OTAY TRAILS AND MITIGATION BANK EXPANSION PROJECT BIOLOGICAL RESOURCES REPORT 2021 UPDATE

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Acronyms and Abbreviations

1987 Manual	1987 *Corps of Engineers Wetland Delineation Manual*
2016 Restoration Project	2016 Otay River Restoration Project
ACE	Areas of Conservation Emphasis
BEI	Bank Enabling Instrument
BIOS	Biogeographic Information and Observation System
BMO	Biological Mitigation Ordinance
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEHC	California Essential Habitat Connectivity
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
City	City of Chula Vista
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
FESA	Federal Endangered Species Act
FR	Federal Register
GDP	General Development Plan
GDP/SRP	Otay Ranch General Development Plan/Otay Subregional Plan
GIS	geographic information systems
GPS	global positioning system
HCP	Habitat Conservation Plan
HLIT	Habitat Loss and Incidental Take Ordinance
HMMP	Habitat Mitigation and Monitoring Plan
HMP	Habitat Management Plan
HomeFed	HomeFed Corporation

MBTA	Migratory Bird Treaty Act
MOA	Memorandum of Agreement
MSCP	Multiple Species Conservation Program
NCCP	Natural Community Conservation Planning Act of 1991
NHD	national hydrography dataset
NWI	National Wetland Inventory
OHWM	ordinary high-water mark
OVRP	Otay Valley Regional Park
OWD	Otay Water District
PBFs	physical and biological features
Proposed Project	Otay Trails and Mitigation Bank Expansion Project
RECON	RECON Environmental, Inc.
RMP	Resource Management Plan
RWQCB	Regional Water Quality Control Board
SAMP	Special Area Management Plan
SDG&E	San Diego Gas & Electric Company
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WMP	Otay River Watershed Management Plan

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Terms

2016 Otay River Restoration Project (2016 Restoration Project): Consists of the Pre-Bank and Original Mitigation Bank evaluated in the 2016 initial study/mitigated negative declaration (IS/MND). The 2016 Restoration Project was guided by the **2016 Otay River Restoration Project Habitat Mitigation and Monitoring Plan (HMMP).**

Bank Enabling Instrument (BEI): A legally binding document which details the responsibilities of each party and includes the establishment of the mitigation bank, a management plan, endowment funding agreement, and other documents detailing the operations of the mitigation bank.

City Parcel: Land owned by the City of Chula Vista (City) within the Otay River floodplain that was identified as an appropriate location to focus restoration efforts within the Lower Otay River watershed.

Development Plan: Addresses the same criteria under an HMMP. The Development Plan will be the document attached to the BEI as **Exhibit C-1** that is the overall plan governing construction and habitat establishment, as well as restoration and enhancement activities required to be conducted on the mitigation bank property to establish credits.

Expanded Mitigation Bank: Part of the Proposed Project. An expansion of Original Mitigation Bank farther downstream to maximize the mitigation opportunities for the larger development community while also providing added security for the currently planned projects.

Habitat Mitigation and Monitoring Pan (HMMP): The document that was completed for the Pre-Bank in order to describe the specific and detailed mitigation activities and plans, performance criteria to measure success, initial monitoring and management actions, long-term management activities.

HomeFed Parcel: Land within the Otay Trails and Mitigation Bank Expansion Project (Proposed Project) that will be restored as part of the Proposed Project. This land is owned by the Otay Land Company, LLC.

HomeFed: HomeFed Corporation (HomeFed) is a real estate development company that specializes in mixed-use master-planned communities. HomeFed, which incorporated in 1988, is headquartered in Carlsbad, California. HomeFed is one of the primary developers working in Otay Village at this time. An agreement was made to allow HomeFed to proceed with mitigation design and implementation to meet its immediate permitting needs for Village 3 and Village 8, in addition to a portion of Village 2, on behalf of another developer.

Mitigation Bank: The preservation, enhancement, restoration, or creation of a wetland, stream, or habitat conservation area that offsets, or compensates for, expected adverse impacts on similar nearby ecosystems. The Mitigation Bank includes the Original Mitigation Bank and the expansion included as part of the Proposed Project.

Mitigation Bank Expansion Area: Portion of Proposed Project's Project Area. The Mitigation Bank Expansion is located on land owned by HomeFed and the City of Chula Vista (Appendix A, Figure 3). Within this area, the Proposed Project includes enhancement, rehabilitation, and re-establishment of hydrological processes, vegetation communities, and wildlife habitats associated with the Lower Otay River watershed, which will be self-sustaining and can be adjusted to dynamic natural

processes. The Proposed Project would also re-establish primary and secondary flow channels, low and high floodplains, and native transitional habitat; remove non-native invasive species; and restore native vegetation.

Multi-Use Trails: The primary trails that provide full access for all trail users while also serving as utility and agency, including San Diego Gas & Electric Company (SDG&E) and U.S. Customs and Border Protection, vehicular access routes through the Project Area. These trails would be a minimum of 14 feet wide but would still project a trail-like atmosphere.

Original Mitigation Bank: Part of the 2016 Restoration Project focused on restoration for the future development and mitigation needs of HomeFed and the City. The Original Mitigation Bank encompassed the remaining floodplain within the City Parcel that was not part of the Pre-Bank. The Original Mitigation Bank area is not part of the Proposed Project (Appendix A, Figure 3).

Otay Land Company, LLC: Subsidiary of HomeFed, a development company.

Otay River: The Otay River is in southern San Diego County, California. The 25-mile-long river begins at San Miguel Mountain, flows through the Upper and Lower Otay Reservoirs, and continues between the southern part of the Chula Vista and the Otay Mesa West district of San Diego before entering San Diego Bay.

Otay Villages: A design approach to community development that focuses on shops, plazas, and parks, with housing arranged strategically; encourages walking and biking; and provides a wide variety of housing types to meet diverse community needs. Each village has well-defined edges, such as the Chula Vista Greenbelt, open spaces, or wildlife corridors.

Pre-Bank: Part of the 2016 Restoration Project, with more than 38 acres of permittee-responsible mitigation to satisfy mitigation requirements for aquatic resource impacts associated with Village 3, Village 8W, and Village 2. It was implemented in 2018 and included river, floodplain, and upland restoration. The Pre-Bank mitigation area is not part of the Proposed Project (Appendix A, Figure 3).

Project Area: Includes the entire project footprint of the Proposed Project, consisting of the Mitigation Bank Expansion Area and the Trails Work Areas (trails grading, trails reclamation, and road closure areas), as shown in Figure 3 of Appendix A.

Proposed Project: Consists of two primary components: the expansion of the Original Mitigation Bank and the creation, modification, and expansion of trails within the entire Project Area. The expansion includes enhancement, rehabilitation, and re-establishment of hydrological processes, vegetation communities, and wildlife habitats associated with the Lower Otay River watershed, which will be self-sustaining and can be adjusted to dynamic natural processes.

Prospectus: An abbreviated Development Plan that outlines the mitigation activities to occur in enough detail for the agencies to review and for the public to provide comments.

Secondary Trails: Smaller trails (3 to 5 feet wide) that preclude vehicular use while still allowing mountain biking, equestrian uses, and hiking. Often facilitate unique routes and loops to enhance the user experience.

Trails Work Areas: A portion of the Proposed Project's Project Area. Consists of the trail network within the Proposed Project's Project Area (Appendix A, Figure 3a) that crosses through the Mitigation Bank Expansion Area, Original Mitigation Bank, and Pre-Bank mitigation area. The trails network includes two trail types (multi-use trails and secondary trails) that serve recreational

resources and provide routine maintenance access to the site. In addition, a series of existing roads and road shoulders would be reclaimed as part of implementation of the Proposed Project.

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Summary

The proposed Otay Trails and Mitigation Bank Expansion Project (Proposed Project) is a multi-phased project that would satisfy the mitigation requirements of the Otay Villages Projects, the University Project, and the Otay Valley Regional Park. The ultimate goal of this project is to restore the Otay River and surrounding communities and create an ecologically functional, self-sustaining wetland that is resilient to a range of natural disturbances (e.g., drought, flood). The Proposed Project's Project Area includes approximately 233 acres of land, spanning six separate parcels owned by the City of Chula Vista (City), County of San Diego, and HomeFed Corporation (HomeFed). The Project Area consists of the Mitigation Bank Expansion Area and the Trails Work Areas, as defined in the Terms list above.

Temporary impacts associated with the Proposed Project would result from two restoration activities: habitat restoration (habitat enhancement and rehabilitation) and grading (for habitat establishment and re-establishment). A relatively small amount of permanent impacts would occur from the creation (i.e., grading) of new trails, and from work (channel armoring) on at least two existing stream crossings. All habitat restoration and establishment/re-establishment impacts are considered temporary because the Proposed Project is a restoration activity, and any affected area would be restored with native vegetation, ultimately leading to a net gain in viable habitat and native plant communities as well as overall improvement in river conditions. Habitat restoration would involve invasive vegetation removal, followed by re-establishment of native vegetation communities. Enhancement and rehabilitation activities would generate little to no ground disturbance, and invasive plant species removal would target select species of plants to minimize potential impacts on native and sensitive species. Grading activities would involve considerable ground disturbance, with the ultimate goal of redefining the channel and other hydrologic features along the Otay River. Prior to grading activities, biologists would conduct preconstruction surveys to identify special-status species and environmentally sensitive areas within the limits of grading. Special-status plant and wildlife species identified within the limits of grading and habitat restoration areas would be avoided, when feasible. In addition, seeds from special-status plant species found within the area would be collected to minimize potential negative impacts on sensitive plant species and native communities. Work for the Proposed Project would be performed outside the migratory bird nesting season (February 15–September 15); pre-construction nesting bird surveys would be conducted with subsequent implementation of buffers and nest monitoring, as needed, to prevent impacts on nesting birds.

Suitable habitat for 65 special-status plant species occurs within the Project Area; of these, 45 special-status plant species have been observed or have a moderate to high potential to occur within the Project Area and therefore are discussed within this report (species with low potential for occurrence are discussed in Appendix D). Potentially significant impacts on these species could result from the temporary impacts and minimal permanent impacts described above.

Suitable habitat for 53 special-status wildlife species occurs within the Project Area; of these, 45 special-status wildlife species have been observed or have a moderate to high potential to occur within the Project Area and therefore are discussed within this report (species with low potential for occurrence are discussed in Appendix E). Potentially significant impacts on these species could result from the temporary and permanent impacts described above.

Impacts on special-status plant and wildlife species would be mostly avoided and minimized through avoidance as part of the Proposed Project's design. Potentially significant impacts on special-status plants and wildlife would be reduced to less than significant through implementation of Proposed Project mitigation measures discussed herein.

The Proposed Project would temporarily affect potentially jurisdictional features and permanently affect a small amount of potentially jurisdictional features, including U.S. Army Corps of Engineers (USACE) jurisdictional non-wetland and wetland waters of the U.S., Regional Water Quality Control Board (RWQCB) waters of the state, and California Department of Fish and Wildlife (CDFW) jurisdictional state streambed and riparian habitat.[1] Impacts on jurisdictional resources would be restored and mitigated entirely on-site.

The Proposed Project is a restoration project that would ultimately increase and enhance sensitive habitats, including those that support special-status plant and wildlife species; improve wildlife corridors and habitat connectivity; and comply with local policies and ordinances that protect biological resources. Proposed Project design and mitigation measures would reduce potentially significant impacts on biological resources to less than significant.

[1] Totals of jurisdictional feature areas and distances reported in this document may not add up to the sum of their parts because of the rounding of raw GIS data.

Chapter 1
Introduction

1.1 Project Location

The proposed Otay Trails and Mitigation Bank Expansion Project (Proposed Project) is located within the Otay River watershed, approximately 1.2 miles downstream from Savage Dam (Appendix A, Figure 1). It is also within the U.S. Geological Survey (USGS) 7.5-minute series Otay Mesa quadrangle (Appendix A, Figure 2). The Proposed Project's Project Area consists of the Mitigation Bank Expansion Area and the Trails Work Areas, as further discussed in Section 1.2, *Project Description*, and shown in Appendix A, Figure 3a. The Proposed Project would cover approximately 233 acres and occur within five parcels owned by the City of Chula Vista (City) (two parcels) and HomeFed Corporation (HomeFed) (three parcels) (Table 1 and Appendix A, Figure 3a).

All parcels are located in southwestern San Diego County, California, entirely within the incorporated area Chula Vista and the floodplain area immediately downstream from Savage Dam and Lower Otay Reservoir. The Proposed Project is within the City of Chula Vista Multiple Species Conservation Program (MSCP) Subarea Plan's area (Appendix A, Figure 4; City of Chula Vista 2003a), which is further discussed in Section 1.5.1, *Regional Context and Site Characteristics*.

Table 1. Proposed Project's Project Area Ownership Parcels

Parcel Number	Owner
64409004	City of Chula Vista
64408009	
64409003	HomeFed Otay Land II, LLC
64601005	
64408021	

1.2 Project Description

The Proposed Project includes restoration and trail work within the Mitigation Bank Expansion Area as well as trail work within the Original Mitigation Bank and Pre-Bank mitigation areas, within a total of approximately 233 acres. The Proposed Project's Project Area consists of the following elements, as shown in Appendix A, Figure 3a: the Mitigation Bank Expansion Area and the Trails Work Areas, which would require trail grading, trail reclamation, and road closures. The Original Mitigation Bank and Pre-Bank mitigation areas are not considered part of the Proposed Project. In addition, the restoration of Salt Creek has been evaluated in this report; however, this aspect is not committed to undergoing construction at this time and will require a refined design and supplemental analysis if implemented in the future.

An overview of restoration activity impact levels of the Proposed Project is shown in Appendix A, Figure 5. The Concept Plan is shown in Appendix A, Figure 6. A figure showing trails, fencing, and locations for educational signage is provided in Appendix A, Figure 7. A description of the Proposed Project elements is provided below.

The primary objective of the Proposed Project is to create an ecologically functional, self-sustaining riverine wetland system that is resilient to a range of natural disturbances (e.g., drought, flood) and enhance, rehabilitate, and re-establish hydrological processes, vegetation communities, and wildlife habitats associated with the Lower Otay River watershed, which will be self-sustaining and can be adjusted to dynamic natural processes. A list of more detailed objectives for the Proposed Project is provided below. These goals are based on historical conditions, existing resources (aquatics and sensitive species), current and future constraints, and the various watershed planning documents, including the Otay River Watershed Management Plan (WMP) and Special Area Management Plan (SAMP), and the City of Chula Vista MSCP Subarea Plan. The goals have been further informed by input obtained through engagement with the various users, stakeholders, and regulatory agencies.

1.2.1 Mitigation Bank Expansion Area

The Mitigation Bank Expansion Area is located on land owned by HomeFed and the City (Appendix A, Figure 3). Work in this area would include the enhancement, rehabilitation, and re-establishment of hydrological processes, vegetation communities, and wildlife habitats associated with the Lower Otay River watershed, which will be self-sustaining and can be adjusted to dynamic natural processes. The Proposed Project would re-establish primary and secondary flow channels, low and high floodplains, and native transitional habitat; it would also remove non-native invasive species and restore native vegetation. This would serve to improve hydrologic conditions, significantly reduce seed sources for upstream invasive species, preserve connectivity between adjacent areas of preserved land and natural habitats, and preserve wildlife movement corridors. It would also result in a net gain in functions and services following restoration activities.

The Proposed Project would provide mitigation opportunities to offset impacts on waters of the U.S. and state, including wetlands, and California Department of Fish and Wildlife (CDFW) jurisdiction within a designated service area, which is currently proposed to include the Otay River watershed, Tijuana watershed, and portions of the San Diego River watershed.

To provide flexibility, expansion of the Proposed Project is justified because designs and permitting for the Villages as well as City projects are still in progress, with the possibility of additional mitigation acreage requirements. In addition, over the last 2 years, multiple local agencies and private entities have inquired about mitigation credit availability, stressing their needs for opportunities now and in the future. It was decided by HomeFed and the City that the Proposed Project mitigation bank expansion was appropriate to meet the larger regional needs for aquatic mitigation. When evaluating the extent to which the mitigation bank should be expanded, consideration was given to cost effectiveness and maximum ecological benefit. This resulted in the recommendation to connect the mainstem of Otay River to the confluence of Salt Creek. This location is ecologically significant because it represents a major input of water in the river valley and the first true connection point for the river. In addition, this key connection point would facilitate future restoration opportunities downstream (see Appendix A, Figure 6, *Proposed Project, Mitigation Bank Expansion Component Concept Plan*, for details).

Mitigation bank expansion and ecological restoration activities associated with the Proposed Project would begin with the removal and management of non-native invasive species within the Otay River, followed by re-establishment of the Otay River mainstem and creation of a secondary channel and floodplain terrace to maximize the hydrologic function of the overall floodplain. The transitional areas and upland habitat buffering the site would then be rehabilitated by recontouring slopes and removing invasive plant species, then revegetating with appropriate native species.

Before it was disturbed, the Otay River through the Proposed Project's Project Area consisted of a braided river channel and associated floodplain; therefore, the intent of the restoration phase of the Proposed Project is to rehabilitate the channel and re-establish these conditions through the creation of a series of secondary channels. The created channels would connect to the upstream and downstream mainstem and include a low and high terrace along with sandy bar complexes that would be designed to accommodate flood events. In particular, the active low floodplain is intended to accommodate a 10-year flood event, while the high floodplain would very likely correspond to a 25-year event, with larger events inundating the entire valley floor with water rising into the upland areas as needed.

Rehabilitation activities would include removing flow-impeding features, including berms, cobble rows, and sediment piles, left behind by a sand mining operation and recontouring the transitional upland area to mirror adjacent natural slopes and accommodate rising floodwaters. This area would also be treated for non-native species and revegetated with native species such as sage scrub and cactus scrub. These improvements to the vegetative cover are expected to result in improved hydrology and flood capacity, bio-filtration, and sediment and toxicant trapping.

Enhancement activities would include removing and managing non-native invasive species such as Arundo (*Arundo donax*), dense tamarisk (*Tamarix* spp.) stands, and eucalyptus (*Eucalyptus* spp.). Removal of non-native invasive plant species would help lower the overall distribution of non-native seed and propagules within the watershed area and protect the Proposed Project.

1.2.1.1 Hydrogeomorphologic Goals

1. Restore proper hydrology and sediment processes to maximize function based on existing conditions and facilitate a dynamic system.
2. Re-establish primary and secondary flow channels, low and high floodplains, and native transitional habitat.
3. Create complex channel morphology including primary and secondary channels.
4. Remove flow obstructions including berms, rows of cobble piles, and sediment and spoil piles.
5. Re-establish the intermittent Otay River mainstem.
6. Re-establish secondary ephemeral channels throughout the floodplain.
7. Re-establish the connection of tributaries to the floodplain.
8. Rehabilitate the connection of Salt Creek and the Otay River and re-establish the historical delta at the confluence, thereby allowing Salt Creek more movement potential.
9. Recreate a floodplain with low and high terraces capable of conveying various flood events.
10. Enhance and create seasonal ponds in the northern high floodplain.

1.2.1.2 Invasive Species Goals

1. Remove non-native, invasive species and restore native vegetation appropriate for current conditions.
2. Reduce the significant upstream invasive species seed source beginning at Savage Dam.

3. Treat all large, woody trees within the Proposed Project limits including eucalyptus (*Eucalyptus* spp.), Brazilian pepper trees (*Schinus terebinthifolius*), and date and fan palms.
    a. Treatment must be done in a manner to avoid impacts on sensitive birds and raptors.

1.2.1.3 Buffer Goals

1. Maximize buffer condition and wetland protection by restoring and enhancing the adjacent transitional and upland habitat including sage scrub and grassland habitat as well as maritime succulent scrub.
2. Where possible, extend the restored buffer to the toe of the hills but at minimum include a buffer of approximately 100 feet.
3. Remove and restore redundant trails.
4. Reduce trails to the minimum width required for vehicular use and regrade to improve drainage and future rutting and associated trail widening.

1.2.1.4 Habitat and Other Ecology Goals

1. Create and maximize habitat diversity and structural complexity.
2. Preserve connectivity between adjacent areas of preserved land and natural habitats.
3. Preserve wildlife movement corridors.
4. Maximize wildlife use opportunities, including local listed species.
5. Seek opportunities to restore vernal pools, with the potential to support fairy shrimp and indicator species, in areas where redundant roads with ruts are able to be reclaimed.

1.2.2 Potential Future Restoration of Salt Creek

Salt Creek is a major tributary to the Otay River. The lower reach of Salt Creek is bounded by Wiley Road to the north and south has significant potential for channel and floodplain restoration. Salt Creek is currently incised with low sinuosity. Its floodplain is disconnected with only a few breakout areas. The proposed restoration will be implanted if approved as a future phase and focuses on creating a more sinuous main channel that can access its floodplain more frequently. Future restoration activities include:

- Creating a two-stage channel with added low-flow sinuosity to match conditions of representative reaches upstream. This creates a broader riparian corridor, adds channel length and complexity at low flows, and allows the channel to access the floodplain more frequently.
- Creating multiple breakout or overflow channels that connect flow across the floodplain from Salt Creek to the Otay River floodplain.
- Realigning 3,560 linear feet of Wiley Road and sewer owned by the City from the lower floodplain (left bank) to upland (north bank). This realignment of utility access and sewer allows for extensive floodplain inundation. It also allows for the removal of two culverts along Wiley Road, which allows for increased floodplain inundation.
- Reconnecting significant tributaries along Salt Creek including Kumeyaay Creek, which flows into Salt Creek to the north, and Corral Creek, which flows into the Otay River floodplain to the

south. Both tributaries will meander through wet meadows and Corral Creek will flow around the historic Otay Rancho Corral.

- Re-habilitating and enhancing areas surrounding the re-established primary channel and Salt Creek with a focus on removal of invasive species such as tamarisk and Arundo.

The Salt Creek Restoration site is adjacent to the proposed vernal pool restoration, which is included in the Otay River Mainstem Restoration activities. Shallow overflow from the Salt Creek floodplain will only enhance vernal pool form and function over time.

1.2.3 Trails Work Areas

The 2016 Otay River Restoration Project (2016 Restoration Project) included trail improvements as part of the project, with a focus on fencing, signage, and stream crossing improvements. These informal trails are part of the *City of Chula Vista Greenbelt Master Plan* (City of Chula Vista 2003b) and the Otay Valley Regional Park (OVRP) Concept Plan (County of San Diego et al. 2016), both of which are high-level planning documents. To further refine these trail designs, additional stakeholder outreach was required as well as agency input. As a result of a series of multi-agency meetings that included the City of Chula Vista, County of San Diego, CDFW, U.S. Fish and Wildlife Service (USFWS), California Department of Transportation, U.S. Customs and Border Protection, Otay Water District (OWD), and the OVRP Citizens Advisory Committee, including both committee meetings and field visits, it was determined that the activities required to finalize the installation of the trail network within the Proposed Project's Project Area would require additional environmental review and permitting. The Proposed Project includes modifications to existing trail routes beyond those described as part of the 2016 Restoration Project.

The Trails Work Areas are shown in Appendix A, Figure 3a and Figure 7. These proposed modifications include trail improvements (grading and contouring) to facilitate drainage and reduce ponding and water damage, new trail alignments to avoid sensitive resources and improve the trail experience for the users, the installation of fencing and placement of natural barriers (boulders and logs) to keep pedestrians and vehicles on trail routes, and trail reclamation where existing road widths would be reduced by planting alongside the edges of the road with vegetation that would match adjacent native vegetation. The trail network within the Proposed Project's Project Area would consist of two trail types, multi-use trails and secondary trails, to serve recreational users and provide for routine maintenance access to the site (see Appendix A, Figure 6, *Concept Plan*, and Figure 7, *Trails Overview*, for details).

The trails envisioned as part of the Proposed Project are considered a Covered Project under the City of Chula Vista MSCP Subarea Plan because they generally conform to those described in the OVRP Concept Plan. The trails designated in the OVRP Concept Plan, and therefore the trails in the Proposed Project, are authorized for take pursuant to the City of Chula Vista Subarea Plan, subject to the provisions of the City Planning Component Framework Management Plan, Section 7.5; the Public Access, Trails, and Recreation Guidelines, Section 7.5.3; and the Otay River Valley Framework Management Plan, Section 7.6.3. The trails in the Proposed Project are also consistent with Section 7.5.3, Public Access, Trails, and Recreation, of the MSCP.

1.2.3.1 Trails and Access Goals

6. Protect existing and proposed native riparian habitat by focusing users (i.e., U.S. Customs and Border Protection) to key access roads and closing others permanently.

7. Design trails to maximize the user experience while avoiding sensitive resources and ensuring access as needed for U.S. Customs and Border Protection, San Diego Gas & Electric Company (SDG&E), OWD, and the County.
8. Establish OVRP Concept Plan and City of Chula Vista Greenbelt Master Plan trail corridors to minimize the potential impacts on the restoration area from existing and potential future uses.
9. Avoid impacts on all road ponds that support San Diego fairy shrimp.
10. Install split-rail fencing, trail signage, and educational kiosks at select locations to keep users on the trails and outside of the restoration area and to avoid dangerous locations and sensitive species/habitats.
11. Maintain vehicular use of the site by U.S. Customs and Border Protection, SDG&E, OWD, and rangers while limiting the impact on future trail users and natural resources.
12. Upgrade one permanent at-grade channel crossing at the downstream end of the Proposed Project using rock and other natural, hard material and protect the existing SDG&E gas transmission line.
13. Reconnect tributaries to the mainstem river floodplain while also maintaining vehicle and trail user access. This includes the confluence with Salt Creek and O'Neil Canyon as well as the smaller, unnamed tributaries to the north.

1.2.3.2 Multi-use Trails

Multi-use trails would provide full access for all trail users and serve as agency and utility vehicular access routes through the Proposed Project's Project Area. The multi-use trail system would be designed along both existing dirt road alignments and new alignments that would work with the site topography and wildlife sensitive areas. Multi-use trails would be wider than secondary trails and serve as utility corridors through the Otay Valley River corridor. The multi-use trail system would be designed to a width of 12 to 14 feet and have a gravel surface, with a clear, 2-foot-wide earthen area on each side of the trail surface for fire safety during vehicle use. The multi-use trails would serve as the main trail system through the Otay River area and extend the Otay Valley River Trail network to the region. The multi-use trails would allow vehicular access from existing roadways at the edge of the Project Area to utility power poles and existing sewer lines in the Project Area. The multi-use trails would also provide utility access, access for U.S. Customs and Border Protection vehicular surveillance, routine maintenance access, and sustainable access for monitoring the river and wildlife along the river corridor and trail system.

1.2.3.3 Fencing

The multi-use trails would be designed with small fence segments to limit vehicle access to emergency use only, protect sensitive resources, and ensure public safety. The fencing would be constructed using treated wood posts and dowels. Most of the small sections of fence would be proposed at transition points in the trail network where the multi-use trails intersect with the secondary trails. Fence locations would be determined in the field in order to best fit the landscape setting; gates, intended to restrict vehicular access, would be designed to allow unrestricted access for pedestrians and cyclists.

1.2.3.4 Secondary Trails

Secondary trails would include a narrower trail for mountain biking and hiking, with limited or no vehicle access. The secondary trail system would be designed with a smaller footprint, limiting use to mountain bikes and hiking. The secondary trails would be 3 to 5 feet wide, with 3 to 4 feet of clear areas on each side of the natural surface trail. The secondary trails would be designed with small fence segments to limit vehicle access to emergency use only.

1.2.3.5 Trail Reclamation/Closure

A series of existing roads and road shoulders would be reclaimed as part of implementation of the Proposed Project, either through passive or active restoration efforts. Certain segments of roads that have been identified as redundant would be graded (where appropriate) and revegetated to blend in with the surrounding landscape. In some instances, large rocks or woody material would also be used to close entry points to trails, allowing natural regrowth of native plant species. Some existing roads would be narrowed (either along their entire alignment or at specific segments) by reclaiming portions of their shoulders.

1.2.3.6 Stream Crossings

The mitigation bank expansion activities would include at least two stream crossings at trails within Trails Work Areas. At these locations, a semi-hardened crossing is proposed that would meet the creek at grade and allow water to flow. The Proposed Project's crossings would be constructed with an interlocking, permeable concrete bedding on the river bottom. The voids in the concrete bedding would be filled with gravel to both stabilize the surface from storm flows and provide a stable surface for trail users to walk on or ride across. The trail surface would transition back to a compacted, decomposed granite crushed-rock surface or the existing natural material above the creekbed.

1.2.3.7 Educational Elements (Signage, Wayfinding, and Kiosks)

Trail improvements would include wayfinding signs and interpretive opportunities along scenic points of the river and riparian areas. The Proposed Project would comply with the OVRP Trail Guidelines (County of San Diego et al. 2003) and Greenbelt Master Plan design standards for signage and educational kiosks (City of Chula Vista 2003b). Educational kiosks would be installed at key viewing locations within the disturbed areas to help inform the readers of the importance of the restoration site as well as to keep users on the trails and outside of the restoration area. Additional design elements would include wayfinding signs and interpretive opportunities along scenic points of the river and riparian areas. Several viewpoints and other nodes along the trail corridor for interpretive opportunities would be further identified following trail construction. Wayfinding signs would be limited to the trail intersections to minimize the number of signs in the open space. The wayfinding signs would follow the OVRP Trail Guidelines for the sign post, sign face, fonts, and color. The number of wayfinding signs for the Project Area could range from 35 to 50, which would be distributed across the Project Area at primary trail intersections. This would also help to minimize incursions by trail users into the restored habitat and ecologically sensitive areas of the Project Area.

1.2.4 Restoration Activities

As an expansion of the 2016 Restoration Project, the Proposed Project would include restoration activities within the Proposed Project's Project Area. Restoration activities would range among heavy, moderate, and low (Appendix A, Figure 6). Heavy restoration activities would include all grading activities, such as that required for restoration of the mainstem Otay River and floodplain areas, restoration of tributaries, depressional and vernal pool establishment, and soil placement for slope repair). Moderate restoration activities would include dethatching, weeding, grow/kill cycles, and planting. Light restoration activities would include upland enhancement and weeding (see Table 2).

Table 2. Restoration Activity Types

Activity Ranking	Restoration Activity Types*
Heavy	All grading activities Permanent trails and crossings
Moderate	Dethatching Mechanical weeding Grow/kill cycles Planting/seeding Stockpile areas
Light	Enhancement Minimal weeding As-needed management Monitoring
*Rankings are classified based on the highest intensity restoration activity that would occur in that specific area.	

1.2.5 Project Construction

1.2.5.1 Construction Overview

Construction of the Proposed Project is anticipated to occur in a single phase over approximately 24 weeks. Although a single-phase development approach would be most cost effective and ecologically preferred, the Proposed Project could be constructed in phases if necessitated by resource permitting requirements, field conditions, or other constraints. Construction activities would include the removal of invasive non-native tree, shrub, and herbaceous species, followed by grading of the channel and floodplain areas to remove spoil piles, berms, and pits and restore the desired hydrologic functions of the channel. Excess soil material would be redistributed on site rather than exported.

The trails would be developed as part of the restoration effort but expected to be completed after the major earthwork in the river has concluded.

1.2.5.2 Construction Sequencing

The equipment and labor force would begin by clearing the Project Area of any vegetation, trash, and other debris before grading. All debris would be moved off-site or mulched for use in erosion

control at a later time. Special considerations would be taken while clearing in riverine and sensitive environments, including biological monitoring to determine invasive versus native vegetation, with an emphasis on tree trimming over complete tree removal.

In order to minimize unwanted ecological impacts, site grading and earthwork would rely on smaller types of equipment (e.g., rubber-tire or narrow-track vehicles), with a greater reliance on hand tools in waterways and ecologically sensitive areas. Larger equipment would be used in areas with less ecological sensitivity, such as the larger upper and lower floodplain areas, to construct seasonal ponds. Limited dewatering may be required for construction during periods of higher flows in the river channel or in areas with a high groundwater table. Dewatering activities, if needed, would be minimal and conducted in a manner that would allow completion of the proposed channel improvements without adversely affecting adjacent plant communities.

Earthwork would include construction of the proposed river channel, floodplain areas, seasonal ponds, trails, and crossings. Placement of materials such as riprap, landscape boulders, and other aggregate products throughout the site would occur after all major earthwork was complete, ensuring that all products would meet the Proposed Project plans and specifications. Final site walks would be performed with engineers, developers, and jurisdictional authorities for acceptance of work completed. As-built plans would be generated and submitted for closure of the grading scope. If any final erosion control devices are needed, they would be installed at that point, and interim grading best management practices would be removed.

1.2.5.3 Routine Monitoring and Maintenance

Routine monitoring and maintenance would be performed following construction throughout the Project Area. HomeFed would perform qualitative and quantitative monitoring efforts and document any problems, such as trash, vandalism, isolated instances of plant mortality, or small-scale weed or pest infestations, which would be rectified as they are discovered during routine site monitoring and maintenance and included in annual reporting. Monitoring results would also be used to determine native and non-native cover across each of the restoration areas during the 5-year maintenance and monitoring program. Monitoring would improve the ability to detect positive or negative trends in the restoration area and allow the project biologist and Otay Land Company to make prompt adaptive management decisions. If the mitigation site has not met the performance criteria, and the criteria are considered accurate and reasonable, the maintenance and monitoring obligations would continue until performance criteria are achieved or alternative contingency measures are negotiated with regulatory agencies.

1.2.5.4 Long-Term Management

Pursuant to 33 Code of Federal Regulations (CFR) 332.7(a), Otay Land Company would prepare a specific long-term management plan that would govern the long-term management of the Project Area after all performance standards have been met. Long-term management would be required to ensure that target goals and maintenance of the site are maintained. The purpose of the long-term management plan is to maintain control over factors that could adversely affect the site, such as invasive species, trespassing, and urban encroachment. Otay Land Company would evaluate the potential factors that could adversely affect the Project Area in light of the location and the condition of riparian/wetland areas surrounding the Project Area. The long-term management plan would be a “living” document and would include a provision to be updated every 5 years so that changes in the physical or anthropogenic environments can be adequately addressed.

1.2.5.5 Operational Activities

Because of the nature of the Proposed Project, long-term operational activities are expected to be minimal. These would include maintaining vegetation overgrowth on the multi-use and secondary trails, erosion control and fencing, and signage and education kiosk maintenance. In addition, ongoing biological monitoring of resources would occur to ensure the Proposed Project maintains its goals and does not warrant an adaptive management activity. Biological monitoring includes qualitative and quantitative monitoring to ensure no major infestation of invasive non-native plants within the Project Area. These monitoring efforts would also help to ensure that performance standards outlined in the future Development Plan are being met.

1.3 Project Purpose and Background

Chula Vista is one of the fastest-growing cities in San Diego County. Part of the rapid growth over the last decade has been in the Otay Ranch area; the *Otay Ranch General Development Plan* (GDP) covers almost 10,000 acres in the city and provides guidelines for buildout of its various phases, identified as "Villages" (City of Chula Vista 2018). As indicated in the GDP, the Otay Villages are intended to have well-defined boundaries, such as the City of Chula Vista Greenbelt, open spaces, or wildlife corridors; be composed of mixed-use centers focused on shops, plazas, and parks, with housing arranged strategically; encourage walking and biking; and provide a wide variety of housing types to meet diverse community needs. The most recent Village development phase has been led by HomeFed, one of the primary developers working in Otay Village at this time.

In 2014, at the request of the project proponent (HomeFed), ICF conducted a survey of the Lower Otay River watershed (watershed survey) to identify restoration opportunities that would serve as compensatory mitigation for impacts on jurisdictional waters and wetlands associated with one of the Otay Villages being developed by HomeFed. This ultimately led to a discussion between HomeFed and the City of Chula Vista (lead agency) about mitigation on public lands, specifically, the City's land in the Lower Otay River watershed, approximately 1 mile downstream from Savage Dam. These discussions resulted in the identification of the City Parcel in the floodplain Lower Otay River (Appendix A, Figure 3) where remnants of the historical sand mining activities and subsequent invasive species had reduced riverine functions substantially. As a result, it was determined that the City Parcel would make an ideal opportunity for mitigation.

The City and HomeFed entered into a Memorandum of Agreement (MOA) to allow HomeFed to proceed with mitigation design and implementation to meet its immediate permitting needs for Village 3, Village 8, and a portion of Village 2. This immediate mitigation need resulted in completion of the 2016 Restoration Project, which included more than 38 acres of river, floodplain, and upland restoration (Pre-Bank). In addition to the immediate needs (Pre-Bank), the 2016 Restoration Project included the design, environmental review, and permitting for a mitigation bank (Original Mitigation Bank) to meet the maximum mitigation required for HomeFed and the City's future projects, including various Otay Village projects and planned City projects, as described in the Otay Ranch GDP. These development projects included the Otay Ranch Village 3, Village 8 West, Village 2, Village 8 East, and Villages 9 and 10. The mitigation needs of the Otay River Valley Regional Park and the City of Chula Vista University Project were also considered. Part of the agreement to allow HomeFed to mitigate on City land included the design and installation of trails within the Proposed Project's Project Area, including the City Greenbelt and OVRP trails.

Since initiating the construction of the Pre-Bank and the development of the prospectus for the Original Mitigation Bank, additional future City projects have been identified. These additional City projects may exhaust the excess acreage generated in the Original Mitigation Bank, leaving little to no "credits" available for unexpected needs or other projects in the watershed. In 2018, the City and HomeFed determined that it would be appropriate to expand the Original Mitigation Bank farther downstream to maximize the mitigation opportunities for the larger development community while also providing added security for the currently planned projects. In addition, the expansion allows for connection to Salt Creek, one of the largest tributaries to the Lower Otay River watershed. During that same time period, the Proposed Project's trail alignment was vetted and the approach to creating a functional trail system was refined to include activities not previously identified in the 2016 Restoration Project. An updated prospectus, along with a Bank Enabling Instrument (BEI) containing the Development Plan will be developed in coordination with and reviewed by CDFW and USFWS in order to encompass the original and expanded mitigation bank. The expanded mitigation bank and expanded trail system are the basic elements of the Proposed Project evaluated in this document.

1.4 Survey Methodology

Data regarding biological resources present or potentially present within the Project Area were obtained through a review of pertinent literature, field reconnaissance, and mapping. Methods are described below.

1.4.1 Literature and Records Search

A literature and records search was conducted to establish the existence or potential occurrence of special-status biological resources (i.e., plant or animal species) on or within the vicinity of the Project Area. The following sources were reviewed:

- California Natural Diversity Database (CNDDB), which is administered by the CDFW Biogeographic Data Division (CDFW 2019a). This database covers special-status animal and plant species as well as sensitive natural communities that occur within California (CDFW 2018). A search of the database was conducted within a 1-mile radius of the Project Area, centered on the Otay Mesa USGS 7.5-minute quadrangle.
- USFWS Occurrence Data (USFWS 2018a).
- USFWS Critical Habitat Data (USFWS 2018b).
- *San Diego County Bird Atlas* (Unitt 2004).
- *San Diego County Mammal Atlas* (Tremor et al. 2017).
- The California Native Plant Society (CNPS) online *Inventory of Rare and Endangered Plants*, eighth edition (CNPS 2019), which identifies four specific designations (California Rare Plant Rank [CRPR]) of special-status plant species and summarizes regulations that provide for the conservation of these plants. A search of the inventory was conducted within the Otay Mesa USGS 7.5-minute quadrangle.
- RECON Environmental (RECON) biological survey data and monitoring reports for the Otay Ranch Preserve, including the Original Mitigation Bank and Pre-Bank mitigation areas (RECON 2009–2018). Results of these surveys are applicable to this report because the Proposed Project

includes trails within the Original Mitigation Bank and Pre-Bank mitigation areas (Appendix A, Figure 4).

- Biological Technical Report for the Otay Ranch University Village Project (Dudek 2014).

1.4.2 Field Surveys and Wetland Delineation

Vegetation mapping and focused surveys for special-status species and jurisdictional resources were conducted within the portions of the Project Area in 2018 and 2019, as further described below. As described in Section 1.2, *Project Description*, above, the Project Area includes the Mitigation Bank Expansion Area as well as Trails Work Areas within portions of the Original Mitigation Bank area and Pre-Bank mitigation area, as identified in Figure 3a within Appendix A. All surveys were conducted on foot throughout the Project Area, although some surveys did not include the entire Project Area because the surveys were conducted prior to expansion of the Project Area (see Figure 3b in Appendix A for the spatial extent of each biological survey conducted for this report). Aerial photographs, topographic maps of the Project Area, global positioning system (GPS) hardware, and geographic information systems (GIS) software were used for orientation and mapping. Photographs were taken to document the existing habitat conditions at the time of the field surveys. Specific methodologies for focused surveys are summarized below or described in the relevant appendices referred to below.

1.4.2.1 Vegetation Mapping

In 2018, ICF biologists conducted vegetation mapping within the Mitigation Bank Expansion Area and proposed Trails Work Areas. In 2021, vegetation mapping was completed within some small areas added to the Project Area in the southwestern corner of HomeFed's parcel number 644-090-03. Vegetation communities were classified according to the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986), as modified for San Diego County (Oberbauer et al. 2008). Upland vegetation communities were mapped to a minimum of 0.1 acre; 0.01 acre for wetland vegetation communities.

1.4.2.2 Special-Status Plant Surveys

As mentioned above, RECON biologists conducted surveys of the Otay Ranch Preserve, including the Original Mitigation Bank and Pre-Bank mitigation areas (RECON 2009–2018). The surveys included areas for special-status plant surveys. The results of the surveys are applicable to this report because the Trails Work Areas that are part of the Proposed Project are within the Original Mitigation Bank and Pre-Bank mitigation areas.

Special-status plant surveys were conducted by ICF on April 16, 17, and 18 as well as June 11 and 12, 2018, in the majority of the Project Area and on September 11, 2019, in the remainder of the Project Area (Appendix A, Figure 3b). An additional follow-up survey for Otay tarplant and south coast saltscale was conducted on May 14, 2019. A small area in the southwestern corner of the Project Area was surveyed for special-status plants on July 15, 2021.

The survey protocol followed the guidelines set forth in the *Protocols for Surveying and Evaluating Impacts to Special Status Native Populations and Sensitive Communities* (CDFW 2018), the USFWS *General Rare Plant Survey Guidelines* (USFWS 2002a), and *CNPS Botanical Survey Guidelines* (CNPS 2001). Special-status plant occurrences were recorded using Collector for ArcGIS in conjunction with a Trimble R-1 GNSS receiver (50-centimeter maximum precision). Special-status plants were

recorded by point location, and the number of individuals was assessed by direct count whenever possible; however, for contiguous occurrences within areas with thick vegetation obstructing passage, polygons were mapped from an offset vantage point. In addition, the number of individual plants was approximated by extrapolation when it became difficult to accurately count by direct method because of a large patch size.

1.4.2.3 Special-Status Animal Surveys

Focused surveys were conducted within the Project Area for the following special-status animal species, as described in the sections below: federally listed large branchiopod (fairy shrimp), wet-season and dry-season surveys; coastal California gnatcatcher (*Polioptila californica californica*); least Bell's vireo (*Vireo bellii pusillus*); Quino checkerspot butterfly (*Euphydryas editha quino*); and western burrowing owl (*Athene cunicularia*).

Listed Fairy Shrimp Surveys

The following fairy shrimp surveys were conducted by ICF within the Project Area. Samples collected were reviewed by a permitted ICF biologist to determine the species of fairy shrimp that occurred. The extents of the various surveys varied. The collective coverage of the fairy shrimp surveys is shown in Appendix A, Figure 3b. Collectively, all suitable habitat areas were surveyed for fairy shrimp. Refer to the individual survey reports in Appendices F, G, and K for each individual survey's coverage.

- Dry-season surveys during the 2017 autumn. Refer to Appendix F for detailed methodology and results of the 2017 dry-season fairy shrimp surveys. The survey area for these dry-season surveys included the eastern portion of the Mitigation Bank Expansion Area and most of the Trails Work Areas, as shown in Appendix F.
- Wet-season surveys during the 2017–2018 winter. Refer to Appendix F for detailed methodology and results of the 2017–2018 wet-season fairy shrimp surveys. The survey area for the 2017–2018 wet-season surveys included the eastern portion of the Mitigation Bank Expansion Area and most of the Trails Work Areas, as shown in Appendix F.
- Dry-season surveys during the 2018 summer. Refer to Appendix G for detailed methodology and results of the 2018 dry-season fairy shrimp surveys. The survey area for these dry-season surveys included a most of the Mitigation Bank Expansion Area, as shown in Appendix G.
- Wet-season surveys during the 2018–2019 winter. Refer to Appendix G for survey methodology and results of the 2018–2019 wet-season fairy shrimp surveys. The survey area for the 2018–2019 wet-season surveys included the majority of the Project Area's Mitigation Bank Expansion Area and Trails Work Areas, as shown in Appendix G.
- Dry-season surveys during the 2019 autumn. The 2019 dry-season survey results are included in reported values and maps of this report; however, the separate survey report is still in progress and is not included as a separate appendix. The survey area for the 2019 dry-season surveys included the majority of the Project Area's Mitigation Bank Expansion Area and Trails Work Areas.

Coastal California Gnatcatcher Surveys

Coastal California gnatcatcher surveys were conducted by ICF in 2018 within a large portion[2] of the Mitigation Bank Expansion Area. Refer to Appendix H for detailed methodology of focused coastal California gnatcatcher surveys.

Least Bell's Vireo Surveys

Least Bell's vireo surveys were conducted by ICF in 2018 and 2019 within a large portion of the Mitigation Bank Expansion Area. Refer to Appendix I for detailed methodology and results of focused least Bell's vireo surveys.

Quino Checkerspot Butterfly Surveys

Quino checkerspot butterfly habitat assessments were conducted by ICF in 2018 within a large portion of the Mitigation Bank Expansion Area. Quino checkerspot butterfly habitat assessments and non-protocol surveys generally followed the USFWS *Quino Checkerspot Butterfly Survey Guidelines* (USFWS 2014), though the survey was truncated (started in April and ended in May). As a result, these surveys cannot be used to determine presence/absence of this species in the Project Area. Refer to Appendix J for detailed methods describing the 2018 Quino checkerspot butterfly surveys.

Western Burrowing Owl Surveys

A survey of suitable burrowing owl burrows was conducted by ICF within the Mitigation Bank Expansion Area on June 13, 2018. The survey was conducted by two biologists who were familiar with burrowing owl signs throughout the Project Area's Mitigation Bank Expansion Area. Surveyors looked for any burrows (natural or non-natural [exposed pipes, culverts, debris piles, etc.]) that could be used by burrowing owls as well as any sign of occupancy by burrowing owls (feathers, pellets).

1.4.2.4 Jurisdictional Delineation

Several jurisdictional delineations have been completed within the Project Area over the last several years because of changes in design limits. ICF biologists conducted a jurisdictional delineation in the Original Mitigation Bank and Pre-Bank mitigation areas in 2015 and a delineation within the Mitigation Bank Expansion Area in 2018. Potential jurisdictional features were evaluated for the presence of a definable channel and/or wetland vegetation, soils, and hydrology. The project was analyzed for potential wetlands using the methodology set forth in the 1987 *Corps of Engineers Wetland Delineation Manual* (1987 Manual; Environmental Laboratory 1987) and the 2008 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008a). Lateral limits of non-wetland waters were identified using field indicators (e.g., ordinary high-water mark [OHWM]) pursuant to *A Field Guide to the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States: A Determination Manual* (USACE 2008b). While in the field, potential jurisdictional features were recorded on an iPad using ESRI Collector and a Trimble hand-held GPS unit with sub-meter accuracy.

[2] The configuration of the Mitigation Bank Expansion Area changed between 2018 and the present. As a result, surveys conducted in 2018 did not encompass all of the currently proposed Mitigation Bank Expansion Area.

Vascular plants were identified using *The Jepson Manual: Vascular Plants of California* (Baldwin et al. 2012) and *The National Wetland Plant List* (Lichvar 2016). Prior to beginning the field delineation, aerial photography, USGS topographic maps, the national hydrography dataset (NHD), and National Wetland Inventory (NWI) maps were analyzed to determine the locations of potential waters of the U.S. and CDFW jurisdiction. Based on the pre-field analysis, it was determined that there was potential for both wetland and non-wetland features to occur within the Project Area.

1.5 Environmental Setting (Existing Conditions)

1.5.1 Regional Context and Site Characteristics

The Proposed Project occurs within the upper portion of the Lower Otay River watershed, approximately 1.2 miles downstream from Savage Dam. It is generally south and west of the Lower Otay Reservoir and surrounded by open space largely within the MSCP preserve system, which is managed in partnership by the City of Chula Vista, City of San Diego, and County of San Diego. Specifically, the City Parcel is owned in fee title by the City of Chula Vista and designated as Open Space Preserve in the City's General Plan (City of Chula Vista 2017). Fee title was transferred to the City as open space mitigation for a previous Otay Ranch development project. The Project Area is within the City of Chula Vista MSCP Subarea Plan area (Appendix A, Figure 4), which designates the parcel as a 100 percent Conservation Area and protects the habitat on-site from development and impacts. The City of Chula Vista and the County of San Diego together, through a Joint Powers Agreement, are the Otay Ranch Preserve Owner/Manager. The Preserve Owner/Manager is responsible for the long-term management of the upland portion of the property. Land management activities are guided by the Otay Ranch Resource Management Plan (RMP) and funded through a Community Facility District. The existing land uses surrounding the site are as follows:

North: Chula Vista Water Treatment Plant, County Park, and Open Space

East: Open Space, including County MSCP, Bureau of Land Management, and CDFW lands

South: Open Space, with the exception of a cluster of development (OWD Roll Reservoir, George F. Bailey Detention Facility, City of San Diego's Otay Treatment Plant, and Richard J. Donovan Correctional Facility)

West: Open Space and the Otay River Valley, both publicly and privately owned

The Project Area is undeveloped land with utility corridors (electric, gas, and water) along the northern, eastern, southern, and western boundaries (Appendix A, Figure 6). Several undesignated trails and dirt roads traverse the Project Area (Appendix A, Figure 7). The roads and trails are accessed by recreational users (hikers, cyclists, equestrians, and off-road vehicle drivers), by U.S. Customs and Border Protection personnel for routine patrols, and by SDG&E, OWD, the City of San Diego, and the City of Chula Vista for utility inspection and maintenance work (Appendix A, Figure 7).

1.5.2 Vegetation Communities and Land Cover Types

A total of 18 vegetation communities and land cover types were mapped within the Project Area. Vegetation communities and land cover types are presented in Table 3 and shown in Appendix A, Figure 8. Soils present within the Project Area include Olivenhain cobbly loam, Huerhuero loam, Visalia gravely sandy loam, Riverwash, San Miguel-Exchequer rocky silt loams, and Terrace escarpments (Bowman 1973; Natural Resource Conservation Service 2019).

1.5.3 Sensitive Vegetation Communities

Under the City of Chula Vista MSCP Subarea Plan, upland vegetation communities, defined according to the Holland classification system (Holland 1986), are grouped into habitat tiers, Tier I through Tier IV, based on species composition and rarity within the region. Tier I (rare uplands), Tier II, and Tier III (common uplands) are considered to be sensitive habitats. Tier IV habitats (other uplands) consist of disturbed and developed habitats and are not considered sensitive. In addition, all wetland areas are considered sensitive under the Wetlands Protection Program described in Section 5.2.4 of the City of Chula Vista MSCP Subarea Plan. Sensitive vegetation communities in the Project Area are identified in Table 3.

Table 3. Vegetation Communities and Land Cover Types Occurring within the Project Area

Modified Holland Code	Vegetation Communities and Land Cover Types	MSCP Habitat Category[a]	Total (acres[b])
Riparian and Wetlands			
52400	Coastal and Freshwater Marsh	W	3.29
61330	Southern Cottonwood – Willow Riparian Forest	W	1.49
	Southern Cottonwood – Willow Riparian Forest (Disturbed)	W	0.19
63320	Southern Willow Scrub	W	3.05
63310	Mule Fat Scrub	W	1.96
63810	Tamarisk Scrub	W	31.18
Uplands			
32510	Diegan Coastal Sage Scrub	Tier II	63.82
	Diegan Coastal Sage Scrub (disturbed)	Tier II	23.51
32530	Diegan Coastal Sage Scrub (Baccharis dominated)	Tier II	8.69
37120	Southern Mixed Chaparral	Tier III	<0.01
42110	Valley Needlegrass Grassland	Tier I	2.03
42130	Saltgrass Grassland	Tier I	0.34
42200	Non-native Grassland	Tier III	8.79
42210	Non-native Grassland (Broadleaf dominated)	Tier III	59.99
79000	Non-native Woodland	Tier IV	4.89
79100	Eucalyptus Woodland	Tier IV	2.30
83200	Southern Interior Cypress Forest	Tier II	2.00

Modified Holland Code	Vegetation Communities and Land Cover Types	MSCP Habitat Category[a]	Total (acres[b])
Anthropogenic Land Covers			
11300	Disturbed (bare ground)	Tier IV	15.40
11300	Prebank (Active Restoration Area)	Tier IV	0.44
Total			**233.36**

[a] City of Chula Vista's MSCP Subarea Plan Habitat Categories:
W – Wetlands the community considered sensitive under the Wetlands Protection Program
Tier I – Rare Uplands
Tier II – Uncommon Uplands
Tier III – Common Uplands
Tier IV – Other Uplands
[b] Rounded acreages do not exactly sum to the total areas because of the rounding of raw values in GIS.

1.5.3.1 Vegetation Communities and Land Cover Types

Riparian and Wetlands

Coastal and Valley Freshwater Marsh: 52410

Coastal and valley freshwater marsh is dominated by perennial emergent monocots that are 4 to 5 meters tall, often forming uniform stands of bullrush (*Scirpus* spp.) and/or cattails (*Typha* spp.) (Oberbauer et al. 2008). Site factors contributing to the development of this type of habitat include prolonged saturation of soils from frequent or permanent flooding and the lack of water currents, allowing for an accumulation of deep, peaty soils (Oberbauer et al. 2008). Coastal and valley freshwater marsh occurs in scattered locations within the Otay River channel and tributaries in the Project Area and also in areas proposed for grading within the Project Area. This community provides nesting habitat for the red-winged blackbird (*Agelaius phoeniceus*) and marsh wren (*Cistothorus palustris*) and provides foraging habitat for numerous avian species.

Southern Cottonwood – Willow Riparian Forest: 61330

Southern cottonwood – willow riparian forest, which is found in streambeds and other wet areas, is composed of tall tree species such as willows, cottonwood, and sycamore (Oberbauer et al. 2008). The understory is composed of shrubby willows such as sandbar willow (*Salix exigua*), mule fat, and perennial herbs such as California mugwort (*Artemisia douglasiana*) and tarragon (*Artemisia dracunculus*). Within the Project Area, this community is dominated by red willows (*Salix laevigata*) and arroyo willows (*Salix lasiolepis*), with scattered cottonwoods within the tree canopy and a shrubby understory made up of native and non-native species, including mule fat, California mugwort, poison oak, Arundo, tamarisk (*Tamarix ramosissima*), and stinging nettle (*Urtica dioica*). Southern cottonwood – willow riparian forest is located within the Mitigation Bank Expansion Area proposed for grading and adjacent to trails proposed for grading. This community supports high avian diversity and abundance and provides nesting habitat for species such as yellow warbler (*Setophaga petechia*), yellow-breasted chat (*Icteria virens*), Cooper's hawk (*Accipiter cooperii*), and least Bell's vireo.

Mule Fat Scrub: 63310

This is a depauperate, tall herbaceous riparian scrub that is strongly dominated by mule fat (*Baccharis salicifolia*) and commonly found in intermittent stream channels with fairly coarse substrate (Oberbauer et al. 2008). This early seral community is maintained by frequent flooding, and absence disturbance, most stands would succeed to riparian forests or woodlands dominated by cottonwood (*Populus fremontii*) or western sycamore (*Platanus racemosa*). Mule fat within the Project Area is dominated by uniform stands of mule fat, with an understory composed of weedy annuals and biennials such as non-native mustards and poison hemlock. Mule fat scrub occurs at a few locations within the Otay River channel and tributaries of the Project Area but outside the proposed grading within the Project Area. This habitat is heavily used for both nesting and foraging birds, including coastal California gnatcatcher and least Bell's vireo.

Southern Willow Scrub: 63320

Southern willow scrub is part of a dense thicket of broadleaf, winter-deciduous riparian species that are dominated by several species of willows (*Salix* spp.) and often found with scattered emergent cottonwoods and sycamores as well as an understory composed of non-native annual weed species (Oberbauer et al. 2008). Site factors contributing to the development of this type of habitat include loose sandy or fine gravelly alluvium deposited along stream channels (Oberbauer et al. 2008). Frequent flooding prevents succession of this seral type vegetation from maturing into riparian forests (Oberbauer et al. 2008). Southern willow scrub within the Project Area is dominated by arroyo willow, mule fat, and elderberry (*Sambucus nigra*), but some was also observed to have a significant non-native component in certain areas, which is composed of non-native perennial weed species and exotic trees, including poison hemlock, perennial pepperweed (*Lepidium latifolia*), giant reed, Canary Island date palm (*Phoenix canariensis*), and Peruvian pepper tree (*Schinus molle*). Southern willow scrub occurs within the Otay River channel and tributaries of the Project Area and within the Mitigation Bank Expansion Area proposed for grading. Southern willow scrub supports least Bell's vireo, which is federally and state-listed as endangered, and provides suitable nesting habitat for a variety of bird species that are protected by the federal Migratory Bird Treaty Act (MBTA).

Tamarisk Scrub: 63810

This non-native riparian community is dominated by and often forms monocultures of an invasive non-native tree species known as saltcedar or tamarisk. These stands often occur as a result of major disturbance. Tamarisk outcompetes native species because of its extensive lateral root system, which can draw down the water table. In addition, it secretes salt crystals that, when introduced into the soil, can prevent native plants from establishing. Tamarisk is also a prolific seeder. It has replaced riparian habitat within the floodplain of the Project Area that was disturbed as a result of sand mining. Tamarisk is common and widespread within the Project Area. It dominates large areas of the Otay River bottom and floodplain within the Mitigation Bank Expansion Area and is adjacent to trails proposed for grading within the Project Area. San Diego marsh-elder (*Iva hayesiana*; CRPR 2.2) and southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*; CRPR 4.2) were also found to be common within the community.

Uplands

Diegan Coastal Sage Scrub: 32510

Diegan coastal sage scrub is considered a sensitive habitat by USFWS, CDFW, and many local jurisdictions and thought to be one of the most endangered vegetation types in California (Atwood 1993). This community is characterized by low-growing, woody, drought-deciduous, aromatic shrubs. It typically occurs on the hotter south-facing slopes (Oberbauer et al. 2008). Diegan coastal sage scrub was once the dominant habitat type on the coastal plains of San Diego County, but its occurrence has been greatly reduced by development. Because of prior significant disturbance within the Project Area, Diegan coastal sage scrub exists in tracts with varying quality and species composition. Disturbed areas exhibit reduced native shrub cover and increased non-native grasses and forbs. These degraded areas are designated as disturbed on the vegetation map (Appendix A, Figure 8). This community is dominated by California buckwheat (*Eriogonum fasciculatum*) and California sagebrush (*Artemisia californica*) within in the Project Area, but it also includes commonly associated species such as lemonade berry (*Rhus integrifolia*), laurel sumac (*Malosma laurina*), white sage (*Salvia apiana*), and deerweed (*Acmispon glaber* var. *glaber*). Also within the Project Area, scattered pockets of San Diego barrel cactus (*Ferocactus viridescens;* California Rare Plant Rank 2B.1) typically occur on open south-facing hillsides. Munz's sage (*Salvia munzii;* CRPR 2B.2) is also found scattered within this community. The Diegan coastal sage scrub within the floodplain is dominated by California buckwheat, laurel sumac, toyon, and lemonade berry, while low-lying areas with more moisture contain abundant San Diego marsh-elder (CRPR 2.2). Diegan coastal sage scrub occurs throughout the Project Area, including portions of the Mitigation Bank Expansion Area and adjacent trails proposed for grading within the Project Area. This community provides nesting habitat for a variety of avian species, including those protected by the MBTA. It has the potential to support listed species protected by the CESA and/or FESA, including coastal California gnatcatcher, which is federally listed as threatened and a California species of special concern, and Quino checkerspot butterfly, which is federally listed as endangered.

Diegan Coastal Sage Scrub: Baccharis Dominated: 32530

Diegan coastal sage scrub typically occurs on disturbed sites or sites with nutrient-poor soils. In addition, it is often found within other forms of Diegan coastal sage scrub on upper terraces of river valleys (Oberbauer et al. 2008). This form of coastal sage scrub is dominated by broom baccharis (*Baccharis sarothroides*). Within the Project Area, Diegan coastal sage scrub is associated with species such as buckwheat, California sage, mule fat, and San Diego marsh-elder (CRPR 2.2). This community occurs within disturbed areas along roads and in small pockets along the margins of riparian vegetation. It is found within the Mitigation Bank Expansion Area proposed for grading.

Southern Mixed Chaparral: 37120

Southern mixed chaparral occurs in the coastal foothills of San Diego County and northern Baja California, usually below 3,000 feet (910 meters). This community is composed of broad-leaved sclerophyll shrubs ranging in height from 1.5 to 3 meters (5 to 10 feet). It is a dense habitat but occasionally occurs with patches of bare soil or with Venturan Coastal Sage Scrub (32300) or Riversidean Sage Scrub (32700), forming a mosaic. In San Diego County, it is dominated by blue-colored lilacs, especially Ramona lilac (*Ceanothus tomentosus* var. *olivaceus*) as well as *C. leucodermis* and *C. oliganthus*; other *Ceanothus* spp. generally indicate other chaparral types. There are

minuscule areas of southern mixed chaparral within the Project Area but contiguous, high-quality habitat on the adjacent hillsides surrounding the river valley.

Valley Needlegrass Grassland: 42110

Valley needlegrass grassland is a low-growing grassland habitat (less than 2 feet tall) dominated by one or more perennial tussock-forming needlegrasses (*Stipa* [previously *Nasella*] spp.). Native and introduced annuals occur between perennials, often exceeding the bunchgrasses in cover. In San Diego County, native perennial herbs such as sanicles (*Sanicula* spp.), checkerbloom (*Sidalcea* spp.), blue-eyed grass (*Sisyrinchium bellum*), California poppy (*Eschscholzia californica*), or goldfields (*Lasthenia* spp.) are present. Non-native grasses occurring include those described in the non-native grassland vegetation community above. The percentage of cover from native species at any one time may be quite low but is considered to be native grassland if 20 percent of the aerial cover of native species is present. Valley and foothill grassland occur within the Project Area but outside the proposed grading area.

Saltgrass Grassland: 42130

Saltgrass occurs in a wide range of habitat types and plant communities. In western riparian areas, saltgrass is a common understory species of willow. In deserts of the Southwest, saltgrass occurs with iodinebush (*Allenrolfea occidentalis*), tamarisk, saltbush (*Atriplex* spp.), sagebrush (*Artemisia* spp.), and black greasewood (*Sarcobatus vermiculatus*). In grasslands, saltgrass grows with alkali sacaton (*Sporobolus airoides*), brome (*Bromus* spp.), green needlegrass (*Nassella viridula*), western wheatgrass (*Pascopyrum smithii*), Nuttall's alkaligrass (*Puccinellia nuttalliana*), and blue grama (*Bouteloua gracilis*).

Non-Native Grassland: 42200

Non-native grassland is a dense to sparse cover of annual grasses with flowering culms that measure less than 1 meter high (Oberbauer et al. 2008). Non-native grassland is an MSCP Tier III (common uplands) habitat type. The vegetation community often occurs where native habitats such as native grassland and coastal sage scrub habitat have been disturbed or removed. It is often associated with numerous species of native wildflowers, especially in years with favorable rainfall. In San Diego County, the presence of black mustard (*Brassica nigra*), slender wild oats (*Avena barbata*), brome grasses (*Bromus* spp.), and red-stem filaree (*Erodium cicutarium*) are common indicators. Germination occurs with the onset of the late fall rains; growth, flowering, and seed set occur from winter through spring. With a few exceptions, the plants are dead through the summer/fall dry season, persisting as seeds. Remnant native species are variable.

Non-native grasslands are considered sensitive habitat by CDFW and some local jurisdictions because they may serve as habitat linkages and support raptor foraging and special-status plant species. Non-native grassland occurs in a large swathe of land within the northern portion of the Mitigation Bank Expansion Area and scattered locations throughout the remaining portions of the Project Area along roadsides and hillsides. Within the Project Area, common species found within this community include black mustard, slender wild oats, a variety of brome grasses, horehound (*Marrubium vulgare*), prickly lettuce (*Lactuca serriola*), and tocalote (*Centaurea melitensis*). Isolated individual native shrub species can persist in some area within the Project Area. This habitat supports a variety of small native mammals, such as Botta's pocket-gophers (*Thomomys bottae*), and native reptiles, such as the red diamond rattlesnake (*Crotalus ruber*). It is often of value to raptors as a foraging area.

Non-Native Grassland: Broadleaf Dominated: 42210

Non-native grassland is characterized as a non-native grassland that is co-dominated (50 percent or greater cover) by one or more non-native, broadleaf, invasive weed species. It is considered an MSCP Tier III (common uplands) habitat type. This community often develops when there is periodic disturbance that prevents a heavy biomass accumulation that favors development of a monotypic stand of non-native grass but allows the establishment of invasive weeds such as black mustard, smallpod mustard (*Hirschfeldia incana*), cheeseweed mallow (*Malva parviflora*), and prickly lettuce. Some non-native species may be characterized as invasive because of their ability to out-compete and displace native species. Although this community may provide some support of native animal species in the form of shelter, foraging habitat, and roosting or nesting habitat, it is generally understood to degrade natural conditions and may result in the exclusion of certain native animal species that are dependent on natural plant species and habitats for their survival.

Non-native Woodland: 79000

A non-native woodland is composed of exotic trees, usually intentionally planted, that are not maintained or artificially irrigated (Oberbauer et al. 2008). Common species within this exotic community include tree species commonly used for landscaping such as pepper trees (*Schinus* spp.), tree of heaven (*Ailanthus altissima*), silk oak (*Grevillea robusta*), Italian stone pine (*Pinus pinea*), and liquid amber (*Liquidamber styraciflua*). Non-native woodlands on site were dominated by Peruvian pepper tree. Non-native woodlands were found in the Otay River floodplain and uplands within the Project Area. Similar to Eucalyptus woodland, this community can provide habitat and foraging value for many native animals and are used by raptors for nesting and roosting sites. Therefore, they may be considered a resource for those species.

Eucalyptus Woodland: 79100

This habitat often consists of monotypic stands of introduced eucalyptus trees. The understory is typically depauperate or sparse because of the allelopathic properties of the eucalyptus leaf litter. Eucalyptus woodland is an MSCP Tier IV (other uplands) habitat type. This community is widespread throughout San Diego County, often occupying large tracts of land and displacing native plant communities. Eucalyptus trees are found as individuals or in small populations throughout both the Otay River channel and the Otay River floodplain within the Project Area. Eucalyptus woodlands provide habitat and foraging value for many native animals and are used by raptors as nesting and roosting sites. Therefore, they may be considered a resource for those species.

Southern Interior Cypress Forest: 83200

This community is typically a dense, fire-maintained low forest of evenly aged stands of Tecate cypress, often surrounded by chaparral and listed by the CNDDB as an imperiled sensitive natural community (State Rank S2). Southern interior cypress forest occurs within the south-central portion of the Project Area, adjacent to trails proposed for grading. Tecate cypress is found in isolated groves in Orange County, San Diego County, and Baja California, Mexico. In San Diego County, groves occur on Guatay Mountain, Otay Mountain, and Tecate Peak. The majority of the Otay Mountain population burned during the Otay Fire in 2003, and most of the Tecate Peak population burned during the Harris Fire of 2007. The rare Thorne's hairstreak butterfly (*Callophrys* [*Mitoura*] *gryneus thornei*) is completely dependent upon this species for its survival; this butterfly lays eggs only on this species of cypress.

Anthropogenic Land Cover

Disturbed Habitat: 11300

Disturbed habitat consists of areas that have experienced persistent mechanical disturbance, resulting in severely limited native plant growth. These areas are usually completely devoid of vegetation or sparsely covered with disturbance-loving plant species. It is characterized by bare topsoil or subsoil from previous mechanical or natural disturbances, such as fires or flooding. Bare ground within the Project Area consists of abandoned lots, pullouts along dirt roads, and recently cleared areas that are planned for habitat restoration or equipment staging. Disturbed habitat also refers to areas under active restoration.

1.5.4 Flora

The Project Area provides suitable habitat for many common and special-status plant species that occur in southwestern San Diego County. A total of 186 plant species were documented in the Project Area (Mitigation Bank Expansion Area and Trails Work Areas) and the immediate vicinity (including the Original Mitigation Bank and Pre-Bank mitigation areas) during the field surveys; of these, 27 are non-native species (Appendix B). Special-status plant species are further discussed below in Section 1.5.6, *Special-Status Species*, and their potential to occur within the Project Area is evaluated in Appendix D.

1.5.5 Fauna

The Project Area provides suitable habitat for many of the common and special-status wildlife species that occur in southwestern San Diego County. A total of 130 wildlife species were observed in the Project Area (Mitigation Bank Expansion Area and Trails Work Areas) and the immediate vicinity (including the Original Mitigation Bank and Pre-Bank mitigation areas) during the field surveys conducted between 2009 and 2019. All invertebrate and vertebrate species observed or detected are listed in Appendix C. Overall, 17 invertebrate, four amphibian, eight reptile, 91 bird, and 10 mammal species were observed or otherwise detected in the Proposed Project's Project Area and immediate vicinity. Special-status animal species are further discussed below in Section 1.5.6, *Special-Status Species*, and their potential to occur within the Project Area is evaluated in Appendix E.

1.5.6 Special-Status Species

The CNDDB search resulted in 29 special-status plant species and 24 special-status wildlife species being identified within 1 mile of the Project Area (CDFW 2019a). An additional 49 special-status plant species and 50 special-status wildlife species with no CNDDB records within 1 mile of the Project Area were also evaluated for potential to occur, based on the biologist's knowledge of special-status species in the region, the species' range and habitat requirements, observations by biologists during surveys, and/or other publicly available data sources. In total, 78 special-status plant species and 74 special-status wildlife species were evaluated for their potential to occur within the Project Area (Appendix D and Appendix E, respectively).

Special-status species are considered those that meet any of the following criteria:

- Species listed or proposed for listing as threatened or endangered under the Federal Endangered Species Act (FESA) (50 CFR 17.12 [listed plants]), 50 CFR 17.11 (listed animals), and various notices in the *Federal Register* (FR) (proposed species).
- Species that are candidates for possible future listing as threatened or endangered under the FESA (79 FR 72450, December 5, 2014).
- Species listed or proposed for listing by the State of California as threatened or endangered or considered fully protected under the California Endangered Species Act (CESA) (14 California Code of Regulations [CCR] 670.5).
- Plant species listed as rare under the California Native Plant Protection Act (California Fish and Game Code 1900, et seq.).
- Species that meet the definitions of "rare" or "endangered" under the California Environmental Quality Act (CEQA) (CEQA Guidelines Sections 15380 and 15125).
- Special vascular plants, bryophytes, and lichens with a California Rare Plant Rank.
- Animal species of special concern to the CDFW ("California species of special concern") (CDFW 2019b).
- Bird species of conservation concern, as identified by USFWS in *Birds of Conservation Concern*, 2008.
- Animals that are fully protected in California (California Fish and Game Code Sections 3511 [birds], 4,700 [mammals], 5050 [amphibians and reptiles], and 5515 [fish]).
- Plant and animal species defined as narrow endemic under the City of Chula Vista MSCP Subarea Plan.
- Sensitive animals and sensitive plants classified under the County of San Diego's Guidelines for Determining Significance and Report Format and Content Requirements – Biological Resources (County of San Diego 2010), Table 2 (County of San Diego Sensitive Plant List, including List A, B, C, and D species) and Table 3 (County of San Diego Sensitive Animals List, including Group I and Group II species).

1.5.6.1 Special-Status Plant Species within the Project Area

Based on searches of the CNDDB and CNPS online inventory, 78 special-status plant species are known from the vicinity of the Project Area. Appendix D provides the probability of occurrence, presence, or absence for each of these species within the Project Area. Of these 78 plant species, 17 species were detected within the Project Area (Appendix A, Figures 9a and 9b). Twenty-eight sensitive and/or special-status plant species have "high" or "moderate" probability of occurring within the Project Area because of the presence of suitable habitat and the proximity of extant populations. The 45 species known to be present or with a high to moderate potential to occur are discussed individually below. Although the entire Project Area was surveyed for rare plants, some of the surveyed areas were evaluated in 2018, following an exceptionally dry winter, and some areas were surveyed only once in 2019; thus, some species cannot be definitively considered not present, despite focused surveys being conducted. Therefore, some species are considered to have moderate to high potential to occur within the Project Area, based on nearby occurrences. Twenty special-status plant species known to occur within the larger region were assessed as having low to no potential to occur within the Project Area and therefore will not be discussed further in this

document. Refer to Appendix D for an evaluation of all species' potential to occur within the Project Area and Appendix A, Figure 3b, for the spatial extents of the focused special-status plant surveys. Figure 9a and Figure 9b in Appendix A show the locations of observed special-status plant species within the Project Area and immediate vicinity.

Federally Listed, State-Listed, and/or Fully Protected Species with Moderate to High Potential to Occur or Known to Be Present within the Project Area (6):

California Orcutt Grass (*Orcuttia californica*) – Federally Listed as Endangered, State Listed as Endangered, CRPR 1B.1; San Diego County List A; City of Chula Vista MSCP Subarea Plan – *Moderate potential to occur within Project Area*

California orcutt grass is considered to have moderate potential to occur within the Project Area because of the presence of potentially suitable ephemeral basins habitat and several known occurrences of this species within the local region of the Project Area. This species was not observed by RECON or ICF during surveys conducted from 2009 through 2017 or during the full Project Area survey in 2018. However, 2018 was an exceptionally dry year; it is possible that the species may not have germinated. Therefore, considering the proximity of observations in the general region, the species is considered to have moderate potential to occur.

Otay Mesa Mint (*Pogogyne nudiuscula*) – Federally Listed as Endangered; State Listed as Endangered; CRPR 1B.1; San Diego County List A; City of Chula Vista MSCP Subarea Plan – *High potential to occur within Project Area*

Otay Mesa mint is considered to have high potential to occur within the Project Area because of the presence of potentially suitable habitat, such as isolated ephemeral basins, and an extant population occurring immediately south of the Project Area on Otay Mesa. This species was not observed within portions of the Project Area by RECON or ICF during surveys conducted from 2009 through 2017 or during the full Project Area survey in 2018. However, 2018 was an exceptionally dry year; it is possible that the species may not have germinated. Therefore, considering the proximity of observations near the Project Area, the species is considered to have high potential to occur.

Otay Tarplant (*Deinandra conjugens*) – Federally Listed as Threatened, State Listed as Endangered, CRPR 1B.1; San Diego County List A; City of Chula Vista MSCP Narrow Endemic – *High potential to occur within Project Area*

Otay tarplant is considered to have high potential to occur within the Project Area because of the presence of suitable habitat and a previous detection of this species adjacent to the Project Area. Otay tarplant was observed by RECON in 2012 adjacent to the southeastern portion of the Project Area, near a proposed trail work (Appendix A, Figure 9b). ICF did not detect this species at the previously recorded location or elsewhere during the 2018 surveys. Subsequently, on May 14, 2019, a spot check survey for Otay tarplant was conducted by ICF at the previously recorded location and in the surrounding area; no plants were observed. However, 2018 was an exceptionally dry year; it is possible that the species may not have germinated. Therefore, considering the proximity of observations near the Project Area, the species is considered to have high potential to occur.

San Diego Button-Celery (*Eryngium aristulatum* var. *parishii*) – Federally Listed as Endangered; State Listed as Endangered; CRPR 1B.1; San Diego County List A; City of Chula Vista MSCP – *High potential to occur within Project Area*

During surveys conducted by ICF in 2018, San Diego button-celery was not observed within the Project Area; however, potentially suitable isolated ephemeral basin habitat is present within the site. In addition, 2018 was an exceptionally dry year; it is possible that the species may not have germinated. There have multiple recorded occurrences within 0.5 mile of the Project Area, the nearest being on Otay Mesa, approximately 2,000 feet southeast of the Project Area (CNPS 2019). Therefore, San Diego button-celery is considered to have high potential to occur within the Project Area because of the presence of suitable habitat and previous detections of this species within 0.5 mile of the Project Area.

San Diego Ambrosia (*Ambrosia pumila*) – Federally Listed as Endangered, CRPR 1B.1; San Diego County List A; City of Chula Vista MSCP Narrow Endemic – *Moderate potential to occur within Project Area*

San Diego ambrosia is considered to have moderate potential to occur within the Project Area because of the presence of suitable habitat and several known occurrences of this species within of the local region. This species was not observed by RECON or ICF during surveys conducted from 2009 through 2017 or during the full Project Area survey in 2018. However, 2018 was an exceptionally dry year; it is possible that the species may not have germinated. Therefore, considering the proximity of observations in the region, the species is considered to have moderate potential to occur.

Spreading Navarretia (*Navarretia fossalis*) – Federally Listed as Threatened; CRPR 1B.1; San Diego County List A; City of Chula Vista MSCP – *Present within Project Area*

Although San Diego vernal pool complexes are not present within the Project Area, isolated ephemeral basins are present (Appendix A, Figure 12). Spreading navarretia is considered to be present within the Project Area because of an extant occurrence of the species within the project Mitigation Bank Expansion Area observed by RECON in 2011 and 2012 (Appendix A, Figure 9b). The observations by RECON included five occurrences with a combined count of at least 55 plants. This species was not observed within the boundaries of the Project Area by ICF during surveys conducted in 2018 but is still considered extant at the previously observed location because of the potential of an existing seed bank from which it could germinate following more favorable rainfall conditions.

Special-status Species with Moderate to High Potential to Occur or Known to Be Present within the Project Area (39):

Ashy Spike-Moss (*Selaginella cinerascens*) – CRPR 4.1; San Diego County List D – *Present within Project Area*

Ashy spike-moss was observed in several locations within the Project Area by RECON in 2009 through 2013 and ICF in 2018 (Appendix A, Figure 9a). During surveys conducted by ICF in 2018, this species was observed within openings in Diegan coastal sage scrub and non-native grasslands communities for both the Mitigation Bank Expansion Area and the proposed Trails Work Areas. Approximately 506 plants have been identified within the Project Area.

California Adder's Tongue (*Ophioglossum californicum*) – CRPR 4.2; San Diego County List D – *Moderate potential to occur within Project Area*

California adder's tongue is considered to have moderate potential to occur within the Project Area because of the presence of suitable habitat and several known occurrences of this species within the local region of the Project Area. This species was not observed by RECON or ICF during surveys conducted from 2009 through 2017 or during the full Project Area survey in 2018. However, 2018 was an exceptionally dry year; it is possible that the species may not have germinated. Therefore, considering the proximity of observations in the region, the species is considered to have moderate potential to occur.

California Box-thorn (*Lycium californicum*) – CRPR 4.2; San Diego County List D – *Moderate potential to occur within Project Area*

California box-thorn is considered to have moderate potential to occur within the Project Area because of the presence of suitable habitat and several known occurrences of this species within the local region of the Project Area. This species was not observed by RECON or ICF during surveys conducted from 2009 through 2017 or during the full Project Area survey in 2018. However, 2018 was an exceptionally dry year; it is possible that the species may not have germinated. Therefore, considering the proximity of observations in the region, the species is considered to have moderate potential to occur.

Chaparral Ragwort (*Senecio aphanactis*) – CRPR 2B.2; San Diego County List B – *High potential to occur within Project Area*

Chaparral ragwort is considered to have high potential to occur within the Project Area because of the presence of suitable habitat and an extant population occurring immediately south of the Project Area. This species was not observed by RECON or ICF during surveys conducted from 2009 through 2017 or during the full Project Area survey in 2018. However, 2018 was an exceptionally dry year; it is possible that the species may not have germinated. Therefore, considering the proximity of observations near the Project Area, the species is considered to have high potential to occur.

Cooper's Rein Orchid (*Piperia cooperii*) – CRPR 4.2; San Diego County List D – *Moderate potential to occur within Project Area*

Cooper's rein orchid is considered to have moderate potential to occur within the Project Area because of the presence of suitable habitat and a known occurrence of this species within the local region of Project Area. This species was not observed by RECON or ICF during surveys conducted from 2009 through 2017 or during the full Project Area survey in 2018. However, 2018 was an exceptionally dry year; it is possible that the species may not have germinated. Therefore, considering the proximity of observations in the region, the species is considered to have moderate potential to occur.

Coulter's Matilija Poppy (*Romneya coulteri*) – CRPR 4.2; San Diego County List D – *Moderate potential to occur within Project Area*

Coulter's matilija poppy is considered to have moderate potential to occur within the Project Area because of the presence of suitable habitat and a known occurrence of this species within the local region of the Project Area. This species was not observed by RECON or ICF during surveys conducted from 2009 through 2017 or during the full Project Area survey in 2018. However, 2018 was an exceptionally dry year; it is possible that the species may not have germinated. Therefore,

considering the proximity of observations in the region, the species is considered to have moderate potential to occur.

Coulter's Saltbush (*Atriplex coulteri*) – CRPR 1B.2; San Diego County List A – *Moderate potential to occur within Project Area*

Coulter's saltbush is considered to have moderate potential to occur within the Project Area because of the presence of suitable habitat and known occurrences of this species within the local region. This species was not observed by RECON or ICF during surveys conducted from 2009 through 2017 or during the full Project Area survey in 2018. However, 2018 was an exceptionally dry year; it is possible that the species may not have germinated. Therefore, considering the proximity of observations in the region, the species is considered to have moderate potential to occur.

Decumbent Goldenbush (*Isocoma menziesii* var. *decumbens*) – CRPR 1B.2; San Diego County List A – *Present within Project Area*

Decumbent goldenbush is present within the Project Area. Decumbent goldenbush was observed by RECON from 2011 through 2013 southeast of the Project Area, near proposed trail work; 10 plants were observed at the location (Appendix A, Figure 9a). The species was also observed during 2018 surveys; approximately 57 plants are known within the Project Area.

Golden-rayed Pentachaeta (*Pentachaeta aurea* ssp. *aurea*) – CRPR 4.2; San Diego County List D – *Moderate potential to occur within Project Area*

Golden-rayed pentachaeta is considered to have moderate potential to occur within the Project Area because of the presence of suitable habitat and several known occurrences of this species within the local region of the Project Area. This species was not observed by RECON or ICF during surveys conducted from 2009 through 2017 or during the full Project Area survey in 2018. However, 2018 was an exceptionally dry year; it is possible that the species may not have germinated. Therefore, considering the proximity of observations in the region, the species is considered to have moderate potential to occur.

Graceful Tarplant (*Holocarpha virgata* ssp. *elongata*) – CRPR 4.2; San Diego County List D – *Present within Project Area*

Graceful tarplant was observed at several locations within the Project Area by RECON in 2010 and ICF in 2018 (Appendix A, Figure 9a). During surveys conducted by ICF in 2018, approximately 573 graceful tarplant were observed in the Project Area. Occurrences of this species within the Project Area included open areas on the coastal sage scrub–covered floodplain and terraces within the southern and south-eastern portions of the Mitigation Bank Expansion Area and within the limits of proposed trail work.

Little Mousetail (*Myosurus minimus* ssp. *apus*) – CRPR 3.1; San Diego County List C – *High potential to occur within Project Area*

Little mousetail is considered to have high potential to occur within the Project Area because of the presence of potentially suitable ephemeral basins habitat and an extant population occurring south of the Project Area. This species was not observed by RECON or ICF during surveys conducted from 2009 through 2017 or during the full Project Area survey in 2018. However, 2018 was an exceptionally dry year; it is possible that the species may not have germinated. Therefore,

considering the proximity of observations near the Project Area, the species is considered to have high potential to occur.

Long-spined Spineflower (*Chorizanthe polygonoides* var. *longispina*) – CRPR 1B.2; San Diego County List A – *High potential to occur within Project Area*

Long-spined spineflower is considered to have high potential to occur within the Project Area because of the presence of potentially suitable ephemeral basins habitat and an extant population occurring approximately 1.0 mile to the north. This species was not observed by RECON or ICF during surveys conducted from 2009 through 2017 or during the full Project Area survey in 2018. However, 2018 was an exceptionally dry year; it is possible that the species may not have germinated. Therefore, considering the proximity of observations near the Project Area, the species is considered to have high potential to occur.

Munz's Sage (*Salvia munzii*) – CRPR 2B.2; San Diego County List B – *Present within Project Area*

Munz's sage was commonly observed within coastal sage scrub throughout the Project Area by RECON from 2010 through 2013 and ICF in 2018 (Appendix A, Figure 9a). Approximately 264 Munz's sage plants were found within the Project Area by ICF in 2018. This species was commonly observed within Diegan coastal sage scrub in both the Mitigation Bank Expansion Area and proposed Trails Work Areas.

Ocellated Humboldt Lily (*Lilium humboldtii* ssp. *Ocellatum*) – CRPR 4.2; San Diego County List D – *Moderate potential to occur within Project Area*

Ocellated Humboldt lily is considered to have moderate potential to occur within the Project Area because of the presence of suitable habitat and several known occurrences of this species within the local region of Project Area. This species was not observed by RECON or ICF during surveys conducted from 2009 through 2017 or during the full Project Area survey in 2018. However, 2018 was an exceptionally dry year; it is possible that the species may not have germinated. Therefore, considering the proximity of observations in the region, the species is considered to have moderate potential to occur.

Orcutt's Brodiaea (*Brodiaea orcuttii*) – CRPR 1B.1; San Diego County List A; City of Chula Vista MSCP Narrow Endemic – *High potential to occur within Project Area*

Orcutt's brodiaea is considered to have high potential to occur within the Project Area because of the presence of potentially suitable ephemeral basins habitat and an extant population occurring approximately 0.25 mile to the southwest. This species was not observed by RECON or ICF during surveys conducted from 2009 through 2017 or during the full Project Area survey in 2018. However, 2018 was an exceptionally dry year; it is possible that the species may not have germinated. Therefore, considering the proximity of observations near the Project Area, the species is considered to have high potential to occur.

Otay Manzanita (*Arctostaphylos otayensis*) – CRPR 1B.2; San Diego County List A; City of Chula Vista MSCP Subarea Plan – *Present within Project Area*

Otay manzanita was detected in the south-central portion of the Project Area, at the periphery of the southern interior cypress forest, by RECON from 2011 through 2013 and ICF in 2018 (Appendix A, Figure 9a). During surveys conducted by ICF in 2018, two Otay manzanita were observed within the Project Area.

Otay Mountain Ceanothus (*Ceanothus otayensis*) – CRPR 1B.2 – *Present within Project Area*

Otay Mountain ceanothus is considered present within the Project Area. Two plants have been observed within the Project Area at one location. Otay Mountain ceanothus was observed by RECON in 2010 in the south-central portion of the Project Area, adjacent to proposed trail work; however, this large perennial shrub was not observed at the previously recorded location or at other locations within the Project Area during surveys conducted by ICF in 2018 (the previously recorded location is shown in Appendix A, Figure 9a).

Palmer's Grapplinghook (*Harpagonella palmeri*) – CRPR 4.2; San Diego County List D – *Present within Project Area*

Palmer's grapplinghook was observed in several locations within the Project Area by RECON from 2010 through 2013 and ICF in 2018 (Appendix A, Figure 9a). During surveys conducted in 2018 by ICF, approximately 5,430 Palmer's grapplinghook were observed within the Project Area. This species was found within openings in coastal sage scrub and non-native grassland communities in the southern and southeastern portions of the Project Area.

Paniculate Tarplant (*Deinandra paniculata*) – CRPR 4.2; San Diego County List D – *Moderate potential to occur within Project Area*

Paniculate tarplant is considered to have moderate potential to occur within the Project Area because of the presence of potentially suitable ephemeral basin habitat and known occurrences of this species within the local region of the Project Area. This species was not observed by RECON or ICF during surveys conducted from 2009 through 2017 or during the full Project Area survey in 2018. However, 2018 was an exceptionally dry year; it is possible that the species may not have germinated. Therefore, considering the proximity of observations in the region, the species is considered to have moderate potential to occur.

Purple Stemodia (*Stemodia durantifolia*) – CRPR 2B.1; San Diego County List B – *High potential to occur within Project Area*

Purple stemodia is considered to have high potential to occur within the Project Area because of the presence of suitable habitat and an extant population occurring near the Project Area observed by RECON in 2012; however, this species was not observed within the boundaries of the Project Area by RECON or ICF during surveys conducted from 2009 through 2017 or during the full Project Area survey in 2018. However, 2018 was an exceptionally dry year; it is possible that the species may not have germinated. Therefore, considering the proximity of observations near the Project Area, the species is considered to have high potential to occur.

Robinson's Pepper-Grass (*Lepidium virginicum* var. *robinsonii*) – CRPR 4.3; San Diego County List A – *High potential to occur within Project Area*

Robinson's pepper-grass is considered to have high potential to occur within the Project Area because of the presence of suitable habitat and an extant population occurring immediately south of the Project Area. This species was not observed by RECON or ICF during surveys conducted from 2009 through 2017 or during the full Project Area survey in 2018. However, 2018 was an exceptionally dry year; it is possible that the species may not have germinated. Therefore, considering the proximity of observations near the Project Area, the species is considered to have high potential to occur.

Round-Leaved Filaree (*California macrophylla*) – CRPR Considered but Rejected; San Diego County List B – *High potential to occur within Project Area*

Round-leaved filaree is considered to have a high potential to occur within the Project Area because of the presence of suitable habitat and an extant population occurring approximately 0.5 mile to the west. This species was not observed by RECON or ICF during surveys conducted from 2009 through 2017 or during the full Project Area survey in 2018. However, 2018 was an exceptionally dry year; it is possible that the species may not have germinated. Therefore, considering the proximity of observations near the Project Area, the species is considered to have high potential to occur.

San Diego Barrel Cactus (*Ferocactus viridescens*) – CRPR 2B.1; San Diego County List B; City of Chula Vista MSCP – *Present within Project Area*

San Diego barrel cactus was observed by RECON from 2011 through 2013 and ICF in 2018 (Appendix A, Figure 9a). During surveys conducted by ICF in 2018, approximately 207 San Diego barrel cactus were commonly observed inside the project boundaries within open coastal sage scrub.

San Diego Bur-Sage (*Ambrosia chenopodifolia*) – CRPR 2B.1; San Diego County List B – *High potential to occur within Project Area*

San Diego bur-sage is considered to have high potential to occur within the Project Area because of the presence of suitable habitat and an extant population occurring approximately 0.5 mile to the southwest. This species was not observed by RECON or ICF during surveys conducted from 2009 through 2017 or during the full Project Area survey in 2018. However, 2018 was an exceptionally dry year; it is possible that the species may not have germinated. Therefore, considering the proximity of observations near the Project Area, the species is considered to have high potential to occur.

San Diego County Needlegrass (*Stipa diegoensis*) – CRPR 4.2; San Diego County List D – *Present within Project Area*

San Diego County needlegrass was observed within open Diegan coastal sage scrub in the Project Area by RECON in 2012 and ICF in 2018 (Appendix A, Figure 9a). Approximately 33 San Diego needlegrass plants were found within the Project Area by ICF in 2018. This species was observed within both the Mitigation Bank Expansion Area and Trails Work Areas.

San Diego Goldenstar (*Bloomeria clevelandii*) – CRPR 1B.1; San Diego County List A; City of Chula Vista MSCP – *High potential to occur within Project Area*

San Diego goldenstar is considered to have high potential to occur within the Project Area because of the presence of potentially suitable ephemeral basin habitat and an extant population detected by RECON in 2010 adjacent to the Project Area (Appendix A, Figure 9a). This species was not observed within the boundaries of the Project Area by RECON and ICF during surveys conducted from 2009 through 2017 or during the full Project Area survey in 2018. However, 2018 was an exceptionally dry year; it is possible that the species may not have germinated. Therefore, considering the proximity of observations near the Project Area, the species is considered to have high potential to occur.

San Diego Marsh-Elder (*Iva hayesiana*) – CRPR 2B.2; San Diego County List B – *Present within Project Area*

San Diego marsh-elder was commonly observed within the riparian zone and floodplain throughout the Project Area by RECON in 2010 and ICF in 2018. Approximately 2,572 San Diego marsh-elder plants were found within the Project Area by ICF in 2018. This species was observed in the Project Area within both the Mitigation Bank Expansion Area and the Trails Work Areas.

San Diego Sagewort (*Artemisia palmeri*) – CRPR 4.2; San Diego County List D – *Moderate potential to occur within Project Area*

San Diego sagewort is considered to have moderate potential to occur within the Project Area because of the presence of suitable habitat and several known occurrences of this species within the local region. This species was not observed by RECON or ICF during surveys conducted from 2009 through 2017 or during the full Project Area survey in 2018. However, 2018 was an exceptionally dry year; it is possible that the species may not have germinated. Therefore, considering the proximity of observations in the region, the species is considered to have moderate potential to occur.

San Diego County Viguiera (*Bahiopsis laciniata*) – CRPR 4.2; San Diego County List D – *Present within Project Area*

San Diego County viguiera was detected in scattered locations within coastal sage scrub in the Project Area by RECON from 2011 through 2013 and ICF in 2018 (Appendix A, Figure 9a). During surveys conducted by ICF in 2018, approximately 161 San Diego County viguiera were observed within the Project Area.

Singlewhorl Burrobrush (*Ambrosia monogyra*) – CRPR List 2B.2 – *Present within Project Area*

Singlewhorl burrobush was observed in scattered clusters within the floodplain and drainages of the Project Area by RECON from 2011 through 2013 and ICF in 2018. During surveys conducted by ICF in 2018, approximately 66 singlewhorl burrobrush were observed within the Project Area.

Small-Flowered Microseris (*Microseris douglasii* ssp. *platycarpha*) – CRPR 4.2; San Diego County List D – *High potential to occur within Project Area*

Small flowered microseris is considered to have high potential to occur within the Project Area because of the presence of suitable habitat and a previously recorded observation adjacent to the Project Area (Appendix A, Figure 9a). Small-flowered microseris was previously observed at one location near the southeastern side of the Project Area by RECON in 2013 but was not detected by ICF during surveys conducted in 2018. However, 2018 was an exceptionally dry year; it is possible that the species may not have germinated. therefore, considering the proximity of observation near the Project Area, the species is considered to have high potential to occur.

Small-flowered morning glory (*Convolvulus simulans*) – CRPR 4.2; San Diego County List D – *Moderate potential to occur within Project Area*

Small-flowered morning glory is considered to have moderate potential to occur within the Project Area because of the presence of suitable habitat and known occurrences of this species within the local region of the Project Area. This species was not observed by RECON or ICF during surveys conducted from 2009 through 2017 or during the full Project Area survey in 2018. However, 2018 was an exceptionally dry year; it is possible that the species may not have germinated. Therefore,

considering the proximity of observations in the region, the species is considered to have moderate potential to occur.

Snake Cholla (*Cylindropuntia californica* var. *californica*) – CRPR 1B.1; San Diego County List A; City of Chula Vista MSCP Narrow Endemic – *High potential to occur within Project Area*

Snake cholla is considered to have high potential to occur within the Project Area because of the presence of suitable habitat and an extant population detected by RECON in 2010 adjacent to the northern and eastern portions of the Project Area (Appendix A, Figure 9a). This species was not observed within the boundaries of the Project Area by RECON or ICF during surveys conducted from 2009 through 2017 or during the full Project Area survey in 2018. However, 2018 was an exceptionally dry year; it is possible that the species may not have germinated. Therefore, considering the proximity of observations near the Project Area, the species is considered to have high potential to occur.

South Coast (Saltbush) Saltscale (*Atriplex pacifica*) – CRPR 1B.2; San Diego County List A – *Present within Project Area*

South coast saltscale is considered present within the Project Area. South coast saltscale was detected by RECON in 2012 in one location within the Mitigation Bank Expansion Area near the proposed trail work in the southeastern portion of the Project Area (Appendix A, Figure 9a). This species was not detected by ICF during surveys conducted in 2018. Subsequently, on May 14, 2019, a spot check survey for south coast saltscale was conducted by ICF at the previously recorded location and surrounding area; no plants were observed.

Southwestern Spiny Rush (*Juncus acutus* ssp. *leopoldii*) – CRPR 4.2; San Diego County List D – *Present within Project Area*

Southwestern spiny rush was commonly observed within the riparian zone and floodplain throughout the Project Area by RECON in 2010 and ICF in 2018 (Appendix A, Figure 9a). Approximately 803 Southwestern spiny rush plants were found within the Project Area by ICF in 2018. Occurrences of this species within the Project Area were observed within both the Mitigation Bank Expansion Area and within the limits of proposed trail work.

Tecate Cypress (*Hesperocyparis forbesii*) – CRPR 1B.1, San Diego County List A; City of Chula Vista MSCP Subarea Plan – *Present within Project Area*

Tecate cypress was observed in several locations within the Project Area by RECON from 2010 through 2013 and ICF in 2018 (Appendix A, Figure 9a). During surveys conducted in 2018 by ICF, approximately 1,158 Tecate cypress were observed within the Project Area. Occurrences of this species within the Project Area were found within the floodplain area of the Mitigation Bank Expansion Area and within the Trails Work Areas.

Variegated Dudleya (*Dudleya variegata*) – CRPR 1B.2; San Diego County List A; City of Chula Vista MSCP Narrow Endemic – *Present within Project Area*

Variegated dudleya is present within the Project Area. It was observed near the southeastern portion of the Project Area, which is proposed for trail work, and at the periphery of a vernal pool complex east of the Project Area by RECON in 2009 and from 2011 through 2013 (Appendix A, Figure 9a). Approximately 50 plants were observed within the Project Area.

Vernal Barley (*Hordeum intercedens*) – CRPR 3.2; San Diego County List C – *High potential to occur within Project Area*

Vernal barley is considered to have high potential to occur within the Project Area because of the presence of potentially suitable ephemeral basin habitat and several known occurrences of this species within 1 mile of the Project Area. This species was not observed by RECON or ICF during surveys conducted from 2009 through 2017 or during the full Project Area survey in 2018. However, 2018 was an exceptionally dry year; it is possible that the species may not have germinated. Therefore, considering the proximity of observations near the Project Area, the species is considered to have high potential to occur.

Western dichondra (*Dichondra occidentalis*) – CRPR 4.2; San Diego County List D – *Moderate potential to occur within Project Area*

Western dichondra is considered to have moderate potential to occur within the Project Area because of the presence of suitable habitat and known occurrences of this species within the local region of the Project Area. This species was not observed by RECON or ICF during surveys conducted from 2009 through 2017 or during the full Project Area survey in 2018. However, 2018 was an exceptionally dry year; it is possible that the species may not have germinated. Therefore, considering the proximity of observations near in the region, the species is considered to have moderate potential to occur.

1.5.6.2 Special-Status Wildlife Species in the Project Area

Based on searches of the CNDDB online inventory and observations made by RECON and ICF biologists, 73 special-status wildlife species are known from the vicinity of the Project Area. Appendix E provides the presence or absence as well as the probability of occurrence for each of these species within the Project Area. The locations at which special-status wildlife species have been observed within the Project Area by RECON and ICF biologists during field surveys are displayed in Appendix A, Figures 10a and 10b. Refer to Appendix A, Figure 3b, for the spatial extents of the focused special-status surveys.

The following are detailed descriptions of the 45 special-status wildlife species that have been observed within the Project Area or that have moderate or high potential to occur within the Project Area. Species with no potential to occur or low potential to occur within the Project Area are listed in Appendix E, which also includes a further description of these species and analysis of their potential to occur.

Federally Listed, State-Listed, and/or Fully Protected Species with Moderate to High Potential to Occur or Known to Be Present within the Project Area (5):

Coastal California Gnatcatcher (*Polioptila californica californica*) – Federally Listed as Threatened, California Species of Special Concern, San Diego County Group I; City of Chula Vista Subarea Plan MSCP – *Present within Project Area*

Suitable nesting habitat and foraging habitat occur in sage scrub habitat located within the Project Area. This species was observed in coastal sage scrub within the Project Area during protocol surveys conducted between 2009 and 2013. Surveys conducted in 2018 detected four gnatcatcher territories within the Project Area, specifically, along the southern side of the Mitigation Bank Expansion Area and Trails Work Areas (Appendix A, Figures 10b and 13). Breeding was confirmed

at all four territories. The full report on the 2018 gnatcatcher surveys is presented as Appendix H, and the survey area is shown in Appendix A, Figure 3b. Additional individual gnatcatchers and territories were previously observed in the Original Mitigation Bank area and Pre-Bank mitigation area, including within small overlapping portions of the Project Area's eastern and southeastern Trails Work Areas (Appendix A, Figures 10b and 13). Although the entire Project Area was not surveyed for coastal California gnatcatcher, it is assumed that the species could occur within all potentially suitable scrub habitats within the Project Area.

Least Bell's Vireo (*Vireo bellii pusillus*) – Federally Listed as Endangered (Nesting), State-Listed as Endangered (Nesting); San Diego County Group I; City of Chula Vista Subarea Plan MSCP – *Present (nesting) within Project Area*

The riparian habitats within the Project Area provide suitable nesting and foraging habitat for the species. Nesting least Bell's vireo were observed in riparian woodland habitat throughout the Project Area during field surveys between 2011 and 2019 (Appendix A, Figures 10b and 14). The full report on 2019 least Bell's vireo surveys is presented in Appendix I, and the survey area is shown in Appendix A, Figure 3b. Although the entire Project Area was not surveyed for least Bell's vireo, it is assumed that the species could occur within all potentially suitable riparian habitats within the Project Area.

Quino Checkerspot Butterfly (*Euphydryas editha quino*) – Federally Listed as Endangered; San Diego County Group II Species; City of Chula Vista Subarea Plan MSCP – *Present within Project Area*

In 2018, a Quino checkerspot butterfly habitat assessment was conducted in a large portion of the Project Area (Appendix A, Figure 3b; Appendix J). Numerous dot-seed plantain (*Plantago erecta,* host plant) individuals were observed on the southern terrace of the Mitigation Bank Expansion Area, and some host plants are present in the northeastern portion of the Mitigation Bank Expansion Area (Appendix A, Figures 10b and 11; Appendix J). Suitable habitat occurs primarily on the northern and southern ends of the Mitigation Bank Expansion Area, outside the grading limits. The Project Area is outside of designated critical habitat. No Quino checkerspot butterflies were observed during this survey.

Quino checkerspot butterfly was previously observed by RECON biologists within the Original Mitigation Bank and Pre-Bank mitigation areas adjacent to, but not within, the Project Area. In 2019, surveys for Quino checkerspot butterfly were conducted within portions of the Project Area for the non-project-related Otay Sewer project (ICF 2019), and Quino checkerspot butterfly were observed within the northeastern portion of the Mitigation Bank Expansion Area (Appendix A, Figure 10b and Figure 11). Although the entire Project Area was not surveyed for Quino checkerspot butterfly, it is assumed that the species could occur within all potentially suitable scrub habitats throughout the Project Area.

San Diego Fairy Shrimp (*Branchinecta sandiegoensis*) – Federally Listed as Endangered; San Diego County Group I Species; City of Chula Vista Subarea Plan MSCP – *Present within Project Area*

Ephemeral basins, consisting primarily of small areas that pond, occur within the southern portion of the Otay River Basin within the Mitigation Bank Expansion Area section of the Project Area and in road ruts along and within the roads that comprise the Trails Work Area. These ponded areas provide suitable habitat for San Diego fairy shrimp (Appendix A, Figure 8 and Figure 12).

Survey results of the 2017 dry season survey and of the 2017–2018 wet season survey are presented in Appendix F. In the 2017 dry-season survey, *Branchinecta* species cysts were observed in some road ruts and ephemeral drainages but were not identified to the species level at that time. In the subsequent 2017–2018 wet-season survey, no San Diego fairy shrimp were identified.

Survey results for the 2018 dry-season survey are presented in Appendix G. Several of the road ruts sampled contained *Branchinecta* species cysts that could not be positively identified to species. A subsequent wet-season survey was conducted in the winter of 2018–2019 within the majority of the Project Area (Appendix G); San Diego fairy shrimp were found in a few ephemeral basins in the Mitigation Bank Expansion Area on the southern side of the Project Area and within numerous road ruts within the Trails Work Areas on the northeastern, eastern, and southeastern sides of the Project Area (Appendix A, Figure 10b and Figure 12).

Following a very wet 2018–2019 winter, a 2019 dry-season survey was conducted to evaluate additional ephemeral basins and ponding areas within road ruts in the previously surveyed areas. *Branchinecta* species were found in additional features but could not be identified to the species; these features will be sampled during subsequent 2019–2020 wet-season surveys. For the purposes of analysis in this report, ephemeral basins and road ruts with *Branchinecta* species observed but not identified to the species level were evaluated as potentially containing San Diego fairy shrimp.

White-Tailed Kite (*Elanus caeruleus*) – California Fully Protected Species (Nesting); San Diego County Group I – *High potential to occur for nesting, present for foraging within the Project Area*

White-tailed kites were observed within the Mitigation Bank Expansion Area of the Project Area in 2018; the observations occurred incidentally during gnatcatcher surveys (Appendix A, Figure 10a; Appendix H). Suitable nesting habitat occurs in the larger trees within the Project Area, although no active white-tailed kite nests were observed during field surveys conducted in 2018. Suitable foraging habitat is available throughout the Project Area and in adjacent areas. Therefore, because of observations of individuals foraging in the Project Area and the presence of suitable nesting habitat, white-tailed kite has high potential to nest within the Project Area.

Non-Listed Special-Status Species with Moderate to High Potential to Occur or Known to Be Present within the Project Area (40):

American Badger (*Taxidea taxus*) – California Species of Special Concern; San Diego County Group II; City of Chula Vista MSCP Subarea Plan – *Moderate potential to occur within Project Area*

The nearest recorded observation of badger was approximately 3 miles northwest of the Project Area at Poggi Canyon on Otay Ranch (Tremor et al. 2017). Other observations have been made approximately 7 to 10 miles east of the Project Area, near Dulzura and the U.S.-Mexico border (CDFW 2019a). Suitable habitat for American badger occurs throughout the Project Area in scrub and mixed chaparral habitats. Therefore, considering the presence of suitable habitat within the Project Area and the distance to known observations, there is moderate potential for American badger to occur within the Project Area.

Belding's Orange-throated Whiptail (*Aspidocelis hyperythra hyperythra*) – CDFW Watch List Species; San Diego County Group II; City of Chula Vista MSCP Subarea Plan – *Present within Project Area*

This species has been observed within the Project Area, specifically, at the southern edge of the Mitigation Bank Expansion Area along the Trails Work Areas (Appendix A, Figure 10a). Suitable

habitat for orange-throated whiptail occurs throughout the Project Area in scrub and mixed chaparral habitats.

Bell's Sage Sparrow (*Artemisiospiza belli belli*) – CDFW Watch List Species; San Diego County Group I – *High potential to occur within the Project Area*

Bell's sage sparrow was observed incidentally in the Project Area during the 2019 least Bell's vireo surveys of the Otay Ranch Preserve, although the exact location of the observation is not known (Appendix I). Suitable nesting and foraging habitats occur within the Project Area in chaparral and scrub. Therefore, because of the proximity of the nearest previous observation and the presence of suitable habitat, the species has high potential to occur within the Project Area.

Big Free-tailed Bat (*Nyctinomops macrotis*) – California Species of Special Concern, San Diego County Group II – *No potential to occur for roosting, high potential to occur for foraging within Project Area*

The species has previously been detected below Otay Reservoir on the Otay River, within the OVRP and just east of the Project Area's eastern boundary (Tremor et al. 2017). Suitable foraging habitat occurs in low-lying arid areas within the Project Area. Therefore, considering the presence of suitable foraging habitat and proximity of a known detection, there is high potential for big free-tailed bat to forage within the Project Area. No suitable roosting habitat occurs within the Project Area; therefore, there is no potential for big free-tailed bat to roost within the Project Area.

Blainville's Horned Lizard (*Phrynosoma blainvillii*) – California Species of Special Concern; San Diego County Group II; City of Chula Vista Subarea Plan MSCP – *High potential to occur within Project Area*

This species has been observed within approximately 250 feet of the Project Area's easternmost Trails Work Areas (RECON 2018) (Appendix A, Figure 10a). Suitable habitat for Blainville's horned lizard occurs throughout the Project Area. Therefore, because of the proximity of previous observations and the presence of suitable habitat, the species has high potential to occur within the Project Area.

California Horned Lark (*Eremophila alpestris actia*) – CDFW Watch List Species; San Diego County Group II – *High potential to occur within the Project Area*

The nearest known observations of California horned lark are approximately 1 mile south of the Project Area on Otay Mesa, just east of State Route 125 (CDFW 2019a). Suitable nesting and foraging habitats occur within the Project Area in grassland habitat and open areas within scrub habitat. Therefore, because of the proximity of the nearest known observations and the presence of suitable habitat, the species has high potential to occur within the Project Area.

Coast Patch-Nosed Snake (*Salvadora hexalepis virgultea*) – California Species of Special Concern; San Diego County Group II – *High Potential to occur within Project Area*

This species has been observed within approximately 2 miles northeast of the Project Area on the Otay Preserve Open Space (RECON 2018). Suitable habitat occurs within scrub and chaparral habitats throughout the Project Area. Therefore, because of the occurrence of the species in the general region and the presence of suitable habitat for the species in the Project Area, coast patch-nosed snake has high potential to occur.

Coastal Rosy Boa (*Lichanura trivirgata rosefusca*) – San Diego County Group II – *Present within Project Area*

This species has been observed in the Project Area and nearby. Specifically, a coastal rosy boa was observed within approximately 250 feet of the southeastern corner of the Project Area, along a portion of the Trails Work Areas (Appendix A, Figure 10a). Suitable habitat occurs within scrub habitat, chaparral habitat, and disturbed arid areas throughout the Project Area.

Coastal Tiger (San Diegan) Whiptail (*Aspidoscelis tigris stejnegeri*) – California Species of Special Concern; San Diego County Group II – *High Potential to occur within Project Area*

This species has been observed within approximately 200 feet of the eastern side of the Project Area (Appendix A, Figure 10a). Suitable habitat occurs within open, arid areas of scrub, chaparral, woodland, and riparian habitat throughout the Project Area. Therefore, because of the proximity of a previous observation of the species and the presence of suitable habitat for the species, coastal tiger whiptail has high potential to occur within the Project Area.

Coastal (San Diego) Cactus Wren (*Campylorhynchus brunneicapillus sandiegensis*) – California Species of Special Concern, San Diego County Group II Species; City of Chula Vista Subarea Plan MSCP – *Present within Project Area*

This species was observed incidentally during gnatcatcher surveys in the Mitigation Bank Expansion Area in 2018. It was previously observed within 100 feet of the northeastern side of the Project Area (Appendix A, Figure 10a—incidental observations made in 2018 were not mapped). Marginally suitable nesting habitat occurs within the Project Area, and suitable nesting habitat occurs just west and south of the Project Area. Suitable foraging habitat occurs in the upland portions of the Project Area. The individual observed within the Project Area was most likely foraging.

Cooper's Hawk (*Accipiter cooperii*) – CDFW Watch List Species (nesting); San Diego County Group I; City of Chula Vista Subarea Plan MSCP – *High potential to occur (nesting) within Project Area*

An inactive Cooper's hawk nest was observed just outside the southeast corner of the Project Area, although nesting has not been observed within the Project Area. Copper's hawks have been observed foraging within the Project Area, specifically, within the northern portion of the Mitigation Bank Expansion Area (Appendix A, Figure 10a). Suitable nesting and foraging habitats occur within the Project Area in the riparian and woodland habitats where oak groves and mature stands of tall trees are present. Therefore, considering the presence of nearby nesting activity, the presence of suitable nesting habitat within the Project Area, and observations of foraging hawks within the Project Area, Cooper's hawks have high potential to nest within the Project Area.

Coronado Skink (*Plestiodon skiltonianus interparietalis*) – CDFW Watch List Species; San Diego County Group II – *High potential to occur within Project Area*

This species has been observed on Otay Ranch Preserve land less than 1 mile southwest of the Project Area, specifically, within the preserve's "Millenia Parcels," located east of State Route 125 (RECON 2018). Suitable habitat occurs within open, arid areas of scrub, chaparral, woodland, and riparian habitat throughout the Project Area. Therefore, because of the proximity of a previous observation of the species and the presence of suitable habitat for the species, Coronado Skink has high potential to occur within the Project Area.

Dulzura Pocket Mouse (*Chaetodipus californicus femoralis*) – California Species of Special Concern; San Diego County Group I – High *potential to occur within Project Area*

Suitable habitat for Dulzura pocket mouse occurs in grassland, scrub, and chaparral habitats within the Project Area. The nearest recorded observations are approximately 9 miles east of the Project Area (Tremor et al. 2017) near Dulzura and 20 miles east of the Project Area near Hauser Mountain (CDFW 2019a). Despite the distance to previously documented observations, ICF mammologists determined that, because of the presence of very suitable habitat within the Project Area, there is high potential for Dulzura pocket mouse to occur within the Project Area.

Grasshopper Sparrow (*Ammodramus savannarum perpallidus*) – California Species of Special Concern (nesting); San Diego County Group I – *High potential to occur (nesting) within Project Area*

Suitable nesting habitat occurs in grassland habitats within the Project Area. The species was incidentally observed nesting within the vicinity of the Project Area, in Otay Ranch Preserve, during least Bell's vireo surveys of the preserve in 2019 (Appendix I). Therefore, considering the proximity of documented nesting observations and the presence of suitable nesting habitat within the Project Area, there is high potential for grasshopper sparrow nesting to occur within the Project Area.

Loggerhead Shrike (*Lanius ludovicianus*) – California Species of Special Concern (nesting); San Diego County Group I – *High potential to occur (nesting) within Project Area*

Suitable nesting and foraging habitat is present within the Project Area in grassland, scrub, and chaparral habitats. There are multiple nearby observations of the species, within approximately 1 to 2 miles of the Project Area (i.e., to the north, near Lower Otay Lake; to the south, on Otay Mesa; and to the west, at Brown Field Municipal Airport) (eBird 2019). Therefore, considering the proximity of documented observations and the presence of suitable nesting habitat, there is high potential for loggerhead shrike to nest within the Project Area.

Long-eared Myotis (*Myotis evotis*) – San Diego County Group II – *No potential to occur for roosting, high potential to occur for foraging within Project Area*

The species has previously been detected below Otay Reservoir on the Otay River, within the OVRP and just east of the Project Area's eastern boundary (Tremor et al. 2017). Suitable foraging habitat is present in scrub, woodland, and forest habitats throughout the Project Area. Therefore, considering the distance to the nearest known detection and presence of suitable foraging habitat, there is high potential for long-eared myotis to forage within the Project Area. Suitable roosting habitat is not present within the Project Area; therefore, there is no potential for the species to roost within the Project Area.

Mountain Lion (*Puma concolor*) – San Diego County Group I; City of Chula Vista MSCP Subarea Plan – *High potential to occur within Project Area*

A mountain lion was observed while biologists were driving to the Project Area. The observation occurred less than 1 mile west of the Project Area, specifically, along Wiley Road, just east of the State Route 125 overpass. Therefore, considering the proximity of this observation and the presence of suitable habitat, there is high potential for mountain lion to occur within the Project Area.

Northern Harrier (*Circus cyaneus*) – California Species of Special Concern (nesting); San Diego County Group I; City of Chula Vista Subarea Plan MSCP – *Moderate potential to occur (nesting) within Project Area*

The Project Area contains marginally suitable nesting habitat for northern harrier. A previous nesting northern harrier observation was made approximately 1 to 2 miles south of the Project Area on Otay Mesa, southwest of Johnson Canyon (CDFW 2019a). Nesting harriers were observed incidentally during 2019 least Bell's vireo surveys of the Otay Ranch Preserve, in the vicinity of the Project Area, although the exact location was not provided (Appendix I). Therefore, considering the presence of marginally suitable nesting habitat for northern harrier and the proximity of nesting observations to the Project Area, northern harrier has moderate potential to nest within the Project Area.

Pallid Bat (*Antrozous pallidus*) – California Species of Special Concern; San Diego County Group II – *Moderate potential for roosting, high potential for foraging within Project Area*

The species has previously been detected below Otay Reservoir on the Otay River, within the OVRP and just east of the Project Area's eastern boundary (Tremor et al. 2017). The eucalyptus trees and palm trees within the Project Area provide suitable roosting habitat. Therefore, considering the distance to the nearest previous observation and presence of suitable foraging and roosting habitats within the Project Area, pallid bat has high potential for roosting and high potential for foraging within the Project Area.

Pocketed Free-tailed Bat (*Nyctinomops femorosaccus*) – California Species of Special Concern; San Diego County Group II – *No potential for roosting, high potential for foraging within the Project Area*

The species has previously been detected within the Otay River Valley near the State Route 125 overpass, less than 1 mile west of the Project Area (Tremor et al. 2017). Suitable foraging habitat occurs within the Project Area in scrub and riparian habitats. Therefore, considering the proximity of previous observations and the presence of suitable foraging habitat, pocketed free-tailed bat has high potential to forage within the Project Area. Suitable roosting habitat is not present within the Project Area; therefore, the species has no potential to roost within the Project Area.

Red Diamond Rattlesnake (*Crotalus ruber*) – California Species of Special Concern; San Diego County Group II – *Present within Project Area*

This species has been observed within the Project Area, specifically, at the southeastern portion of the Mitigation Bank Expansion Area (Appendix A, Figure 10a). It has also been observed within 600 feet of the Project Area's southern border as well as adjacent to the Project Area within the Original Mitigation Bank area (Appendix A, Figure 10a). Suitable habitat occurs throughout the Project Area, primarily within scrub habitats, chaparral habitats, and disturbed areas with rocky components and dense vegetation.

San Diego Black-Tailed Jackrabbit (*Lepus californicus bennettii*) – California Species of Special Concern; San Diego County Group II – *High potential to occur within Project Area*

This species has been observed within approximately 50 of the Project Area's southeastern, eastern, and northeastern boundaries and within the Original Mitigation Bank area (Appendix A, Figure 10a). Suitable habitat occurs throughout the Project Area in open areas and scrub habitats. Therefore,

because of the proximity of observations and the presence of suitable habitat within the Project Area, San Diego black-tailed jack rabbit has high potential to occur within the Project Area.

San Diego Desert Woodrat (*Neotoma lepida intermedia*) – California Species of Special Concern, San Diego County Group II – *Present within Project Area*

The species is known to be present within the Project Area. A woodrat midden was observed within the Project Area, specifically, within the northern portion of the Mitigation Bank Extension Area (Appendix A, Figure 10a). Suitable habitat occurs throughout the Project Area where riparian vegetation and scrub habitats exist.

San Diego Pocket Mouse (*Chaetodipus fallax fallax*) – California Species of Special Concern; San Diego County Group II – *High potential to occur within Project Area*

This species has been observed just north of the Project Area (Tremor et al. 2017) and approximately 3 miles east of the Project Area, in an area just east of Brown Field Municipal Airport (CDFW 2019a). Suitable habitat occurs throughout the Project Area, primarily within scrub, chaparral, grassland, and riparian habitats. Therefore, because of the proximity of a previous observation and the presence of suitable habitat, San Diego pocket mouse has high potential to occur within the Project Area.

San Diego Ringneck Snake (*Diadophis punctatus similis*) – San Diego County Group II – *High potential to occur within Project Area*

This species has been observed approximately 1 to 2 miles south of the Project Area on Otay Mesa (CDFW 2019a). Suitable habitat occurs throughout the Project Area, primarily within scrub, chaparral, grassland, and riparian habitats. Therefore, because of the proximity of a previous observation and the presence of suitable habitat within the Project Area, San Diego ringneck snake has high potential to occur within the Project Area.

Silvery (Southern California) Legless Lizard (*Anniella stebbinsi*) – California Species of Special Concern; San Diego County Group II – *Moderate potential to occur within Project Area*

This species has been observed approximately 6 miles west of the Project Area, in the OVRP at San Ysidro (CDFW 2019a). Suitable habitat occurs within the Project Area, primarily within scrub, chaparral, and riparian woodland habitats on the Otay River floodplain or near wetted areas. Therefore, considering the distance to the nearest known observation of the species and the presence of suitable habitat within the Project Area, silvery legless lizard has moderate potential to occur within the Project Area.

Southern California Rufous-Crowned Sparrow (*Aimophila ruficeps canescens*) – CDFW Watch List; San Diego County Group I; City of Chula Vista Subarea Plan MSCP – *Present within Project Area*

This species has been observed incidentally during 2018 gnatcatcher surveys within the Project Area, specifically, in the Mitigation Bank Expansion Area, although the exact location was not noted (Appendix H). Rufous-crowned sparrow was also previously observed within 100 feet of the northern and southern boundaries of the Project Area and within approximately 500 feet of the eastern boundary of the Project Area (Appendix A, Figure 10a). Suitable nesting and foraging habitats occur in sage scrub habitat in the upland areas of the Project Area.

Southern Mule Deer (*Odocoileus hemionus fulginata*) – San Diego County Group II; City of Chula Vista Subarea Plan MSCP – *High potential to occur within Project Area*

This species has been observed within approximately 100 feet of the Project Area, on the northern side of the Original Mitigation Bank area (Appendix A, Figure 10a). Suitable habitat occurs throughout the Project Area. Therefore, because of the proximity of previous observations of the species and presence of suitable habitat within the Project Area, southern mule deer has high potential to occur within the Project Area.

Thorne's Hairstreak (*Callophrys thornei*) – San Diego County Group I; City of Chula Vista MSCP Subarea Plan – *Present within Project Area*

Suitable habitat with Tecate cypress trees occurs within the Project Area, specifically, along a portion of the Trails Work Areas and within the Mitigation Bank Expansion Area on the southern side of the Project Area (Appendix A, Figure 9a). Thorne's hairstreak butterfly was observed within the Project Area, specifically, within the Tecate cypress grove (Appendix A, Figure 10a).

Townsend's Big-eared Bat (*Plecotus townsendii*) – California Species of Special Concern; San Diego County Group II – *No potential to occur for roosting, high potential to occur for foraging within Project Area*

The species has previously been detected below Otay Reservoir on the Otay River, within the OVRP and just east of the Project Area's eastern boundary (Tremor et al. 2017). Suitable foraging habitat is present throughout the Project Area, particularly in the river corridor. Therefore, considering the distance to the nearest detection of the species and the presence of suitable foraging habitat within the Project Area, there is high potential for Townsend's big-eared bat to forage within the Project Area. Suitable roosting habitat is not present within the Project Area; therefore, there is no potential for Townsend's big-eared bat to roost within the Project Area.

Two-Striped Gartersnake (*Thamnophis hammondii*) – California Species of Special Concern; San Diego County Group I – *Present within Project Area*

Within the Project Area, suitable habitat occurs in Salt Creek (along the northern side of the Project Area), while marginal quality habitat occurs in the main channel of the Otay River. Marginal quality habitat also occurs at isolated pools. The species was observed within the Trails Work Areas on the northeastern side of the Project Area (Appendix A, Figure 10a).

Western Burrowing Owl (*Atherne cunicularia*) – California Species of Special Concern (burrow sites and some wintering sites); San Diego County Group I; City of Chula Vista MSCP Subarea Plan – *Moderate potential to occur (nesting) within Project Area*

A habitat assessment was conducted within a large portion of the Project Area's Mitigation Bank Expansion Area in 2018 (Appendix A, Figure 3b). No suitable nesting burrows were observed within the surveyed area. In 2019, the Project Area was expanded to the west and north; these areas were not included in the habitat assessment. A transient burrowing owl was observed near the Project Area, within the existing mitigation site, in 2018 (Appendix A, Figure 10a). There were additional burrowing owl observations approximately 1 mile west and south of the Project Area (CDFW 2019a). No suitable nesting burrows were observed during the habitat assessment; however, because of the proximity of burrowing owl observations in the Project Area and the fact that the expanded portion of the Project Area has not been surveyed for burrowing owl habitat, the potential for burrowing owls to nest within the Project Area is moderate.

Western Mastiff Bat (*Eumops perotis californicus*) – California Species of Special Concern; San Diego County Group II – *No potential to occur for roosting, high potential to occur for foraging within Project Area*

The species has previously been detected below Otay Reservoir on the Otay River, within the OVRP and just east of the Project Area's eastern boundary (Tremor et al. 2017). Suitable foraging habitat is found throughout the Project Area. Therefore, considering the proximity of previous detections of the species and the presence of suitable foraging habitat within the Project Area, there is high potential for western mastiff bat to forage within the Project Area. Suitable roosting habitat is not present within the Project Area; therefore, there is no potential for western mastiff bat to roost within the Project Area.

Western Red Bat (*Lasiurus blossevillii*) – California Species of Special Concern; San Diego County Group II – *High potential to occur for roosting, high potential to occur for foraging within Project Area*

The species has previously been detected less than 1 mile west of the Project Area, within the Otay River Valley near the State Route 125 overpass and below Lower Otay Reservoir on the Otay River, within the OVRP and just east of the Project Area's eastern boundary (Tremor et al. 2017). The riparian trees within the Project Area provide suitable roosting habitat. Suitable foraging and roosting habitats occur within the Project Area, particularly along the Otay River corridor. Therefore, considering the proximity of previous detections and presence of suitable roosting and foraging habitat within the Project Area, western red bat has high potential to roost and high potential to forage within the Project Area.

Western Small-footed Myotis (*Myotis ciliolabrum*) – San Diego County Group II – *High potential to occur for roosting, high potential to occur for foraging within Project Area*

The species has previously been detected less than 1 mile west of the Project Area, within the Otay River Valley near the State Route 125 overpass (Tremor et al. 2017). Large trees with loose bark found within the Project Area could provide suitable roosting habitat. Suitable foraging habitat is present within the Project Area in scrub, forest, and riparian habitats. Therefore, considering the proximity to previous detections and presence of suitable foraging and roosting habitats within the Project Area, western small-footed myotis has high potential to forage and high potential to roost within the Project Area.

Western Spadefoot (*Spea hammondii*) – California Species of Special Concern; San Diego County Group II – *Present within Project Area*

This species has been observed within the Trails Work Areas on the southern and eastern sides of the Project Area (Appendix A, Figure 10a). Specifically, spadefoot larvae were observed in ephemeral basins, including deep road ruts, during wet-season fairy shrimp surveys in winter 2018–2019.

Western Yellow Bat (*Laiurus xanthinus*) – California Species of Special Concern – *High potential to occur for roosting, high potential to occur for foraging within Project Area*

The species has previously been detected less than 1 mile west of the Project Area, within the Otay River Valley near the State Route 125 overpass (Tremor et al. 2017). The eucalyptus trees and palm trees within the Project Area provide suitable roosting habitat. Suitable foraging habitat is present within the Project Area, particularly along the Otay River corridor. Therefore, considering the

proximity of nearby observations and presence of suitable foraging and roosting habitats within the Project Area, western yellow bat has high potential to occur for roosting and high potential to occur for foraging within the Project Area.

Yellow-Breasted Chat (*Icteria virens*) – California Species of Special Concern (nesting); San Diego County Group I – *High potential to occur (nesting) within Project Area*

A foraging yellow-breasted chat was incidentally observed within the Project Area in 2018 during gnatcatcher surveys within the Mitigation Bank Expansion Area on the southern side of the Otay River's mainstem (Appendix A, Figure 10a; Attachment H). Additional individual observations have been made within approximately 100 feet of the Project Area, within the Original Mitigation Bank area and Pre-Bank mitigation area as well as south of the southern edge of the Project Area (Appendix A, Figure 10a). The riparian habitats within the Project Area provide suitable nesting and foraging habitat for yellow-breasted chat. Therefore, because of the known presence of foraging individuals and suitable nesting and foraging habitat within the Project Area, yellow-breasted chat has high potential to nest within the Project Area.

Yellow Warbler (*Dendroica petechia brewsteri*) – California Species of Special Concern (Nesting), San Diego County Group II – *High potential to occur (nesting) within Project Area*

Foraging yellow warblers were observed incidentally during 2018 gnatcatcher surveys within the Project Area along the southern shared boundary of the Mitigation Bank Expansion Area (Appendix A, Figure 10a; Attachment H). Additional individual observations have been made within approximately 250 feet of the Project Area, within the Original Mitigation Bank area and north of the northeastern edge of the Project Area (Appendix A, Figure 10a). The riparian habitats within the Project Area provide suitable nesting and foraging habitat for the species. Therefore, because of the presence of individuals observed foraging within the Project Area and suitable nesting and foraging habitats within the Project Area, yellow warbler nesting has high potential to nest within the Project Area.

Yuma Myotis (*Myotis yumanensis*) – San Diego County Group II – *High potential to occur for roosting, high potential to occur for foraging within Project Area*

The species has previously been detected less than 1 mile west of the Project Area, within the Otay River Valley near the State Route 125 overpass (Tremor et al. 2017). The eucalyptus trees and palm trees within the Project Area provide suitable roosting habitat. Suitable foraging habitat is present within the Project Area, particularly along the Otay River corridor. Therefore, considering the proximity of previous observations and the presence of suitable foraging and roosting habitats within the Project Area, Yuma myotis has high potential to forage and high potential to roost within the Project Area.

1.5.7 Critical Habitat

Critical habitat spatial layers were queried from the USFWS's Critical Habitat database (USFWS 2018b). Four species have designated critical habitat within or adjacent to the Project Area, as discussed below: Otay tarplant, spreading navarretia, Quino checkerspot butterfly, and San Diego fairy shrimp.

Otay Tarplant

There are 140.61 acres of designated critical habitat for Otay tarplant within the Project Area (Appendix A, Figure 15). This area is within Otay tarplant critical habitat Unit 3: Otay Valley/Big Murphy's Unit, Subunit 3A (USFWS 2002b).

Spreading Navarretia, Quino Checkerspot Butterfly, and San Diego Fairy Shrimp

There is no designated critical habitat for spreading navarretia, Quino checkerspot butterfly, and San Diego fairy shrimp within the Project Area; however, there is critical habitat for these species adjacent to the Project Area (Appendix A, Figures 16a and 16b). Designated Quino checkerspot butterfly critical habitat is to the east and south, outside the Project Area. Designated San Diego Fairy Shrimp critical habitat occurs to the south, outside the Project Area. Designated spreading navarretia critical habitat occurs to the southeast, outside the Project Area.

1.5.8 Wetlands and Jurisdictional Waters

A total of 12 features were delineated within the Project Area, including the Otay River. Table 4 presents the acreage and linear feet for each feature delineated. Figures 16a and 16b in Appendix A shows the location and extent of U.S. Army Corps of Engineers (USACE)/Regional Water Quality Control Board (RWQCB) and CDFW jurisdiction. A refined wetland delineation is to be completed prior to design finalization and permitting to refine the identification of ephemeral basins and determine if jurisdictional vernal pool resources are present within the Project Area; currently mapped ephemeral basins are discussed in Section 1.5.6.1, *Special-Status Plant Species within the Project Area*, and shown in Appendix A, Figure 12. Below is a brief description of each jurisdictional feature currently delineated.

Table 4. Jurisdictional Features Occurring within the Project Area

	Stream Length	USACE/RWQCB		CDFW	
Feature	Linear Feet	Non-Wetland (acres)[a]	Wetland (acres)[a]	Streambed (acres)[a]	Riparian (acres)[a]
Feature 1 – Otay River	2,223	-	28.68	18.23	33.51
Feature 2	-	-	0.17	-	0.17
Feature 4	40	0.01	-	0.01	-
Feature 5 – O'Neal Canyon Creek	1,602	0.73	-	1.10	-
Feature 6	348	0.03	-	0.06	-
Feature 7	83	0.11	-	0.11	-
Feature 8	130	0.01	-	0.02	-
Feature 9	584	0.03	-	0.06	-
Feature 10 – Salt Creek	-	-	1.47	-	2.50
Feature 22	173	0.02	-	0.04	-
Feature 23	-	-	0.15	-	0.15
Feature 24	611	0.13	-	0.20	-
Total[a]	10,647	1.42	31.82	20.34	36.54
[a] Total acreage may not add up to the total shown; total is reflective of rounding GIS raw data in each category.					

Feature 1 is the Otay River, a well-defined wetland supported primarily by shallow groundwater near the eastern portion of the mitigation bank. The Otay River forms a well-defined channel (supporting OHWM) as it flows west and supports a large wetland floodplain consisting of freshwater marsh habitat within the primary channel and cismontane alkali marsh, tamarisk scrub, and willow riparian forest within the active floodplain. Approximately 2,223 linear feet/51.74 acres of the Otay River occur within the Project Area.

Feature 2 is wetland on the north side of the Otay River floodplain created by two berms on either side of the feature. Within the Project Area, 0.17 acre of this feature occurs as wetland and riparian. This wetland appears to be supported primarily by subsurface groundwater and dominated by cattails and arroyo willows.

Feature 4 is an unvegetated channel that meets the Project Area on the south side of the Otay River floodplain; 40 linear feet/0.01 acre of this feature occurs within the Project Area. This feature supports an OHWM.

Feature 5 is also known as O'Neal Canyon Creek. It is an intermittent drainage that flows in a northwestern direction within the Project Area; 1,602 linear feet/1.10 acres of this feature occurs within the Project Area. This feature supports an OHWM and is characteristic of a desert wash until it hits the valley floor and a defined channel no longer exists. The channel sheetflows west along with the Otay River.

Feature 6 is an ephemeral drainage on the south side of the mitigation bank that flows in a northwestern direction; 348 linear feet/0.06 acre of this feature occurs within the Project Area. An OHWM was observed throughout the length of the drainage, which is dominated by upland coastal sage scrub species.

Feature 7 is an ephemeral drainage at the southwestern end of the mitigation bank that flows in a northwest direction before entering the Otay River floodplain; 83 linear feet/0.11 acre of this feature occurs within the Project Area. The drainage ends at a patch of tamarisk and then most likely sheetflows because there is no defined OHWM or bed and bank. The drainage is dominated by coastal sage habitat and supports a cobble bottom. Only a very small portion of Feature 7 is within the mitigation bank boundaries.

Feature 8 is an ephemeral drainage that flows in a northwest direction for approximately 130 linear feet/0.02 acre within the Project Area before dissipating. Indicators of an OHWM and a defined bed and bank end once the feature reaches a flat and broad open space where it appears to sheetflow toward the bottom of the valley.

Feature 9 is an ephemeral drainage, flowing south along a hillside before turning west, paralleling an access road; 576 linear feet/0.06 acre of this feature occurs within the Project Area. The feature eventually dissipates and sheetflows along the road, no longer supporting a defined OHWM or bed and bank.

Feature 10 is also known as Salt Creek; 2.50 acres of Salt Creek occurs within the Project Area. This feature supports wetland and riparian habitat dominated by mule fat and southern cattail (*Typha domingensis*).

Feature 22 is a small ephemeral drainage flowing south at the northeastern side of the Project Area; 173 linear feet/0.04 acre of this feature occurs within the Project Area.

Feature 23 is a wetland area on the northern Otay River floodplain dominated by southern cattail and San Diego marsh elder; 0.15 acre of this feature occurs within the Project Area as wetland and riparian habitat.

Feature 24 is a 1.5-foot-wide ephemeral drainage on the eastern side of the Project Area that is discernable as a channel for only a short distance; 611 linear feet/0.20 acre of this feature occurs within the Project Area. The flow upstream and downstream of this feature is not frequent enough to form a channel. OHWM indicators included sediment sorting and cracking.

1.5.9 Habitat Connectivity and Wildlife Corridors

The Project Area is connected to open space. It provides wildlife habitat and acts as a wildlife corridor. The Project Area occurs in the Otay River Valley within the floodplain of the Otay River. The Project Area is currently undeveloped. It does not inhibit wildlife movement or disrupt habitat connectivity. As described above in Section 1.5.1, *Regional Context and Site Characteristics*, the Project Area is connected to large areas of undeveloped land and open space, part of the Otay Ranch Preserve. Open space exists immediately east, south, and west of the Project Area, consisting of publicly and privately owned lands, including Bureau of Land Management lands, CDFW lands, and preserve land covered by the City of Chula Vista MSCP Subarea Plan and the San Diego County MSCP Subarea Plan. As shown in Figure 4 within Appendix A, the Project Area is within the City of Chula Vista Subarea Plan area (100 percent preserve).

The habitat connectivity layers available in the CDFW's Biogeographic Information and Observation System (BIOS) application, available online at https://apps.wildlife.ca.gov/bios, were reviewed for relevant connectivity and wildlife corridor data. The following layers overlap the Project Area:

- Terrestrial Connectivity – ACE [ds2734]

  The Terrestrial Connectivity, Areas of Conservation Emphasis (ACE), layer visualizes information on terrestrial connectivity by hexagonal mapping units to show the presence of mapped know wildlife connectivity corridors or linkages. This dataset is to be used in support of conservation planning efforts by evaluating the relative contribution of an area to regional terrestrial connectivity (CDFW 2019c).

  The Project Area is entirely within hexagonal mapping units of the Terrestrial Connectivity – ACE [ds2734] layer that are classified as Connectivity Rank 3 – Connections with Implementation Flexibility. CDFW defines this connectivity rank as follows: "These are other areas that have been identified as having connectivity importance, but have not been identified as channelized areas, species corridors, or habitat linkages at this time. This may change with future changes in surrounding land use or regional specific information."

- Natural Landscape Block – California Essential Habitat Connectivity (CEHC) [ds621]

  The CEHC Project: A Strategy for Conserving a Connected California (Spencer et al. 2010) was designed to support connectivity conservation in land use and transportation planning. The report was produced by a multidisciplinary team of representatives of 62 agencies, a smaller technical advisory team, and a steering committee. The report includes a statewide Essential Habitat Connectivity Map that depicts large and small natural blocks of habitat and areas deemed essential for ecological connectivity for a broad range of species. The data can be used to help prioritize conservation, mitigation, and other land use decisions.

The Natural Landscape Block CEHC layer visualizes a statewide network of 850 relatively intact Natural Landscape Blocks, ranging in size from 2,000 to about 3.7 million acres, connected by 195 Essential Connectivity Areas. The layer is meant to focus attention on large areas important to maintaining ecological integrity at a broad scale. CDFW notes that "Natural areas excluded from this broad-brush Essential Connectivity Network can therefore not be 'written off' as unimportant to connectivity conservation or to sustaining California's natural heritage" (CDFW 2017). Approximately the western third of the Project Area overlaps the Natural Landscape Block – CEHC [ds621] layer. This overlap indicates the area was considered by the CEHC Project as essential for ecological connectivity. The remainder of the Project Area is adjacent to the layer and consists of similar undeveloped natural areas; thus, it too could be considered potentially essential for ecological connectivity, taking into account the large, broad scale of the CEHC Natural Landscape Block analysis.

1.6 Applicable Regulations

1.6.1 Federal Environmental Regulations

1.6.1.1 Federal Endangered Species Act

The FESA was enacted in 1973 to provide protection to threatened and endangered species and their associated ecosystems. "Take" of a listed species is prohibited, except when authorization has been granted through a permit under Sections 4(d), 7, or 10(a) of the FESA. The word *take* means to harass, harm, shoot, wound, kill, trap, capture, or collect or attempt to engage in any of these activities without a permit. No species listed as threatened or endangered was detected during the surveys, but habitat assessments for listed species were conducted.

1.6.1.2 Migratory Bird Treaty Act

The MBTA was enacted in 1918. Its purpose is to prohibit the killing or transporting of native migratory birds or any part, nest, or egg of any such bird, unless allowed by another regulation adopted in accordance with the MBTA. Nests of birds protected by the MBTA occur on the Project Area.

1.6.1.3 Clean Water Act

In 1948, Congress first passed the federal Water Pollution Control Act, which was amended in 1972 and became known as the Clean Water Act. The Clean Water Act regulates the discharge of pollutants into the waters of the U.S. Under Section 404, permits need to be obtained from the USACE for the discharge of dredged or fill material into waters of the U.S. Under Section 401, water quality certification from the RWQCB needs to be obtained if any impacts on waters of the U.S. would occur. Several areas within the Project Area may be regulated as waters of the U.S.

1.6.2 State Environmental Regulations

1.6.2.1 California Environmental Quality Act

CEQA requires that biological resources be considered when assessing the environmental impacts resulting from proposed actions. CEQA does not specifically define what constitutes an "adverse effect" on a biological resource. Instead, lead agencies are charged with determining what specifically should be considered an impact.

1.6.2.2 California Fish and Game Code

The California Fish and Game Code regulates the taking or possession of birds, mammals, fish, amphibians, and reptiles as well as natural resources such as wetlands and waters of the state. It includes the CESA (Sections 2050–2115), Streambed Alternation Agreement regulations (Sections 1600–1616), as well as provisions for legal hunting and fishing and tribal agreements for activities involving take of native wildlife.

1.6.2.3 California Endangered Species Act

CESA prohibits the take of any species that the California Fish and Game Commission determines to be a threatened or endangered species and administered by the CDFW. Incidental take of these listed species can be approved by the CDFW. Under the act, the word *take* means to hunt, pursue, catch, capture, or kill or attempt to hunt, pursue, catch, capture, or kill. Habitat assessments for potential special-status species were conducted for the Proposed Project.

1.6.2.4 California Native Plant Protection Act

The California Native Plant Protection Act of 1977 (California Fish and Game Code Sections 1900–1913) directed the California Department of Fish and Game (now CDFW) to carry out the legislature's intent to "preserve, protect, and enhance rare and endangered plants in this state." The Native Plant Protection Act gave the California Fish and Game Commission the power to designate native plants as "endangered" or "rare" and protect endangered and rare plants from take.

1.6.2.5 Lake and Streambed Alteration Program

The Lake and Streambed Alteration Program is administered by the CDFW and found in Section 1600 et seq. of the California Fish and Game Code. The CDFW is to be notified if a project will affect lake or streambed resources. The Proposed Project has been designed to avoid streams and other waterways.

1.6.2.6 Porter-Cologne Water Quality Control Act

This act is the California equivalent of the federal Clean Water Act. It provides for statewide coordination of water quality regulations through the establishment of the California State Water Resources Control Board and nine separate RWQCBs to oversee water quality on a day-to-day basis at the regional/local level. The Proposed Project has been designed to avoid streams and other waterways.

1.6.2.7 Natural Community Conservation Planning Act of 1991

The Natural Community Conservation Planning Act of 1991 (NCCP) is designed to conserve natural communities at the ecosystem scale while accommodating compatible land use. The CDFW is the principal state agency for implementing the NCCP. NCCP plans developed in accordance with the act provide for the comprehensive management and conservation of multiple wildlife species. They also identify and provide for regional or area-wide protection and perpetuation of natural wildlife diversity while allowing compatible and appropriate development and growth. The Proposed Project is contained within the City of Chula Vista MSCP Subarea Plan, which is an NCCP program, as further described below.

1.6.3 Local Environmental Regulations

1.6.3.1 City of Chula Vista Multiple Species Conservation Plan Subarea Plan

The San Diego MSCP is a long-term subregional conservation plan under the NCCP program that will be implemented through local subarea plans. The MSCP is designed to establish a connected preserve system that protects San Diego County's special-status species and habitats. The MSCP covers 582,243 acres over 12 jurisdictions. Each jurisdiction has its own subarea plan, which is to be implemented separately from the others.

The Project Area is within the 2003 City of Chula Vista MSCP Subarea Plan area (Appendix A, Figure 4), which provides a blueprint for the conservation of covered species and their associated habitats and forms the basis for federal and state incidental take permits for 86 plant and animal species within the city. Lands that are managed under the MSCP are designated as 100 percent Conservation Areas, areas where the habitat is protected on-site from development and impacts. The City of Chula Vista and the County of San Diego manage these Conservation Areas together.

The Proposed Project is considered a "Covered Project" under the City of Chula Vista MSCP Subarea Plan. The 100 percent Conservation Areas are either already in public ownership or will be dedicated to the MSCP preserve as part of the development approval process for Covered Projects. Any portion of a Covered Project that is within the 100 percent Conservation Areas must be consistent with the conditions that allow specific land uses within the MSCP preserve, as outlined in Chapter 6.0 of the Subarea Plan. Such conditions are subject to the Narrow Endemic Species Policy (avoidance and minimization), as outlined in Section 5.2.3, and the Wetlands Protection Program, as outlined in Section 5.2.4 of the Subarea Plan.

In compliance with the City of Chula Vista MSCP Subarea Plan, as a condition of issuance of take authorization by the wildlife agencies, the City established a development standard and an implementing ordinance, the Habitat Loss and Incidental Take Ordinance (HLIT). The HLIT Ordinance is consistent with the conservation and mitigation goals of the MSCP Subregional Plan and the City Subarea Plan, which require impacts on sensitive vegetation communities to be avoided and minimized to the maximum extent practicable. The Proposed Project is within the 100 percent Conservation Areas of Covered Projects (i.e., within the MSCP preserve) and is therefore limited to the compatible uses described in Section 6.2 of the Subarea Plan, which include habitat restoration and enhancement activities. The Proposed Project is also subject to approval by the City and/or appropriate managing entity, as applicable, as well as the underlying landowner. This includes obtaining any necessary permits. All activities must be consistent with the Subarea Plan, including any conditions associated with RWQCB 401 certifications, USACE 404 permits, CDFW 1600 permits,

or other resource conservation permits. In addition, reasonable access will be provided to the wildlife agencies (CDFW and USFWS) for the purposes of monitoring species and habitat and evaluating compliance with the permit. Any take resulting from management and/or scientific activities undertaken pursuant to Section 7.0 of the Subarea Plan, including Section 7.5, City Planning Component Framework Management Plan, and the Otay Ranch RMP (Appendices D, E, and/or F), and/or pursuant to area-specific management directives prepared pursuant to the Subarea Plan will be authorized by the take authorizations.

Natural Vegetation Protection

Natural vegetation is identified as Tier I, II, or III on Table 5-3 of the City of Chula Vista MSCP Subarea Plan. Impacts on Tier I, II, and III habitats will be mitigated pursuant to HLIT mitigation standards contained in Table 5-3 of the Subarea Plan. To ensure complete assembly of the preserve, as planned by this Subarea Plan, the City will encourage all mitigation to be conducted within the preserve.

Narrow Endemic Species Protection

Impacts on covered narrow endemic species from planned and future facilities located within the 100 percent Conservation Areas of Covered Projects will be avoided to the maximum extent practicable. Where impacts are demonstrated to be unavoidable, impacts will be limited to 5 percent of the total narrow endemic species population within the Project Area. Unavoidable impacts on narrow endemics are subject to the equivalency findings, limitations, and provisions of Section 5.2.3.6, Equivalency Findings, of the Subarea Plan.

If impacts exceed 5 percent of the covered narrow endemic species population within the Project Area after comprehensive consideration of avoidance and minimization measures, the City must make a determination of biologically superior preservation, consistent with Section 5.2.3.7 of the Subarea Plan. Regardless of the percent of impact on narrow endemic species, the findings of equivalency and wildlife agency concurrence are required.

Wetlands Protection Program

As part of the CEQA review, development projects that contain wetlands will be required to demonstrate that impacts on wetlands have been avoided to the greatest extent practicable and, where impacts are nonetheless proposed, that such impacts have been minimized. For unavoidable impacts on wetlands within the Project Area, the mitigation ratio will be in accordance with the wetlands mitigation ratios identified in the Subarea Plan. The wetlands mitigation ratios provide a standard for each habitat type but may be adjusted, depending on both the functions and values of the affected wetlands and the wetlands mitigation proposed by a project. The City may also consider the wetland habitat type(s) being affected and used for mitigation in establishing whether these standards have been met.

1.6.3.2 Otay Ranch General Development Plan/Otay Subregional Plan and Otay Ranch Resource Management Plan

The Otay Ranch General Development Plan/Otay Subregional Plan (GDP/SRP) was adopted in 1993 and amended in 2018 (City of Chula Vista 2018). The GDP/SRP establishes goals, objectives, and policies to ensure the conservation of significant portions of Otay Ranch's natural environment, including the resource preserve area of Otay Ranch. Implementation of the policies is guided by the

Otay Ranch RMP, which includes more precise standards and implementation guidelines for protection of these resources.

The Proposed Project is within the Otay Ranch boundary and the Otay Valley area, on land identified as a "preserve" area, as described in the Phase 2 RMP Update (RECON 2018). Preserve lands within the OVRP and Otay Ranch boundary are subject to the land use considerations of the RMP, including preserve management. Specific land uses permitted include trails for access and habitat restoration and enhancement of disturbed areas in accordance with an adopted revegetation plan.

In a regional context, the Otay Ranch Preserve RMP provides CEQA mitigation for development of less sensitive areas within the areas proposed for development on Otay Ranch. Therefore, the Proposed Project design must demonstrate conformance with the conservation goals and preserve boundaries of the GDP, RMP, and City of Chula Vista MSCP Subarea Plan. As described above, the Project is consistent with the conservation goals and preserve boundaries of the GDP, RMP, and City of Chula Vista MSCP Subarea Plan.

1.6.3.3 Otay River Watershed Management Plan and Special Area Management Plan

Over the past decade, two key documents have been created for the Otay River watershed: the Otay River WMP (Aspen Environmental Group 2006) and the SAMP. In 2006, the County of San Diego, with partial funding from a Proposition 13 grant, prepared the WMP in collaboration with the USACE, RWQCB, CDFW, City of Chula Vista, City of Imperial Beach, and Port of San Diego. That same year, a SAMP for the Otay River watershed in San Diego County was initiated with the County of San Diego as a facet of its broader watershed management program and following a species conservation planning effort. Although no final SAMP framework was developed, USACE compiled the extensive data and analyses in a geospatial database and summary report (USACE 2016), which are available resources to inform decision-making processes (i.e., permitting and mitigation).

The WMP includes implementation strategies to ensure the protection of existing beneficial uses and natural resources, including methods to monitor, maintain, and/or enhance existing water quality levels using non-structural and structural best management practices. In addition, recommendations for appropriate aquatic resource enhancement and monitoring programs are provided in the WMP. SAMPs are intended to strike a balance between aquatic resources and reasonable economic development and uses in the watershed or region in which they are developed. Together, these two documents provide a framework program that is consistent with the local general plans (county and city), the San Diego RWQCB National Pollutant Discharge Elimination System permit, and the County of San Diego MSCP. They also represent a proactive watershed planning and permitting approach that identifies areas within the watershed that are of "low value" and suitable for development and areas of "high value" that should be protected.

The Proposed Project will primarily restore existing wetlands, waterways, and riparian habitat within the Otay River corridor. Specifically, the Proposed Project will address stressors identified in the WMP including historical mining impacts and introductions/increases in species harmful to native flora (e.g., non-native species such as *Arundo* sp. and *Tamarix* sp.). The Proposed Project aligns with the following high-priority strategies of the WMP: eradicate non-native flora and fauna and prevent re-infestation and new introductions; protect, enhance, and restore habitat linkages and wildlife movement; restore the Lower Otay River floodplain to enhance the quality of water entering San Diego Bay. It also aligns with the medium-priority strategy to improve existing and create new

recreational facilities within the watershed. Thus, the Proposed Project is consistent with the WMP's goal to protect, enhance, and restore watershed resources.

1.6.3.4 Otay Valley Regional Park Concept Plan

In 1997 the OVRP Concept Plan was released (County of San Diego 1997); it was revised in 2016 (County of San Diego et al. 2016). The OVRP Concept Plan was the result of a multi-jurisdictional planning effort in the Otay River Valley by the County of San Diego and the Cities of Chula Vista and San Diego. The Concept Plan proposed a boundary for the OVRP that includes the Project Area. The OVRP Concept Plan also included recommendations for open space/core preserve areas, recreation areas, trail corridors, staging areas, viewpoint and overlook areas, and interpretive centers. Although this Proposed Project was not designed to specifically include components of the OVRP Concept Plan, it does not preclude any of these elements. The Proposed Project, which has identified trail corridors in compliance with the OVRP Concept Plan, would implement trail improvements to a portion of the existing dirt roads and existing unofficial trails within the City Parcel, both through and adjacent to the Project Area. These improvements include installing wood split-rail fencing, trail signage, and educational kiosks, all of which serve to designate the roads and trails and protect the restoration site from existing uses. Two existing road crossings through the Project Area, running north to south, have been identified as necessary for property access by U.S. Customs and Border Protection, SDG&E, OWD, and the City of Chula Vista. These crossings also overlap with OVRP trail corridors. These road and trail crossings have been designed as part of the Proposed Project to be at grade and protected using native rock to minimize erosion and maintenance while allowing for unobstructed hydrology and sediment transport. Any other improvements to the roads and trails or other OVRP recreational facilities planned in the river valley would be evaluated under separate regulatory processes, including subsequent environmental review and resource permitting, if necessary.

The Proposed Project would be consistent with OVRP goals and policies regarding siting and developing park features and facilities as well as the requirements and guidelines of the City of Chula Vista MSCP Subarea Plan. As such, the trails component of the Proposed Project is considered a Covered Activity under the City of Chula Vista MSCP Subarea Plan. The proposed trails would encourage recreational uses as buffers between the open space/core preserve area and new private development, with development standards for roads across the Otay River to minimize impacts on habitat and wildlife movement as well as trail connectivity, all of which are consistent with the goals and policies of the OVRP. The Proposed Project would also comply with the OVRP Trail Guidelines for education, design and layout, erosion control, signage, fencing, and educational kiosks. The intent of the Proposed Project is to ensure that the OVRP Concept Plan is accommodated, including additional recreational facilities outside the Project Area but on City of Chula Vista property. The Proposed Project is not intended to restrict trail development or use as long as it is done to minimize (to the extent practicable) impacts on aquatic resources and other protected habitats.

1.6.3.5 Otay Valley Regional Park Habitat Restoration Plan and Non-Native Plant Removal Guidelines

The Habitat Restoration Plan and Non-Native Plant Removal Guidelines document lists basic requirements for any project within the OVRP boundary and additional requirements for projects greater than 5 acres (County of San Diego et al. 2006). It also provides guidelines for the installation

and maintenance of project components, the monitoring of restoration areas, and performance standards and remedial measures.

As described above, the Proposed Project is a restoration project that will ultimately improve and enhance sensitive native and naturalized habitat function and suitability for native, sensitive, and special-status species through restoration and enhancement activities. The Proposed Project is consistent with the goals of the Habitat Restoration and Non-Native Plant Removal Guidelines to (1) remove populations of non-native vegetation and to (2) manage and minimize the expansion of non-native species. The Proposed Project will comply with the six basic requirements of the Habitat Restoration Plan and Non-Native Plant Removal Guidelines, as specified in County of San Diego et al. (2006): have a designated Project Manager or Project Point-of-Contact; have a Project Biologist; have a Cultural Resource Specialist; have a Qualified Herbicide/Pesticide Applicator; complete a Verification of Jurisdictional Compliance; and complete a Verification of Resource Agency Notification. Additionally, the project will comply with guidelines for projects greater than 5 acres to the maximum extent practicable, as specified in County of San Diego et al. (2006): have a landscape architect; have a installation contractor; and have a maintenance contractor. The Proposed Project will also follow the guidelines for installation and maintenance of project components, for monitoring restoration areas, and performance standards and remedial measures to the maximum extent practicable.

1.6.3.6 City of Chula Vista Greenbelt Master Plan

The City of Chula Vista Greenbelt Master Plan provides guidance and continuity for planning open space and constructing and maintaining trails that encircle Chula Vista (City of Chula Vista 2003b). The plan's primary purpose is to provide goals and policies, trail design standards, and implementation tools that guide the creation of the greenbelt system. The greenbelt system is composed of a series of open space segments, which are connected by a multi-use trail that extends through each segment, from the channelized Sweetwater River, along golf courses and the banks of the Otay Lakes, and following the Otay River Valley to the Chula Vista Bayfront. The Proposed Project would implement minor improvements to a portion of the existing dirt road/trail identified within the OVRP East/Otay Ranch Village Greenway segments. The Proposed Project would be consistent with goals and policies to provide connected open space areas around the city of Chula Vista, enhance and protect native biological and sensitive habitats, and establish a greenbelt system that ensures public access by utilizing existing fire roads, access roads, and/or utility easements for the trail system when possible and limiting the use of multi-use trails to non-motorized uses, except for motorized wheelchairs and utility, maintenance, and emergency vehicles.

The Proposed Project would also comply with greenbelt design standards for trail signage, educational kiosks, and wood split-rail fencing. The intent of the Proposed Project is to ensure that the greenbelt trail is accommodated by identification of a realistic corridor, installation of trail signage, split-rail fencing, and educational kiosks while avoiding any sensitive resources. The existing roads and trails would be moved or modified as needed to avoid road ponds, protect the San Diego fairy shrimp, and protect the restoration area. The Proposed Project does not preclude the future implementation of new or upgraded trail facilities identified in the City of Chula Vista Greenbelt Master Plan on the property. Additional trail amenities, if needed, would be evaluated and approved through a subsequent environmental review, if necessary, and associated permitting process, if needed.

1.6.3.7 City of Chula Vista General Plan

The City has established economic development initiatives focused on infrastructure, developing a strong consumer base, and attracting a well-educated and experienced workforce. Over the past few decades, the City has acquired a large volume of commercial/industrial development lands, pursued a progressive business and employment investment policy, and completed acquisition of the 375-acre University Park and Innovation District site.

A variety of documents have been prepared to facilitate redevelopment and growth within the city. In 2005, the Chula Vista City Council approved an updated general plan that guides the city's future growth and development through 2030. This plan, last amended in 2017, is complemented by more detailed planning documents for discrete elements and regions within the city. Of particular relevance is the Otay Ranch GDP (City of Chula Vista 2018), which was approved by the City of Chula Vista and County of San Diego as part of the subregional plan in 1993 and updated through 2018. The Otay Ranch GDP planning area covers three separate land parcels, including almost 10,000 acres in the city. The Otay Ranch GDP is an integrated policy document, combining the requirements of the City of Chula Vista and the County of San Diego. It identifies the land use pattern and intensities for the Otay Ranch community (including the Villages) as well as environmental, economic, and social goals, objectives, and policies.

The Proposed Project is within Open Space Preserve land use area identified in the City of Chula Vista General Plan and consistent with the Chula Vista MSCP Subarea Plan (City of Chula Vista 2017). The Proposed Project is designated as a scenic resource and Open Space Preserve by the City of Chula Vista General Plan. The City implements measures of the environmental elements of the general plan, relevant to biological resources, by administering the Chula Vista MSCP Subarea Plan and the Chula Vista Greenbelt Master Plan.

1.6.4 Required Discretionary Approvals Summary

The City of Chula Vista is the lead agency under CEQA and responsible for permitting the Proposed Project; USACE, CDFW, and the RWQCB have some approval and/or discretionary authority over the Proposed Project. Table 5, below, indicates the discretionary approvals that would be required to implement the Proposed Project.

Table 5. Discretionary Approvals Required

Agency	Role	Permit/Approval
City of Chula Visa	Lead agency	• Mitigated negative declaration adoption o Mitigation monitoring and reporting program adoption o Prospectus and BEI approval o Finance plan approval (including retaining the appropriate qualified personnel, as described in the BEI [e.g., landscape installation/maintenance contractor, restoration ecologist]). o Habitat loss and incidental take approval • Grading permit
San Diego Gas and Electric	Responsible agency	• Grading permit and letter of authorization

Agency	Role	Permit/Approval
U.S. Army Corps of Engineers	Federal agency with permitting authority and National Environmental Policy Act lead agency	• Section 404 Permit
U.S. Fish and Wildlife Service	Federal agency with permitting authority	• Section 7 consultation to determine Proposed Project's consistency with take authorizations provided in the City of Chula Vista MSCP Subarea Plan.
California Department of Fish and Wildlife	Trustee/responsible agency	• Section 1602 Streambed Alteration Agreement • California Endangered Species Act consultation
Regional Water Quality Control Board	Responsible agency	• Section 401 Water Quality Certification • Construction General Permit/Stormwater Pollution Prevention Plan

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Chapter 2
Project Effects and Project Mitigation Measures

2.1 Impact Definitions

Biological resource impacts can be considered direct, indirect, or cumulative. They will also be either permanent or temporary in nature.

Direct: Occur when biological resources are altered, disturbed, or destroyed during project implementation. Examples include clearing vegetation, encroaching into wetland buffers, diverting surface water flows, and the loss of individual species and/or their habitats.

Indirect: Occur when project-related activities affect biological resources in a manner that is not direct. Examples include elevated noise and dust levels, increased human activity, decreased water quality, and the introduction of invasive wildlife (domestic cats and dogs) and plants.

Cumulative: Occur when biological resources are either directly or indirectly affected to a minor extent as a result of a specific project, but the project-related impacts are part of a larger pattern of similar minor impacts. The overall result of these multiple minor impacts from separate projects is considered a cumulative impact on biological resources.

Temporary: Temporary impacts can be direct or indirect and are considered reversible. Examples include the removal of vegetation from areas that will be revegetated, elevated noise levels, and increased levels of dust.

Permanent: Permanent impacts can be direct or indirect and are not considered reversible. Examples include the removal of vegetation from areas that will have permanent structures placed on them or landscaping an area with non-native plant species or without natural communities (e.g., hardscape for trails).

2.2 Project Effects on Biological Resources

Impacts on each sensitive biological resource are summarized below. The total Proposed Project footprint includes impacts associated with trail creation, road reclamation, grading for restoration, enhancement activities, equipment staging, soil removal, and soil stockpiling. Most impacts associated with the Proposed Project are considered temporary, and all resources and habitats will be restored on-site to functions and values equal to or greater than the existing conditions. Construction of new trails is considered a permanent impact due to conversion of a small amount of natural vegetation communities or land cover types to maintained trails. At least two at-grade stream crossings will be reinforced with armoring, which is also considered a permanent impact. Fencing and signage will be installed to protect sensitive areas from human trespass, but no permanent buildings will be constructed.

2.2.1 Sensitive Vegetation Communities

Table 6 provides a summary of impacts from Proposed Project earthwork/grading (temporary impacts) and trail construction (permanent impacts). A small amount of permanent impacts on sensitive vegetation communities would result from conversion to maintained trails. Permanent impacts would occur on sensitive native and naturalized habitats; approximately 2.96 acres of Tier I, II, and III habitats and 0.19 acre of riparian and wetland habitats would be permanently affected by the project (Table 6).

Most of the impact from the restoration and enhancement activities is considered temporary because those areas will be replanted with native vegetation, and much of the temporary impact area will involve only enhancement (e.g., weeding and invasive species treatment) and not involve grading. Temporary impacts could occur on up to 166.21 acres of Tier I, II, or III habitats, including 67.06 acres that would be subject to grading during restoration activities; the remainder of temporary impacts would be associated with disturbance during enhancement activities such as weeding and invasive species treatment. Temporary impacts could occur on up to 40.97 acres of riparian and wetland habitats, of which 35.39 acres would be subject to grading during channel and floodplain restoration activities; the remainder of temporary impacts would be associated with disturbance during enhancement activities. Overall, there would be a net gain from native vegetation communities replacing non-native communities as a result of restoration activities.

Table 6. Project Impacts on Sensitive Natural Communities and Land Covers

Modified Holland Code	Vegetation Communities and Land Cover Types	MSCP[a]	Permanent Impacts (acres)[b]	Total Temporary Impacts [subset of temporary impacts due to grading][c] (acres)[b]	Total Impacts (acres)[b]
Riparian and Wetlands					
52400	Coastal and Freshwater Marsh	W	<0.01	3.29 [3.29]	3.29
61330	Southern Cottonwood – Willow Riparian Forest	W	0.01	1.48 [1.43]	1.49
	Southern Cottonwood – Willow Riparian Forest (Disturbed)	W	0.01	0.18 [0.18]	0.19
63310	Mule Fat Scrub	W	<0.01	1.95 [1.93]	1.96
63320	Southern Willow Scrub	W	<0.01	3.04 [2.75]	3.05
65000	Non-native Riparian (Tamarisk)	W	0.16	31.02 [25.81]	31.18
Riparian and Wetlands Subtotals			**0.19**	**40.97 [35.39]**	**41.16**
Sensitive Natural Upland Communities					
32510	Diegan Coastal Sage Scrub	Tier II	1.07	62.75 [14.60]	63.82
	Diegan Coastal Sage Scrub (disturbed)	Tier II	0.92	22.59 [5.97]	23.51
32530	Diegan Coastal Sage Scrub (Baccharis dominated)	Tier II	0.03	8.66 [7.27]	8.69
37120	Southern Mixed Chaparral	Tier III	<0.01	<0.01 [<0.01]	<0.01
42000	Valley Needlegrass Grassland	Tier I	0.05	1.98 [1.55]	2.03
42130	Saltgrass Grassland	Tier I	<0.01	0.34 [0.33]	0.34

Modified Holland Code	Vegetation Communities and Land Cover Types	MSCP[a]	Permanent Impacts (acres)[b]	Total Temporary Impacts [subset of temporary impacts due to grading][c] (acres)[b]	Total Impacts (acres)[b]
42200	Non-native Grassland	Tier III	0.17	8.62 [3.32]	8.79
42210	Non-native Grassland (Broadleaf dominated)	Tier III	0.66	59.33 [33.50]	59.99
83200	Southern Interior Cypress Forest	Tier II	0.06	1.94 [0.52]	2.00
Sensitive Upland Community Subtotals			**2.96**	**166.21 [67.06]**	**169.17**
Riparian and Wetlands and Sensitive Upland Communities Subtotals			**3.15**	**207.19 [102.46]**	**210.34**
Disturbed/Naturalized Areas					
11300	Disturbed Habitat (Bare Ground)	Tier IV	5.25	10.15 [3.08]	15.40
	Prebank (Active Restoration Area)	Tier IV	0.38	0.06 [0.02]	0.44
79000	Non-native Woodland	Tier IV	0.11	4.78 [01.32]	4.89
79100	Eucalyptus Woodland	Tier IV	0.08	2.22 [0.69]	2.30
Disturbed/Naturalized Areas Subtotals			**5.82**	**17.20 [5.10]**	**23.02**
Grand Totals			**8.97**	**224.39 [107.56]**	**233.36**

[a] City of Chula Vista's MSCP Subarea Plan Habitat Categories:
W – Wetlands the community considered sensitive under the Wetlands Protection Program
Tier I – Rare Uplands
Tier II – Uncommon Uplands
Tier III – Common Uplands
[b] Rounded acreages do not exactly sum to the total areas because of the rounding of raw values in GIS.
[c] The portion of temporary impacts that would be subjected to grading are shown in brackets. Grading would be temporary, followed by restoration and revegetation with native plants.

2.2.2 Special-Status Plants

The Project Area contains suitable habitat for 65 special-status plant species, 45 of which have moderate to high potential to occur or are known to be present within the Project Area (identified in Appendix D and described in Section 1.5.6). Table 7 identifies the number of special-status plants known to occur within the total Project Area, within the permanent impact area, and within the portion of the temporary impact area where grading would occur (e.g., "heavy" activity level).

Table 7. Special-Status Plants Present within Project Area and Subject to Permanent Impacts and Temporary Impacts

Species	Status	Number of Individuals Present			
		Total in Project Area	Permanent Impact Area	Temporary – "Heavy" Impact Area (grading)	Temporary "Moderate and Low" Impact Areas (no grading)
Ashy spike-moss (*Selaginella cinerascens*)	CRPR 4.1; SD County List D	4,620	0	2	707
Decumbent goldenbush (*Isocoma menziesii* var. *decumbens*)	CRPR 1B.2; SD County List A	104	10	--	47
Graceful tarplant (*Holocarpha virgata* ssp. *elongata*)	CRPR 4.2; SD County List D	1,762	2	2	645
Munz's sage (*Salvia munzii*)	CRPR 2B.2; SD County List B	368	26	26	315
Otay manzanita (*Arctostaphylos otayensis*)	CRPR 1B.2; SD County List A; City of Chula Vista MSCP	2	--	2	--
Otay mountain ceanothus (*Ceanothus otayensis*)	CRPR 1B.2	2	--	--	2
Palmer's grapplinghook (*Harpagonella palmeri*)	CRPR 4.2; SD County List D	5,705	5	3,008	1,330
San Diego barrel cactus (*Ferocactus viridescens*)	CRPR 2B.1; SD County List B; City of Chula Vista MSCP	207	1	99	110
San Diego County needle grass (*Stipa diegoensis*)	CRPR 4.2; SD County List D	39	6	--	30
San Diego County viguiera (*Bahiopsis laciniata*)	CRPR 4.2; SD County List D	1,186	1	23	189
San Diego marsh-elder (*Iva hayesiana*)	CRPR 2B.2; SD County List B	2,638	155	1,562	216
Singlewhorl burrobrush (*Ambrosia monogyra*)	CRPR 2B.2	162	8	48	82
Small-flowered microseris (*Microseris douglasi*i ssp. *platycarpha*)	CRPR 4.2; SD County List D	165	--	--	5

Species	Status	Number of Individuals Present			
		Total in Project Area	Permanent Impact Area	Temporary – "Heavy" Impact Area (grading)	Temporary "Moderate and Low" Impact Areas (no grading)
South coast saltscale (*Atriplex coulteri*)	CRPR 1B.2; SD County List A	1	--	--	1
Southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*)	CRPR 4.2; SD County List D	5,422	23	5,015	212
Spreading navarrettia (*Navarretia fossalis*)	FT; CRPR 1B.1; SD County List A; City of Chula Vista MSCP	1,001	--	--	50
Tecate cypress (*Hesperocyparis forbesii*)	CRPR 1B.1; SD County List A; City of Chula Vista MSCP	1,113	29	303	707
Variegated dudleya (*Dudleya variegata*)	CRPR 1B.2; SD County List A; City of Chula Vista MSCP NE	2,530	--	--	50

Status:
Federal
FE - Listed as endangered under the federal Endangered Species Act.
FT - Listed as threatened under the federal Endangered Species Act.
FC – Candidate for listing under the federal Endangered Species Act.
State
CE - Listed as endangered under the California Endangered Species Act.
CT – Listed as threatened under California Endangered Species Act.
CR – Listed as rare under California Endangered Species Act.
California Rare Plant Rank (CRPR) – Formerly known as CNPS List
1A. Presumed extirpated in California and either rare or extinct elsewhere
1B. Rare, threatened, or endangered in California and elsewhere
2A. Presumed extirpated in California, more common elsewhere
2B. Rare, threatened, or endangered in California, more common elsewhere
3. Plants for which we more information is needed – Review List
4. Plants of limited distribution – Watch List
Threat Ranks
.1 - Seriously endangered in California
.2 – Fairly endangered in California
.3 – Not very endangered in California
San Diego County List
A – Rare, threatened, or endangered in California and elsewhere
B – Rare, threatened, or endangered in California but more common elsewhere
C – Maybe quite rare but more information is needed to determine their status
D – Limited distribution and uncommon but not presently rare or endangered

City of Chula Vista MSCP – MSCP Subarea Plan species with known occurrences or suitable habitat within the Chula Vista Subarea
NE = Narrow Endemic

2.2.2.1 Permanent Impacts

No state or federally listed or narrow endemic plant species occur within the permanent impact areas or within the limits of grading, and no permanent impacts on listed species or narrow endemic plant species are anticipated to occur. Eleven County Group A, B, or D plant species occur within the limits of permanent impacts associated with trail improvement activities (Table 7; Appendix A, Figures 9a and 9b): decumbent goldenbush, graceful tarplant, Munz's sage, Palmer's grapplinghook, San Diego barrel cactus, San Diego marsh-elder, San Diego County needle grass, San Diego County Viguiera, singlewhorl burrobrush, southwestern spiny rush, and Tecate cypress. A permanent loss of these special-status plant species is anticipated to occur from trail creation activities. New trail construction could result in permanent impacts on approximately 3.15 acres of potential special-status plant species habitat due to construction of the trail components and armoring of stream crossings. Indirect impacts from unauthorized access and trespass may also occur and could result in direct mortality of special-status plants. This is particularly true in and around the proposed trail system.

2.2.2.2 Temporary Impacts

No state or federally listed or narrow endemic plant species occur within the limits of grading associated with the habitat enhancement activities, and no temporary impacts on listed species or narrow endemic plant species are anticipated to occur. Twelve County Group A, B, or D plant species occur within the limits of temporary impacts in areas that will be subject to grading before restoration is completed (Table 7; Appendix A, Figures 9a and 9b): ashy spike-moss, graceful tarplant, Munz's sage, Otay manzanita, Otay Mountain ceanothus, Palmer's grapplinghook, San Diego barrel cactus, San Diego marsh-elder, San Diego County viguiera, singlewhorl burrobrush, southwestern spiny rush, and Tecate cypress. Impacts due to the loss of individuals, temporary loss of habitat, or reduction of habitat quality may occur from grading activities, increased dust, and trampling.

Sixteen County Group A, B, C, or D plant species, including one narrow endemic plant species, occur within the limits of temporary impacts where no grading would occur and where low- or moderate-intensity restoration activities will occur (Table 7; Appendix A, Figures 9a and 9b). No direct mortality of variegated dudleya, a narrow endemic species within the low- to moderate-intensity restoration areas, or spreading navarretia, a federally listed as threatened species, is anticipated from these habitat restoration activities. Fencing or staking would be provided around these species, where necessary, and every effort would be made to completely avoid trampling or affecting these species.

Indirect impacts may occur in all areas of temporary impact and could include effects such as increased dust deposition from nearby grading, minor physical disturbance due to work activities, or trampling. These types of indirect impacts on special-status plants could occur on the approximately 214.18 acres of the Project Area that consist of natural vegetation and land cover that would be subjected to temporary impacts.

More detailed discussion of impacts on special-status and sensitive plant species is provided below in Section 3.1, *Special-Status Species*, in the context of evaluation of impacts for determination of significance under relevant laws and guidelines.

2.2.3 Special-Status Wildlife

As discussed in Section 1.5.6, the Project Area contains suitable habitat for 53 special-status wildlife species (Appendix A, Figure 11; Appendix F), including 45 species that have moderate to high potential to occur or have been observed within the Project Area. These species include the federally listed San Diego fairy shrimp, Quino checkerspot butterfly, coastal California gnatcatcher, and least Bell's vireo. One species that is state fully protected has high potential to occur within the Project Area: white-tailed kite (nesting).

Permanent conversion of a small amount of natural habitat to trails or armored stream crossings (i.e., to disturbed bare ground) is considered a permanent impact. As shown in Table 6, above, 8.97 acres of vegetation communities/land cover types will be permanently affected, primarily due to trail construction and stream crossing armoring, which includes 5.25 acres of disturbed bare ground that will be converted to trail. Disturbed bare ground areas do not provide suitable habitat for special-status wildlife species, nor do areas with non-native woodland and eucalyptus; therefore, only approximately 3.15 acres of potential habitat for sensitive and/or special-status species is considered as being permanently affected by the Proposed Project.

Grading, movement of heavy equipment, and other construction-related risks could also directly affect individuals of special-status species. Most of the wildlife species with moderate to high potential to occur within the Project Area, or that are present, are mobile or only have limited mobility seasonally (e.g., nesting birds).

San Diego fairy shrimp were observed within the Project Area, specifically, in pools within road ruts and other isolated individual ephemeral basins. This is the only species that does not have the ability to move out of the way of Proposed Project activities. Because of the current trail design, there are ephemeral basin and road rut pools within the grading areas as well as within areas subject to other restoration and enhancement activities (without grading). Specifically, less than 0.01 acre of occupied habitat and 0.02 acre of potentially occupied habitat[3] are within the footprint of permanent impacts and could be permanently affected by grading for maintained trail creation. There is currently 0.03 acre of potentially occupied habitat within the temporary "heavy" impact footprint where grading would occur. Approximately 0.13 acre of occupied habitats and 0.07 acre of potentially occupied habitats are within the temporary "moderate" and "low" impact footprint where restoration and enhancement of ephemeral basin habitat or adjacent habitats could occur.

As shown in Table 6, above, approximately 207.19 acres of natural vegetation communities/land cover types that could provide habitat for special-status species would be temporarily affected by the Proposed Project. Grading activities would result in the temporary loss of vegetation, which could result in indirect impacts on special-status wildlife species. Within the total area of temporary impacts, approximately 102.46 acres of natural habitats would be affected by temporary "heavy" restoration activities that include grading (refer to Section 1.3.3 for activity level definitions). If conducted during the nesting season, grading and associated removal of vegetation could result in the loss of suitable habitat, loss of individuals, and loss of active nests. Other temporary indirect impacts on special-status wildlife species, such as disturbance due to increased human activity,

[3] Potentially occupied features are defined as having *Branchinecta* sp. observed that were not identified to the species level.

temporary removal of vegetation, and increased noise and dust, resulting in reduced habitat quality or suitability, could occur during work activities.

As described in Sections 1.1. and 1.3, above, expansion of the mitigation bank and ecological restoration activities associated with the Proposed Project would result in overall improvement of native habitats due to removal and management of non-native vegetation; re-establishment of river, tributary, and floodplain hydrologic function; vernal pool establishment and enhancement; rehabilitation of upland habitat; and revegetation with appropriate native species. Therefore, overall, there is expected to be a net positive effect from the Proposed Project related to improved habitat quality and suitability for all special-status wildlife species with potential to occur within the Project Area.

More detailed discussion of impacts on special-status and sensitive wildlife species is provided below in Section 3.1, *Special-Status Species*, in the context of evaluation of impacts for determination of significance under relevant laws and guidelines.

2.2.4 Critical Habitat

Project effects on designated critical habitat are discussed below and shown in Table 8 as well as Appendix A, Figures 16a and 16b.

Table 8. Designated Critical Habitat Impacts within the Project Area

Designated Critical Habitat	Permanent Impact (acres)	Temporary Impact [area subject to grading] (acres)	Total Impact (acres)
Otay Tarplant Critical Habitat	5.70	134.91 [49.08]	140.61

2.2.4.1 Otay Tarplant

Activities associated with grading, trail grading and reclamation, and upland enhancement within the Project Area will affect approximately 140.61 acres of designated Otay tarplant critical habitat (Table 7 and Appendix A, Figure 15). Approximately 5.70 acres of Otay tarplant critical habitat will be permanently affected from the creation of new trails. However, these permanent impacts will occur primarily within existing access roads that do not provide the physical and biological features (PBFs) necessary to support Otay tarplant. Only approximately 1.94 acre of critical habitat that has PBFs for Otay tarplant (Diegan coastal sage scrub and non-native grasslands) would be permanently affected by construction of the trails.

Revegetation, rehabilitation, and enhancement activities will occur in areas of temporary impact, totaling approximately 134.91 acres of Otay tarplant critical habitat. However, only 49.08 acres of the total temporary impact area will be affected by "heavy" temporary work activities involving grading prior to restoration (refer to Section 1.3.3 for activity level definitions). Within these heavy grading areas, only approximately 38.12 acres contain PBFs for Otay tarplant because they are within coastal sage scrub and non-native grassland vegetation communities. No Otay tarplant individuals are anticipated to be affected by either the permanent impacts or heavy grading in temporary impact areas. Furthermore, upland enhancement and trail reclamation will very likely result in improved habitat conditions for Otay tarplant in the temporary impact area, and an overall positive effect from improved habitat quality is anticipated within Otay tarplant critical habitat.

2.2.4.2 Spreading Navarretia, Quino Checkerspot Butterfly, and San Diego Fairy Shrimp

There is no designated critical habitat for spreading navarretia, Quino checkerspot butterfly and San Diego fairy shrimp within the Project Area; however, there is critical habitat for these species adjacent to the Project Area (Appendix A, Figures 16a and 16b). Designated Quino checkerspot butterfly critical habitat is located to the east and south, outside the Project Area. Designated San Diego fairy shrimp critical habitat occurs to the south, outside the Project Area. Designated spreading navarretia critical habitat occurs to the southeast, outside the Project Area. No activities associated with any phase of the trails or grading will affect designated critical habitat for spreading navarretia, Quino checkerspot butterfly, or San Diego fairy shrimp.

2.2.5 Wetlands and Jurisdictional Waters

The Proposed Project design would result in mostly temporary impacts on wetlands and jurisdictional areas within the Project Area, although a small amount of permanent impacts will also occur with trail construction and armoring of two road/trail crossings. Tables 9 and 10 detail the linear feet/acreage and the jurisdiction for temporary and permanent impacts associated with the Proposed Project on waters of the U.S. and waters of the state, respectively. These impacts are approximate based on the most recent engineering data for the project and may change. All impacts on jurisdictional wetlands and waters will be finalized during the aquatic resource permitting phase.

These permanent and temporary impacts would be mitigated on-site as part of the Proposed Project, including rehabilitation and re-establishment of the river channel and its floodplain. In addition to restoring existing wetlands, waterways, and riparian habitat, the Proposed Project would expand and re-establish both federal and state wetlands, including more than 30 acres of waters of the U.S./55 acres of waters of the state and more than 5,500 feet of restored channel length. In addition, hydrology would be restored and invasive vegetation removed, further improving conditions for native species composition, diversity, and abundance throughout the site.

Table 9. Proposed Project Wetlands and Jurisdictional Waters of the US: USACE and RWQCB

Project Component	Jurisdictional Feature Type	Permanent Impacts (acres)[a]	Temporary Impacts (All) (acres)[a]	Temporary Impacts (Heavy Only)
Mitigation Bank Expansion Area	Unvegetated Channel (Non-Wetland Water)	--	1.06	0.38
	Wetland	--	37.74	33.23
	Wetland Vernal Pools	--	0.01	<0.01 (34 square feet)
	Isolated Aquatic Resources (RWQCB jurisdiction only)	--	0.15	0.01
Post Restoration Trails	Unvegetated Channel (Non-Wetland Water)	0.14	--	--
	Wetland	<0.01 (90 square feet)	--	--

Project Component	Jurisdictional Feature Type	Permanent Impacts (acres)[a]	Temporary Impacts (All) (acres)[a]	Temporary Impacts (Heavy Only)
Trail Reclamation / Closure	Unvegetated Channel (Non-Wetland Water)	--	0.22	0.18
	Wetland	--	0.09	0.04
Total[a]		**0.14**	**39.27**	**33.84**
[a] Total acreage may not add up to the total shown; total is reflective of rounding GIS raw data in each category.				

Table 10. Proposed Project Wetlands and Jurisdictional Waters of the State Impacts: CDFW

Project Component	Jurisdictional Feature Type	Permanent Impacts (acres)[a]	Temporary Impacts (acres)[a]	Temporary Impacts (Heavy Only) (acres)[a]
Mitigation Bank Expansion Area	Riparian	--	42.41	36.60
	Streambed	--	18.04	13.48
Post Restoration Trails	Riparian	0.02	--	--
	Streambed	0.20	--	--
Trail Reclamation / Closure	Riparian	--	0.15	0.09
	Streambed	--	0.63	0.48
Total		**0.23**	**61.23**	**50.65**
[a] Total acreage may not add up to the total shown; total is reflective of rounding GIS raw data in each category.				

2.2.6 Core Wildlife Area/Wildlife Corridors

As described in Section 1.5.9, the Project Area is entirely within hexagonal mapping units of the Terrestrial Connectivity – ACE [ds2734] layer that are classified as Connectivity Rank 3 – Connections with Implementation Flexibility. Approximately the western third of the Project Area overlaps with the Natural Landscape Block – CEHC [ds621] layer. This overlap indicates the area was considered by the CEHC Project as essential for ecological connectivity. The remainder of the Project Area is adjacent to the layer and consists of similar undeveloped natural areas; thus, it too could be considered as potentially essential for ecological connectivity, taking into account the broad scale of the CEHC Natural Landscape Block analysis.

Impacts associated with grading and trails creation will be minimal with regard to wildlife use and movement within the Project Area. The Proposed Project is not expected to significantly change the overall use for wildlife species in the Project Area. Short-term construction activity is expected to take place during daylight hours, with minimal impacts on local wildlife movement during construction. Expansion of the mitigation bank and ecological restoration activities associated with the Proposed Project will result in overall improvement of native habitats due to removal and management of non-native vegetation; re-establishment of river, tributary, and floodplain hydrologic function; vernal pool establishment and enhancement; rehabilitation of upland habitat; and revegetation with appropriate native species. Therefore, Proposed Project will not negatively

affect a wildlife corridor or core wildlife area and will most likely have a net benefit on wildlife corridors and core wildlife areas.

2.3 Project Mitigation Measures

The Proposed Project is a habitat restoration project that will ultimately restore and enhance habitat for special-status plant and wildlife species. The following mitigation measures will be incorporated into the project design to mitigate negative potential impacts described above:

BIO-1: Obtain Approval of All Necessary Resource Agency Permits.

Prior to the issuance of a grading permit, the applicant shall obtain all necessary resource agency permits and provide copies to the City. All conditions identified within each of the resource agency permits shall be implemented in accordance with the permit. The applicable resource agency permits for the Proposed Project include a Clean Water Act Section 404 permit from USACE, Clean Water Act Section 401 water quality certification from the RWQCB, a Clean Water Act Section 402 National Pollutant Discharge Elimination System Construction General Permit (Order No. 2012-0006-DWQ) from the RWQCB, and a Section 1602 Streambed Alteration Agreement from the CDFW. In addition to the agency permits, a conservation easement or other approved site protection mechanism and endowment would be established per USACE and U.S. Environmental Protection Agency Compensatory Mitigation Rule.

The applicant shall also entered into consultation with the USFWS under Section 7 of FESA to seek concurrence that the Proposed Project is consistent with the City of Chula Vista's MSCP Subarea Plan and that incidental take authorization is provided for the Proposed Project under the City of Chula Vista's MSCP Subarea Plan.

BIO-2. Biological Awareness Training

Prior to initiation of grading activities, biological resource awareness training will be provided by a qualified biologist to all construction personnel. The training will include information regarding sensitive species with the potential to occur at the site as well as minimization and avoidance measures to reduce potential indirect effects on the habitat. A log of personnel who have completed the training and a copy of the training report/outline (including special-status species photos, targeted invasive plant species, and descriptions of the measures discussed in the training session) will be maintained at the construction office.

BIO-3. Temporary Fencing

Prior to the initiation of grading activities, the limits of grading will be clearly marked by well-installed temporary fencing that is prominently colored. The fence will be installed by the construction contractor and will remain in place during all grading activities.

BIO-4. Biological Monitor

A qualified biological monitor will be on-site during vegetation clearing activities to ensure that grading activities occur within designated areas. The monitor will also ensure that any special-status species that becomes entrapped within the grading limits is moved away from construction equipment. The biological monitor will also periodically inspect the limits of

disturbance fence to ensure that it is in good condition. Any parts of the fence that need attention will be brought to the contractor's attention to be fixed immediately. In the event that a special-status species is located within the grading limits, the biological monitor will temporarily stop construction. Removal of special-status species should be done by a biologist who is qualified to handle that specific species. If needed, the CDFW will be informally consulted if there is a question on the best manner to safely address a situation with a special-status wildlife species.

BIO-5. Best Management Practices

Best management practices will be implemented during all grading activities to reduce potential indirect effects on special-status species and habitat. Best management practices will include the following:

- All trash will be properly stored and removed from the site daily to prevent attracting wildlife to the construction area.
- Vehicles and equipment will be stored only on pre-designated staging areas in disturbed or developed areas. Fueling should be conducted in a manner that prevents spillage of fuel into the Otay River or into riparian or wetland habitats.
- All maintenance of vehicles and equipment will be conducted in a manner so that oils and other hazardous materials will not discharge into the Otay River or into riparian habitat areas (including fresh water and freshwater marsh).
- Dust control measures will be implemented to minimize the settling of dust on vegetation.
- Appropriate firefighting equipment (e.g., extinguishers, shovels, water tankers) will be available on the site during all phases of Proposed Project construction, and appropriate fire prevention measures will be taken to help minimize the chance of human-caused wildfires.
- All construction will be performed between dawn and dusk to the degree feasible to minimize potential indirect effects (e.g., increased depredation) on the species beyond the limits of disturbance.

BIO-6. Nesting Bird Avoidance

To avoid any direct impacts on nesting coastal California gnatcatchers (*Polioptila californica californica*), least Bell's vireo (*Vireo bellii pusillus*), burrowing owl, raptors, or other birds protected under the MBTA, removal of any vegetation that may support active nests on within the Project Area will occur outside of the breeding season when feasible. The breeding season is defined as February 15–September 15. If work must be conducted during the breeding season, including any trail grading, nesting bird surveys will be conducted within the work area and a 500-foot buffer to clear the area or locate active nests for avoidance. Adequate avoidance buffers will be established around any active nests in coordination with the wildlife agencies.

BIO-7: Preconstruction Burrowing Owl Survey

Prior to ground disturbance, a biologist will conduct preconstruction take-avoidance surveys for burrowing owls within 150 meters of Project Areas in suitable habitat no more than 14 days prior to ground-disturbing activities according to methods outlined in the CDFW's 2012 (or most recent) *Staff Report on Burrowing Owl Mitigation* (CDFG 2012). Surveys will provide data

on whether burrowing owls occupy the site and, if so, whether the owls are actively nesting. If pre-construction take-avoidance surveys detect the presence of any active burrowing owl burrows during breeding season, the burrows will be avoided, and construction activities within 150 meters will be enclosed by construction fencing. Buffer sizes are outlined in the CDFW's *Staff Report on Burrowing Owl Mitigation*. Active burrowing owl burrows will be monitored regularly to ensure no adverse effects on the burrowing owls is occurring. Avoidance buffers will remain in place until the nest fledges or fails. If, in consultation with the CDFW, it is determined that project activities require removal of occupied burrows, or burrows potentially occupied by burrowing owls, eviction and burrow closure may be required to ensure against "take" of owl or nests. If eviction is required, it will occur only after consulting with CDFW and CDFW approval. Monitoring will be conducted to ensure take is avoided during eviction procedures. Owls may not be evicted or captured without prior authorization from the CDFW.

BIO-8. Vernal Pool and Vernal Pool–Dependent Species Avoidance

The trails alignment described in this report is planned to be further refined in order to avoid all permanent impacts on federally listed branchiopods. To avoid potential fairy shrimp habitat areas and potential impacts on San Diego fairy shrimp (*Branchinecta sandiegonensis*) and western spadefoot (*Spea hammondii*), ephemeral basins, which were primarily seasonally ponding features such as road ruts and road ponds, were identified by an aquatic resource and fairy shrimp specialist. Prior to any ground-disturbing work on-site, mapped ephemeral basins will be re-evaluated using the finalized spatial extents of trails and all work areas. Vernal pools resources will be differentiated from all other ephemeral basins (e.g., unvegetated road ruts and road ponds) in a refined jurisdictional delineation, and the potential for impacts will be re-evaluated using the finalized design and alignments.

In creation of the final extents of trails and work areas, to avoid direct impacts on San Diego fairy shrimp to the maximum extent practicable, road and trail improvements and creation will avoid existing ephemeral basins that are known to support or could support San Diego fairy shrimp by moving the alignment prior to construction, as needed. Construction access routes will also be rerouted within the proposed grading footprint to avoid these ponding features to the maximum extent practicable.

During construction and restoration activities, occupied and potentially occupied habitat for San Diego fairy shrimp will be avoided during the wet season to the maximum extent practicable. Prior to ground disturbance, occupied and potentially occupied fairy shrimp habitats will be temporarily fenced and avoided during construction activities to the maximum extent practicable. No staging of any equipment will occur within vernal pools, road ruts, or other ephemeral basins occupied by or potentially occupied by San Diego fairy shrimp at any time. A biological monitor will be present for construction activities occurring adjacent to vernal pools and occupied or potentially occupied habitats and to ensure that vehicles are fueled and maintained at least 100 feet away from such pools. In addition, where appropriate, the adjacent upland areas surrounding road ruts, vernal pools, and other ephemeral basins will be restored with native species. Wood split-rail fencing, boulders, and signage will be used to inform the public of the sensitivity of the area and deter them from trespassing into the ponded areas and into the river restoration areas. Although the majority of grading will occur within the Otay River floodplain, some grading and staging of equipment will occur in upland areas outside of the floodplain. Grading activities will include vernal pool establishment and enhancement activities, as described in Section 1.3.3, above. In accordance with Mitigation Measure BIO-1,

should any pools occupied by or potentially occupied by San Diego fairy shrimp be unable to be avoided in the final project design, the applicant shall entered into consultation with the USFWS under Section 7 of FESA to seek concurrence that the Proposed Project is consistent with the City of Chula Vista's MSCP Subarea Plan and that incidental take authorization is provided for the Proposed Project under the City of Chula Vista's MSCP Subarea Plan. Mitigation of impacts on fairy shrimp will be addressed in the Section 7 consultation process, either with on-site pool enhancement/habitat creation or additional avoidance through Proposed Project re-design prior to construction. Mitigation of impacts on jurisdictional vernal pool habitats will also be mitigated for, as needed, to obtain Clean Water Act Section 401 and 404 permits from the RWQCB and USACE.

BIO-9: Special-Status Plant, Quino Host Plant, and Succulent Plant Salvage Plan

During grading and enhancement activities, special-status plants, Quino checkerspot host plants (e.g., dot-seed plantain), and succulent plants (i.e., target plant species) will be avoided where feasible. Prior to ground-disturbing work on-site, special-status plant surveys will be conducted to locate target plant species within defined work limits and determine areas to be avoided. Salvage and relocation of target plant species will occur to the extent feasible in accordance with a Plant Salvage Plan. The Plant Salvage Plan will be prepared for the areas where temporary grading and habitat enhancement activities will occur, with an emphasis on collecting and relocating to adjacent areas the target plant species. The plan will be prepared and implemented prior to grading and enhancement activities. The Plant Salvage Plan will include a list of target plant species list, seed collection methods, succulent plant salvage techniques, transplanting methods, and applicable monitoring activities for transplanted individuals, as appropriate. All state- and federally listed plants, as well as all narrow endemic plants, will be avoided; construction fencing shall be installed for all listed and narrow endemic plant species that occur within 50 feet of any grading activities. Biological monitoring will ensure that the avoidance fencing remains for the duration of grading activities, as well as any other restoration activities that have the potential to result in direct mortality of any listed or narrow endemic plant species observed during pre-construction special-status plant surveys.

BIO-10: Quino Checkerspot Butterfly Seasonal Avoidance

Because of the presence Quino checkerspot butterfly within the Project Area and known populations nearby, no removal of any host plant vegetation or any native vegetation within 50 feet of host plants will occur within the Quino flight season, defined by the USFWS 2014 protocol as the third week of February to the second Saturday in May. Biological monitors will stake locations of host plants for avoidance and be present during vegetation removal activities within potentially suitable habitat for Quino located outside of the mapped host plant locations and 50-foot buffer to ensure that construction activities do not result in harm to individual Quino checkerspot butterflies that may be foraging or nectaring in the area.

BIO-11. Public Access, Trails, and Recreation

To deter trespassing into the restoration site, wood split-rail fencing will be installed to designate road/trail corridors along existing roads and existing unofficial trails that border the restoration site. Other barriers (boulders, brush piles, logs, and plantings) will be placed at strategic locations when protection of sensitive resources is required where fencing is not present. For safety purposes, reflective material will be placed on the wood fencing at specific

locations to aid U.S. Customs and Border Protection and other night-time users from unintentionally breaking through fencing into sensitive habitat. In addition, signage and informational kiosks will be installed for educational purposes and to inform the public of the sensitivity of the restoration site and adjacent habitats. All installation activities (signage, fencing, kiosks) and reflective materials will occur outside of the breeding season, defined as February 15–September 15, or be in accordance with Mitigation Measure BIO-6 and require preconstruction surveys.

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Chapter 3
Special-Status and Sensitive Species

3.1 Guidelines for the Determination of Significance

A project would have a potentially significant effect on biological resources 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.

Specifically, any of the following conditions would be considered significant:

3A. The project would affect one or more individuals of a special-status species listed as federally or state endangered or threatened.

3B. The project would affect the regional long-term survival of a County Group A or B plant species or a County Group I animal species or a species listed as a state Species of Special Concern or a narrow endemic plant species under the City of Chula Vista MSCP Subarea Plan.

3C. The project would affect the regional long-term survival of a County Group C or D plant species or a County Group II animal species or a covered animal species under the City of Chula Vista MSCP Subarea Plan.

3D. The project would affect arroyo toad aestivation, foraging, or breeding habitat.

3E. The project would affect golden eagle habitat.

3F. The project would result in a loss of functional foraging habitat for raptors.

3G. The project would affect the viability of a core wildlife area, defined as a large block of habitat (typically 500 acres or more, not limited to project boundaries, though smaller areas with particularly valuable resources may also be considered a core wildlife area) that supports a viable population of a sensitive wildlife species or an area that supports multiple wildlife species.

3H. The project would cause indirect impacts, particularly at the edge of open space or other natural habitat areas.

3I. The project would affect occupied burrowing owl habitat.

3J. The project would affect occupied cactus wren habitat or formerly occupied coastal cactus wren habitat that has been burned by wildfire.

3K. The project would affect occupied Hermes copper butterfly habitat.

3L. The project would affect the nesting success of sensitive animals through grading, clearing, fire fuel modification, and/or noise-generating activities such as construction.

Each of these significance criteria is discussed in Section 3.2, *Analysis of Project Effects*, with respect to the Proposed Project.

3.2 Analysis of Project Effects

Each of the significance criteria listed above is discussed herein with respect to the Proposed Project's anticipated effects. The criteria for which impacts are not anticipated are discussed briefly at the end of the section.

3A. The project would affect one or more individuals of a special-status species listed as federally or state endangered or threatened.

The project has the potential to affect one or more individuals of a species listed as federally or state endangered or threatened. As explained below, impacts on federally and state-listed plant and animal species are considered less than significant with mitigation.

3.2.1.1 Listed Special-Status Plants

Six federally or state-listed as threatened or endangered plant species are present or have moderate to high potential to occur within the Project Area: Otay mesa mint (high potential to occur), Otay tarplant (high potential to occur), San Diego ambrosia (moderate potential to occur), San Diego button-celery (high potential to occur), spreading navarretia (present) and California Orcutt grass (moderate potential to occur).

Spreading navarretia, federally listed as threatened, occurs in a localized area within the southeastern portion of the Project Area, within the upland restoration area (Appendix A, Figure 9b). However, the identification of these occurrences does not appear to have been confirmed by RECON and was not confirmed by ICF in subsequent, and exhaustive, surveys for the species in areas where RECON mapped it, as well as throughout the Project Area. The locations where this species occurs will be confirmed, flagged, and avoided during project activities (weeding and planting) (see MM-BIO-9). No spreading navarretia individuals occur within areas proposed for permanent impacts or grading. As a result, no direct impacts on this species would occur.

Otay tarplant, federally listed as threatened and state listed as endangered, occurs directly adjacent to the Proposed Project boundary but does not occur within the Project Area. This occurrence will not be directly affected as a result of the Proposed Project (Appendix A, Figure 9b). Otay tarplant occurs adjacent to an access route that will be part of the trail system work, and flagging will be placed around the known occurrence to ensure avoidance during all work activities, especially grading.

Indirect impacts on these two listed species, such as increased trampling from restoration personnel, would be avoided through implementation of Mitigation Measures BIO-9, *Special-Status and Succulent Plant Salvage Plan*, and BIO-11, *Public Access, Trails, and Recreation*. With implementation of these mitigation measures, impacts on spreading navarretia and Otay tarplant would be less than significant.

3.2.1.2 Listed Special-Status Wildlife

Five species listed as federally or state endangered or threatened have been observed within the Project Area: San Diego fairy shrimp, Quino checkerspot butterfly, western yellow-billed cuckoo (nesting),[4] least Bell's vireo (nesting), and coastal California gnatcatcher (Appendix A, Figure 10b).

San Diego Fairy Shrimp

San Diego fairy shrimp, federally listed as endangered, were observed within the Project Area during surveys conducted in 2019, including in many ponded areas within road ruts inside the Trails Work Areas and also potentially in some ephemeral basins outside the roads (Appendix A, Figure 10b and Figure 12). Approximately 0.01 acre of occupied San Diego fairy shrimp habitat and 0.04 acre of potentially occupied San Diego fairy shrimp habitat[5] occur within the limits of grading in areas of permanent and temporary impacts. Permanent conversion of a small amount of occupied or potentially occupied San Diego fairy shrimp habitat to trails or armored stream crossings is considered a permanent impact because it would remove occupied suitable habitat and could result in direct mortality of individuals if grading and fill of these features occurs during the wet season. Within temporary impact areas subject to grading activities, construction equipment grading or filling ponded areas containing San Diego fairy shrimp also could result in direct mortality (e.g., crushing) of individuals. A direct loss of individual San Diego fairy shrimp would be significant, absent mitigation.

Approximately 0.13 acre of occupied San Diego fairy shrimp habitat and 0.07 acre of potentially occupied San Diego fairy shrimp habitat are within the temporary "moderate" and "low" impact footprint where restoration and enhancement of ephemeral basin habitat or adjacent habitats could occur. Because no grading or fill of these features is anticipated within these "moderate" or "low" impact areas, no direct mortality of San Diego fairy shrimp would occur. As a result, activities in the "moderate" or "low" temporary impact areas would not result in a significant impact on this species.

Implementation of Mitigation Measures BIO-2 through BIO-5 and BIO-8 will ensure avoidance of known locations of occupied fairy shrimp habitats and potentially occupied habitats. Furthermore, the San Diego fairy shrimp is a Covered Species in the City of Chula Vista MSCP Subarea Plan, and the Proposed Project is a Covered Project under that plan. In accordance with Table 4-2 of the Subarea Plan, the City of Chula Vista's coverage for incidental take authorization for this species is reliant on implementation of the City and/or the County of San Diego MSCP Subarea Plans. Once the trail alignments have been finalized, to avoid impacts on San Diego fairy shrimp habitat**,** the applicant will enter into consultation with the USFWS to document how the Proposed Project is consistent with the Chula Vista MSCP Subarea Plan, as described in BIO-1, *Obtain Approval of All Necessary Resource Agency Permits*. As a result of the consultation process, the USFWS will provide a Biological Opinion regarding the potential effects on this species from the Proposed Project. The applicant will adhere to any conservation measures provided by the USFWS in its Biological Opinion, as required

[4] Western yellow-billed cuckoo is considered protected while nesting. The individual observed on-site was a transient foraging migrant, and the site does not have suitable habitat to support nesting cuckoo.

[5] Potentially occupied pools are defined as any pool with *Branchinecta* sp. observed but not identified to the species level.

by law. Implementation of these mitigation measures and anticipated conservation measures from the Biological Opinion will reduce impacts on San Diego fairy shrimp to less than significant.

Quino Checkerspot Butterfly

Quino checkerspot butterfly, federally listed as endangered, was detected within the Project Area during surveys conducted in 2019 for an unrelated Otay sewer project (Appendix A, Figure 10b and Figure 11); its host plant (dot-seed plantain) is present within the Project Area (Appendix A, Figure 9a). Some of the mapped suitable habitat and host plants for Quino checkerspot butterfly are within the grading limits and could be directly affected by grading activities. This includes approximately 11,000 dot-seed plantain plants within permanent impact and temporary impact grading limits. Grading during the Quino checkerspot butterfly flight season, when individuals require nectar and host plants, would also result in direct impacts on the availability of suitable habitat for this species. These impacts would be significant absent mitigation.

Implementation of Mitigation Measure BIO-9, *Special-Status and Succulent Plant Salvage Plan,* will reduce and avoid direct impacts on host plants to the extent possible and further facilitate the restoration enhancement goals for this species envisioned in the City of Chula Vista MSCP Subarea Plan (see below). Furthermore, as part of Mitigation Measure BIO-10, no construction or grading of host plants will occur during the Quino checkerspot butterfly flight season, roughly mid-February to mid-May. Construction activities that do occur within the flight season and that are located within suitable habitat for Quino checkerspot butterfly habitat will require biological monitoring to ensure that no inadvertent impacts on Quino checkerspot butterfly occur during construction. The suitable habitat for Quino checkerspot butterfly within the Project Area will ultimately increase in quality as a result of restoration and enhancement activities because those areas will be managed for non-native plant species, and host plants will be further seeded. Furthermore, the Proposed Project is consistent with the City of Chula Vista MSCP goals and objectives for the preservation of Quino checkerspot butterfly within the subarea. Specifically, Quino checkerspot butterfly habitat restoration and enhancement consistent with the Proposed Project activities is specifically identified in Section 4.4.3.4, *Habitat Restoration/Enhancement*, of the City of Chula Vista MSCP. Long-term preserve management of the Mitigation Bank Expansion Area will also be consistent with Section 4.4.3.3*, Preserve Management*. Quino checkerspot butterfly is a Covered Species in the City of Chula Vista MSCP Subarea Plan, and the Proposed Project is a Covered Project under that plan. In accordance with Table 4-1 of the Subarea Plan, the level of conservation provided for this species in the City of Chula Vista Subarea Plan is considered to be enough to maintain the City's incidental take authorization, regardless of the status of the City and/or County of San Diego MSCP Subarea Plans. As described in BIO-1, *Obtain Approval of All Necessary Resource Agency Permits*, the applicant will enter into initiate consultation with the USFWS regarding effects on Quino checkerspot butterfly resulting from removal of some suitable and/or occupied habitat and from habitat enhancement activities*.* Therefore, impacts on Quino checkerspot butterfly would be less than significant with mitigation.

Western Yellow-Billed Cuckoo

Western yellow-billed cuckoo is considered protected only when nesting, and the individual observed within the Project Area (Figure 10b and Figure 14) was foraging. There is insufficient habitat unit size to support nesting cuckoo within the Project Area and vicinity; therefore, there is no potential for cuckoo to nest within the Project Area, and no impacts are anticipated on this species while nesting as a result of the Proposed Project.

Least Bell's Vireo

Least Bell's vireo, federally and state listed as endangered when nesting, has been observed within the Project Area boundaries, including while nesting (Appendix A, Figure 10b and Figure 14). The Proposed Project includes permanent impacts on approximately 0.19 acre of riparian and riparian scrub habitats (which includes 0.16 acre of tamarisk-dominated area) and the temporary removal of 35.39 acres of riparian and riparian scrub habitats due to grading (which includes 25.81 acres of tamarisk-dominated area). Although the Proposed Project will result in the removal of individual trees, the Proposed Project has been designed to mostly avoid grading in native riparian habitats. The Proposed Project will avoid removal of most significant stands of native riparian habitat in the Project Area. However, much of the existing tamarisk (31.18 acres), which could also be used by vireos for nesting, will be removed and replanted with native riparian woodland species. The permanent loss of 0.19 acre of suitable native nesting habitat, temporary loss of approximately 9.59 acres of suitable native nesting habitat, and temporary loss of 25.81 acres of non-native tamarisk nesting habitat would be considered a significant impact on least Bell's vireo absent mitigation. Least Bells' vireo is a Covered Species in the City of Chula Vista MSCP Subarea Plan, and the Proposed Project is a Covered Project under that plan. In accordance with Table 4-1 of the Subarea Plan, the level of conservation provided for this species in the City of Chula Vista Subarea Plan is considered to be enough to maintain the City's incidental take authorization, regardless of the status of the City and/or County of San Diego MSCP Subarea Plans.

In accordance with BIO-6, *Nesting Bird Avoidance*, grading and ground disturbance activities will be conducted outside of the nesting season for least Bell's vireo to avoid direct impacts. Although the Proposed Project may temporarily reduce least Bell's vireo numbers and reproduction in the Project Area, over time, there will be no net loss of habitat and no long-term reduction in the number of least Bell's vireo supported on the Otay River. A temporary, limited reduction in numbers and reproduction in the Project Area, even over several years, is not likely to affect the long-term viability of the Otay River population or appreciably reduce the numbers, reproduction, or distribution of the species range-wide. The Proposed Project will ultimately benefit least Bell's vireo by enhancing suitable nesting and forging habitat in approximately 38 acres of riparian and riparian scrub habitat that could be used by vireo in the Otay River channel and floodplain. In addition, restoration and enhancement activities in adjacent upland areas will also benefit the species by improving adjacent foraging habitat quality.

In accordance with BIO-1, *Obtain Approval of All Necessary Resource Agency Permits*, the applicant will initiate Section 7 consultation with USFWS regarding effects on least Bell's vireo resulting from the Proposed Project and comply will all conservation measures required as a result of this consultation process. Implementation of these mitigation measures and anticipated conservation measures from the Biological Opinion will reduce impacts on least Bell's vireo to less than significant.

Coastal California Gnatcatcher

Coastal California gnatcatcher, federally listed as threatened, has been observed throughout scrub habitat of the Project Area, including while nesting (Appendix A, Figure 10b and Figure 13). Coastal California gnatcatcher is a Covered Species in the City of Chula Vista MSCP Subarea Plan, and the Proposed Project is a Covered Project under that plan. In accordance with Table 4-1 of the Subarea Plan, the level of conservation provided for this species in the City of Chula Vista Subarea Plan is

considered to be enough to maintain the City's incidental take authorization, regardless of the status of the City and/or County of San Diego MSCP Subarea Plans.

The Proposed Project includes a permanent impact on 2.02 acres of coastal sage scrub, grading for restoration within approximately 27.84 acres of coastal sage scrub, and enhancement without grading in up to 66.15 acres of coastal sage scrub habitats. The coastal sage scrub habitat within the Project Area is suitable for coastal California gnatcatchers and considered occupied by the species. Grading activities in coastal sage scrub could significantly affect coastal California gnatcatchers by temporarily removing suitable habitat and directly harming birds or nesting activities. These impacts would be considered significant absent mitigation.

In accordance with BIO-6, *Nesting Bird Avoidance*, grading and ground disturbance activities in suitable habitat will be conducted outside the nesting season for coastal California gnatcatcher to avoid direct impacts. The graded coastal sage scrub habitat is within the Otay River floodplain and will be replaced with restored floodplain and coastal sage scrub habitat, improving overall habitat suitability for gnatcatcher. The Proposed Project will ultimately improve approximately 93.99 acres of habitat for coastal California gnatcatchers by restoring and enhancing coastal sage scrub habitat.

In accordance with BIO-1, *Obtain Approval of All Necessary Resource Agency Permits*, the applicant will initiate Section 7 consultation with USFWS regarding effects on coastal California gnatcatchers resulting from the Proposed Project and comply will all conservation measures required as a result of this consultation process. Implementation of these mitigation measures and anticipated conservation measures from the Biological Opinion will reduce impacts on coastal California gnatcatchers to less than significant.

3B. The project would affect the regional long-term survival of a County Group A or B plant species or a County Group I animal species or a species listed as a state Species of Special Concern or a narrow endemic plant species under the City of Chula Vista MSCP Subarea Plan.

The project has the potential to affect the regional long-term survival of a species listed as a state Species of Special Concern, a CRPR 1B or 2B plant species, a County Group A or B plant species, or a County Group I animal species or a narrow endemic species under the City of Chula Vista MSCP Subarea Plan. Significance criteria 3B and 3C are discussed together in Section 3.2.1.3 below because of similarities in how the significance criteria are applied to each species group. As explained below, impacts on non-listed special-status plant and wildlife species are considered less than significant with mitigation.

3C. The project would affect the regional long-term survival of a County Group C or D plant species or a County Group II animal species or a covered animal species under the City of Chula Vista MSCP Subarea Plan.

The project has the potential to affect the regional long-term survival of a County Group C or D plant species or a County Group II animal species or a covered species under the City of Chula Vista MSCP Subarea Plan. Significance criteria 3B and 3C are discussed together in Section 3.2.1.3 below because of similarities in how the significance criteria are applied to each species group. As explained below, impacts on non-listed special-status plant and wildlife species are considered less than significant with mitigation.

3.2.1.3 Non-Listed Special-Status Plant Species

Seven CRPR 1B or 2B plant species, County Group A or B plant species, or narrow endemic plant species under the City of Chula Vista MSCP Subarea Plan are present within the permanent impact area or temporary impact areas where heavy grading will occur. The following numbers of each species would be expected to be removed or directly affected within areas of permanent impact and temporary "heavy" impacts:

- Decumbent goldenbush (CRPR 1B.2; SD County List A): 10 of 104 individuals within the Project Area (10 percent)
- Munz's sage (CRPR 2B.2; SD County List B): 52 of 368 individuals within the Project Area (14 percent)
- Otay manzanita (CRPR 1B.2; SD County List A; City of Chula Vista MSCP): 2 of 2 individuals (100 percent)
- San Diego barrel cactus (CRPR 2B.1; SD County List B; City of Chula Vista MSCP): 100 of 207 individuals within the Project Area (48 percent)
- San Diego marsh-elder (CRPR 2B.2; SD County List B): 1,717 of 2,638 individuals within the Project Area (65 percent)
- Singlewhorl burrobrush (CRPR 2B.2): 56 of 162 individuals within the Project Area (35 percent)
- Tecate cypress (CRPR 1B.1; SD County List A; City of Chula Vista MSCP): 332 of 1,113 individuals within the Project Area (30 percent)

Impacts on these species will be further minimized through implementation of MM-BIO-9, which requires special-status plant surveys prior to construction, as well as avoidance and minimization measures (salvage and transplantation, etc.) to the extent feasible during restoration activities. In addition, many of these special-status plant species are adequately conserved in other locations in southern San Diego County. As a result, these impacts are considered less than significant.

Six CRPR 3 or 4 plant species, County Group C or D special-status plant species, or covered plant species under the City of Chula Vista MSCP Subarea Plan are present within the Project Area. The following numbers of each species would be expected to be removed or directly affected within areas of permanent impact and temporary "heavy" impacts:

- Ashy spike-moss (CRPR 4.1; SD County List D): two of 4,620 individuals within the Project Area (< 1 percent)
- Graceful tarplant (CRPR 4.2; SD County List D): four of 1,762 individuals within the Project Area (<1 percent)
- Palmer's grapplinghook (CRPR 4.2; SD County List D): 3,118 of 5,705 individuals within the Project Area (55 percent)
- San Diego County needle grass (CRPR 4.2; SD County List D): six of 39 individuals within the Project Area (15 percent)
- San Diego County viguiera (CRPR 4.2; SD County List D): 24 of 161 individuals within the Project Area (15 percent)
- Southwestern spiny rush (CRPR 4.2; SD County List D): 5,038 of 5,422 individuals within the Project Area (93 percent)

These permanent impacts would not result in a regional long-term decline in any of these species, especially considering the conservation objectives and preserve assembly occurring within the larger Chula Vista and Otay area as a result of the San Diego MSCP. In addition, many of these special-status plant species are adequately conserved in other locations in southern San Diego County. As a result, these impacts are considered less than significant.

Plants that occur only within restoration areas subject to "moderate" and "low" restoration activity levels but are not within areas subject to new trail creation or grading would not experience significant mortality, if any, during restoration activities. As a result, impacts on these species would not result in a regional long-term decline of these species, and these impacts would be less than significant.

Impacts from trail creation and restoration activities, including grading, will be avoided further through implementation of Mitigation Measure BIO-9, *Special-Status and Succulent Plant Salvage Plan*, which includes rare plant salvage and avoidance measures (e.g., exclusionary flagging and fencing and salvage and relocation). Implementation of BIO-11, *Public Access, Trails, and Recreation*, will ensure persistence of viable populations of these species within the Project Area by limiting trespassing into the restoration areas and special-status plant populations. In addition, the Proposed Project's footprint and trail alignment will be further refined in the design finalization and permitting process, which is anticipated to further reduce impacts on special-status species through avoidance. For example, further avoidance of the Tecate cypress within the current grading footprint may be avoided entirely in the final design of the grading footprint. The Proposed Project is a restoration project that will ultimately improve and enhance habitat and populations of these species within the Project Area. Therefore, impacts on these special-status plant species would be less than significant.

3.2.1.4 Non-Listed Special-Status Wildlife Species

As shown in Table 6, above, approximately 3.15 acres of potential habitat for special-status wildlife species is considered permanently affected by the Proposed Project. Approximately 207.19 acres of special-status wildlife habitat would be temporarily affected by the Proposed Project. Direct loss of individuals and their habitat could occur in the areas of permanent impacts. Direct loss of special-status wildlife species would be a significant impact absent mitigation.

Grading and restoration activities will result in the temporary loss of vegetation, which could result in direct and indirect impacts on special-status wildlife species. Within the total area of temporary impacts, approximately 102.46 acres of special-status wildlife habitat would be affected by "heavy" restoration activities that include grading (refer to Section 1.3.3 for activity level definitions), resulting in temporary removal of potentially suitable habitat for sensitive species prior to revegetation and restoration completion. Within the area of temporary impacts, temporary indirect impacts due to construction-related disturbance (e.g., increased human activity, noise, dust, etc.) may also occur on special-status wildlife habitat. If this disturbance results in direct mortality of individual special-status wildlife, these impacts would be significant absent mitigation.

Direct impacts as a result of grading and vegetation removal activities will be minimized or avoided to the maximum extent practicable through implementation of mitigation measures. Specifically, grading and ground disturbance activities will be conducted outside of the nesting season, when feasible, to avoid direct impacts on nesting birds (Mitigation Measure BIO-6, *Nesting Bird Avoidance*). Pre-construction burrowing owl surveys will be completed to avoid impacts on

burrowing owl (Mitigation Measure BIO-7, *Pre-construction Burrowing Owl Survey*). Therefore, no special-status bird nests will be directly affected.

Impacts on host plants of Thorne's hairstreak, Tecate cypress, will be avoided or minimized through implementation of Mitigation Measure BIO-9, *Special-Status and Succulent Plant Salvage Plan*. Mitigation Measure BIO-4 requires a qualified biological monitor to be on-site during vegetation clearing activities to ensure that grading activities occur within designated areas and to be on-site during construction activities to ensure that any special-status species that becomes entrapped within the grading limits is moved away from construction equipment.

Indirect impacts on special-status wildlife will be minimized or avoided through implementation of Mitigation Measures BIO-2, BIO-3, BIO-5, and BIO-11. The Proposed Project is a restoration project that will ultimately improve and enhance function of native habitats that are suitable for special-status wildlife species. The Proposed Project is a Covered Project under the City of Chula Vista MSCP, and many of these special-status wildlife species are Covered Species that will directly benefit in the long term as a result of the Proposed Project. Therefore, impacts on special-status wildlife species under the City of Chula Vista MSCP Subarea Plan would be less than significant with mitigation.

White-Tailed Kite

White-tailed kite, a California fully protected species when nesting, has been observed foraging within the Project Area. Suitable nesting habitat within the Project Area exists where trees greater than 3 meters tall occur. The Proposed Project will include grading in approximately 4.14 acres of woodland and forest habitats (eucalyptus woodland, riparian forest, cypress forest, and non-native woodland habitats) and enhancement activities in 6.46 acres of woodland and forest habitats, which could result in temporary impacts due to disturbances. Grading activities in woodland and forest habitats could temporarily remove suitable nesting habitat for white-tailed kite, although removal of most substantial stands of native woodland/forest trees would be avoided. The temporary removal of 4.14 acres of suitable nesting habitat could be considered a significant impact; however, the Proposed Project will avoid tall trees within this area. Direct impacts on nesting birds could occur from disturbance during grading activities. These impacts would be considered significant absent mitigation.

Grading and ground disturbance activities will be conducted outside of the nesting season for white-tailed kite, when feasible, and pre-construction nesting bird surveys and buffers will be implemented, as needed, to avoid direct impacts on the species. The Proposed Project will ultimately improve approximately 10.60 acres of forest and woodland habitats through restoration and enhancement activities, improving overall nesting habitat suitability for white-tailed kite. Implementation of Mitigation Measures BIO-2 through BIO-5 and BIO-6 will ensure avoidance and minimization of impacts on white-tailed kite. Therefore, impacts on white-tailed kite are considered less than significant with mitigation.

3D. The project would affect arroyo toad aestivation, foraging, or breeding habitat.

Arroyo toad has no potential to occur within the Project Area because no suitable habitat exists; therefore, no impacts on arroyo toad or their habitat would occur.

3E. The project would affect golden eagle habitat.

The Proposed Project will not affect any suitable golden eagle nesting habitat. No golden eagle nests are on-site or within 4,000 feet of the Project Area. No suitable nesting habitat occurs within the Project Area, and golden eagles have no potential to nest within the Project Area; therefore, no impacts would occur on golden eagle nesting habitat.

3F. The project would result in a loss of functional foraging habitat for raptors.

The Proposed Project has the potential to affect raptor foraging habitat. As described above, a total of up to 233.36 acres of land will be affected temporarily and permanently by Proposed Project activities. The Proposed Project will have a small amount of permanent impacts on raptor foraging habitat due to conversion of 3.72 acres of natural vegetation communities and land cover types to maintained trails (5.25 acres of disturbed bare ground will also be converted to trails, but that land cover is not considered to provide suitable foraging habitat). Temporary short-term impacts may occur on potential raptor foraging habitat due to grading and vegetation removal activities. A total of 214.18 acres of natural vegetation communities, eucalyptus woodland and non-native woodland would be subjected to temporary impacts within the Project Area, all of which could provide foraging habitat for raptors. Of the total temporarily affected area, grading may occur in up to 104.48 acres of natural vegetation and land cover types (excluding disturbed bare ground that is not considered to provide habitat for sensitive species), resulting in temporary removal of potentially suitable raptor foraging habitat prior to revegetation and restoration completion. Disturbance to nesting birds such as during grading activities could result in direct impacts. Absent mitigation, these impacts are significant.

Implementation of Mitigation Measures BIO-2, BIO-4, BIO-5, and BIO-11 will minimize or avoid impacts on raptor foraging habitat. With implementation of Mitigation Measure BIO-6, grading and ground disturbance activities will be conducted outside of the nesting season, when feasible, and pre-construction nesting bird surveys and buffers will be implemented, as needed, to avoid impacts on the nesting raptors. Furthermore, the Proposed Project is a restoration project that will not result in the loss of functional foraging habitat for raptors, and the Proposed Project will provide a net improvement in habitat quality for native species, which is expected to benefit raptors with improved foraging habitat. Therefore, impacts on raptor foraging habitat would be less than significant with mitigation.

3G. The project would affect the viability of a core wildlife area, defined as a large block of habitat (typically 500 acres or more, not limited to project boundaries, though smaller areas with particularly valuable resources may also be considered a core wildlife area) that supports a viable population of a sensitive wildlife species or an area that supports multiple wildlife species.

The Proposed Project is within a core habitat area under the MSCP and, as a result, has the potential to temporarily affect a core wildlife area but will not result in the loss of a core wildlife area. Temporary disturbances from Proposed Project activities include increased human activity, noise, and dust, etc., as well as temporary removal of natural habitats during restoration activities; however, these impacts are less than significant.

Implementation of Mitigation Measures BIO-2, *Biological Awareness Training*; BIO-3, *Temporary Fencing*; BIO-4, *Biological Monitor*; and BIO-5, *Best Management Practices*, will minimize impacts on core wildlife areas. The Proposed Project is a restoration project that will provide a net

improvement and enhancement of habitat for wildlife species and the functions and values of the core habitat area, consistent with the goals and objectives of the City of Chula Vista MSCP Subarea Plan. Therefore, impacts on core wildlife areas would be less than significant.

3H. The project would cause indirect impacts, particularly at the edge of open space or other natural habitat areas.

The Proposed Project has the potential to cause direct and indirect impacts on the edges of open space and on natural areas, although most impacts would be temporary. Although the Proposed Project is a restoration project that will improve and enhance the quality of the habitat, both temporary direct and indirect impacts will occur during grading and vegetation removal activities. As described above, a total of up to 233.36 acres of land will be affected temporarily and permanently by Proposed Project activities. Temporary grading followed by restoration would occur in up to 102.46 acres of natural vegetation, resulting in temporary removal of potentially suitable habitat for special-status species prior to revegetation and restoration completion. Temporary impacts due to disturbance (e.g., increased human activity, noise, dust, etc.) may also occur in natural habitats where enhancement activities will occur (e.g. weeding and invasive species treatment) and that provide potentially suitable habitat for sensitive species. Of the 8.97 acres of permanent impacts within the Project Area, only approximately 3.15 acres consists of natural vegetation; direct impacts will occur on these areas due to conversion of existing vegetation/land cover types to maintained trails and due to trail widening. Permanent conversion of this area to maintained trails would not substantially alter the existing open space or natural area habitats in the Project Area or vicinity. Therefore, these impacts are less than significant.

During project activities, the following mitigation measures will be implemented to minimize impacts on open space edges and natural areas: All personnel will go through comprehensive environmental training (BIO-2, *Biological Awareness Training*), fencing will be installed during construction to focus work areas and illustrate avoidance areas (BIO-3, *Temporary Fencing*), best management practices will be implemented throughout the work area to minimize impacts on adjacent resources (BIO-5, *Best Management Practices*), and signage and wood split-rail fencing will be installed to limit trespassing and protect sensitive biological resources (BIO-11, *Public Access, Trails, and Recreation*). Additionally, other trails within the Project Area will be reclaimed to natural habitats. The Proposed Project is a restoration project that will provide a net improvement and enhancement of natural areas. Therefore, impacts on open space edges and natural areas would be less than significant.

3I. The project would affect occupied burrowing owl habitat.

The Proposed Project will not affect known occupied burrowing owl habitat but has the potential to affect potentially suitable burrowing owl habitat during grading activities. Burrowing owl have moderate potential to occur within the Project Area due to the potential presence of marginally suitable habitat in some portions of the Project Area that could contain suitable burrows. Absent mitigation, this impact is significant.

With implementation of Mitigation Measure BIO-6, *Nesting Bird Avoidance*, grading and vegetation removal will be conducted outside of the nesting season, when feasible, and pre-construction nesting bird surveys and buffers will be implemented as needed; therefore, impacts on nesting birds, including burrowing owl, will be avoided. With implementation of Mitigation Measure BIO-7, *Pre-construction Burrowing Owl Survey,* burrowing owl surveys will be conducted in any areas that will

be affected by grading and ground-disturbing activities. If any active burrows are discovered, they will be avoided to minimize and avoid impacts on burrowing owls. Therefore, impacts on occupied burrowing owl habitat would be less than significant with mitigation.

3J. The project would affect occupied cactus wren habitat or formerly occupied coastal cactus wren habitat that has been burned by wildfire.

The Proposed Project has the potential to affect occupied coastal cactus wren habitat. Coastal cactus wrens are known to forage within upland portions of the Project Area. Marginally suitable nesting habitat occurs within the Project Area where cholla and prickly pear cactuses occur within Diegan coastal sage scrub habitats, and suitable nesting habitat occurs just to the west and to the south of the Project Area. Within the overall temporary impact areas, there are approximately 63.82 acres of Diegan coastal sage scrub habitat potentially suitable for coastal cactus wren. Thus, the Proposed Project has the potential to cause indirect impacts on nesting animals (e.g., due to increased human activity, noise, and dust, etc.). Direct impacts on nesting coastal cactus wren could also occur within the temporary impact area, specifically where grading may occur on 14.60 acres of Diegan coastal sage scrub habitat, prior to subsequent restoration activities. Trail creation will also include permanent removal of up to 1.07 acres of Diegan coastal sage scrub habitat that may provide suitable habitat for coastal cactus wren. Absent mitigation, these impacts are significant.

The Proposed Project includes the restoration and enhancement of maritime succulent scrub, which includes thickets of cholla and prickly pear. Cholla and prickly pear will be planted as part of the restoration and enhancement activities. This restoration and enhancement will ultimately improve foraging and nesting habitat for coastal cactus wrens. Mitigation Measure BIO-6, *Nesting Bird Avoidance,* will be implemented to avoid the impacts on nests of coastal cactus wren. All grading activities and vegetation removal will be conducted outside of the nesting season, when feasible. Should these activities occur during the nesting season, pre-construction nesting bird surveys will be conducted and nest avoidance buffers will be established, as described in BIO-6. In addition, many acres of suitable habitat for coastal cactus wren will remain in proximity to the Project Area during completion of restoration and enhancement activities. The Proposed Project is a restoration project that will ultimately improve nesting habitat for cactus wren. Implementation of Mitigation Measures BIO-2 through BIO-5 will minimize or avoid indirect impacts on cactus wren during project activities. Therefore, impacts on the nesting success of cactus wren would be less than significant with mitigation.

3K. The project would affect occupied Hermes copper butterfly habitat.

The project will not affect occupied Hermes copper butterfly habitat. As described in Appendix E, only a small amount of marginally suitable habitat for Hermes copper butterfly occurs within the Project Area in chaparral and scrub habitats, where spiny redberry (*Rhamnus crocea*) and California buckwheat are both present. However, the nearest extant populations were observed in 2004, approximately 6 miles north of the project area, on Mother Miguel Mountain (CDFW 2019a). Additionally, the species' known extant populations as of 2019 occur significantly north and east of the Project Area in the vicinity of McGinty Mountain, Sycuan Peak and Roberts Ranch (Marschalek and Deutschman 2019). Therefore, the species has a low potential to occur within the Project Area. Impacts to Hermes copper butterfly occupied habitat are not anticipated.

3L. The project would affect the nesting success of sensitive animals through grading, clearing, fire fuel modification, and/or noise-generating activities such as construction.

The project has the potential to affect the nesting success of sensitive animals through grading, vegetation clearing, and/or noise-generating actions that could occur during restoration and enhancement activities. As described above, grading activities will remove vegetation that could provide suitable nesting habitat for sensitive nesting bird species and other birds protected under the MBTA, as well as sensitive and special-status species. Absent mitigation, these impacts would be significant.

Mitigation measure BIO-6, *Nesting Bird Avoidance,* will be implemented to avoid the impacts on nests of raptors, sensitive avian species, and other species protected under the MBTA. Grading activities and vegetation removal will be conducted outside of the nesting season, when practicable. When such activities must occur within the nesting season, pre-construction nesting surveys will be conducted. Any existing nests will be left in place and adequate avoidance buffers will be established. Additionally, many acres of trees and vegetation will remain in proximity to the project area and will continue to provide suitable nesting habitat for avian species during completion of restoration and enhancement activities. The project is a restoration project that will ultimately improve nesting habitat for birds. As described above, the project has the potential to cause indirect impacts to nesting animals, such as due to increased human activity, noise, and dust, etc. Implementation of mitigation measures BIO-2 through BIO-5 will further minimize or avoid impacts to nesting species. Therefore, impacts on the nesting success of sensitive animals through grading, vegetation clearing, and/or noise-generating activities are less than significant with mitigation.

3.3 Cumulative Impact Analysis

The Proposed Project is limited to the grading, revegetation, and restoration/enhancement of the Project Area. The Proposed Project would result primarily in temporary impacts on sensitive species' use of the area; very limited permanent impacts would occur from a small amount of natural habitat conversion to maintained trails. The Proposed Project vicinity is surrounded by extant undeveloped land whose existing resources would not significantly change during the time that the Proposed Project is active. In addition, the mitigation bank restoration project adjacent and upstream of the Proposed Project will also be improving the function and quantity of natural habitats for special-status species in the vicinity. The Proposed Project will comply with all regulatory requirements as appropriate, per BIO-1, *Obtain Approval of All Necessary Resource Agency Permits.* Temporal loss of habitat for listed species, in particular, may be addressed during Section 7 consultation and the extent to which the upstream river restoration project has begun to provide for habitat functions and values during the timeframe for the restoration enhancement activities envisioned in the Proposed Project. Implementation of mitigation measures BIO-2 through BIO-5 will further minimize impacts on special-status species. Overall, the Proposed Project and mitigation measures would result in a site with permanent net gains in sensitive-species' habitat; therefore, on-site impacts would not be cumulatively significant.

3.4 Conclusions

The Proposed Project will include primarily temporary direct and indirect impacts on suitable habitats for special-status species as well as a small amount of permanent direct impacts. Ultimately, as a restoration and enhancement project, the Proposed Project will result in increased habitat quality and suitability for special-status plant and wildlife species as well as increased populations of special-status plant species; therefore, impacts of the Proposed Project on any special-status plant or wildlife species are considered less than significant with mitigation measures incorporated.

Chapter 4

Riparian Habitat or Sensitive Natural Communities

4.1 Guidelines for the Determination of Significance

A project would have a potentially significant effect on biological resources if the project would have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS.

Specifically, any of the following conditions would be considered significant:

4A. Project-related construction, grading, clearing, or other activities would temporarily or permanently remove sensitive native or naturalized habitat on or off the Project Area.

4B. Any of the following would occur to or within jurisdictional wetlands and/or riparian habitats, as defined by USACE, CDFW, City of Chula Vista Wetlands Protection Program, and the County of San Diego: removal of vegetation; grading; obstruction or diversion of water flow; adverse change in velocity, siltation, volume of flow, or runoff rate; placement of fill; placement of structures; construction of a road crossing; placement of culverts or other underground piping; any disturbance of the substratum; and/or any activity that may cause an adverse change in native species composition, diversity, and abundance.

4C. The project would draw down the groundwater table to the detriment of groundwater-dependent habitat, typically a drop of 3 feet or more from historical low groundwater levels.

4D. The project would cause indirect impacts, resulting in levels that would very likely harm sensitive habitats over the long term.

4E. The project does not include a wetland buffer adequate to protect the functions and values of existing wetlands.

Each of these significance criteria is discussed in Section 4.2, *Analysis of Project Effects*, with respect to the Proposed Project.

4.2 Analysis of Project Effects

Each of the significance criteria listed above is discussed herein with respect to the Proposed Project's anticipated effects. The criteria for which impacts are not anticipated are discussed briefly at the end of the section.

4A. Project-related construction, grading, clearing, or other activities would temporarily or permanently remove sensitive native or naturalized habitat on or off the Project Area.

Project-related construction, grading, clearing, or other activities will temporarily and permanently remove sensitive native or naturalized habitat within the Project Area. As shown in Table 6 and described in Section 2.2.1, permanent impacts would occur on sensitive native and naturalized

habitats; approximately 3.15 acres of Tier I, II, and III habitats and 0.19 acre of riparian and wetland habitats would be permanently affected by the Proposed Project. Temporary impacts could occur on up to 166.21 acres of Tier I, II, or III habitats (including 67.06 acres that would be subject to grading during restoration activities; the remainder of temporary impacts would be associated with disturbance during enhancement activities such as weeding and invasive species treatment) and on up to 40.97 acres of riparian and wetland habitats (including 35.39 acres that would be subject to grading during channel and floodplain restoration activities; the remainder of temporary impacts would be associated with disturbance during enhancement activities).

The Proposed Project will ultimately improve and enhance sensitive native and naturalized habitat function and suitability for native, sensitive, and special-status species through restoration and enhancement activities. Implementation of Mitigation Measures BIO-2 through BIO-5 and BIO-11 would avoid and minimize impacts on sensitive native and naturalized habitats to the maximum extent practicable. The Proposed Project will apply for and comply with all regulatory aquatic permits for impacts on jurisdictional riparian or wetland habitats, per BIO-1, *Obtain Approval of All Necessary Resource Agency Permits.* Therefore, impacts on sensitive native and naturalized habitats would be less than significant with mitigation.

4B. Any of the following would occur to or within jurisdictional wetlands and/or riparian habitats, as defined by USACE, CDFW, City of Chula Vista Wetlands Protection Program, and the County of San Diego: removal of vegetation; grading; obstruction or diversion of water flow; adverse change in velocity, siltation, volume of flow, or runoff rate; placement of fill; placement of structures; construction of a road crossing; placement of culverts or other underground piping; any disturbance of the substratum; and/or any activity that may cause an adverse change in native species composition, diversity, and abundance.

As described in Section 1.3, Section 2.2.1, and Section 2.2.5, the Proposed Project would cause temporary and permanent impacts on jurisdictional wetlands and/or riparian habitats, as defined by USACE, CDFW, the City of Chula Vista's Subarea Plan Wetlands Protection Program, and the County of San Diego. Grading (for both trail construction and restoration activity purposes), vegetation removal, re-construction of road (trail) crossings, placement of fill (for crossing armoring), and limited dewatering activities (if a high groundwater table is encountered) could occur within these areas.

As described above under 4A, permanent impacts would occur on approximately 0.19 acre of riparian and wetland habitats, as defined by the City of Chula Vista's Subarea Plan Wetlands Protection Program and the County of San Diego. As described in Section 2.2.5, a total of 0.01 acre of wetland waters of the U.S. would be permanently affected by the Proposed Project. A total of 0.02 acre of riparian waters of the state would be permanently affected by the Proposed Project. As described above under 4A, temporary impacts would occur on up to 40.98 acres of riparian and riparian and wetland habitats, as defined by the City of Chula Vista's Subarea Plan Wetlands Protection Program and the County of San Diego. As described in Section 2.2.5, a total of 30.46 acres of wetland waters of the U.S. would be temporarily affected by the Proposed Project. A total of 36.32 acres of riparian waters of the state would be temporarily affected by the Proposed Project. Absent mitigation, these impacts are significant.

These permanent and temporary impacts will be mitigated on-site as part of the Proposed Project, including rehabilitation and re-establishment of the river channel and its floodplain. In addition to restoring existing wetlands and riparian habitat, the Proposed Project will expand and re-establish

both federal and state wetlands, including more than 30 acres of waters of the U.S./55 acres of waters of the state and more than 5,500 feet of restored channel length. In addition, hydrology will be restored and invasive vegetation removed, further improving conditions for native species composition, diversity, and abundance throughout the site. Implementation of Mitigation Measures BIO-2 through BIO-5 and BIO-11 would minimize indirect impacts on jurisdictional resources. The Proposed Project will apply for and comply with all regulatory aquatic permits, as appropriate, per Mitigation Measure BIO-1, *Obtain Approval of All Necessary Resource Agency Permits.* Therefore, impacts on jurisdictional wetlands and/or riparian habitats, as defined by USACE, CDFW, the City of Chula Vista's Subarea Plan Wetlands Protection Program, and the County of San Diego, would be less than significant with mitigation.

4C. The project would draw down the groundwater table to the detriment of groundwater-dependent habitat, typically a drop of 3 feet or more from historical low groundwater levels.

The Proposed Project does not propose to use groundwater. It will create increased opportunity for groundwater infiltration as a result of floodplain restoration.

4D. The project would cause indirect impacts, resulting in levels that would very likely harm sensitive habitats over the long term.

The Proposed Project was designed to prevent long-term indirect impacts on natural habitats within the Project Area by closing specific trail segments and minimizing trespass through strategically placed fencing adjacent to native habitats. The Proposed Project would include construction that would be active for a short period and would not introduce unnecessary human access or domestic animals. Overall, the Proposed Project is designed as a restoration and enhancement project to improve natural habitats within the Project Area. The Proposed Project would re-establish primary and secondary flow channels, low and high floodplains, and native transitional habitat as well as remove non-native invasive species and restore native vegetation. This will serve to improve hydrologic conditions, significantly reduce the upstream invasive species seed sources, preserve connectivity between adjacent areas of preserved land and natural habitats, and preserve wildlife movement corridors, resulting in a net gain in functions and services following restoration activities. Implementation of Mitigation Measures BIO-2 through BIO-5 and, in particular, Mitigation Measure BIO-11, *Public Access, Trails, and Recreation*, would minimize indirect impacts on sensitive natural communities and riparian habitats within the Project Area.

4E. The project does not include a wetland buffer adequate to protect the functions and values of existing wetlands.

The Proposed Project includes a wetland buffer adequate to protect the functions and values of existing wetlands. One of the primary goals of this project is to enhance the functions and values of the wetlands on-site. Any work performed will have temporary impacts only on-site, and the result of the work will include an overall net gain in the functions and values of the existing wetlands. Implementation of Mitigation Measure BIO-1, *Obtain Approval of All Necessary Resource Agency Permits*, will ensure that the Proposed Project applies for and complies with all regulatory permits, as appropriate.

4.3 Cumulative Impact Analysis

The Proposed Project is limited to the grading, restoration/enhancement, and revegetation of the Project Area. The Proposed Project would result in primarily temporary impacts on riparian habitat and sensitive communities; very limited permanent impacts would occur from the small amount of natural habitat conversion to maintained trails. The Proposed Project would remove environmental contaminants from the area, and the Proposed Project mitigation would return the site to greater functions and values than those currently on-site. The Proposed Project vicinity is surrounded by extant undeveloped land whose existing resources would not significantly change during the time that the Proposed Project is active. In addition, the mitigation bank restoration project adjacent and upstream of the Proposed Project will also be improving habitat function and values of riparian habitats and sensitive vegetation communities in the vicinity. The Proposed Project will apply for and comply with all regulatory permits, as appropriate, per BIO-1, *Obtain Approval of All Necessary Resource Agency Permits.* The Proposed Project would result in a site with permanent gains in sensitive habitat; therefore, on-site impacts would not be cumulatively significant.

4.4 Conclusions

Although the Proposed Project will include primarily temporary direct and indirect impacts on riparian habitat and sensitive natural communities, as well as a small amount of permanent direct impacts, ultimately, on-site restoration of sensitive vegetation communities, including riparian habitats, will improve the quality and quantity of riparian habitats and native vegetation communities. The Proposed Project has been designed to reduce the permanent and temporary impacts on riparian habitats and sensitive natural communities to a level of less than significant with mitigation measures incorporated.

Chapter 5
Federal and State Wetlands and Waterways

5.1 Guidelines for the Determination of Significance

A project would have a potentially significant effect on biological resources if the project would have a substantial adverse effect on state or federally protected wetlands, as defined by Section 404 of the Clean Water Act, (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

Specifically, any of the following conditions would be considered significant:

5A. Any of the following would occur to or within jurisdictional wetlands and/or waterways, as defined by the USACE, CDFW, or RWQCB: removal of vegetation; grading; obstruction or diversion of water flow; adverse change in velocity, siltation, volume of flow, or runoff rate; placement of fill; placement of structures; construction of a road crossing; placement of culverts or other underground piping; any disturbance of the substratum; and/or any activity that may cause an adverse change in native species composition, diversity, and abundance.

5B. The project would draw down the groundwater table to the detriment of groundwater-dependent habitat, typically a drop of 3 feet or more from historical low groundwater levels.

5C. The project does not include a wetland buffer adequate to protect the functions and values of existing wetlands.

Each of these significance criteria is discussed in Section 5.2, *Analysis of Project Effects*, with respect to the Proposed Project.

5.2 Analysis of Project Effects

Each of the significance criteria listed above is discussed herein with respect to the Proposed Project's anticipated effects. The criteria for which impacts are not anticipated are discussed briefly at the end of the section.

5A. Any of the following would occur to or within jurisdictional wetlands and/or waterways, as defined by the USACE: removal of vegetation; grading; obstruction or diversion of water flow; adverse change in velocity, siltation, volume of flow, or runoff rate; placement of fill; placement of structures; construction of a road crossing; placement of culverts or other underground piping; any disturbance of the substratum; and/or any activity that may cause an adverse change in native species composition, diversity, and abundance.

As described in Section 1.3, Section 2.2.1, and Section 2.2.5, the Proposed Project would cause temporary and permanent impacts on jurisdictional wetlands and waterways, as defined by USACE (Figure 16a; Tables 9 and 10). Grading (for both trail construction and restoration activity purposes), vegetation removal, re-construction of road (trail) crossings, placement of fill (for

channel crossing armoring), and limited dewatering activities (if a high groundwater table is encountered) could occur within these areas. Absent mitigation, these impacts are significant.

These permanent and temporary impacts will be mitigated on-site as part of the Proposed Project, including rehabilitation and re-establishment of the river channel and its floodplain. In addition to restoring existing wetlands, waterways, and riparian habitat, the Proposed Project will expand and re-establish both federal wetlands and waterways, including more than 30 acres of waters of the U.S. and more than 3,300 feet of restored channel length. In addition, hydrology will be restored and invasive vegetation removed, further improving conditions for native species composition, diversity, and abundance throughout the site. Implementation of Mitigation Measures BIO-2 through BIO-5 and BIO-11 would minimize indirect impacts on federal jurisdictional resources. The Proposed Project will apply for and comply with all regulatory permits, as appropriate, per BIO-1, *Obtain Approval of All Necessary Resource Agency Permits.* Therefore, impacts on federal jurisdictional wetlands and waterways, as defined by USACE, would be less than significant with mitigation.

5B. The project would draw down the groundwater table to the detriment of groundwater-dependent habitat, typically a drop of 3 feet or more from historical low groundwater levels.

The Proposed Project does not propose to use groundwater. It will create increased opportunity for groundwater infiltration as a result of floodplain restoration.

5C. The project does not include a wetland buffer adequate to protect the functions and values of existing wetlands.

As described under 4E above, the Proposed Project includes a wetland buffer adequate to protect the functions and values of existing wetlands. One of the primary goals of the Proposed Project is to enhance the functions and values of the wetlands on-site. Any work performed will have temporary impacts only on-site, and the result of the work will include an overall net gain in the functions and values of the existing wetlands. Implementation of Mitigation Measure BIO-1, *Obtain Approval of All Necessary Resource Agency Permits*, will ensure that the Proposed Project applies for and complies with all regulatory permits, as appropriate.

5.3 Cumulative Impact Analysis

The Proposed Project is limited to the grading, restoration/enhancement, and revegetation of the Project Area. The Proposed Project would result primarily in temporary impacts on jurisdictional resources; a very small amount of permanent impacts would occur from new trail construction and channel crossing armoring. The Proposed Project would restore the Otay River channel. Implementation of Mitigation Measures BIO-2 through BIO-5 and BIO-11 will minimize impacts on riparian habitats, sensitive natural communities, and jurisdictional resources. Implementation of Mitigation Measure BIO-1, *Obtain Approval of All Necessary Resource Agency Permits*, will ensure that the Proposed Project applies for and complies with all regulatory permits, as appropriate. The Proposed Project vicinity is surrounded primarily by extant undeveloped land whose existing resources would not significantly change during the time that the Proposed Project is active. In addition, the mitigation bank restoration project adjacent and upstream of the Proposed Project will also be improving the habitat function and values of federal wetlands and waterways in the vicinity. The Proposed Project would result in a site with permanent gains in the functions and values of federal wetlands and waterways on-site; therefore, impacts would not be cumulatively significant.

5.4 Conclusions

On-site restoration of jurisdictional waterways will reduce project-related impacts to a level of less than significant with mitigation measures incorporated.

The Proposed Project will include primarily temporary impacts on federal wetlands and waterways as well as a small amount of permanent impacts. Ultimately, as a restoration and mitigation bank project, on-site restoration and enhancement of jurisdictional resources will improve the quality and quantity of such resources within the Project Area. The Proposed Project has been designed to reduce the permanent and temporary impacts on federal wetlands and waters to a level of less than significant with mitigation measures incorporated.

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Chapter 6
Wildlife Movement and Nursery Sites

6.1 Guidelines for the Determination of Significance

A project would have a potentially significant effect on biological resources if the project 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.

Any of the following conditions would be considered significant:

6A. The project would prevent wildlife access to foraging habitat, breeding habitat, water sources, or other areas necessary for their reproduction.

6B. The project would substantially interfere with connectivity between blocks of habitat or would potentially block or substantially interfere with a local or regional wildlife corridor or linkage.

6C. The project would create artificial wildlife corridors that do not follow natural movement patterns.

6D. The project would increase noise and/or nighttime lighting in a wildlife corridor or linkage to levels proven to affect the behavior of the animals identified in a site-specific analysis of wildlife movement.

6E. The project would not maintain an adequate width for an existing wildlife corridor or linkage and/or would further constrain an already narrow corridor through activities such as (but not limited to) reduction of corridor width, removal of available vegetative cover, placement of incompatible uses adjacent to it, and placement of barriers in the movement path.

6F. The project would not maintain adequate visual continuity (i.e., long lines of sight) within wildlife corridors or linkage.

Each of these significance criteria is discussed in Section 6.2, *Analysis of Project Effects*, with respect to the Proposed Project.

6.2 Analysis of Project Effects

The Proposed Project will not result in significant impacts under the above-listed guidelines for the following reasons:

6A. The project would prevent wildlife access to foraging habitat, breeding habitat, water sources, or other areas necessary for their reproduction.

The Proposed Project would not prevent wildlife access to foraging habitat, breeding habitat, water sources, or other areas necessary for reproduction; overall, the Proposed Project would improve

these characteristics of the site. Wildlife nursery areas within the Project Area could include vegetation communities that support nesting birds, riparian habitat, wetlands, and stream habitat.

A very small amount of permanent impacts on natural habitats would occur from conversion to trails, although this would not be expected to negatively affect wildlife access to foraging habitat, breeding habitat, water sources, or other areas necessary for reproduction because of the existing trail networks in the Project Area. In addition, some existing trails will be reclaimed, improving these characteristics on the site. Temporary impacts on natural habitats would occur from implementation of restoration activities in the Otay River channel and floodplain, such as large areas of grading.

The Proposed Project is a restoration and enhancement project; all areas of temporary impact will be restored and replanted with native vegetation or enhanced to improve habitat quality. Implementation of Mitigation Measures BIO-1 through BIO-11 would minimize indirect impacts on natural habitats that provide functions such as wildlife movement and nursery sites. Ultimately, restoration of the Otay River channel will improve function of the channel and restore flows in the river, thereby improving habitat connectivity for aquatic species. Native plant revegetation, restoration of the river and wetland hydrology, and enhancement of riparian vegetation communities (e.g., invasive species treatment) is expected to improve the habitat quality of the riparian corridor, wetlands, and stream habitat, which would benefit wildlife movement habitat and nursery areas. Therefore, impacts on wildlife movement corridors and nursery sites would be less than significant.

6B. The project would substantially interfere with connectivity between blocks of habitat or would potentially block or substantially interfere with a local or regional wildlife corridor or linkage.

As described in 6A, overall, the Proposed Project would not prevent wildlife access to habitat, nor would it create a barrier to wildlife movement. Most impacts are temporary in nature; a small amount of permanent impacts on wildlife corridor habitat would occur due to conversion of natural areas to maintained trails. However, this would not substantially alter the existing wildlife corridors or linkages in the Project Area or vicinity. Therefore, these impacts are less than significant.

As described in 6A, temporary impacts on wildlife habitat access due to construction activities will be avoided or minimized with implementation of Mitigation Measures BIO-1 through BIO-11. Restoration and enhancement of the Project Area will improve habitat connectivity in the region. Therefore, impacts on wildlife habitat access would be less than significant.

6C. The project would create artificial wildlife corridors that do not follow natural movement patterns.

The Proposed Project would not create artificial wildlife corridors. Restoration and enhancement of the Project Area will restore historical habitat functions in the Otay River channel and floodplain, thereby improving habitat connectivity in the region.

6D. The project would increase noise and/or nighttime lighting in a wildlife corridor or linkage to levels proven to affect the behavior of the animals identified in a site-specific analysis of wildlife movement.

The Proposed Project does not propose to increase noise or nighttime lighting within a wildlife corridor permanently. No nighttime lighting will be employed during construction activities for the restoration and enhancement project. Temporary indirect impacts, like increased noise, could occur because of construction activities within wildlife habitats, including corridor habitats along the Otay River channel. Absent mitigation, this is a significant impact.

Temporary indirect impacts will be avoided or minimized with implementation of Mitigation Measures BIO-2 through BIO-11. Therefore, indirect impacts (such as increased noise) on wildlife corridors would be less than significant with mitigation.

6E. The project would not maintain an adequate width for an existing wildlife corridor or linkage and/or would further constrain an already narrow corridor through activities such as (but not limited to) reduction of corridor width, removal of available vegetative cover, placement of incompatible uses adjacent to it, and placement of barriers in the movement path.

The Proposed Project would not constrain a wildlife corridor, nor would it create a barrier to wildlife movement. As described in Section 1.5.9, the Project Area is entirely within hexagonal mapping units of the Terrestrial Connectivity – ACE [ds2734] layer that are classified as Connectivity Rank 3 – Connections with Implementation Flexibility. Approximately the western third of the Project Area overlaps the Natural Landscape Block – CEHC [ds621] layer. This overlap indicates the area was considered by the CEHC Project as essential for ecological connectivity. The remainder of the Project Area is adjacent to the layer and consists of similar undeveloped natural areas; thus, it too could be considered potentially essential for ecological connectivity, taking into account the broad scale of the CEHC Natural Landscape Block analysis. As described in 6A and 6B, temporary impacts on wildlife corridors and wildlife movement may occur from grading and vegetation removal associated with restoration activities in the Otay River channel and floodplain.

The Proposed Project is a restoration and enhancement project that will ultimately improve the quality of wildlife corridor habitat; it will not create a permanent barrier to wildlife movement. Overall, native plant revegetation, restoration of the river and wetland hydrology, and enhancement of riparian vegetation communities (e.g., invasive species treatment) is expected to improve the habitat quality of the riparian corridor, wetlands, and stream habitat, which would benefit wildlife movement and wildlife corridor areas. Implementation of Mitigation Measures BIO-1 through BIO-11 would minimize indirect impacts on wildlife corridor habitats and the movement of wildlife. Therefore, impacts on wildlife corridor and wildlife movement would be less than significant.

6F. The project would not maintain adequate visual continuity (i.e., long lines- of-sight) within wildlife corridors or linkage.

The Proposed Project would not affect visual continuity within a wildlife movement corridor. No permanent buildings or elevated man-made structures would be built within the Project Area. The only permanent structures to be built would be reinforced at-grade stream crossings and fencing/signage to prevent human trespass into sensitive resource areas.

6.3 Cumulative Impact Analysis

The Proposed Project is limited to the grading, restoration/enhancement, and revegetation of the Project Area. The Proposed Project would result primarily in temporary impacts on wildlife movement and nursery areas. A very small amount of permanent impacts would occur from new trail construction, although reclamation of some existing trails would approximately negate effects on wildlife connectivity. The Proposed Project would restore the Otay River channel and floodplain. Implementation of Mitigation Measures BIO-2 through BIO-5 and BIO-11 will minimize impacts on wildlife movement and nursery areas. Implementation of Mitigation Measure BIO-1, *Obtain Approval of All Necessary Resource Agency Permits*, will ensure that the Proposed Project applies for and complies with all regulatory permits, as appropriate. The Proposed Project vicinity is surrounded primarily by extant undeveloped land whose existing resources would not significantly change during the time that the Proposed Project is active. In addition, the mitigation bank restoration project adjacent and upstream of the Proposed Project will also be improving habitat function for wildlife movement and nursery areas in the vicinity. The Proposed Project would result in a site with permanent gains in the functions and values of wildlife corridors and nursery areas on-site; therefore, impacts would not be cumulatively significant.

6.4 Conclusions

The Proposed Project would not result in permanent impacts on wildlife corridors or nursery habitat. It would ultimately improve habitat corridors within the Project Area. The Proposed Project would include primarily temporary impacts on wildlife movement and nursery areas as well as a small amount of permanent direct impacts. On-site restoration of riverine and riparian habitats would improve the quality and quantity of wildlife corridors and nursery areas. The Proposed Project has been designed to reduce the permanent and temporary impacts on wildlife movement and nursery areas to a level of less than significant with mitigation measures incorporated.

Chapter 7
Local Policies, Ordinances, Adopted Plans

7.1 Guidelines for the Determination of Significance

A project would have a potentially significant effect on biological resources if the project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, or conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional or state habitat conservation plan.

Any of the following conditions would be considered significant:

7A. For lands outside of the MSCP, the project would affect coastal sage scrub vegetation in excess of the County of San Diego's 5 percent habitat loss threshold, as defined by the Southern California Coastal Sage Scrub NCCP Process Guidelines.

7B. The project would preclude, or prevent preparation of, the subregional NCCP process. For example, if the project proposes development within areas that have been identified by the County or resource agencies as critical to future habitat preserves.

7C. The project would affect sensitive habitat lands, as outlined in the Resource Protection Ordinance.

7D. The project would not minimize and/or mitigate coastal sage scrub habitat loss, in accordance with Section 4.3 of the NCCP Process Guidelines.

7E. The project would not conform to the goals and requirements outlined in any applicable habitat conservation plan (HCP), habitat management plan (HMP), SAMP, WMP, or similar regional planning effort.

7F. For lands within the MSCP, the project would not minimize impacts on sensitive resources, as defined by the HLIT Ordinance.

7G. The project would preclude connectivity between areas of high habitat values, as defined by the Southern California Coastal Sage Scrub NCCP Process Guidelines.

7H. The project would not maintain existing movement corridors and/or habitat linkages, as defined by the Biological Mitigation Ordinance (BMO).

7I. The project would not avoid impacts on MSCP narrow endemic species and would affect core populations of narrow endemics.

7J. The project would reduce the likelihood of survival and recovery of listed species in the wild.

7K. The project would result in the killing of migratory birds or destruction of active migratory bird nests and/or eggs (MBTA).

7L. The project would result in the take of eagles, eagle eggs, or any part of an eagle (Bald and Golden Eagle Protection Act).

Each of these significance criteria is discussed in Section 7.2, *Analysis of Project Effects*, with respect to the Proposed Project.

7.2 Analysis of Project Effects

The Proposed Project will not result in significant impacts under the above-listed guidelines for the following reasons:

7A. For lands outside of the MSCP, the project would affect coastal sage scrub vegetation in excess of the County of San Diego's 5 percent habitat loss threshold, as defined by the Southern California Coastal Sage Scrub NCCP Process Guidelines.

7D. The project would not minimize and/or mitigate coastal sage scrub habitat loss, in accordance with Section 4.3 of the NCCP Process Guidelines.

There are approximately 96.01 acres of coastal sage scrub habitat within the Project Area. This habitat is within the jurisdiction of the City of Chula Vista MSCP Subarea Plan. The Proposed Project would minimize and mitigate coastal sage scrub habitat loss in accordance with Section 4.3 of the NCCP Process Guidelines.

The Proposed Project would include permanent impacts on approximately 2.02 acres of coastal sage scrub habitats (including disturbed and Baccharis-dominated), primarily as a result of conversion to maintained trails. These impacts represent approximately 2 percent of existing coastal sage scrub within the Project Area. Temporary impacts on up to 93.99 acres of coastal sage scrub would occur as a result of restoration and enhancement activities. However, of the total temporary impacts area, only 27.84 acres would be affected by grading, followed by restoration; this temporary impact would be mitigated on-site for overall enhancement of coastal sage scrub habitats. The remaining 66.15 acres of temporary impact area containing coastal sage scrub habitats would be due to enhancement activities (e.g., weeding and invasive species treatment).

Implementation of Mitigation Measures BIO-I through BIO-5, BIO-9, and BIO-11 will minimize and avoid temporary impacts on coastal sage scrub habitats. Ultimately, the Proposed Project is a mitigation bank and restoration project and designed to improve natural habitats, including upland communities; there will be a net improvement in coastal sage scrub habitat quality on-site. Therefore, the project is consistent with Section 4.3 of the Southern California Coastal Sage Scrub NCCP Process Guidelines.

7B. The project would preclude, or prevent preparation of, the subregional NCCP process. For example, if the project proposes development within areas that have been identified by the County or resource agencies as critical to future habitat preserves.

The Proposed Project is consistent with the City of Chula Vista MSCP Subarea Plan. Because an NCCP is in effect, this Proposed Project does not preclude or prevent preparation of an NCCP.

7C. The project would affect sensitive habitat lands, as outlined in the Resource Protection Ordinance.

7F. For lands within the MSCP, the project would not minimize impacts on sensitive resources, as defined by the HLIT Ordinance.

Ultimately, the Proposed Project will restore and enhance existing preserve land and minimize impacts on sensitive resources as defined by the City of Chula Vista HLIT Ordinance. As described in Chapters 3 through 6, above, a small amount of permanent impacts on sensitive resources will occur from the construction of new trails and the armoring of existing stream crossings; however, the project will result primarily in temporary impacts on sensitive resources during restoration and enhancement activities.

As described in Chapters 3 through 6, above, overall, the Proposed Project will increase habitat quantity and quality for narrow endemic species; restore protected riverine, wetland, and riparian habitats; and enhance and restore Tier I, Tier II, and Tier III upland habitats. Avoidance and minimization of impacts on sensitive resources will be accomplished to the maximum extent practicable through implementation of Mitigation Measures BIO-1 through BIO-11. Therefore, the Project is consistent with the City of Chula Vista MSCP Subarea Plan

7E. The project would not conform to the goals and requirements outlined in any applicable habitat conservation plan (HCP), habitat management plan (HMP), SAMP, WMP, or similar regional planning effort.

The Proposed Project will directly benefit the primary goals of the City of Chula Vista MSCP Subarea Plan, which are to conserve covered species and their habitat through the conservation of interconnected significant habitat cores and linkages. The Proposed Project will also be consistent with goals and priorities of the Otay River WMP and SAMP, OVRP Concept Plan, OVRP Habitat Restoration Plan and Non-native Plant Removal Guidelines, and City of Chula Vista Greenbelt Master Plan. The Proposed Project will restore more than 1 mile of lost river channel and its floodplain and further enhance existing preserved upland habitats, all while minimizing impacts on sensitive resources. Ultimately, the Proposed Project will improve habitat functions and directly benefit many of the MSCP-covered flora and fauna.

7G. The project would preclude connectivity between areas of high habitat values, as defined by the Southern California Coastal Sage Scrub NCCP Process Guidelines.

7H. The project would not maintain existing movement corridors and/or habitat linkages, as defined by the Biological Mitigation Ordinance (BMO).

The Proposed Project does not preclude connectivity between areas of high habitat value or disrupt movement corridors or habitat linkages. Refer to Chapter 6, *Wildlife Movement and Nursery Areas*, for analysis of Proposed Project effects on wildlife corridors and habitat connectivity. In summary, the Proposed Project would not result in permanent impacts on wildlife corridors and linkages or nursery habitat. It would ultimately improve wildlife corridors within the Project Area. The Proposed Project will include primarily temporary impacts on wildlife movement as well as a small amount of permanent direct impacts on natural habitats; however, this would not be a substantial effect on existing wildlife movement corridors. On-site restoration of riverine and riparian habitats will improve the overall quality and quantity of wildlife corridors within the Project Area. Implementation of Mitigation Measures BIO-1 through BIO-11 will minimize and avoid impacts on

areas of high habitat value, movement corridors, and habitat linkages. Therefore, impacts on wildlife connectivity, movement corridors, and linkage habitats are considered less than significant.

7I. The project would not avoid impacts on MSCP narrow endemic species and would affect core populations of narrow endemics.

Refer to Chapter 3, *Special-Status and Sensitive Species*, Section 3.2, sub-section 3B for analysis of Proposed Project effects on MSCP narrow endemic species. Narrow endemic species present and with moderate to high potential to occur within the Project Area include Otay tarplant (high potential to occur), San Diego ambrosia (moderate potential to occur), Orcutt's brodiaea (high potential to occur), snake cholla (high potential to occur), and variegated dudleya (present).

In summary, a very small amount of permanent impacts on natural habitats that can support narrow endemic species may occur with the construction of new trails and the armoring of existing stream crossings; however, the Proposed Project will result primarily in temporary impacts on natural habitats and narrow endemic species during restoration and enhancement activities. As described in Section 3.2, above, one narrow endemic plant species occurs within the limits of temporary impacts: variegated dudleya (Table 7; Appendix A, Figures 9a and 9b).

All narrow endemic plant species will be avoided to maximum extent practicable. Under the current Proposed Project design, no narrow endemic plant species are within the area of permanent or temporary grading impacts, and no direct mortality is anticipated. Fencing or staking would be provided around narrow endemic species where necessary within the Project Area, and every effort will be made to completely avoid trampling or affecting narrow endemic species. If individuals must be removed under future design limits, less than 5 percent of the population of a narrow endemic plant species within Project Area will be removed. Therefore, impacts on narrow endemic species would be less than significant.

Implementation of Mitigation Measures BIO-2, BIO-3, BIO-4, BIO-5, BIO-8, and BIO-9 will further minimize temporary impacts and avoid direct impacts on narrow endemic species. Overall, restoration will increase habitat quantity and quality for narrow endemic species. Therefore, impacts on narrow endemic species would be less than significant.

7J. The project would reduce the likelihood of survival and recovery of listed species in the wild.

The Proposed Project has been designed to avoid impacts on listed species, including San Diego fairy shrimp, least Bell's vireo, western yellow-billed cuckoo, and coastal California gnatcatcher, to the maximum extent practicable. Refinement of trail alignments and footprints during final design and permitting is expected to further reduce impacts on listed species. Refer to Chapter 3, *Special-Status and Sensitive Species*, Section 3.2, sub-section 3B, for analysis of Proposed Project effects on MSCP narrow endemic species.

In summary, a very small amount of permanent impacts on natural habitats that can and do support listed species may occur from the construction of new trails and armoring of existing stream crossings; however, the project will result primarily in temporary impacts on natural habitats and listed species during restoration and enhancement activities. The small amount of permanent impacts are not expected to substantially affect the likelihood of survival and recovery of listed species.

The Proposed Project will initiate Section 7 consultation and comply with all conservation measures required as part of that process, per Mitigation Measure BIO-1, *Obtain Approval of All Necessary Resource Agency Permits.* Implementation of Mitigation Measures BIO-2 through BIO-6 and BIO-8 through BIO-11 will minimize temporary impacts and avoid direct impacts on listed species. Overall, the restoration project will increase habitat quantity and quality for listed species. Therefore, impacts on listed species would be less than significant.

7K. The project would result in the killing of migratory birds or destruction of active migratory bird nests and/or eggs (MBTA).

The Proposed Project has the potential to harm birds and nests protected under the MBTA because of grading and vegetation removal during restoration activities, such as killing of migratory birds or destruction of active migratory bird nests and/or eggs protected under the MBTA. Absent mitigation, this is a significant impact.

Grading and vegetation removal activities will be conducted outside of the nesting season, when feasible. If grading and vegetation removal must occur during the nesting season, pre-construction surveys, implementation of nest avoidance buffers, and on-site biological monitors will ensure that any protected birds or nesting occurring on-site will be avoided through implementation of Mitigation Measures BIO-4 and BIO-6. Therefore, impacts on migratory birds and migratory bird nests and/or eggs protected under MBTA would be less than significant with mitigation.

7L. The project would result in the take of eagles, eagle eggs, or any part of an eagle (Bald and Golden Eagle Protection Act).

The Proposed Project will not result in the take of bald eagles or golden eagles, eagle eggs, or any part of an eagle protected under the Bald and Golden Eagle Protection Act. These species are not known to nest within the Project Area; any bald eagles or golden eagles that could forage on-site will be avoided.

7.3 Cumulative Impact Analysis

The Proposed Project would result primarily in temporary impacts on sensitive resources on-site; only a very small amount of permanent impacts would occur. Implementation of Mitigation Measures BIO-2 through BIO-11 will minimize impacts on sensitive biological resources. Implementation of Mitigation Measure BIO-1, *Obtain Approval of All Necessary Resource Agency Permits*, will ensure that the Proposed Project initiates Section 7 consultation with the USFWS to address impacts on listed species and the consistency of the Proposed Project with the City of Chula Vista MSCP Subarea Plan. The Proposed Project would restore the Otay River channel as well as riparian and upland habitats and return the site to greater habitat functions and values than are currently extant within the Project Area. The Proposed Project vicinity is surrounded primarily by extant undeveloped land whose existing resources would not significantly change during the time that the Proposed Project is active. In addition, the mitigation bank restoration project adjacent and upstream of the Proposed Project will also be improving habitat function and quality for sensitive biological resources. The Proposed Project would not conflict with any local policies or ordinances protecting sensitive biological resources and, thus, would not cause cumulatively significant impacts on locally protected sensitive biological resources.

7.4 Conclusions

The Proposed Project design will not conflict with any local policies or ordinances protecting sensitive biological resources or conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state HCP.

Chapter 8
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