Kline, George E., and Victoria L. Kline
2007 Fluted Point Recovered from San Diego County Excavation. *Proceedings of the Society for California Archaeology* 20:55–59.

Knell, Edward J., and Mark S. Becker
2017 Early Holocene San Dieguito Complex Lithic Technologies at the C.W. Harris Site, San Diego County, California. *Journal of California and Great Basin Anthropology* 37(2):183-201.

Koerper, Henry C., Paul E. Langenwalter II, and Adella Schroth
1991 Early Holocene Adaptations and the Transition Phase Problem: Evidence from the Allan O. Kelly Site, Agua Hedionda Lagoon. In *Hunter-Gatherers of Early Holocene Coastal California*, edited by J. M. Erlandson and R. H. Colton, pp. 43–62. Perspectives in California Archaeology, Vol. 1, J. E. Arnold, series editor. Institute of Archaeology, University of California, Los Angeles.

Kroeber, A. L.
1925 *Handbook of California Indians*. Bureau of American Ethnology of the Smithsonian Institution *Bulletin 78*. Republished lithographed edition 1970, Fulmer Brothers Press Taylor & Taylor, San Francisco.

Laylander, Don
1997 The Last Days of Lake Cahuilla: The Elmore Site. *Pacific Coast Archaeological Society Quarterly* 33 (1 and 2).

Lightfoot, Kent G., and Otis Parrish
2009 *California Indians and the Environment.* University of California Press: Berkeley.

Luomala, Katherine
1978 Tipai-Ipai. In *California*, edited by Robert F. Heizer, pp. 592-609. Handbook of North American Indians, vol. 8. William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Masters, Patricia M., and Ivano W. Aiello
2007 Postglacial Evolution of Coastal Environments. In *California Prehistory: Colonization, Culture, and Complexity*, edited by Terry L. Jones and Kathryn A. Klar, pp. 25–51. Altamira Press, Lanham, Maryland.

McCown, B. E.
1945 An Archaeological Survey of the San Vicente Lake Bed, San Diego County, California. *American Antiquity* 10: 255–264.

McDonald, Meg
1992 *Indian Hill Rockshelter and Aboriginal Cultural Adaption in Anza-Borrego Desert State Park, Southeastern California*. Unpublished Ph.D. dissertation, Department of Anthropology, University of California, Riverside.

1995 *Phase II Evaluation of Six Prehistoric Sites in Ames Valley, Cleveland National Forest, San Diego, California*. Report prepared by ASM Affiliates for the U.S. Forest Service, Cleveland National Forest, San Diego California. Report on file at the Cleveland National Forest, Supervisor's Office, San Diego.

McDonald, Meg, Carol Serr, and Daniel M. Saunders
1994 *Phase III Data Recovery of CA-SDI-9243, a Multicomponent Prehistoric Site in the San Diego River Valley, Santee, California, ll-SD-52, P.M. 7.3/17.2, 11222-047050.* Brian F. Mooney & Associates, San Diego. Prepared for the California Department of Transportation.

Meighan, Clement W.
1954 The Late Complex in Southern California Prehistory. *Southwestern Journal of Anthropology* 10(2):215–227.

Moore, B.B.
1950 "San Diego's Shrunken Boundaries." *The Journal of San Diego History*. Electronic document available at https://sandiegohistory.org/journal/1955/january/shrunken/, accessed July 2020.

Moratto, Michael J.
1984 *California Archaeology*. Academic Press, Orlando.

Moriarty, James R., III
1966 Cultural Phase Divisions Suggested by Typological Change Coordinated with Stratigraphically Controlled Radiocarbon Dating in San Diego. *The Anthropological Journal of Canada* 4(4): 20–30.

1967 Transitional Pre-Desert Phase in San Diego County. Science (155):37–62.

1968 The Environmental Variations of the Yuman Area of Southern California, Parts I and II. *Anthropological Journal of Canada* 6(2):1–20 and 6(3):9–23.

Munz, Philip A.
1974 *A Flora of Southern California*. University of California Press, Berkeley.

Parker, Patricia L. and Thomas F. King
1998 *Guidelines for Evaluating and Documenting Traditional Cultural Properties*. National Park Service, Washington, D.C.

Pigniolo, Andrew R.
2004 Points, Patterns, and People: Distribution of the Desert Side-Notched Point in San Diego. *Proceedings of the Society for California Archaeology* 14:27–40.

2005 A Different Context: San Dieguito in the Mountains of Southern California. *Proceedings of the Society for California Archaeology* 18:247–254.

Pigniolo, Andrew R., Theodore G. Cooley, Joyce Clevenger, and Lynn Christenson
1991 *The Archaeology of a La Jolla Complex Coastal Camp: Data Recovery at CA-SDI-10,945, Point Loma Naval Facilities, San Diego, California.* Report on file at the South Coastal Information Center, San Diego State University.

Pryde, Philip R.
2004 *San Diego: An Introduction to the Region*. Sunbelt Publications; 4th edition.

Raven-Jennings, Shelly, and Brian F. Smith
1999 *Report of Excavations at CA-SDI-4608: Subsistence and Technology Transitions during the Mid-to-Late Holocene in San Diego County.* Brian F. Smith and Associates, Poway, California. Prepared for City of Poway. Report on file at the South Coastal Information Center, San Diego State University.

Rondeau, Michael F., James Cassidy, and Terry L. Jones
2007 Colonization Technologies: Fluted Projectile Points and the First Californians. In *California Prehistory: Colonization, Culture, and Complexity*, edited by Terry L. Jones and Kathryn A. Klar. AltaMira Press, Lanham, Maryland.

Rogers, Malcolm J.
1939 *Early Lithic Industries of the Lower Basin of the Colorado River and Adjacent Desert Areas*. San Diego Museum of Man Papers No. 3. San Diego Museum of Man.

1966 *Ancient Hunters of the Far West*, edited by Richard F. Pourade, pp. 21–108. Copley Press, La Jolla, California.

Rogers, Thomas H.
1965 *Geologic Map of California, Santa Ana Sheet*. California Division of Mines and Technology, Sacramento.

San Diego Association of Governments (SANDAG)
2015 San Diego Forward: The Regional Plan. October 2. Electronic document available at: http://www.sdforward.com/pdfs/EIR_Final/FinalEnvironmentalImpactReport-completedocument.pdf.

San Diego History Center
2020 *Timeline of San Diego History*. Electronic document available at: https://sandiegohistory.org/archives/biographysubject/timeline/, accessed July 2020.

Schaefer, Jerry
1994 The Challenge of Archaeological Research in the Colorado Desert: Recent Approaches and Discoveries. *Journal of California and Great Basin Anthropology* 16 (1):60–80.

2006 *A Class I Cultural Resources Inventory of the Truckhaven Geothermal Leasing Area, Imperial County, California.* Report prepared for Ecology and Environmental, Inc., San Diego, California. Prepared by ASM Affiliates, Inc., Carlsbad, California.

Schaefer, Jerry, and Don Laylander
2007 The Colorado Desert: Ancient Adaptations to Wetlands and Wastelands. In *California Prehistory: Colonization, Culture, and Complexity*, edited by Terry L. Jones and Kathryn A. Klar. Altamira Press, Lanham, Maryland.

Shumway, George, Carl L. Hubbs, and James R. Moriarty
1961 Scripps Estates Site, San Diego, California: A La Jolla Site Dated 5,460 to 7,370 Years Before the Present. *Annals of the New York Academy of Sciences* 93(3):37–132.

Smith, Brian F., and James R. Moriarty
1985 *The Excavations at Site W-20, the Sierra del Mar Project. A Site Occupied by the La Jolla Complex from 7,140 B.P. (5,190 B.C.) to 2,355 B.P. (400 B.C.) on the Shores of Los Peñasquitos Lagoon near Del Mar, California*. Brian F. Smith and Associates, Poway. Prepared for Dr. Victor Fargo, Fargo Industries. Report on file at the South Coastal Information Center, San Diego State University.

Sparkman, Philip Stedman
1908 The Culture of the Luiseño Indians. *University of California Publications in American Archaeology and Ethnology* 8(4):187-234.

Stebbins, Robert C.
1966 A Field Guide to Western Reptiles and Amphibians. Houghton Mifflin Company, Boston.

Strand, Rudolph G.
1962 *Geologic Map of California, San Diego-El Centro Sheet*. California Division of Mines and Technology, Sacramento.

Sutton, Mark Q., and Donn R. Grenda
2012 Defining Level 1 at Malaga Cove (CA-LAN-138), Alta California. *California Archaeology* 4(1):123–144.

True, D. L.
1958 An Early Complex in San Diego County, California. *American Antiquity* 23(3): 255–263.

1970 *Investigation of a Late Prehistoric Complex in Cuyamaca Rancho State Park, San Diego County, California*. Monograph 1. Archaeological Survey, University of California, Los Angeles.

1980 The Pauma Complex in Northern San Diego County: 1978. *Journal of New World Archaeology* 3(4): 1–30. Institute of Archaeology, University of California, Los Angeles.

1990 Site Locations and Water Supply: A Perspective from Northern San Diego County, California. *Journal of New World Archaeology* 7(4):37–60.

True, D. L., and Eleanor Beemer
1982 Two Milling Stone Inventories from Northern San Diego County, California. *Journal of California and Great Basin Anthropology* 4(2):233–261.

True, D. L., and Georgie Waugh
1982 Proposed Settlement Shifts during San Luis Rey Times: Northern San Diego County, California. *Journal of California and Great Basin Anthropology* 4(1):34–54.

True, D. L., and Paul D. Bouey
1990 Gladishill: A Probable San Dieguito Camp near Valley Center, California. *Journal of New World Archaeology* VII (4):1–28.

Vaughan, Sheila J.
1982 *A Replicative Systems Analysis of the San Dieguito Component at the C.W. Harris Site.* Master's thesis, Department of Anthropology, University of Nevada, Las Vegas.

Wade, Sue, Stephen R. Van Wormer, and Heather Thomson
2009 *240 Years of Ranching: Historical Research, Field Surveys, Oral Interviews, Significance Criteria, and Management Recommendations for Ranching Districts and Sites in the San Diego Region*. California State Parks.

Wallace, William J.
1955 A Suggested Chronology for Southern California Coastal Archaeology. *Southwestern Journal of Anthropology* 11:214-230.

Warren, Claude N.
1967 The San Dieguito Complex: A Review and Hypothesis. *American Antiquity* 32:168-185.

1968 Cultural Tradition and Ecological Adaptation on the Southern California Coast. In *Archaic Prehistory in the Western United States*, edited by C. Irwin-Williams, pp. 1–14. Eastern New Mexico Contributions in Anthropology 1(3). Portales, New Mexico.

1987 The San Dieguito and La Jolla: Some Comments. In, *San Dieguito – La Jolla: Chronology and Controversy*, edited by D.R. Gallegos, pp. 73–85. San Diego County Archaeological Society Research Paper No. 1.

2012 Environmental Stress and Subsistence Intensification: Late La Jolla on the San Diego Coast (3000 B.C. to A.D. 500). *California Archaeology* 4(1):39-54.

Warren, Claude N. (editor)
1966 *The San Dieguito Type Site: M. J. Rogers' 1938 Excavation on the San Dieguito River*. San Diego Museum Paper No. 6, San Diego, California.

Warren, Claude N., and H. T. Ore
2011 The Age of the San Dieguito Artifact Assemblage at the C. W. Harris Site. *Journal of California and Great basin Anthropology* 31(1):81-97.

Warren, Claude N., and D. L. True
1961 The San Dieguito Complex and Its Place in San Diego County Prehistory. *Archaeological Survey Annual Report*, *1960–1961*, pp. 246–291. University of California, Los Angeles.

Warren, Claude N., D. L. True, Ardith A. Eudey
1961 Early Gathering Complexes of Western San Diego County. *Archaeological Survey Annual Report, 1960–1961*, pp. 1–106. University of California, Los Angeles.

Warren, Claude N., Gretchen Siegler, and Frank Dittmer
1998 Paleoindian and Early Archaic Periods. In *Prehistoric and Historic Archaeology of Metropolitan San Diego: A Historic Properties Background Study*. Prepared for the Metropolitan Wastewater Department, City of San Diego. ASM Affiliates, Encinitas, California.

Weber, David
1992 *The Spanish Frontier in North America*. Yale University Press.

Weber, Harold F.
1963 *Geology and Mineral Resources of San Diego County, California*. County Report 3. California Division of Mines and Geology, San Francisco.

White, Raymond C.
1963 Luiseño Social Organization. *University of California Publications in American Archaeology and Ethnology* 48(2):91-194.

Wilke, Philip J.
1978 *Late Prehistoric Human Ecology at Lake Cahuilla, Coachella Valley, California.* Contributions of the University of California Archaeological Research Facility, No. 38. Berkeley, California.

Wilke, Phillip J., and Meg McDonald
1989 Prehistoric Use of Rock-Lined Cache Pits: California Deserts and Southwest. *Journal of California and Great Basin Anthropology* 11(1):50–73.

Willey, Loraine M., and Christy Dolan
2004 *Above and Below the Valley: Report on Data Recovery at San Vicente Reservoir, San Diego County, California.* EDAW, San Diego. Prepared for the San Diego County Water Authority. Report on file at the South Coastal Information Center, San Diego State University.

Williams, Brian
2014 *Archeological Research Analysis at SDI-7074 within San Diego Gas & Electric Company's East County Substation Project (ECSP), San Diego County, California*. Report prepared by ASM Affiliates, submitted to the Bureau of Land Management, El Centro, CA, and SDG&E, Alpine, CA.

This page intentionally left blank

Appendix D

Air Quality Technical Report

HELIX Environmental Planning

County of San Diego Integrated Vector Management Program

Air Quality Technical Report

November 2021 | 00187.00124.001 (CSD-05.24)

Prepared for:

County of San Diego
Department of Environmental Health
Vector Control Program
5570 Overland Avenue, Suite 102
San Diego, CA 92123

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

County of San Diego Integrated Vector Management Program

Air Quality Technical Report

Prepared for:

County of San Diego
Department of Environmental Health
Vector Control Program
5570 Overland Avenue, Suite 102
San Diego, CA 92123

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

November 2021 | 00187.00124.001 (CSD-05.24)

TABLE OF CONTENTS

Section **Page**

TABLE OF CONTENTS (cont.)

LIST OF APPENDICES

LIST OF FIGURES

LIST OF TABLES

ACRONYMS AND ABBREVIATIONS

$\mu g/m^3$	micrograms per cubic meter
AQIA	Air Quality Impact Analysis
BMPs	best management practices
CAA	Clean Air Act (Federal)
CAAQS	California Ambient Air Quality Standard
CalEPA	California Environmental Protection Agency
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAA	California Clean Air Act
CDPH	California Department of Public Health
CEQA	California Environmental Quality Act
CO	carbon monoxide
County	County of San Diego
CPA	Community Planning Area
DEH	Department of Environmental Health
DPM	diesel particulate matter
°F	degrees Fahrenheit
H_2S	hydrogen sulfide
IVMP	Integrated Vector Management Program
lbs	pounds
LOS	level of service
NAAQS	National Ambient Air Quality Standard
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
O_3	ozone
OEHHA	Office of Environmental Health Hazard Assessment
Pb	lead
PM	particulate matter
PM_{10}	coarse particulate matter equal to or less than 10 microns in diameter
$PM_{2.5}$	fine particulate matter equal to or less than 2.5 microns in diameter

ACRONYMS AND ABBREVIATIONS (cont.)

ROG	reactive organic gas
SANDAG	San Diego Association of Governments
SCAQMD	South Coast Air Quality Management District
SDAB	San Diego Air Basin
SDAPCD	San Diego County Air Pollution Control District
SIP	State Implementation Plan
SLT	screening-level threshold
SO_2	sulfur dioxide
TACs	toxic air contaminants
USEPA	U.S. Environmental Protection Agency
VCP	Vector Control Program
VOC	volatile organic compound
WRCC	Western Regional Climate Center

EXECUTIVE SUMMARY

This report presents an assessment of potential air quality impacts associated with the proposed County of San Diego (County) Department of Environmental Health (DEH), Vector Control Program's (VCP) Integrated Vector Management Program (IVMP; Proposed Project). The evaluation addresses the potential for air pollutant emissions during implementation of the Proposed Project. The IVMP carries out a full range of vector control activities, practices, and procedures to protect the public from vector-borne diseases and public nuisances while simultaneously protecting the environment. For the purposes of this analysis, the Proposed Project is the ongoing implementation of the IVMP, which would continue to comprehensively approach vector control through various techniques, including surveillance and monitoring, source reduction (i.e., physical control), source treatment (i.e., biological and chemical controls), public education and outreach, and disease diagnostics. The IVMP is managed by County staff, governed by the County Board of Supervisors, and implemented within a service area that includes all unincorporated areas within the county, as well as the 18 incorporated cities.

The Proposed Project would result in emissions of air pollutants during the ongoing implementation of the IVMP. Implementation of the IVMP does not include the construction or renovation of habitable structures, stationary sources, or infrastructure. Therefore, for the purpose of this report, the Proposed Project would not result in construction activities or associated impacts. Grading and vegetation clearing are herein analyzed as operational emissions since they are considered ongoing activities under the IVMP. In addition, operation of on-road fleet vehicles, watercraft, aircraft, portable equipment, and small equipment associated with surveillance and monitoring, source reduction, and source treatment activities would result in emissions of criteria pollutants from engine exhaust during IVMP implementation. Emission estimates found all criteria pollutants would be below the daily thresholds and impacts would be less than significant.

Implementation of the Proposed Project would be consistent with the San Diego Air Pollution Control District (SDAPCD) Ozone Attainment Plan and would not result in cumulatively considerable emissions of nonattainment air pollutants that would exceed the screening level thresholds.

The Proposed Project would not result in the exposure of sensitive receptors to substantial emissions of pollutants, toxic air contaminants, or odors. The Proposed Project would not result in the degradation of roadway intersections such that emissions of carbon monoxide (CO) would exceed state or federal standards that would result in a CO hotspot. Impacts would be less than significant; therefore, no mitigation measures or design considerations would be required.

This page intentionally left blank

1.0 INTRODUCTION

1.1 PURPOSE OF THE REPORT

The County of San Diego (County) Department of Environmental Health (DEH), Vector Control Program (VCP) is a public health program that was established to monitor and control vectors that transmit diseases and create public nuisances within San Diego County. For the purposes of the Proposed Project, a vector is defined as any animal capable of spreading disease or producing human discomfort or injury, including, but not limited to, mosquitoes, flies, mites, ticks, other arthropods, and rodents and other vertebrates (California Health and Safety Code Section 2002[k]).The VCP is managed by County staff, governed by the County Board of Supervisors, and implemented within a service area that includes all 18 incorporated cities and unincorporated areas of San Diego County. The VCP serves to reduce exposure to vectors and vector-borne diseases in a manner that minimizes risks to people, property and the environment through a coordinated set of activities collectively known as the Integrated Vector Management Program (IVMP). The IVMP carries out a full range of vector control activities, practices, and procedures to protect the public from vector-borne diseases and public nuisances while allowing for the inclusion of progressive and emerging vector control techniques, tools and materials. For the purposes of this analysis, the Proposed Project consists of the ongoing implementation of the IVMP.

This report analyzes potential air quality impacts associated with implementation of the IVMP, which includes an evaluation of existing conditions in the Proposed Project vicinity and an assessment of associated potential impacts.

1.2 PROJECT LOCATION AND DESCRIPTION

1.2.1 Project Location

The IVMP service area is defined by the boundaries of San Diego County (Figure 1, *Regional Map*; Figure 2, *Integrated Vector Management Program Service Area*). The county is bordered by Orange and Riverside counties to the north, Imperial County to the east, the Pacific Ocean to the west, and the U.S./Mexico International Border to the south. The service area encompasses approximately 4,261 square miles, and includes all unincorporated areas within the county, as well as the 18 incorporated cities (Carlsbad, Chula Vista, Coronado, Del Mar, El Cajon, Encinitas, Escondido, Imperial Beach, La Mesa, Lemon Grove, National City, Oceanside, Poway, San Diego, San Marcos, Santee, Solana Beach, and Vista). The unincorporated portion of the county is divided into 23 planning areas. Fourteen of the planning areas are referred to as Community Planning Areas (CPAs) and nine areas are called Subregional Planning Areas (Subregions). The CPAs are Alpine, Bonsall, County Islands, Fallbrook, Julian, Lakeside, Pendleton/De Luz, Rainbow, Ramona, San Dieguito, Spring Valley, Sweetwater, Valle de Oro, and Valley Center. The nine Subregions are Central Mountain, Crest/Dehesa/Harbison Canyon/Granite Hills, Desert, Jamul/Dulzura, Mountain Empire, North County Metropolitan (Metro), North Mountain, Otay, and Pala/Pauma Valley. The location and extent of specific activities implemented under the IVMP are evaluated based on the site-specific situation and dictated by the targeted vector, regulatory requirements, and applicable management approaches.

1.2.2 Project Description

Under the Proposed Project, the IVMP would continue to comprehensively implement vector control through various techniques, including surveillance and monitoring, source reduction (i.e., physical control), source treatment (i.e., biological and chemical controls), public education and outreach, and disease diagnostics. Each of these techniques would be applied to the applicable vectors under the IVMP, including disease-transmitting mosquitoes (i.e., *Culex* spp., *Aedes* spp., and *Anopheles* spp.); nuisance mosquitoes (i.e., not disease-transmitting); vectors associated with mammalian disease reservoirs (i.e., ticks and rodents); and other nuisance species (e.g., eye gnats not on commercial organic farms) deemed necessary for control as approved by the VCP. The five core services of the IVMP include: (1) early detection of public health risks through comprehensive vector surveillance and testing; (2) control and reduction of vectors that transmit diseases to humans or create public nuisance; (3) dissemination of information regarding tools for prevention, protection, and reporting of vectors that transmit diseases; (4) appropriate and timely response to vector-related customer complaints; and (5) detection of vector-borne pathogens. The objectives of the IVMP are to:

1. Protect public health, well-being, and economic effects from vectors throughout San Diego County by applying integrated vector management practices.

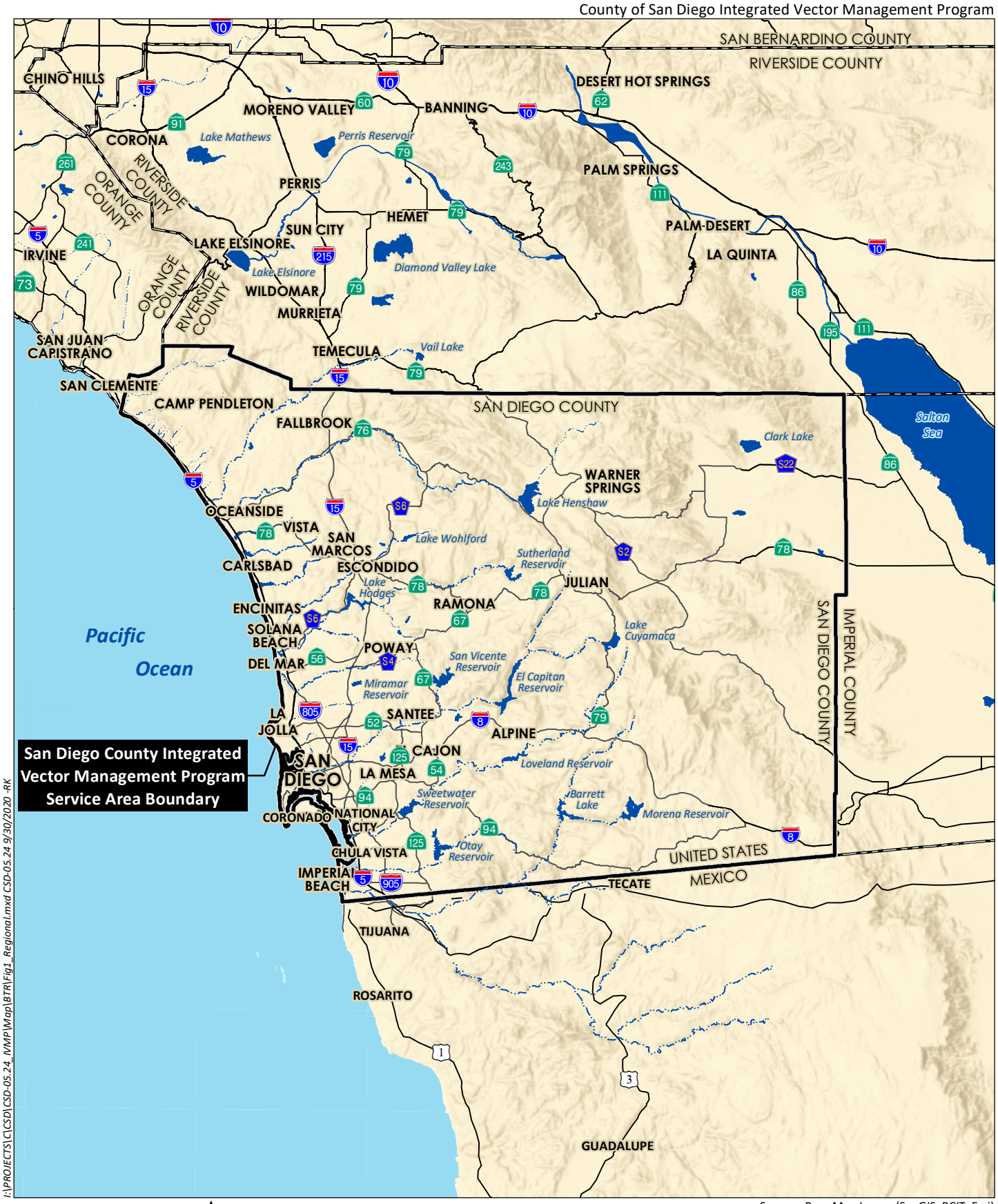
2. Implement effective and efficient integrated vector management practices in a manner that balances environmental impacts with the need to protect the public from vector-borne diseases and nuisances.

3. Coordinate with other regional vector control districts throughout California as well as State and federal public health and environmental protection agencies to allow for the inclusion of progressive and emerging vector control activities and technologies.

Vector control and surveillance activities are conducted by VCP staff under standard operating procedures and use a risk-based approach to determine appropriate levels of response to each vector of concern. The IVMP incorporates various vector management principles and techniques from guidance documents that are regularly updated, such as the VCP's annual *Mosquito, Vector and Disease Control Assessment Engineer's Report* (hereafter referred to as Engineer's Report); *West Nile Virus Strategic Response Plan*; and *Aedes Transmitted Disease Strategic Response Plan* (County 2020a, 2018a and 2018b, respectively), as well as procedural documents such as the *Mosquito Breeding Site Access Standard Operating Procedure* (County 2014). A general discussion of the key IVMP activities is discussed below.

Surveillance and Monitoring

Vector surveillance, monitoring, and diagnostics are needed to assess location and abundance of vector populations and species so that data-informed decisions can be made. Vector surveillance involves monitoring vector populations and habitat, their disease pathogens, and human/vector interactions. Vector surveillance provides the VCP with valuable information about which vector species are present or likely to occur, locations in which they may occur, abundance, and if they are carrying disease(s). The information obtained from surveillance is evaluated against treatment and risk-based response criteria to decide when and where to implement vector control measures, and to help form action plans that can also assist in reducing the risk of contracting disease or causing nuisance. Vector surveillance can

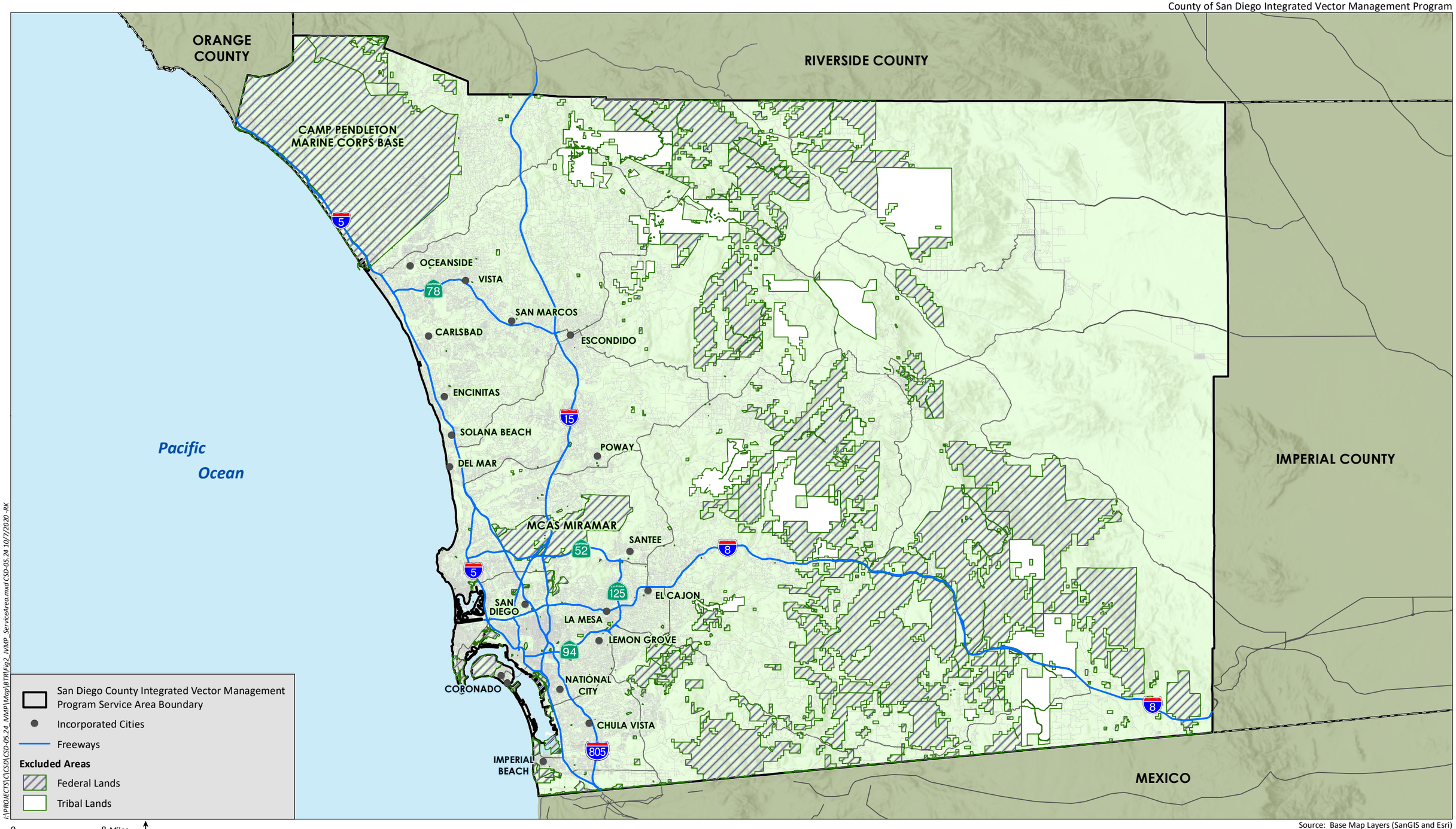


HELIX Environmental Planning

Regional Location

Figure 1

County of San Diego Integrated Vector Management Program



Source: Base Map Layers (SanGIS and Esri)

I:\PROJECTS\CLCSD\CSD-05.24_IVMP\Map\BTR\Fig2_IVMP_ServiceArea.mxd CSD-05.24 10/7/2020 -RK

HELIX Environmental Planning

Integrated Vector Management Program Service Area

Figure 2

help minimize the area to which control techniques may be applied by directing activities to the areas where they are needed.

The VCP monitors disease-carrying animals such as mosquitoes, ticks, and rodents, as well as other pests including flies on commercial poultry ranches, within the IVMP service area. Monitoring includes such techniques as setting traps to determine abundance and species of mosquitoes; testing mosquitoes for presence of disease; collecting and testing dead birds for West Nile virus; and conducting surveys via ground vehicles, aircraft (including piloted and unmanned), watercraft, and remote sensing equipment to evaluate mosquito-breeding sources. Surveillance is also conducted for ticks and rodents.

The VCP operates the Vector Disease and Diagnostic Laboratory that provides diagnostic testing to support the VCP, which helps in the evaluation of public health risk and appropriate responses and or treatments. The VCP tests vector specimens from the field for numerous diseases that could be a risk to public health.

Source Reduction

Source reduction (i.e., environmental modification) techniques are used to reduce vector-breeding sources such as habitat and other areas of harborage. Source reduction primarily involves physical control techniques that eliminate or reduce standing water including, but not limited to, ground disturbance (e.g., grading), vegetation management (including physical removal and/or herbicide application), water control, and other maintenance activities. Trapping and removal of vectors is also a form of source reduction.

Source Treatment

Source treatment includes biological and chemical controls of vectors. Specifically, this includes the use of mosquito fish (*Gambusia affinis*) and application of pesticides, such as larvicides and adulticides to reduce larval and adult mosquito populations, respectively. The type and location of biological and chemical control vary based on different factors, including, but not limited to, the vector species and growth stage, environment, disease presence, and risk level to public health. Any pesticides applied within waterbodies defined by federal and state regulations as waters of the U.S. and/or State are conducted in accordance with the Statewide National Pollutant Discharge Elimination System (NPDES) Permit for Biological and Residual Pesticide Discharges to Waters of the U.S. from Vector Control Applications (Order No. 2016-0039-DWQ, General Permit No. CA990004). Methods of application include, but are not limited to, backpack applicators, truck-mounted equipment, or other motorized vehicles (e.g., piloted and unmanned aircraft, watercraft). Source treatment of non-mosquito vectors can include, but are not limited to, chemical controls applied to mammal vectors such as rodents and mammal-related disease carriers such as ticks, fleas, and other arthropods. When pesticides are applied, label requirements are followed by VCP staff.

Public Education and Outreach

VCP staff conduct public education and outreach activities to increase public awareness of steps to prevent and protect against disease-carrying vectors. VCP staff distribute educational materials, provide informational displays and presentations, use social media and informational emails, and conduct media campaigns to provide the public with this knowledge.

Emerging Vector Control Strategies

Vector management strategies are updated as new information becomes available and are adapted and applied to new or emerging vectors as they arise. All vector control methods are based on empirical data, scientific evidence, published research, current state and federal guidelines, expert guidance, and the VCP's experience conducting vector control activities. The IVMP integrates progressive and emerging vector control activities and materials established in coordination with other regional vector control districts and research institutions throughout California, as well as state and federal agencies such as the California Department of Public Health, California Environmental Protection Agency (CalEPA), the U.S. Environmental Protection Agency (USEPA), and the Centers for Disease Control and Prevention (CDC). Emerging vector control strategies that may be implemented to address future public health risks and public nuisances could include, but not be limited to, increased or advanced/early source prevention and/or reduction, surveillance, or physical/biological/chemical controls, depending on the assessment.

1.3 BEST MANAGEMENT PRACTICES

The IVMP follows the best management practices (BMPs) described in State guidance documents, such as the *Best Management Practices for Mosquito Control in California* (California Department of Public Health [CDPH]; 2012), *Best Management Practices for Mosquito Control on California State Properties* (CDPH 2008), and *California Mosquito-Borne Virus Surveillance and Response Plan* (CDPH 2020), which detail vector control and pesticide application procedures. In addition, the County integrates BMPs into the IVMP serving as a comprehensive management framework for implementation of individual activities. BMPs implemented as part of the IVMP demonstrate the County's commitment to avoid or minimize impacts to the maximum extent feasible. The following BMPs will be implemented to reduce air pollutant emissions:

- Vehicles will only be driven on existing roadways, access roads, and existing unpaved access paths. Vehicles driven on levees to travel near aquatic areas (such as tidal marshes, sloughs, or channels) for surveillance or treatment activities will travel at speeds slow enough to avoid or minimize noise and the production of dust, typically 15 miles per hour or less.

- Engine idling times will be minimized by shutting off equipment and vehicles when not in use to the extent feasible.

- Vehicles and equipment will be maintained in accordance with manufacturer's specifications, including mufflers, engine operation, and tire inflation pressure to minimize rolling resistance.

- Vegetation trimming or removal, when necessary to provide access to vector habitat for surveillance and control activities, will be conducted by hand using handheld tools rather than gas-powered equipment or heavy machinery to minimize negative environmental effects.

- Where heavy equipment or machinery are necessary, measures will be taken, such as reducing turns by track-type vehicles, taking a minimum number of passes with equipment, identifying multiple points of entry, driving vehicles at low speed, and avoiding or minimizing operating on open mud and other soft areas.

In addition to the aforementioned BMPs, the County also engages in other environmental-friendly practices that further reduce potential air quality emissions, such as:

- The VCP assigns geographic locations, defined by continuous census tracts, to individual Certified Vector Control Technicians. Each geographic location is referred to as a 'district'. Work is assigned to each district, which defines the routine work area for Certified Vector Control Technicians within a specific geographic area, thereby reducing mileage driven, which reduces fuel consumption and vehicle emissions.

- Certified Vector Control Technicians use mobile phones to call customers and to access the County-produced Vector Mobile App. Real-time access to new work requests while in the field allows Certified Vector Control Technicians to conduct and complete additional work while remaining in the geographic area. When they are able to complete new work assignments while remaining in the current area, this eliminates the need to return at a later time, thereby reducing mileage driven, which reduces fuel consumption and vehicle emissions.

2.0 EXISTING CONDITIONS

2.1 EXISTING SETTING

San Diego County supports a wide range of climates, land uses, and habitat types. The SDAPCD identifies five distinct climate zones as occurring within the county: Maritime, Coastal, Transitional, Interior, and Desert. These climatic zones run nearly parallel to the coast, with each having its own specific characteristics.

- The Maritime zone consists of the area from the coastline to 5 miles east. This climate zone is dominated by the influence of the Pacific Ocean. The humidity is high and temperatures are mild. Low clouds, fog, and dampness are common.

- The Coastal zone encompasses the area approximately 5 miles from the coast to 15 miles inland. The ocean's influence is diminished but is still significant. The prevailing climate is semi-arid to arid. The climate in this region experiences frequent summer morning fog, clouds, and moderate humidity.

- The Transitional zone is located approximately 20 to 25 miles inland from the coast. The conditions can include brief Coastal-zone climate conditions, but normally consist of a warm, dry climate. Daytime humidity is low. Summer temperatures may reach 100 degrees Fahrenheit (°F), while winter days average approximately 70°F with frosty mornings.

- The Interior zone is located approximately 25 to 60 miles inland. This zone consists of topographical terrain that rises from 2,000 to 6,500 feet, produces dramatic contrasts in climate ranging from the 70s to the 90s.

- The Desert zone is located approximately 60 miles inland and extends to the eastern border of the state. Temperatures in the desert can reach 80°F in the winter and 120°F in the summer. (County 2008)

Land uses within San Diego County vary between the urban areas along the coast and the more rural areas in the eastern regions. Urban uses tend to consist of large-scale residential and commercial uses, as well as small-scale agricultural and industrial uses. Other land uses that occur throughout the county are environmentally constrained uses, such as floodplains, lagoons, lands that contain mineral resources, agricultural preserves, and areas containing rare and endangered plant and animal species, as well as national forest and state park lands. San Diego County also supports a wide range of habitat types including vegetated wetlands, oak woodlands, riparian scrub, wet meadows, freshwater marsh, tidal marshes, sloughs, lakes, ponds, sage scrub, chaparral, grassland habitats, and a variety of other upland and wetland habitats.

2.1.1 Sensitive Receptors

The California Air Resources Board (CARB) and the California Office of Environmental Health Hazard Assessment (OEHHA) have identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, infants (including in utero in the third trimester of pregnancy), and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis (CARB 2005; OEHHA 2015). Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved and are referred to as sensitive receptors. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. Due to the nature of the countywide VCP, sensitive receptors are located throughout the entirety of the IVMP service area. Due to the wide geographic dispersion of the IVMP activities and their short-term temporary nature at any particular location, no quantifiable risk to sensitive receptors or the general public would be posed by program-related emissions.

2.2 CLIMATE AND METEOROLOGY

The climate in southern California, including the San Diego Air Basin (SDAB; defined as "All of San Diego County"),[1] is controlled largely by the strength and position of the subtropical high-pressure cell over the Pacific Ocean. Areas within 30 miles of the coast experience moderate temperatures and comfortable humidity. The general region possesses a mild climate tempered by cool sea breezes with light average wind speeds. This basin experiences warm summers, mild winters, infrequent rainfall, light winds, and moderate humidity. This usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. Precipitation occurs mostly during the winter and relatively infrequently during the summer (Western Regional Climate Center [WRCC] 2020).

Due to its climate, the SDAB experiences frequent temperature inversions (temperature increases as altitude increases, which is the opposite of general patterns). Temperature inversions prevent air close to the ground from mixing with the air above it. As a result, air pollutants are trapped near the ground. During the summer, air quality problems are created due to the interaction between the ocean surface and the lower layer of the atmosphere, creating a moist marine layer. An upper layer of warm air mass forms over the cool marine layer, preventing air pollutants from dispersing upward. Additionally, hydrocarbons and nitrogen dioxide (NO_2) react under strong sunlight, creating smog. Light, daytime winds, predominantly from the west, further aggravate the condition by driving the air pollutants inland,

[1] The San Diego Air Basin is defined in the California Code of Regulations, Title 17, §60110 (17 CCR 60110) as "All of San Diego County."

toward the foothills. During the fall and winter, air quality problems are created due to CO and NO_2 emissions. High NO_2 levels usually occur during autumn or winter, on days with summer-like conditions.

2.3 AIR POLLUTANTS OF CONCERN

2.3.1 Criteria Air Pollutants

Six air pollutants have been identified by the USEPA and CARB as being of concern both on a nationwide and statewide level: ground-level ozone (O_3), CO, NO_2, sulfur dioxide (SO_2), lead (Pb), and particulate matter (PM), which is subdivided into two classes based on particle size: coarse PM equal to or less than 10 microns in diameter (PM_{10}) and fine PM equal to or less than 2.5 microns in diameter ($PM_{2.5}$). These air pollutants are commonly referred to as "criteria air pollutants" because air quality standards are regulated using human health and environmentally based criteria. Criteria pollutants can be emitted directly from sources (primary pollutants; e.g., CO, SO_2, PM_{10}, $PM_{2.5}$, and lead), or they may be formed through chemical and photochemical reactions of precursor pollutants (secondary pollutants; e.g., ozone and NO_2) in the atmosphere. The principal precursor pollutants of concern are reactive organic gasses ([ROGs])[2] also known as volatile organic compounds [VOCs])[2] and nitrogen oxides (NO_X).

The descriptions of sources and general health effects for each of the criteria air pollutants are shown in Table 1, *Summary of Common Sources and Human Health Effects of Criteria Air Pollutants,* based on information provided by the California Air Pollution Control Officers Association (CAPCOA 2018). Specific adverse health effects to individuals or population groups induced by criteria pollutant emissions are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, and the number and character of exposed individuals [e.g., age, gender]). Criteria pollutant precursors (ROG and NO_X) affect air quality on a regional scale, typically after significant delay and distance from the pollutant source emissions. Health effects related to ozone and NO_2 are therefore, the product of emissions generated by numerous sources throughout a region. As such, specific health effects from these criteria pollutant emissions cannot be directly correlated to the incremental contribution from a single project.

[2] CARB defines and uses the term ROGs while the USEPA defines and uses the term VOCs. The compounds included in the lists of ROGs and VOCs and the methods of calculation are slightly different. However, for the purposes of estimating criteria pollutant precursor emissions, the two terms are often used interchangeably.

Table 1
SUMMARY OF COMMON SOURCES AND HUMAN HEALTH EFFECTS OF CRITERIA AIR POLLUTANTS

Pollutant	Major Human Sources	Human Health Effects
Carbon Monoxide (CO)	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
Nitrogen Dioxide (NO_2)	A reddish-brown gas formed during fuel combustion for motor vehicles and industrial sources. Sources include motor vehicles, electric utilities, and other sources that burn fuel.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Contributes to climate change and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere.
Ozone (O_3)	Formed by a chemical reaction between reactive organic gases (ROGs) and nitrogen oxides (NO_X) in the presence of sunlight. Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, gasoline storage and transport, solvents, paints, and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing, and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield. Damages rubber, some textiles and dyes.
Particulate Matter (PM_{10} and $PM_{2.5}$)	Produced by power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles, and other sources.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
Sulfur Dioxide (SO_2)	A colorless, nonflammable gas formed when fuel containing sulfur is burned, when gasoline is extracted from oil, or when metal is extracted from ore. Examples are petroleum refineries, cement manufacturing, metal processing facilities, locomotives, and ships.	Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid which can damage marble, iron and steel. Damages crops and natural vegetation. Impairs visibility. Precursor to acid rain.
Lead	Metallic element emitted from metal refineries, smelters, battery manufacturers, iron and steel producers, use of leaded fuels by racing and aircraft industries.	Anemia, high blood pressure, brain and kidney damage, neurological disorders, cancer, lowered IQ. Affects animals, plants, and aquatic ecosystems.

Source: CAPCOA 2018

2.3.2 Toxic Air Contaminants

Toxic air contaminants (TACs) are a diverse group of air pollutants that may cause or contribute to an increase in deaths or in serious illness or that may pose a present or potential hazard to human health. TACs can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage, or short-term acute effects such as eye watering, respiratory irritation (a cough), runny nose, throat pain, and headaches. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For carcinogenic TACs, there is no level of exposure that is considered safe and impacts are evaluated in

terms of overall relative risk expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

The Health and Safety Code (§39655, subdivision (a)) defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant, pursuant to subsection (b) of Section 112 of the Federal Clean Air Act (CAA) (42 U.S.C. Section 7412[b]) is a TAC. Under State law, CalEPA, acting through CARB, is authorized to identify a substance as a TAC if it determines the substance is an air pollutant that may cause or contribute to an increase in mortality or an increase in serious illness, or that may pose a present or potential hazard to human health.

Diesel engines emit a complex mixture of air pollutants, including both gaseous and solid material. The solid material in diesel exhaust is known as diesel particulate matter (DPM). Almost all DPM is 10 microns or less in diameter, and 90 percent of DPM is less than 2.5 microns in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung. In 1998, the CARB identified DPM as a toxic air contaminant based on published evidence of a relationship between diesel exhaust exposure and lung cancer and other adverse health effects. DPM has a significant impact on California's population—it is estimated that about 70 percent of total known cancer risk related to air toxics in California is attributable to DPM (CARB 2018).

2.4 REGULATORY SETTING

Air quality is defined by ambient air concentrations of specific pollutants identified by the USEPA to be of concern with respect to health and welfare of the general public. The USEPA is responsible for enforcing the Federal CAA of 1970 and its 1977 and 1990 Amendments. The CAA required the USEPA to establish National Ambient Air Quality Standards (NAAQS), which identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. In response, the USEPA established both primary and secondary standards for criteria pollutants. Primary standards are designed to protect human health with an adequate margin of safety. Secondary standards are designed to protect property and the public welfare from air pollutants in the atmosphere. The CAA allows states to adopt ambient air quality standards and other regulations provided they are at least as stringent as federal standards. CARB has established the more stringent California Ambient Air Quality Standards (CAAQS) for the six criteria pollutants through the California Clean Air Act of 1988 (CCAA), and has established CAAQS for additional pollutants, including sulfates, hydrogen sulfide (H_2S), vinyl chloride and visibility-reducing particles. Table 2, *California and National Ambient Air Quality Standards,* shows the federal and state ambient air quality standards.

Table 2
CALIFORNIA AND NATIONAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	Federal Standards	
			Primary[a]	Secondary[b]
O_3	1 Hour	0.09 ppm (180 µg/m^3)	–	–
	8 Hour	0.070 ppm (137 µg/m^3)	0.070 ppm (147 µg/m^3)	Same as Primary
PM_{10}	24 Hour	50 µg/m^3	150 µg/m^3	Same as Primary
	AAM	20 µg/m^3	–	–
$PM_{2.5}$	24 Hour	–	35 µg/m^3	Same as Primary
	AAM	12 µg/m^3	12.0 µg/m^3	Same as Primary
CO	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	–
	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	–
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)	–	–
NO_2	AAM	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary
	1 Hour	0.18 ppm (339 µg/m^3)	0.100 ppm (188 µg/m^3)	–
SO_2	24 Hour	0.04 ppm (105 µg/m^3)	–	–
	3 Hour	–	–	0.5 ppm (1,300 µg/m^3)
	1 Hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)	–
Lead	30-day Avg.	1.5 µg/m^3	–	–
	Calendar Quarter	–	1.5 µg/m^3	Same as Primary
	Rolling 3-month Avg.	–	0.15 µg/m^3	
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per km – visibility ≥ 10 miles (0.07 per km – ≥30 miles for Lake Tahoe)	**No Federal Standards**	
Sulfates	24 Hour	25 µg/m^3		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)		
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m^3)		

Source: CARB 2016
Note: More detailed information in the data presented in this table can be found at the CARB website (www.arb.ca.gov).
[a] National Primary Standards: The levels of air quality necessary, within an adequate margin of safety, to protect the public health.
[b] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
O_3 = ozone; ppm: parts per million; µg/m^3 = micrograms per cubic meter; PM_{10} = large particulate matter; AAM: Annual Arithmetic Mean; $PM_{2.5}$ = fine particulate matter; CO = carbon monoxide; mg/m^3 = milligrams per cubic meter; NO_2 = nitrogen dioxide; SO_2 = sulfur dioxide; km= kilometer; – = No Standard.

Areas that do not meet the NAAQS or the CAAQS for a particular pollutant are considered to be "nonattainment areas" for that pollutant. As of August 3, 2018, the SDAB has been classified as a nonattainment area for the 2015 8-hour NAAQS for ozone. The SDAB is also currently classified as a nonattainment area under the CAAQS for ozone, PM_{10}, and $PM_{2.5}$. The SDAB is an attainment area for the NAAQS and CAAQS for all other criteria pollutants (SDAPCD 2020b).

CARB is the state regulatory agency with authority to enforce regulations to both achieve and maintain the NAAQS and CAAQS. The local air district has the primary responsibility for the development and

implementation of rules and regulations designed to attain the NAAQS and CAAQS, as well as the permitting of new or modified sources, development of air quality management plans, and adoption and enforcement of air pollution regulations. The SDAPCD is the local agency responsible for the administration and enforcement of air quality regulations in San Diego County.

The SDAPCD and San Diego Association of Governments (SANDAG) are responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the SDAB. SDAPCD has prepared an Attainment Plan for San Diego County (SDAPCD 2020a) demonstrating how the SDAB will further reduce air pollutant emissions to attain the current NAAQS for ozone. The Attainment Plan, in combination with those from all other California nonattainment areas with serious (or worse) air quality problems, is submitted to the CARB, which develops the California State Implementation Plan (SIP). The Attainment Plan was approved by the SDAPCD Board on October 14, 2020 and by CARB on November 19, 2020.

The Attainment Plan relies on information from CARB and SANDAG, including mobile and area source emissions, as well as information regarding projected growth in the county, to project future emissions and then determine from that the strategies necessary for the reduction of emissions through regulatory controls. CARB mobile source emission projections and SANDAG growth projections are based on population and vehicle trends and land use plans developed by the cities and by the County as part of the development of the County's General Plan (County 2011).

The SIP relies on the same information from SANDAG to develop emission inventories and emission reduction strategies that are included in the attainment demonstration for the air basin.

The current federal and state attainment status for SDAB is shown in Table 3, *Federal and State Air Quality Designation.*

Table 3
FEDERAL AND STATE AIR QUALITY DESIGNATION

Criteria Pollutant	Federal Designation	State Designation
Ozone (1-hour)	(No federal standard)	Nonattainment
Ozone (8-hour)	Nonattainment	Nonattainment
Carbon Monoxide (CO)	Attainment	Attainment
PM_{10}	Unclassified	Nonattainment
$PM_{2.5}$	Attainment	Nonattainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	(No federal standard)	Attainment
Hydrogen Sulfide	(No federal standard)	Unclassifiable
Visibility	(No federal standard)	Unclassifiable

Source: SDAPCD 2020b

2.5 BACKGROUND AIR QUALITY

The SDAPCD operates a network of ambient air monitoring stations throughout the county. The purpose of the monitoring stations is to measure ambient concentrations of the pollutants and determine

whether the ambient air quality meets the CAAQS and the NAAQS. The monitoring stations collectively measure the ambient concentrations of six criteria air pollutants: ozone, NO_2, SO_2, CO, PM_{10}, and $PM_{2.5}$.

Air quality is affected by a variety of existing sources in the IVMP service area. Light motor vehicles, diesel powered construction equipment, and commercial trucks are a source of NO_X and ROGs, along with PM_{10} and $PM_{2.5}$ pollutants. Noncombustion sources of PM_{10} and $PM_{2.5}$ include fugitive dust from roads, construction, demolition, and earthmoving. Commercial and general aviation aircraft also generate emissions that affect air quality. Ozone is a secondary pollutant that is not emitted directly by sources, but rather is formed by a reaction between NO_X and ROGs in the presence of sunlight. Reductions in ozone concentrations are dependent upon reducing emissions of these precursors. Major sources of ozone precursors are motor vehicles and other mobile equipment, solvent use, and electric utilities operation.

3.0 SIGNIFICANCE CRITERIA AND ANALYSIS METHODOLOGY

3.1 SIGNIFICANCE CRITERIA

The significance thresholds for air quality are based specifically on criteria provided in the County's Guidelines for Determining Significance (2007), which are based on Appendix G, Section III of the State California Environmental Quality Act (CEQA) Guidelines. Accordingly, County Guidelines state that a project would have a significant environmental impact if it would:

1. Conflict with or obstruct the implementation of the San Diego Regional Air Quality Strategy or applicable portions of the SIP;

2. Result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation;

3. Result in a cumulatively considerable net increase for which the SDAB is in non-attainment of NAAQS or CAAQS;

4. Expose sensitive receptors (including, but not limited to, residences, schools, hospitals, resident care facilities, or day-care centers) to substantial pollutant concentrations; and/or

5. Create objectionable odors affecting a substantial number of people.

To determine whether a project would (a) result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation, or (b) result in a cumulatively considerable net increase of PM_{10} or exceed quantitative thresholds for ozone precursors, NO_X and ROGs, project emissions may be evaluated based on the quantitative emission thresholds established by the SDAPCD. County Guidelines identify as screening-level thresholds (SLTs) the Air Quality Impact Analysis (AQIA) trigger levels for new or modified stationary sources from the SDAPCD Rules 20.2 and 20.3. County Guidelines also use the screening threshold of 55 pounds (lbs) per day or 10 tons per year as a significance threshold for $PM_{2.5}$.

For CEQA purposes, these screening criteria can be used as numeric methods to demonstrate that a project's total emissions would not result in a significant impact to air quality. The screening thresholds are included in Table 4, *Screening-Level Thresholds for Air Quality Impact Analysis*.

Table 4
SCREENING-LEVEL THRESHOLDS FOR AIR QUALITY IMPACT ANALYSIS

Pollutant	Total Emissions		
Construction Emissions (pounds per day)			
Respirable Particulate Matter (PM_{10})	100		
Fine Particulate Matter ($PM_{2.5}$)	55		
Oxides of Nitrogen (NO_X)	250		
Oxides of Sulfur (SO_X)	250		
Carbon Monoxide (CO)	550		
Volatile Organic Compounds (VOCs)	75		
Operational Emissions			
	Pounds per Hour	**Pounds per Day**	**Tons per Year**
Respirable Particulate Matter (PM_{10})	---	100	15
Fine Particulate Matter ($PM_{2.5}$)	---	55	10
Oxides of Nitrogen (NO_X)	25	250	40
Oxides of Sulfur (SO_X)	25	250	40
Carbon Monoxide (CO)	100	550	100
Lead and Lead Compounds	---	3.2	0.6
Volatile Organic Compounds (VOCs)	---	75	13.7
Toxic Air Contaminant Emissions			
Excess Cancer Risk	1 in 1 million 10 in 1 million with T-BACT		
Non-Cancer Hazard	1.0		

Source: County 2007; SDAPCD Rules 20.2 and 20.3.
T-BACT = Toxics-Best Available Control Technology

3.2 METHODOLOGY AND ASSUMPTIONS

3.2.1 Air Pollutant-generating Activities

Under the Proposed Project, the IVMP would continue the use of the following vector control techniques: surveillance and monitoring, source reduction (i.e., physical control), source treatment (i.e., biological and chemical controls), public education and outreach, and disease diagnostics. Emerging vector control strategies that may be implemented to address future public health risks and public nuisances could include, but not be limited to, increased or advanced/early source prevention and/or reduction, surveillance, or physical/biological/chemical controls. Of these, surveillance and monitoring, source reduction, and source treatment are the only vector control techniques evaluated in this analysis, as the other techniques (i.e., public education and outreach and disease diagnostics) would be unlikely to result in air pollutant emissions.

Surveillance and monitoring activities include evaluation of mosquito-breeding areas by conducting surveys via ground vehicles, aircraft (including piloted and unmanned), watercraft, and remote sensing equipment; trapping of mosquitoes and rodents; and testing of collected samples for vector-borne diseases. The reduction of vector-breeding sources primarily involves physical control techniques that

eliminate or reduce standing water that functions as mosquito breeding habitat. These techniques include, but are not limited to, vegetation management including trimming and removal of vegetation and application of herbicides; removal of sediment; water control; and other maintenance activities.

Source treatment, which includes biological and chemical controls used to manage and reduce vectors, can include the use of natural predators, parasites, or pathogens to reduce immature mosquito numbers (biological controls) and application of pesticides that target larvae (larvicides) or adult mosquitos (adulticides). The primary technique employed by the VCP for biological controls is the application of mosquito fish in artificial mosquito breeding sources such as ornamental ponds, rain barrels, horse troughs, neglected swimming pools, and spas to reduce the abundance of mosquitoes. Pesticides are applied through on-ground techniques such as by foot with backpack applicators, vehicle-mounted equipment, or watercraft by qualified certified technicians, or by aircraft (including piloted and unmanned) when land-based methods are not practicable due to the size of the area to be treated or impediments to access. As described in Section 1.3, the IVMP follows the BMPs described in State guidance documents, such as the *Best Management Practices for Mosquito Control in California* (CDPH 2012), *Best Management Practices for Mosquito Control on California State Properties* (CDPH 2008), and in the *California Mosquito-Borne Virus Surveillance and Response Plan* (CDPH 2020), which detail vector control and pesticide application procedures.

3.2.2 Analysis Methodology

The air quality impact analysis contained in this report was prepared in accordance with the methodologies provided by the County as included in the *Guidelines for Determining Significance and Report Format and Content Requirements for Air Quality* (County 2007). Implementation of the IVMP does not propose new development; operations would be evaluated at a programmatic level based on the types of equipment that may be used during surveillance and monitoring, source reduction, and source treatment activities, as described below. Due to the programmatic nature of this document, the exact locations and extent of all activities to be conducted under the IVMP are not known at this time. As such, site-specific evaluation of air pollutant emissions sources and potential impacts is beyond the scope of this programmatic evaluation.

Operation of on-road fleet vehicles, watercraft, aircraft, portable equipment, and small equipment would result in emissions of criteria pollutants from engine exhaust. Equipment lists and annual activity schedules were provided by DEH (County 2020b). Some equipment would not generate criteria pollutant emissions and were therefore excluded from this analysis. Excluded equipment includes hand operated tools, attachments, and other equipment such as battery-powered traps. The list of equipment to be used in the IVMP air pollutant emissions analysis is provided in Appendix A. Emission calculations were performed using the most recent and applicable emission factors published by CARB and the USEPA. A list of emissions generating equipment, assumed usage, and emission factor source is provided in Table 5, *IVMP Equipment Usage*.

Table 5
IVMP EQUIPMENT USAGE

Equipment Name	Equipment Type	Peak Daily Usage per Unit (hours)	Emission Factor Source
Land Surveillance and Application/Management			
Dump Truck[1]	Dump Truck	6	CARB's OFFROAD
Caterpillar 320[1]	Excavator	4	CARB's OFFROAD
Polaris Sportsman[1]	ATV Quad with Plow	4	CARB's OFFROAD
John Deere 6420[1]	Tractor	4	CARB's OFFROAD
Caterpillar D3[1]	Tracked Dozer	4	CARB's OFFROAD
Woodchipper[1]	Processing Equipment	4	CARB's OFFROAD
Arrow ULV (gas)	Hand Sprayer/Fogger	4	CARB's OFFROAD
Colt ULV (gas)	Hand Sprayer/Fogger	4	CARB's OFFROAD
Maruyama	Granular applicator	2	CARB's OFFROAD
Buffalo turbine	Vehicle-mounted sprayer	2	CARB's OFFROAD
Skid Sprayer	Vehicle-mounted sprayer	2	CARB's OFFROAD
Fleet Vehicle	Medium Duty Truck	79 miles	CARB's EMFAC
Fleet Vehicle	Light Duty Truck	113 miles	CARB's EMFAC
Water Surveillance and Application/Management			
Marshmaster MM-1LX[1]	Aquatic Weed Harvester	1	CARB's OFFROAD
Pond Pump – WB15	Pond Pump	2	CARB's OFFROAD
Boat motor – 5 horsepower four stroke engine	Outboard Motor	3	CARB's PC2014
Boat motor – 9.9 horsepower four stroke engine	Outboard Motor	3	CARB's PC2014
Aerial Surveillance and Application/Management			
Bell 206B	Aircraft	8.5	USEPA AP-42
Robinson R44 Raven II	Aircraft	8.5	USEPA AP-42
Piper Chieftain	Aircraft	6	USEPA AP-42

Source: County 2020b

[1] Equipment/vehicle is not listed in County's existing inventory (2020b), but could potentially be used, if needed.

Note: this table only includes equipment that is gas-powered. Equipment that is battery-operated is excluded since no air quality emissions would occur.

4.0 PROJECT IMPACT ANALYSIS

4.1 CONFORMANCE TO THE REGIONAL AIR QUALITY STRATEGY

4.1.1 Guideline for the Determination of Significance

Would the project conflict with or obstruct the implementation of the San Diego Regional Air Quality Strategy or applicable portions of the SIP?

The Attainment Plan outlines SDAPCD's plans and control measures designed to attain the CAAQS for ozone. In addition, the SDAPCD relies on the SIP, which includes the SDAPCD's plans and control measures for attaining the ozone NAAQS. These plans accommodate emissions from all sources, including natural sources, through the implementation of control measures, where feasible, on stationary sources to attain the standards. Mobile sources are regulated by the USEPA and the CARB,

and the emissions and reduction strategies related to mobile sources are considered in the Attainment Plan and SIP.

The Attainment Plan relies on information from the CARB and SANDAG, including projected growth in the county, mobile source, area source, and all other source emissions in order to project future emissions and determine the strategies necessary for the reduction of stationary source emissions through regulatory controls. The CARB mobile source emission projections and SANDAG growth projections are based on population and vehicle trends and land use plans developed by the cities and the county. As such, projects that propose development that is consistent with the growth anticipated by the local jurisdictions' general plans would be consistent with the Attainment Plan. In the event that a project proposes development that is less dense than anticipated within the General Plan, the project would likewise be consistent with the Attainment Plan. If a project proposes development that is greater than that anticipated in the County General Plan and SANDAG's growth projections upon which the Attainment Plan is based, the Project would be in conflict with the Attainment Plan and SIP and might have a potentially significant impact on air quality. This situation would warrant further analysis to determine whether the Project and the surrounding projects exceed the growth projections used in the Attainment Plan for the specific subregional area.

4.1.2 Significance of Impacts Prior to Mitigation

The proposed IVMP would continue to comprehensively approach vector control through various techniques, including surveillance and monitoring, source reduction (i.e., physical control), source treatment (i.e., biological and chemical controls), public education and outreach, and disease diagnostics. The IVMP would not generate growth, increase population or associated vehicle usage, or require the alteration of an existing land use designation through amendments to general plans or changes to zoning.

In addition to the policies in the General Plan, the Proposed Project would be required to comply with the SDAPCD Rules and Regulations. The Attainment Plan also assess the impact of all emission sources and all control measures, including those under the jurisdiction of the CARB (e.g., on-road motor vehicles, off-road vehicles and equipment, and consumer products). Therefore, the Proposed Project would not conflict with or obstruct the implementation of the Attainment Plan or applicable portions of the SIP. Impacts would be less than significant.

4.1.3 Mitigation Measures and Design Considerations

Impacts would be less than significant; therefore, no mitigation measures would be required.

4.1.4 Conclusions

The Proposed Project would not conflict with or obstruct the implementation of the applicable portions of the SIP and the impact would be less than significant.

4.2 CONFORMANCE TO FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS

4.2.1 Construction Impacts

Under the Proposed Project, the IVMP would continue to comprehensively approach vector control through various techniques. The IVMP does not include the construction or renovation of habitable structures, stationary sources, or infrastructure. Therefore, for the purpose of this report, the Proposed Project would not result in construction activities or associated impacts.

Grading and vegetation clearing are analyzed further below in Section 4.2.2, *Operational Impacts* since they are considered ongoing activities under the IVMP.

4.2.1.1 Guideline for the Determination of Significance

Would the project construction result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation?

To determine whether a project would result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation, project emissions may be evaluated based on the quantitative emission thresholds established by the SDAPCD (as shown in Table 4).

4.2.1.2 Significance of Impacts Prior to Mitigation

Implementation of the IVMP does not include the construction or renovation of habitable structures, stationary sources, or infrastructure. Grading and vegetation clearing are analyzed as operational emissions since they are considered ongoing activities under the IVMP. Therefore, the Proposed Project would result in no construction-related impacts.

4.2.1.3 Mitigation Measures and Design Considerations

Impacts would be less than significant; therefore, no mitigation measures would be required.

4.2.1.4 Conclusions

The Proposed Project does not include the construction or renovation of habitable structures, stationary sources, or infrastructure. Therefore, for the purpose of this report, the Proposed Project would not result in construction activities or associated impacts.

4.2.2 Operational Impacts

The proposed IVMP would continue to comprehensively approach vector control through various techniques, including surveillance and monitoring, source reduction (i.e., physical control), source treatment (i.e., biological and chemical controls), public education and outreach, and disease diagnostics. Operation of on-road fleet vehicles, watercraft, aircraft, portable equipment, and small equipment would result in air pollutant emissions, as evaluated below.

4.2.2.1 Guideline for the Determination of Significance

Based on the County Guidelines (2007), operational impacts would be potentially significant if they exceed the quantitative screening-level thresholds for criteria pollutants as listed in Table 4.

4.2.2.2 Significance of Impacts Prior to Mitigation

Table 6, *Estimated Daily Operational Emissions*, presents the summary of estimated operational emissions for the Proposed Project. Operational emission calculations are provided in Appendix A.

Table 6
ESTIMATED DAILY OPERATIONAL EMISSIONS

Category	Pollutant Emissions (pounds per day)					
	ROG	**CO**	**NO_X**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Land Surveillance and Application/ Management	5.90	137.03	11.71	0.08	1.97	1.66
Water Surveillance and Application/ Management	1.60	4.14	2.03	<0.01	0.33	0.33
Air Surveillance and Application/ Management	0.02	0.31	74.63	0.15	1.04	0.68
Total Daily Maximum Emissions	**7.52**	**141.48**	**88.37**	**0.23**	**3.34**	**2.67**
Screening-Level Thresholds	*75*	*550*	*250*	*250*	*100*	*55*
Exceed Thresholds?	***No***	***No***	***No***	***No***	***No***	***No***

Source: Calculations using emission factors from CARB EMFAC2017, ORION Off-Road database, and EPA AP-42 (USEPA 2000; calculation data is provided in Appendix A).
ROG = reactive organic gas; CO = carbon monoxide; NO_X = oxides of nitrogen; SO_X = oxides of sulfur; PM_{10} = particulate matter 10 microns or less in diameter; $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

As shown in Table 6, emissions of criteria pollutants and ozone precursors during IVMP implementation would not exceed the daily screening thresholds. Therefore, the Proposed Project's operational emissions would not result in a violation of the NAAQS or CAAQS and impacts would be less than significant.

4.2.2.3 Mitigation Measures and Design Considerations

Impacts would be less than significant; therefore, no mitigation measures would be required.

4.2.2.4 Conclusions

The Proposed Project's operational emissions would not exceed the County screening threshold levels. Therefore, operation of the Proposed Project would not result in a violation of the NAAQS or CAAQS and impacts would be less than significant.

4.3 CUMULATIVELY CONSIDERABLE NET INCREASE OF CRITERIA POLLUTANTS

4.3.1 Construction Impacts

Under the Proposed Project, the IVMP would continue to comprehensively approach vector control through various techniques. No construction is proposed as part of IVMP implementation. Although construction of habitable structures, stationary sources, or infrastructure are not proposed, construction-type activities (such as grading, vegetation clearing, etc.) are proposed. Those activities are analyzed below under Operational Impacts.

4.3.1.1 Guidelines for the Determination of Significance

The following threshold is used for the assessment of cumulative construction impacts:

Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the San Diego Air Basin is non-attainment under an applicable Federal or State Ambient Air Quality Standard (including emissions which exceed the SLTs for ozone precursors)?

4.3.1.2 Significance of Impacts Prior to Mitigation

Implementation of the IVMP does not include the construction or renovation of habitable structures, stationary sources, or infrastructure. Therefore, for the purpose of this report, the Proposed Project would not result in construction activities or associated impacts.

4.3.1.3 Mitigation Measures and Design Considerations

Impacts would be less than significant; therefore, no mitigation measures would be required.

4.3.1.4 Conclusions

The Proposed Project would result in no construction activities or associated impacts.

4.3.2 Operational Impacts

Based on the County Guidelines (2007), a project would result in a cumulatively significant impact if the project results in a significant contribution to the cumulative increase in criteria pollutants and ozone precursors. In accordance with the guidelines, a project that does not conform to the Attainment Plan and/or has a significant direct impact on air quality with regard to operational emissions of nonattainment pollutants would also have a cumulatively considerable net increase. Also, projects that cause road intersections to operate at or below a level of service (LOS) E and create a CO hotspot would also create a cumulatively considerable net increase of CO.

4.3.2.1 Guidelines for the Determination of Significance

The following thresholds are used for the assessment of cumulatively considerable net increases in air pollutants during the operational phase:

Would the project conform to the Regional Air Quality Strategy and/or have a significant direct impact on air quality with regard to operational emissions of PM_{10}, $PM_{2.5}$, NO_X, and/or VOCs, which would also have a significant cumulatively considerable net increase in these emissions?

Would the project cause road intersections or roadway segments to operate at or below LOS E and create a CO hotspot that would result in a cumulatively considerable net increase of CO?

4.3.2.2 Significance of Impacts Prior to Mitigation

As described in Sections 4.1 and 4.2, the Proposed Project would be consistent with the Attainment Plan and would not exceed the County's screening-level thresholds. In addition, the use of ground vehicles to travel between County offices and vector sites is considered an ongoing use of the IVMP. Accordingly, the Proposed Project would not cause intersections or roadway segments to operate at or below LOS E. As discussed in Section 4.4.2 below (Sensitive Receptors), the Proposed Project would not create a CO hotspot that would result in a cumulatively considerable net increase of CO. Therefore, operation of the Proposed Project would not create a cumulatively considerable net increase in criteria pollutants associated with IVMP operations and impacts would be less than significant.

4.3.2.3 Mitigation Measures and Design Considerations

Impacts would be less than significant; therefore, no mitigation would be required.

4.3.2.4 Conclusions

Cumulative impacts associated with the Proposed Project's operational emissions of criteria pollutants and ozone precursors would be less than cumulatively considerable.

4.4 IMPACTS TO SENSITIVE RECEPTORS

4.4.1 Guidelines for the Determination of Significance

Would the project expose sensitive receptors to substantial pollutant concentrations?

The following guidelines of significance are used by the County to address the above question:

> *Would the project place sensitive receptors near CO hotspots or creates CO hotspots near sensitive receptors?*
>
> *Would project implementation result in exposure to TACs resulting in a maximum incremental cancer risk greater than 1 in 1 million without application of Toxics-Best Available Control Technology or a health hazard index greater than 1 and, thus, be deemed as having a potentially significant impact?*

4.4.2 Significance of Impacts Prior to Mitigation

4.4.2.1 CO Concentrations (CO Hotspot Analysis)

CO hotspots are most likely to occur at heavily congested intersections where idling vehicles increase localized CO concentrations. The County Guidelines call for a CO hotspot analysis if a project would:

- Place sensitive receptors within 500 feet of a signalized intersection with a LOS of E or F, with peak-hour trips exceeding 3,000 vehicles; or

- Cause intersections to operate at LOS E or F, with peak-hour trips exceeding 3,000 vehicles.

The Proposed Project includes implementation of surveillance and monitoring, source reduction (i.e., physical control), source treatment (i.e., biological and chemical controls), public education and outreach, and disease diagnostics for the purpose of protecting public health, well-being, and economic effects from vectors throughout San Diego County. The Proposed Project does not include the construction or placement of sensitive receptors. Furthermore, the Proposed Project would not require a high number of workers or generate a high number of worker commute trips to and from individual sites that would cause intersections to operate at LOS E or F. Thus, there would be no potential for a CO hot spot to be created. Impacts would be less than significant.

4.4.2.2 Toxic Air Contaminants

Under the Proposed Project, the IVMP would continue to comprehensively approach vector control through various techniques. Implementation of the IVMP does not include the construction or renovation of habitable structures, stationary sources, or infrastructure. Therefore, for the purpose of this report, the Proposed Project does not include construction or operation of stationary sources of TACs. Ongoing implementation would result in the use of heavy-duty equipment and vehicles. These vehicles and equipment could generate the TAC DPM. Generation of DPM from equipment and vehicles typically occurs in a localized area for short periods of time. Because activities and subsequent emissions vary depending on the location and activity being performed, the emissions to which nearby receptors are exposed would also vary. The dose (of TAC) to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance in the environment and the extent of exposure a person has with the substance; a longer exposure period to a fixed amount of emissions would result in higher health risks. Current models and methodologies for conducting health risk assessments are best suited for evaluation of long duration TAC emissions with predictable schedules and locations. These assessment models do not correlate well with the highly variable nature of the Proposed Project. Because the Proposed Project would result in variable emissions occurring in locations throughout the county, the dose of any individual receptor is expected to be minimal. Additionally, the Proposed Project would implement the BMPs described in Section 1.3, above, including limiting of idling time and proper maintenance of vehicles and equipment to reduce air pollutant emissions. Therefore, the Proposed Project would not generate substantial emissions of TACs.

4.4.3 Mitigation Measures and Design Considerations

Impacts would be less than significant; therefore, no mitigation measures are required.

4.4.4 Conclusions

Impacts to sensitive receptors would be less than significant.

4.5 ODOR IMPACTS

4.5.1 Guidelines for the Determination of Significance

Based on the County Guidelines (2007), a project would have a significant impact if it would:

> *Generate objectionable odors or place sensitive receptors next to existing objectionable odors that would affect a considerable number of persons or the public.*

SDAPCD Rule 51 (Public Nuisance) and California Health & Safety Code, Division 26, Part 4, Chapter 3, Section 541700, prohibit the emission of any material that causes nuisance to a considerable number of persons or endangers the comfort, health, or safety of the public. In addition, the County's Zoning Ordinance, Section 6318, states: "all commercial and industrial uses shall be so operated as to not emit matter causing unpleasant odors which are perceptible by the average person at or beyond any lot line of the lot containing said uses." Projects required to obtain permits from SDAPCD, typically industrial and some commercial projects, are evaluated by SDAPCD staff for potential odor nuisance and conditions may be applied (or control equipment required), where necessary, to prevent occurrence of public nuisance.

4.5.2 Significance of Impacts Prior to Mitigation

According to the SCAQMD *CEQA Air Quality Handbook*, land uses associated with odor complaints include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting activities, refineries, landfills, dairies, and fiberglass molding operations (SCAQMD 1993). The Proposed Project does not include construction or operation of any of these uses.

Ongoing implementation of various IVMP activities could potentially include diesel equipment operating at various sites or unburned hydrocarbons in equipment exhaust that may generate nuisance odors; however, since equipment would operate at various locations throughout each individual IVMP activity area, and because operation near existing sensitive receptors would be temporary and intermittent, impacts associated with odors would be less than significant.

4.5.3 Mitigation Measures and Design Considerations

Impacts would be less than significant; therefore, no mitigation measures are required.

4.5.4 Conclusions

Due to the nature of the proposed IVMP, there would be no significant odorous air emissions anticipated from construction or operation; therefore, impacts would be less than significant.

5.0 SUMMARY OF RECOMMENDED PROJECT DESIGN FEATURES, IMPACTS, AND MITIGATION

In summary, the Proposed Project would result in the emission of air pollutants during the ongoing implementation of the IVMP. The analysis evaluated the potential for adverse impacts to the ambient air quality due to the Proposed Project emissions. No construction is proposed as part of IVMP

implementation. Operation of on-road fleet vehicles, watercraft, aircraft, portable equipment, and small equipment would result in emissions of criteria pollutants from engine exhaust. As detailed in Section 4.1, the Proposed Project would not conflict with or obstruct the implementation of the Attainment Plan or applicable portions of the SIP. The Proposed Project emissions of criteria pollutants and ozone precursors during IVMP implementation would not exceed the daily screening thresholds, and operational emissions would not result in a violation of the NAAQS or CAAQS. Air pollutant emissions impacts would be less than significant. The Proposed Project would not result in cumulatively considerable emissions of nonattainment air pollutants that would exceed the screening level thresholds. Impacts associated with exposure of sensitive receptors to substantial pollutant concentrations would be less than significant. Impacts from odors would be less than significant.

5.1 MITIGATION MEASURES AND DESIGN CONSIDERATIONS

Because the Proposed Project would not result in significant impacts, no mitigation or design considerations are required.

6.0 REFERENCES

California Air Resources Board (CARB). 2018. Overview: Diesel Exhaust and Health. Available at: https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health.

2017. Off-road Diesel Analysis & Inventory, OFFROAD2017 - ORION Web Database. https://www.arb.ca.gov/orion/. Accessed July 2020.

2016. Ambient Air Quality Standards. May 4. Available at: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf.

2005. Air Quality and Land Use Handbook: A Community Health Perspective. Available at: https://www.arb.ca.gov/ch/handbook.pdf.

California Department of Public Health (CDPH). 2020. California Mosquito-Borne Virus Surveillance and Response Plan.

2012. Best Management Practices for Mosquito Control in California. July. Available at: http://westnile.ca.gov/resources.php.

2008. Best Management Practices for Mosquito Control on California State Properties. June. Available at: http://westnile.ca.gov/resources.php.

California Pollution Control Officers Association (CAPCOA). 2018. Health Effects. Available at: http://www.capcoa.org/health-effects/. Accessed January 2019.

Office of Environmental Health Hazard Assessment (OEHHA). 2015. Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. Available at: https://oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0.

San Diego, County of. 2020a. County of San Diego Vector Control Program Mosquito, Vector and Disease Control Assessment Engineer's Report. Fiscal Year 2020-2021. June.

2020b. Vector Control Program Equipment Inventory. Provided by County 7/14/20. Fleet vehicle data reflects calendar year 2019 inventory/usage.

2018a. County of San Diego West Nile Virus Strategic Response Plan. April.

2018b. County of San Diego Aedes Transmitted Disease Strategic Response Plan. April.

2014. County of San Diego Vector Control Program Mosquito Breeding Site Access Standard Operating Procedure. November 21. [Subject to continuous revision.]

2011. General Plan. Land Use and Environmental Group, Department of Planning and Land Use, Department of Public Works. August. Available at: https://www.sandiego.gov/planning/genplan.

San Diego, County of (cont.)
2008. Fact Sheet: Climate and Smog. July. Available at: https://www.sandiegocounty.gov/content/dam/sdc/deh/Vector/pdf/chd_VHRP_Final_PEIR_incl_Errata_Att_A.pdf.

2007. Guidelines for Determining Significance and Report Format and Content Requirements – Air Quality. Land Use and Environmental Group, Department of Planning and Land Use, Department of Public Works. March 19.

San Diego Air Pollution Control District (SDAPCD). 2020a. 2020 Plan for Attaining the National Ambient Air Quality Standards for Ozone in San Diego County. October.

2020b. Attainment Status. Available at: https://www.sdapcd.org/content/sdc/apcd/en/air-quality-planning/attainment-status.html. Accessed July 2020

South Coast Air Quality Management District (SCAQMD). CEQA Air Quality Handbook. 1993.

U.S. Environmental Protection Agency (USEPA). 2000. AP-42, Fifth Edition Compilation of Air Pollutant Emissions Factors, Chapter 3.1 Stationary Gas Turbines.

Western Regional Climate Center (WRCC). 2020. Western U.S. Climate Summary – San Diego, Lindbergh Field (047740). Available at: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7740. Accessed July 2020.

7.0 LIST OF PREPARERS

Joanne M. Dramko, AICP	County-approved Air Quality Consultant
Victor Ortiz	Senior Air Quality/GHG Specialist
Brendan Sullivan	Air Quality/GHG Analyst
Yara Fisher	Project Manager

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

Appendix A

Emissions Calculation Sheets

Equipment	No. of Units	Frequency of Use (days/yr)	Peak Daily Usage per unit (hr/day or VMT/day)	Total Peak Daily Usage (hr/day or VMT/day)	Total Annual Average Usage (hr/yr or VMT/yr)
Land					
Handheld ULV Fogger	9	1	4	36	36
Maruyama MD155DX	9	10	2	18	180
Buffalo Turbine	1	12	2	2	24
Skid Sprayer	1	36	2	2	72
Dump Truck	1	55	6	6	330
Excavator	1	20	4	4	80
ATV Quad with Plow	1	8	4	4	32
Tractor	1	9	4	4	36
Tracked Dozer	1	12	4	4	48
Woodchipper	1	12	4	4	48
Fleet Vehicle (MDV)	28	101	79	2,209	178,447
Fleet Vehicle (LDT2)	27	87	113	3,050	212,310
Water					
Aquatic Weed Harvester	1	24	4	4	96
Honda Boat Motor - 5hp	1	20	3	3	60
Honda Boat Motor - 9.9hp	1	20	3	3	60
Honda Pond Pump	1	39	2	2	78
Air					
Bell 206B Helicopter	1	14	8.5	8.5	85.3
Robinson R44 Raven II Helicopter	1	10	8.5	8.5	50
Piper Chieftain	1	20	6	6	120
Total					

Equipment	Pounds per Unit									
	VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	CO_2	CH_4	N_2O	CO_2e
Land										
Handheld ULV Fogger	4.51E-02	7.40E-01	1.97E-02	6.54E-05	6.14E-04	6.12E-04	1.89E+00	2.56E-03	3.08E-03	2.87E+00
Maruyama MD155DX	5.55E-02	2.00E+00	3.52E-02	9.45E-05	2.76E-02	2.75E-02	3.31E+00	3.15E-03	4.19E-03	4.64E+00
Buffalo Turbine	1.38E-01	5.11E+00	7.87E-02	2.04E-04	6.69E-02	6.68E-02	8.05E+00	7.83E-03	6.43E-03	1.02E+01
Skid Sprayer	1.38E-01	5.11E+00	7.87E-02	2.04E-04	6.69E-02	6.68E-02	8.05E+00	7.83E-03	6.43E-03	1.02E+01
Dump Truck	1.49E-01	5.44E-01	7.47E-01	2.67E-03	2.71E-02	2.70E-02	2.72E+02	1.34E-02	0.00E+00	2.72E+02
Excavator	7.02E-02	6.63E-01	3.86E-01	1.26E-03	1.94E-02	1.93E-02	1.12E+02	6.33E-03	0.00E+00	1.12E+02
ATV Quad with Plow	7.63E-02	1.19E-01	2.27E-05	4.54E-04	9.20E-04	9.19E-04	2.53E-01	4.74E-03	8.56E-05	3.97E-01
Tractor	4.99E-02	2.94E+00	1.13E-01	4.99E-04	3.98E-03	3.97E-03	5.16E+01	2.82E-03	7.56E-03	5.40E+01
Tracked Dozer	8.33E-02	4.63E-01	4.90E-01	7.71E-04	3.70E-02	3.69E-02	6.58E+01	7.52E-03	0.00E+00	6.59E+01
Woodchipper	1.11E-01	4.26E+00	7.98E-02	2.07E-04	6.04E-02	6.02E-02	7.24E+00	6.29E-03	6.50E-03	9.34E+00
Fleet Vehicle (MDV)	6.43E-05	2.61E-03	2.76E-04	9.62E-06	1.03E-04	4.27E-05	9.72E-01	1.41E-05	2.08E-05	9.79E-01
Fleet Vehicle (LDT2)	4.50E-05	2.19E-03	2.25E-04	7.99E-06	1.02E-04	4.25E-05	8.08E-01	1.09E-05	1.78E-05	8.13E-01
Water										
Aquatic Weed Harvester	8.33E-02	4.63E-01	4.90E-01	7.71E-04	3.70E-02	3.69E-02	6.58E+01	7.52E-03	0.00E+00	6.59E+01
Honda Boat Motor - 5hp	2.07E-01	3.20E-01	9.73E-03	5.18E-05	2.99E-02	2.98E-02	1.82E+00	1.28E-02	2.11E-03	2.77E+00
Honda Boat Motor - 9.9hp	2.07E-01	3.20E-01	9.73E-03	5.18E-05	2.99E-02	2.98E-02	1.82E+00	1.28E-02	2.11E-03	2.77E+00
Honda Pond Pump	1.40E-02	1.86E-01	3.70E-03	2.69E-05	2.28E-03	2.28E-03	6.53E-01	8.67E-04	1.29E-03	1.06E+00
Air										
Bell 206B Helicopter	1.36E-03	1.09E-02	2.92E+00	5.15E-03	3.98E-02	2.59E-02	5.42E+02	1.50E-02	1.74E-02	5.47E+02
Robinson R44 Raven II Helicopter	1.36E-03	1.09E-02	2.92E+00	5.15E-03	3.98E-02	2.59E-02	5.42E+02	1.50E-02	1.74E-02	5.47E+02
Piper Chieftain	0.00E+00	2.00E-02	4.17E+00	1.00E-02	6.00E-02	4.00E-02	7.74E+02	2.00E-02	2.00E-02	7.80E+02
Total										

Equipment	Pounds per Day									
	VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	CO_2	CH_4	N_2O	CO_2e
Land										
Handheld ULV Fogger	1.62	26.65	0.71	0.00	0.02	0.02	68.17	0.09	0.11	103.49
Maruyama MD155DX	1.00	36.09	0.63	0.00	0.50	0.50	59.65	0.06	0.08	83.56
Buffalo Turbine	0.28	10.23	0.16	0.00	0.13	0.13	16.09	0.02	0.01	20.32
Skid Sprayer	0.28	10.23	0.16	0.00	0.13	0.13	16.09	0.02	0.01	20.32
Dump Truck	0.89	3.26	4.48	0.02	0.16	0.16	1,632.54	0.08	0.00	1,634.55
Excavator	0.28	2.65	1.54	0.01	0.08	0.08	448.48	0.03	0.00	449.12
ATV Quad with Plow	0.31	0.48	0.00	0.00	0.00	0.00	1.01	0.02	0.00	1.59
Tractor	0.20	11.78	0.45	0.00	0.02	0.02	206.54	0.01	0.03	215.83
Tracked Dozer	0.33	1.85	1.96	0.00	0.15	0.15	263.01	0.03	0.00	263.76
Woodchipper	0.44	17.03	0.32	0.00	0.24	0.24	28.97	0.03	0.03	37.34
Fleet Vehicle (MDV)	0.14	5.76	0.61	0.02	0.23	0.09	2,147.74	0.03	0.05	2,162.22
Fleet Vehicle (LDT2)	0.14	6.69	0.69	0.02	0.31	0.13	2,464.23	0.03	0.05	2,481.24
Water										
Aquatic Weed Harvester	0.33	1.85	1.96	0.00	0.15	0.15	263.01	0.03	0.00	263.76
Honda Boat Motor - 5hp	0.62	0.96	0.03	0.00	0.09	0.09	5.45	0.04	0.01	8.30
Honda Boat Motor - 9.9hp	0.62	0.96	0.03	0.00	0.09	0.09	5.45	0.04	0.01	8.30
Honda Pond Pump	0.03	0.37	0.01	0.00	0.00	0.00	1.31	0.00	0.00	2.12
Air										
Bell 206B Helicopter	0.01	0.09	24.80	0.04	0.34	0.22	4,603.59	0.13	0.15	4,651.98
Robinson R44 Raven II Helicopter	0.01	0.09	24.80	0.04	0.34	0.22	4,603.59	0.13	0.15	4,651.98
Piper Chieftain	0.00	0.12	25.02	0.06	0.36	0.24	4,642.26	0.12	0.12	4,681.02
Total	***7.53***	***137.15***	***88.37***	***0.23***	***3.34***	***2.67***	***21,477.16***	***0.92***	***0.80***	***21,740.78***

Equipment	Tons per Year						Metric Tons per Year			
	VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	CO_2	CH_4	N_2O	CO_2e
Land										
Handheld ULV Fogger	0.00	0.01	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.05
Maruyama MD155DX	0.00	0.18	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.38
Buffalo Turbine	0.00	0.06	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.11
Skid Sprayer	0.00	0.18	0.00	0.00	0.00	0.00	0.26	0.00	0.00	0.33
Dump Truck	0.02	0.09	0.12	0.00	0.00	0.00	40.73	0.00	0.00	40.78
Excavator	0.00	0.03	0.02	0.00	0.00	0.00	4.07	0.00	0.00	4.07
ATV Quad with Plow	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Tractor	0.00	0.05	0.00	0.00	0.00	0.00	0.84	0.00	0.00	0.88
Tracked Dozer	0.00	0.01	0.01	0.00	0.00	0.00	1.43	0.00	0.00	1.44
Woodchipper	0.00	0.10	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.20
Fleet Vehicle (MDV)	0.01	0.23	0.02	0.00	0.01	0.00	78.72	0.00	0.00	79.25
Fleet Vehicle (LDT2)	0.00	0.23	0.02	0.00	0.01	0.00	77.80	0.00	0.00	78.33
Water										
Aquatic Weed Harvester	0.00	0.02	0.02	0.00	0.00	0.00	2.86	0.00	0.00	2.87
Honda Boat Motor - 5hp	0.01	0.01	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.08
Honda Boat Motor - 9.9hp	0.01	0.01	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.08
Honda Pond Pump	0.00	0.01	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.04
Air										
Bell 206B Helicopter	0.00	0.00	0.12	0.00	0.00	0.00	20.96	0.00	0.00	21.18
Robinson R44 Raven II Helicopter	0.00	0.00	0.07	0.00	0.00	0.00	12.28	0.00	0.00	12.41
Piper Chieftain	0.00	0.00	0.25	0.00	0.00	0.00	42.11	0.00	0.00	42.47
Total	***0.07***	***1.24***	***0.68***	***0.00***	***0.04***	***0.03***	***282.73***	***0.01***	***0.01***	***284.94***

Appendix F

Noise Technical Report

Appendix E

Greenhouse Gas Emissions Technical Report

HELIX Environmental Planning

County of San Diego Integrated Vector Management Program

Greenhouse Gas Emissions Technical Report

November 2021 | 00187.00005.024 (CSD-05.24)

Prepared for:

County of San Diego
Department of Environmental Health
Vector Control Program
5570 Overland Avenue, Suite 102
San Diego, CA 92123

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

County of San Diego Integrated Vector Management Program

Greenhouse Gas Emissions Technical Report

Prepared for:

County of San Diego
Department of Environmental Health
Vector Control Program
5570 Overland Avenue, Suite 102
San Diego, CA 92123

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

November 2021 | 00187.00005.024 (CSD-05.24)

TABLE OF CONTENTS

Section **Page**

TABLE OF CONTENTS (cont.)

LIST OF APPENDICES

LIST OF FIGURES

LIST OF TABLES

ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
BMPs	best management practices
CAA	Clean Air Act (Federal)
CAFE	Corporate Average Fuel Economy
CalEEMod	California Emission Estimator Model
CalEPA	California Environmental Protection Agency
CalRecycle	California Department of Resources Recycling and Recovery
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CDPH	California Department of Public Health
CEQA	California Environmental Quality Act
CFCs	chlorofluorocarbons
CH_4	methane
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
County	County of San Diego
CPA	Community Planning Area
DEH	Department of Environmental Health
EO	Executive Order
EPIC	Energy Policy Initiative Center
°F	degrees Fahrenheit
GHG	greenhouse gas
GWP	global warming potential
HFCs	hydrofluorocarbons
IPCC	Intergovernmental Panel on Climate Change
IVMP	Integrated Vector Management Program
LCFS	Low Carbon Fuel Standard
MMT	million metric tons
mpg	miles per gallon
MT	metric ton

ACRONYMS AND ABBREVIATIONS (cont.)

N_2O	nitrous oxide
NASA	National Aeronautics and Space Administration
NHTSA	National Highway Traffic Safety Administration
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
PFCs	perfluorocarbons
ppm	parts per million
SANDAG	San Diego Association of Governments
SB	Senate Bill
SF_6	sulfur hexafluoride
VCP	Vector Control Program
VMT	vehicle miles traveled
USEPA	U.S. Environmental Protection Agency
WRI	World Resource Institute
ZEV	zero emissions vehicle

EXECUTIVE SUMMARY

This report evaluates the potential greenhouse gas (GHG) emission impacts associated with the proposed County of San Diego (County) Department of Environmental Health (DEH), Vector Control Program's (VCP) Integrated Vector Management Program (IVMP; Proposed Project). An estimate of the GHG emissions that would occur as a result of the Proposed Project implementation is provided. The IVMP carries out a full range of vector control activities, practices, and procedures to protect the public from vector-borne diseases and public nuisances while simultaneously protecting the environment. For the purposes of this analysis, the Proposed Project is the ongoing implementation of the IVMP, which would continue to comprehensively approach vector control through various techniques, including surveillance and monitoring, source reduction (i.e., physical control), source treatment (i.e., biological and chemical controls), public education and outreach, and disease diagnostics. The IVMP is managed by County staff, governed by the County Board of Supervisors, and implemented within a service area that includes all unincorporated areas within the county, as well as the 18 incorporated cities.

The Proposed Project would result in emissions of GHGs. Operation of on-road fleet vehicles, watercraft, aircraft, portable equipment, and small equipment associated with surveillance and monitoring, source reduction, and source treatment activities would result in emissions of GHGs from engine exhaust during IVMP implementation. However, implementation of the IVMP would result in annual emissions of 285 metric tons (MT) of carbon dioxide equivalents (CO_2e) per year, which is less than the threshold being applied to the Proposed Project, and therefore would result in less than significant impacts.

This page intentionally left blank

1.0 INTRODUCTION

1.1 PURPOSE OF THE REPORT

HELIX Environmental Planning, Inc. (HELIX) has completed this greenhouse gas (GHG) emissions technical report for the County of San Diego (County) Department of Environmental Health (DEH) Integrated Vector Management Program (IVMP; Proposed Project). The County DEH Vector Control Program (VCP) is a public health program that was established to monitor and control vectors that transmit diseases and create public nuisances within the county. For the purposes of the Proposed Project, a vector is defined as any animal capable of spreading disease or producing human discomfort or injury, including, but not limited to, mosquitoes, flies, mites, ticks, other arthropods, and rodents and other vertebrates (California Health and Safety Code Section 2002[k]).

The VCP is managed by County staff, governed by the County Board of Supervisors, and implemented within a service area that includes all 18 incorporated cities and unincorporated areas of San Diego County. The VCP serves to reduce exposure to vectors and vector-borne diseases in a manner that minimizes risks to people, property, and the environment through a coordinated set of activities collectively known as the IVMP. The IVMP carries out a full range of vector control activities, practices, and procedures to protect the public from vector-borne diseases and public nuisances while allowing for the inclusion of progressive and emerging vector control techniques, tools, and materials. For the purposes of this analysis, the Proposed Project consists of the ongoing implementation of the IVMP.

This report analyzes the significance of the IVMP's potential contribution of GHG emissions to statewide GHG emissions and GHG emissions reduction targets.

1.2 PROJECT LOCATION AND DESCRIPTION

1.2.1 Project Location

The IVMP service area is defined by the boundaries of San Diego County (Figure 1, *Regional Map*; Figure 2, *Integrated Vector Management Program Service Area*). The county is bordered by Orange and Riverside counties to the north, Imperial County to the east, the Pacific Ocean to the west, and the U.S./Mexico International Border to the south. The service area encompasses approximately 4,261 square miles, and includes all unincorporated area within the county, as well as the 18 incorporated cities (Carlsbad, Chula Vista, Coronado, Del Mar, El Cajon, Encinitas, Escondido, Imperial Beach, La Mesa, Lemon Grove, National City, Oceanside, Poway, San Diego, San Marcos, Santee, Solana Beach, and Vista). The unincorporated portion of the county is divided into 23 planning areas. Fourteen of the planning areas are referred to as Community Planning Areas (CPAs) and nine areas are called Subregional Planning Areas (Subregions). The CPAs are Alpine, Bonsall, County Islands, Fallbrook, Julian, Lakeside, Pendleton/De Luz, Rainbow, Ramona, San Dieguito, Spring Valley, Sweetwater, Valle de Oro, and Valley Center. The nine Subregions are Central Mountain, Crest/Dehesa/Harbison Canyon/Granite Hills, Desert, Jamul/Dulzura, Mountain Empire, North County Metropolitan (Metro), North Mountain, Otay, and Pala/Pauma Valley. The location and extent of specific activities implemented under the IVMP are evaluated based on the site-specific situation and dictated by the targeted vector, regulatory requirements, and applicable management approaches.

1.2.2 Project Description

Under the Proposed Project, the IVMP would continue to comprehensively implement vector control through various techniques, including surveillance and monitoring, source reduction (i.e., physical control), source treatment (i.e., biological and chemical controls), public education and outreach, and disease diagnostics. Each of these techniques would be applied to the applicable vectors under the IVMP, including disease-transmitting mosquitoes (i.e., Culex spp., Aedes spp., and *Anopheles* spp.); nuisance mosquitoes (i.e., not disease-transmitting); vectors associated with mammalian disease reservoirs (i.e., ticks and rodents); and other nuisance species (e.g., eye gnats not on commercial organic farms) deemed necessary for control as approved by the VCP. The five core services of the IVMP include: (1) early detection of public health risks through comprehensive vector surveillance and testing; (2) control and reduction of vectors that transmit diseases to humans or create public nuisance; (3) dissemination of information regarding tools for prevention, protection, and reporting of vectors that transmit diseases; (4) appropriate and timely response to vector-related customer complaints; and (5) detection of vector-borne pathogens. The objectives of the IVMP are to:

1. Protect public health, well-being, and economic effects from vectors throughout San Diego County by applying integrated vector management practices.

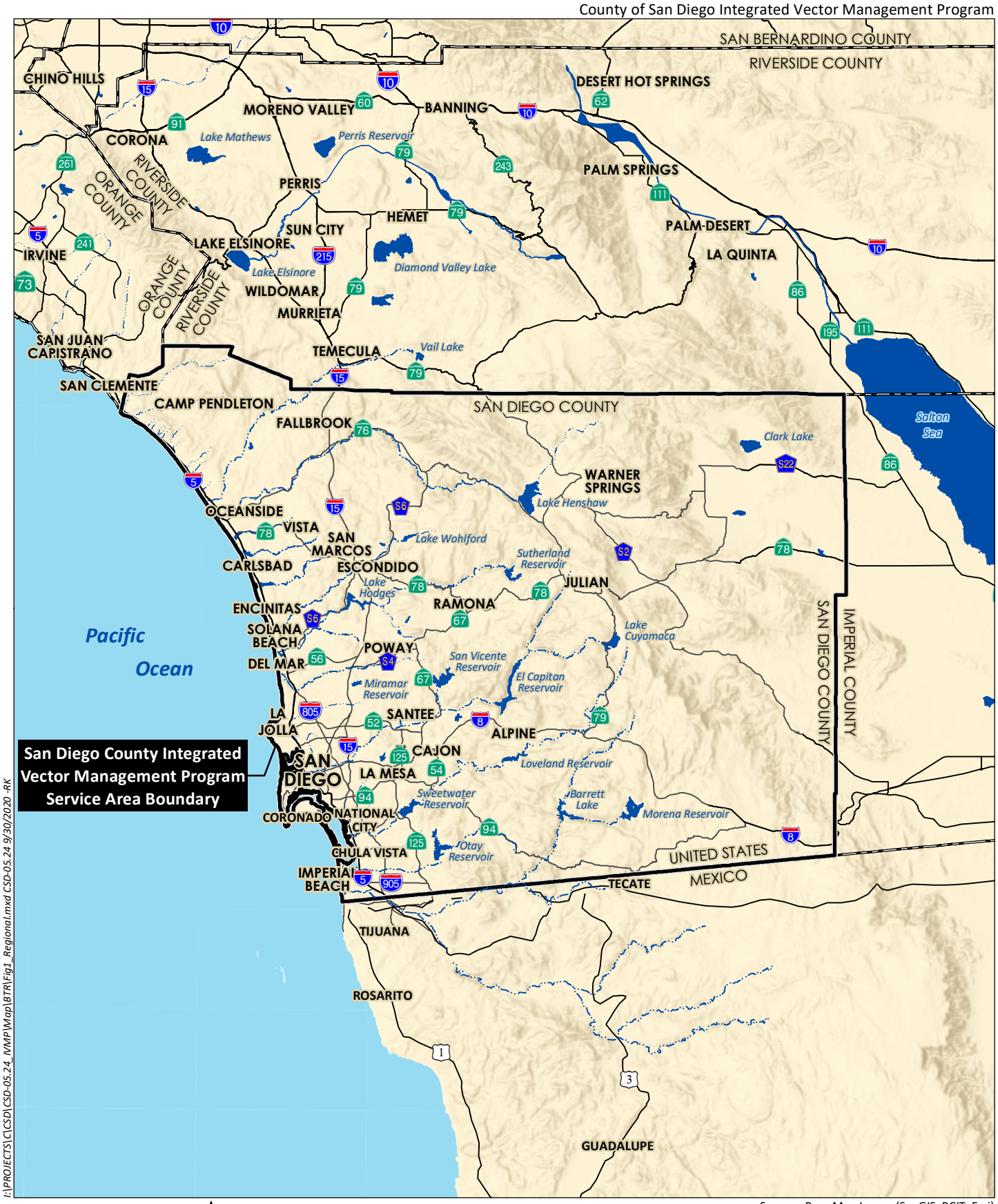
2. Implement effective and efficient integrated vector management practices in a manner that balances environmental impacts with the need to protect the public from vector-borne diseases and nuisances.

3. Coordinate with other regional vector control districts throughout California as well as State and federal public health and environmental protection agencies to allow for the inclusion of progressive and emerging vector control activities and technologies.

Vector control and surveillance activities are conducted by VCP staff under standard operating procedures and use a risk-based approach to determine appropriate levels of response to each vector of concern. The IVMP incorporates various vector management principles and techniques from guidance documents that are regularly updated, such as the VCP's annual *Mosquito, Vector and Disease Control Assessment Engineer's Report* (hereafter referred to as Engineer's Report); *West Nile Virus Strategic Response Plan*; and *Aedes Transmitted Disease Strategic Response Plan* (County 2020, 2018a and 2018b, respectively), as well as procedural documents such as the *Mosquito Breeding Site Access Standard Operating Procedure* (County 2014). A general discussion of the key IVMP activities is discussed below.

Surveillance and Monitoring

Vector surveillance, monitoring, and diagnostics are needed to assess location and abundance of vector populations and species so that data-informed decisions can be made. Vector surveillance involves monitoring vector populations and habitat, their disease pathogens, and human/vector interactions. Vector surveillance provides the VCP with valuable information about which vector species are present or likely to occur, locations in which they may occur, abundance, and if they are carrying disease(s). The information obtained from surveillance is evaluated against treatment and risk-based response criteria to decide when and where to implement vector control measures, and to help form action plans that can also assist in reducing the risk of contracting disease or causing nuisance. Vector surveillance can help minimize the area to which control techniques may be applied by directing activities to the areas where they are needed.

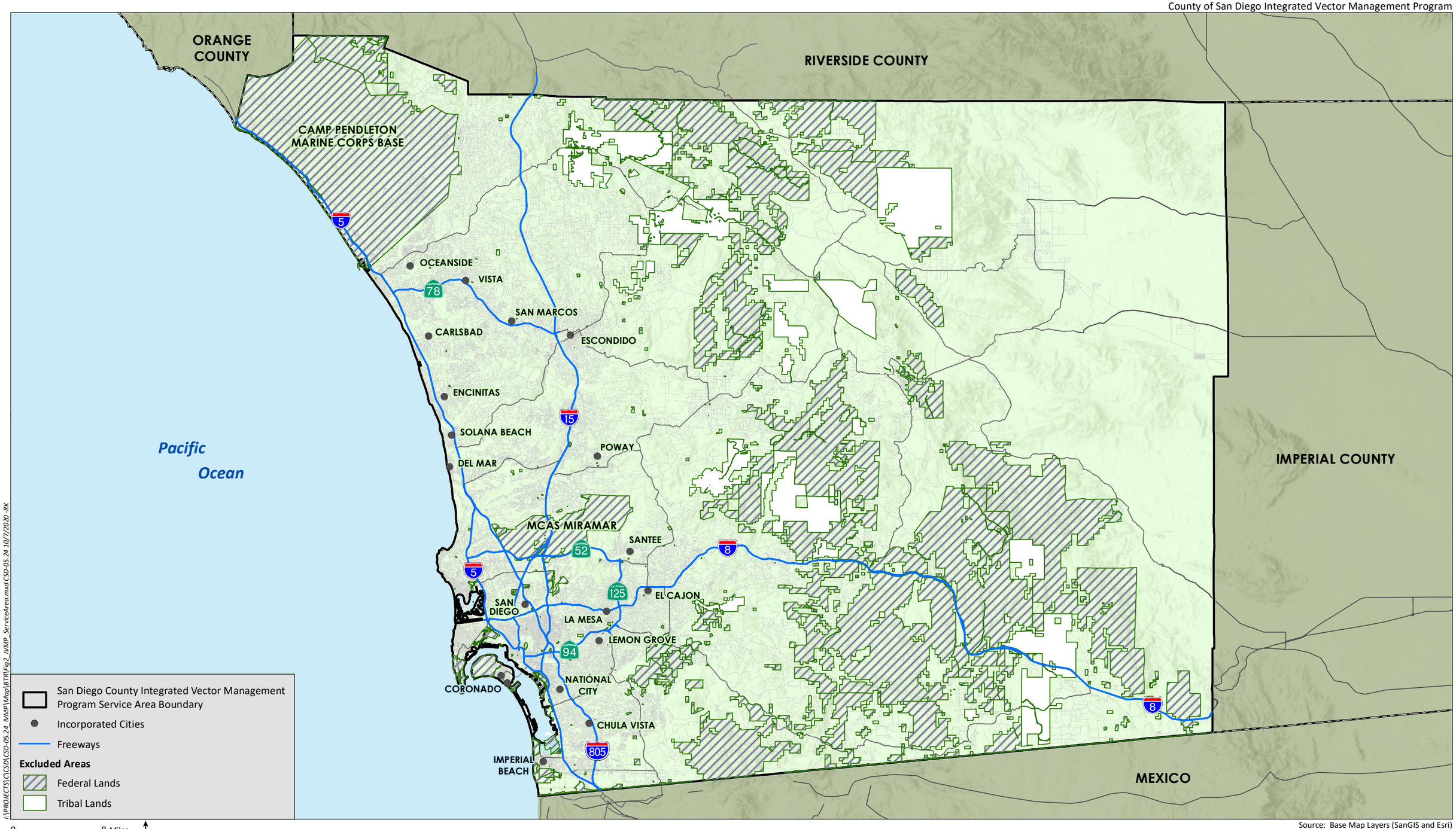


HELIX Environmental Planning

Regional Location

Figure 1

County of San Diego Integrated Vector Management Program



Source: Base Map Layers (SanGIS and Esri)

I:\PROJECTS\CLCSD\CSD-05.24_IVMP\Map\BTR\Fig2_IVMP_ServiceArea.mxd CSD-05.24 10/7/2020 -RK

HELIX Environmental Planning

Integrated Vector Management Program Service Area

Figure 2

The VCP monitors disease-carrying animals such as mosquitoes, ticks, and rodents, as well as other pests including flies on commercial poultry ranches, within the IVMP service area. Monitoring includes such techniques as setting traps to determine abundance and species of mosquitoes; testing mosquitoes for presence of disease; collecting and testing dead birds for West Nile virus; and conducting surveys via ground vehicles, aircraft (including piloted and unmanned), watercraft, and remote sensing equipment to evaluate mosquito-breeding sources. Surveillance is also conducted for ticks and rodents.

The VCP operates the Vector Disease and Diagnostic Laboratory that provides diagnostic testing to support the VCP, which helps in the evaluation of public health risk and appropriate responses and treatments. The VCP tests vector specimens from the field for numerous diseases that could be a risk to public health.

Source Reduction

Source reduction (i.e., environmental modification) techniques are used to reduce vector-breeding sources such as habitat and other areas of harborage. Source reduction primarily involves physical control techniques that eliminate or reduce standing water including, but not limited to, ground disturbance (e.g., grading), vegetation management (including physical removal and/or herbicide application), water control, and other maintenance activities. Trapping and removal of vectors is also a form of source reduction.

Source Treatment

Source treatment includes biological and chemical controls of vectors. Specifically, this includes the use of mosquito fish (*Gambusia affinis*) and application of pesticides, such as larvicides and adulticides to reduce larval and adult mosquito populations, respectively. The type and location of biological and chemical control vary based on different factors, including, but not limited to, the vector species and growth stage, environment, disease presence, and risk level to public health. Any pesticides applied within waterbodies defined by federal and state regulations as Waters of the U.S. and/or State are conducted in accordance with the Statewide National Pollutant Discharge Elimination System (NPDES) Permit for Biological and Residual Pesticide Discharges to Waters of the U.S. from Vector Control Applications (Order No. 2016-0039-DWQ, General Permit No. CA990004). Methods of application include, but are not limited to, backpack applicators, truck-mounted equipment, or other motorized vehicles (e.g., piloted and unmanned aircraft, watercraft). Source treatment of non-mosquito vectors can include, but are not limited to, chemical controls applied to mammal vectors such as rodents and mammal-related disease carriers such as ticks, fleas, and other arthropods. When pesticides are applied, label requirements are followed by VCP staff.

Public Education and Outreach

VCP staff conduct public education and outreach activities to increase public awareness of steps to prevent and protect against disease-carrying vectors. VCP staff distribute educational materials, provide informational displays and presentations, use social media and informational emails, and conduct media campaigns to provide the public with this knowledge.

Emerging Vector Control Strategies

Vector management strategies are updated as new information becomes available and are adapted and applied to new or emerging vectors as they arise. All vector control methods are based on empirical

data, scientific evidence, published research, current state and federal guidelines, expert guidance, and the VCP's experience conducting vector control activities. The IVMP integrates progressive and emerging vector control activities and materials established in coordination with other regional vector control districts and research institutions throughout California, as well as state and federal agencies, such as the California Department of Public Health, California Environmental Protection Agency (CalEPA), the U.S. Environmental Protection Agency (USEPA), and the Centers for Disease Control and Prevention (CDC). Emerging vector control strategies that may be implemented to address future public health risks and public nuisances could include, but not be limited to, increased or early source prevention and/or reduction, surveillance, or physical/biological/chemical controls, depending on the assessment.

1.3 BEST MANAGEMENT PRACTICES

The IVMP follows the best management practices (BMPs) described in State guidance documents, such as the *Best Management Practices for Mosquito Control in California* (California Department of Public Health [CDPH]; 2012), *Best Management Practices for Mosquito Control on California State Properties* (CDPH 2008), and *California Mosquito-Borne Virus Surveillance and Response Plan* (CDPH 2020), which detail vector control and pesticide application procedures. In addition, the County integrates BMPs into the IVMP serving as a comprehensive management framework for implementation of individual activities. BMPs implemented as part of the IVMP demonstrate the County's commitment to avoid or minimize impacts to the maximum extent feasible. The following BMPs will be implemented to reduce GHG emissions:

- Vehicles will only be driven on existing roadways, access roads, and existing unpaved access paths. Vehicles driven on levees to travel near aquatic areas (such as tidal marshes, sloughs, or channels) for surveillance or treatment activities will travel at speeds slow enough to avoid or minimize noise and the production of dust, typically 15 miles per hour or less.

- Engine idling times will be minimized by shutting off equipment and vehicles when not in use to the extent feasible.

- Vehicles and equipment will be maintained in accordance with manufacturer's specifications, including mufflers, engine operation, and tire inflation pressure to minimize rolling resistance.

- Vegetation trimming or removal, when necessary to provide access to vector habitat for surveillance and control activities, will be conducted by hand using handheld tools rather than gas-powered equipment or heavy machinery to minimize negative environmental effects.

- Where heavy equipment or machinery are necessary, measures will be taken, such as reducing turns by track-type vehicles, taking a minimum number of passes with equipment, identifying multiple points of entry, driving vehicles at low speed, and avoiding or minimizing operating on open mud and other soft areas.

In addition to the aforementioned BMPs, the County also engages in other environmental-friendly practices that further reduce potential air quality emissions, such as:

- The VCP assigns geographic locations, defined by continuous census tracts, to individual Certified Vector Control Technicians. Each geographic location is referred to as a 'district'. Work is assigned to each district, which defines the routine work area for Certified Vector Control

Technicians within a specific geographic area, thereby reducing mileage driven, which reduces fuel consumption and vehicle emissions.

- Certified Vector Control Technicians use mobile phones to call customers and to access the County-produced Vector Mobile App. Real-time access to new work requests while in the field allows Certified Vector Control Technicians to conduct and complete additional work while remaining in the geographic area. When they are able to complete new work assignments while remaining in the current area, this eliminates the need to return at a later time, thereby reducing mileage driven, which reduces fuel consumption and vehicle emissions.

2.0 EXISTING CONDITIONS

2.1 ENVIRONMENTAL SETTING

2.1.1 Understanding Global Climate Change

Global climate change refers to changes in average climatic conditions on Earth, as a whole, including temperature, wind patterns, precipitation, and storms. Global temperatures are moderated by naturally occurring atmospheric gases. These gases are commonly referred to as GHGs because they function like a greenhouse by letting light in but preventing heat from escaping, thus warming the Earth's atmosphere. These gases allow solar radiation (sunlight) into the Earth's atmosphere but prevent radiative heat from escaping, thus warming the Earth's atmosphere.

GHGs are emitted by natural processes and human (anthropogenic) activities. Anthropogenic GHG emissions are primarily associated with (1) the burning of fossil fuels during motorized transport, electricity generation, natural gas consumption, industrial activity, manufacturing, and other activities; (2) deforestation; (3) agricultural activity; and (4) solid waste decomposition.

The temperature record shows a decades-long trend of warming, with 2016 global surface temperatures ranking as the warmest year on record since 1880 (National Aeronautics and Space Administration [NASA] 2018). The newest release in long-term warming trends announced 2017 ranked as the second warmest year with an increase of 1.62 degrees Fahrenheit (°F) compared to the 1951-1980 average (NASA 2018). GHG emissions from human activities are the most significant driver of observed climate change since the mid-20th century (United Nations Intergovernmental Panel on Climate Change [IPCC] 2013). The IPCC constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. The statistical models show a "high confidence" that temperature increase caused by anthropogenic GHG emissions could be kept to less than two degrees Celsius relative to pre-industrial levels if atmospheric concentrations are stabilized at about 450 parts per million (ppm) carbon dioxide equivalent (CO_2e) by the year 2100 (IPCC 2014).

2.1.2 Greenhouse Gases of Primary Concern

The GHGs, as defined under California's Assembly Bill (AB) 32, include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Although water vapor is the most abundant and variable GHG in the atmosphere, it is not considered a pollutant; it maintains a climate necessary for life.

Carbon Dioxide. CO_2 is the most important and common anthropogenic GHG. CO_2 is an odorless, colorless GHG. Natural sources include the decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungi; evaporation from oceans; and volcanic outgassing. Anthropogenic sources of CO_2 include burning fuels, such as coal, oil, natural gas, and wood. Data from ice cores indicate that CO_2 concentrations remained steady prior to the current period for approximately 10,000 years. The atmospheric CO_2 concentration in 2010 was 390 ppm, 39 percent above the concentration at the start of the Industrial Revolution (about 280 ppm in 1750). As of April 2020, the CO_2 concentration exceeded 413 ppm, a 46 percent increase since 1750 (National Oceanic and Atmospheric Administration [NOAA] 2020).

Methane. CH_4 is a gas and is the main component of natural gas used in homes. A natural source of methane is from the decay of organic matter. Geological deposits known as natural gas fields contain methane, which is extracted for fuel. Other sources are from decay of organic material in landfills, fermentation of manure, and cattle digestion.

Nitrous Oxide. N_2O is produced by both natural and human-related sources. N_2O is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste. Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic (fatty) acid production, and nitric acid production.

Fluorocarbons. Fluorocarbons are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. Chlorofluorocarbons (CFCs) are nontoxic, nonflammable, insoluble, and chemically nonreactive in the troposphere (the level of air at Earth's surface). CFCs were first synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone; therefore, their production was stopped as required by the Montreal Protocol.

Sulfur Hexafluoride. SF_6 is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF_6 is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semi-conductor manufacturing, and as a tracer gas for leak detection.

GHGs have long atmospheric lifetimes that range from one year to several thousand years. Long atmospheric lifetimes allow for GHGs to disperse around the globe. Because GHGs vary widely in the power of their climatic effects, climate scientists have established a unit called global warming potential (GWP). The GWP of a gas is a measure of both potency and lifespan in the atmosphere as compared to CO_2. For example, because methane and N_2O are approximately 25 and 298 times more powerful than CO_2, respectively, in their ability to trap heat in the atmosphere, they have GWPs of 25 and 298, respectively (CO_2 has a GWP of 1). CO_2e is a quantity that enables all GHG emissions to be considered as a group despite their varying GWP. The GWP of each GHG is multiplied by the prevalence of that gas to produce CO_2e. The atmospheric lifetime and GWP of selected GHGs are summarized in Table 1, *Global Warming Potentials and Atmospheric Lifetimes*. As shown in the table, the GWP for common GHGs ranges from 1 (CO_2) to 22,800 (SF_6).

Table 1
GLOBAL WARMING POTENTIALS AND ATMOSPHERIC LIFETIMES

Greenhouse Gas	Atmospheric Lifetime (years)	Global Warming Potential (100-year time horizon)
Carbon Dioxide (CO_2)	50-200	1
Methane (CH_4)	12	25
Nitrous Oxide (N_2O)	114	298
HFC-134a	14	1,430
PFC: Tetraflouromethane (CF_4)	50,000	7,390
PFC: Hexafluoroethane (C_2F_6)	10,000	12,200
Sulfur Hexafluoride (SF_6)	3,200	22,800

Source: IPCC 2007
HFC: hydrofluorocarbon; PFC: perfluorocarbon

2.1.3 Worldwide and National GHG Inventory

In 2013, total GHG emissions worldwide were estimated at 48,257 million metric tons (MMT) of CO_2e emissions (World Resource Institute [WRI] 2017). The U.S. contributed the second largest portion (13 percent) of global GHG emissions in 2013. The total U.S. GHG emissions was 6,213 MMT CO_2e in 2013, of which 82 percent was CO_2 emission (WRI 2017). On a national level, approximately 27 percent of GHG emissions were associated with transportation and about 38 percent were associated with electricity generation (WRI 2017).

2.1.4 State GHG Inventories

The California Air Resources Board (CARB) performed statewide inventories for the years 1990 to 2017, as shown in Table 2, *California Greenhouse Gas Emissions by Sector*. The inventory is divided into six broad sectors of economic activity: agriculture, commercial, electricity generation, industrial, residential, and transportation. Emissions are quantified in MMT CO_2e.

As shown in Table 2, statewide GHG source emissions totaled 431 MMT CO_2e in 1990, 471 MMT CO_2e in 2000, 449 MMT CO_2e in 2010, and 424 MMT CO_2e in 2017. Transportation-related emissions consistently contribute the most GHG emissions, followed by electricity generation and industrial emissions.

Table 2
CALIFORNIA GREENHOUSE GAS EMISSIONS BY SECTOR

Sector	1990 Emissions (MMT CO_2e)	2000 Emissions (MMT CO_2e)	2010 Emissions (MMT CO_2e)	2017 Emissions (MMT CO_2e)
Agriculture and Forestry	18.9 (4%)	31.0 (7%)	33.7 (8%)	32.4 (8%)
Commercial	14.4 (3%)	14.1 (3%)	20.1 (4%)	23.3 (5%)
Electricity Generation	110.5 (26%)	105.4 (22%)	90.6 (20%)	62.6 (15%)
Industrial	105.3 (24%)	105.8 (22%)	101.8 (23%)	101.1 (24%)
Residential	29.7 (7%)	31.7 (7%)	32.1 (7%)	30.4 (7%)
Transportation	150.6 (35%)	183.2 (39%)	170.2 (38%)	174.3 (41%)
Unspecified Remaining	1.3 (<1%)	0.0 (0%)	0.0 (0%)	0.0 (0%)
Total	430.7	471.1	448.5	424.1

Source: CARB 2007 and CARB 2019
MMT = million metric tons; CO_2e = carbon dioxide equivalent

A San Diego regional emissions inventory that was prepared by the University of San Diego School of Law, Energy Policy Initiative Center (EPIC) accounted for the unique characteristics of the region. Its 2014 emissions inventory update for San Diego is presented in Table 3, *San Diego County Greenhouse Gas Emissions by Sector in 2014*. The sectors included in this inventory are somewhat different from those in the statewide inventory. Similar to the statewide emissions, transportation-related GHG emissions contributed the most countywide, followed by emissions associated with energy use.

Table 3
SAN DIEGO COUNTY GREENHOUSE GAS EMISSIONS BY SECTOR IN 2014

Sector	2014 Emissions MMT CO_2e (% total)[1]
On-Road Transportation	1.46 (45%)
Electricity	0.76 (24%)
Solid Waste	0.34 (11%)
Natural Gas Consumption	0.29 (9%)
Agriculture	0.16 (5%)
Water	0.13 (4%)
Off-Road Transportation	0.04 (1%)
Wastewater	0.02 (1%)
Propane	0.01 (<0.5%)
Total	3.21

Source: USD EPIC 2017. County of San Diego 2014 Greenhouse Gas Inventory and Projections. Prepared by the University of San Diego School of Law, Energy Policy Initiative Center (EPIC), and available online at: https://www.sandiegocounty.gov/content/dam/sdc/pds/advance/cap/publicreviewdocuments/PostBOSDocs/CAP%20Appendix%20A%20%20-%202014%20Inventory%20and%20Projections.pdf.
[1] Percentages may not total 100 due to rounding.
MMT = million metric tons; CO_2e = carbon dioxide equivalent

2.2 REGULATORY SETTING

2.2.1 Federal Greenhouse Gas Regulations

The U.S. Supreme Court ruled on April 2, 2007, in *Massachusetts* v. *U.S. Environmental Protection Agency*, that CO_2 is an air pollutant, as defined under the Clean Air Act (CAA), and that the USEPA has the authority to regulate emissions of GHGs. The USEPA announced that GHGs (including CO_2, CH_4, N_2O, HFC, PFC, and SF_6) threaten the public health and welfare of the American people. This action was a prerequisite to finalizing the USEPA's GHG emissions standards for light-duty vehicles, which were jointly proposed by the USEPA and the U.S. Department of Transportation's National Highway Traffic Safety Administration (NHTSA). The standards were established on April 1, 2010 for 2012 through 2016 model year vehicles and on October 15, 2012 for 2017 through 2025 model year vehicles (USEPA and NHTSA 2012).

2.2.1.1 Mandatory Reporting Rule of Greenhouse Gases

On January 1, 2010, the USEPA began requiring large emitters of heat-trapping emissions to begin collecting GHG data under a new reporting system. This program covers approximately 85 percent of the nation's GHG emissions and applies to roughly 10,000 facilities. Fossil fuel and industrial GHG suppliers, motor vehicle and engine manufacturers, and facilities that emit 25,000 metric tons or more of CO_2e per year are required to report GHG emissions data to the USEPA annually. This reporting threshold is equivalent to the annual GHG emissions from approximately 4,600 passenger vehicles.

2.2.1.2 Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards

The USEPA and the NHTSA worked together on developing a national program of regulations to reduce GHG emissions and to improve fuel economy of light-duty vehicles. The USEPA established the first-ever national GHG emissions standards under the CAA, and the NHTSA established Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Act. On April 1, 2010, the USEPA and NHTSA announced a joint Final Rulemaking that established standards for 2012 through 2016 model year vehicles. This was followed up on October 15, 2012, when the agencies issued a Final Rulemaking with standards for model years 2017 through 2025. On August 2, 2018, the agencies released a notice of proposed rulemaking—the Safer Affordable Fuel-Efficient Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks (SAFE Vehicles Rule). The purpose of the SAFE Vehicles Rule is "to correct the national automobile fuel economy and greenhouse gas emissions standards to give the American people greater access to safer, more affordable vehicles that are cleaner for the environment." The direct effect of the rule is to eliminate the standards that were put in place to gradually raise average fuel economy for passenger cars and light trucks under test conditions from 37 miles per gallon (mpg) in 2020 to 50 mpg in 2025. By contrast, the new SAFE Vehicles Rule freezes the average fuel economy level standards indefinitely at the 2020 levels. The new SAFE Vehicles Rule also results in the withdrawal of the waiver previously provided to California for that State's GHG and zero emissions vehicle (ZEV) programs under section 209 of the CAA. The combined USEPA GHG standards and NHTSA CAFE standards resolve previously conflicting requirements under both federal programs and the standards of the State of California and other states that have adopted the California standards.

2.2.2 California Greenhouse Gas Regulations

2.2.2.1 Executive Order S-3-05

Signed by Governor Schwarzenegger on June 1, 2005, Executive Order (EO) S-3-05 proclaimed that California is vulnerable to climate change impacts. It declared that increased temperatures could reduce snowpack in the Sierra Nevada, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To avoid or reduce climate change impacts, EO S-3-05 calls for a reduction in GHG emissions to the year 2000 level by 2010, to year 1990 levels by 2020, and to 80 percent below 1990 levels by 2050.

2.2.2.2 Executive Order B-30-15

Signed by Governor Brown on April 29, 2015, EO B-30-15 established a California GHG reduction target of 40 percent below 1990 levels by 2030. The EO aligns California's GHG reduction targets with those of leading international governments, including the 28-nation European Union. California is on track to meet or exceed the target of reducing greenhouse gas emissions to 1990 levels by 2020, as established in AB 32. The updated emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal established by EO S-3-05 of reducing emissions 80 percent under 1990 levels by 2050.

2.2.2.3 Assembly Bill 32 – Global Warming Solutions Act of 2006

Approved by Governor Schwarzenegger on September 27, 2006, the California Global Warming Solutions Act of 2006 (Assembly Bill 32 and Health and Safety Code Sections 38500, 38501, 28510, 38530, 38550, 38560, 38561–38565, 38570, 38571, 38574, 38580, 38590, 38592–38599), widely known as AB 32, requires that the CARB develop and enforce regulations for the reporting and verification of statewide GHG emissions. CARB is directed to set a GHG emission limit, based on 1990 levels, to be achieved by 2020. The bill requires CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions. AB 32 enacts the goals of EO S-3-05.

2.2.2.4 Senate Bill 32

Approved by Governor Brown on September 8, 2016, Senate Bill (SB) 32 (Amendments to the California Global Warming Solutions Action of 2006) extends California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include Section 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by EO B-30-15 for 2030, which set the next interim step in the State's continuing efforts to pursue the long-term target expressed in EO B-30-15 of 80 percent below 1990 emissions levels by 2050.

2.2.2.5 Assembly Bill 197

A condition of approval for SB 32 was the passage of AB 197. Approved by Governor Brown on September 8, 2016, AB 197 requires that CARB consider the social costs of GHG emissions and prioritize direct reductions in GHG emissions at mobile sources and large stationary sources. AB 197 also gives the California legislature more oversight over CARB through the addition of two legislatively appointed

members to the CARB Board and the establishment a legislative committee to make recommendations about CARB programs to the legislature.

2.2.2.6 Assembly Bill 1493 – Vehicular Emissions of GHGs

Approved by Governor Davis on July 22, 2002, AB 1493 (Pavley) requires that CARB develop and adopt regulations that achieve "the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty truck and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the State." On September 24, 2009, CARB adopted amendments to the Pavley regulations that intend to reduce GHG emissions in new passenger vehicles from 2009 through 2016. The amendments bind California's enforcement of AB 1493 (starting in 2009), while providing vehicle manufacturers with new compliance flexibility. The amendments also prepare California to merge its rules with the federal CAFE rules for passenger vehicles. In January 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single packet of standards called Advanced Clean Cars.

2.2.2.7 Assembly Bill 75

Approved by Governor Davis on October 7, 1999, AB 75 mandates state agencies to develop and implement an integrated waste management plan to reduce GHG emissions related to solid waste disposal. In addition, the bill mandates that community service districts providing solid waste services report the disposal and diversion information to the appropriate city, county, or regional jurisdiction. The bill requires diversion of at least 50 percent of the solid waste from landfills and transformation facilities, and submission to the California Department of Resources Recycling and Recovery (CalRecycle; formerly known as California Integrated Waste Management Board) of an annual report describing the diversion rates.

2.2.2.8 Executive Order S-01-07

EO S-01-07 was signed by Governor Schwarzenegger on January 18, 2007 and directs that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. It orders that a Low Carbon Fuel Standard (LCFS) for transportation fuels be established for California and directs CARB to determine whether an LCFS can be adopted as a discrete early action measure pursuant to AB 32. The CARB approved the LCFS as a discrete early action item with a regulation adopted and implemented in 2010. Although challenged in 2011, the Ninth Circuit reversed the District Court's opinion and rejected arguments that implementing LCFS violates the interstate commerce clause in September 2013. CARB is therefore continuing to implement the LCFS statewide.

2.2.2.9 Senate Bill 350

Approved by Governor Brown on October 7, 2015, SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030. This will increase the use of Renewables Portfolio Standard eligible resources, including solar, wind, biomass, and geothermal. In addition, large utilities are required to develop and submit Integrated Resource Plans to detail how each entity will meet their customers resource needs, reduce greenhouse gas emissions, and increase the use of clean energy.

2.2.2.10 Senate Bill 100

Approved by Governor Brown on September 10, 2018, SB 100 extends the renewable electricity procurement goals and requirements of SB 350. SB 100 requires that all retail sale of electricity to California end-use customers be procured from 100 percent eligible renewable energy resources and zero-carbon resources by the end of 2045.

2.2.2.11 Senate Bill 97 – California Environmental Quality Act: Greenhouse Gas Emissions

Approved by Governor Schwarzenegger on August 24, 2007, SB 97 required the OPR to prepare, develop, and transmit to the Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by the California Environmental Quality Act (CEQA), including but not limited to, effects associated with transportation or energy consumption. The Resources Agency certified and adopted the guidelines on December 31, 2009. The OPR guidance states that the lead agency can rely on qualitative or other performance-based standards for estimating the significance of GHG emissions, although the new CEQA Guidelines did not establish a threshold of significance.

2.2.2.12 California Air Resources Board: Scoping Plan

In December 2008, CARB adopted its first version of its Climate Change Scoping Plan (Scoping Plan), which contained the main strategies California will implement to achieve the mandate of AB 32 to reduce statewide GHG emissions to 1990 levels by 2020. The Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. The Scoping Plan evaluates opportunities for sector-specific reductions, integrates all CARB and Climate Action Team early actions and additional GHG reduction measures by both entities, identifies additional measures to be pursued as regulations, and outlines the role of a cap-and-trade program.

On December 14, 2017, CARB adopted the 2017 Climate Change Scoping Plan (2017 Scoping Plan), which lays out the framework for achieving the mandate of SB 32 (2016) to reduce statewide GHG emissions to at least 40 percent below 1990 levels by the end of 2030 (CARB 2017a).

The 2017 Scoping Plan includes guidance to local governments in Chapter 5, including plan-level GHG emissions reduction goals and methods to reduce communitywide GHG emissions. In its guidance, CARB recommends that "local governments evaluate and adopt robust and quantitative locally-appropriate goals that align with the statewide per capita targets and the State's sustainable development objectives and develop plans to achieve the local goals." CARB further states that "it is appropriate for local jurisdictions to derive evidence-based local per capita goals [or some other metric] that the local jurisdiction deems appropriate, such as mass emissions or per service population, based on local emissions sectors and population projections that are consistent with the framework used to develop the statewide per capita targets" (CARB 2017a).

2.2.3 Local Policies and Plans

2.2.3.1 SANDAG: San Diego Forward: The Regional Plan

Initially adopted in 2011, *San Diego Forward: The Regional Plan* (Regional Plan) is the long-range planning document developed to address the region's housing, economic, transportation,

environmental, and overall quality-of-life needs. The Regional Plan is updated approximately every four years. The most recent version of the document was adopted by SANDAG in October 2015. The underlying purpose is to provide direction and guidance on future regional growth (i.e., the location of new residential and non-residential land uses) and transportation patterns throughout the region as stipulated under SB 375. The Regional Plan establishes a planning framework and implementation actions that increase the region's sustainability and encourage "smart growth while preserving natural resources and limiting urban sprawl." The Regional Plan encourages local jurisdictions, including the County of San Diego, to increase residential and employment concentrations in areas with the best existing and future transit connections, and to preserve important open spaces. The focus is on implementation of basic smart growth principles designed to strengthen the integration of land use and transportation. General urban form goals, policies, and objectives are summarized as follows:

- Mix compatible uses.
- Take advantage of compact building design.
- Create a range of housing opportunities and choices.
- Create walkable neighborhoods.
- Foster distinctive, attractive communities with a strong sense of place.
- Preserve open space, natural beauty, and critical environmental areas.
- Strengthen and direct development towards existing communities.
- Provide a variety of transportation choices.
- Make development decisions predictable, fair, and cost-effective.
- Encourage community and stakeholder collaboration in development decisions.

The Regional Plan also provides important guidance for communities that have borders with Mexico. In this case, the goal is to create a regional community where San Diego, its neighboring counties, tribal governments, and northern Baja California mutually benefit from San Diego's varied resources and international location.

SANDAG is currently developing the 2021 update to the Regional Plan. SANDAG's vision for the future of transportation in the San Diego region reimagines how people and goods move in the 21st century. SANDAG is applying key strategies—known as the 5 Big Moves—to envision a balanced transportation network that makes travel easier and quicker, increases access to opportunity, and meets state greenhouse gas emissions mandates.

2.2.3.2 County of San Diego General Plan

The County 2011 General Plan includes a plan to balance population growth and development with infrastructure needs and resource protection. The current General Plan is based on smart growth and land planning principles that will reduce vehicle miles travelled (VMT), and thus result in a reduction of GHGs. This will be accomplished by locating future development within and near existing infrastructure.

2.2.3.3 County of San Diego Climate Action Plan

In February 2018, the County adopted a long-term programmatic Climate Action Plan (CAP) that outlines the actions the County would undertake to achieve its proportional share of state GHG emission reductions to be compliant with AB 32 and EO S-3-05.

After hearing petitions challenging the CAP, the San Diego County Superior Court ruled on December 24, 2018 – which the Appellate Court affirmed on June 12, 2020 – that the CAP failed to adequately account for potential environmental impacts for General Plan Amendment projects, and the County is required to set aside and vacate the CAP, the certification of its associated Supplemental EIR, and related actions. As a result, on September 30, 2020, the County Board of Supervisors rescinded and vacated the CAP and associated actions. Pending adoption of a new CAP, the County would continue to implement the 26 GHG reduction measures and sustainability initiatives and programs identified in the 2018 CAP to reduce GHG emissions to meet the State's 2030 reduction target. Since the CAP has been formally rescinded, it is not discussed further in this report.

3.0 SIGNIFICANCE CRITERIA AND ANALYSIS METHODOLOGIES

3.1 GUIDELINES FOR DETERMINING SIGNIFICANCE

Given the relatively small levels of emissions generated by a typical project in relationship to the total amount of GHG emissions generated on a regional, national, or global basis, individual projects are not expected to result in significant, direct impacts with respect to climate change. However, given the magnitude of the impact of GHG emissions on the global climate, GHG emissions from individual projects could result in significant, cumulative impacts with respect to climate change. Thus, the potential for a significant GHG impact is limited to cumulative impacts.

In the absence of County-established threshold for GHG emissions, State CEQA Guidelines Appendix G criteria shall apply to determine if the proposed project would result in a significant impact. Specifically, a significant impact from GHG emissions would result if the Proposed Project would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

- Conflict with an applicable plan, policy or regulation adopted for reducing the emissions of greenhouse gases.

CEQA Section 15064.4 states that a CEQA lead agency "should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project." It also states that the lead agency has the discretion to determine the methodology to assess the significance of GHG emissions on the environment. Accordingly, the following section describes the threshold of significance applied to the Proposed Project.

3.1.1 CAPCOA Screening Levels

To establish context in which to consider the Proposed Project's GHG emissions, this analysis reviewed guidelines used by other experts and public agencies. Prior to 2020, a screening level based on the California Air Pollution Control Officers Association's (CAPCOA) report *CEQA & Climate Change* was used as a tool used to determine whether further analysis would be needed to examine the GHG impacts of a proposed project (CAPCOA 2008). CAPCOA developed a 900 MT CO_2e per year screening threshold by analyzing the capture of 90 percent or more of future discretionary development for residential and commercial projects across the state. Direct and cumulative impacts would be potentially significant and require further analysis if a project results in emissions that exceed 900 MT CO_2e beyond current baseline emissions. This screening threshold was developed with the goal in mind of achieving the reductions described by AB 32 for meeting 1990 levels of statewide GHG emissions by the year 2020.

Subsequently, SB 32 set a further GHG emission reduction target of 40 percent below 1990 levels by 2030. To achieve this target, a regression trajectory can be projected by reducing the operational year emissions goal from the 900 MT CO_2e target in 2020 to the 540 MT CO_2e target in 2030. This trajectory is outlined in Table 4, *GHG Significance Thresholds Trajectory*, below. Therefore, for the purpose this report, 540 MT CO_2e is considered a valid and adequate screening level as it is based on current methodologies. It is not the intent of the County to adopt the above screening levels as mass emission limits for this or other projects, but rather to disclose this information and put the project-generated GHG emissions in the appropriate statewide context and consider the Proposed Project's potential impacts pursuant to CEQA.

Table 4
GHG SCREENING LEVEL TRAJECTORY

Year	Screening Level (MT CO_2e)
2020	900
2021	855
2022	813
2023	722
2024	734
2025	697
2026	662
2027	629
2028	598
2029	568
2030	540

Source: CAPCOA 2008; SB 32
Note: Emissions reduce by 4.98 percent each year to achieve SB 32's 2030 target.
MT = metric tons; CO2e = carbon dioxide equivalents.

3.2 METHODOLOGY AND ASSUMPTIONS

3.2.1 GHG Emission-generating Activities

Under the Proposed Project, the IVMP would continue the use of the following vector control techniques: surveillance and monitoring, source reduction (i.e., physical control), source treatment

(i.e., biological and chemical controls), public education and outreach, and disease diagnostics. Emerging vector control strategies that may be implemented to address future public health risks and public nuisances could include, but not be limited to, increased or advanced/early source prevention and/or reduction, surveillance, or physical/biological/chemical controls.

Surveillance and monitoring activities include evaluation of mosquito-breeding areas by conducting surveys via ground vehicles, aircraft (including piloted and unmanned), watercraft, and remote sensing equipment; trapping of mosquitoes and rodents; and testing of collected samples for vector-borne diseases. The reduction of vector-breeding sources primarily involves physical control techniques that eliminate or reduce standing water that functions as mosquito breeding habitat. These techniques include, but are not limited to, vegetation management including trimming and removal of vegetation and application of herbicides; removal of sediment; water control; and other maintenance activities.

Source treatment involves application of biological and chemical controls to control, manage, and reduce vectors. It can include the use of natural predators, parasites, or pathogens to reduce immature mosquito numbers (biological controls) and application of chemical controls that are pesticides that target larvae (larvicides) or adult mosquitos (adulticides). The primary technique employed by the VCP for biological controls is the introduction of mosquito fish into artificial mosquito breeding sources such as ornamental ponds, rain barrels, horse troughs, neglected swimming pools, and spas to reduce the abundance of mosquitoes. Pesticides are applied through on-ground techniques such as by foot with backpack applicators, vehicle-mounted equipment, or watercraft by qualified, certified technicians, or by aircraft (including piloted and unmanned) when land-based methods are not practicable due to the size of the area to be treated or impediments to access. The IVMP follows BMPs described in State guidance documents, such as the *Best Management Practices for Mosquito Control in California* (California Department of Public Health [CDPH], 2012), *Best Management Practices for Mosquito Control on California State Properties* (CDPH, 2008), and in the *California Mosquito-Borne Virus Surveillance and Response Plan* (CDPH, 2020), which detail vector control and pesticide application procedures.

3.2.2 Analysis Methodology

The Proposed Project's GHG emissions were calculated using a combination of the California Emission Estimator Model (CalEEMod), Version 2016.3.2 and CARB's emission inventory models EMFAC and OFFROAD, in accordance with the County Guidelines for Determining Significance and Report Content and Format Requirements for Climate Change (County 2018e). GHG emissions are estimated in terms of total metric tons (MT) of CO_2e.

Operation of on-road fleet vehicles, watercraft, aircraft, portable equipment, and small equipment would result in emissions of GHGs from engine exhaust. Equipment lists and annual activity schedules were provided by DEH (County 2020). Some equipment would not generate GHG emissions and were therefore excluded from this analysis. Excluded equipment includes hand operated tools, attachments, and other equipment such as battery-powered traps. The list of equipment used in the IVMP GHG emissions analysis is provided in Appendix A. Emission calculations were performed using the most recent and applicable emission factors published by CARB and the USEPA. A list of emissions generating equipment, assumed usage, and emission factor source is provided in Table 5, *IVMP Equipment Usage*.

Table 5
IVMP EQUIPMENT USAGE

Equipment Name	Equipment Type	Total Annual Average Usage (hours)	Emission Factor Source
Land Surveillance and Application/Management			
Dump Truck[1]	Dump Truck	330	CARB's OFFROAD
Caterpillar 320[1]	Excavator	80	CARB's OFFROAD
Polaris Sportsman[1]	ATV Quad with Plow	32	CARB's OFFROAD
John Deere 6420[1]	Tractor	36	CARB's OFFROAD
Caterpillar D3[1]	Tracked Dozer	48	CARB's OFFROAD
Woodchipper[1]	Processing Equipment	48	CARB's OFFROAD
Arrow ULV (gas)	Hand Sprayer/ Fogger	24	CARB's OFFROAD
Colt ULV (gas)	Hand Sprayer/ Fogger	12	CARB's OFFROAD
Maruyama	Granular applicator	180	CARB's OFFROAD
Buffalo turbine	Vehicle -mounted sprayer	24	CARB's OFFROAD
Skid Sprayer	Vehicle-mounted sprayer	72	CARB's OFFROAD
Fleet Vehicle	Medium Duty Truck	178,447 miles	CARB's EMFAC
Fleet Vehicle	Light Duty Truck	212,310 miles	CARB's EMFAC
Water Surveillance and Application/Management			
Marshmaster MM-1LX[1]	Aquatic Weed Harvester	96	CARB's OFFROAD
Pond Pump – WB15	Pond Pump	78	CARB's OFFROAD
Boat motor – 5 horsepower four stroke engine	Outboard Motor	60	CARB's PC2014
Boat motor – 9.9 horsepower four stroke engine	Outboard Motor	60	CARB's PC2014
Aerial Surveillance and Application/Management			
Bell 206B	Aircraft	85.3	USEPA AP-42
Robinson R44 Raven II	Aircraft	50	USEPA AP-42
Piper Chieftain	Aircraft	6	USEPA AP-42

Source: County 2020

[1] Equipment/vehicle is not listed in County's existing inventory (2020b), but could potentially be used, if needed.

Note: this table only includes equipment that is gas-powered. Equipment that is battery-operated is excluded since no GHG emissions would occur.

4.0 PROJECT IMPACT ANALYSIS

4.1 GREENHOUSE GAS EMISSIONS

Operation of on-road fleet vehicles, watercraft, aircraft, portable equipment, and small equipment would result in emissions of GHGs from engine exhaust. Table 6, *Estimated Annual Operational Emissions*, presents the summary of operational emissions for the Proposed Project. Operational emission calculations are provided in Appendix A.

Table 6
ESTIMATED ANNUAL GHG EMISSIONS

Category[1]	CO_2 Pollutant Emissions (metric tons per year)	CH_4 Pollutant Emissions (metric tons per year)	N_2O Pollutant Emissions (metric tons per year)	CO_2e Pollutant Emissions (metric tons per year)
Land Surveillance and Application/Management	204.40	0.0055	0.0043	205.83
Water Surveillance and Application/Management	2.99	0.0011	0.0002	3.06
Air Surveillance and Application/Management	75.35	0.0020	0.0022	76.05
Total Annual Emissions	**282.73**	**0.0086**	**0.0067**	**284.94**

Source: Calculations using emission factors from CARB EMFAC2017, ORION Off-Road database, and EPA AP-42 (calculation data is provided in Appendix A).

[1] Categories were derived from Table 5.

CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalents

As shown in Table 6, implementation of the IVMP has been conservatively estimated to emit approximately 284.94 MT CO_2e annually. Proposed Project emissions during IVMP implementation would not exceed the screening threshold of 540 MT CO_2e adjusted from CAPCOA for compliance with SB 32 in 2030. Therefore, the Proposed Project's emissions would result in a less than significant impact.

5.0 CUMULATIVE IMPACT ANALYSIS

The proposed IVMP would continue to comprehensively approach vector control through various techniques, including surveillance and monitoring, source reduction (i.e., physical control), source treatment (i.e., biological and chemical controls), public education and outreach, and disease diagnostics. The proposed IVMP would not generate growth, increase population or associated vehicle usage, or require the alteration of an existing land use designation through amendments to general plans or changes to zoning. Furthermore, as shown in Table 6, the Proposed Project would not result in a significant increase in GHG emissions. Therefore, the Proposed Project would have a less than significant cumulative impact with respect to climate change.

6.0 SUMMARY OF RECOMMENDED PROJECT DESIGN FEATURES, IMPACTS, AND MITIGATION

In summary, the Proposed Project would result in the emission of GHGs during the ongoing implementation of the IVMP. The analysis evaluated the potential for adverse impacts to climate change due to the Proposed Project emissions. Operation of on-road fleet vehicles, watercraft, aircraft, portable equipment, and small equipment would result in emissions of GHGs from engine exhaust. As detailed in Section 4.1, the Proposed Project emissions of GHGs during IVMP implementation would not exceed the screening threshold of 540 MT CO_2e adjusted from CAPCOA for compliance with SB 32 in 2030. Additionally, the Proposed Project would implement the BMPs described in Section 1.3, above, including limiting of idling time and proper maintenance of vehicles and equipment to reduce GHG emissions. Therefore, the Proposed Project would have a less-than-significant cumulative impact with respect to climate change.

6.1 MITIGATION MEASURES AND DESIGN CONSIDERATIONS

Because the Proposed Project would not result in significant impacts, no mitigation or design considerations are required.

7.0 REFERENCES

California Air Resources Board (CARB). 2019. California Greenhouse Gas Inventory for 2000-2017 – By Sector and Activity. November 6.

2017a. California's 2017 Climate Change Scoping Plan: The strategy for achieving California's 2030 greenhouse gas target. November. Available at: https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf

2017b. Off-road Diesel Analysis & Inventory, OFFROAD2017 - ORION Web Database. https://www.arb.ca.gov/orion/. Accessed December 2018.

2007. Staff Report: California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit. November 16.

California Air Pollution Control Officers Association (CAPCOA). 2008 (January). CEQA & Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act. CAPCOA. Available at: http://www.capcoa.org/wp-content/uploads/downloads/2010/05/CAPCOA-White-Paper.pdf.

California Department of Public Health (CDPH). 2020. California Mosquito-Borne Virus Surveillance and Response Plan.

2012. Best Management Practices for Mosquito Control in California. July. Available at: http://westnile.ca.gov/resources.php.

Intergovernmental Panel on Climate Change (IPCC). 2014. *Mitigation of Climate Change.* Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Edenhofer, O., R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A. Adler, I. Baum, S. Brunner, P. Eickemeier, B. Kriemann, J. Savolainen, S. Schlömer, C. von Stechow, T. Zwickel and J.C. Minx (eds.)]. Cambridge University Press, Cambridge, United Kingdom, and New York, NY, USA.

2013. Climate Change 2013: The Physical Science Basis. Working Group I Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.

2007. Climate Change 2007: The Physical Science Basis, Summary for Policy Makers (Working Group Fourth Assessment Report). February. Available at: http://www.ipcc.ch/SPM2feb07.pdf.

National Aeronautics and Space Administration, Goddard Institute for Space Studies (NASA). 2018. NASA News & Features Releases. Long-Term Warming Trend Continued in 2017: NASA, NOAA. https://www.giss.nasa.gov/research/news/20180118/. Accessed July 2018.

National Oceanic and Atmospheric Administration (NOAA). 2019. Earth System Research Laboratory. Available at: http://www.esrl.noaa.gov/gmd/ccgg/trends/global.html.

San Diego Association of Governments (SANDAG). 2015. San Diego Forward – The Regional Plan. Available at: http://www.sdforward.com/pdfs/Final_PDFs/The_Plan_combined.pdf.

San Diego, County of. 2020a. County of San Diego Vector Control Program Mosquito, Vector and Disease Control Assessment Engineer's Report. Fiscal Year 2020-2021. June.

2020b. Vector Control Program Equipment Inventory. Provided by County 7/14/20. Fleet vehicle data reflects calendar year 2019 inventory/usage.

2018a. County of San Diego West Nile Virus Strategic Response Plan. April

2018b. County of San Diego Aedes Transmitted Disease Strategic Response Plan. April

2018e. Guidelines for Determining Significance and Report Format and Content Requirements – Climate Change. Land Use and Environmental Group, Department of Planning and Land Use, Department of Public Works. February.

2014. Mosquito Breeding Site Access Standard Operating Procedure.

2011. General Plan. Land Use and Environmental Group, Department of Planning and Land Use, Department of Public Works. August. Available at: https://www.sandiego.gov/planning/genplan.

University of San Diego School of Law Energy Policy Initiative Center (EPIC)
2017. County of San Diego 2014 Greenhouse Gas Inventory and Projections. December. Available at: https://www.sandiegocounty.gov/content/dam/sdc/pds/advance/cap/publicreviewdocuments/PostBOSDocs/CAP%20Appendix%20A%20%20-%202014%20Inventory%20and%20Projections.pdf

U.S. Environmental Protection Agency (USEPA). 2000. AP-42, Fifth Edition Compilation of Air Pollutant Emissions Factors, Chapter 3.1 Stationary Gas Turbines.

U.S. Environmental Protection Agency and U.S. Department of Transportation, National Highway Traffic Safety Administration. 2012. 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards. October 15. Available at: https://one.nhtsa.gov/staticfiles/rulemaking/pdf/cafe/2017-25_CAFE_Final_Rule.pdf.

World Resources Institute (WRI). 2017. CAIT Climate Data Explorer. Available at: http://cait.wri.org/historical. Accessed February 2, 2017.

8.0 LIST OF PREPARERS

Joanne M. Dramko, AICP	County-approved Air Quality Specialist
Victor Ortiz	Senior Air Quality/GHG Specialist
Brendan Sullivan	Air Quality/GHG Analyst
Yara Fisher	Project Manager

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

Appendix A

Emissions Calculation Sheets

Equipment	No. of Units	Frequency of Use (days/yr)	Peak Daily Usage per unit (hr/day or VMT/day)	Total Peak Daily Usage (hr/day or VMT/day)	Total Annual Average Usage (hr/yr or VMT/yr)
Land					
Handheld ULV Fogger	9	1	4	36	36
Maruyama MD155DX	9	10	2	18	180
Buffalo Turbine	1	12	2	2	24
Skid Sprayer	1	36	2	2	72
Dump Truck	1	55	6	6	330
Excavator	1	20	4	4	80
ATV Quad with Plow	1	8	4	4	32
Tractor	1	9	4	4	36
Tracked Dozer	1	12	4	4	48
Woodchipper	1	12	4	4	48
Fleet Vehicle (MDV)	28	101	79	2,209	178,447
Fleet Vehicle (LDT2)	27	87	113	3,050	212,310
Water					
Aquatic Weed Harvester	1	24	4	4	96
Honda Boat Motor - 5hp	1	20	3	3	60
Honda Boat Motor - 9.9hp	1	20	3	3	60
Honda Pond Pump	1	39	2	2	78
Air					
Bell 206B Helicopter	1	14	8.5	8.5	85.3
Robinson R44 Raven II Helicopter	1	10	8.5	8.5	50
Piper Chieftain	1	20	6	6	120
Total					

Equipment	Pounds per Unit									
	VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	CO_2	CH_4	N_2O	CO_2e
Land										
Handheld ULV Fogger	4.51E-02	7.40E-01	1.97E-02	6.54E-05	6.14E-04	6.12E-04	1.89E+00	2.56E-03	3.08E-03	2.87E+00
Maruyama MD155DX	5.55E-02	2.00E+00	3.52E-02	9.45E-05	2.76E-02	2.75E-02	3.31E+00	3.15E-03	4.19E-03	4.64E+00
Buffalo Turbine	1.38E-01	5.11E+00	7.87E-02	2.04E-04	6.69E-02	6.68E-02	8.05E+00	7.83E-03	6.43E-03	1.02E+01
Skid Sprayer	1.38E-01	5.11E+00	7.87E-02	2.04E-04	6.69E-02	6.68E-02	8.05E+00	7.83E-03	6.43E-03	1.02E+01
Dump Truck	1.49E-01	5.44E-01	7.47E-01	2.67E-03	2.71E-02	2.70E-02	2.72E+02	1.34E-02	0.00E+00	2.72E+02
Excavator	7.02E-02	6.63E-01	3.86E-01	1.26E-03	1.94E-02	1.93E-02	1.12E+02	6.33E-03	0.00E+00	1.12E+02
ATV Quad with Plow	7.63E-02	1.19E-01	2.27E-05	4.54E-04	9.20E-04	9.19E-04	2.53E-01	4.74E-03	8.56E-05	3.97E-01
Tractor	4.99E-02	2.94E+00	1.13E-01	4.99E-04	3.98E-03	3.97E-03	5.16E+01	2.82E-03	7.56E-03	5.40E+01
Tracked Dozer	8.33E-02	4.63E-01	4.90E-01	7.71E-04	3.70E-02	3.69E-02	6.58E+01	7.52E-03	0.00E+00	6.59E+01
Woodchipper	1.11E-01	4.26E+00	7.98E-02	2.07E-04	6.04E-02	6.02E-02	7.24E+00	6.29E-03	6.50E-03	9.34E+00
Fleet Vehicle (MDV)	6.43E-05	2.61E-03	2.76E-04	9.62E-06	1.03E-04	4.27E-05	9.72E-01	1.41E-05	2.08E-05	9.79E-01
Fleet Vehicle (LDT2)	4.50E-05	2.19E-03	2.25E-04	7.99E-06	1.02E-04	4.25E-05	8.08E-01	1.09E-05	1.78E-05	8.13E-01
Water										
Aquatic Weed Harvester	8.33E-02	4.63E-01	4.90E-01	7.71E-04	3.70E-02	3.69E-02	6.58E+01	7.52E-03	0.00E+00	6.59E+01
Honda Boat Motor - 5hp	2.07E-01	3.20E-01	9.73E-03	5.18E-05	2.99E-02	2.98E-02	1.82E+00	1.28E-02	2.11E-03	2.77E+00
Honda Boat Motor - 9.9hp	2.07E-01	3.20E-01	9.73E-03	5.18E-05	2.99E-02	2.98E-02	1.82E+00	1.28E-02	2.11E-03	2.77E+00
Honda Pond Pump	1.40E-02	1.86E-01	3.70E-03	2.69E-05	2.28E-03	2.28E-03	6.53E-01	8.67E-04	1.29E-03	1.06E+00
Air										
Bell 206B Helicopter	1.36E-03	1.09E-02	2.92E+00	5.15E-03	3.98E-02	2.59E-02	5.42E+02	1.50E-02	1.74E-02	5.47E+02
Robinson R44 Raven II Helicopter	1.36E-03	1.09E-02	2.92E+00	5.15E-03	3.98E-02	2.59E-02	5.42E+02	1.50E-02	1.74E-02	5.47E+02
Piper Chieftain	0.00E+00	2.00E-02	4.17E+00	1.00E-02	6.00E-02	4.00E-02	7.74E+02	2.00E-02	2.00E-02	7.80E+02
Total										

Equipment	Pounds per Day									
	VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	CO_2	CH_4	N_2O	CO_2e
Land										
Handheld ULV Fogger	1.62	26.65	0.71	0.00	0.02	0.02	68.17	0.09	0.11	103.49
Maruyama MD155DX	1.00	36.09	0.63	0.00	0.50	0.50	59.65	0.06	0.08	83.56
Buffalo Turbine	0.28	10.23	0.16	0.00	0.13	0.13	16.09	0.02	0.01	20.32
Skid Sprayer	0.28	10.23	0.16	0.00	0.13	0.13	16.09	0.02	0.01	20.32
Dump Truck	0.89	3.26	4.48	0.02	0.16	0.16	1,632.54	0.08	0.00	1,634.55
Excavator	0.28	2.65	1.54	0.01	0.08	0.08	448.48	0.03	0.00	449.12
ATV Quad with Plow	0.31	0.48	0.00	0.00	0.00	0.00	1.01	0.02	0.00	1.59
Tractor	0.20	11.78	0.45	0.00	0.02	0.02	206.54	0.01	0.03	215.83
Tracked Dozer	0.33	1.85	1.96	0.00	0.15	0.15	263.01	0.03	0.00	263.76
Woodchipper	0.44	17.03	0.32	0.00	0.24	0.24	28.97	0.03	0.03	37.34
Fleet Vehicle (MDV)	0.14	5.76	0.61	0.02	0.23	0.09	2,147.74	0.03	0.05	2,162.22
Fleet Vehicle (LDT2)	0.14	6.69	0.69	0.02	0.31	0.13	2,464.23	0.03	0.05	2,481.24
Water										
Aquatic Weed Harvester	0.33	1.85	1.96	0.00	0.15	0.15	263.01	0.03	0.00	263.76
Honda Boat Motor - 5hp	0.62	0.96	0.03	0.00	0.09	0.09	5.45	0.04	0.01	8.30
Honda Boat Motor - 9.9hp	0.62	0.96	0.03	0.00	0.09	0.09	5.45	0.04	0.01	8.30
Honda Pond Pump	0.03	0.37	0.01	0.00	0.00	0.00	1.31	0.00	0.00	2.12
Air										
Bell 206B Helicopter	0.01	0.09	24.80	0.04	0.34	0.22	4,603.59	0.13	0.15	4,651.98
Robinson R44 Raven II Helicopter	0.01	0.09	24.80	0.04	0.34	0.22	4,603.59	0.13	0.15	4,651.98
Piper Chieftain	0.00	0.12	25.02	0.06	0.36	0.24	4,642.26	0.12	0.12	4,681.02
Total	***7.53***	***137.15***	***88.37***	***0.23***	***3.34***	***2.67***	***21,477.16***	***0.92***	***0.80***	***21,740.78***

Equipment	Tons per Year						Metric Tons per Year			
	VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$	CO_2	CH_4	N_2O	CO_2e
Land										
Handheld ULV Fogger	0.00	0.01	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.05
Maruyama MD155DX	0.00	0.18	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.38
Buffalo Turbine	0.00	0.06	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.11
Skid Sprayer	0.00	0.18	0.00	0.00	0.00	0.00	0.26	0.00	0.00	0.33
Dump Truck	0.02	0.09	0.12	0.00	0.00	0.00	40.73	0.00	0.00	40.78
Excavator	0.00	0.03	0.02	0.00	0.00	0.00	4.07	0.00	0.00	4.07
ATV Quad with Plow	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Tractor	0.00	0.05	0.00	0.00	0.00	0.00	0.84	0.00	0.00	0.88
Tracked Dozer	0.00	0.01	0.01	0.00	0.00	0.00	1.43	0.00	0.00	1.44
Woodchipper	0.00	0.10	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.20
Fleet Vehicle (MDV)	0.01	0.23	0.02	0.00	0.01	0.00	78.72	0.00	0.00	79.25
Fleet Vehicle (LDT2)	0.00	0.23	0.02	0.00	0.01	0.00	77.80	0.00	0.00	78.33
Water										
Aquatic Weed Harvester	0.00	0.02	0.02	0.00	0.00	0.00	2.86	0.00	0.00	2.87
Honda Boat Motor - 5hp	0.01	0.01	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.08
Honda Boat Motor - 9.9hp	0.01	0.01	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.08
Honda Pond Pump	0.00	0.01	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.04
Air										
Bell 206B Helicopter	0.00	0.00	0.12	0.00	0.00	0.00	20.96	0.00	0.00	21.18
Robinson R44 Raven II Helicopter	0.00	0.00	0.07	0.00	0.00	0.00	12.28	0.00	0.00	12.41
Piper Chieftain	0.00	0.00	0.25	0.00	0.00	0.00	42.11	0.00	0.00	42.47
Total	***0.07***	***1.24***	***0.68***	***0.00***	***0.04***	***0.03***	***282.73***	***0.01***	***0.01***	***284.94***

Appendix B

Energy Calculation Sheet

Equipment	No. of Units	Frequency of Use (days/yr)	Peak Daily Usage per unit (hr/day or VMT/day)	Total Peak Daily Usage (hr/day or VMT/day)	Total Annual Average Usage (hr/yr or VMT/yr)	Fuel Usage Rate (gal/hr or gal/VMT)	gal/yr	MMBTU/yr
Land								
Handheld ULV Fogger	9	1	4	36	36	0.17	6.02	0.75
Maruyama MD155DX	9	10	2	18	180	0.35	62.25	7.74
Buffalo Turbine	1	12	2	2	24	0.86	20.65	2.57
Skid Sprayer	1	36	2	2	72	0.86	61.96	7.70
Dump Truck	1	55	6	6	330	12.32	4,064.64	562.91
Excavator	1	20	4	4	80	5.11	408.66	56.60
ATV Quad with Plow	1	8	4	4	32	0.04	1.21	0.15
Tractor	1	9	4	4	36	2.92	105.29	13.09
Tracked Dozer	1	12	4	4	48	3.01	144.42	20.00
Woodchipper	1	12	4	4	48	0.74	35.70	4.44
Fleet Vehicle (MDV)	28	101	79	2,209	178,447	0.05	9,402.65	1,169.13
Fleet Vehicle (LDT2)	27	87	113	3,050	212,310	0.04	9,288.97	1,154.99
Water								
Aquatic Weed Harvester	1	24	4	4	96	3.01	288.85	40.00
Honda Boat Motor - 5hp	1	20	3	3	60	0.16	9.66	1.20
Honda Boat Motor - 9.9hp	1	20	3	3	60	0.16	9.66	1.20
Honda Pond Pump	1	39	2	2	78	0.05	4.03	0.50
Air								
Bell 206B Helicopter	1	14	8.5	8.5	85.3	25.20	2,149.56	290.19
Robinson R44 Raven II Helicopter	1	10	8.5	8.5	50	15.00	750.00	84.38
Piper Chieftain	1	20	6	6	120	15.00	1,800.00	202.50
Total								***3,620.04***

HELIX Environmental Planning

County of San Diego Integrated Vector Management Program

Noise Technical Report

October 2021 | 00187.00005.024

Prepared for:

County of San Diego
Department of Environmental Health
Vector Control Program
5570 Overland Avenue, Suite 102
San Diego, CA 92123

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

County of San Diego Integrated Vector Management Program

Noise Technical Report

Prepared for:

County of San Diego
Department of Environmental Health
Vector Control Program
5570 Overland Avenue, Suite 102
San Diego, CA 92123

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

October 2021 | 00187.00005.024

TABLE OF CONTENTS

TABLE OF CONTENTS (cont.)

LIST OF APPENDICES

LIST OF FIGURES

LIST OF TABLES

ACRONYMS AND ABBREVIATIONS

amsl	above mean sea level
ANSI	American National Standards Institute
CalEPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CDC	Centers for Disease Control and Prevention
County	County of San Diego
CPA	Community Planning Area
BMPs	best management practices
dB	decibel
dBA	A-weighted decibel
DEH	Department of Environmental Health
FHWA	Federal Highway Administration
GPS	global positioning system
Hz	hertz
in/sec	inches per second
IVMP	Integrated Vector Management Program
kHz	kilohertz
L_{EQ}	time-averaged noise level
mPa	micro Pascal
NPDES	National Pollutant Discharge Elimination System
NSLU	noise-sensitive land use
PPV	peak particle velocity
RCNM	Roadway Construction Noise Model
SPL	sound pressure level
SR	State Route
ULV	Ultra Low Volume
USDOT	U.S. Department of Transportation
USEPA	U.S. Environmental Protection Agency
VCP	Vector Control Program

This page intentionally left blank

EXECUTIVE SUMMARY

This report presents an assessment of potential noise impacts associated with the proposed County of San Diego (County) Department of Environmental Health (DEH), Vector Control Program's (VCP) Integrated Vector Management Program (IVMP; Proposed Project). The service area for the IVMP includes all 18 incorporated cities and unincorporated areas of San Diego County. This report details the environmental setting, including noise and sound level descriptors/terminology and noise and vibration sensitive land uses within the IVMP service area, and provides the regulatory framework for evaluation of compliance with relevant regulations and conditions established by each of the jurisdictions within the service area. It provides an analysis of potential noise impacts the IVMP activities may have on noise sensitive land uses and identifies best management practices that would reduce potential adverse noise impacts that may result from ongoing implementation of the IVMP.

Under the Proposed Project, the IVMP would continue the use of the following vector control techniques: surveillance and monitoring, source reduction (i.e., physical control), source treatment (i.e., biological and chemical controls), public education and outreach, and disease diagnostics. Emerging vector control strategies that may be implemented to address future public health risks and public nuisances could include, but not be limited to, increased or advanced/early source prevention and/or reduction, surveillance, or physical/biological/chemical controls. Of these, surveillance and monitoring, source reduction, and source treatment are the only the vector control techniques evaluated in this analysis, as the other techniques (i.e., public education and outreach and disease diagnostics) would not result in temporary noise impacts.

DEH has committed to implementation of BMPs to decrease noise levels from the use of standard equipment for the IVMP operations that would generate noise expected to be of concern to the public. Moreover, activities anticipated to be implemented under the IVMP will be required to comply with all applicable regulations governing temporary noise impacts.

For the purposes of analyzing IVMP equipment noise levels, this report identifies a 75 decibel (dB) time-averaged noise level (L_{EQ}) one-hour limit threshold. IVMP equipment would not be expected to require continuous and uninterrupted operation, and operations at individual locations would be mobile and used at various distances from noise-sensitive land uses. With the implementation of BMPs, noise levels for individual IVMP activities would result in a less than significant noise impact. No mitigation measures would be required. Furthermore, the IVMP would not result in activities that would generate vibration.

This page intentionally left blank

1.0 INTRODUCTION

1.1 PROJECT DESCRIPTION

1.1.1 Project Background

The County of San Diego (County) Department of Environmental Health (DEH), Vector Control Program (VCP) is a public health program that was established to monitor and control vectors that transmit diseases and create public nuisances within San Diego County. For the purposes of the Proposed Project, a vector is defined as any animal capable of spreading disease or producing human discomfort or injury, including, but not limited to, mosquitoes, flies, mites, ticks, other arthropods, and rodents and other vertebrates (California Health and Safety Code Section 2002[k]).

The VCP is managed by County staff, governed by the County Board of Supervisors, and implemented within a service area that includes all 18 incorporated cities and unincorporated areas of San Diego County. The VCP serves to reduce exposure to vectors and vector-borne diseases in a manner that minimizes risks to people, property and the environment through a coordinated set of activities collectively known as the Integrated Vector Management Program (IVMP). The IVMP carries out a full range of vector control activities, practices, and procedures to protect the public from vector-borne diseases and public nuisances while allowing for the inclusion of progressive and emerging vector control techniques, tools and materials. For the purposes of this analysis, the Proposed Project consists of the ongoing implementation of the IVMP.

1.1.2 Project Location

The IVMP service area is defined by the boundaries of San Diego County (Figure 1, *Regional Location*; Figure 2, *Integrated Vector Management Program Service Area*). The county is bordered by Orange and Riverside counties to the north, Imperial County to the east, the Pacific Ocean to the west, and the U.S./Mexico International Border to the south. The service area encompasses approximately 4,261 square miles, and includes all unincorporated area within the county, as well as the 18 incorporated cities (Carlsbad, Chula Vista, Coronado, Del Mar, El Cajon, Encinitas, Escondido, Imperial Beach, La Mesa, Lemon Grove, National City, Oceanside, Poway, San Diego, San Marcos, Santee, Solana Beach, and Vista). The unincorporated portion of the county is divided into 23 planning areas. Fourteen of the planning areas are referred to as Community Planning Areas (CPAs) and nine areas are called Subregional Planning Areas (Subregions). The CPAs are Alpine, Bonsall, County Islands, Fallbrook, Julian, Lakeside, Pendleton/De Luz, Rainbow, Ramona, San Dieguito, Spring Valley, Sweetwater, Valle de Oro, and Valley Center. The nine Subregions are Central Mountain, Crest/Dehesa/Harbison Canyon/Granite Hills, Desert, Jamul/Dulzura, Mountain Empire, North County Metropolitan (Metro), North Mountain, Otay, and Pala/Pauma Valley. The location and extent of specific activities implemented under the IVMP are evaluated based on the site-specific situation and dictated by the targeted vector, regulatory requirements, and applicable management approaches.

1.1.3 Project Description

Under the Proposed Project, the IVMP would continue to comprehensively implement vector control through various techniques, including surveillance and monitoring, source reduction (i.e., physical control), source treatment (i.e., biological and chemical controls), public education and outreach, and

disease diagnostics. Each of these techniques would be applied to the applicable vectors under the IVMP, including disease-transmitting mosquitoes (i.e., Culex spp., Aedes spp., and *Anopheles* spp.); nuisance mosquitoes (i.e., not disease-transmitting); vectors associated with mammalian disease reservoirs (i.e., ticks and rodents); and other nuisance species (e.g., eye gnats not on commercial organic farms) deemed necessary for control as approved by the VCP. The five core services of the IVMP include: (1) early detection of public health risks through comprehensive vector surveillance and testing; (2) control and reduction of vectors that transmit diseases to humans or create public nuisance; (3) dissemination of information regarding tools for prevention, protection, and reporting of vectors that transmit diseases; (4) appropriate and timely response to vector-related customer complaints; and (5) detection of vector-borne pathogens. The objectives of the IVMP are to:

1. Protect public health, well-being, and economic effects from vectors throughout San Diego County by applying integrated vector management practices.

2. Implement effective and efficient integrated vector management practices in a manner that balances environmental impacts with the need to protect the public from vector-borne diseases and nuisances.

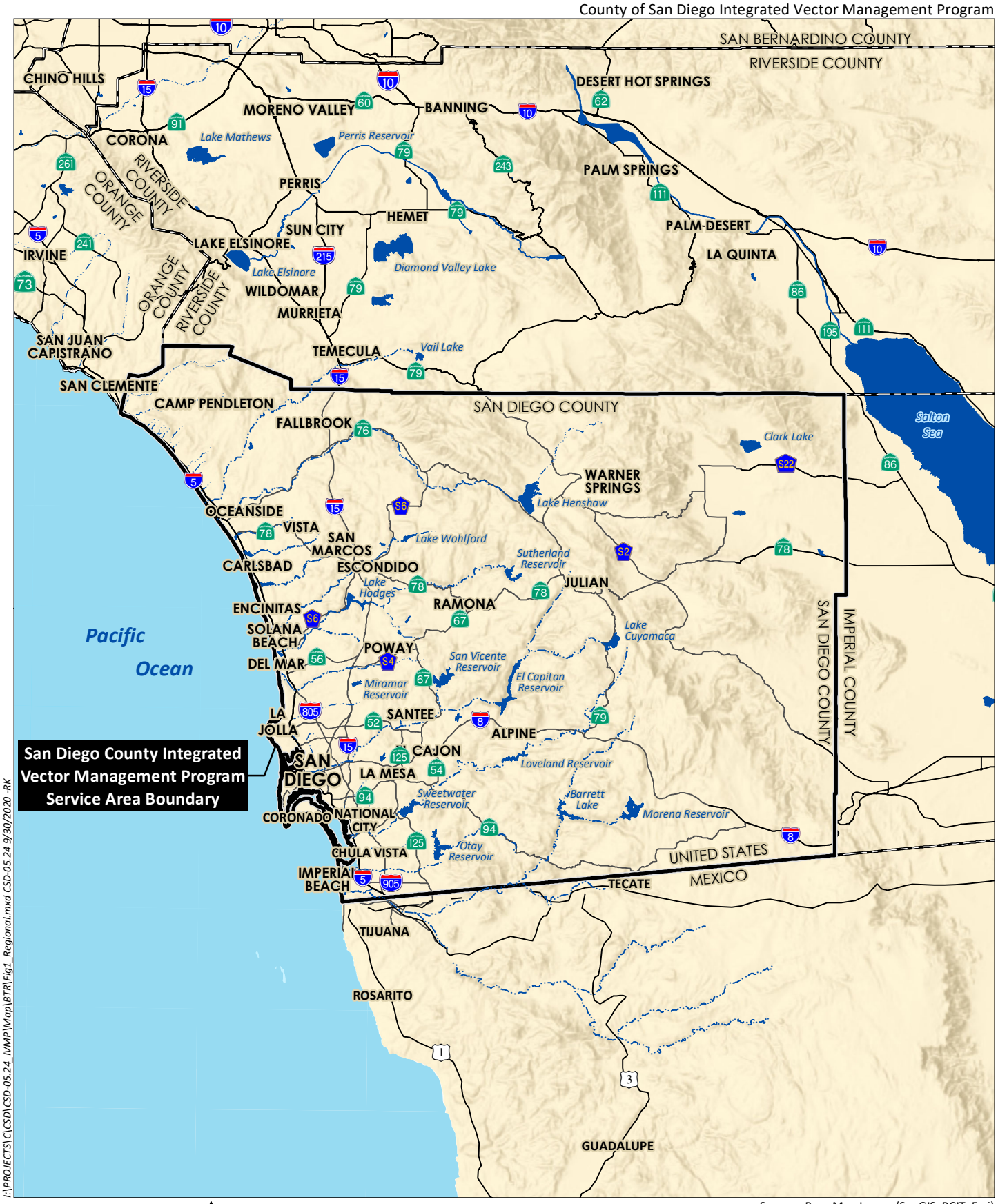
3. Coordinate with other regional vector control districts throughout California as well as State and federal public health and environmental protection agencies to allow for the inclusion of progressive and emerging vector control activities and technologies.

Vector control and surveillance activities are conducted by VCP staff under standard operating procedures and use a risk-based approach to determine appropriate levels of response to each vector of concern. The IVMP incorporates various vector management principles and techniques from guidance documents that are regularly updated, such as the VCP's annual *Mosquito, Vector and Disease Control Assessment Engineer's Report* (hereafter referred to as Engineer's Report); *West Nile Virus Strategic Response Plan*; and *Aedes Transmitted Disease Strategic Response Plan* (County 2020, 2018a, and 2018b, respectively), as well as procedural documents such as the *Mosquito Breeding Site Access Standard Operating Procedure* (County 2014). A general discussion of the key IVMP activities is discussed below.

Surveillance and Monitoring

Vector surveillance, monitoring, and diagnostics are needed to assess location and abundance of vector populations and species so that data-informed decisions can be made. Vector surveillance involves monitoring vector populations and habitat, their disease pathogens, and human/vector interactions. Vector surveillance provides the VCP with valuable information about which vector species are present or likely to occur, locations in which they may occur, abundance, and if they are carrying disease(s). The information obtained from surveillance is evaluated against treatment and risk-based response criteria to decide when and where to implement vector control measures, and to help form action plans that can also assist in reducing the risk of contracting disease or causing nuisance. Vector surveillance can help minimize the area to which control techniques may be applied by directing activities to the areas where they are needed.

The VCP monitors disease-carrying animals such as mosquitoes, ticks, and rodents, as well as other pests including flies on commercial poultry ranches, within the IVMP service area. Monitoring includes such techniques as setting traps to determine abundance and species of mosquitoes; testing mosquitoes for

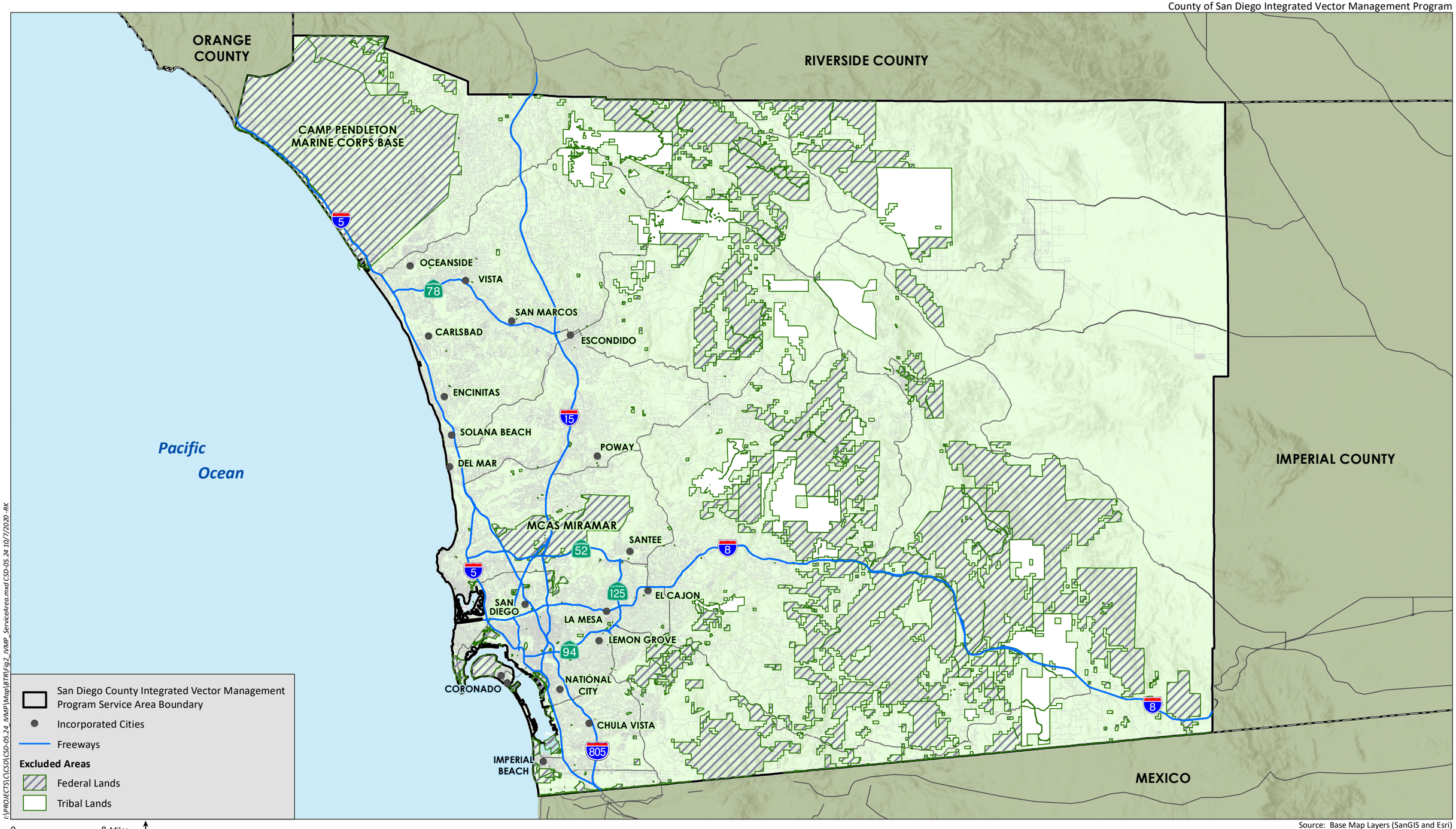


HELIX Environmental Planning

Regional Location

Figure 1

County of San Diego Integrated Vector Management Program



Source: Base Map Layers (SanGIS and Esri)

I:\PROJECTS\CLCSD\CSD-05.24_IVMP\Map\BTR\Fig2_IVMP_ServiceArea.mxd CSD-05.24 10/7/2020 -RK

HELIX Environmental Planning

Integrated Vector Management Program Service Area

Figure 2

presence of disease; collecting and testing dead birds for West Nile virus; and conducting surveys via ground vehicles, aircraft (including piloted and unmanned), watercraft, and remote sensing equipment to evaluate mosquito-breeding sources. Surveillance is also conducted for ticks and rodents.

The VCP operates the Vector Disease and Diagnostic Laboratory that provides diagnostic testing to support the VCP, which helps in the evaluation of public health risk and appropriate responses and treatments. The VCP tests vector specimens from the field for numerous diseases that could be a risk to public health.

Source Reduction

Source reduction (i.e., environmental modification) techniques are used to reduce vector-breeding sources such as habitat and other areas of harborage. Source reduction primarily involves physical control techniques that eliminate or reduce standing water including, but not limited to, ground disturbance (e.g., grading), vegetation management (including physical and/or herbicide application), water control, and other maintenance activities. Trapping and removal of vectors is also a form of source reduction.

Source Treatment

Source treatment includes biological and chemical controls of vectors. Specifically, this includes the use of mosquito fish (*Gambusia affinis*) and application of pesticides, such as larvicides and adulticides to reduce larval and adult mosquito populations, respectively. The type and location of biological and chemical control vary based on different factors, including, but not limited to, the vector species and growth stage, environment, disease presence, and risk level to public health. Any pesticides applied within waterbodies defined by federal and state regulations as Waters of the U.S. and/or State are conducted in accordance with the Statewide National Pollutant Discharge Elimination System (NPDES) Permit for Biological and Residual Pesticide Discharges to Waters of the U.S. from Vector Control Applications (Order No. 2016-0039-DWQ, General Permit No. CA990004). Methods of application include, but are not limited to, backpack applicators, vehicle-mounted equipment, or other motorized vehicles (e.g., piloted and unmanned aircraft, watercraft). Source treatments of non-mosquito vectors can include, but are not limited to, chemical controls applied to mammalian vectors such as rodents and mammal-related disease carriers such as ticks, fleas, and other arthropods. When pesticides are applied, label requirements are followed by VCP staff.

Public Education and Outreach

VCP staff conduct public education and outreach activities to increase public awareness of steps to prevent and protect against disease-carrying vectors. VCP staff distribute educational materials, provide informational displays and presentations, use social media and informational emails, and conduct media campaigns to provide the public with this knowledge.

Emerging Vector Control Strategies

Vector management strategies are updated as new information becomes available and are adapted and applied to new or emerging vectors as they arise. All vector control methods are based on empirical data, scientific evidence, published research, current state and federal guidelines, expert guidance, and the VCP's experience conducting vector control activities. The IVMP integrates progressive and emerging vector control activities and materials established in coordination with other regional vector control

districts and research institutions throughout California, as well as state and federal agencies, such as the California Department of Public Health, California Environmental Protection Agency (CalEPA), the U.S. Environmental Protection Agency (USEPA), and the Centers for Disease Control and Prevention (CDC). Emerging vector control strategies that may be implemented to address future public health risks and public nuisances could include, but not be limited to, increased or early source prevention and/or reduction, surveillance, or physical/biological/chemical controls, depending on the assessment.

1.2 BEST MANAGEMENT PRACTICES

The IVMP follows the best management practices (BMPs) described in State guidance documents, such as the *Best Management Practices for Mosquito Control in California* (California Department of Public Health [CDPH]; 2012), *Best Management Practices for Mosquito Control on California State Properties* (CDPH 2008), and *California Mosquito-borne Virus Surveillance and Response Plan* (CDPH 2020), which detail vector control and pesticide application procedures. In addition, the County integrates BMPs into the IVMP serving as a comprehensive management framework for implementation of individual activities. BMPs implemented as part of the IVMP demonstrate the County's commitment to avoid or minimize effects to the maximum extent feasible. The following BMPs will be implemented to reduce noise:

- For operations that require large-scale treatments that may occur in close proximity to homes or heavily populated, high traffic, or other sensitive areas (including bee farms), or other control activities that may generate noise expected to be of concern to the public, the VCP will notify the public and/or affected properties (approximately 24 to 48 hours in advance, when possible) via the following communication protocols, as appropriate:

    - Provide Advance Notice. Depending on the nature and magnitude of the activities, information will be provided using press releases, social media, website, mailers, hand-delivered flyers, posted signs, and/or emails. Public agencies, such as environmental health and agricultural agencies, emergency service providers, local governments, law enforcement, and airports may also be notified of the nature and duration of the activities.

    - Provide Mechanism to Address Questions. The County offers various methods for customers to communicate with VCP staff via online tools, email, telephone, and/or postal mail during all times of VCP activities to respond to service calls and address public inquiries.

- Vehicles will only be driven on existing roadways, access roads, and existing unpaved access paths. Vehicles driven on levees to travel near aquatic areas (such as tidal marshes, sloughs, or channels) for surveillance or treatment activities will travel at speeds slow enough to avoid or minimize noise and the production of dust, typically 15 miles per hour or less.

- Operation of noise-generating equipment (e.g., construction equipment, wood chipper, pesticide application equipment) will abide by the time-of-day restrictions established by the applicable local jurisdiction's municipal code or ordinance (e.g., city or county) if such noise activities would exceed acceptable noise levels for sensitive receptors (e.g., residential land uses, schools, hospitals, places of worship). All motorized equipment will be shut down when not in use.

- Engine idling times will be minimized by shutting off equipment and vehicles when not in use to the extent feasible.

- Vehicles and equipment will be maintained in accordance with manufacturer's specifications, including mufflers, engine operation, and tire inflation pressure to minimize rolling resistance.

- Vegetation trimming or removal, when necessary to provide access to vector habitat for surveillance and control activities, will be conducted by hand using handheld tools rather than gas-powered equipment or heavy machinery to minimize negative environmental effects.

- Where heavy equipment or machinery are necessary, measures will be taken, such as reducing turns by track-type vehicles, taking a minimum number of passes with equipment, identifying multiple points of entry, driving vehicles at low speed, and avoiding or minimizing operating on open mud and other soft areas.

2.0 ENVIRONMENTAL SETTING AND EXISTING CONDITIONS

2.1 NOISE AND SOUND LEVEL DESCRIPTORS AND TERMINOLOGY

All noise level or sound level values presented herein are expressed in terms of decibels (dB), with A weighting (dBA) to approximate the hearing sensitivity of humans. Time-averaged noise levels are expressed by the symbol L_{EQ}, with a specified duration.

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a hearing organ, such as a human ear. Noise is defined as loud, unexpected, or annoying sound.

In the science of acoustics, the fundamental model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receiver contribute to the sound level and characteristics of the noise perceived by the receiver. The field of acoustics deals primarily with the propagation and control of sound.

Continuous sound can be described by frequency (pitch) and amplitude (loudness). A low frequency sound is perceived as low in pitch. Frequency is expressed in terms of cycles per second, or Hertz (Hz) (e.g., a frequency of 250 cycles per second is referred to as 250 Hz). High frequencies are sometimes more conveniently expressed in kilohertz (kHz), or thousands of Hertz. The audible frequency range for humans is generally between 20 Hz and 20,000 Hz.

The amplitude of pressure waves generated by a sound source determines the loudness of that source. A logarithmic scale is used to describe sound pressure level (SPL) in terms of dBA units. The threshold of hearing for the human ear is about 0 dBA, which corresponds to 20 micro Pascals (mPa).

Because decibels are logarithmic units, SPL cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3-dBA increase. In other words,

when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dBA higher than one source under the same conditions.

To place noise levels measured in dBA in context, typical noise levels for common outdoor and indoor noise sources are shown in Table 1, *Typical Noise Levels*.

Table 1
TYPICAL NOISE LEVELS

Common Outdoor Noise	Noise Level (dBA)	Common Indoor Noise
	110	Rock band
Jet flyover at 1000 feet		
	100	
Gas lawn mower at 3 feet		
Diesel truck at 50 feet at 50 mph	**90**	
		Food blender at 3 feet
Noisy urban area, daytime	**80**	Garbage disposal at 3 feet
Gas lawn mower at 100 feet	**70**	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	**60**	
		Large business office
Quiet urban area, daytime	**50**	Dishwasher in next room
Quiet urban area, nighttime	**40**	Theater, large conference room (background)
Quiet suburban area, nighttime		
	30	Library
Quiet rural area, nighttime		Bedroom at night, concert hall (background)
	20	
		Broadcast/recording studio
	10	
	0	

Source: Caltrans 2013a

2.2 NOISE AND VIBRATION SENSITIVE LAND USES

Noise-sensitive land uses (NSLUs) are land uses that may be subject to stress and/or interference from excessive noise, such as residential dwellings, schools, transient lodging (hotels), hospitals, and educational facilities. Industrial and commercial land uses are generally not considered sensitive to noise. Noise receptors are individual locations that may be affected by noise.

Land uses in which ground-borne vibration could potentially interfere with operations or equipment, such as research, manufacturing, hospitals, and university research operations are considered "vibration-sensitive" (California Department of Transportation [Caltrans] 2013b). The degree of sensitivity depends on the specific equipment that would be affected by the ground-borne vibration. In addition, excessive levels of ground-borne vibration of either a regular or an intermittent nature can result in annoyance to residential uses or schools.

2.3 REGULATORY FRAMEWORK

2.3.1 Local Ordinances

The IVMP service area includes all 18 incorporated cities and unincorporated areas of San Diego County. Cities and counties in California are required to include a noise element in their general plans, including policies intended to achieve noise compatibility between existing and proposed land uses. These policies typically establish average noise levels that are acceptable at different land uses and are intended to guide land-use compatibility when new development is proposed. However, the IVMP would continue to comprehensively implement vector control through various techniques with the goal to protect the public from vector-borne disease and public nuisances. Therefore, the IVMP does not propose changes in land use, and noise compatibility land uses will not be further discussed.

Some jurisdictions within the IVMP service area specify allowable hours for construction and noise levels resulting from construction during certain times of day. Although the IVMP does not include "construction" as part of the Proposed Project, certain activities may cause temporary effects similar to construction activities. Therefore, construction noise standards will be used as a method to describe allowable temporary noise. A summary of relevant regulations and conditions to the IVMP are shown in Table 2, *Summary of Noise Regulations*.

Table 2
SUMMARY OF NOISE REGULATIONS

Jurisdiction	Applicable Hours[1]	Temporary Noise Level Limit[2]
County of San Diego	7:00 a.m. to 7:00 p.m.	75 dBA L_{EQ} (8 hour)
City of Carlsbad	7:00 a.m. to 6:00 p.m.	N/A
City of Chula Vista	7:00 a.m. to 10:00 p.m.	N/A
City of Coronado	7:00 a.m. to 7:00 p.m.	75 dBA L_{EQ} (1 hour)
City of Del Mar	7:00 a.m. to 7:00 p.m.	75 dBA L_{EQ} (1 hour)
City of El Cajon	7:00 a.m. to 7:00 p.m.	N/A
City of Encinitas	7:00 a.m. to 7:00 p.m.	75 dBA L_{EQ} (8 hour)
City of Escondido	7:00 a.m. to 6:00 p.m.	75 dBA L_{EQ} (1 hour)
City of Imperial Beach	7:00 a.m. to 10:00 p.m.	75 dBA L_{EQ} (1 hour)
City of La Mesa	7:00 a.m. to 10:00 p.m.	N/A
City of Lemon Grove	7:00 a.m. to 7:00 p.m.	75 dBA L_{EQ} (8 hour)
City of National City	7:00 a.m. to 7:00 p.m.	75 dBA L_{EQ} (1 hour)[3]
City of Oceanside	7:00 a.m. to 8:00 p.m.	85 dBA L_{EQ} (1 hour)[4]
City of Poway	7:00 a.m. to 5:00 p.m.	75 dBA L_{EQ} (8 hour)
City of San Diego	7:00 a.m. to 7:00 p.m.	75 dBA L_{EQ} (12 hour)
City of San Marcos[5]	7:00 a.m. to 7:00 p.m.	75 dBA L_{EQ} (8 hour)
City of Santee	7:00 a.m. to 7:00 p.m.	75 dBA L_{EQ} (1 hour)

Table 2 (cont.)
SUMMARY OF NOISE REGULATIONS

Jurisdiction	Applicable Hours[1]	Temporary Noise Level Limit[2]
City of Solana Beach	7:00 a.m. to 7:00 p.m.	75 dBA L_{EQ} (1 hour)
City of Vista[5]	7:00 a.m. to 7:00 p.m.	75 dBA L_{EQ} (8 hour)

[1] Applicable hours indicate the hours when construction noise is not prohibited, per each jurisdiction's Municipal Code. Hours may vary by day of week and by holidays, depending on jurisdiction. Hours listed in this table apply to typical weekdays.
[2] N/A = not applicable; indicates that the jurisdiction has not set a numerical construction noise standard.
[3] The City of National City sets different noise levels for semi-residential and for stationary equipment. This report anticipates the individual IVMP activities would fall under the limits for short-term mobile equipment at residential locations.
[4] The City of Oceanside does not set construction noise limits in its Municipal Code. The General Plan Noise Element sets the 85 dBA limit when measured at 100 feet.
[5] The City of San Marcos and City of Vista adopted the County Noise Ordinance in their Municipal Codes.

2.3.1.1 County of San Diego – Noise Ordinance

Sections 36.401 through 36.423 of the County of San Diego Code of Regulatory Ordinances (i.e., Noise Ordinance) discuss further County noise requirements. The purpose of the Noise Ordinance is to regulate noise in the unincorporated area of the County to promote the public health, comfort, and convenience of the County's inhabitants and its visitors.

Section 36.408, Hours of Operation of Construction Equipment

Except for emergency work, it shall be unlawful for any person to operate or cause to be operated, construction equipment:

a. Between the hours of 7:00 p.m. and 7:00 a.m.

b. On a Sunday or a holiday. For the purposes of this section a holiday means January 1, the last Monday in May, July 4, the first Monday in September, December 25, and any day appointed by the President as a special national holiday or the Governor of the State as a special State holiday. A person may, however, operate construction equipment on a Sunday or holiday between the hours of 10:00 a.m. and 5:00 p.m. at the person's residence or for the purpose of constructing a residence for himself or herself, provided that the operation of construction equipment is not carried out for financial consideration or other consideration of any kind and does not violate the limitations in Sections 36.409 and 36.410**.**

Section 36.409, Construction Noise

Except for emergency work, it shall be unlawful for any person to operate construction equipment or cause construction equipment to be operated that exceeds an average sound level of 75 dBA for an 8-hour period, between 7:00 a.m. and 7:00 p.m., when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is being received.

The minimum measurement period for any measurements is one hour. During the measurement period, a measurement must be conducted every minute from a fixed location on an occupied property. The

measurements must measure the maximum sound level during each minute of the measurement period. If the sound level caused by construction equipment or the producer of the impulsive noise exceeds the maximum sound level for any portion of any minute, it will be deemed that the maximum sound level was exceeded during that minute.

2.3.1.2 City of Carlsbad

Section 8.48.010 of the City of Carlsbad's Municipal Code states that it shall be unlawful to operate equipment or perform any construction in the erection, demolition, alteration, or repair of any building or structure or the grading or excavation of land during the following hours, except as hereinafter provided:

a. After 6:00 p.m. on any day, and before 7:00 a.m., Monday through Friday, and before 8:00 a.m. on Saturday;

b. All day on Sunday; and

c. On any federal holiday.

2.3.1.3 City of Chula Vista

Section 17.24.040 of the City of Chula Vista's Municipal Code prohibits the use of any tools, power machinery, or equipment or the conduct of construction and building work in residential zones so as to cause noises disturbing to the peace, comfort, and quiet enjoyment of property of any person residing or working in the vicinity between the hours of 10:00 p.m. and 7:00 a.m., Monday through Friday, and between the hours of 10:00 p.m. and 8:00 a.m., Saturday and Sunday, except when the work is necessary for emergency repairs required for the health and safety of any member of the community.

2.3.1.4 City of Coronado

Section 41.10.040 of the City of Coronado Municipal Code states that it shall be unlawful for any person, between the hours of 7:00 p.m. and 7:00 a.m. of any day or on legal holidays and Sundays to erect, construct, demolish, excavate for, alter or repair any building or structure in such a manner as to create a disturbing, excessive or offensive noise unless a noise control permit has been applied for and granted beforehand by the Noise Control Officer.

Section 41.10.050 states that it shall be unlawful for any person, including the City of Coronado, to conduct any construction activity so as to cause, at or within the property lines of any property zoned residential, an average sound level greater than 75 decibels during a one-hour period any time between the hours of 7:00 a.m. to 7:00 p.m. unless a variance has been applied for and granted by the Noise Control Officer.

2.3.1.5 City of Del Mar

Section 9.20.050 of the City of Del Mar Municipal Code states that any person who operates powered construction or landscape equipment and/or who erects, constructs, demolishes, excavates for, alters or repairs any building or structure within the City of Del Mar in such a manner as to cause noise to be received beyond the boundaries of the property on which the construction work is occurring shall comply with the following:

a. No construction work shall be performed on Sundays or City holidays.

b. No construction work shall be performed before 9:00 a.m. or after 7:00 p.m. on Saturday.

c. No construction work shall be performed before 7:00 a.m. or after 7:00 p.m. on Monday through Friday.

d. Construction activity shall not cause an hourly average sound level greater than 75 decibels on property zoned or used for residential purposes.

2.3.1.6 City of El Cajon

Section 17.115.130 of the City of El Cajon Municipal Code states that it is unlawful for any person within any residential zone, or within a radius of 500 feet from any residential zone, to operate equipment or perform any outside construction, maintenance or repair work on buildings, structures, landscapes or related facilities, or to operate any pile driver, power shovel, pneumatic hammer, power hoist, leaf blower, mower, or any other mechanical device, between the hours of 7:00 p.m. of one day and 7:00 a.m. of the next day in such a manner that a reasonable person of normal sensitivities residing in the area is caused discomfort or annoyance. This shall also apply to any property in the Mixed-Use zone having one or more residential units. This restriction does not apply to emergency work made necessary to restore property to a safe condition, restore utility service, or to protect persons or property from an imminent exposure to danger.

2.3.1.7 City of Encinitas

Section 9.32.410 of the City of Encinitas Municipal Code states that except for emergency work, it shall be unlawful for any person, including the City of Encinitas, to operate construction equipment at any construction site on Mondays through Saturdays except between the hours of 7:00 a.m. and 7:00 p.m.

No such equipment or combination of equipment regardless of age or date of acquisition, shall be operated so as to cause noise at a level in excess of 75 decibels for more than eight hours during any 24-hour period when measured at or within the property lines of any property which is developed and used either in part or in whole for residential purposes. In the event that lower noise limit standards are established for construction equipment pursuant to state or federal law, said lower limits shall be used as a basis for revising and amending the noise level limits specified in this subsection.

2.3.1.8 City of Escondido

Section 17-234 of the City of Escondido Municipal Code states that except for emergency work, it shall be unlawful for any person, including the City of Escondido, to operate construction equipment as follows:

a. It shall be unlawful for any person, including the City of Escondido, to operate construction equipment at any construction site, except on Monday through Friday during a week between the hours of 7:00 a.m. and 6:00 p.m. and on Saturdays between the hours of 9:00 a.m. and 5:00 p.m., and provided that the operation of such construction equipment complies with the requirements of subsection (c) of this section.

b. It shall be unlawful for any person, including the City of Escondido, to operate construction equipment at any construction site on Sundays and on days designated by the President, Governor, or City Council as public holidays.

c. No construction equipment or combination of equipment, regardless of age or date of acquisition, shall be operated so as to cause noise in excess of a one-hour average sound level limit of 75 dBA at any time, unless a variance has been obtained in advance from the City Manager.

2.3.1.9 City of Imperial Beach

Section 9.32.20 of the City of Imperial Beach Municipal Code states that it is prohibited to use any tools or power machinery so as to cause noise disturbances to anyone working or residing in the vicinity, or in excess of 75 dBA, between the hours of 10:00 p.m. and 7:00 a.m.

2.3.1.10 City of La Mesa

Section 10.80.100 of the City of La Mesa Municipal Code states that it is unlawful for any person within a residential zone or CN (neighborhood commercial) zone, or within 500 feet of these zones, to operate equipment or perform any outside construction or repair work on buildings, structures, or projects or to operate any pile driver, power shovel, pneumatic hammer, derrick, power hoist, or any other construction-type device between the hours of 10:00 p.m. of one day and 7:00 a.m. of the next day, or on Sundays unless a special permit authorizing the activity has been duly obtained from the chief building official.

2.3.1.11 City of Lemon Grove

Section 9.24.120 of the City of Lemon Grove Municipal Code states that it is unlawful for any person, including the City of Lemon Grove, to operate any single or combination of powered construction equipment at any construction site on Sundays on any day celebrating official state holidays. It is unlawful for any person to operate any single or combination of powered construction equipment at any construction site on Mondays through Saturdays except between the hours of 7:00 a.m. and 7:00 p.m.

No such equipment, or combination of equipment, regardless of age or date of acquisition, shall be operated so as to cause noise at a level in excess of 75 dBA for more than eight hours during any 24-hour period when measured at or within the property lines of any property which is developed and used either in part or in whole for residential purposes.

2.3.1.12 City of National City

Section 2.10.160 of the City of National City Municipal Code states that it is unlawful to operate or to allow or cause the operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work between weekday hours of 7:00 p.m. and 7:00 a.m., or at any time on weekends or holidays.

Noise from construction demolition activities shall not exceed the maximum noise levels at or within the boundaries of affected properties listed in the following schedule at all other times:

Maximum noise levels for nonscheduled, intermittent, short-term operation (less than ten days) of mobile equipment shall not exceed 75 dBA for residential areas and 85 dBA for semi-residential and commercial areas. Maximum noise levels for repetitively scheduled and relatively long-term operation (periods of ten days or more) of stationary equipment shall not exceed 60 dBA for residential areas and 70 dBA for semi-residential/commercial areas.

2.3.1.13 City of Oceanside

The City of Oceanside does not set construction noise limits in its Municipal Code. The General Plan Noise Element for the City of Oceanside, however, states that noise generated by construction activity shall not exceed 85 dBA when measured 100 feet from the source. Construction activity shall not occur between 8:00 p.m. and 7:00 a.m. that generates noise levels exceeding 50 dBA at any property line.

2.3.1.14 City of Poway

Section 8.08.100 of the City of Poway Municipal Code states that it is unlawful for any person, including the City of Poway, to operate any single or combination of powered construction equipment at any construction site before 7:00 a.m. or after 5:00 p.m. on Mondays through Saturdays or at any time on a Sunday or holiday.

No such equipment, or combination of equipment regardless of age or date of acquisition, shall be operated so as to cause noise at a level in excess of 75 decibels for more than eight hours during any 24-hour period when measured at or within the property lines of any property which is developed and used either in part or in whole for residential purposes.

2.3.1.15 City of San Diego

Section 59.5.0404 of the San Diego Municipal Code states that it shall be unlawful for any person, including the City of San Diego, to conduct any construction activity so as to cause, at or beyond the property lines of any property zoned residential, an average sound level greater than 75 dBA during the 12-hour period from 7:00 a.m. to 7:00 p.m.

2.3.1.16 City of San Marcos

The City of San Marcos has adopted the County of San Diego Noise Ordinance for the purpose of controlling excessive noise levels, including noise from construction activities.

2.3.1.17 City of Santee

Section 8.12.290 of the City of Santee Municipal Code states that it shall be unlawful for construction equipment to be operated on Sundays, holidays, or between the hours of 7:00 p.m. to 7:00 a.m. Monday through Saturday. If construction is to occur between the hours of 7:00 a.m. to 7:00 p.m. Monday through Saturday, construction equipment shall not exceed 75 dBA for more than 8 hours during any 24-hour period when measured at the property line of a residential use.

2.3.1.18 City of Solana Beach

Section 7.34.100 of the City of Solana Beach Municipal Code states that construction noise levels are not to exceed 75 dBA for more than eight hours during any 24-hour period when measured at or within

property lines of any property which is developed and used either in part or in whole for residential purposes.

Except for emergency work or other exceptions granted by the City Manager, construction noise would be limited to the following hours:

a. Before 7:00 a.m. or after 7:00 p.m., Monday through Friday, and before 8:00 a.m. or after 7:00 p.m. on Saturday;

b. All day on Sunday, New Year's Day, Martin Luther King Day, President's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving Day, and Christmas Day.

2.3.1.19 City of Vista

The City of Vista has adopted the County of San Diego Noise Ordinance for the purpose of controlling excessive noise levels, including noise from construction activities.

2.3.2 Federal Aviation Administration

Standards related to aircraft are contained in CFR Title 14: Aeronautics and Space, Chapter I: Federal Aviation Administration, Department of Transportation, Subchapter C for fixed-wing aircraft noise and Subchapter H for helicopter noise.

2.3.2.1 Part 36: Noise Standards: Aircraft Type and Airworthiness Certification

Noise data from aircraft engines, propellers, and combinations of each by aircraft type are well documented as each aircraft type must be certified by the FAA under Part 36 prior to use by general and commercial aviation. The helicopters identified under IVMP for aerial surveillance and source treatment have FAA noise certifications, including Robinson R44 and Bell 206, respectively.[1]

Noise standards for the issue of certificates for propeller-driven small airplanes, and propeller-driven commuter category airplanes do not include those airplanes designed for agricultural aircraft operations. Agricultural aircraft operations include those defined as dispersing economic poison and dispensing substances intended for pest control.

2.3.2.2 Part 91: Flight Operations

Aircraft not operating under an Instrument Flight Rules, emergencies, during takeoff or landing, or Part 137 are required to maintain the altitudes listed in Section 91.119 - Minimum Safe Altitudes: General (a)-(d). Section 91.119 (a), (b), and (c) are provided below.

Except when necessary for takeoff or landing, no person may operate an aircraft below the following altitudes:

(a) Anywhere. An altitude allowing, if a power unit fails, an emergency landing without undue hazard to persons or property on the surface.

[1] 14 CFR Part 36, Appendix J - https://www.faa.gov/about/office_org/headquarters_offices/apl/noise_emissions/aircraft_noise_levels/

(b) Over congested areas. Over any congested area of a city, town, or settlement, or over any open air assembly of persons, an altitude of 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet of the aircraft.

(c) Over other than congested areas. An altitude of 500 feet above the surface, except over open water or sparsely populated areas. In those cases, the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure.

2.3.2.3 Section 137.49: Operations Over Other than Congested Areas

Notwithstanding Part 91 of this chapter, during the actual dispensing operation, including approaches, departures, and turnarounds reasonably necessary for the operation, an aircraft may be operated over other than congested areas below 500 feet above the surface and closer than 500 feet to persons, vessels, vehicles, and structures, if the operations are conducted without creating a hazard to persons or property on the surface.

2.3.2.4 Section 137.51: Operation over Congested Areas: General

(a) Notwithstanding Part 91 of this chapter, an aircraft may be operated over a congested area at altitudes required for the proper accomplishment of the agricultural aircraft operation if the operation is conducted:

(1) With the maximum safety to persons and property on the surface, consistent with the operation, and

(2) In accordance with the requirements of paragraph (i) of this section

(i) No person may operate an aircraft over a congested area except in accordance with the requirements of this paragraph.

(3) Prior written approval must be obtained from the appropriate official or governing body of the political subdivision over which the operations are conducted.

(4) Notice of the intended operation must be given to the public by some effective means, such as daily newspapers, radio, television, or door-to-door notice.

(5) A plan for each complete operation must be submitted to, and approved by appropriate personnel of the FAA Flight Standards District Office having jurisdiction over the area where the operation is to be conducted. The plan must include consideration of obstructions to flight, the emergency landing capabilities of the aircraft to be used, and any necessary coordination with air traffic control.

(6) Single engine aircraft must be operated as follows:

(i) Except for helicopters, no person may take off a loaded aircraft, or make a turnaround over a congested area.

(ii) No person may operate an aircraft over a congested area below the altitudes prescribed in Part 91 of this chapter except during the actual dispensing operation, including the approaches and departures necessary for that operation.

(iii) No person may operate an aircraft over a congested area during the actual dispensing operation, including the approaches and departures for that operation, unless it is operated in a pattern and at such an altitude that the aircraft can land, in an emergency, without endangering persons or property on the surface.

(7) Multiengine aircraft must be operated as follows:

(i) No person may take off a multiengine airplane over a congested area except under conditions that will allow the airplane to be brought to a safe stop within the effective length of the runway from any point on takeoff up to the time of attaining, with all engines operating at normal takeoff power, 105 percent of the minimum control speed with the critical engine inoperative in the takeoff configuration or 115 percent of the power-off stall speed in the takeoff configuration, whichever is greater, as shown by the accelerate stop distance data. In applying this requirement, takeoff data is based upon still-air conditions, and no correction is made for any uphill gradient of 1 percent or less when the percentage is measured as the difference between elevations at the end points of the runway divided by the total length. For uphill gradients greater than 1 percent, the effective takeoff length of the runway is reduced 20 percent for each 1 percent grade.

(ii) No person may operate a multiengine airplane at a weight greater than the weight that, with the critical engine inoperative, would permit a rate of climb of at least 50 feet per minute at an altitude of at least 1,000 feet above the elevation of the highest ground or obstruction within the area to be worked or at an altitude of 5,000 feet, whichever is higher. For the purposes of this subdivision, it is assumed that the propeller of the inoperative engine is in the minimum drag position, that the wing flaps and landing gear are in the most favorable positions, and that the remaining engine or engines are operating at the maximum continuous power available.

(iii) No person may operate any multiengine aircraft over a congested area below the altitudes prescribed in Part 91 of this chapter except during the actual dispensing operation, including the approaches, departures, and turnarounds necessary for that operation.

2.3.2.5 Section 137.53: Operation over Congested Areas: Pilots and Aircraft

(a) General. No person may operate an aircraft over a congested area except in accordance with the pilot and aircraft rules of this section.

(b) Pilots. Each pilot in command must have at least:

(1) 25 hours of pilot-in-command flight time in the make and basic model of the aircraft, at least 10 hours of which must have been acquired within the preceding 12 calendar months.

(2) 100 hours of flight experience as pilot in command in dispensing agricultural materials or chemicals.

(c) Aircraft.

(1) Each aircraft must –

(i) If it is an aircraft not specified in paragraph (c)(1)(ii) of this section, have had within the preceding 100 hours of time in service a 100-hour or annual inspection by a person authorized by Part 65 or 145 of this chapter, or have been inspected under a progressive inspection system.

(ii) If it is a large or turbine-powered multiengine civil airplane of U.S. registry, have been inspected in accordance with the applicable inspection program requirements of Section 91.409 of this chapter.

(2) If other than a helicopter, it must be equipped with a device capable of jettisoning at least one-half of the aircraft's maximum authorized load of agricultural material within 45 seconds. If the aircraft is equipped with a device for releasing the tank or hopper as a unit, there must be a means to prevent inadvertent release by the pilot or other crewmember.

2.4 EXISTING CONDITIONS

San Diego County is a diverse region with a variety of land uses, habitats, and climatic and topographic conditions. Because of the diversity of vector habitat within the IVMP service area, vector control activities are conducted in a wide variety of ecosystems, habitats types, and land uses throughout the county. Mosquito control activities are associated with wet areas of all types and sizes, including marshes, ponds, creeks, seasonal wetlands, wastewater ponds, stormwater detention basins, ditches, ornamental fishponds, impound areas, etc., as well as individual homes or commercial buildings. Other vectors such as fleas, ticks, and rodents are more commonly found in rural or undeveloped areas, including campgrounds and agricultural areas.

The county is a generally semi-arid environment and supports a wide range of habitats and biological communities that vary greatly depending on the eco-region, soils and substrate, elevation, and topography. Habitats and vegetation communities include vegetated wetlands, oak woodlands, riparian scrub, meadows, freshwater marsh, tidal marshes, sloughs, lakes, ponds, sage scrub, chaparral, grassland habitats, and a variety of other upland and wetland habitats. Sensitive habitats and unique resources within the service area require special consideration due to the potential presence of endangered plants and animals. These include, but are not limited to, active coastal dunes; vernal pools; southern maritime scrub; maritime succulent scrub; southern coastal bluff scrub; riparian scrub, forest, and woodland; and salt marsh. Additionally, man-made facilities that may be served by the IVMP include stormwater detention basins, flood control channels, roadside ditches, and liquid waste detention ponds.

The existing transportation network consists of freeways, highways, regional arterials, local streets and roads, alternative transportation facilities, commercial and general aviation facilities, seaport facilities,

and ports of entry at the U.S./Mexico border. These facilities serve the 18 cities and unincorporated areas of the county.

Land uses within the county vary between the urban areas along the coast and the more rural areas in the eastern regions. The majority of the land in the unincorporated county is open space or undeveloped, while the majority of land in the incorporated cities is developed. More than 50 percent of the total land area in the region is not available for urban development, including public lands, dedicated parks and open space, lands constrained for environmental reasons, and military use (SANDAG 2015). The highest population densities are found in the western (coastal) third of the county, where topography and mild coastal climatic conditions have attracted intensive development. Urban uses tend to consist of residential and commercial uses, as well as small-scale agricultural and industrial uses. Land uses that occur throughout the county include low-density residential and commercial uses, agricultural operations, mineral resources and extraction, and undeveloped habitats, as well as national forest and state park lands. Public and semi-public facilities, recreational areas, and open space conservation areas are located throughout the county.

3.0 METHODOLOGY AND EQUIPMENT

3.1 NOISE MODELING SOFTWARE

Modeling of the exterior noise environment for this report was analyzed using the Roadway Construction Noise Model (RCNM; USDOT 2008), which incorporates estimates of sound levels from standard construction equipment based on manufacturers' specifications and measured reference noise levels. Although the IVMP does not include construction of permanent noise sources as part of the Proposed Project, the RCNM is appropriate because it is used for individual equipment and is a state-approved model for analyzing temporary noise levels.

3.2 NOISE-GENERATING ACTIVITIES

Under the Proposed Project, the IVMP would continue the use of the following vector control techniques: surveillance and monitoring, source reduction (i.e., physical control), source treatment (i.e., biological and chemical controls), public education and outreach, and disease diagnostics. Emerging vector control strategies that may be implemented to address future public health risks and public nuisances could include, but not be limited to, increased or advanced/early source prevention and/or reduction, surveillance, or physical/biological/chemical controls. Of these, surveillance and monitoring, source reduction, and source treatment are the only the vector control techniques evaluated in this analysis, as the other techniques (i.e., public education and outreach and disease diagnostics) would not result in temporary noise impacts.

Surveillance and monitoring activities include evaluation of mosquito-breeding areas by conducting surveys via ground vehicles, aircraft (including piloted and unmanned), watercraft, and remote sensing equipment; trapping of mosquitoes and rodents; and testing of collected samples for vector-borne diseases. The reduction of vector-breeding sources primarily involves physical control techniques that eliminate or reduce standing water that functions as mosquito breeding habitat. These techniques include but are not limited to vegetation management including trimming and removal of vegetation and application of herbicides; removal of sediment; water control; and other maintenance activities.

Source treatment, which includes biological and chemical controls used to manage and reduce vectors, can include the use of natural predators, parasites, or pathogens to reduce immature mosquito numbers (biological controls) and application of pesticides that target both larvae (larvicides) and adult mosquitos (adulticides) (chemical controls). One of the techniques employed by the VCP for biological controls is the application of mosquito fish in artificial mosquito breeding sources such as ornamental ponds, rain barrels, horse troughs, neglected swimming pools, and spas to reduce the abundance of mosquitoes. Pesticides are applied through on-ground techniques such as by foot with backpack applicators, vehicle-mounted equipment, or watercraft by qualified certified technicians, or by aircraft (including piloted and unmanned) when land-based methods are not practicable due to the size of the area to be treated or impediments to access. As described in Section 1.2, the IVMP and VCP follow the best management practices (BMPs) described in the *Best Management Practices for Mosquito Control in California* (CDPH 2012) and in the *California Mosquito-borne Virus Surveillance and Response Plan* (CDPH 2005) which detail vector control and pesticide application procedures.

Noise-generating activities associated with the IVMP would include mobile equipment that is not meant to be stationary or permanent. Noise from the IVMP would be temporary and would last only for the duration of each activity. No potential exists to produce permanent increases in noise as a result of the IVMP, and therefore are not discussed further. Examples of typical temporary noise levels for common noise sources and equipment applicable to the IVMP are presented in Table 1. Noise levels are addressed at a programmatic level based on the types of equipment that may be used during surveillance and monitoring, source reduction, and source treatment activities. Due the programmatic nature of this document, the exact locations and extent of all activities to be conducted under the IVMP are not known at this time. As such, site-specific evaluation of noise sources and potential effects is beyond the scope of this programmatic evaluation.

3.2.1 Equipment Noise Levels

The full list of equipment to be used in the IVMP is provided in Appendix A. Some equipment would not generate elevated noise levels and were therefore excluded from this analysis. Excluded equipment includes hand operated tools, attachments, and other equipment such as battery-powered traps. A list of noise-generating equipment is provided in Table 3, *IVMP Equipment Noise Levels*. Noise levels are based on manufacturer data sheets, referenced studies, and noise databases. Noise levels are based on a standard modeled distance of 50 feet as a reference, and do not assume the incorporation of BMPs or noise attenuation measures that the IVMP may implement.

Table 3
IVMP EQUIPMENT NOISE LEVELS

Equipment Name	Equipment Type	Distance from Receiver	dBA L_{EQ} (one hour)
Pond Pump – WB15	Pond Pump	50 feet	70
Pond Pump – Electric Pump	Pond Pump	50 feet	70
Pioneer ULV (battery-powered)	Hand Sprayer/Fogger	50 feet	<45
Arrow ULV (gas)	Hand Sprayer/Fogger	50 feet	87
Colt ULV (gas)	Hand Sprayer/Fogger	50 feet	87
Skid Sprayer	Hand Sprayer/Fogger	50 feet	<45
Skid Sprayer (small plastic)	Hand Sprayer/Fogger	50 feet	<45
Maruyama	Granular applicator	50 feet	<45
Mozzie Vehicle-mounted sprayer	Vehicle-mounted sprayer	50 feet	87
DynaJet	Vehicle-mounted sprayer	50 feet	87
Buffalo turbine	Vehicle-mounted sprayer	50 feet	87
Boat motor – four stroke engine	Motor	50 feet	85
Boat motor – battery-powered electric motor	Motor	50 feet	70
Helicopter	Aircraft	400 feet	87
Piper Chieftain	Aircraft (fixed-wing)	N/A[1]	N/A[1]
Pickup Truck at 35 mph[1]	Vehicle	50 feet	53
Excavator[2]	Construction Equipment	100 feet	71
John Deere 6420 with Flail Mulch Mower S900*	Construction Equipment	50 feet	80
Caterpillar D3*	Construction Equipment	50 feet	62
Salsco 6” 6235BXT*	Wood Chipper	50 feet	55
Marshmaster MM-1LX*	Aquatic Weed Harvester	50 feet	61

Source: Appendix A

[1] Not Applicable – agricultural aircraft are exempt under CFR 36 1(a)(2) and 36.1583. Noise from fixed-wing aircraft used for agricultural operations, including pest control applications, is not regulated by the FAA and noise information is not available.

[2] Noise level conservatively based on 100 passes of a singular receiver at 35 mph within a given hour.

[3] Noise level based on Roadway Construction Noise Model

* Equipment/vehicle is not listed in County’s existing inventory (2020b), but could potentially be used, if needed.

dBA = A-weighted decibel; L_{EQ} = time averaged level; ULV = Ultra Low Volume

3.2.2 Traffic

Traffic trips generated by the IVMP would primarily result from Certified Vector Control Technicians travelling between County offices and individual vector sites that require surveillance or source treatment. As a result, these traffic trips would be short-term and temporary. As described in Section 2.1, a doubling of noise-generating activity (i.e., traffic) would cause a doubling in noise (a 3 dBA increase), which would be considered a significant increase. Additionally, the types of vehicles that would be used (e.g., pickup trucks and other light vehicles) do not generate noise levels that are louder than other common vehicles. Individual IVMP activities, and therefore the vehicles associated with them, would be dispersed over a large area. As such, noise level increases associated with IVMP-related traffic are anticipated to be less than double any trafficked roadway, and noise levels from IVMP traffic are not further analyzed.

4.0 GUIDELINES FOR THE DETERMINATION OF SIGNIFICANCE

The following significance threshold categories for noise are based specifically on the County's Guidelines for Determining Significance and Report Format and Content Requirements (County 2009). The County's Guidelines for Determining Significance were adapted from Appendix G of the CEQA Guidelines and developed using the best available information.

- Noise Sensitive Land Uses Affected by Airborne Noise
    - Exterior Locations
    - Interior Locations

- Project – Generated Airborne Noise
    - Non-Construction Noise
    - Construction Noise
    - Impulsive Noise

- Ground-borne Vibration and Noise Impacts

4.1 NOISE SENSITIVE LAND USES AFFECTED BY AIRBORNE NOISE

Cities and counties in California are required to include a noise element in their general plans, which include policies intended to achieve noise compatibility between land uses. These policies typically establish average noise levels that are acceptable at different land uses. The standards established in the noise elements for the IVMP service area are intended to establish land-use compatibility for planning purposes and are not intended to address temporary and sporadic sources of noise such as the IVMP activities. Therefore, noise compatibility discussions in general plan noise elements are not discussed further in this technical report.

Furthermore, the IVMP includes implementation of surveillance and monitoring, source reduction (i.e., physical control), source treatment (i.e., biological and chemical controls), public education and outreach, and disease diagnostics for the purpose of protecting public health, well-being, and economic effects from vectors throughout San Diego County. The IVMP does not propose changes in land use or improvements that would expose people to excessive noise levels associated with proximity to a public airport or private airstrip. Therefore, airport land use noise compatibility is not discussed further.

4.2 PROJECT-GENERATED AIRBORNE NOISE

A significant impact would result if project implementation would generate airborne noise which, together with noise from all sources, will be in excess of established thresholds for (1) non-construction noise; (2) construction noise; or (3) impulsive noise as discussed below.

4.2.1 Non-Construction Noise

The IVMP would be implemented within a service area that includes all 18 incorporated cities and unincorporated areas of San Diego County. IVMP activities would be short-term and temporary in nature. Therefore, although the IVMP does not include "construction" as part of the Proposed Project,

certain activities may cause temporary effects similar to construction activities. Therefore, construction noise standards will be used as a method to describe allowable temporary noise. As described in Section 2.3 and shown in Table 1, noise ordinances vary throughout the county depending on the jurisdiction. For the jurisdictions that establish a noise level limit for construction, all except one use a volume of 75 dBA. Eight jurisdictions allow this level to be calculated on the basis of one hour, five jurisdictions (including the County) use an 8-hour average, and one (the City of San Diego) uses a 12-hour average to calculate the limit. The one-hour average is the most restrictive, as it limits the amount of quieter time included in the calculation that would potentially lower the overall average noise level.

Because most of the jurisdictions use a one-hour average and because this is the most conservative, this report uses the threshold of 75 dBA L_{EQ} (one hour) to assess significance for individual IVMP activities.

4.2.2 Construction Noise

As discussed above in Section 4.2.1, the IVMP does not include "construction" as part of the Proposed Project, but certain activities may cause temporary effects similar to construction activities. Therefore, construction noise standards will be used as described in Section 4.2.1 as a method to describe allowable temporary noise.

4.2.3 Impulsive Noise

Impulsive noise is defined as any single noise event or a series of single noise events, which causes a high peak noise level of short duration (one second or less), measured at a specific location. Impulsive noise is generated by activities such as pile impact driving and blasting. Due to the nature of the IVMP, activities that would generate impulsive noise would not occur and is not analyzed or discussed further in this report.

4.3 GROUND-BORNE VIBRATION AND NOISE IMPACTS

The IVMP does not propose equipment that would be a significant source of ground-borne vibration such as blasting, pile driving, or substantial compacting activities. The IVMP does not propose vibration sources that would impact existing or foreseeable future NSLUs, nor does it include new development that would create or locate NSLUs that would be impacted by ground-borne vibration and noise. Furthermore, construction and operational activities implemented under IVMP shall conform to the requirements of the applicable noise element and/or municipal code governing acceptable noise as well as ground-borne vibration levels and construction activity hours. Therefore, ground-borne vibration noise impacts are not analyzed or discussed further in this report.

5.0 ANALYSIS OF PROJECT EFFECTS

For the purpose of this technical report, the noise analysis has been divided into three categories: vector control equipment, aircraft, and construction equipment.

5.1 POTENTIAL NOISE IMPACTS

5.1.1 Vector Control Equipment

BMPs would be implemented restricting the operation of noise-generating equipment to time-of-day limits established by the applicable local jurisdiction's municipal code or ordinance. As shown in Table 2, jurisdictions identify both noise level limits and time-of-day limits for construction and short-term construction-related equipment.

Vector control equipment that would be used for individual surveillance and monitoring, source reduction, and source treatment activities includes pumps, hand sprayers and foggers, vehicle-mounted sprayers, vehicles, and construction equipment such as excavators, dump trucks, and other earthmoving equipment. As shown in Table 3, at 50 feet, noise levels for individual equipment have the potential to exceed the 75 dBA L_{EQ} (one hour) limit if IVMP equipment were to operate continuously and uninterrupted during a given hour. However, due to the nature of individual IVMP activities, noise from vector control equipment would be periodic, not continuous, and noise-generating activities would be limited to brief periods of time spread out over multiple days in multiple locations. Operations would therefore minimize the amount of time any sensitive receptor was exposed to increased noise. In addition, operations at individual locations would be mobile, temporary, sporadic, and used at various distances from individual NSLUs. As a result, noise levels are not anticipated to exceed significance thresholds.

Furthermore, BMPs would be implemented that would reduce noise further. Applicable BMPs include the requirement to notify nearby properties prior to construction-type activities, speed reduction measures for vehicles, restricting the operation of noise-generating equipment during applicable hours, requiring equipment to be turned off when not in use, enforcing maintenance of tools and equipment, and the use of hand-held tools for vegetation removal and trimming. Therefore, noise levels generated by individual IVMP activities with the incorporation of applicable BMPs would be less than significant.

5.1.2 Aircraft

Aircraft are anticipated to be used for aerial surveillance and source treatment (i.e., chemical control application) within difficult-to-access areas that are generally in undeveloped areas away from NSLUs. Most aircraft operations associated with source treatment would take place over open space areas that are not heavily populated. Although some of the aerial activity could occur over all land-use types, the impacts on any one location would be minimized because the aircraft would continuously move to new locations. Fixed-wing aircraft would not have the capability to remain stationary over any specific location. Due to operational requirements of aerial source treatment, helicopters would also not remain stationary over specific locations. As a result, impacts to NSLUs would be less than significant due to the short periods of time aircraft would be in use.

5.1.3 Construction Equipment

BMPs would be implemented restricting the operation of noise-generating equipment to time-of-day limits established by the applicable local jurisdiction's municipal code or ordinance. As shown in Table 2, jurisdictions identify both noise level limits and time-of-day limits for construction and short-term construction-related equipment.

Traditional construction activities, such as demolition, blasting, pile driving, or substantial compacting activities for development, are not included in the IVMP. However, IVMP activities that involve standard construction equipment, such as ground disturbance (e.g., grading), vegetation management, water control, and other maintenance activities, may be required for specific circumstances during implementation of the IVMP. As a result, large-scale construction equipment is not anticipated, but the use of an excavator, dump truck, and other earthmoving equipment may be used for operations associated with physical activities. As such, those activities would be temporary in nature and would involve enhancing the environment to minimize vegetation overgrowth or maximizing open water areas to provide additional predator habitat and promote water circulation and/or wave action. Construction equipment would be mobile, resulting in fluctuating noise levels as the equipment travels around the site. Mobile construction equipment is not typically used at full power for the entire duration of construction activities in a given day, and construction equipment would not be in operation for the entire construction time frame (e.g., 7:00 a.m. to 7:00 p.m.). At 100 feet, a dozer and dump truck would generate a combined noise level of 72.8 dBA L_{EQ} (1-hour) which is less than established municipal thresholds of 75 dBA L_{EQ}.

BMPs would be implemented that would further reduce noise generated by construction equipment. Applicable BMPs include the requirement to notify nearby properties prior to construction-type activities, speed reduction measures for vehicles, restricting the operation of noise-generating equipment during applicable hours, requiring equipment to be turned off when not in use, and the maintenance of tools and equipment. Through the application of these BMPs, noise levels generated by construction equipment would be less than significant.

5.2 CUMULATIVE IMPACT ANALYSIS

The Proposed Project includes implementation of a countywide IVMP in which individual activities would occur throughout San Diego County. The IVMP consists of a range of activities involving surveillance of existing and potential vector threats as well as physical, biological, and chemical control methods to reduce the spread of mosquito-borne and other vector-borne diseases and nuisances. Due to the programmatic nature of this document, the exact locations and extent of all activities to be conducted under the IVMP are not known at this time. Activities implemented under the IVMP will be required to comply with all applicable regulations governing temporary noise impacts, and implementation of BMPs would effectively reduce potential noise impacts to less than significant.

For a project to result in a cumulative noise impact, two projects would need to be constructed simultaneously and be located in close physical proximity to a noise-sensitive land use for the noise levels to compound. As noted earlier, the Proposed Project would incorporate BMPs that would ensure that the noise level limit does not exceed a one-hour average of 75 dBA, which is consistent with the majority of the jurisdictions included in this program and is more restrictive than jurisdictions that use an 8-hour average, 12-hour average, or establish no construction noise limit at all. Therefore, while there is a potential for a cumulative construction noise impact to result if two or more projects are constructed at the same time and in close proximity to a noise-sensitive land use, the Proposed Project's contribution to that impact would not be cumulatively considerable.

5.3 MITIGATION MEASURES

Implementation of the IVMP BMPs identified above would ensure the reduction of noise levels for individual IVMP activities to less than significant levels. As a result, no mitigation measures would be required.

6.0 CONCLUSION

As described above, BMPs would be implemented to minimize noise from the use of standard equipment for the IVMP activities. Implementation of the BMPs would ensure that noise levels from IVMP activities would occur within the hours designated by each municipality, and that noise levels would not exceed 75 dBA (one hour). Additionally, individual IVMP activities' noise contributions to noise impacts would not be cumulatively considerable. No mitigation measures would be required.

7.0 LIST OF PREPARERS

Charles Terry	County-approved Noise Consultant
Joanne M. Dramko, AICP	Principal Technical Specialist, Quality Control Reviewer
Jason Runyan	Acoustic Analyst
Brendan Sullivan	Acoustic Analyst
Yara Fisher	Project Manager

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

8.0 REFERENCES

California Department of Transportation (Caltrans). 2013a. Technical Noise Supplement. Environmental Program, Noise, Air Quality, and Hazardous Waste Management Office. Available at: http://www.dot.ca.gov/hq/env/noise/pub/tens_complete.pdf.

2013b. Transportation and Construction Vibration Guidance Manual, Environmental Engineering, Hazardous Waste, Air, Noise, Paleontology Office. September.

City of Carlsbad. Municipal Code Section 8.48.010. Available at: http://www.qcode.us/codes/carlsbad/.

City of Chula Vista. Municipal Code Section 17.24.040. Available at: https://chulavista.municipal.codes/CVMC.

City of Coronado. Municipal Code Section 41.10.040. Available at: https://www.codepublishing.com/CA/Coronado/#!/Coronado41/Coronado41.

City of Del Mar. Municipal Code Section 9.20.050. Available at: https://library.municode.com/ca/del_mar/codes/municipal_code.

City of El Cajon. Municipal Code Section 17.115.130. Available at: http://qcode.us/codes/elcajon/.

City of Encinitas. Municipal Code Section 9.32.410. Available at: http://www.qcode.us/codes/encinitas/view.php?topic=9-9_32.

City of Escondido. Municipal Code Section 17-234. Available at: https://qcode.us/codes/escondido/view.php?topic=17-12-17_234&frames=on.

City of Imperial Beach. Municipal Code Section 9.32.20. Available at: https://qcode.us/codes/imperialbeach/.

City of La Mesa. Municipal Code Section 10.80.100. Available at: https://library.municode.com/ca/la_mesa/codes/code_of_ordinances?nodeId.

City of Lemon Grove. Municipal Code Section 9.24.120. Available at: https://qcode.us/codes/lemongrove/.

City of National City. Municipal Code Section 2.10.160. Available at: https://library.municode.com/ca/national_city/codes/code_of_ordinances?nodeId.

City of Oceanside. 2002. General Plan Noise Element. Available at: https://www.ci.oceanside.ca.us/civicax/filebank/blobdload.aspx?BlobID=24786.

City of Poway. Municipal Code Section 8.08.100. Available at: https://www.codepublishing.com/CA/Poway/html/Poway08/Poway0808.html.

City of San Diego. Municipal Code Section 59.5.0404. Available at: https://docs.sandiego.gov/municode/MuniCodeChapter05/Ch05Art9.5Division04.pdf.

City of San Marcos. 2012. General Plan Noise Element. Available at: https://www.san-marcos.net/home/showdocument?id=8475.

City of Santee. Municipal Code Section 8.12.290. Available at: https://qcode.us/codes/santee/Section 8.12.290.

City of Solana Beach. Municipal Code Section 7.34.100. Available at: https://www.codepublishing.com/CA/SolanaBeach/html/SolanaBeach07/SolanaBeach0734.html#7.34.100.

City of Vista. 2012. General Plan, Noise Element. Available at: https://records.cityofvista.com/weblink/DocView.aspx?id=712585&cr=1.

County of San Diego. 2020. *Mosquito, Vector and Disease Control Assessment Engineer's Report*

2018a *West Nile Virus Strategic Response Plan*.

2018b *Aedes Transmitted Disease Strategic Response Plan*.

2014 *Mosquito Breeding Site Access Standard Operating Procedure*.

2011 General Plan. August. Available at: https://www.sandiego.gov/planning/genplan.

2009 County of San Diego Guidelines for Determining Significance – Noise.

Federal Highway Administration (FHWA). 2017. Construction Noise Handbook. Available from: https://www.fhwa.dot.gov/ENVIRONMENT/noise/construction_noise/handbook/handbook09.cfm.

Grant Visual Technology. 2013. Integrated Mosquito and Vector Management Programs for Nine Districts Project.

San Diego Association of Governments (SANDAG). 2015. San Diego Forward: The Regional Plan

U.S. Department of Transportation (USDOT). 2008. Roadway Construction Noise Model.

Appendix A

IVMP Equipment List

Appendix A
IVMP EQUIPMENT LIST

Equipment	Manufacturer Name / General Description / Model Number	Method of Application (Aerial, Water, Land)	Power Source	IVMP Activity Type
Pond Pump – WB15[1]	Honda / 2.2 HP	Water	Gas	control
Pond pump-electric pump[1]	N/A	N/A	Battery	control
Pioneer ULV, ultra low volume fogger[2]	Longray/Rechargable Backpack ULV Fogger/ LR- PIONEER2	Land	Battery	control
Hand Duster, handheld pesticide dust applicator	B&G/2qt Hand Duster/1152-A	Land	Hand operated	control
Sotera Duster, handheld pesticide dust applicator	Sotera Systems/Handheld Duster/S25V	Land	Hand operated	control
Arrow ULV, ultra low volume fogger[3]	Arro-Gun Spray Systems/Handheld ULV Fogger/Bullet	Land	Gas powered	control
Colt ULV, ultra low volume fogger[3]	London Fog/Handheld ULV Fogger/Colt-T	Land	Gas powered	control
Duster attachment	Maruyama/Mist Duster/MD155DX	Land	Hand operated	control
Maruyama, backpack granular larvicide applicator[4]	Maruyama/Mist Duster/MD155DX	Land	Gas powered	control
Pioneer ULV, ultra low volume fogger	Longray/Rechargable Backpack ULV Fogger/LR- PIONEER2	Land	Battery	control
Maruyama, backpack granular larvicide applicator[4]	Maruyama/Mist Duster/MD155DX	Land	Gas powered	control
Maruyama, backpack granular larvicide applicator[4]	Maruyama/Mist Duster/MD155DX	Land	Gas powered	control
Skid sprayer (metal)[5]	Rears SS304; 50 gal. Powered by Honda 5 HP	Land	Gas powered	control
Skid sprayer (small plastic)[5]	Rainer tank; 20 gal. Powered by ShurFlo 12-volt spray motor	Land	Battery	control
Spray cans (new) - 3.5 gal	B&G/Compressed Air Sprayer/N300SV	Land	Hand operated	control
Spray cans (used) - 2 gal	N/A	Land	Hand operated	control
Spray cans (used) - 3.5 gal	B&G/Compressed Air Sprayer/N300SV	Land	Hand operated	control
Drum pump (metal) - new	Dayton/Rotery Drum Pump/4HA34	Land	Hand operated	control
Drum pump (metal) - used	Dayton/Rotery Drum Pump/4HA34	Land	Hand operated	control
Drum pump (plastic)	N/A	Land	Hand operated	control
Spray wands	N/A	Land	Hand operated	control
Mozzie, truck-mounted sprayer[6]	N/A	Land	Battery	control
Poly tank	N/A	N/A	N/A	control
DynaJet, truck-mounted sprayer[6]	L30	Land	Battery	control
14 Jac flat bottom boat	Klamath	Water	Hand operated	control
Boat motor - 5 horsepower (hp) four stroke engine[7]	Honda	Water	Gas	control

Appendix A (cont.)
IVMP EQUIPMENT LIST

Equipment	Manufacturer Name / General Description / Model Number	Method of Application (Aerial, Water, Land)	Power Source	IVMP Activity Type
Boat motor - 9.9 hp four stroke engine[7]	Honda	Water	Gas	control
Boat motor - electric motor 12-volt battery**	Minn Kota	Water	battery	control
Buffalo Turbine, truck-mounter sprayer**	Buffalo Turbine	Land	Gas	control
Emergence traps (UCR)	N/A	N/A	Hand operated	surveillance
Gravid Aedes trap (GAT) - plastic trap that attracts gravid mosquitoes with standing water	Biogents/Mosquito Trap/BG-GAT	N/A	N/A	surveillance
Mouse traps	N/A	N/A	N/A	surveillance
Squirrel traps	N/A	N/A	N/A	surveillance
BG traps (used)	Biogents/Mosquito Trap/BG-Sentinel 2	N/A	Battery	surveillance
Gravid traps	BioQuip/Mosquito Trap/2800S	N/A	Battery	surveillance
Emergence traps (UCR)	N/A	N/A	N/A	surveillance
BG traps (new)	Biogents/Mosquito Trap/BG-Sentinel 2	N/A	Gas	surveillance
Dry ice canisters (BG)	N/A	N/A	N/A	surveillance
Dry ice canisters (EVS)	N/A	N/A	N/A	surveillance
Autocidal gravid ovitrap (AGO) traps female (Aedes) mosquitoes	Springstar/Mosquito Trap/Biocare Gravid Ovitrap	N/A	N/A	surveillance
Blue traps, dual attractant trap combining both the gravid and encephalitis vector survey (EVS) functionality	N/A	N/A	Battery	surveillance
Gravid traps (old)	BioQuip/Mosquito Trap/2800S	N/A	Battery	surveillance
Dry ice canisters (EVS)	N/A	N/A	N/A	surveillance
EVS traps	N/A	N/A	battery	surveillance
Rat monitors	Bell Laboratories/Rodent Trap/Protecta Evo Ambush EA2000	N/A	N/A	surveillance
Helicopter[8]	Bell 206B / Robinson R44 Raven II	Air	Jet fuel	control/ surveillance
Aircraft (fixed-wing)	Piper Chieftain	Air	Fuel	control/ surveillance
Dump Truck[9]	Dump Truck	Land	Gas	control
Excavator[10]	Caterpillar 320	Land	Gas	control
Polaris Sportsman ATV[11]	Polaris Sportsman 6x6 570 with plow	Land	Gas	control
Tractor[12]	John Deere 6420 with Flail Mulch Mower S900	Land	Gas	control
Tracked Dozer[13]	Caterpillar D3	Land	Gas	control

Appendix A (cont.)
IVMP EQUIPMENT LIST

Equipment	Manufacturer Name / General Description / Model Number	Method of Application (Aerial, Water, Land)	Power Source	IVMP Activity Type
Wood Chipper**	Salsco 6" 6235BXT	Land	Gas	control
Aquatic Weed Harvester**	Marshmaster MM-1LX	Water	Gas	control
LECO ULV**	Model 1600/DP, Lowndes Engineering Co., Inc w/ Universal RAI Blower (45 U-RAI)	Land	Gas	control

Source of equipment inventory: County of San Diego, Department of Environmental Health. Date of Inventory: 4/21/20

* Equipment noise levels are incorporated by reference based on comparable equipment for vector control activities as cited in the Integrated Mosquito and Vector Management Programs for Nine Districts project (Grant Visual Technology 2013) and respective vector districts' Program Environmental Impact Reports. See Table 3 in the Noise Technical Report for IVMP equipment and documented noise levels. Equipment that is not notated would not generate elevated noise levels and were therefore excluded from further analysis.

** Noise levels provided by manufacturer or measured by County personnel (levels assumed at source and extrapolated based on 50-foot distance).

1 Napa County Mosquito and Vector Control District (SCH# 2012052042): FloTech Trash Pump

2 Napa County Mosquito and Vector Control District (SCH# 2012052042): Pioneer Backpack Fogger

3 Contra Costa Mosquito and Vector Control District (SCH# 2012052055): Colt-T ULV

4 Alameda County Mosquito Abatement District (SCH# 2012052037): Maruyama Mist Duster MD155DX

5 San Mateo County Mosquito and Vector Control District (SCH# 2012052063): Nurse Rig 200 gal tank and sprayer

6 San Mateo County Mosquito and Vector Control District (SCH# 2012052063): Clark Grizzly ULV Truck Mounted Sprayer

7 Marin-Sonoma Mosquito and Vector Control District (SCH# 2012052066): Klamath Boat

8 Marin-Sonoma Mosquito and Vector Control District (SCH# 2012052066): Bell 206 Jet Ranger

9 Marin-Sonoma Mosquito and Vector Control District (SCH# 2012052066): Dump Truck 5-ton

10 Northern Salinas Valley Mosquito Abatement District (SCH# 2012051081): Cat 320 Excavator

11 Alameda County Mosquito Abatement District (SCH# 2012052037): 2001 6x6 Polaris ATV

12 Northern Salinas Valley Mosquito Abatement District (SCH# 2012051081): John Deere 6420 with Flail Mulch Mower S900 (PTO)

13 Northern Salinas Valley Mosquito Abatement District (SCH# 2012051081): Cat D3 Dozer

ATTACHMENT B

FINDINGS CONCERNING MITIGATION OF SIGNIFICANT ENVIRONMENTAL EFFECTS

FINAL PROGRAM ENVIRONMENTAL IMPACT REPORT AND SUPPORTING DOCUMENTATION SCH # 2018081060

INTENTIONALLY LEFT BLANK

FINDINGS CONCERNING MITIGATION OF SIGNIFICANT ENVIRONMENTAL EFFECTS

Integrated Vector Management Program
San Diego County, California
SCH # 2018081060

The County decision-making body makes the following findings for each significant effect identified in the Final Program Environmental Impact Report (Final PEIR) pursuant to Public Resources Code section 21081(a)(1) ("Changes or alterations have been required in, or incorporated into, the project which mitigate or avoid the significant effects on the environment"), and mitigation measures are stated fully in the Final PEIR. Pursuant to Public Resources Code section 21081(a)(2), there are no changes that are the responsibility or jurisdiction of another public agency, and pursuant to Public Resources Code section 21081(a)(3) no mitigation measures were identified as infeasible. These findings are explained below and are supported by substantial evidence in the record of proceedings.

1. Biological Resources

Significant Effect: Impact BI-1 – The Proposed Project has the potential to cause significant impacts to special status plant species (Final PEIR p. 2.1-17). Source reduction activities that involve the physical removal of vegetation could result in potentially significant impacts to special status plant species if they are found to be present within a project-specific IVMP activity area.

Finding: Pursuant to Public Resources Code, section 21081(a)(1) and CEQA Guidelines section 15091(a)(1), specific changes or alterations have been required in, or incorporated into, the project which avoid, mitigate, or substantially lessen this potential effect on the environment.

Mitigation Measures:

M-BI-1a Prior to conducting Integrated Vector Management Program activities that would result in vegetation removal, habitat modification, and/or ground disturbance, a qualified biologist shall conduct a biological evaluation of the individual Integrated Vector Management Program activity area. The biological evaluation shall include (1) a general reconnaissance survey; (2) a review of recent aerial imagery, topographic and soils maps, regional vegetation mapping (as available), and local, State, and federal biological databases including but not limited to County SanBIOS data, California Department of Fish and Wildlife Biogeographic Information and Observation System database, U.S. Fish and Wildlife Service National Wetland Inventory) and critical habitat databases, and U.S. Environmental Protection Agency Watershed Assessment, Tracking & Environmental Results System database to determine sensitive biological resources known to occur within and adjacent to the Integrated Vector Management Program activity area; (3) a query of sensitive species databases such as U.S. Fish and Wildlife Service occurrence records, California Department of Fish and Wildlife California Natural Diversity Database, and County SanBIOS data to determine if special status species are present or have high potential to occur within or adjacent to the individual Integrated Vector Management Program activity area; and (4) preparation of a biological resources report. The reconnaissance survey shall include an inventory of existing vegetation communities, flora and fauna resources, and potentially jurisdictional resources present within the individual Integrated Vector Management Program

activity area and documentation of special status plant and animal species, if encountered during the survey. The biological resources report shall summarize existing biological resources present within the individual Integrated Vector Management Program activity area, identify sensitive biological resources that are present or have potential to occur, provide an assessment of potential impacts, and identify applicable mitigation measures if necessary. (Final PEIR p. 2.1-33)

M-BI-1b Prior to conducting Integrated Vector Management Program activities that would result in vegetation removal, permanent habitat modification, and/or ground disturbance in areas with potential to support special status plant species, a qualified biologist shall conduct a rare plant survey to confirm the presence/absence of special status plant species within or adjacent to the individual Integrated Vector Management Program activity area. The exact timing of the rare plant survey shall be determined based on the location, elevation, and flowering phenology of the special status plant species with potential to occur within and adjacent to the individual Integrated Vector Management Program activity area. If special status plant species are discovered within the individual Integrated Vector Management Program activity area, those individuals or populations shall be avoided, or additional mitigation measures (which could include transplantation) shall be implemented that would reduce impacts to below a level of significance. Impacts to State- and/or federally listed plant species and species designated critical habitat may require additional consultation with the U.S. Fish and Wildlife Service pursuant to the federal Endangered Species Act if the individual Integrated Vector Management Program activity area occurs outside an adopted Natural Community Conservation Plan/Habitat Conservation Plan or if take of that species is not covered under the specific adopted plan. Mitigation for impacts to special status plant species shall be consistent with local jurisdictions' policies and ordinances and/or adopted Natural Community Conservation Plans/Habitat Conservation Plans where required and identified within the individual Integrated Vector Management Program activity biological resources report that shall be prepared pursuant to M-BI-1a. (Final PEIR p. 2.1-34)

M-BI-1c Prior to conducting Integrated Vector Management Program activities, a qualified biologist shall flag areas to be avoided that contain sensitive biological resources. Where indicated by the qualified biologist, these areas shall be fenced or otherwise protected from direct or indirect impacts. Specifically, temporary (i.e., exclusionary) fencing shall be installed where feasible when grubbing, clearing, or grading would be conducted within 100 feet of sensitive biological resources depending on the species or habitat present, individual Integrated Vector Management Program activities, and site constraints. Temporary fencing (such as silt or orange construction fencing) shall be installed at limits of an individual Integrated Vector Management Program activity area prior to initiation of activities. A qualified biologist shall monitor the installation of temporary (i.e., exclusionary) fencing wherever it would abut sensitive species or vegetation communities, jurisdictional wetlands and waterways, or other sensitive areas, such as environmentally designated open space. (Final PEIR p. 2.1-34).

M-BI-1d Prior to conducting Integrated Vector Management Program activities that would result in vegetation removal, permanent habitat modification, and/or ground disturbance in areas known to contain sensitive biological resources, a qualified biologist shall conduct a training session for personnel, as applicable, to inform them of the sensitive biological resources with potential to occur in the sensitive

area and any mitigation and/or avoidance measures that must be implemented. (Final PEIR p. 2.1-34)

M-BI-1e When sensitive biological resources have been identified on site or adjacent to an individual Integrated Vector Management Program activity area, a qualified biologist shall monitor initial vegetation clearing, grubbing, and ground disturbance activities to ensure that activities occur within the approved limits of work and that protective measures (e.g., flagging, fencing) are in place. (Final PEIR p. 2.1-35)

Rationale: Impacts to special-status plant species would be reduced to below a level of significance by conducting focused surveys to identify sensitive species within individual project sites, requiring avoidance of habitat with the potential to support special-status plants to the extent practicable, and requiring the implementation of mitigation measures to reduce all significant impacts to below a level of significance. In addition, the requirement to initiate consultation under the California Endangered Species Act and/or the federal Endangered Species Act, as appropriate, would ensure impacts to state and/or federally listed species are reduced to below a level of significance.

Significant Effect: Impact BI-2 – The Proposed Project has the potential to cause significant direct impacts to special status animal species (Final PEIR p. 2.1-20). If minor trimming were to occur associated with surveillance and monitoring activities during the general bird breeding season (February 15 to September 15, including riparian birds; January 15 to July 15 for raptors), potential direct impacts to nesting individuals would be considered potentially significant.

Finding: Pursuant to Public Resources Code, section 21081(a)(1) and CEQA Guidelines section 15091(a)(1), specific changes or alterations have been required in, or incorporated into, the project which avoid, mitigate, or substantially lessen this potential effect on the environment.

Mitigation Measures:

Mitigation would occur through mitigation measures M-BI-1a, M-BI-1c, M-BI-1d, M-BI-1e in addition to:

M-BI-2a Integrated Vector Management Program activities that could result in vegetation removal, permanent habitat modification, and/or ground disturbance activities within potentially suitable habitat for State- and/or federally listed animal species shall occur outside a species' breeding season. If such activities are unavoidable during the respective breeding season, focused protocol surveys for each species with potential to occur shall be conducted prior to conducting Integrated Vector Management Program activities. Surveys shall follow the current U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife protocols, as appropriate. If State- and/or federally listed species are determined to occur within or adjacent to the individual Integrated Vector Management Program activity area, consultation with the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife under the Federal Endangered Species Act and California Endangered Species Act, respectively, shall be initiated, and any resulting mitigation measures (including but not limited to breeding season activity restrictions and/or habitat-based compensatory mitigation) identified during consultation shall be implemented. (Final PEIR p. 2.1-35)

M-BI-2b Clearing or grubbing of vegetation during the general bird breeding season (February 15 through September 15) or raptor breeding season (January 15 through July 15) as defined by the County of San Diego Guidelines for Determining Significance – Biological Resources shall be avoided except as outlined by this measure. These breeding seasons shall not supersede implementing any agreements with the wildlife agencies, Habitat Conservation Plans, Habitat/Resource Management Plans, and Special Area Management Plans. If clearing and grubbing of vegetation is unavoidable during the breeding season, a pre-construction survey shall be conducted by a qualified biologist no more than seven days prior to conducting work in an individual Integrated Vector Management Program activity area that supports suitable nesting bird habitat to determine if active bird nests are present. If no nesting birds are documented (includes nest building or other breeding or active nesting behavior) within the individual activity area, clearing, grubbing, and grading shall be allowed to proceed. If an active nest is observed within the activity area, the qualified biologist shall determine an appropriate buffer around the nest based on the biology of the species and the specific site constraints. Activities shall not occur within the buffer area until the qualified biologist has determined that the nest is no longer active, young have fledged, or determined which activities within the buffer would not jeopardize nesting success. The buffer area shall be demarcated in the field with flagging, stakes, and/or temporary fencing. The nesting buffer may be determined and adjusted depending on the species present, individual Integrated Vector Management Program activities and site constraints, and in consultation with applicable wildlife agencies. (Final PEIR p. 2.1-35)

Rationale: Impacts on special-status wildlife species, including breeding birds and listed wildlife species, which could be directly harmed by vegetation clearing, grading, etc. would be reduced to below a level of significance by conducting focused surveys for listed species and breeding birds in all work areas that support habitat for these species, flagging and mapping active nests (and an appropriate buffer) identified within the project area, restricting/phasing work to avoid the breeding season for listed species and birds protected by the federal Migratory Bird Treaty Act, and conducting the required consultation under the Federal and/or State Endangered Species Acts (and implementing all required mitigation measures resulting from the consultation).

Significant Effect: Impact BI-3 – The Proposed Project has the potential to cause significant indirect noise-related impacts to special status animal species (Final PEIR p. 2.1-21). Potentially significant indirect impacts from noise could occur if activities were to take place adjacent to habitat occupied by nesting raptors or State- and/or federally listed species, including but not limited to coastal California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, and light-footed Ridgway's rail (Rallus obsoletus levipes). Impacts to these special status species are anticipated to be localized and limited to the smallest footprint necessary to eliminate or reduce vector-breeding sources.

Finding: Pursuant to Public Resources Code, section 21081(a)(1) and CEQA Guidelines section 15091(a)(1), specific changes or alterations have been required in, or incorporated into, the project which avoid, mitigate, or substantially lessen this potential effect on the environment.

Mitigation Measures:

M-BI-3 For individual Integrated Vector Management Program activities adjacent to habitat occupied by State- and/or federally listed bird species (e.g., coastal

California gnatcatcher, least Bell's vireo, and southwestern willow flycatcher) in which noise would be produced in excess of 60 A-weighted decibel equivalent continuous sound level or ambient noise levels (if ambient levels are above 60 A-weighted decibel), the Integrated Vector Management Program activities shall:

a) Be postponed until a qualified biologist determines the nest(s) is no longer active or until after the respective breeding season; or

b) Not occur until a temporary noise attenuation structure or barrier is constructed at the edge of the individual Integrated Vector Management Program activity area and/or around the noise-generating equipment to ensure that noise levels are reduced to below 60 A-weighted decibels or ambient, whichever is greater.
(Final PEIR p. 2.1-36)

Rationale: Impacts on listed avian species caused by construction-related noise during the breeding season would be reduced to below a level of significance by requiring surveys to identify sensitive biological resources, including listed avian species, and then either postponing construction activities or implementation of noise attenuation measures.

Significant Effect: Impact BI-4 – The Proposed Project has the potential to cause significant impacts to riparian habitats and sensitive natural communities (Final PEIR p. 2.1-25). Source reduction activities that involve the removal of vegetation could result in potentially significant impacts to riparian habitat and sensitive natural communities (BI-4) and require mitigation.

Finding: Pursuant to Public Resources Code, section 21081(a)(1) and CEQA Guidelines section 15091(a)(1), specific changes or alterations have been required in, or incorporated into, the project which avoid, mitigate, or substantially lessen this potential effect on the environment.

Mitigation Measures:

Mitigation would occur through mitigation measures M-BI-1a, M-BI-1c, M-BI-1d, M-BI-1e in addition to:

M-BI-4a Permanent impacts to riparian habitat and other sensitive natural communities shall be offset through mitigation of habitat of equal or higher biological value at ratios commensurate with individual Integrated Vector Management Program activity impacts. Mitigation shall occur by implementing one or a combination of the following: off-site or on-site preservation, enhancement, restoration, and/or creation of habitat; deduction of habitat mitigation credits from an approved mitigation area or bank, or other location deemed acceptable by the County and applicable regulatory agencies. Final mitigation obligations shall be determined based on the quality, quantity, and type of habitat impacted at ratios consistent with local policies and ordinances, or, for projects within the boundaries of an adopted Natural Community Conservation Plan/Habitat Conservation Plan, in accordance with the applicable mitigation ratios and measures of that specific final plan. In the event that the adopted Natural Community Conservation Plan/Habitat Conservation Plan does not stipulate mitigation ratios for temporary impacts, temporary impacts to riparian habitat and other sensitive natural communities shall be mitigated through on-site revegetation of temporarily impacted areas to pre-construction conditions and appropriate vegetation types at a minimum 1:1 ratio. (Final PEIR p. 2.1-36)

M-BI-4b For individual Integrated Vector Management Program activities resulting in permanent impacts to wetland or riparian habitats and/or upland sensitive natural communities, and whose mitigation includes enhancement, restoration, and/or creation of such habitat, a restoration plan shall be prepared by qualified personnel with experience in Southern California ecosystems and native plant restoration techniques. At a minimum, the restoration plan shall include the following information: (a) the location of the mitigation site(s); (b) a schematic depicting the mitigation areas; (c) the plant species to be used, container sizes, and seeding rates; (d) a planting schedule; (e) a description of installation requirements, irrigation sources and methodology, erosion control, maintenance and monitoring requirements; (f) measures to properly control exotic vegetation on-site; (g) site-specific success criteria; (h) a detailed monitoring program; (i) contingency measures should the success criteria not be met; (j) a summary of the annual reporting requirements; and (k) identification of the responsible party(ies) for meeting the success criteria and providing for conservation of the mitigation site in perpetuity. (Final PEIR p. 2.1-36)

Rationale: Impacts on riparian habitats and sensitive natural communities caused by implementation of IVMP activities would be reduced to below a level of significance by providing compensatory mitigation at ratios consistent with local Natural Community Conservation Plan subarea plans and/or commensurate with project impacts and habitat quality. Also, conducting a biological assessment prior to conducting work would ensure that riparian habitats and sensitive natural communities located within the boundaries of a proposed activity are identified and impacts assessed. Temporary impact areas would be restored to pre-construction contours and vegetation types. Restoration plans for both on- and offsite mitigation would be prepared, as needed, by a qualified native habitat restoration specialist to address the revegetation of all permanent and temporarily disturbed areas.

Significant Effect: Impact BI-5 – The Proposed Project has the potential to cause significant impacts to jurisdictional waters and wetlands (Final PEIR p. 2.1-27). Source reduction activities that result in the filling, removal, and or discharge into waters, wetlands, or riparian habitat, such as sediment and vegetation removal, may result in potentially significant impacts to California Department of Fish and Wildlife (CDFW), Regional Water Quality Control Board (RWQCB), and/or U.S. Army Corps of Engineers (USACE) jurisdictional wetlands and waterways if they are found to be present within a project-specific IVMP activity area.

Finding: Pursuant to Public Resources Code, section 21081(a)(1) and CEQA Guidelines section 15091(a)(1), specific changes or alterations have been required in, or incorporated into, the project which avoid, mitigate, or substantially lessen this potential effect on the environment.

Mitigation Measures:

Mitigation would occur through mitigation measures M-BI-1a, M-BI-1c, M-BI-1d, M-BI-1e, M-BI-4a, M-BI-4b in addition to:

M-BI-5 Individual Integrated Vector Management Program activities that would result in impacts to federal or State regulated water bodies (i.e., waters of the U.S. and State, streambeds, wetlands, and/or riparian habitat) shall obtain applicable permits from federal and State regulatory agencies prior to the commencement of such discharge or dredging activities. Such agencies may include U.S. Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife. Mitigation requirements for impacts to federal

and State regulated water bodies would be determined through the permitting process. (Final PEIR p. 2.1-37)

Rationale: Significant impacts to waters and wetlands subject to CDFW, RWQCB, and/or USACE jurisdiction would be reduced to below a level of significance by incorporation of mitigation in addition to coordination and potential permitting through the appropriate regulatory agencies. Due to the programmatic nature of this analysis, project-specific impacts would be assessed prior to future projects and impacts to wetlands would be mitigated in accordance with applicable permits. Permits that may be required include a CWA Section 404 Permit from the USACE, CWA Section 401 Water Quality Certification or Porter-Cologne WDRs from the RWQCB, and CFG Code, Section 1602, SAA from CDFW. Final mitigation requirements for impacts to waters and wetlands under the jurisdiction of the permitting agencies (USACE, RWQCB, and CDFW) would be determined through consultation with these agencies, as applicable.

2. Cultural Resources

Significant Effect: Impact CR-1 – Ground-disturbing activities have the potential to cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5 of the CEQA Guidelines (Final PEIR p. 2.2-13). Source reduction activities could potentially result in tangible impacts due to the potential ground-disturbing or physical impacts that environmental modifications could entail. Specifically, unrecorded or unevaluated archaeological sites may require research or testing programs to determine their eligibility for inclusion in the CRHR or San Diego County Local Register of Historical Resources. If an archaeological resource is found to be eligible for inclusion in the CRHR or San Diego County Local Register of Historical Resources, it would be considered a "historical resource" in accordance with CEQA Guidelines, Section 15064.5(c).

Finding: Pursuant to Public Resources Code, section 21081(a)(1) and CEQA Guidelines section 15091(a)(1), specific changes or alterations have been required in, or incorporated into, the project which avoid, mitigate, or substantially lessen this potential effect on the environment.

Mitigation Measures:

M-CR-1 Site-Specific Cultural Resources Survey. For individual Integrated Vector Management Program source reduction activities that have been determined to have the potential to result in impacts to cultural resources, as identified in the Integrated Vector Management Program Best Management Practices (A14), a qualified archaeologist shall be retained to conduct a site-specific cultural resource survey if the site has not been surveyed in the previous 5 years. The survey shall consist of a record search of the California Historical Resources Information System housed at the South Coastal Information Center, research to identify historic land use in the area, and a pedestrian survey that includes the participation of a Native American monitor. A review of the Sacred Lands File maintained by the Native American Heritage Commission shall also be requested for the individual Integrated Vector Management Program activity. A report shall be prepared to discuss the survey and record search results.

Cultural Resources Evaluation. If potential cultural resources are identified in an individual Integrated Vector Management Program activity area where ground disturbance is proposed, a cultural resources significance evaluation shall be conducted. Specifically, a significance evaluation shall be prepared if the individual Integrated Vector Management Program activity has the potential to

result in an adverse effect to (1) new cultural resources that are identified as a result of a site-specific survey, or (2) previously recorded resources that have not been previously evaluated that are re-identified during a survey, unless resources can be avoided. Per the County of San Diego Report Format and Content Requirements, Cultural Resources: Archaeological and Historic Resources, significance evaluations will not be required if the resource has been evaluated for California Environmental Quality Act significance or for National Register of Historic Places eligibility within the last 5 years and if there has been no change in the conditions that contributed to the determination of resource importance (County 2007b). Significance evaluation efforts may include additional research to determine whether the resource meets the criteria for listing on the California Register of Historical Resources and/or subsurface investigation. Archaeological testing programs involving subsurface investigation shall include assessing the horizontal and vertical dimensions of a site, the chronological placement, site function, artifact/ecofact density and variability, presence/absence of subsurface features, and research potential. A Native American monitor shall be retained for all subsurface investigations. Resources found to be non-significant as a result of a survey and/or assessment will require no further work beyond documentation of the resources on the appropriate California Department of Parks and Recreation site forms and inclusion of results in the survey and/or assessment report prepared for the individual Integrated Vector Control Program activity. A cultural resources report shall be prepared to discuss potential impacts associated with the individual Integrated Vector Management Program activities and identify measures to reduce all significant impacts to below a level of significance, if applicable.

Cultural Resources Data Recovery Program. If significant cultural resources are identified within an individual Integrated Vector Management Program activity area where ground disturbance is proposed, and avoidance of impacts to the resource is not possible, a data recovery program (including research design) shall be implemented. The data recovery program shall be subject to the provisions, as outlined in California Public Resources Code, Section 21083.2, and completed prior to the implementation of the individual Integrated Vector Management Program activity. Avoidance of significant cultural resources shall be sought to the extent possible.

Cultural Resources Monitoring Program. If significant cultural resources are identified or potential cultural resources are suspected to occur in an individual Integrated Vector Management Program activity area where ground disturbance is proposed, monitoring shall be required by an archaeologist and Native American monitor. If unevaluated potentially significant cultural resources are discovered, construction activities shall be diverted away from the discovery until significance evaluation can be conducted.

To mitigate potential impacts to significant cultural resources, a data recovery program for any newly discovered cultural resource would be prepared, approved by the County, and implemented using professional archaeological methods. Construction activities would be allowed to resume after the completion of the recovery of an adequate sample and the recordation of features. All cultural material collected during the data recovery program or monitoring program would be processed and curated at a San Diego County facility that meets federal standards per Code of Federal Regulations, Title 36, Part 79, unless the Native American monitors request the collection.

> After monitoring is completed, an appropriate report shall be prepared. If no significant cultural resources are discovered, a brief letter shall be prepared. If significant cultural resources are discovered, a report with the results of the monitoring and any data recovery (including the interpretation of the data within the research context) shall be prepared.
> (Final PEIR p. 2.2-15)

Rationale: Incorporation of mitigation measures into the project is designed to avoid impacts from construction of individual activities implemented under the IVMP by locating and avoiding disturbance and destruction of sensitive resources. Avoidance and preservation of the resource is the preferred option and, if implemented, would result in no significant impact to cultural resources. If cultural resources cannot be avoided, mitigation measures (including monitoring during construction) would be required to be incorporated into the project to reduce impacts to below a level of significance.

Significant Effect: Impact CR-2 – Ground-disturbing activities have the potential to cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines (Final PEIR p. 2.2-13). Adverse effects to known significant or unique archaeological resources may result in a loss of valuable information that could be gained from the resources or prevent potentially eligible sites from being listed on a register of cultural resources. Since specific sites cannot be defined at this time, it is anticipated that ground-disturbing activities could have the potential to cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines.

Finding: Pursuant to Public Resources Code, section 21081(a)(1) and CEQA Guidelines section 15091(a)(1), specific changes or alterations have been required in, or incorporated into, the project which avoid, mitigate, or substantially lessen this potential effect on the environment.

Mitigation Measures:

Mitigation would occur through mitigation measure M-CR-1. (Final PEIR p. 2.2-17)

Rationale: Incorporation of mitigation measures into the project is designed to avoid impacts from construction of individual activities implemented under the IVMP by locating and avoiding disturbance and destruction of sensitive resources. Avoidance and preservation of the resource is the preferred option and, if implemented, would result in no significant impact to cultural resources. If cultural resources cannot be avoided, mitigation measures (including monitoring during construction) would be required to be incorporated into the project to reduce impacts to below a level of significance.

Significant Effect: Impact CR-3 – Ground-disturbing activities have the potential to disturb human remains (Final PEIR p. 2.2-14). Archaeological materials, including human burials, have been found throughout unincorporated San Diego County and incorporated cities serviced by the IVMP. Human burials have occurred outside formal cemeteries, usually associated with archaeological resource sites and prehistoric people. While some burials have been uncovered, the potential exists for unknown burials to be present within areas potentially requiring physical control activities associated with the IVMP.

Finding: Pursuant to Public Resources Code, section 21081(a)(1) and CEQA Guidelines section 15091(a)(1), specific changes or alterations have been required in, or incorporated into, the project which avoid, mitigate, or substantially lessen this potential effect on the environment.

Mitigation Measures:

M-CR-2 Identification of Human Remains. In the event that human remains are discovered during individual Integrated Vector Management Program source reduction activities, work shall halt in the identified area, the County Medical Examiner shall be contacted, and California Public Resources Code, Section 5097.98; CEQA Guidelines, Section 15064.5; and California Health and Safety Code, Section 7050.5, shall be followed. If the remains are determined to be of Native American origin, the most likely descendant shall be identified by the Native American Heritage Commission and contacted by the County to determine proper treatment and disposition of the remains. (Final PEIR p. 2.2-17)

Rationale: The mitigation measure would ensure that if human remains are encountered, they would be handled according to applicable regulations. This mitigation measure would reduce impacts related to finding human remains to below a level of significance.

3. Geology and Soils

Significant Effect: Impact GE-1 – Ground-disturbing activities have the potential to disturb the substratum or parent material below the major soil horizons in a paleontologically sensitive area, which would result in a potentially significant impact to paleontological resources (Final PEIR p. 2.3-18). Source reduction activities would require access to various locations throughout the county, including areas with high paleontological resource sensitivity. Minor grading activities may occur to reduce standing water, such as to remove impediments to the movement of water. Activities would be the minimum necessary to reduce or eliminate vector habitat and would not be conducted on a large scale. However, since specific site locations cannot be defined at this time, it is anticipated that source reduction could require earthmoving activities that could disturb the substratum or parent material below major soil horizons.

Finding: Pursuant to Public Resources Code, section 21081(a)(1) and CEQA Guidelines section 15091(a)(1), specific changes or alterations have been required in, or incorporated into, the project which avoid, mitigate, or substantially lessen this potential effect on the environment.

Mitigation Measures:

M-GE-1a Integrated Vector Management Program activities that are within high or moderate paleontologically sensitive areas where excavation is greater than 2,500 cubic yards pursuant to *County of San Diego Guidelines for Determining Significance – Paleontological Resources* shall implement a monitoring program during excavation/grading activities. A Project Paleontologist and Paleontological Resources Monitor shall be retained as defined by the County Guidelines.

The Project Paleontologist shall attend the pre-grading/pre-construction meeting to consult with grading contractors regarding the requirement of monitoring for paleontological resources, the potential importance and uniqueness of fossils and other paleontological resources that could be found during grading and excavation for the Proposed Project, and the regulations that govern the protection of paleontological resources.

The Project Paleontologist and Paleontological Resources Monitor shall monitor the original cutting (grading and excavation activities) of previously undisturbed formations of sedimentary rocks that may contain paleontological resources for

unearthed fossils. The frequency of monitoring depends upon the rate of excavation, the materials excavated, and the abundance of fossils.

In the event paleontological resources are found, construction activities shall be diverted or temporarily halted in the area where the resources were found to allow for recovery/salvage.

Upon conclusion of grading or excavation activities, a Paleontological Resources Mitigation Report shall be prepared, even if no resources are found during the monitoring. The report shall summarize the results of the mitigation program, including field and laboratory methodology, monitoring dates, location and geologic and stratigraphic setting, monitoring efforts, conclusions, and references cited, as well as if paleontological resources were found, lists of collected fossils and their paleontological significance and descriptions of any analyses. (Final PEIR p. 2.3-20)

M-GE-1b Integrated Vector Management Program activities that are within low or marginal paleontologically sensitive areas or within high or moderate paleontologically sensitive areas where excavation is less than 2,500 cubic yards pursuant to *County of San Diego Guidelines for Determining Significance – Paleontological Resources* shall implement a monitoring program during excavation/grading activities. A Standard Monitor shall be retained as defined by County Guidelines.

If a fossil of greater than 12 inches in any dimension, including circumference, is encountered during excavation or grading, all excavation operations in the area where the fossil was found shall be suspended immediately, the County Department of Environmental Health and Quality shall be notified, and a Project Paleontologist shall be retained to assess the significance of the find and, if the fossil is significant, to oversee the salvage program, including salvaging, cleaning, and curating the fossils and documenting the find. (Final PEIR p. 2.3-21)

Rationale: Incorporation of mitigation measures into the project is designed to avoid impacts from construction of individual activities implemented under the IVMP by locating and avoiding disturbance and destruction of sensitive resources. Avoidance and preservation of the resource is the preferred option and, if implemented, would result in no significant impact to paleontological resources. If paleontological resources cannot be avoided, mitigation measures (including monitoring during construction) would be required to be incorporated into the project to reduce impacts to below a level of significance.

4. Tribal Cultural Resources

Significant Effect: Impact TCR-1 – Ground-disturbing activities could have the potential to cause a substantial adverse change in the significance of a TCR pursuant to §21074 of the California Public Resources Code (Final PEIR p. 2.4-10). Considering the various techniques of the Proposed Project, source reduction would potentially result in tangible impacts to TCRs due to the potential ground-disturbing or physical impacts that environmental modifications could entail. And since specific site locations cannot be defined at this time, it is anticipated that ground-disturbing activities could have the potential to cause a substantial adverse change in the significance of a TCR pursuant to Section 21074 of the California Public Resources Code.

Finding: Pursuant to Public Resources Code, section 21081(a)(1) and CEQA Guidelines section 15091(a)(1), specific changes or alterations have been required in, or incorporated

into, the project which avoid, mitigate, or substantially lessen this potential effect on the environment.

Mitigation Measures:

M-TCR-1 Mitigation would occur through mitigation measures M-CR-1 and M-CR-2. (Final PEIR p. 2.4-10)

Rationale: Incorporation of mitigation measures into the project is designed to avoid impacts from construction of individual activities implemented under the IVMP by locating and avoiding disturbance and destruction of sensitive resources. Avoidance and preservation of the resource is the preferred option and, if implemented, would result in no significant impact to tribal cultural resources. If tribal cultural resources cannot be avoided, mitigation measures (including monitoring during construction) would be required to be incorporated into the project to reduce impacts to below a level of significance. Any subsequent discretionary projects that are not evaluated under the Final PEIR would be required to prepare site-specific project-level analyses to fulfill CEQA requirements, which may include additional AB 52 consultation with the culturally affiliated Native American tribes that could lead to the identification of TCRs.

ATTACHMENT C

LIST OF COMMENTERS, LETTERS OF COMMENT, AND RESPONSE TO COMMENTS ON THE DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT

FINAL PROGRAM ENVIRONMENTAL IMPACT REPORT AND SUPPORTING DOCUMENTATION SCH # 2018081060

INTENTIONALLY LEFT BLANK

LIST OF COMMENTERS, LETTERS OF COMMENT, AND RESPONSE TO COMMENTS ON THE DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT

PROJECT NAME: Integrated Vector Management Program Project; SCH # 2018081060

PUBLIC REVIEW PERIOD: October 6, 2023 – November 20, 2023

List of Commenters

Comment Letter	Date of Comment Letter	Commenter
Government Agencies		
A	10/06/23	State of California Governor's Office of Planning and Research, State Clearinghouse and Planning Unit
B	10/31/23	Marya Ahmad, CA State Parks
Organizations		
C	10/06/23	Billie Jo Jannen, Campo Lake Morena CPG
D	10/06/23	Kerry McNeill Forrest, Descanso Planning Group
Individuals		
E	10/06/23	David Moty
F	10/09/23	Ken Abernathy
G	10/9/23	Andrea Umezu
H	11/9/23	Robie Faulkner

Comment Letter A

From: Mikayla Vaba <mikayla.vaba@opr.ca.gov>
Sent: Friday, October 6, 2023 9:32 AM
To: Kashak, Jeff
Subject: [External] SCH Number 2018081060

Hello,

Your project is published and is available for review. Please note the review 'start' and 'end' period. You can use the "navigation" tab and select "published document" to view your project and any attachments on CEQAnet.

****Updates to Published Projects:** Please note that we do not remove attachments from published projects unless there is confidential information that cannot be displayed online. To make changes to a published document, send requests and any attachments to state.clearinghouse@opr.ca.gov. We ask that you also provide a brief memo on lead agency letterhead explaining what changes/corrections have been made.

Closing Letters: The State Clearinghouse (SCH) would like to inform you that at this time, our office has transitioned from providing close of review period acknowledgement on your CEQA environmental document. During the phase of not receiving notice on the close of review period, comments submitted by state agencies at the close of review period (and after) are available on CEQAnet. Please visit: https://ceqanet.opr.ca.gov/Search/Advanced

- Type in the SCH# of your project
- If filtering by "Lead Agency, "select the correct project
- Only State Agency comments will be available in the "attachments" section. Note: Refer to the bold and highlighted agencies.

A-1

Mikayla Vaba
State Clearinghouse
(916) 445-0613
mikayla.vaba@opr.ca.gov

To view your submission, use the following link.
https://ceqasubmit.opr.ca.gov/Document/Index/162235/3

1

Response to Letter A

State of California, Governor's Office of Planning and Research State Clearinghouse and Planning Unit

A-1 The comment includes a notice from State Clearinghouse verifying that Draft PEIR was successfully published in accordance California Environmental Quality Act requirements. No further response is required.

Comment Letter B

From: Ahmad, Marya@Parks <Marya.Ahmad@parks.ca.gov>
Sent: Tuesday, October 31, 2023 11:45 AM
To: IVMP
Cc: Tobias, Kathryn@Parks; Smith, Darren@Parks; Stephens, Valerie@Parks; Van Doren, Chad@Parks
Subject: [External] CA State Parks Comment Letter - IVMP Draft PEIR
Attachments: 2023_CSP_comments_County Vector Control PEIR.pdf

Categories: Public Comment, Responded

Good morning, IVMP Manager,

Please accept the attached comment letter from California State Parks for the draft PEIR for the Integrated Vector Management Program.

Thank you for the opportunity to comment.

Marya Ahmad
District Environmental Coordinator
Department of Parks & Recreation | San Diego Coast District
4477 Pacific Highway, San Diego, CA 92110
Office: (619) 688-3395

B-1

State of California • Natural Resources Agency — Gavin Newsom, *Governor*
DEPARTMENT OF PARKS AND RECREATION — Armando Quintero, *Director*
San Diego Coast District
4477 Pacific Highway
San Diego, CA 92110
(619) 688-3260 FAX (619) 688-3229

October 30, 2023

Vector Control Program
Attention: IVMP Manager
5570 Overland Avenue, Suite 102
San Diego, CA 92132

RE: California State Parks Comment Letter for the Integrated Vector Management Program Draft Program Environmental Impact Report

To Whom it May Concern,

Thank you for the opportunity to comment on the Draft Program Environmental Impact Report (PEIR) to evaluate the potential environmental effects associated with County of San Diego's (County) proposed Integrated Vector Management Program (IVMP or Proposed Project). State of California, Department of Parks and Recreation (State Parks) is a Trustee Agency responsible for the protection of natural, cultural and historical resources within the units of the State Parks system. The mission of State Parks is to provide for the health, inspiration and education of the people of California by helping to preserve the state's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high-quality outdoor recreation.

B-2

Invasive mosquito species known to carry pathogens are present at Los Peñasquitos Lagoon Marsh Natural Preserve (Los Peñasquitos Lagoon), a sub-unit of Torrey Pines State Natural Reserve, and Tijuana Estuary Natural Preserve. The County Vector Control Program currently coordinates with State Parks on an ongoing basis to gain access to habitats at these park units for the purposes of vector monitoring and control. Under the Proposed Project, the IVMP would continue to comprehensively implement vector control through various techniques, including surveillance and monitoring, source reduction (i.e., physical control), source treatment (i.e., biological and chemical controls), public education, outreach, and disease diagnostics.

Potential impacts to sensitive natural communities and species

Vector monitoring and control activities require entry to the salt marsh by foot, boat and/or helicopter. Therefore, the IVMP has the potential to cause significant impacts to sensitive natural communities and special status animal and plant species. The habitats of Los Peñasquitos Marsh Natural Preserve and Tijuana Estuary Natural Preserve have been afforded the highest level of resource protection in the State Parks system, and natural resource protection is a primary management goal for park units classified as State Reserves and for sub-units classified as Natural Preserves. Natural Preserves (Public Resource Code § 5019.71) are distinct areas of outstanding natural or scientific significance established within the boundaries of other State Park System units, whose purpose is to preserve rare or endangered plant and animal species and their supportive ecosystems. The Tijuana Estuary Natural Preserve has been designated as a Wetland of International Importance by the Ramsar Convention. State and federally listed bird species at these units include the Light-footed Ridgway's rail, Belding's savannah sparrow, least Bell's Vireo, Western Snowy plover, California Least Tern, and coastal California gnatcatcher.

B-3

State Parks generally restricts access to sensitive habitats, including riparian, coastal sage scrub, and salt marsh, during nesting season to avoid disturbance to nesting birds. To minimize potentially significant environmental impacts resulting from implementation of the IVMP, State Parks supports the biological resources mitigation measures identified in Chapter 7.1.1, specifically M-BI-1a through M-BI-5. State Parks supports the continuation of requiring qualified biologists to accompany County staff into Los Peñasquitos lagoon during bird breeding season, in order to avoid sensitive habitats (i.e., saltmarsh and mudflat) and species. State Parks also continues to support testing extended mosquito larvicide treatment stations at Los Peñasquitos lagoon and the use of aerial applications to reduce the need to enter sensitive habitats by foot during nesting season.

Thank you for the opportunity to comment on the draft PEIR for the Integrated Vector Management Program. We look forward to continuing to work with the County Vector Control Program to facilitate the vector monitoring and control efforts at Los Peñasquitos Marsh Natural Preserve and Tijuana Estuary Natural Preserve. Please feel free to contact me for further discussions regarding the IVMP.

B-3

Sincerely,

DocuSigned by:
Nicole Van Doren
1E83B1BCD06441F...

Nicole Van Doren

Acting District Superintendent
San Diego Coast District
Nicole.vandoren@parks.ca.gov

Cc'd

Kathryn Tobias, Senior Counsel
Darren Smith, Senior Environmental Scientist
Valerie Stephens, Administrative Chief
Chad Van Doren, Maintenance Chief

Response to Letter B

State of California, Department of Parks and Recreation

B-1 The comment includes the email transmittal of the comment letter to follow. No response is required.

B-2 The comment includes introductory remarks regarding the Proposed Project and acknowledges the County's current coordination efforts with the State to conduct vector control activities at Torrey Pines State Natural Reserve (which includes Los Peñasquitos Lagoon Marsh Natural Preserve) and the Tijuana Estuary Natural Preserve.

B-3 The comment summarizes that the Torrey Pines State Natural Reserve (which includes Los Peñasquitos Lagoon Marsh Natural Preserve) and the Tijuana Estuary Natural Preserve are part of a nationwide State Parks system, which serves to preserve rare or endangered plant and animal species and their supporting ecosystems. Due to the need to conduct vector control activities at Los Peñasquitos Lagoon, the comment states that the IVMP's activities have potential to cause significant impacts to various sensitive biological resources and agrees with implementation of the County's proposed mitigation measures M-BI-1a through M-BI-5.

The County acknowledges the State's support to continue testing other vector control methods that would limit entrance to the preserve by foot. The County appreciates the State's coordination and collaboration to ensure mosquito populations are controlled in a manner that balances the need to protect the region's natural environment.

Since this comment does not raise an issue concerning the analysis of adequacy of the PEIR pursuant to CEQA Guidelines Section 15088, no further response is required. This comment is included in the Final PEIR for review and consideration by the County decision-making body prior to a final decision on the Proposed Project.

Comment Letter C

From: Descanso Planning Group <descansocpg@gmail.com>
Sent: Friday, October 6, 2023 10:18 AM
To: IVMP
Subject: [External] Draft EIR

Categories: Needs Review

I see in your notice that a hardcopy of the DEIR is available for review. Where is the hardcopy located? Many residents in the back county do not have adequate Broadband to handle the volume of an electronic version of this document. The DEIR should be placed at the county libraries for review and comment.
Kerry McNeill Forrest, Chair Descanso Community Planning Group

From: IVMP
Sent: Friday, October 13, 2023 4:57 PM
To: IVMP; campoplanninggroup@nym.hush.com; Descanso Planning Group; Cherry Diefenbach (Jacumba); Travis Lyon; Story R Vogel; Robin Joy Maxson (Ramona); Eileen Delaney; Kathy Goddard - Cuyamaca; Darin Wessel
Subject: RE: [External] Re: Fwd: Draft EIR

Follow Up Flag: Follow up
Flag Status: Completed

Categories: Needs Review

We appreciate the feedback that was received about the distribution of hard copies of the Vector Control draft PEIR at County libraires. Based on this suggestion, we will be placing a hard copy of the draft PEIR at the County libraries by next week or as soon as the printer can supply them. We would appreciate if all the CPGs can share the public notice that you received with your community through the normal methods your CPG shares this type of information (such as email distribution lists, newsletters, etc.). We would also appreciate if you could highlight that the document can be found either electronically or as a hard copy at the County libraries for any resident that is not able to access the document from their home computer or other electronic device. If you have any further questions, please feel free to contact me.

Sincerely,

Nikos Gurfield, DVM, PhD, DACVP, County Veterinarian
County of San Diego, Dept. Environmental Health and Quality
Community Health Division - Vector Control Program

Help us make sure our customers have a positive experience. Please take 60 seconds to provide us with your feedback.

C-1

Response to Letter C

Descanso Community Planning Group
Kerry Forrest, Chair

C-1 The commenter asked and encouraged County staff to provide a hardcopy of the Draft PEIR at County libraries due to the limited internet access in some areas of the county. After collaborating with the commenter, County staff successfully placed a hardcopy of the Draft PEIR at all 33 County library locations on October 19, 2023 allowing sufficient time for review.

This comment does not raise an issue concerning the analysis of adequacy of the PEIR pursuant to CEQA Guidelines Section 15088. Therefore, no further response is required. This comment is included in the Final PEIR for review and consideration by the County decision-making body prior to a final decision on the Proposed Project.

Comment Letter D

From: campoplanninggroup@nym.hush.com
To: Descanso Planning Group; Billie Jo Jannen (Campo); Cherry Diefenbach (Jacumba); Travis Lyon; Story R Vogel; Robin Joy Maxson (Ramona); Eileen Delaney; Kathy Goddard - Cuyamaca; Darin Wessel; IVMP
Subject: [External] Re: Fwd: Draft EIR
Date: Friday, October 6, 2023 10:48:53 AM

Dear staff: I strongly support this request. The public should be informed about the control measures used, especially where the use of pesticides is concerned. As a former pest control professional, I am well aware of the importance of tracking and limiting exposure.

I don't understand why EIRs aren't being posted in local libraries anymore, but if policies have changed about posting, it may be time to revisit them. The use of the internet for notifications is great for expanding your audience, but doing it instead of local postings shrinks it. We need to do both.

D-1

Thank you
Billie Jo Jannen, Chairman
Campo Lake Morena CPG

On 10/6/2023 at 10:25 AM, "Descanso Planning Group" <descansocpg@gmail.com> wrote:

> This is regarding the Vector Control DEIR for the county of San Diego, anyone who pays property taxes has an assessment for this program listed on their bill. A notice came out this morning regarding the DEIR review. The program link follows:
> https://www.sandiegocounty.gov/content/sdc/deh/pests/IVMP.html
>
> Kerry Forrest, Chair DCPG
>
> --------- Forwarded message ---------
> From: **Descanso Planning Group** <descansocpg@gmail.com>
> Date: Fri, Oct 6, 2023 at 10:18 AM
> Subject: Draft EIR
> To: <IVMP@sdcounty.ca.gov>
>
> I see in your notice that a hardcopy of the DEIR is available for review. Where is the hardcopy located? Many residents in the back county do not have adequate Broadband to handle the volume of an electronic version of this document. The DEIR should be placed at the county libraries for review and comment.
> Kerry McNeill Forrest, Chair Descanso Community Planning Group

D-2

Response to Letter D

Campo Lake Moreno Community Planning Group
Billie Jo Jannen, Chair

D-1 The commenter supports Ms. Forrest's request (Comment Letter C) to provide a hardcopy of the Draft PEIR at County libraries. As noted in Response to Comment C-1, County staff successfully placed a hardcopy of the Draft PEIR at all 33 County library locations on October 19, 2023 in response to the planning groups' requests allowing sufficient time for review.

This comment does not raise an issue concerning the analysis of adequacy of the PEIR pursuant to CEQA Guidelines Section 15088. Therefore, no further response is required. This comment is included in the Final PEIR for review and consideration by the County decision-making body prior to a final decision on the Proposed Project.

Comment Letter E

From: David Moty
To: IVMP
Subject: [External] Comment - INTEGRATED VECTOR MANAGEMENT PROGRAM DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT SCH# 2018081060
Date: Friday, October 6, 2023 12:07:44 PM

My comment is to ask why flies are not considered a vector for disease given that "house flies are strongly suspected of transmitting at least 65 diseases to humans, including typhoid fever, dysentery, cholera, poliomyelitis, yaws, anthrax, tularemia, leprosy, and tuberculosis. Flies regurgitate and excrete wherever they come to rest and thereby mechanically transmit disease organisms." (Penn State University)

In urban areas of San Diego County, particularly the most urbanized, lower income areas, flies are a significant issue especially in late summer. Evaluation of and a program of control for this disease vector and its most prolific breeding grounds should be included in the EIR.

Respectfully submitted,
David Moty

E-1

Response to Letter E

David Moty

E-1 The comment asks why flies are not considered a vector for disease. County staff contacted Mr. Moty separately to educate and explain that although flies can mechanically spread certain organisms that, except for poultry ranches, they are not the type of vector that the program has authority over. However, this comment does not raise an issue concerning the analysis of adequacy of the PEIR pursuant to CEQA Guidelines Section 15088. Therefore, no further response is required. This comment is included in the Final PEIR for review and consideration by the County decision-making body prior to a final decision on the Proposed Project.

Comment Letter F

From: Caterpillar Chow
To: IVMP
Subject: [External] Vector control and Monarch Habitats
Date: Monday, October 9, 2023 10:22:02 AM

Hi there this is Ken from Caterpillar Chow milkweed nursery. Currently we have mating monarch and queen butterflies following the watershed and larva are hatching in many San Diego locations right now.

We know several sensitive areas in the county and are always identifying more. It is Crystal to the preservation of the monarch population in San Diego and for the rest of California that we try to maintain protections for these insects and include them in the county plans for mowing, vector control and landscaping.

Please feel free to contact me directly and I will work with San Diego to help. We are experts in the biology of milkweed habitats .

Sincerely
Ken Abernathy
Caterpillar Chow

619-987-7848

Sent from my iPhone

F-1

Response to Letter F

Ken Abernathy

F-1 The commenter stresses the importance of preserving the monarch butterfly populations in San Diego and requested that the County consider this species during vector control activities. The County is aware that the San Diego region contains several sensitive butterfly species, and minimization and avoidance of any sensitive species are key priorities for the County's vector control program. As outlined in the Final PEIR's mitigation measures (e.g., M-BI-1a, M-BI-2a), surveys would be conducted prior to vegetation removal, permanent habitat modification, and/or ground disturbance activities to determine if any special status wildlife species may be present. If present, coordination with the applicable wildlife agencies and implementation of compensatory mitigation would occur.

However, this comment does not raise an issue concerning the analysis of adequacy of the PEIR pursuant to CEQA Guidelines Section 15088. Therefore, no further response is required. This comment is included in the Final PEIR for review and consideration by the County decision-making body prior to a final decision on the Proposed Project.

Comment Letter G

From: Andrea Aquino <andreaumezu@gmail.com>
Sent: Monday, October 9, 2023 11:47 AM
To: IVMP
Subject: [External] Mosquitoes

Follow Up Flag: Follow up
Flag Status: Completed

Categories: Needs Review

To Whom It May Concern,

Good Afternoon, I live in Monarch Ridge Community in El Cajon, CA. My community and neighbors told me to email and get help with the major mosquito problem we are having. We have a wildlife trail and there is a swamp there in the middle of our community that is managed by the county.
My address is 1819 Monarch Ridge Circle, El Cajon, CA 92019. I have done the best that I can do on my part buying all kinds of gadgets Zappers, natural remedies , etc to help with the problem but nothing works and my entire family including my newborn is getting tons of mosquito bites regardless of what we do, We are desperate for help here and your help would be truly appreciated. Please let me know what you can do to help us.

G-1

Sincerely,
Andrea Umezu
(310)971-0515

Response to Letter G

Andrea Umezu

G-1 The commenter expressed an interest in receiving additional guidance or support from the County pertaining to mosquito abatement. County staff contacted the individual separately, provided information, inspected the area related to the request, and, although no mosquitoes were found to be breeding, continued to monitor the area as part of its routine surveillance program.

Since this comment does not raise an issue concerning the analysis of adequacy of the PEIR pursuant to CEQA Guidelines Section 15088, no further response is required. This comment is included in the Final PEIR for review and consideration by the County decision-making body prior to a final decision on the Proposed Project.

Comment Letter H

From: robie faulkner <robiekala@gmail.com>
Sent: Thursday, November 9, 2023 6:11:55 AM (UTC+00:00) Monrovia, Reykjavik
To: IVMP <ivmp@sdcounty.ca.gov>
Subject: [External] vector control program

Vector control is a fraud and operators should spen time in prison. The tax should be removed from our taxes. Robie Faulkner Ca .professional engineer retired

H-1

Response to Letter H

Robie Faulkner

H-1 The County acknowledges this comment; however, it does not raise an issue concerning the analysis of adequacy of the PEIR pursuant to CEQA Guidelines Section 15088. Therefore, no further response is required. This comment is included in the Final PEIR for review and consideration by the County decision-making body prior to a final decision on the Proposed Project.

ATTACHMENT D

STATEMENT OF LOCATION AND CUSTODIAN OF RECORD

FINAL PROGRAM ENVIRONMENTAL IMPACT REPORT
AND SUPPORTING DOCUMENTATION
SCH # 2018081060

INTENTIONALLY LEFT BLANK

STATEMENT OF LOCATION AND CUSTODIAN OF DOCUMENTS OR OTHER MATERIALS THAT CONSTITUTE A RECORD OF PROCEEDINGS

Integrated Vector Management Program
San Diego County, California
SCH # 2018081060

Public Resource Code Section 21081.6(a)(2) requires that the lead agency (in this case the County of San Diego) specify the location and custodian of the documents or other material that constitute the record of proceedings upon which its decision is based. It is the purpose of this statement to satisfy this requirement.

Location of documents and other materials that constitute the record of proceedings:

County of San Diego
Department of Environmental Health and Quality, Vector Control Program
5570 Overland Avenue, Suite 102
San Diego, California 92123

Clerk of the Board of Supervisors
1600 Pacific Highway, Room 402
San Diego, CA 92101

Custodian:

County of San Diego
Department of Environmental Health and Quality, Vector Control Program
5570 Overland Avenue, Suite 102
San Diego, California 92123

Clerk of the Board of Supervisors
1600 Pacific Highway, Room 402
San Diego, CA 92101

INTENTIONALLY LEFT BLANK

ATTACHMENT E

DECISION AND EXPLANATION REGARDING RECIRCULATION OF THE DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT

FINAL PROGRAM ENVIRONMENTAL IMPACT REPORT
AND SUPPORTING DOCUMENTATION
SCH # 2018081060

INTENTIONALLY LEFT BLANK

EXPLANATION OF THE DECISION REGARDING RECIRCULATION OF THE DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT

Integrated Vector Management Program
San Diego County, California
SCH # 2018081060

Pursuant to California Environmental Quality Act (CEQA) Guidelines, Section 15088.5(a), the County of San Diego is required to recirculate a draft environmental impact report (EIR) when significant new information is added to the draft EIR after public review of the draft EIR, but before certification. Significant new information can include changes in the project or environmental setting, as well as additional data or other information. New information added to a draft EIR is not significant unless the draft EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including feasible alternatives) that the project's proponents have declined to implement.

BACKGROUND: The County of San Diego (County) released a Draft Program Environmental Impact Report (Draft PEIR) for a 46-day public review period from October 6, 2023 to November 20, 2023. During this public review period, the County received 8 comment letters. Responses were prepared to all comments received during the public review period and are included in the Final PEIR.

DECISION: No “significant new information” has been added to the Final PEIR since public notices were given of the availability of the Draft PEIR for public review, and, therefore, recirculation of the Draft PEIR is not required.

EXPLANATION: The County provides the following explanation of the decision regarding no recirculation:

CEQA Guidelines Section 15088.5 states that new information added to a Draft EIR is not significant unless the Draft EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project’s proponents have declined to implement. “Significant new information” requiring recirculation includes, for example, a disclosure showing that:

(1) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.

(2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.

(3) A feasible project alternative or mitigation measure considerably different from the others previously analyzed would clearly lessen the significant environmental impacts of the project, but the project’s proponents decline to adopt it.

(4) The Draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded.

Recirculation is not required where the new information added to the Draft PEIR merely clarifies or amplifies or makes insignificant modifications to an adequate EIR.

No Changes to Project and Environmental Setting Since Circulation of Draft PEIR

The project and the methods described for its implementation have not substantially changed from the descriptions provided within the published Draft PEIR or its revised portions, and no new information of significance has become available that was not known and could not have been known at the time the Draft PEIR or its revised portions were circulated. Moreover, the circumstances under which the project would be undertaken have not changed substantially since the Draft PEIR or its revised portions were circulated to agencies, organizations, and the general public.

Conclusion

Pursuant to CEQA, recirculation of a draft EIR is warranted only when significant new information is added. New information added to an EIR is not significant unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement. No new significant impacts would result from the changes, and no mitigation measures were added as a result of the changes to the document. Therefore, the public was not deprived of an opportunity to comment on a new significant adverse effect or feasible way to mitigate such an effect that the project proponent declines to implement. For these reasons, recirculation of the Draft PEIR is not required.

ATTACHMENT F

MITIGATION MONITORING AND REPORTING PROGRAM

FINAL PROGRAM ENVIRONMENTAL IMPACT REPORT
AND SUPPORTING DOCUMENTATION
SCH # 2018081060

INTENTIONALLY LEFT BLANK

MITIGATION MONITORING AND REPORTING PROGRAM

Integrated Vector Management Program
San Diego County, California
SCH # 2018081060

Mitigation measures have been identified in the Final Program Environmental Impact Report (Final PEIR) for the Integrated Vector Management Program to reduce or eliminate potential environmental impacts. The County of San Diego (County) is required to implement all adopted mitigation measures for an identified significant impact that would occur as a result of a specific project relying on the Final PEIR. If a specific project would not result in one or more of the significant impacts identified below (and in the Final PEIR), the associated mitigation measure(s) would not be required to be implemented. To ensure compliance, the following mitigation monitoring and reporting program has been formulated. This program consists of a matrix containing detailed descriptions of the mitigation measures and providing a checklist to ensure that they are carried out.

The proposed enhancements to the existing vector control program will benefit the community by protecting the public from vectors, including the diseases they transmit and the discomfort and injury they cause.

Two checklists have been prepared for the project. Table 1 summarizes the mitigation measures and Table 2 summarizes the project design features (i.e., avoidance measures / best management practices) for the Integrated Vector Management Program. Information contained within the checklists clearly identifies the measures, delineates the monitoring schedule, and defines the conditions required to verify compliance. Following is an explanation of the columns that constitute each checklist.

Column 1 **Impact**: An inventory of each impact is numbered and provided with a brief description.

Column 2 **Mitigation Measure**: Each measure is numbered and provided with a brief description of mitigation to reduce the impact to a below a level of significance.

Column 3 **Responsibility**: Identifies the person(s) responsible for determining compliance with the mitigation measure, ensuring the mitigation measure is completed within the correct timing period, and informing Department of Environmental Health and Quality (DEHQ) about compliance.

Column 4 **Schedule**: The monitoring schedule depends upon the progression of the overall project. Therefore, specific dates are not used within the “Schedule” column. Instead, scheduling describes a logical succession of events (e.g., prior to construction, annual) and if necessary, delineates a follow-up program.

Column 5 **Verification of Compliance**: The monitor verifies completion of the particular mitigation measure by initialing and dating in this column. Where the “Schedule” column indicates annual or other ongoing mitigation measures, verification of compliance may not occur until completion of the project. Provision of all required signatures within the Verification of Compliance column signifies conclusion of the monitoring program.

Remarks: The status of ongoing and cumulative mitigation measures is to be documented during each visit. The space provided for remarks is obviously too

small for the inclusion of the remarks. It is intended that this space be used to indicate whether there are specific comments pertaining to the status of the mitigation measure. If there are additional comments they are to be attached to the checklist. Progress reports are required for the revegetation program. Information provided within progress reports will be helpful in the development of future mitigation programs.

This program is to be adopted by the lead and responsible agencies upon formulation of findings in order to comply with the requirements set forth by Assembly Bill 3180 (Public Resources Code Section 21081.6)

Table 1
Mitigation Checklist

Impact	Mitigation Measure	Responsibility	Schedule	Verification of Compliance		
				Initial	Date	Remarks
Biological Resources						
BI-1. The Proposed Project has the potential to cause significant impacts to special status plant species.	**M-BI-1a.** Prior to conducting Integrated Vector Management Program activities that would result in vegetation removal, habitat modification, and/or ground disturbance, a qualified biologist shall conduct a biological evaluation of the individual Integrated Vector Management Program activity area. The biological evaluation shall include (1) a general reconnaissance survey; (2) a review of recent aerial imagery, topographic and soils maps, regional vegetation mapping (as available), and local, State, and federal biological databases including but not limited to County SanBIOS data, California Department of Fish and Wildlife Biogeographic Information and Observation System database, U.S. Fish and Wildlife Service National Wetland Inventory) and critical habitat databases, and U.S. Environmental Protection Agency Watershed Assessment, Tracking & Environmental Results System database to determine sensitive biological resources known to occur within and adjacent to the Integrated Vector Management Program activity area; (3) a query of sensitive species databases such as U.S. Fish and Wildlife Service occurrence records, California Department of Fish and Wildlife California Natural Diversity Database, and County SanBIOS data to determine if special status species are present or have high potential to occur within or adjacent to the individual Integrated Vector Management Program activity area; and (4) preparation of a biological resources report. The reconnaissance survey shall include an inventory of existing vegetation communities, flora and fauna resources, and potentially jurisdictional resources present within the individual Integrated Vector Management Program activity area and documentation of special status plant and animal species, if encountered during the survey. The biological resources report shall summarize existing biological resources present within the individual Integrated Vector Management Program activity area, identify sensitive biological resources that are present or have potential to occur, provide an assessment of potential impacts, and identify applicable mitigation measures if necessary. **M-BI-1b.** Prior to conducting Integrated Vector Management Program activities that would result in vegetation removal, permanent habitat modification, and/or ground disturbance in areas with potential to support special status plant species, a qualified biologist shall conduct a rare plant survey to confirm the presence/absence of special status plant species within or adjacent to the individual Integrated Vector Management Program activity area. The exact timing of the rare plant survey shall be determined based on the location, elevation, and flowering phenology of the special status plant species with potential to occur within and adjacent to the individual Integrated Vector Management Program activity area. If special status plant species are discovered within the individual Integrated Vector Management Program activity area, those individuals or populations shall be avoided, or additional mitigation measures (which could include transplantation) shall be implemented that would reduce impacts to below a level of significance. Impacts to State- and/or federally listed plant species and species designated critical habitat may require additional consultation with the U.S. Fish and Wildlife Service pursuant to the federal Endangered Species Act if the individual Integrated Vector Management Program activity area occurs outside an adopted Natural Community Conservation Plan/Habitat Conservation Plan or if take of that species is not covered under the specific adopted plan. Mitigation for impacts to special status plant species shall be consistent with local jurisdictions' policies and ordinances and/or adopted Natural Community Conservation Plans/Habitat Conservation	DEHQ Project Manager and Project Biologist	Prior to and during site-specific IVMP activities			

Table 1
Mitigation Checklist

Impact	Mitigation Measure	Responsibility	Schedule	Verification of Compliance		
				Initial	Date	Remarks
	Plans where required and identified within the individual Integrated Vector Management Program activity biological resources report that shall be prepared pursuant to M-BI-1a. **M-BI-1c.** Prior to conducting Integrated Vector Management Program activities, a qualified biologist shall flag areas to be avoided that contain sensitive biological resources. Where indicated by the qualified biologist, these areas shall be fenced or otherwise protected from direct or indirect impacts. Specifically, temporary (i.e., exclusionary) fencing shall be installed where feasible when grubbing, clearing, or grading would be conducted within 100 feet of sensitive biological resources depending on the species or habitat present, individual Integrated Vector Management Program activities, and site constraints. Temporary fencing (such as silt or orange construction fencing) shall be installed at limits of an individual Integrated Vector Management Program activity area prior to initiation of activities. A qualified biologist shall monitor the installation of temporary (i.e., exclusionary) fencing wherever it would abut sensitive species or vegetation communities, jurisdictional wetlands and waterways, or other sensitive areas, such as environmentally designated open space. **M-BI-1d**. Prior to conducting Integrated Vector Management Program activities that would result in vegetation removal, permanent habitat modification, and/or ground disturbance in areas known to contain sensitive biological resources, a qualified biologist shall conduct a training session for personnel, as applicable, to inform them of the sensitive biological resources with potential to occur in the sensitive area and any mitigation and/or avoidance measures that must be implemented. **M-BI-1e**. When sensitive biological resources have been identified on site or adjacent to an individual Integrated Vector Management Program activity area, a qualified biologist shall monitor initial vegetation clearing, grubbing, and ground disturbance activities to ensure that activities occur within the approved limits of work and that protective measures (e.g., flagging, fencing) are in place.					
BI-2. The Proposed Project has the potential to cause significant direct impacts to special status animal species.	Mitigation would occur through mitigation measures **M-BI-1a, M-BI-1c, M-BI-1d, M-BI-1e** in addition to: **M-BI-2a.** Integrated Vector Management Program activities that could result in vegetation removal, permanent habitat modification, and/or ground disturbance activities within potentially suitable habitat for State- and/or federally listed animal species shall occur outside a species' breeding season. If such activities are unavoidable during the respective breeding season, focused protocol surveys for each species with potential to occur shall be conducted prior to conducting Integrated Vector Management Program activities. Surveys shall follow the current U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife protocols, as appropriate. If State- and/or federally listed species are determined to occur within or adjacent to the individual Integrated Vector Management Program activity area, consultation with the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife under the Federal Endangered Species Act and California Endangered Species Act, respectively, shall be initiated, and any resulting mitigation measures (including but not limited to breeding season activity restrictions and/or habitat-based compensatory mitigation) identified during consultation shall be implemented. **M-BI-2b.** Clearing or grubbing of vegetation during the general bird breeding season (February 15 through September 15) or raptor breeding season (January 15 through July 15) as defined by the	DEHQ Project Manager and Project Biologist	During site-specific IVMP activities (prior to breeding season)			

Table 1
Mitigation Checklist

Impact	Mitigation Measure	Responsibility	Schedule	Verification of Compliance		
				Initial	Date	Remarks
	County of San Diego Guidelines for Determining Significance – Biological Resources shall be avoided except as outlined by this measure. These breeding seasons shall not supersede implementing any agreements with the wildlife agencies, Habitat Conservation Plans, Habitat/Resource Management Plans, and Special Area Management Plans. If clearing and grubbing of vegetation is unavoidable during the breeding season, a pre-construction survey shall be conducted by a qualified biologist no more than seven days prior to conducting work in an individual Integrated Vector Management Program activity area that supports suitable nesting bird habitat to determine if active bird nests are present. If no nesting birds are documented (includes nest building or other breeding or active nesting behavior) within the individual activity area, clearing, grubbing, and grading shall be allowed to proceed. If an active nest is observed within the activity area, the qualified biologist shall determine an appropriate buffer around the nest based on the biology of the species and the specific site constraints. Activities shall not occur within the buffer area until the qualified biologist has determined that the nest is no longer active, young have fledged, or determined which activities within the buffer would not jeopardize nesting success. The buffer area shall be demarcated in the field with flagging, stakes, and/or temporary fencing. The nesting buffer may be determined and adjusted depending on the species present, individual Integrated Vector Management Program activities and site constraints, and in consultation with applicable wildlife agencies.					
BI-3. The Proposed Project has the potential to cause significant indirect noise-related impacts to special status animal species.	**M-BI-3.** For individual Integrated Vector Management Program activities adjacent to habitat occupied by State- and/or federally listed bird species (e.g., coastal California gnatcatcher, least Bell's vireo, and southwestern willow flycatcher) in which noise would be produced in excess of 60 A-weighted decibel equivalent continuous sound level or ambient noise levels (if ambient levels are above 60 A-weighted decibel), the Integrated Vector Management Program activities shall: a) Be postponed until a qualified biologist determines the nest(s) is no longer active or until after the respective breeding season; or b) Not occur until a temporary noise attenuation structure or barrier is constructed at the edge of the individual Integrated Vector Management Program activity area and/or around the noise-generating equipment to ensure that noise levels are reduced to below 60 A-weighted decibels or ambient, whichever is greater.	DEHQ Project Manager and Project Biologist	During site-specific IVMP activities (prior to breeding season)			
BI-4. The Proposed Project has the potential to cause significant impacts to riparian habitats and sensitive natural communities.	Mitigation would occur through mitigation measures **M-BI-1a, M-BI-1c, M-BI-1d, M-BI-1e** in addition to: **M-BI-4a.** Permanent impacts to riparian habitat and other sensitive natural communities shall be offset through mitigation of habitat of equal or higher biological value at ratios commensurate with individual Integrated Vector Management Program activity impacts. Mitigation shall occur by implementing one or a combination of the following: off-site or on-site preservation, enhancement, restoration, and/or creation of habitat; deduction of habitat mitigation credits from an approved mitigation area or bank, or other location deemed acceptable by the County and applicable regulatory agencies. Final mitigation obligations shall be determined based on the quality, quantity, and type of habitat impacted at ratios consistent with local policies and ordinances, or, for projects within the boundaries of an adopted Natural Community Conservation Plan/Habitat Conservation Plan, in accordance with the applicable mitigation ratios and measures of that specific final plan. In the event that the adopted Natural Community Conservation Plan/Habitat Conservation Plan does not stipulate mitigation ratios	DEHQ Project Manager and Project Biologist	Prior to conducting site-specific IVMP activities			

Table 1
Mitigation Checklist

Impact	Mitigation Measure	Responsibility	Schedule	Verification of Compliance		
				Initial	Date	Remarks
	for temporary impacts, temporary impacts to riparian habitat and other sensitive natural communities shall be mitigated through on-site revegetation of temporarily impacted areas to pre-construction conditions and appropriate vegetation types at a minimum 1:1 ratio. **M-BI-4b**. For individual Integrated Vector Management Program activities resulting in permanent impacts to wetland or riparian habitats and/or upland sensitive natural communities, and whose mitigation includes enhancement, restoration, and/or creation of such habitat, a restoration plan shall be prepared by qualified personnel with experience in Southern California ecosystems and native plant restoration techniques. At a minimum, the restoration plan shall include the following information: (a) the location of the mitigation site(s); (b) a schematic depicting the mitigation areas; (c) the plant species to be used, container sizes, and seeding rates; (d) a planting schedule; (e) a description of installation requirements, irrigation sources and methodology, erosion control, maintenance and monitoring requirements; (f) measures to properly control exotic vegetation on-site; (g) site-specific success criteria; (h) a detailed monitoring program; (i) contingency measures should the success criteria not be met; (j) a summary of the annual reporting requirements; and (k) identification of the responsible party(ies) for meeting the success criteria and providing for conservation of the mitigation site in perpetuity.					
BI-5. The Proposed Project has the potential to cause significant impacts to jurisdictional waters and wetlands.	Mitigation would occur through mitigation measures **M-BI-1a, M-BI-1c, M-BI-1d, M-BI-1e, M-BI-4a, M-BI-4b** in addition to: **M-BI-5.** Individual Integrated Vector Management Program activities that would result in impacts to federal or State regulated water bodies (i.e., waters of the U.S. and State, streambeds, wetlands, and/or riparian habitat) shall obtain applicable permits from federal and State regulatory agencies prior to the commencement of such discharge or dredging activities. Such agencies may include U.S. Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife. Mitigation requirements for impacts to federal and State regulated water bodies would be determined through the permitting process.	DEHQ Project Manager and Project Biologist	Prior to conducting site-specific IVMP activities			
Cultural Resources						
CR-1. Ground-disturbing activities have the potential to cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5 of the CEQA Guidelines (CR-1).	**M-CR-1.** Site-Specific Cultural Resources Survey. For individual Integrated Vector Management Program source reduction activities that have been determined to have the potential to result in impacts to cultural resources, as identified in the Integrated Vector Management Program Best Management Practices (A13), a qualified archaeologist shall be retained to conduct a site-specific cultural resource survey if the site has not been surveyed in the previous 5 years. The survey shall consist of a record search of the California Historical Resources Information System housed at the South Coastal Information Center, research to identify historic land use in the area, and a pedestrian survey that includes the participation of a Native American monitor. A review of the Sacred Lands File maintained by the Native American Heritage Commission shall also be requested for the individual Integrated Vector Management Program activity. A report shall be prepared to discuss the survey and record search results. Cultural Resources Evaluation. If potential cultural resources are identified in an individual Integrated Vector Management Program activity area where ground disturbance is proposed, a cultural resources significance evaluation shall be conducted. Specifically, a significance evaluation shall be prepared if the individual Integrated Vector Management Program activity has the potential to result in an adverse	DEHQ Project Manager and Project Archaeologist	Prior to and during site-specific IVMP activities			

Table 1
Mitigation Checklist

Impact	Mitigation Measure	Responsibility	Schedule	Verification of Compliance		
				Initial	Date	Remarks
	effect to (1) new cultural resources that are identified as a result of a site-specific survey, or (2) previously recorded resources that have not been previously evaluated that are re-identified during a survey, unless resources can be avoided. Per the County of San Diego Report Format and Content Requirements, Cultural Resources: Archaeological and Historic Resources, significance evaluations will not be required if the resource has been evaluated for California Environmental Quality Act significance or for National Register of Historic Places eligibility within the last 5 years and if there has been no change in the conditions that contributed to the determination of resource importance (County 2007b). Significance evaluation efforts may include additional research to determine whether the resource meets the criteria for listing on the California Register of Historical Resources and/or subsurface investigation. Archaeological testing programs involving subsurface investigation shall include assessing the horizontal and vertical dimensions of a site, the chronological placement, site function, artifact/ecofact density and variability, presence/absence of subsurface features, and research potential. A Native American monitor shall be retained for all subsurface investigations. Resources found to be non-significant as a result of a survey and/or assessment will require no further work beyond documentation of the resources on the appropriate California Department of Parks and Recreation site forms and inclusion of results in the survey and/or assessment report prepared for the individual Integrated Vector Control Program activity. A cultural resources report shall be prepared to discuss potential impacts associated with the individual Integrated Vector Management Program activities and identify measures to reduce all significant impacts to below a level of significance, if applicable. Cultural Resources Data Recovery Program. If significant cultural resources are identified within an individual Integrated Vector Management Program activity area where ground disturbance is proposed, and avoidance of impacts to the resource is not possible, a data recovery program (including research design) shall be implemented. The data recovery program shall be subject to the provisions, as outlined in California Public Resources Code, Section 21083.2, and completed prior to the implementation of the individual Integrated Vector Management Program activity. Avoidance of significant cultural resources shall be sought to the extent possible. Cultural Resources Monitoring Program. If significant cultural resources are identified or potential cultural resources are suspected to occur in an individual Integrated Vector Management Program activity area where ground disturbance is proposed, monitoring shall be required by an archaeologist and Native American monitor. If unevaluated potentially significant cultural resources are discovered, construction activities shall be diverted away from the discovery until significance evaluation can be conducted. To mitigate potential impacts to significant cultural resources, a data recovery program for any newly discovered cultural resource would be prepared, approved by the County, and implemented using professional archaeological methods. Construction activities would be allowed to resume after the completion of the recovery of an adequate sample and the recordation of features. All cultural material collected during the data recovery program or monitoring program would be processed and curated at a San Diego County facility that meets federal standards per Code of Federal Regulations, Title 36, Part 79, unless the Native American monitors request the collection.					

Table 1
Mitigation Checklist

Impact	Mitigation Measure	Responsibility	Schedule	Verification of Compliance		
				Initial	Date	Remarks
	After monitoring is completed, an appropriate report shall be prepared. If no significant cultural resources are discovered, a brief letter shall be prepared. If significant cultural resources are discovered, a report with the results of the monitoring and any data recovery (including the interpretation of the data within the research context) shall be prepared.					
CR-2. Ground-disturbing activities have the potential to cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines.	Mitigation would occur through mitigation measure **M-CR-1**.	DEHQ Project Manager and Project Archaeologist	Prior to and during site-specific IVMP activities			
CR-3. Ground-disturbing activities have the potential to disturb human remains.	**M-CR-2.** Identification of Human Remains. In the event that human remains are discovered during individual Integrated Vector Management Program source reduction activities, work shall halt in the identified area, the County Medical Examiner shall be contacted, and California Public Resources Code, Section 5097.98; CEQA Guidelines, Section 15064.5; and California Health and Safety Code, Section 7050.5, shall be followed. If the remains are determined to be of Native American origin, the most likely descendant shall be identified by the Native American Heritage Commission and contacted by the County to determine proper treatment and disposition of the remains.	DEHQ Project Manager and Project Archaeologist	During site-specific IVMP activities			
Geology and Soils						
GE-1. Ground-disturbing activities have the potential to disturb the substratum or parent material below the major soil horizons in a paleontologically sensitive area, which would result in a potentially significant impact to paleontological resources.	**M-GE-1a**. Integrated Vector Management Program activities that are within high or moderate paleontologically sensitive areas where excavation is greater than 2,500 cubic yards pursuant to County of San Diego Guidelines for Determining Significance – Paleontological Resources shall implement a monitoring program during excavation/grading activities. A Project Paleontologist and Paleontological Resources Monitor shall be retained as defined by the County Guidelines. The Project Paleontologist shall attend the pre-grading/pre-construction meeting to consult with grading contractors regarding the requirement of monitoring for paleontological resources, the potential importance and uniqueness of fossils and other paleontological resources that could be found during grading and excavation for the Proposed Project, and the regulations that govern the protection of paleontological resources. The Project Paleontologist and Paleontological Resources Monitor shall monitor the original cutting (grading and excavation activities) of previously undisturbed formations of sedimentary rocks that may contain paleontological resources for unearthed fossils. The frequency of monitoring depends upon the rate of excavation, the materials excavated, and the abundance of fossils. In the event paleontological resources are found, construction activities shall be diverted or temporarily halted in the area where the resources were found to allow for recovery/salvage.	DEHQ Project Manager and Project Paleontologist	Prior to and during site-specific IVMP activities			

Table 1
Mitigation Checklist

Impact	Mitigation Measure	Responsibility	Schedule	Verification of Compliance		
				Initial	Date	Remarks
	Upon conclusion of grading or excavation activities, a Paleontological Resources Mitigation Report shall be prepared, even if no resources are found during the monitoring. The report shall summarize the results of the mitigation program, including field and laboratory methodology, monitoring dates, location and geologic and stratigraphic setting, monitoring efforts, conclusions, and references cited, as well as if paleontological resources were found, lists of collected fossils and their paleontological significance and descriptions of any analyses. **M-GE-1b**. Integrated Vector Management Program activities that are within low or marginal paleontologically sensitive areas or within high or moderate paleontologically sensitive areas where excavation is less than 2,500 cubic yards pursuant to County of San Diego Guidelines for Determining Significance – Paleontological Resources shall implement a monitoring program during excavation/grading activities. A Standard Monitor shall be retained as defined by County Guidelines. If a fossil of greater than 12 inches in any dimension, including circumference, is encountered during excavation or grading, all excavation operations in the area where the fossil was found shall be suspended immediately, the County Department of Environmental Health and Quality shall be notified, and a Project Paleontologist shall be retained to assess the significance of the find and, if the fossil is significant, to oversee the salvage program, including salvaging, cleaning, and curating the fossils and documenting the find.					
Tribal Cultural Resources						
TCR-1. Ground-disturbing activities could have the potential to cause a substantial adverse change in the significance of a TCR pursuant to §21074 of the California Public Resources Code.	**M-TCR-1**. Mitigation would occur through mitigation measures M-CR-1 and M-CR-2.	DEHQ Project Manager and Project Archaeologist	Prior to conducting site-specific IVMP activities			

INTENTIONALLY LEFT BLANK

Table 2
Project Design Feature Checklist

	Project Design Features	Applicable CEQA Topic	Responsibility	Schedule	Verification of Compliance		
					Initial	Date	Remarks
A. Prior to Conducting Vector Control Activities							
A1	The VCP performs public education and outreach activities to educate residents how to prevent mosquito breeding and other vector problems at their homes, businesses, and properties; how to protect themselves from being bitten by mosquitoes; and how to report dead birds and mosquito-breeding sources, including unmaintained pools, to prevent the spread of mosquito-borne diseases. Reducing vector breeding minimizes the need for VCP control activities.	Cultural Tribal Cultural Hazards	DEHQ Project Manager	Ongoing			
A2	The VCP has cooperative, collaborative relationships with federal, State, and local agencies. The VCP regularly communicates with resource agencies, including USFWS and CDFW, and abides by all applicable permits and agreements regarding planned vector activities in sensitive habitats. Access, timing, and methods of surveillance and control are discussed. Methods to minimize impacts to special status species, habitat, and wildlife are agreed upon prior to entering protected and sensitive habitats. The VCP will continue to foster these relationships, communication, and collaboration.	Biological Hydrology	DEHQ Project Manager	Ongoing and prior to site-specific IVMP activities			
A3	To help minimize the need for pesticide application or vegetation management, surveillance and monitoring at known or suspected vector sites will continue to be performed to assess vector species abundance and distribution and if they are carrying diseases. Information obtained from surveillance is evaluated with risk-based response criteria and other factors to decide when and where to implement vector control measures, such as pesticide application, and to help form action plans that reduce the risk of disease transmission and assist in reducing environmental impacts.	Biological Cultural Tribal Cultural Hazards	DEHQ Project Manager	Ongoing			
A4	All pesticides (i.e., chemical and biological controls) applied by the VCP are approved by the CDPR, and their application will continue to abide by all label instructions and regulations of the USEPA and CDPR, including application rates and methods, storage, transportation, mixing, and container disposal. In addition, the VCP will continue to comply with all pesticide reporting, equipment calibration, and inspection requirements as regulated by the County Agricultural Commissioner.	Biological Cultural Tribal Cultural Hazards	DEHQ Project Manager	Ongoing			
A5	In accordance with CDPH regulations, pesticides will only be applied by Certified Vector Control Technicians. VCP staff who apply pesticides or remove vegetation will continue to complete all training required by the CDPH to maintain status as a Certified Vector Control Technician and will follow the VCP's comprehensive documents, including the annual Engineer's Report, strategic response plans, and standard operating procedures to avoid and minimize negative environmental impacts. These activities are conducted in accordance with the BMPs described in the Best Management Practices for Mosquito Control in California (CDPH 2012), Best Management Practices for Mosquito Control on California State Properties (CDPH 2008a), and California Mosquito-Borne Virus Surveillance and Response Plan (CDPH 2021) which detail integrated vector best management practices for vector control and vector-borne disease prevention to ensure that pesticides are selected and applied appropriately and that potential impacts on non-targeted areas are eliminated or minimized.	Biological Cultural Tribal Cultural Hazards	DEHQ Project Manager	Ongoing			
A6	Chemical controls applied within waterbodies defined by federal and State regulations as wetland and/or non-wetland waters of the U.S. and/or State must be used in accordance with the Statewide NPDES Permit for Biological and Residual Pesticide Discharges to Waters of the U.S. from Vector Control Applications (Order No. 2016-0039-DWQ, General Permit No. CA990004).	Biological Hazards Hydrology	DEHQ Project Manager	Ongoing			

Table 2
Project Design Feature Checklist

	Project Design Features	Applicable CEQA Topic	Responsibility	Schedule	Verification of Compliance		
					Initial	Date	Remarks
A7	Before conducting monitoring or treatment, a Certified Vector Control Technician will review all site records in the County's enterprise database (currently Accela) used by the Vector Control Program for any applicable permits or agreements on file dictating how a site should be addressed or any other notes discussing environmental constraints/requirements, points of access, whether a qualified biological monitor is required, or any other pertinent information prior to visiting a site. Sensitive sites may include but are not limited to CDFW- or USFWS-owned or operated lands, easements, and preserves; national forests; County-owned parks and open space areas; or other lands identified by the SanGIS.	Biological	DEHQ Project Manager	Prior to conducting site-specific activities			
A8	Prior to entering an environmentally sensitive area or other site that has the potential to contain sensitive habitat or species, VCP staff will identify suspected vector-breeding sources using satellite images, topographic maps, historical records, and on-site evaluation to help ascertain the least environmentally impactful way to access the site. If more than one access route is available, staff will prioritize the path that would minimize or avoid environmental impacts to sensitive biological resources. If site conditions warrant a qualified biologist to accompany the Certified Vector Control Technician, the VCP will arrange for a qualified biologist to accompany field staff. Certified Vector Control Technicians will strictly follow all guidance and instructions from the biologist, including where access is permissible or should be avoided near sensitive habitat.	Biological	DEHQ Project Manager	Prior to conducting site-specific activities			
A9	If a site has been flagged in the County's enterprise database (currently Accela) for potentially containing sensitive biological resources, VCP staff will review applicable sensitive species databases, such as USFWS occurrence records, CDFW's California Natural Diversity Database, and County SanBIOS data, to determine if any potentially special status species (e.g., birds, fish, insects, plants, or other animals) are present or have high potential to occur on the site and research any unfamiliar species with photographs and descriptions of biology and habitat. Staff will also discuss preferred access points, methods, and paths for reaching vector-breeding sources with the supervisor and/or land manager.	Biological	DEHQ Project Manager	Prior to conducting site-specific activities			
A10	VCP staff will receive annual training on the identification of sensitive biological resources, including sensitive habitat and special status species (e.g., vernal pools and fairy shrimp, coastal sage scrub, bird species).	Biological	DEHQ Project Manager	Ongoing			
A11	VCP staff will receive annual training regarding techniques and procedures to avoid or minimize negative effects to protect State- and/or federally listed threatened or endangered species, listed species habitat, and wildlife/wildlife habitat. For example, training includes observation and avoidance measures when accessing areas that may serve as bird nesting habitat (e.g., watch for flushing birds that may indicate a nest is nearby).	Biological	DEHQ Project Manager	Ongoing			
A12	For operations that require large-scale treatments that may occur in proximity to homes or heavily populated, high traffic, or other sensitive areas (including bee farms) or other control activities that may generate noise expected to be of concern to the public, the VCP will notify the public and/or affected properties (approximately 24 to 48 hours in advance when possible) via the following communication protocols as appropriate: a) Provide Advance Notice. Depending on the nature and magnitude of the activities, information will be provided using press releases, social media posts, County website, mailers, hand-delivered flyers, posted signs, and/or emails. Public agencies, such as environmental health and agricultural agencies, emergency service providers, local governments, law enforcement, and airports, may also be notified of the nature and duration of the activities.	Noise	DEHQ Project Manager	Prior to conducting site-specific activities			

Table 2
Project Design Feature Checklist

	Project Design Features	Applicable CEQA Topic	Responsibility	Schedule	Verification of Compliance		
					Initial	Date	Remarks
	b) b) Provide Mechanism to Address Questions. The County offers various methods for customers to communicate with VCP staff via online tools, email, telephone, and/or postal mail during all times of VCP activities to respond to service calls and address public inquiries.						
A13	Individual IVMP source reduction activities that involve ground disturbance (e.g., grading, earthwork, or other excavation activities) will undergo a preliminary planning review by the County to assess the degree to which each activity may potentially result in impacts to cultural and tribal cultural resources. The County will review available records documentation and determine whether known archaeological or tribal resources are present within the proposed activity area or ascertain the potential that such resources may be encountered. Per the County of San Diego Report Format and Content Requirements, Cultural Resources: Archaeological and Historic Resources, project sites that have been previously surveyed within 5 years or less may use the previous study (County 2007b). As such, if preliminary planning review determines that the IVMP activity area has been previously surveyed for the presence of archaeological or tribal resources within the last 5 years with negative results or has been previously disturbed (e.g., grading, earthwork, or other excavation activities), the area would be considered "low sensitivity," and no further evaluation would be required. If the results of the review determine that the area has not previously been surveyed or disturbed or has been surveyed and archaeological and/or tribal resources have been identified, a site-specific cultural resource survey will be required.	Cultural Tribal Cultural	DEHQ Project Manager and Project Archaeologist	Prior to conducting site-specific activities			
B. During Vector Control Activities							
B1	VCP staff will minimize potential disturbance to wildlife while performing surveillance and control activities. When walking or using small equipment in sensitive habitats, existing trails, levees, and access roads will be used whenever feasible to avoid or minimize impacts to sensitive species, sensitive vegetation communities, and wetlands.	Biological	DEHQ Project Manager	During site-specific activities			
B2	When accessing sensitive habitat, VCP staff will minimize the use of motorized vehicles to the extent feasible by conducting activities on foot with handheld equipment and remain in previously disturbed areas when vehicle use is needed. Aerial surveillance or control (e.g., helicopter or drones) will also be used when feasible and appropriate during pesticide applications and identification of potential vector sites, respectively.	Biological Geology Transportation	DEHQ Project Manager	During site-specific activities			
B3	Vehicles will only be driven on existing roadways, access roads, and existing unpaved access paths. Vehicles driven on levees to travel near aquatic areas (such as tidal marshes, sloughs, or channels) for surveillance or treatment activities will travel at speeds slow enough to avoid or minimize noise and the production of dust, typically 15 miles per hour or less.	Biological Geology Air Quality Noise Transportation	DEHQ Project Manager	During site-specific activities			
B4	Watercraft will be used to access aquatic environments where access is permissible, including but not limited to marshes, lagoons, and estuaries, to conduct surveillance and control of vectors and when their use would reduce the risk of potential impacts that may otherwise occur from land-based vehicles. Operation of watercraft within CDFW-owned lands and easements, USFWS-owned lands and preserves, and other open space areas would be completed in coordination with the CDFW, USFWS, and/or other applicable land managers and agencies and would follow avoidance and minimization measure as required by the relevant agencies and right-of-entry permit, Special Use Permit, or other relevant permits.	Biological	DEHQ Project Manager	During site-specific activities			
B5	Prior to entering sensitive habitat, VCP staff will minimize the potential for the introduction and spread of invasive plant species by ensuring all equipment, vehicles, and personal gear (such as clothing and boots) are clean.	Biological	DEHQ Project Manager	During site-specific activities			

Table 2
Project Design Feature Checklist

	Project Design Features	Applicable CEQA Topic	Responsibility	Schedule	Verification of Compliance		
					Initial	Date	Remarks
B6	Only staff who are certified by the CDPH as a vector control technician or staff who have received training such as proper application methods to protect the environment and public health will be allowed to access environmentally sensitive areas.	Biological	DEHQ Project Manager	During site-specific activities			
B7	Operation of noise-generating equipment (e.g., construction equipment, woodchipper, pesticide application equipment) will abide by the time-of-day restrictions established by the applicable local jurisdiction's municipal code or ordinance (e.g., city or county) if such noise activities would exceed acceptable noise levels for sensitive receptors (e.g., residential land uses, schools, hospitals, places of worship). All motorized equipment will be shut down when not in use.	Noise	DEHQ Project Manager	During site-specific activities			
B8	Engine idling times will be minimized by shutting off equipment and vehicles when not in use to the extent feasible.	Air Quality Greenhouse Gas Energy Noise	DEHQ Project Manager	During site-specific activities			
B9	Vehicles and equipment will be maintained in accordance with manufacturer's specifications, including mufflers, engine operation, and tire inflation pressure, to minimize rolling resistance.	Air Quality Greenhouse Gas Energy Noise	DEHQ Project Manager	During site-specific activities			
B10	Vegetation trimming or removal, when necessary to provide access to vector habitat for surveillance and control activities, will be conducted by hand using handheld tools rather than gas-powered equipment or heavy machinery to minimize negative environmental effects. Vegetation trimming or removal activities will be conducted outside the general bird breeding season (February 15 to September 15, including riparian for general birds; January 15 to July 15 for raptors) to the greatest extent feasible.	Biological Geology Air Quality Greenhouse Gas Energy Noise	DEHQ Project Manager	During site-specific activities			
B11	Downed trees and large vegetation that have fallen due to storm events or disease may be trimmed and/or removed to the minimum extent necessary to maintain existing access points or to allow access to for vector monitoring or control.	(none but included as a general practice)	--	--	--	--	--
B12	Any staging of equipment or materials will occur in developed/disturbed areas outside existing wetlands, non-wetland waters, and native or rare upland areas.	Biological Geology Hydrology	DEHQ Project Manager	During site-specific activities			
B13	The changing of oil, refueling, and other actions that could result in a release of a hazardous substance will be restricted to designated service areas such as maintenance yards and gas stations or, when necessary, areas that are a minimum of 100 feet from any documented special status plant populations, sensitive habitats, or drainages. Equipment will be checked for leaks prior to operation and repaired as necessary. Fueling areas will be installed in the field, as applicable, by berms, sandbags, or other artificial barriers designed to prevent accidental spills.	Hazards Hydrology Wildfire	DEHQ Project Manager	During site-specific activities			
B14	Where heavy equipment or machinery is necessary, measures will be taken, such as reducing turns by track-type vehicles, taking a minimum number of passes with equipment, identifying multiple points of entry, driving vehicles at low speed, and avoiding or minimizing operating on open mud and other soft areas.	Geology Air Quality Greenhouse Gas Energy	DEHQ Project Manager	During site-specific activities			

Table 2
Project Design Feature Checklist

	Project Design Features	Applicable CEQA Topic	Responsibility	Schedule	Verification of Compliance		
					Initial	Date	Remarks
		Hydrology Noise					
B15	Microbial larvicides (Bti, Bs) or insect growth regulator (e.g., methoprene) will be used as primary treatment methods when necessary to control mosquito larvae due to their high effectiveness, high safety, and environmental compatibility. Only when necessary, surfactants (that are highly effective at suffocating mosquito larvae) may be used to control late-stage larvae or pupae that are resistant to microbial larvicides.	Hazards	DEHQ Project Manager	During site-specific activities			
B16	Pesticides will be applied at the lowest effective concentration for a specific, targeted set of vectors and site conditions. Application rates will never exceed the USEPA and CDPH-approved maximum label application rate. All pesticide application equipment is currently and will continue to be calibrated and inspected annually as required by regulating agencies, such as the CDPH and County Department of Agriculture, Weights and Measures.	Hazards Hydrology	DEHQ Project Manager	During site-specific activities			
B17	VCP staff will modify, postpone, or cease pesticide application when weather parameters exceed product label specifications, such as when wind speeds exceed the velocity stated on the product label or may result in drift or when a high chance of rain is predicted and rain is a determining factor on the label of the material to be applied.	Hazards Hydrology Wildfire	DEHQ Project Manager	During site-specific activities			
B18	Spray nozzles for the application of pesticides will be adjusted to produce larger droplet size rather than smaller droplet size when feasible. Low-pressure nozzles will be used when appropriate. Certified Vector Control Technicians will keep spray nozzles within a predetermined maximum distance as close as feasibly possible of target weeds or pests to avoid or minimize overspray. For application of ultra-low volume adulticides, equipment will be calibrated to deliver proper droplet size per manufacturer specifications.	Hazards	DEHQ Project Manager	During site-specific activities			
B19	Caution will be exercised to prevent spillage of pesticides during storage, transportation, mixing, or application of pesticides. All pesticide spills and cleanups (excepting cases where dry materials may be returned to the container or application equipment) will be reported to appropriate staff and any regulatory agencies. Application equipment will be checked for proper operation prior to use.	Hazards Hydrology	DEHQ Project Manager	During site-specific activities			
B20	A pesticide spill cleanup kit and proper protective equipment will be maintained at the VCP's service yard and in each vehicle for pesticide application and transport.	Hazards Hydrology	DEHQ Project Manager	During site-specific activities			
B21	In the event of spilled pesticides, the site will be managed to prevent entry by unauthorized personnel while the spill is contained, controlled, and cleaned up by stopping it from leaking or spreading to surrounding areas. Dry spills will be covered with a polyethylene or plastic tarpaulin if they cannot be cleaned up immediately. Any liquid hazardous material spill will be contained with appropriate absorbent materials.	Hazards Hydrology	DEHQ Project Manager	During site-specific activities			
B22	Staff will properly recover any spilled material, label the container or bag with the pesticide name, and coordinate with a VCP supervisor for disposal.	Hazards Hydrology	DEHQ Project Manager	During site-specific activities			
B23	Staff will be trained annually on petroleum-based or other chemical-based storage and disposal regulations and procedures including spill management protocols.	Hazards Hydrology Wildfire	DEHQ Project Manager	During site-specific activities			
B24	Field-based mixing and loading operations will occur in such a manner as to minimize the risk of accidental spill or release of pesticides.	Hazards Hydrology	DEHQ Project Manager	During site-specific activities			
B25	All vehicles will contain a fire extinguisher and first aid kit at all times.	Hazards Wildfire	DEHQ Project Manager	During site-specific activities			