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).

- A12: Prior to commencing activities that would disturb State- and/or federally listed plants or wildlife, the VCP will consult and coordinate with all applicable wildlife agencies (e.g., USFWS, CDFW) and obtain all required permits.

- 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

[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.

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.

- 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, A9, and A12).

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 A12, 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

[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*.

could potentially improve as an indirect benefit from the reduction of plants damaged by insect populations (USEPA 1998).

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 A12, 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, A9, and A12). 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 A12, 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.

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

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 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, A9, and A12).

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 A12, 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

[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).

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 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 A12, 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, A9, and A12). 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 A12, 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 A12, 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, A9, and A12). 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 A12, 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, A9, and A12).

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 A12, 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.

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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

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)

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Potential Jurisdictional Waters and Wetlands

Figure 2.1-1

County of San Diego Integrated Vector Management Program

ORANGE COUNTY

RIVERSIDE COUNTY

IMPERIAL COUNTY

MEXICO

Pacific Ocean

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

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

Vegetation Communities

- Agriculture
- Alkali Playa
- Badlands
- Beach/Saltpans/Mudflats
- Chaparral
- Coastal Dunes
- Coastal Scrub
- Desert Dunes
- Desert Scrub
- Disturbed Habitat
- Disturbed Wetland
- Eucalyptus Woodland
- Forest/Woodland
- Grassland
- Marsh
- Meadows and Seeps
- Open Water
- Other Scrub Communities
- Riparian Forest/Woodland
- Riparian Scrub
- Urban/Developed
- Vernal Pools

0 8 Miles

N

Source: Vegetation (SanGIS, 2017)

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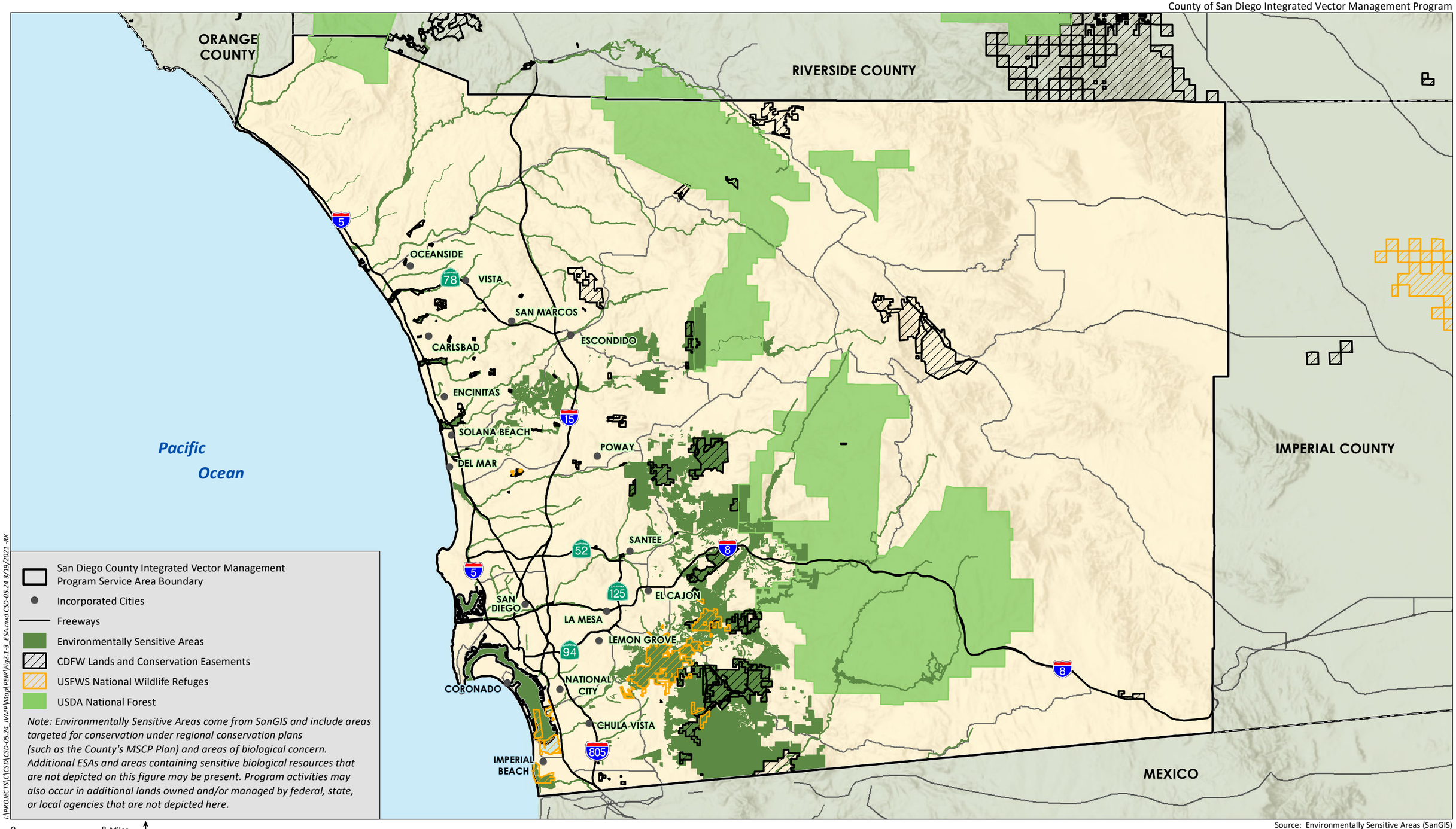
Regional Vegetation Mapping

Figure 2.1-2



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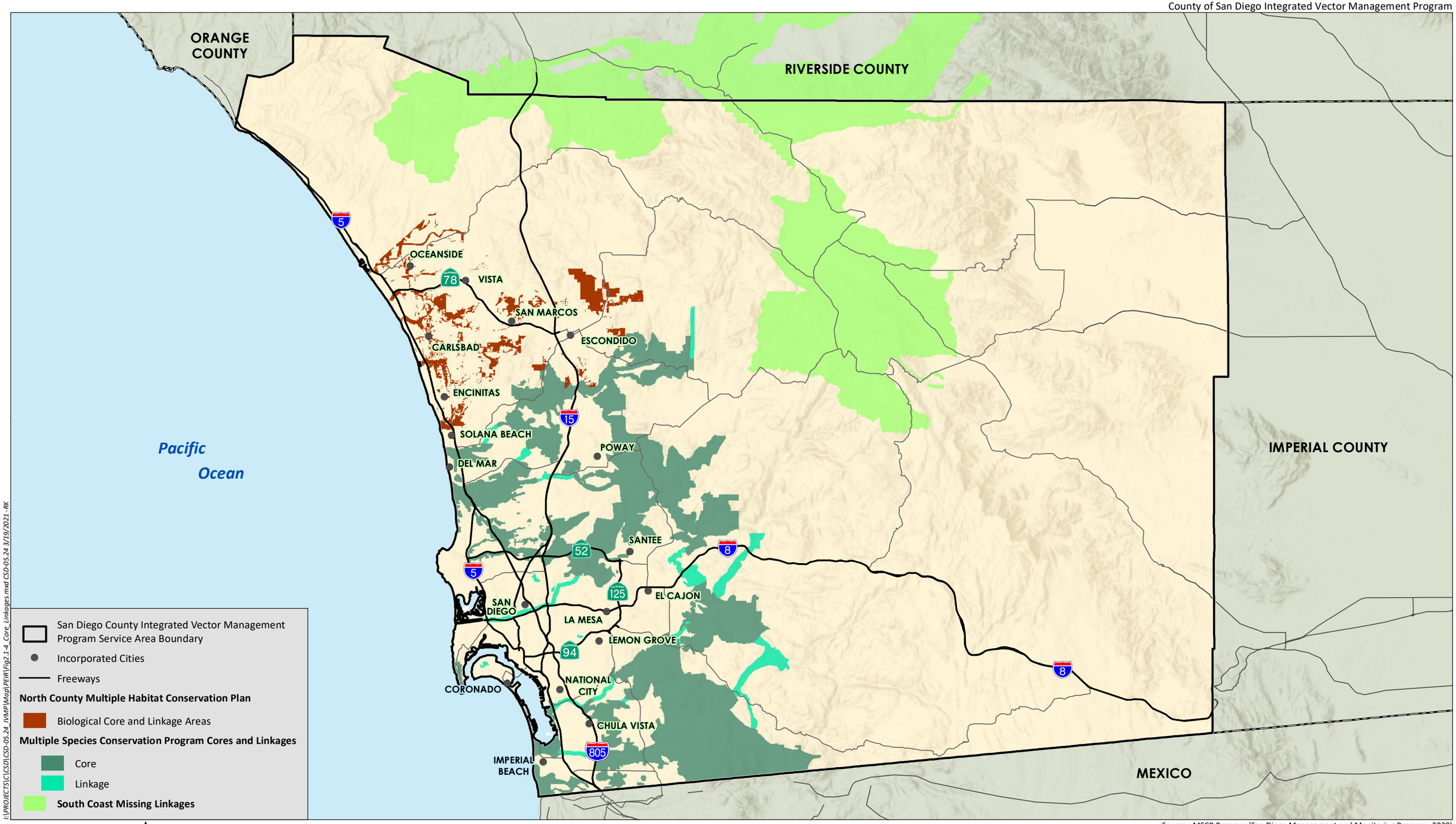
Source: Environmentally Sensitive Areas (SanGIS)

Environmentally Sensitive Areas

Figure 2.1-3



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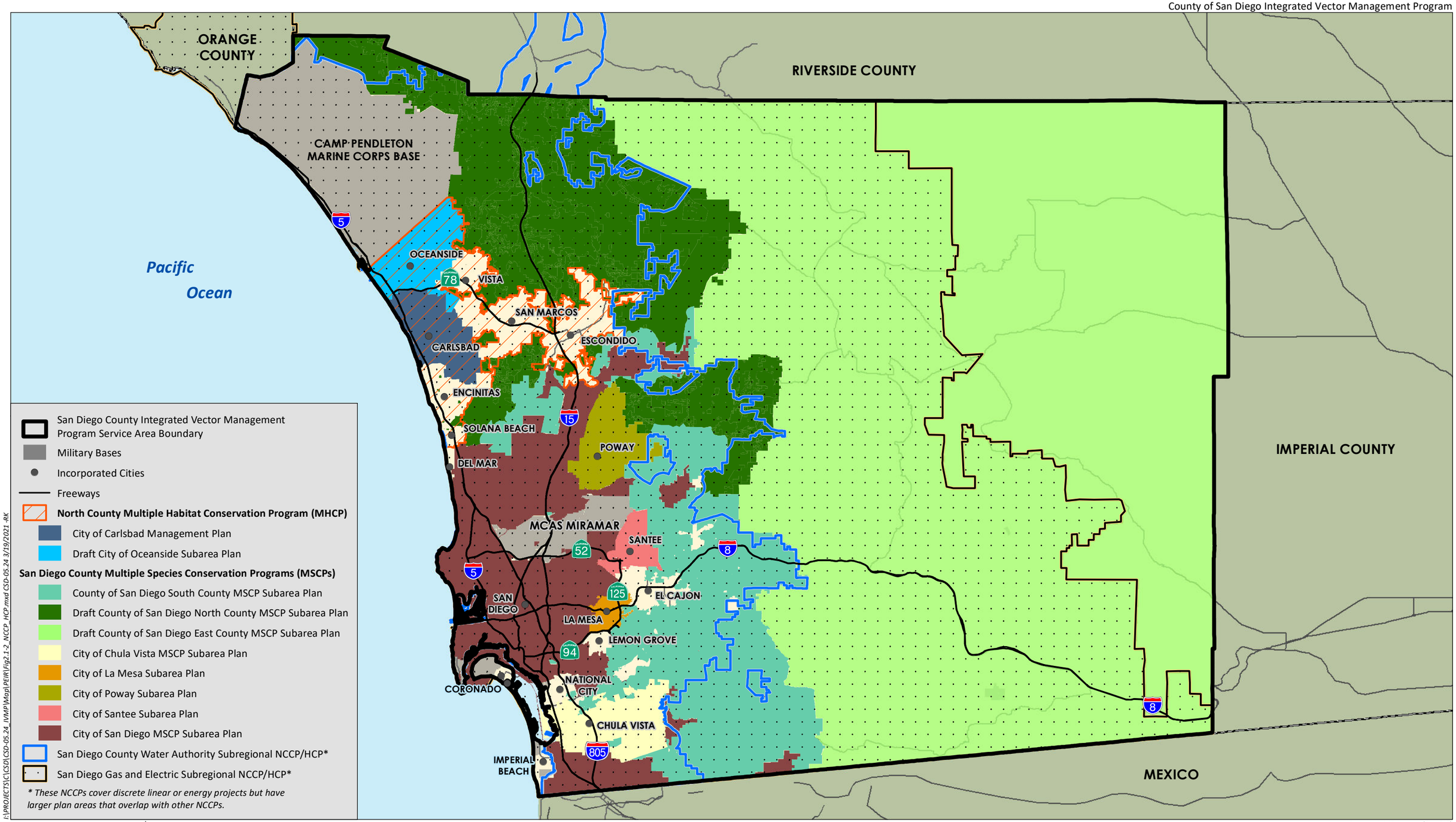
Source: MSCP Program (San Diego Management and Monitoring Program, 2020)

Wildlife Movement Corridors and Habitat Linkages

Figure 2.1-4



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Source: HMP Layers (SanGIS)

Natural Community Conservation Plans/Habitat Conservation Plans

Figure 2.1-5