

ATTACHMENT 1

Trails Restoration Plan for the Southwest Village Specific Plan Project



**Trails Restoration Plan for the
Southwest Village Specific Plan
San Diego, California
Project No. 614791**

Prepared for
Tri Pointe Homes
13520 Evening Creek Drive North, Suite 300
San Diego, CA 92128

Prepared by
RECON Environmental, Inc.
3111 Camino del Rio North, Suite 600
San Diego, CA 92108
P 619.308.9333

RECON Number 8868
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A handwritten signature in black ink, appearing to read "Raquel Atik".

Raquel Atik, Restoration Biologist

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Acronyms and Abbreviations

City	City of San Diego
City MMC	City of San Diego Mitigation Monitoring and Coordination office
MHPA	Multi-Habitat Planning Area
MMC	Mitigation Monitoring Coordination
MSCP	Multiple Species Conservation Program
PEP	Plant Establishment Period
plan	Trails Restoration Plan for the Southwest Village Specific Plan
project	Southwest Village Specific Plan project
RECON	RECON Environmental, Inc.
RWQCB	Regional Water Quality Control Board
Specific Plan	Southwest Village Specific Plan
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

1.0 Introduction

The proposed Southwest Village Specific Plan (Specific Plan) is in the community of Otay Mesa, within the city of San Diego (Figures 1 through 3). The project includes the adoption of a Specific Plan, which is a policy framework intended to guide the future development of residences, commercial and retail spaces, public facilities including an elementary school, parks, and trails, and open space and habitat conservation areas within a 490-acre area. The project also includes implementation of a portion of the Specific Plan residential development including a portion of the planned trail network, which are evaluated at the project-level as detailed in the biology report.

As part of implementation of the Specific Plan, a trail network is planned to be located within the natural open space surrounding the Specific Plan development area. The Specific Plan defines the formal trail network within the Specific Plan boundary, while an amendment to the Otay Mesa Community Plan is proposed to formalize revised trail networks in the area surrounding the Specific Plan area. Trails within the open space areas surrounding the proposed development areas are planned as primitive trails. As detailed in the Specific Plan, primitive trails would have a maximum width of 4 feet. However, actual trail widths may be less than 4 feet where trails are constrained by sensitive resources. Due to the extent of disturbance and existing unauthorized trail networks throughout the open space, the Specific Plan calls for restoration of disturbed areas within a 50-foot buffer on each side of planned primitive trail alignments (100-foot total). The purpose of the restoration effort is to remove access to unauthorized trail alignments from the formal trail network, while enhancing habitat value.

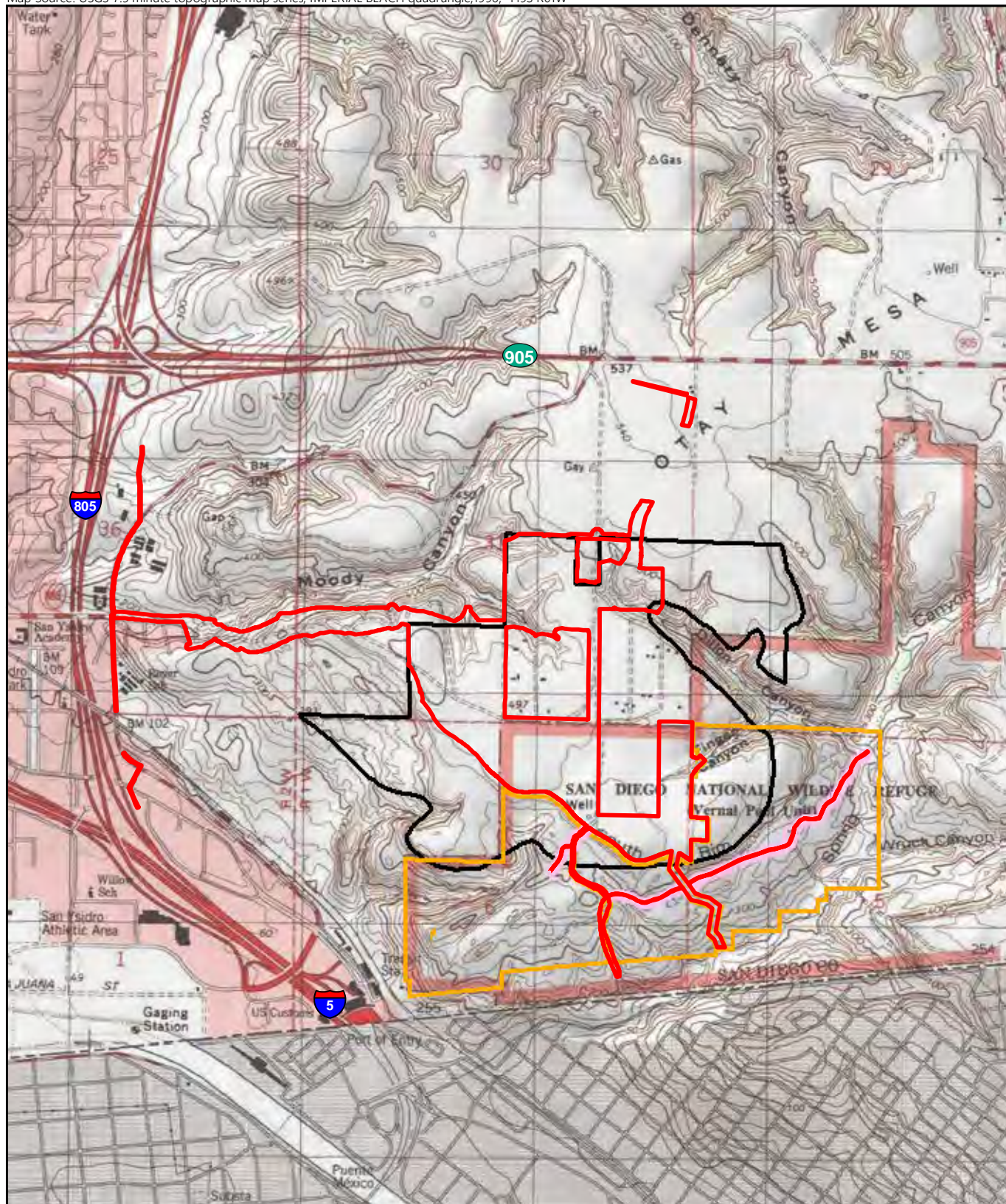
This restoration plan (plan) details the methods for implementing restoration and enhancement of disturbed lands and disturbed habitat areas within a 100-foot corridor surrounding the planned primitive trail system located within lands owned by Tri Pointe Homes. The plan includes a discussion of existing conditions, an implementation and maintenance plan, adaptive management, performance standards, and monitoring requirements.

Restoration would be implemented concurrent with the establishment of formal primitive trails (4 feet wide maximum), which would occur after completion of the restoration efforts proposed for Otay tarplant (*Deinandra conjugens*)/Native Grassland and wetland restoration within Spring Canyon, since the existing road would be needed for access to these restoration sites (Figure 4). While the Southwest Village wetland restoration area is not directly accessible by the road/trail, the area north of the wetland mitigation site identified on Figure 4 is part of a separate restoration effort for another Tri Pointe Homes project. After the restoration sites are signed off by the City of San Diego (City) Mitigation Monitoring and Coordination (MMC) office and applicable regulatory agencies, the trail can be established (reduced) to a 4-foot-wide trail with restoration implemented within the 100-foot corridor.



✱ Project Location

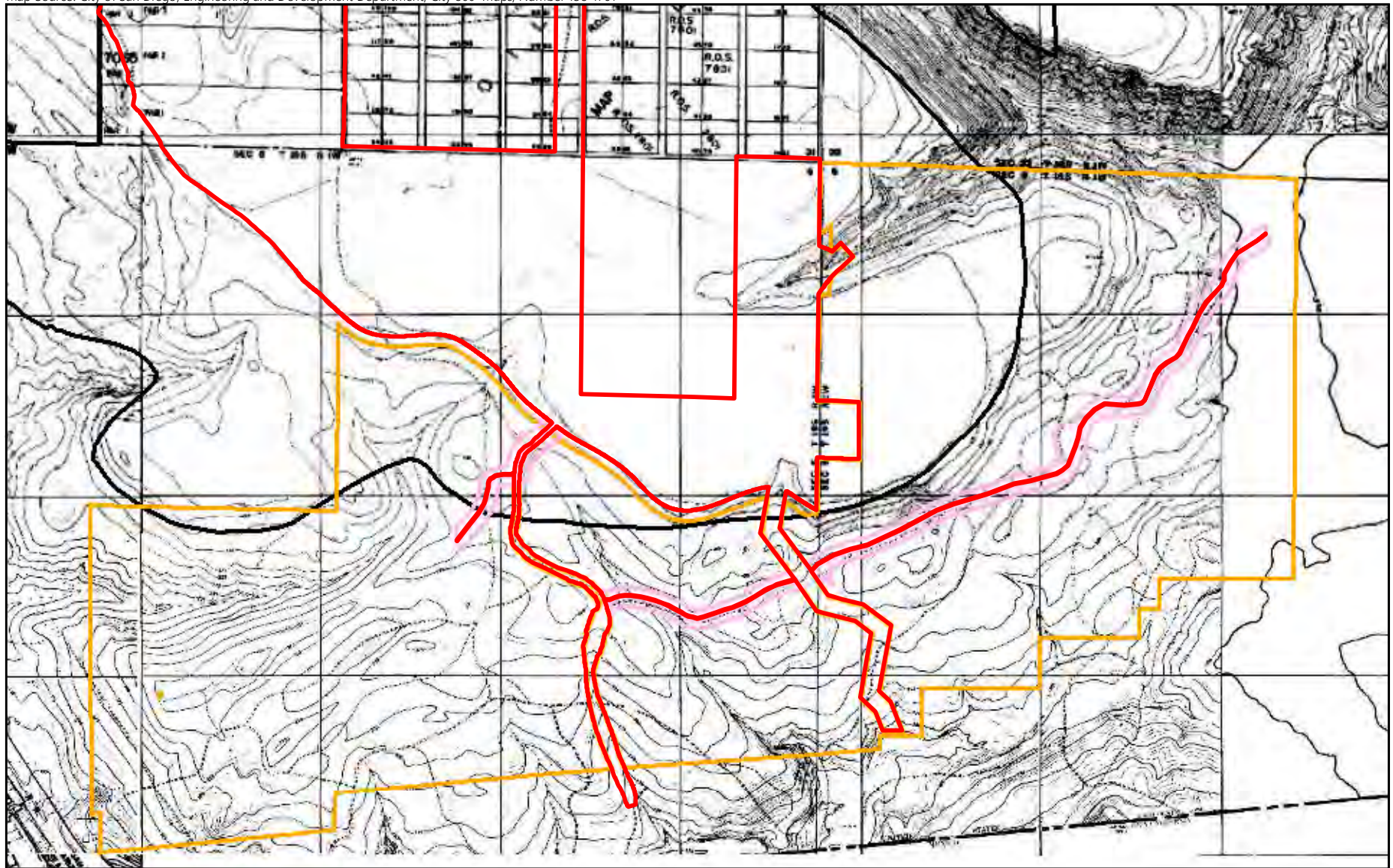
FIGURE 1
Regional Location







- Project-level Analysis Area
- Trail Restoration
- Land to be Conserved and Managed by the City
- Specific Plan Boundary

0 Feet 2,000

FIGURE 2
Restoration Site Location
on USGS Map



-  Project-level Analysis Area
-  Trail Restoration
-  Land to be Conserved and Managed by the City
-  Specific Plan Boundary

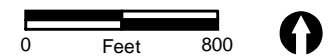
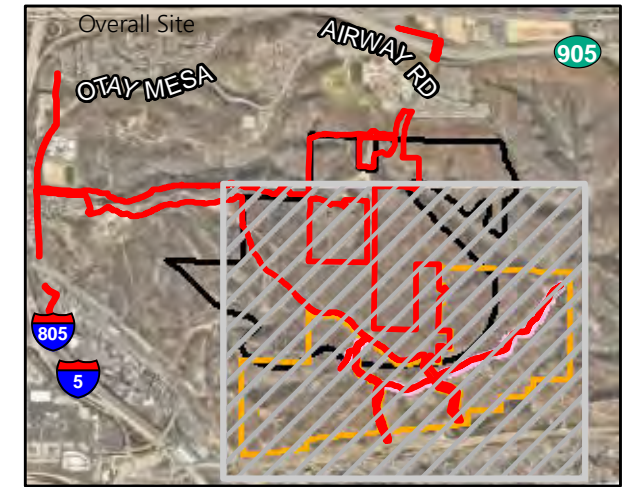
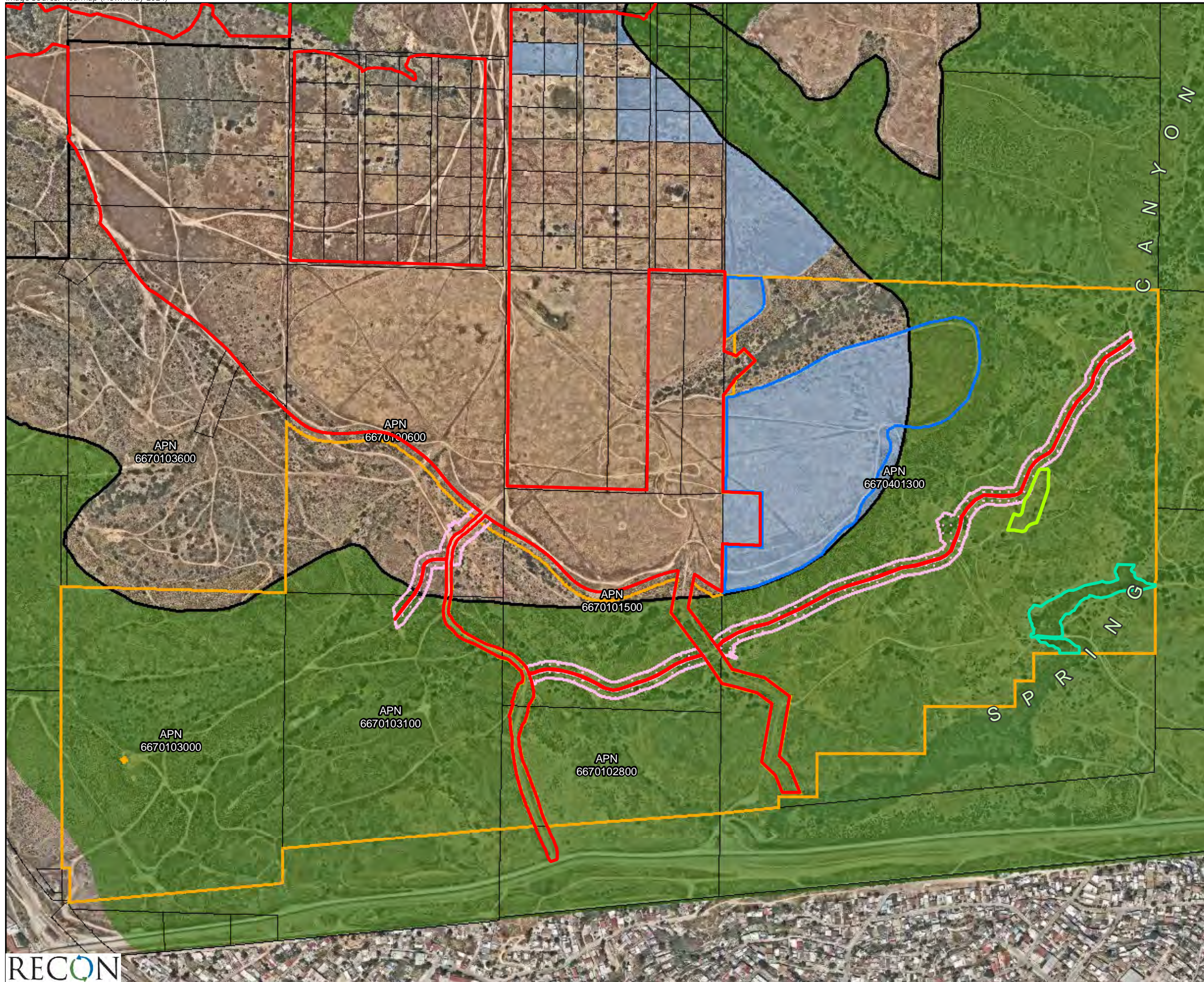


FIGURE 3
Restoration Site Location
on City 800' Map



- Project-level Analysis Area
- Trail Restoration
- Vernal Pool Mitigation Site
- Wetland Mitigation Site
- Otay Tarplant / Native Grassland Mitigation Site
- Land to be Conserved and Managed by the City
- Specific Plan Boundary
- City of SD MHPA
- VPHCP MHPA
- Parcels



FIGURE 4
Restoration Site Location
on Aerial Photograph

Restoration within the 100-foot-wide trail buffer would be limited to disturbed areas, including existing disturbed trail alignments that are not planned to be part of the formal trail network and non-native grassland and disturbed habitat areas located within the 100-foot-wide trail buffer. Additionally, habitat enhancement would occur within disturbed maritime succulent scrub, disturbed wetlands, and vernal pools. All other native habitats and jurisdictional resources would be left in their existing condition.

The approximately one-mile 100-foot trail corridor encompasses approximately 12 acres of land that is occupied with Diegan coastal sage scrub, disturbed coastal sage scrub, maritime succulent scrub, disturbed maritime succulent scrub, non-native grassland, disturbed lands, and jurisdictional resources including vernal pools, disturbed wetlands, and wetlands. The disturbed and non-native grassland habitats would be subject to restoration to either Diegan coastal sage scrub or maritime succulent scrub, based on dominant habitats in the vicinity. The disturbed maritime succulent scrub, disturbed wetlands and vernal pools would be subject to enhancement. All other native habitats and jurisdictional resources outside of the designated trail buffer would be left in their existing condition. Due to the anticipated timeline of implementation of restoration being approximately 7 to 10 years from the time of report preparation, verification of site conditions would occur prior to implementation to define the limits of the restoration effort based on resources present at the time of implementation.

As the proposed trail restoration effort is a project design feature and not a mitigation requirement, the restoration and enhancement would be implemented consistent with City Landscape Manual for revegetation adjacent to native vegetation (Section IV), which requires maintenance for a period not less than 25 months or until final sign-off by the City MMC.

2.0 Existing Conditions

This section describes the project location, a general description of the restoration site, existing soils and vegetation, and a rationale for expecting restoration success.

2.1 Project Location

The trails restoration site is within the community of Otay Mesa within the city of San Diego, and more specifically within the Southwest District of the Otay Mesa Community Plan, south of State Route 905 and east of Interstate 805 (see Figure 1). The proposed project is within Township 19 South, Range 01 West, of the U.S. Geological Survey (USGS) 7.5-minute topographic map, Imperial Beach, California quadrangle (see Figure 2; USGS 1996) and is presented on the City 800-foot-scale map numbers 138-1761 (see Figure 3). The restoration site is surrounded by open space in all directions. Additionally, the City's Multi-Habitat Planning Area (MHPA) occurs within and adjacent to the project site (see Figure 4).

The trails restoration corridor totals approximately 12 acres, with the trail width at a maximum 4 feet wide, and restoration occurring within 50 feet on both sides of the trail. A 100-foot corridor surrounding a segment of the emergency only vehicle access road would also be restored. While the total restoration area is approximately 12 acres, the restoration and enhancement would occur within

an approximate 10-acre area including disturbed lands, non-native grassland, disturbed maritime succulent scrub, disturbed wetlands, and vernal pools. All other native habitats and jurisdictional resources would be left in their existing condition.

2.2 Restoration Site Description

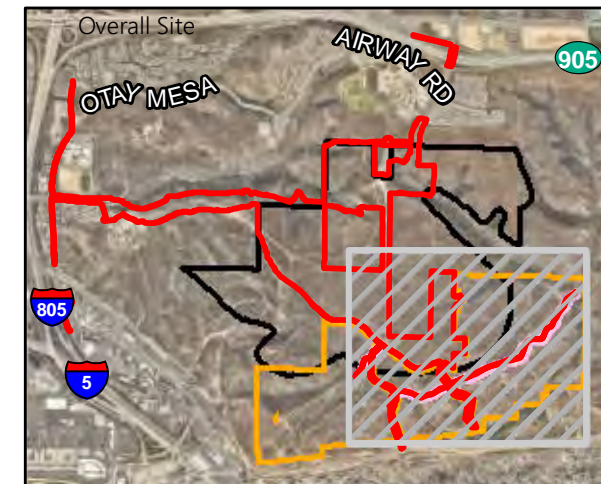
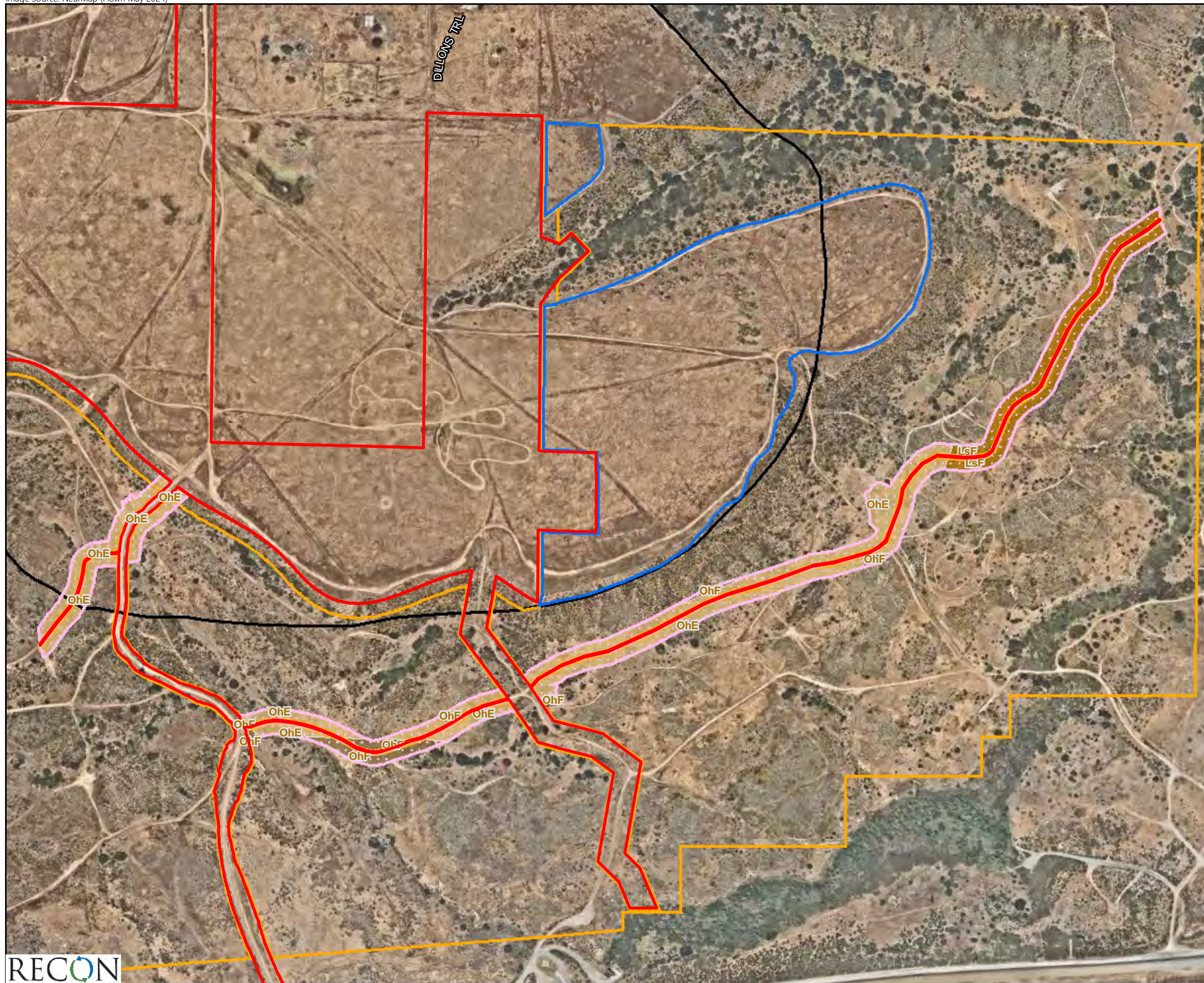
The trails restoration site falls within several undeveloped parcels owned by Tri Pointe Homes. These parcels include Assessor's Parcel Numbers 667-010-06, 667-010-30, 667-010-31, 667-010-28, 667-040-13, and a very small area of 667-010-36 (see Figure 4). The proposed primitive trails are located south of the development footprint and occur within existing City's MHPA or within areas that would be added to the MHPA are part of the project's boundary line adjustment. The restoration site occurs on undulating topography and is adjacent to undeveloped land and/or other planned restoration sites. Additionally, the restoration site has been subject to recent and historic disturbances, mostly unauthorized off-road vehicle use. The restoration area is proposed within a 100-foot corridor around the 5,091 linear feet (approximately one mile) of proposed primitive trails. The proposed primitive trails are located within existing disturbed trails and/or roads that have resulted from unauthorized use. In addition, the restoration area includes the 100-foot area around the northern segment of the emergency only vehicle access road. Restoration in this location would support closure of trail segments that are not intended for public use, while retaining the access road for future emergency only vehicle access needs.

2.3 Soils

Three soil types occur within the restoration site: Linne clay loam, 30 to 50 percent slopes (LsF), Olivenhain cobbly loam, 9 to 30 percent slopes (ohE), and Olivenhain cobbly loam, 30 to 50 percent slopes (OhF) (Figure 5; U.S. Department of Agriculture 1973). Linne clay loam soils formed from calcareous sandstone and shale and are located on hillslopes. The soil is typically well drained with medium to very rapid runoff and moderately slow permeability. Olivenhain cobbly loam soils formed in ancient cobbly and gravelly alluvium and are located on marine terraces and mesas. The topsoil is typically well-drained cobbly loam with a very cobbly clay subsoil (U.S. Department of Agriculture 1973).

2.4 Vegetation Communities

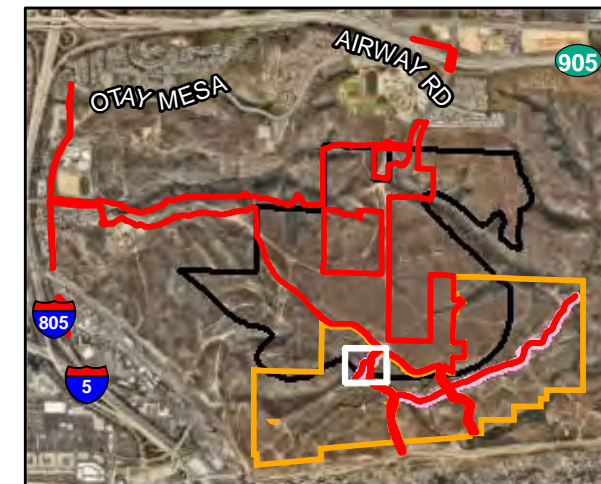
Existing vegetation communities within the one-mile, 100-foot-wide trail corridor include: maritime succulent scrub, disturbed maritime succulent scrub, Diegan coastal sage scrub, non-native grassland, disturbed lands, tamarisk scrub, disturbed wetland, and vernal pools with fairy shrimp for a total of 12.18 acres (Figures 6.1 through 6.6 and Table 1).



- Project-level Analysis Area
 - Trail Restoration
 - Vernal Pool Restoration Areas
 - Land to be Conserved and Managed by the City
 - Specific Plan Boundary
- Soil Type**
- LsF | Linne clay loam, 30 to 50 percent slopes
 - OhE | Olivenhain cobbly loam, 9 to 30 percent slopes
 - OhF | Olivenhain cobbly loam, 30 to 50 percent slopes



FIGURE 5
Restoration Site Location
on Soils Map

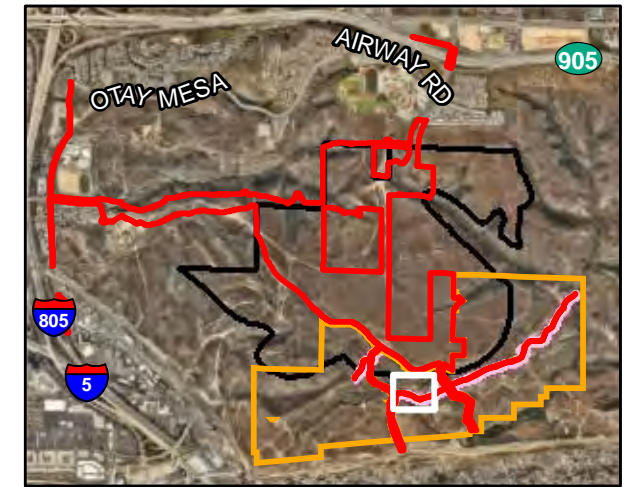
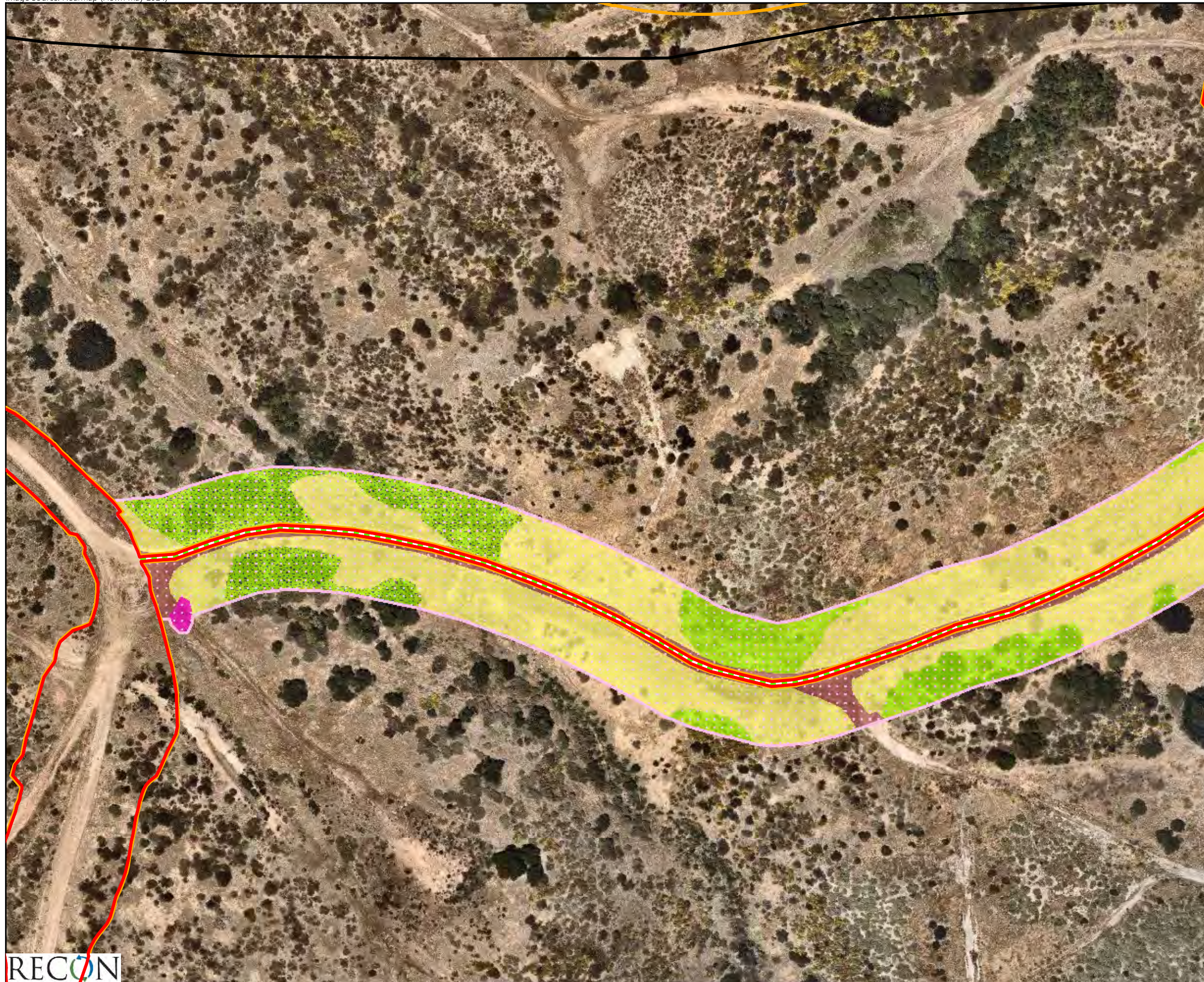


- Project-level Analysis Area
 - Trail Restoration
 - Land to be Conserved and Managed by the City
 - Specific Plan Boundary
 - Primitive Trail Alignment
- Vegetation Communities**
- Diegan Coastal Sage Scrub
 - Maritime Succulent Scrub
 - Disturbed Maritime Succulent Scrub
 - Non-native Grassland
 - Disturbed Wetland
 - Disturbed Land

*Impacts associated with the primitive trail conservatively assumes a 10-foot wide impact footprint; however, the ultimate trail width would generally be, at a maximum, approximately 4 feet wide. Restoration would occur beyond the 4-foot wide trail.



FIGURE 6.1
Existing Vegetation within
Trail Restoration Areas

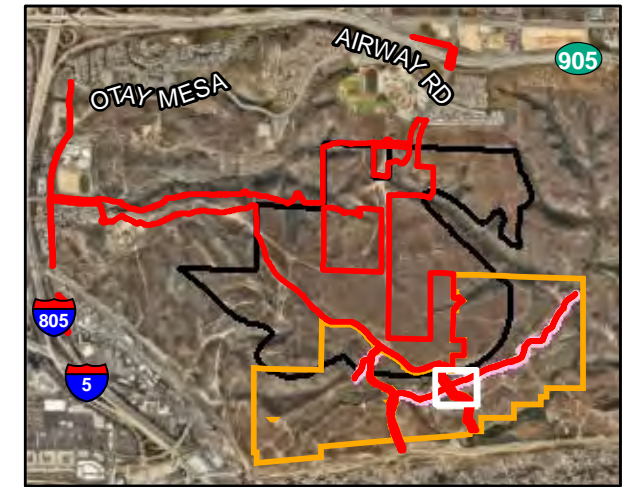


- Project-level Analysis Area
- Trail Restoration
- Land to be Conserved and Managed by the City
- Specific Plan Boundary
- Primitive Trail Alignment
- Vegetation Communities**
- Maritime Succulent Scrub
- Disturbed Maritime Succulent Scrub
- Non-native Grassland
- Vernal Pool with Fairy Shrimp
- Disturbed Land

*Impacts associated with the primitive trail conservatively assumes a 10-foot wide impact footprint; however, the ultimate trail width would generally be, at a maximum, approximately 4 feet wide. Restoration would occur beyond the 4-foot wide trail.



FIGURE 6.2
Existing Vegetation within
Trail Restoration Areas

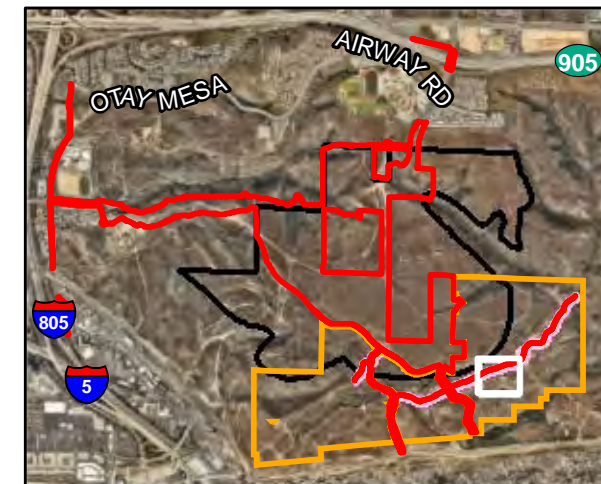


- Project-level Analysis Area
 - Trail Restoration
 - Land to be Conserved and Managed by the City
 - Specific Plan Boundary
 - Primitive Trail Alignment
- Vegetation Communities**
- Maritime Succulent Scrub
 - Disturbed Maritime Succulent Scrub
 - Non-native Grassland
 - Tamarisk Scrub
 - Vernal Pool with Fairy Shrimp
 - Disturbed Land

*Impacts associated with the primitive trail conservatively assumes a 10-foot wide impact footprint; however, the ultimate trail width would generally be, at a maximum, approximately 4 feet wide. Restoration would occur beyond the 4-foot wide trail.



FIGURE 6.3
Existing Vegetation within
Trail Restoration Areas

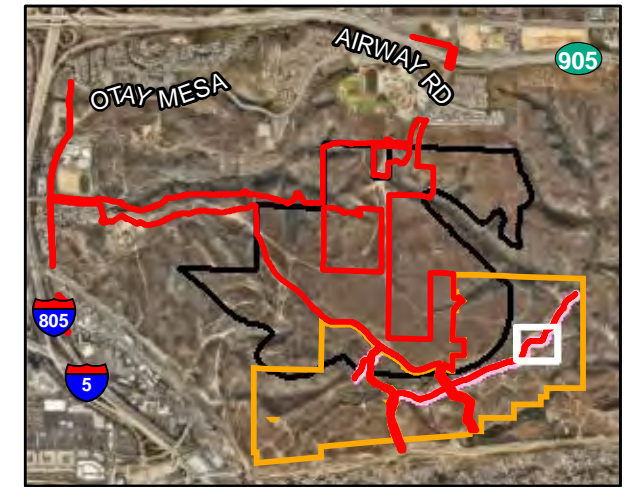


- Project-level Analysis Area
 - Trail Restoration
 - Land to be Conserved and Managed by the City
 - Specific Plan Boundary
 - Primitive Trail Alignment
- Vegetation Communities**
- Maritime Succulent Scrub
 - Disturbed Maritime Succulent Scrub
 - Non-native Grassland
 - Disturbed Wetland
 - Disturbed Land

*Impacts associated with the primitive trail conservatively assumes a 10-foot wide impact footprint; however, the ultimate trail width would generally be, at a maximum, approximately 4 feet wide. Restoration would occur beyond the 4-foot wide trail.



FIGURE 6.4
Existing Vegetation within
Trail Restoration Areas

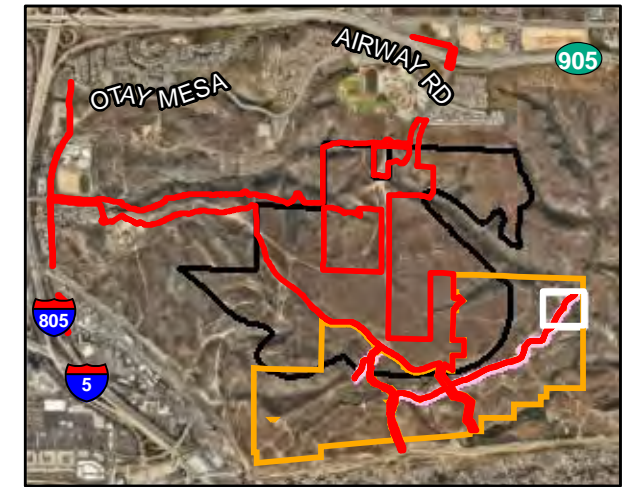


- Project-level Analysis Area
 - Trail Restoration
 - Land to be Conserved and Managed by the City
 - Primitive Trail Alignment
- Vegetation Communities**
- Diegan Coastal Sage Scrub
 - Maritime Succulent Scrub
 - Disturbed Maritime Succulent Scrub
 - Non-native Grassland
 - Disturbed Wetland
 - Disturbed Land

*Impacts associated with the primitive trail conservatively assumes a 10-foot wide impact footprint; however, the ultimate trail width would generally be, at a maximum, approximately 4 feet wide. Restoration would occur beyond the 4-foot wide trail.



FIGURE 6.5
Existing Vegetation within
Trail Restoration Areas



- Project-level Analysis Area
 - Trail Restoration
 - Land to be Conserved and Managed by the City
 - Primitive Trail Alignment
- Vegetation Communities**
- Diegan Coastal Sage Scrub
 - Disturbed Maritime Succulent Scrub
 - Non-native Grassland
 - Disturbed Land

*Impacts associated with the primitive trail conservatively assumes a 10-foot wide impact footprint; however, the ultimate trail width would generally be, at a maximum, approximately 4 feet wide. Restoration would occur beyond the 4-foot wide trail.



FIGURE 6.6
Existing Vegetation within
Trail Restoration Areas

Table 1 Existing Vegetation Communities within the One mile, 100 foot wide Trail Corridor	
Existing Vegetation Community	Acreage
Maritime Succulent Scrub	2.18
Disturbed Maritime Succulent Scrub	1.86
Diegan Coastal Sage Scrub	0.41
Non-native Grassland	6.02
Disturbed Lands	1.10
Tamarisk Scrub	0.08
Disturbed Wetland	0.44
Vernal Pools with Fairy Shrimp	0.09
TOTAL:	12.18
NOTE: A 4-foot-wide trail corridor and the emergency vehicle access road is excluded from the corridor acreages as they would not be subject to restoration.	

The restoration effort would be limited to disturbed lands, non-native grassland, disturbed maritime succulent scrub, disturbed wetlands, and vernal pools. Currently, these disturbed areas are dominated by dense non-native annual grasses, such as slender wild oat (*Avena barbata*) and wall barley (*Hordeum murinum*), as well as patches of black mustard (*Brassica nigra*), Russian thistle (*Salsola tragus*), tocalote (*Centaurea melitensis*), and fennel (*Foeniculum vulgare*). These areas would be restored to either Diegan coastal sage scrub or maritime succulent scrub habitats based on what the dominant vegetation community is in the surrounding area (see Section 5.0 of this plan for restored/enhanced habitats). Disturbed wetlands and vernal pools would be enhanced as detailed in Section 5.1.1.

2.5 Sensitive Species

2.5.1 Sensitive Plants

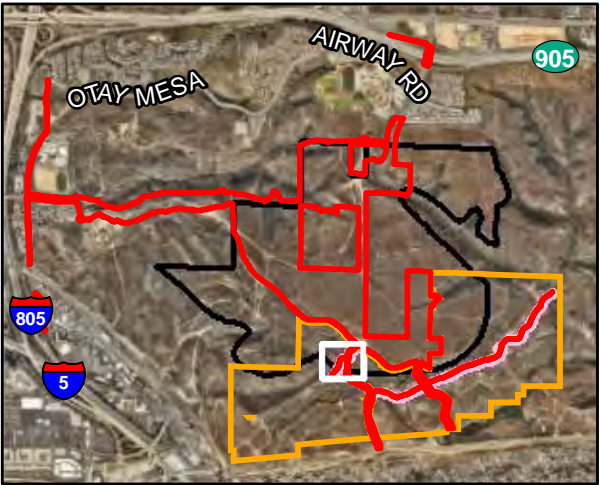
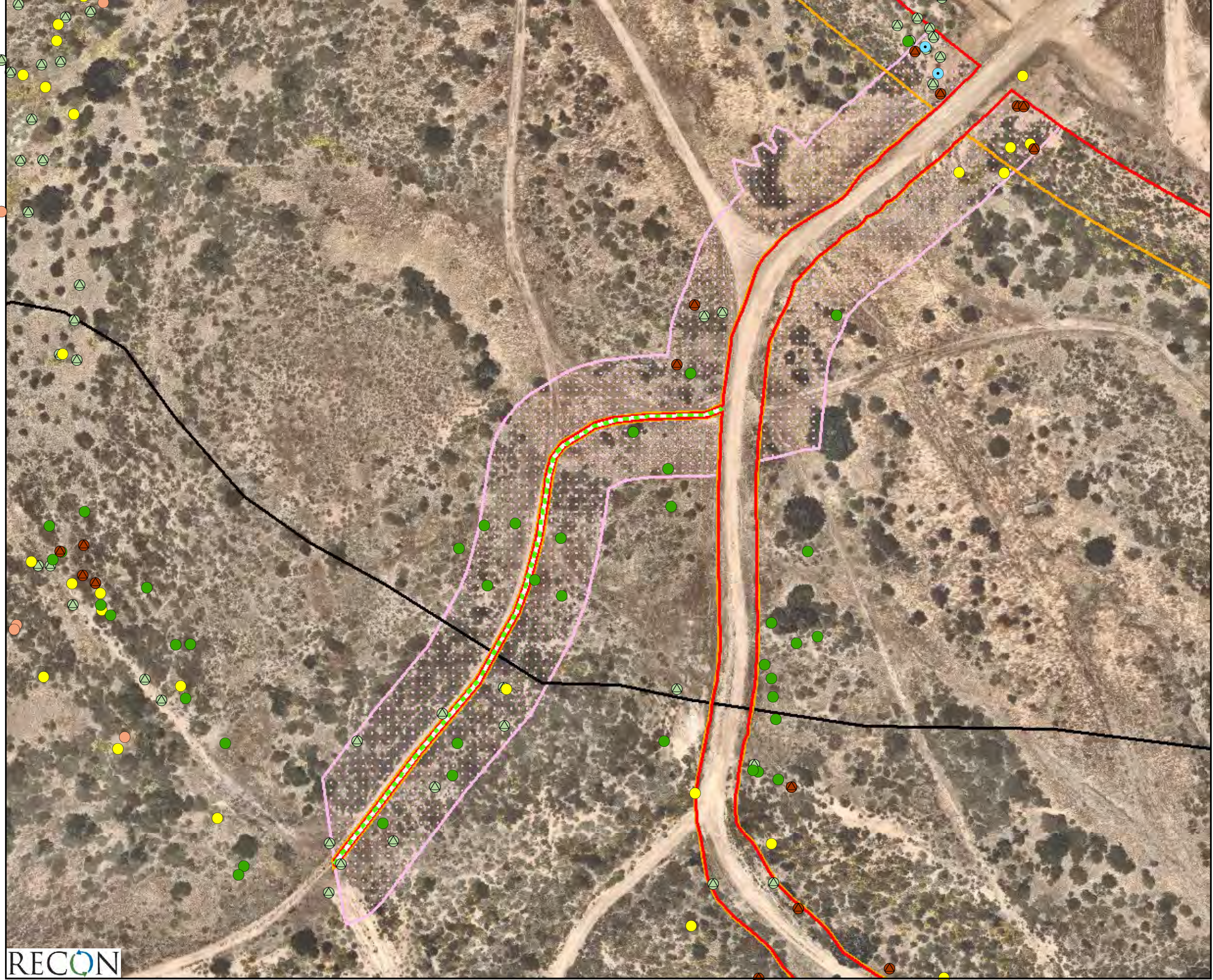
As discussed in the biological resources technical report (RECON Environmental, Inc. [RECON] 2024), general biological surveys and focused rare plants surveys were conducted, and a total of 19 sensitive plant species were observed during the surveys conducted in project-level analysis areas and/or lands to be conveyed to the City for long-term management. Sensitive plant species observed include: ashy spike-moss (*Selaginella cinerascens*), bobtail barley (*Hordeum intercedens*), California adolphia (*Adolphia californica*), California box-thorn (*Lycium californicum*), cliff spurge (*Euphorbia misera*), decumbent goldenbush (*Isocoma menziesii* var. *decumbens*), golden-ray pentachaeta (*Pentachaeta aurea* ssp. *aurea*), Otay tarplant (*Deinandra conjugens*), Palmer's grapplinghook (*Harpagonella palmeri*), San Diego barrel cactus (*Ferocactus viridescens*), San Diego bur-sage (*Ambrosia chenopodiifolia*), San Diego button-celery (*Eryngium aristulatum* var. *parishii*), San Diego County viguiera (*Bahiopsis laciniata*), San Diego County needle grass (*Stipa* [= *Achnatherum*] *diegoensis*), seaside cistanthe (*Cistanthe maritima*), snake cholla (*Cylindropuntia californica* var. *californica*), south coast saltscale (*Atriplex pacifica*), variegated dudleya (*Dudleya variegata*), and western dichondra (*Dichondra occidentalis*).

Two of these observed species, Otay tarplant and San Diego button-celery, are federally and state listed endangered and covered under the Multiple Species Conservation Program (MSCP) and Vernal Pool Habitat Conservation Plan, respectively. Otay tarplant, variegated dudleya, San Diego button-celery, and snake cholla are narrow endemic, MSCP-covered species. San Diego barrel cactus is a MSCP-covered species. The remaining sensitive plant species are considered locally sensitive and have a rare plant ranking as assigned by California Native Plant Society. Figures 7.1 through 7.6 depict the sensitive plants occurring within or adjacent to the trail restoration areas. Of the sensitive plant species observed within the project survey areas, only San Diego bur-sage, ashy spike-moss, San Diego County viguiera, cliff spurge, San Diego barrel cactus, and snake cholla were identified within the trail restoration plan area. Refer to Section 4.3.1 for mitigation measures that would be implemented prior to restoration to ensure avoidance of sensitive species.

2.5.2 Sensitive Wildlife

Per the biological resources technical report (RECON 2024), a total of 24 sensitive wildlife species were observed or assumed present within the project-level survey area during the general and focused surveys conducted for the project. Sensitive wildlife species observed include: Quino checkerspot butterfly (*Euphydryas edithaa quino*), San Diego fairy shrimp (*Branchinecta sandiegonensis*), Riverside fairy shrimp (*Streptocephalus woottoni*), western spadefoot (*Spea hammondi*), coastal California gnatcatcher (*Polioptila californica californica*), orange-throated whiptail (*Aspidoscelis hyperythra*), coastal whiptail (*Aspidoscelis tigris stejnegeri*), coast horned lizard (*Phrynosoma blainvillii*), red diamond rattlesnake (*Crotalus ruber*), two-striped gartersnake (*Thamnophis hammondi*), Cooper's hawk (*Accipiter cooperii*), burrowing owl (*Athene cunicularia*), northern harrier (*Circus hudsonius*), white-tailed kite (*Elanus leucurus*), merlin (*Falco columbarius*), bald eagle (*Haliaeetus leucocephalus*), golden eagle (*Aquila chrysaetos*), California horned lark (*Eremophila alpestris actia*), yellow warbler (*Setophaga petechia*), yellow-breasted chat (*Icteria virens*), least Bell's vireo (*Vireo bellii pusillus*), southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), grasshopper sparrow (*Ammodramus savannarum*), and San Diego desert woodrat (*Neotoma lepida intermedia*).

Six additional wildlife species were not observed within the trail restoration area but have a moderate to high potential to occur within the project-level analysis area, including Crotch's bumble bee (*Bombus crotchii*) (observed in the surrounding mitigation lands but not in the trail restoration area), Coronado skink (*Plestiodon skiltonianus interparietalis*), Bell's sage sparrow (*Artemisiospiza belli belli*), loggerhead shrike (*Lanius ludovicianus*), southern mule deer (*Odocoileus hemionus fuliginata*), and coastal cactus wren (*Campylorhynchus brunneicapillus sandiegonensis*). Figures 8.1 through 8.6 present the sensitive wildlife species that have been detected to occur within or adjacent to the trail restoration areas. Refer to Section 4.0 for mitigation measures that would be implemented during trail restoration and construction activities that would ensure impacts to these species would be avoided.



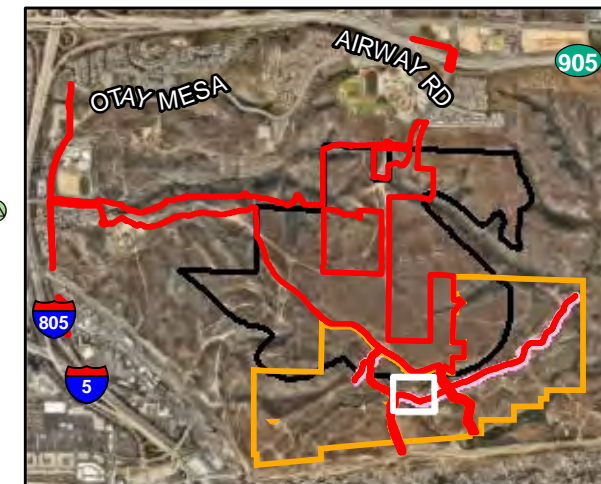
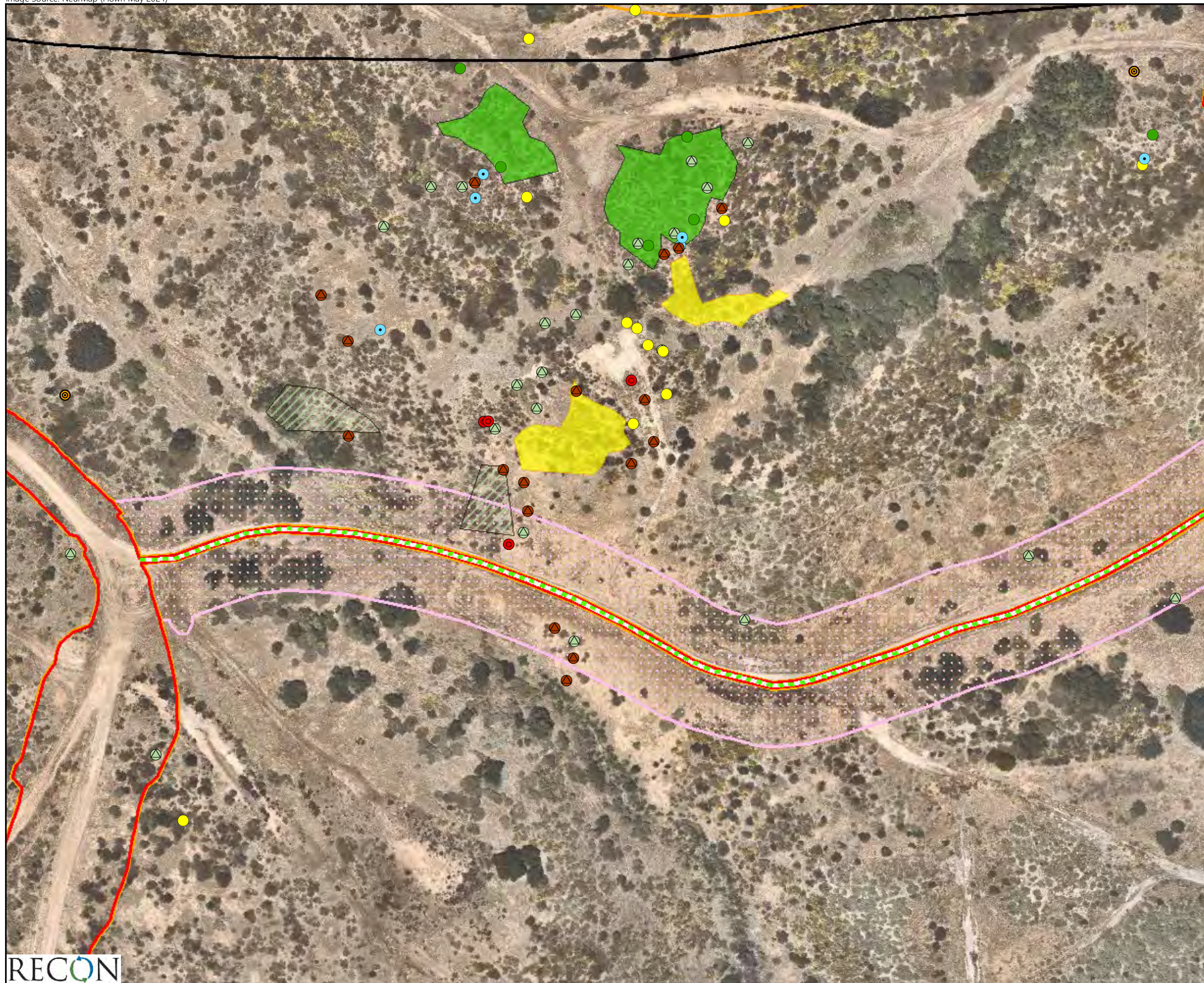
- Project-level Analysis Area
- Trail Restoration
- Land to be Conserved and Managed by the City
- Specific Plan Boundary
- Primitive Trail Alignment

Sensitive Plants

- San Diego Bur-sage
(*Ambrosia chenopodiifolia*)
- Ashy Spike-moss
(*Selaginella cinerascens*)
- San Diego County Viguiera
(*Bahiopsis laciniata*)
- Cliff Spurge
(*Euphorbia misera*)
- San Diego Barrel Cactus
(*Ferocactus viridescens*)
- California Adolphia
(*Adolphia californica*)



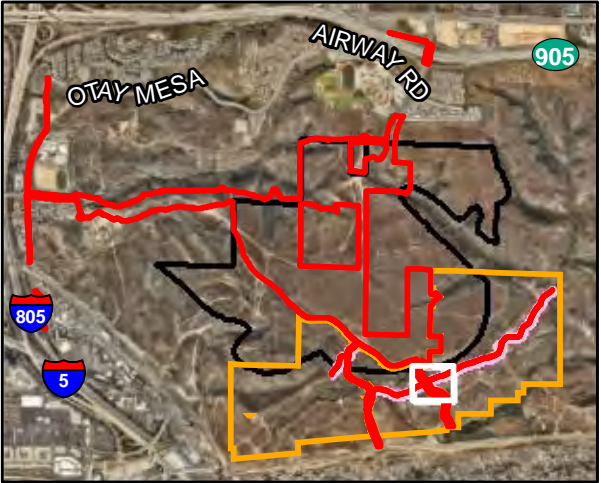
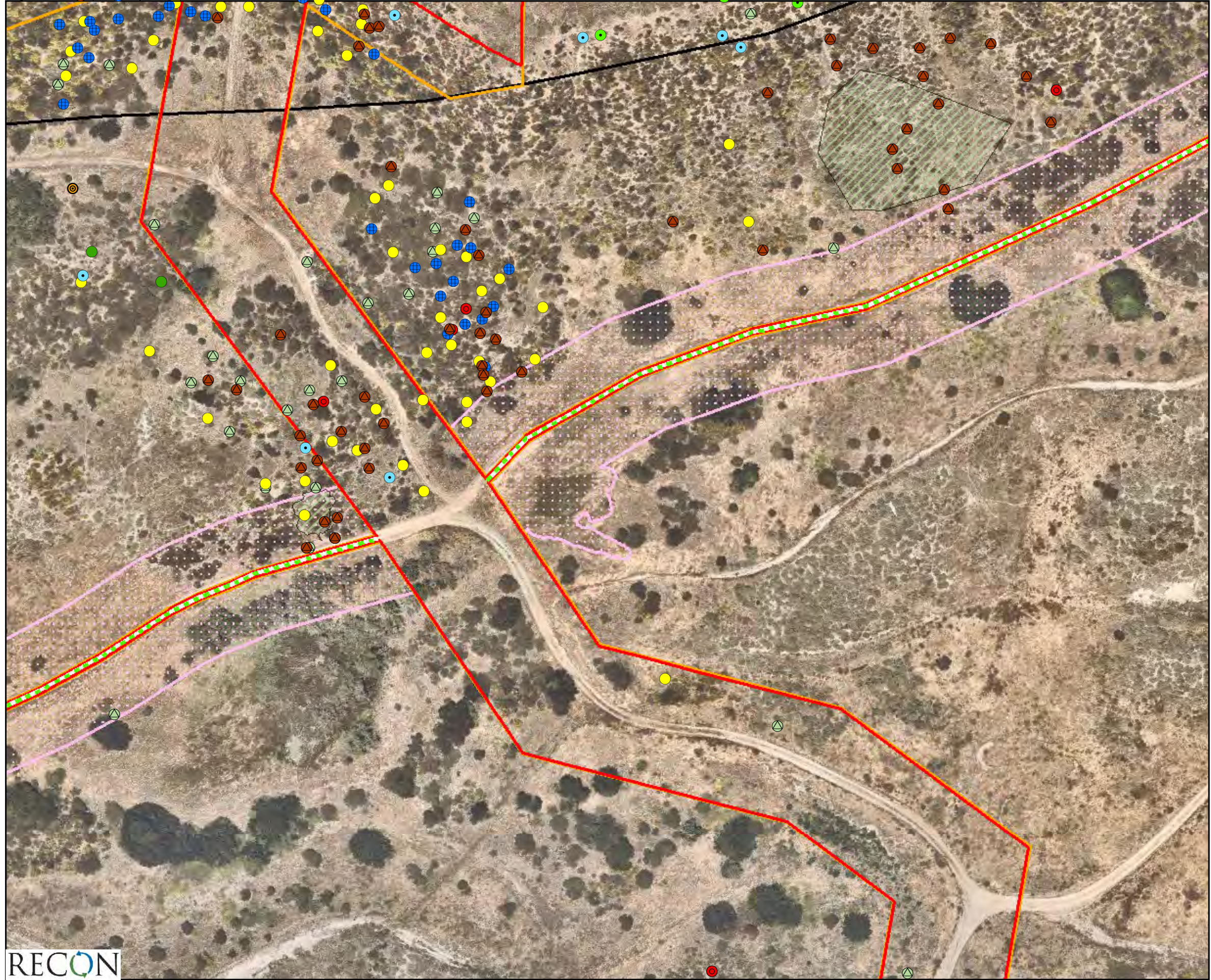
FIGURE 7.1
Sensitive Plant Species Occurring within
or Adjacent to Trail Restoration Areas



- Project-level Analysis Area
- Trail Restoration
- Land to be Conserved and Managed by the City
- Specific Plan Boundary
- Primitive Trail Alignment
- Sensitive Plants**
- San Diego Bur-sage
(*Ambrosia chenopodiifolia*)
- Ashy Spike-moss
(*Selaginella cinerascens*)
- San Diego County Viguiera
(*Bahiopsis laciniata*)
- Cliff Spurge
(*Euphorbia misera*)
- San Diego Barrel Cactus
(*Ferocactus viridescens*)
- ⊙ San Diego County Needle Grass
(*Stipa diegoensis*)
- Snake Cholla
(*Cylindropuntia californica* var. *californica*)



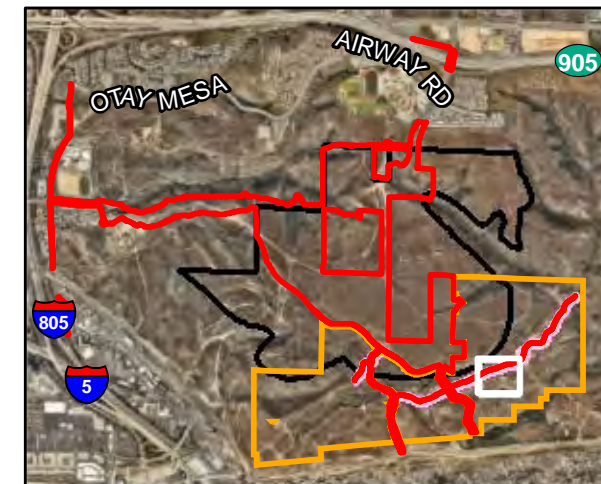
FIGURE 7.2
Sensitive Plant Species Occurring within
or Adjacent to Trail Restoration Areas



- Project-level Analysis Area
 - Trail Restoration
 - Land to be Conserved and Managed by the City
 - Specific Plan Boundary
 - Primitive Trail Alignment
- Sensitive Plants**
- San Diego Bur-sage (*Ambrosia chenopodiifolia*)
 - Ashy Spike-moss (*Selaginella cinerascens*)
 - San Diego County Viguiera (*Bahiopsis laciniata*)
 - Cliff Spurge (*Euphorbia misera*)
 - San Diego Barrel Cactus (*Ferocactus viridescens*)
 - Palmer's Grapplinghook (*Harpagonella palmeri*)
 - San Diego County Needle Grass (*Stipa diegoensis*)
 - Seaside Cistanthe (*Cistanthe maritima*)
 - Snake Cholla (*Cylindropuntia californica* var. *californica*)



FIGURE 7.3
Sensitive Plant Species Occurring within
or Adjacent to Trail Restoration Areas



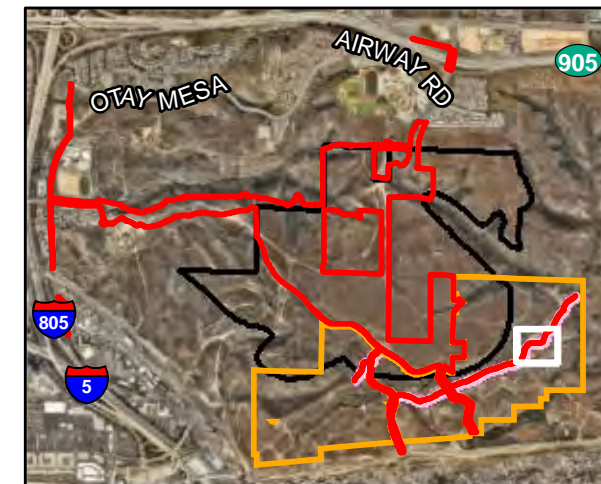
- Project-level Analysis Area
- Trail Restoration
- Land to be Conserved and Managed by the City
- Specific Plan Boundary
- Primitive Trail Alignment

Sensitive Plants

- △ San Diego Bur-sage
(*Ambrosia chenopodiifolia*)
- Ashy Spike-moss
(*Selaginella cinerascens*)
- San Diego County Vigiera
(*Bahiopsis laciniata*)
- Palmer's Grapplinghook
(*Harpagonella palmeri*)
- Snake Cholla
(*Cylindropuntia californica* var. *californica*)



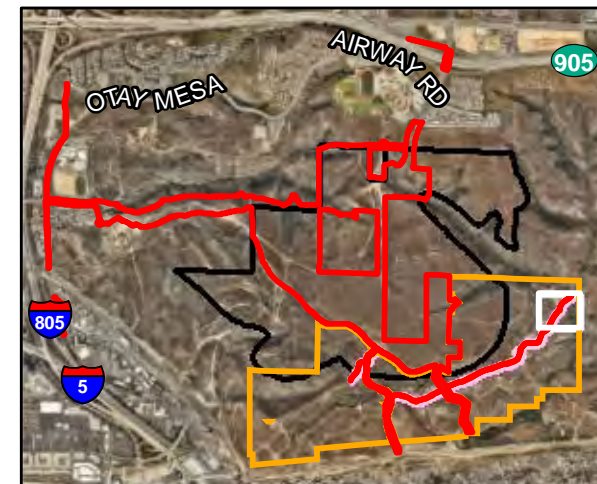
FIGURE 7.4
Sensitive Plant Species Occurring within
or Adjacent to Trail Restoration Areas



- Project-level Analysis Area
 - Trail Restoration
 - Land to be Conserved and Managed by the City
 - Primitive Trail Alignment
- Sensitive Plants**
- San Diego Bur-sage
(*Ambrosia chenopodiifolia*)
 - San Diego County Viguiera
(*Bahiopsis laciniata*)



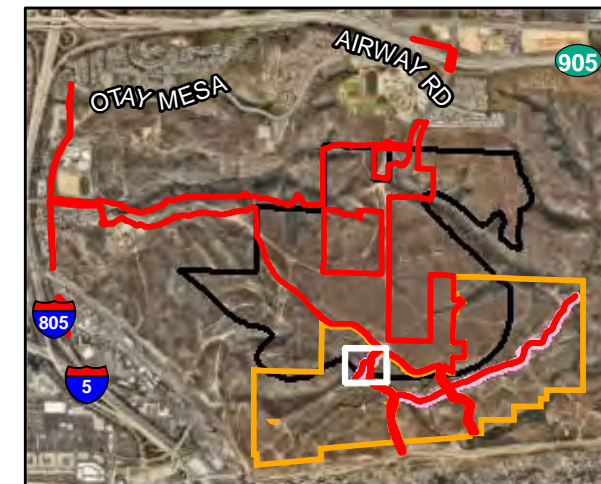
FIGURE 7.5
Sensitive Plant Species Occurring within
or Adjacent to Trail Restoration Areas



- Project-level Analysis Area
 - Trail Restoration
 - Land to be Conserved and Managed by the City
 - Primitive Trail Alignment
- Sensitive Plants**
- San Diego Bur-sage
(*Ambrosia chenopodiifolia*)



FIGURE 7.6
Sensitive Plant Species Occurring within
or Adjacent to Trail Restoration Areas



- Project-level Analysis Area
- Trail Restoration
- Land to be Conserved and Managed by the City
- Specific Plan Boundary
- Primitive Trail Alignment

Sensitive Wildlife

Birds

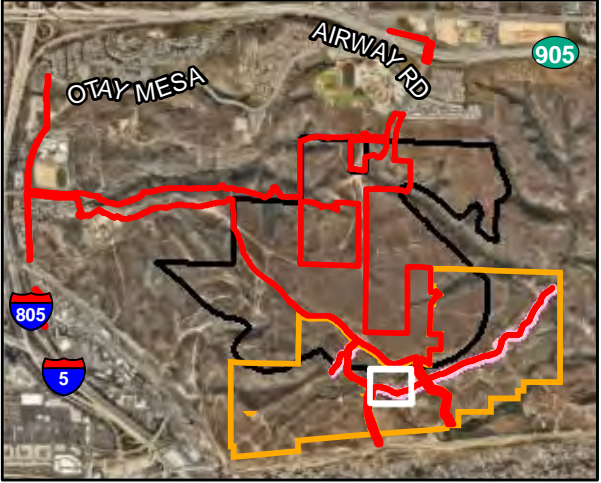
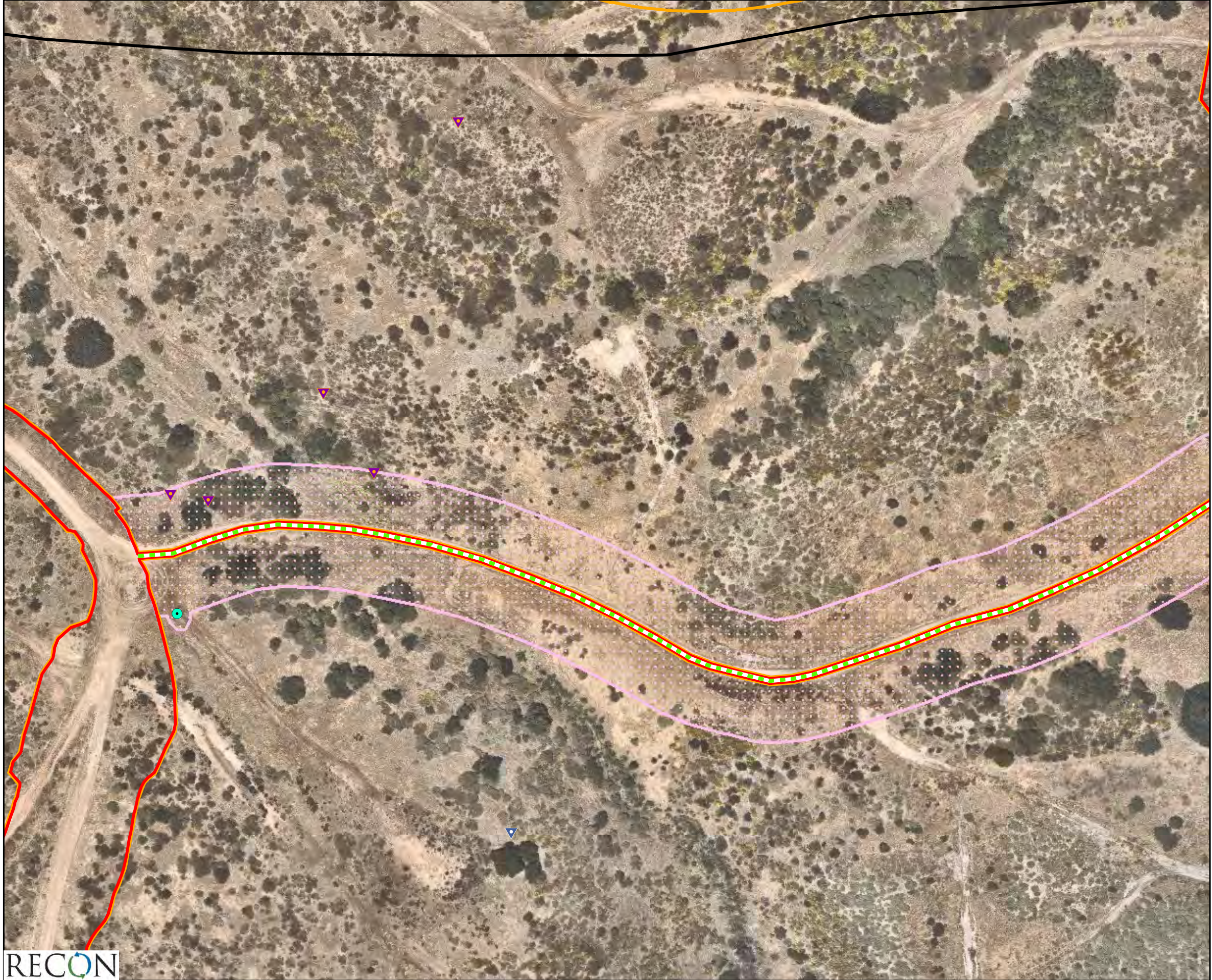
- ▼ Coastal California Gnatcatcher
(*Poliophtila californica californica*)
- ▼ Northern Harrier
(*Circus hudsonius*)

Reptiles and Amphibians

- ✕ Western Spadefoot
(*Spea hammondi*)



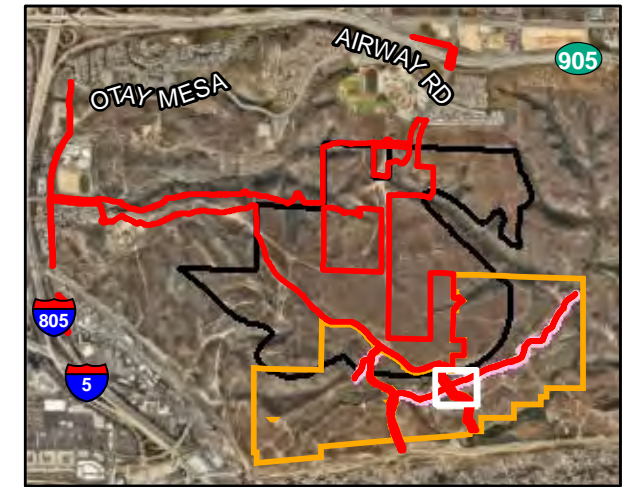
FIGURE 8.1
Sensitive Wildlife Species Occurring within
or Adjacent to Trail Restoration Areas



- Project-level Analysis Area
 - Trail Restoration
 - Land to be Conserved and Managed by the City
 - Specific Plan Boundary
 - Primitive Trail Alignment
- Sensitive Wildlife**
- Birds**
- Coastal California Gnatcatcher (*Poliopitila californica californica*)
 - Southern California Rufous-crowned Sparrow (*Aimophila ruficeps canescens*)
- Crustaceans**
- San Diego Fairy Shrimp (*Branchinecta sandiegonensis*)



FIGURE 8.2
Sensitive Wildlife Species Occurring within
or Adjacent to Trail Restoration Areas



- Project-level Analysis Area
 - Trail Restoration
 - Land to be Conserved and Managed by the City
 - Specific Plan Boundary
 - Primitive Trail Alignment
- Sensitive Wildlife**
- Birds**
- ▼ Coastal California Gnatcatcher
(*Poliophtila californica californica*)
 - ▼ Southern California Rufous-crowned Sparrow
(*Aimophila ruficeps canescens*)
 - ▼ California Horned Lark
(*Eremophila alpestris actia*)
- Reptiles and Amphibians**
- ✕ Orange-throated Whiptail
(*Aspidoscelis hyperythra*)
 - ✕ Western Spadefoot
(*Spea hammondi*)
- Crustaceans**
- San Diego Fairy Shrimp
(*Branchinecta sandiegonensis*)

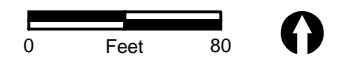
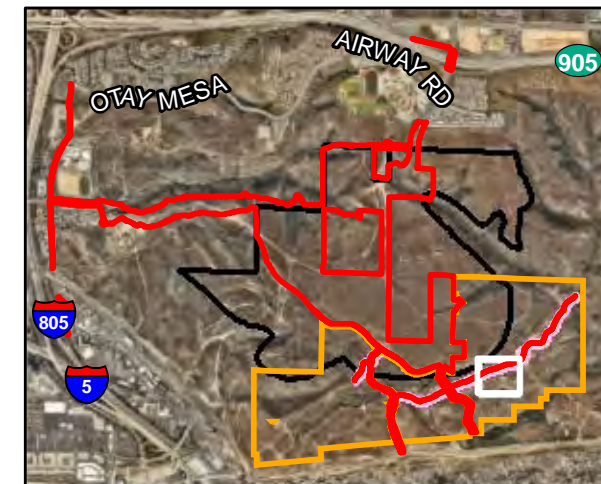


FIGURE 8.3
Sensitive Wildlife Species Occurring within
or Adjacent to Trail Restoration Areas



- Project-level Analysis Area
- Trail Restoration
- Land to be Conserved and Managed by the City
- Specific Plan Boundary
- Primitive Trail Alignment

Sensitive Wildlife

Birds

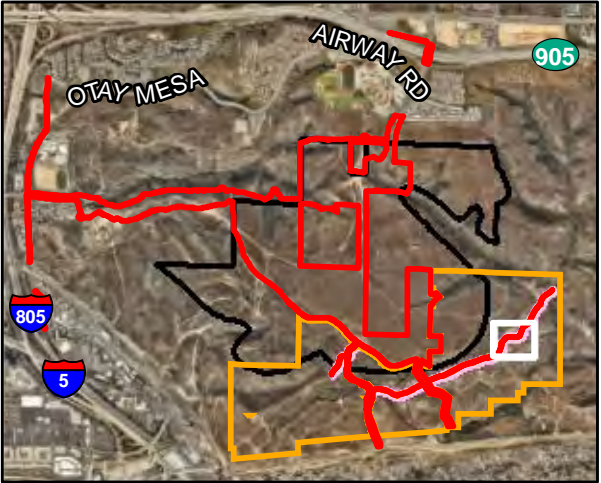
- Coastal California Gnatcatcher
(*Poliophtila californica californica*)
- Southern California Rufous-crowned Sparrow
(*Aimophila ruficeps canescens*)

Reptiles and Amphibians

- Western Spadefoot
(*Spea hammondi*)



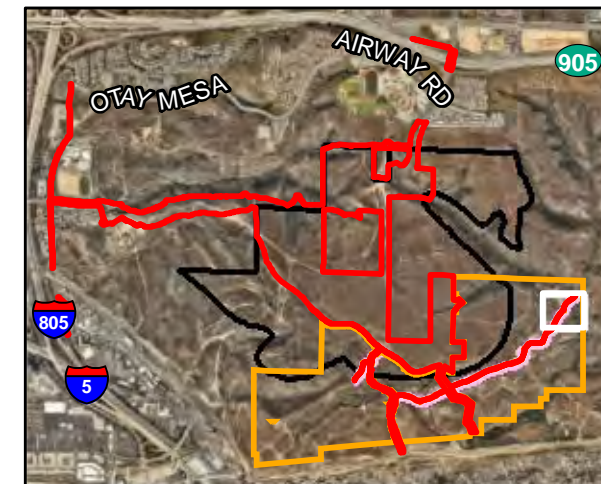
FIGURE 8.4
Sensitive Wildlife Species Occurring within
or Adjacent to Trail Restoration Areas



- Project-level Analysis Area
 - Trail Restoration
 - Land to be Conserved and Managed by the City
 - Primitive Trail Alignment
- Sensitive Wildlife**
- Birds**
- Coastal California Gnatcatcher (*Polioptila californica californica*)
- Reptiles and Amphibians**
- Western Spadefoot (*Spea hammondi*)
- Crustaceans**
- Riverside Fairy Shrimp (*Streptocephalus woottoni*)



FIGURE 8.5
Sensitive Wildlife Species Occurring within
or Adjacent to Trail Restoration Areas



- Project-level Analysis Area
 - Trail Restoration
 - Land to be Conserved and Managed by the City
 - Primitive Trail Alignment
- Sensitive Wildlife**
- Birds**
- ▼ Coastal California Gnatcatcher
(*Poliptila californica californica*)
 - ▼ (Yellow-breasted Chat
(*Icteria virens*)



FIGURE 8.6
Sensitive Wildlife Species Occurring within
or Adjacent to Trail Restoration Areas

2.6 Rationale for Expecting Success

2.6.1 Restoration Goals

The goals for this restoration project are to restore and enhance habitat immediately adjacent to the proposed primitive trail system with the goal of closing unauthorized trail segments that may intersect with the formal trail system while improving biological value of the surrounding habitats. The restoration activities and methods described in this plan are intended to restore disturbed and non-native habitats and enhance existing native habitat, primarily maritime succulent scrub vegetation. Additionally, this plan includes methods and measures that would be taken to ensure impacts to sensitive plant and wildlife species are avoided during the course of the restoration effort.

2.6.2 Restoration Site Suitability

The site is suitable for restoration because the restoration corridor contains evidence of anthropogenic impacts including unauthorized trails and roads. Such anthropogenic impacts result in habitat fragmentation, and loss of native habitat and pollinators. The restoration activities described would remove the fragmentation and effects of the anthropogenic impacts to create one contiguous restoration buffer around the approved trails system. In addition, it is anticipated that restoration of the disturbed lands and non-native grassland to native habitat would prevent continued unauthorized use of unauthorized trail alignments and would reduce the extent of non-native invasive plants and would increase the habitat quality of the vegetation communities.

The proposed restoration is suitable for the following reasons:

- 1) The restoration site is located within the MHPA.
- 2) The surrounding areas would be maintained as open space.
- 3) There is adequate site access for implementation and maintenance activities.
- 4) It is adjacent to intact maritime succulent scrub and Diegan coastal sage scrub habitats.
- 5) The restoration site is outside any brush management zones.
- 6) The restoration effort would close unauthorized trails to limit ongoing human disturbance into surrounding open space.
- 7) The restoration effort has been designed to ensure adverse impacts to sensitive plant and wildlife species would be avoided during restoration installation and maintenance activities.

3.0 Roles and Responsibilities

3.1 Project Proponent and Financial Responsibility

The project proponent (Tri Pointe Homes) would be responsible for retaining (1) a qualified restoration specialist with over five years of experience monitoring habitat restoration to oversee the installation and monitoring of the restoration program and (2) a qualified installation/maintenance contractor with expertise in restoration of native habitat and sensitive plant species. Tri Pointe Homes would be

responsible for financing the installation and maintenance of the proposed restoration described in this plan.

3.2 Responsible Agencies

The City's Development Services Department and MSCP (City of San Diego 1997) would be responsible for the review and approval of this plan.

3.3 Restoration Specialist

Overall supervision of the installation and maintenance of this restoration effort would be the responsibility of a restoration specialist with at least five years of native habitat and sensitive plant species restoration experience. The restoration specialist would oversee the installation/maintenance for the life of the restoration project. Specifically, the restoration specialist would educate all participants about restoration goals and requirements; inspect plant material; directly oversee seeding, weeding, and other maintenance activities; and conduct regular monitoring as well as annual assessments of the restoration effort. The restoration specialist would prepare and submit an annual and final report documenting restoration implementation.

3.4 Installation/Maintenance Contractor

Tri Pointe Homes would hire a qualified restoration contractor. The contractor would be a firm holding a valid C-27 Landscape Contracting License from the State of California, a valid Pest Control Business License, and a Qualified Applicator Certificate or Qualified Applicator License, with Category B, that would allow them to perform the required work for this restoration effort.

During the installation, the contractor would be responsible for initial weed control/dethatching, native container plant installation, seeding, as well as maintenance of the restoration site during the 120-day Plant Establishment Period (PEP) and 25-month maintenance period.

Following installation, the contractor would submit marked-up as-builts for all activities that occurred during implementation to the City MMC. Following formal sign-off of the PEP, the contractor would maintain the restoration site for a minimum of 25 months. During this period, the contractor would service the entire restoration site according to the maintenance schedule (Section 6.0, below). Service would include, but not be limited to, weed control, trash removal, watering, remedial planting and/or seeding, and pest and disease management. All activities conducted would be seasonally appropriate and approved by the restoration specialist.

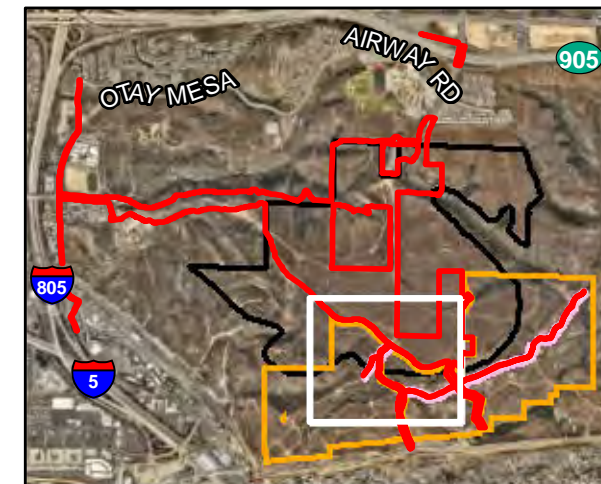
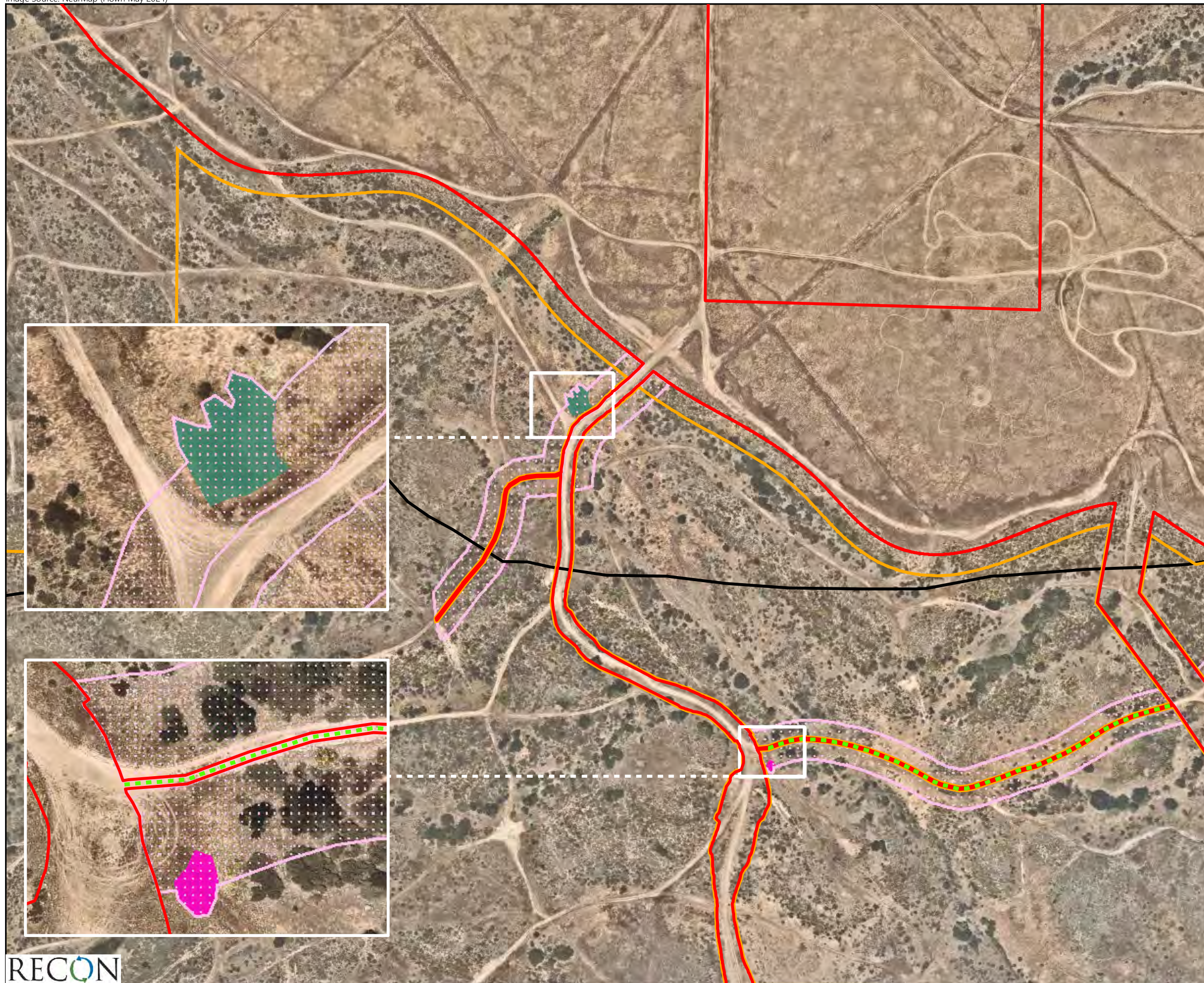
4.0 Mitigation Measures

The following mitigation measures to avoid and minimize impacts to sensitive biological resources are provided as detailed in the Biological Resources Report for the Southwest Village Specific Plan, San Diego, California, Project No. 614791 (RECON 2024).

4.1 Jurisdictional Resources

Jurisdictional resources would be avoided during final siting of the trail to avoid impacts to wetlands, vernal pools, and other jurisdictional features as depicted on Figures 9.1 and 9.2. The following mitigation measures would be followed during restoration implementation to avoid and minimize impacts to jurisdictional resources:

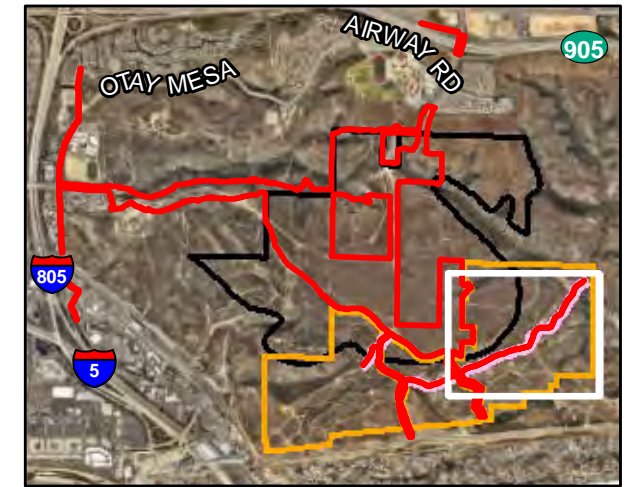
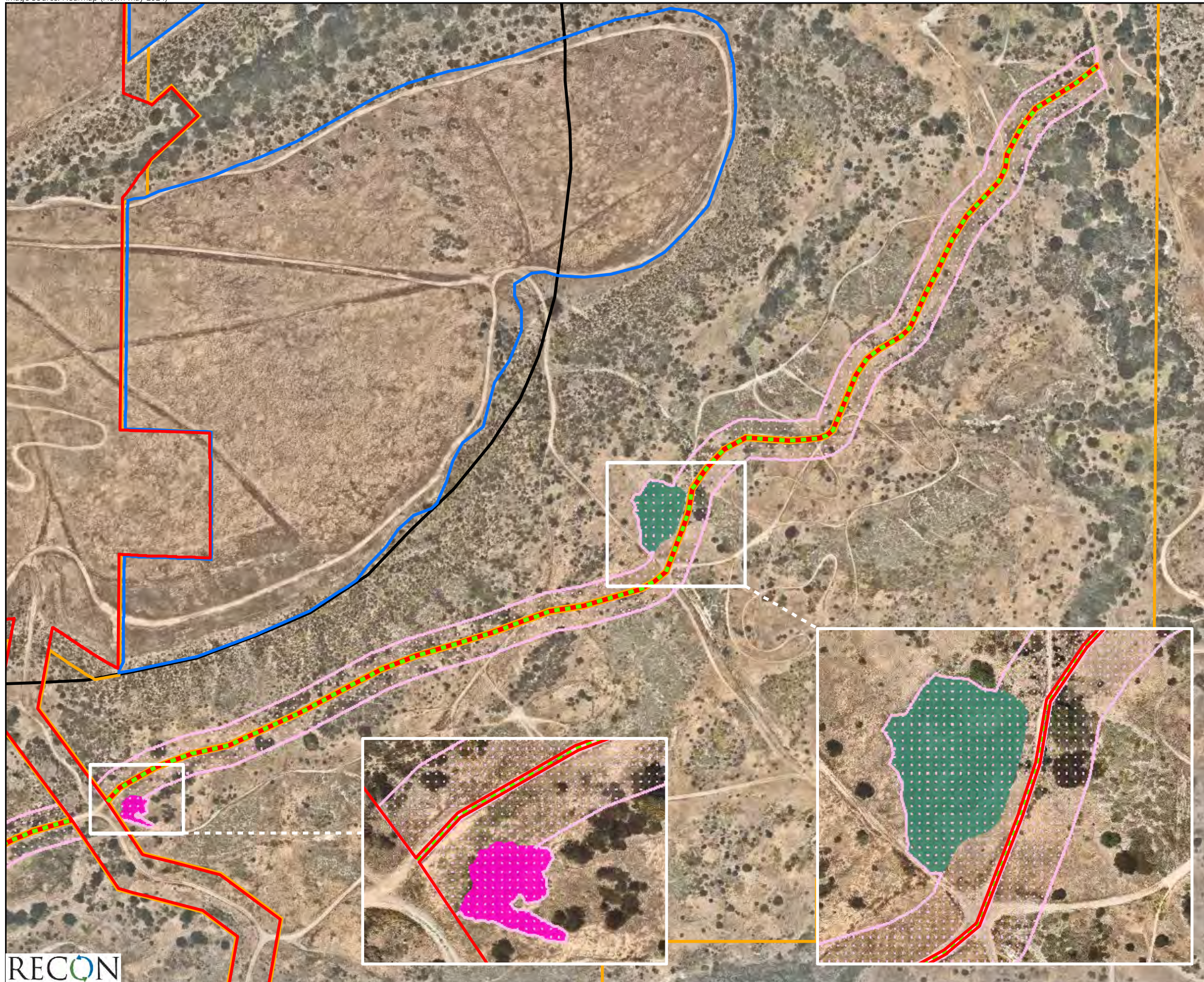
- Enhancement of existing vernal pools that are located within the restoration corridor would comply with the general avoidance and minimization measures consistent with the City's Vernal Pool Habitat Conservation Plan (City of San Diego 2019), including avoidance measurements for the western spadefoot toad which was observed as eggs and tadpoles during fairy shrimp protocol surveys and general biological surveys. To avoid impacts to western spadefoot, no work shall occur within the vernal pools when ponded and herbicide application would not occur within a 10-foot buffer of vernal pools.
- Compliance with the City's Vernal Pool Habitat Conservation Plan general avoidance and minimization measures including but not limited to temporary fencing, grading techniques, monitoring, and topsoil salvage to preclude any construction impacts to the on-site vernal pool and wetland restoration areas.
- A qualified biological monitor shall be on-site when enhancement/restoration work is being performed at or adjacent to jurisdictional resources.
- Field crews performing enhancement/restoration work within jurisdictional resources shall not use heavy equipment, only hand tools would be utilized.
- All jurisdictional resources shall be flagged to ensure avoidance.



- Project-level Analysis Area
- Trail Restoration
- Land to be Conserved and Managed by the City
- Specific Plan Boundary
- Primitive Trail Alignment
- Jurisdictional Waters of the US (USACE),
Waters of the State (RWQCB), City of SD Wetland**
- Vernal Pool with Fairy Shrimp
- Disturbed Wetland



FIGURE 9.1
Jurisdictional Resources
within Trail Restoration



- Project-level Analysis Area
- Trail Restoration
- Vernal Pool Restoration Areas
- Land to be Conserved and Managed by the City
- Specific Plan Boundary
- Primitive Trail Alignment
- Jurisdictional Waters of the US (USACE),
Waters of the State (RWQCB), City of SD Wetland**
- Vernal Pool with Fairy Shrimp
- Disturbed Wetland

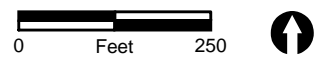
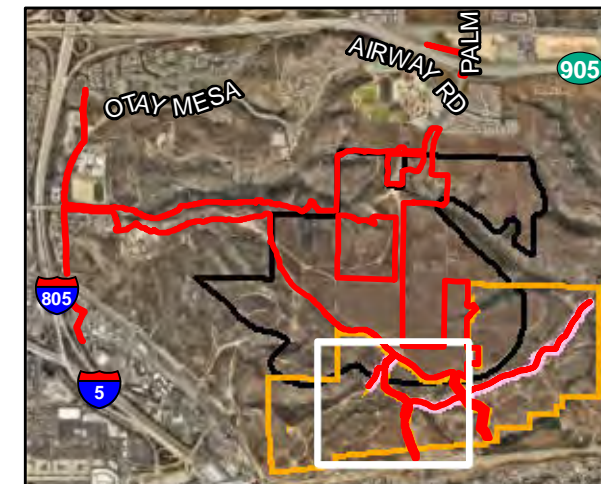
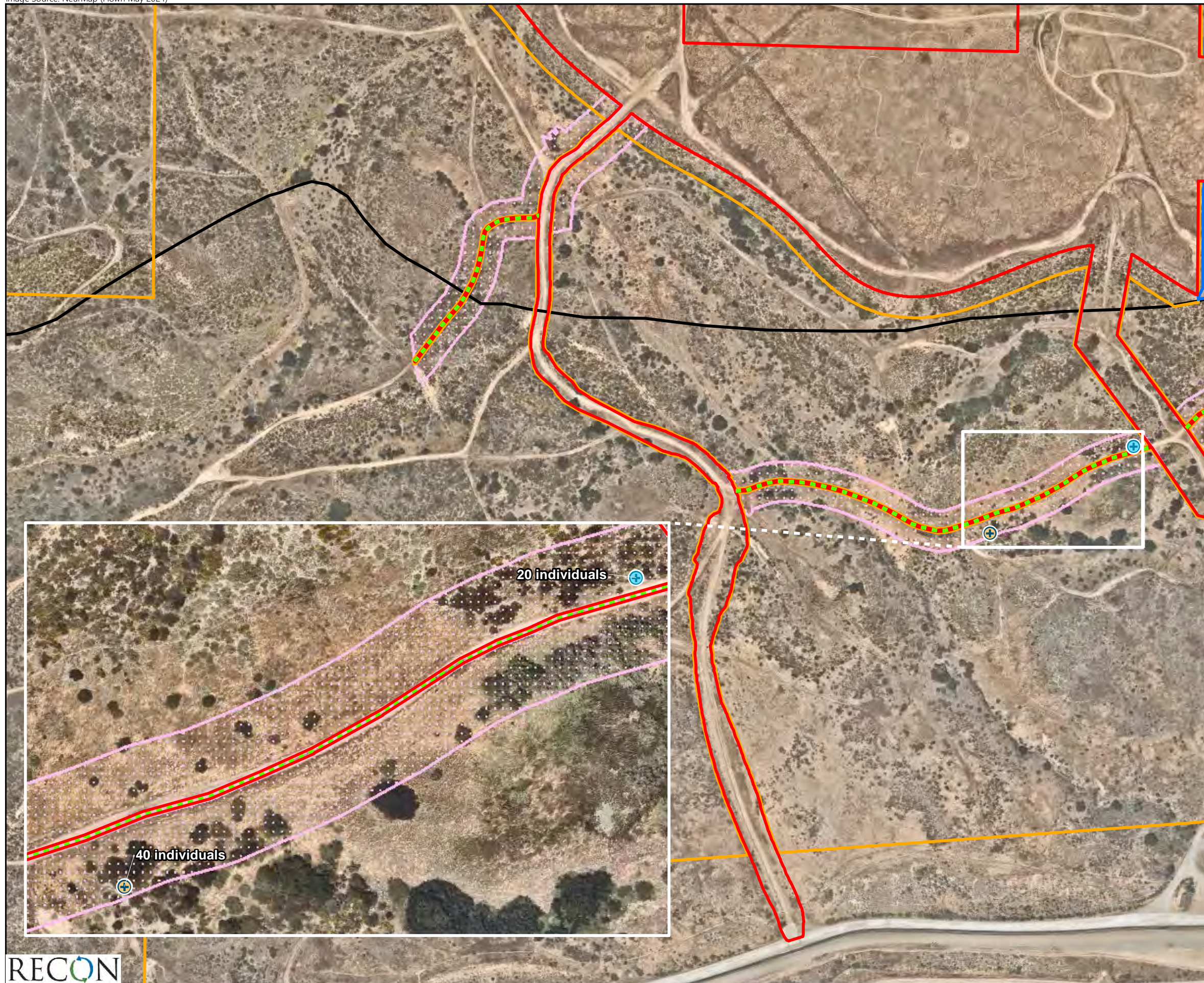


FIGURE 9.2
Jurisdictional Resources
within Trail Restoration

4.2 Quino Checkerspot Butterfly Suitable Habitat Areas

No Quino checkerspot butterfly host plants were identified in the trail restoration area; however, the location of nectar plants is presented in Figures 10.1 and 10.2. These Quino checkerspot butterfly habitat areas would be avoided during restoration implementation and maintenance activities. To avoid potential direct impacts to Quino checkerspot butterfly and suitable habitats during restoration activities, the following mitigation measures would be required:

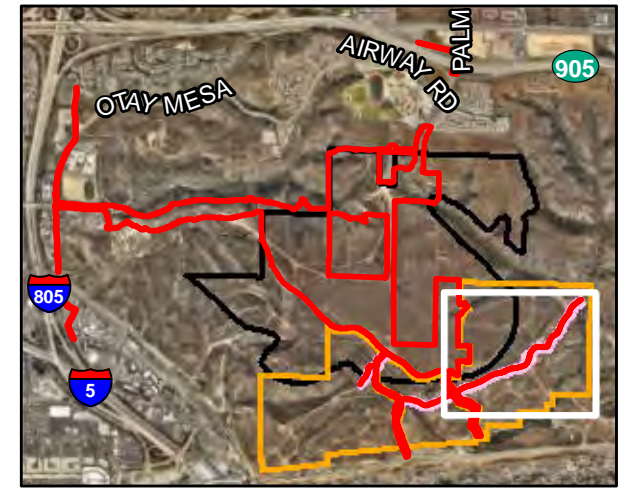
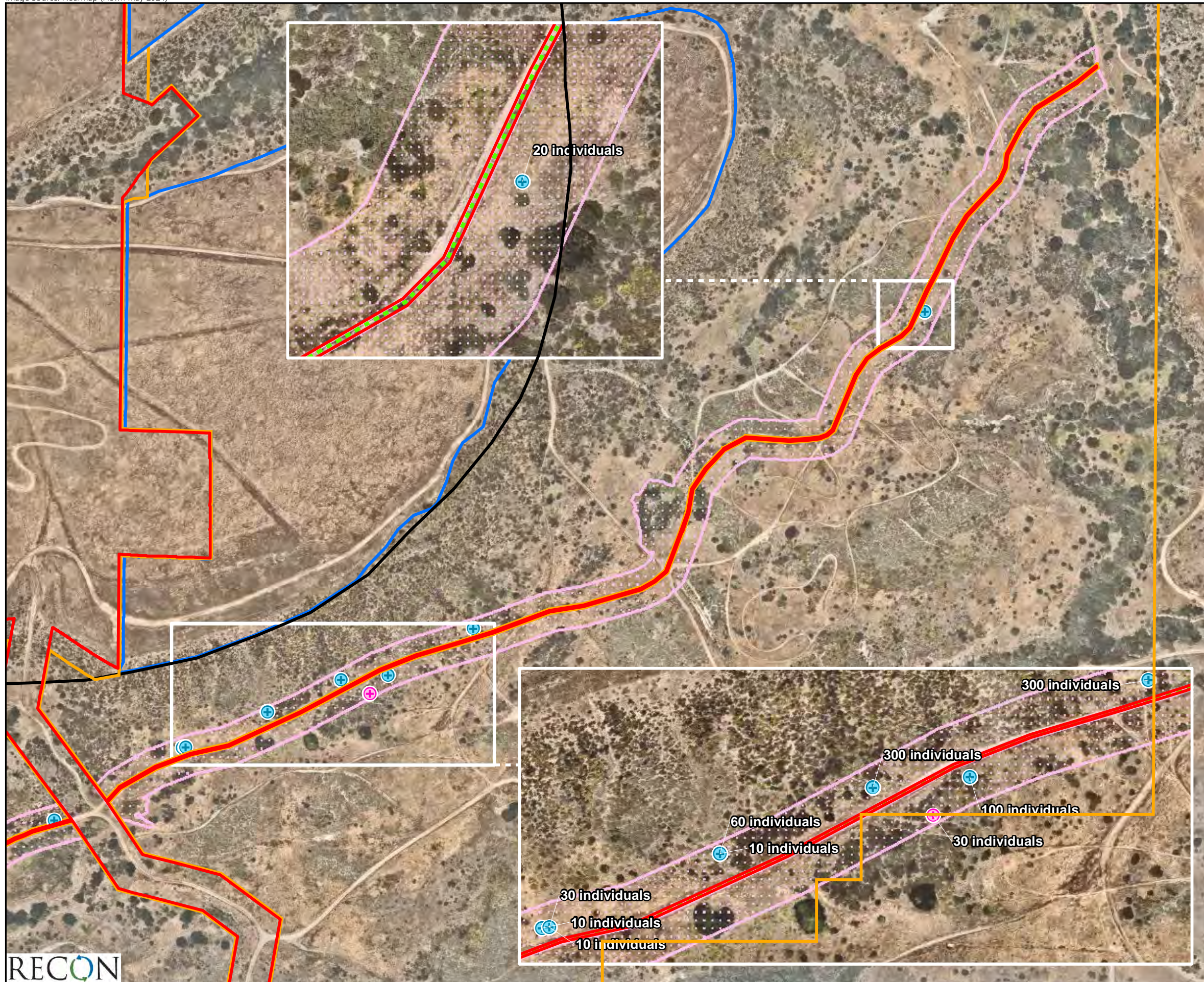
- Prior to restoration implementation, locations of Quino checkerspot butterfly host and nectar plants would be mapped.
- During restoration activities, Quino checkerspot butterfly nectar plants shall be avoided.
- Herbicide application would not occur within the 10-foot buffers of Quino checkerspot butterfly host plant patches, if present. Buffers shall be used to prohibit restoration activities from occurring or personnel from entering areas where Quino checkerspot butterfly larvae have potential be present between host plant patches, and to ensure only target species are treated with herbicide. The field crew shall not enter occupied Quino checkerspot butterfly areas or areas where host plants are present.
- Only locations with dense non-native plant cover and no Quino checkerspot butterfly host, if present, may be sprayed with a glyphosate-based herbicide. A field crew trained in habitat restoration would spray weeds in areas where Quino checkerspot butterfly and its host plants have not been documented.
- Herbicide shall not be applied when wind speed and direction may cause herbicide drift to areas with host plants, if present. Marker dye would be added to the herbicide mixture so the restoration field crew can see any drift.
- The California Invasive Plant Council Best Management Practices for wildland stewardship, including covering host plant patches with tarps during herbicide applications, shall be adhered to (California Invasive Plant Council 2015).



- Project-level Analysis Area
 - Trail Restoration
 - Vernal Pool Restoration Areas
 - Land to be Conserved and Managed by the City
 - Specific Plan Boundary
 - Primitive Trail Alignment
- QCB Suitable Habitat**
- Nectar Plants**
- + Blue Dicks (*Dipterostemon capitatus*)
 - + Popcornflower (*Plagiobothrys* sp. and *Cryptantha* sp.)



FIGURE 10.1
Quino Suitable Habitat
within Trail Restoration



- Project-level Analysis Area
- Trail Restoration
- Vernal Pool Restoration Areas
- Land to be Conserved and Managed by the City
- Specific Plan Boundary
- Primitive Trail Alignment
- QCB Suitable Habitat**
- Nectar Plants**
- Farinose Ground Pink (*Linanthus dianthiflorus*)
- Blue Dicks (*Dipterostemon capitatus*)



FIGURE 10.2
Quino Suitable Habitat
within Trail Restoration

4.3 Other Sensitive Plant and Wildlife Mitigation Measures

4.3.1 Rare Plants

- Conduct a focused rare plant survey in the spring prior to the start of construction to determine the presence of sensitive plant species not previously detected. If no rare plants are detected, no additional measures would be required.
- The ultimate trail alignment shall be sited to avoid impacts to sensitive plant species and all rare plant species within the restoration area shall be flagged to ensure avoidance during restoration efforts. All sensitive plants shall be avoided to the maximum extent feasible within the temporary impact and restoration areas.

4.3.2 Crotch's Bumble Bee

- Additional coordination and an Incidental take Permit are anticipated to be conducted with the California Department of Fish and Wildlife (CDFW). The results of this additional coordination may adjust the required mitigation. If Crotch's bumble bee is no longer a candidate or listed species at the time of implementation, this measure would not apply.
- To avoid impacts to Crotch's bumble bee, removal of habitat in the proposed area of disturbance must occur outside of the Colony Active Period between April 1 through August 31. If removal of habitat in the proposed area of disturbance must occur during the Colony Active Period, a Qualified Biologist shall conduct a pre-construction survey to determine the presence or absence of Crotch's bumble bee within the proposed area of disturbance.
- The Qualified Biologist must be approved by CDFW and hold a Memorandum of Understanding to catch and release Crotch's bumble bees in accordance with the CDFW guidance (i.e., Survey Considerations for California Endangered Species Act Candidate Bumble Bee Species, dated June 6, 2023). Survey methods that involve lethal take of species are not acceptable.
- The pre-construction survey shall be conducted during the colony active period between April 1 through August 31 by the Qualified Biologist prior to the issuance of Grading Permit, Demolition Plans/Permits and Building Plans/Permits and within one year prior to the initiation of project activities (including removal of vegetation). The pre-construction survey shall consist of photographic surveys following CDFW guidance (i.e., Survey Considerations for California Endangered Species Act Candidate Bumble Bee Species, dated June 6, 2023). The surveys shall consist of three separate visits spaced two to four weeks apart. Survey results will be considered valid until the start of the next colony active period.
- The Qualified Biologist/owner/permittee shall submit the results (including positive or negative survey results) of the pre-construction survey to City Development Services Department (Mitigation Monitoring and Coordination) City Planning Department (MSCP)

staff and CDFW for review and written approval prior to the issuance of Grading Permit, Demolition Plans/Permits and Building Plans/Permits.

- If pre-construction surveys identify Crotch's bumble bee individuals on-site, the Qualified Biologist shall notify CDFW and the measures identified in the Incidental Take Permit will be implemented.
- Survey data shall be submitted by the Qualified Biologist to the California Natural Diversity Database in accordance with the Memorandum of Understanding with CDFW, or Scientific Collecting Permit requirements, as applicable.
- Herbicide application should consider proximity to known Crotch's bumble bee (*Bombus crotchii*) occurrences or nests (i.e., known occurrences within 1 kilometer of the mitigation site) during the nesting season (February 15 to September 15), and to the extent feasible herbicide shall be avoided during the peak blooming season for potential foraging resources of Crotch's bumble bee.

4.3.3 San Diego Fairy Shrimp and Western Spadefoot

- To ensure that impacts do not occur to any fairy shrimp or western spadefoot, a scouting survey shall be conducted to map any new ponding areas within the trail alignment and within the restoration area that may result from road ruts. The trail alignment would be sited to avoid direct impacts to vernal pool, potential vernal pools resources, and sensitive wildlife that may occur within the pools. Restoration efforts adjacent to the trail alignment would also avoid any ponded resources that supports sensitive wildlife.

4.3.4 Coastal California Gnatcatcher

- To avoid indirect impacts to coastal California gnatcatcher nesting within the adjacent MHPA, any work that may cause noise in excess of 60 A-weighted decibels hourly average, or the ambient if it is greater, shall be avoided during the breeding season for these species, March 1 to August 15.
- If removal of habitat in the mitigation area must occur during the breeding season, a qualified biologist shall conduct a pre-implementation survey to determine the presence or absence of nesting birds in the proposed area of disturbance. The pre-implementation survey shall be conducted within three calendar days prior to the start of mitigation activities (including removal of vegetation).
- The applicant shall submit the results of the pre-implementation survey to the City for review and approval prior to initiating any mitigation activities. If none are detected, no additional monitoring beyond general biological monitoring will be required.

- If nesting birds are detected, a letter report in conformance with the City's Biology Guidelines (i.e., appropriate follow-up surveys, monitoring schedules, work and noise barriers/buffers, etc.) shall be prepared and include proposed measures to be implemented to ensure that take of birds or eggs or disturbance of breeding activities is avoided.
- The report shall be submitted to the City for review and approval and implemented to the City's satisfaction. The City's MMC shall verify and approve that all measures identified in the report are in place prior to and/or during implementation.

4.3.5 Other Nesting Avian Species

- A biological monitor would check suitable habitat areas for any nesting birds three days prior to vegetation removal tasks.
- To avoid any direct impacts to avian species identified as a listed, candidate, sensitive, or special status species in the MSCP, removal of habitat that supports active nests in the mitigation area should occur outside the breeding season for these species (February 1 to September 15).
- If removal of habitat in the mitigation area must occur during the breeding season, a qualified biologist shall conduct a pre-implementation survey to determine the presence or absence of nesting birds in the proposed area of disturbance. The pre-implementation survey shall be conducted within 3 calendar days prior to the start of mitigation activities (including removal of vegetation).
- The applicant shall submit the results of the pre-implementation survey to the City, CDFW, U.S. Fish and Wildlife Service (USFWS), and Regional Water Quality Control Board (RWQCB) for review and approval prior to initiating any mitigation activities. If no nesting birds are detected, no additional monitoring beyond general biological monitoring will be required.
- If nesting birds are detected, a letter report in conformance with the City's Biology Guidelines (i.e., appropriate follow-up surveys, monitoring schedules, work and noise barriers/buffers, etc.) shall be prepared and include proposed measures to be implemented to ensure that take of birds or eggs or disturbance of breeding activities is avoided.
- The report shall be submitted to the City, CDFW, USFWS, and RWQCB for review and approval and implemented to the City's satisfaction. The City's Mitigation Monitoring Coordinator and CDFW, RWQCB, and USFWS shall verify and approve that all measures identified in the report are in place prior to and/or during implementation.

5.0 Implementation Plan

This section describes the design of the proposed restoration and how it would be implemented. Implementation of the restoration would be conducted under the direction of the qualified habitat restoration specialist.

Implementation activities include seed collection and bulking, weed dethatching, native container plant installation, and seed installation. Restoration activities would occur in the order included in the following sections, although seasonal variability would be taken into consideration and the contractor's best professional judgment should be applied. Some activities may be conducted concurrently.

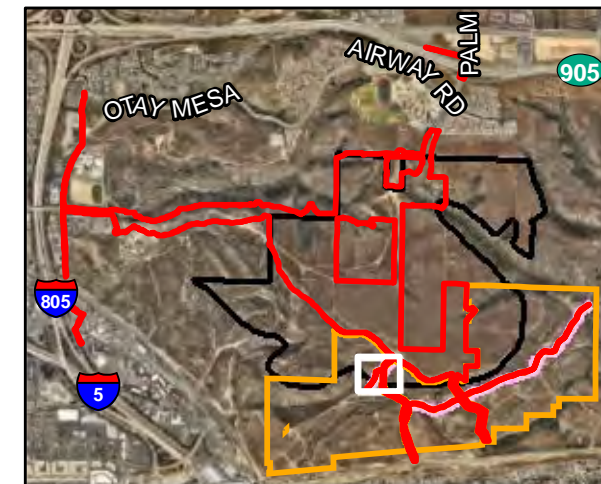
Implementation of the trail improvements and associated restoration effort would occur after completion of the restoration effort proposed for Otay tarplant (*Deinandra conjugens*)/Native Grassland and Wetland Restoration (see Figure 4) and sign-off by the City and applicable regulatory agencies, as the existing access road would be needed to provide access for this restoration effort. Seed collection would occur prior to the start of construction of the project. Weed dethatching would occur approximately one year prior to native plant installation.

5.1 Habitat to be Restored/Enhanced

Restoration and enhancement activities would aim to create contiguous patches of native habitat in the buffer areas around the trails. The disturbed and non-native grassland habitats would be subject to restoration to either Diegan coastal sage scrub or maritime succulent scrub, based on dominant habitats in the vicinity. Disturbed maritime succulent scrub, disturbed wetlands and vernal pools would be subject to enhancement. All other native habitats and jurisdictional resources would be left in their existing condition.

There are six areas where the restoration buffer overlaps with existing vernal pools and disturbed wetlands (see Figures 9.1 and 9.2). The boundary of the restoration corridor (shown in light pink hatched markings on Figures 9.1 and 9.2) has been expanded in these areas to encompass the entire disturbed wetland and vernal pool features. These features would be subject to enhancement including removal of non-native species during the implementation and maintenance periods of this restoration project.

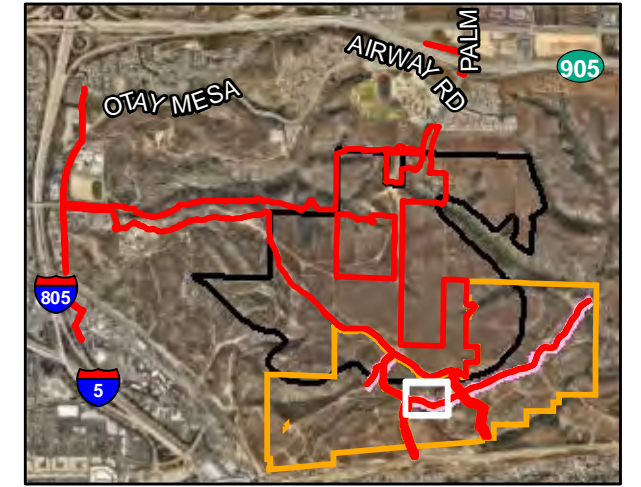
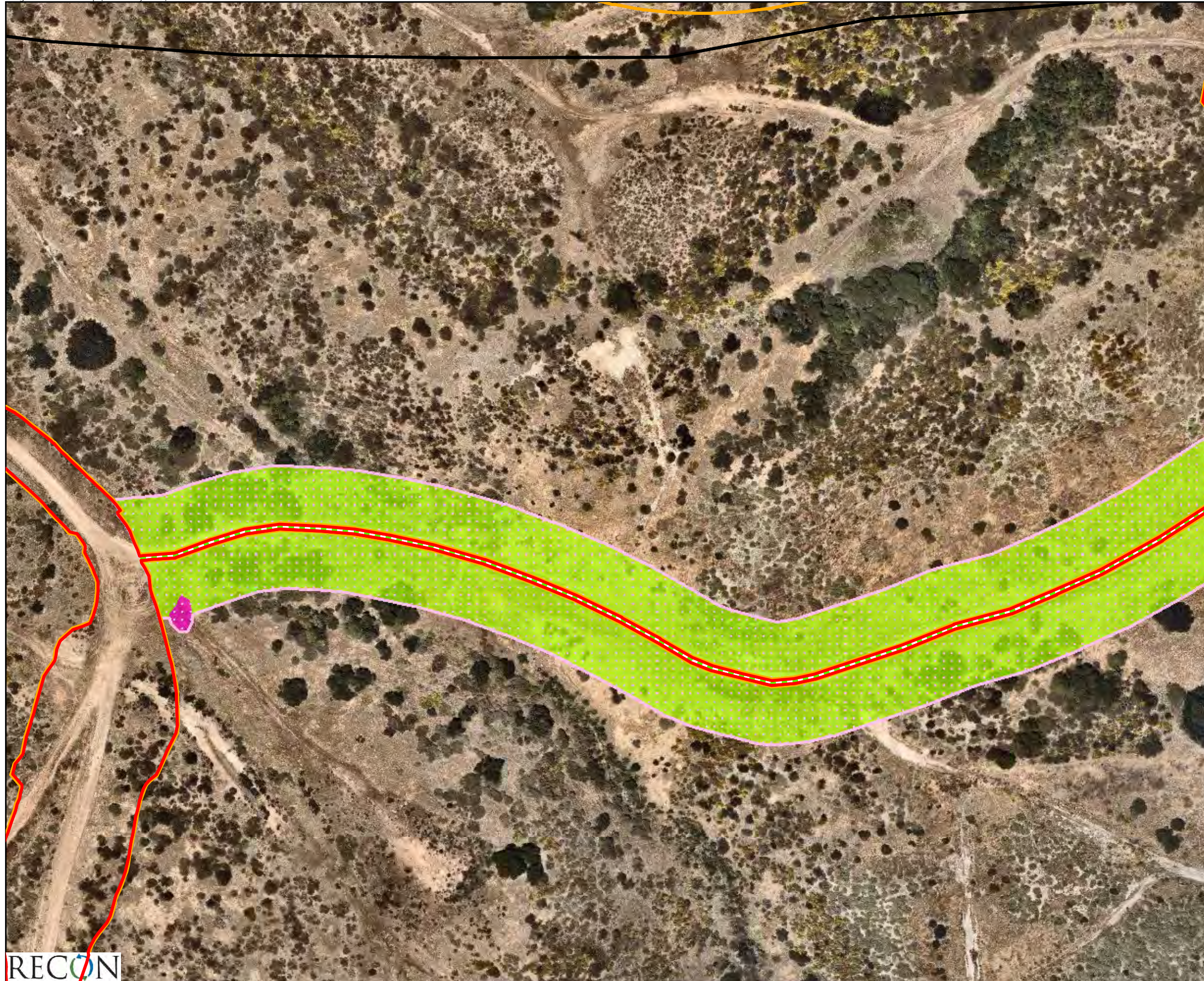
A summary of the proposed restored/enhanced vegetation communities within the trail corridor is presented in Table 2 and Figures 11.1 through 11.6. As detailed in Table 2, the restoration/enhancement effort would convert disturbed lands, non-native grassland, and disturbed maritime succulent scrub to either coastal sage scrub or maritime succulent scrub depending on the dominant vegetation community in the area. Additionally, 0.44 acre of disturbed wetlands (vernal pools that lack vernal pool plant indicators) would be enhanced by adding vernal pool plants to create functional vernal pools. The restoration/enhancement effort would total approximately 9.50 acres.



- Project-level Analysis Area
 - Trail Restoration
 - Land to be Conserved and Managed by the City
 - Specific Plan Boundary
 - Primitive Trail Alignment
- Proposed Restored Vegetation Communities**
- Diegan Coastal Sage Scrub
 - Maritime Succulent Scrub
 - Vernal Pool



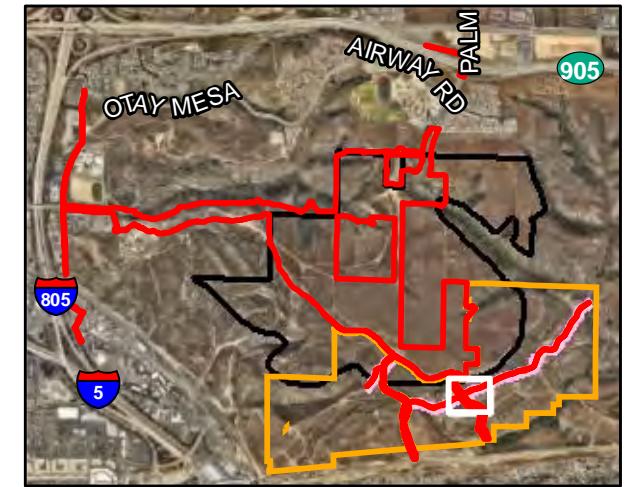
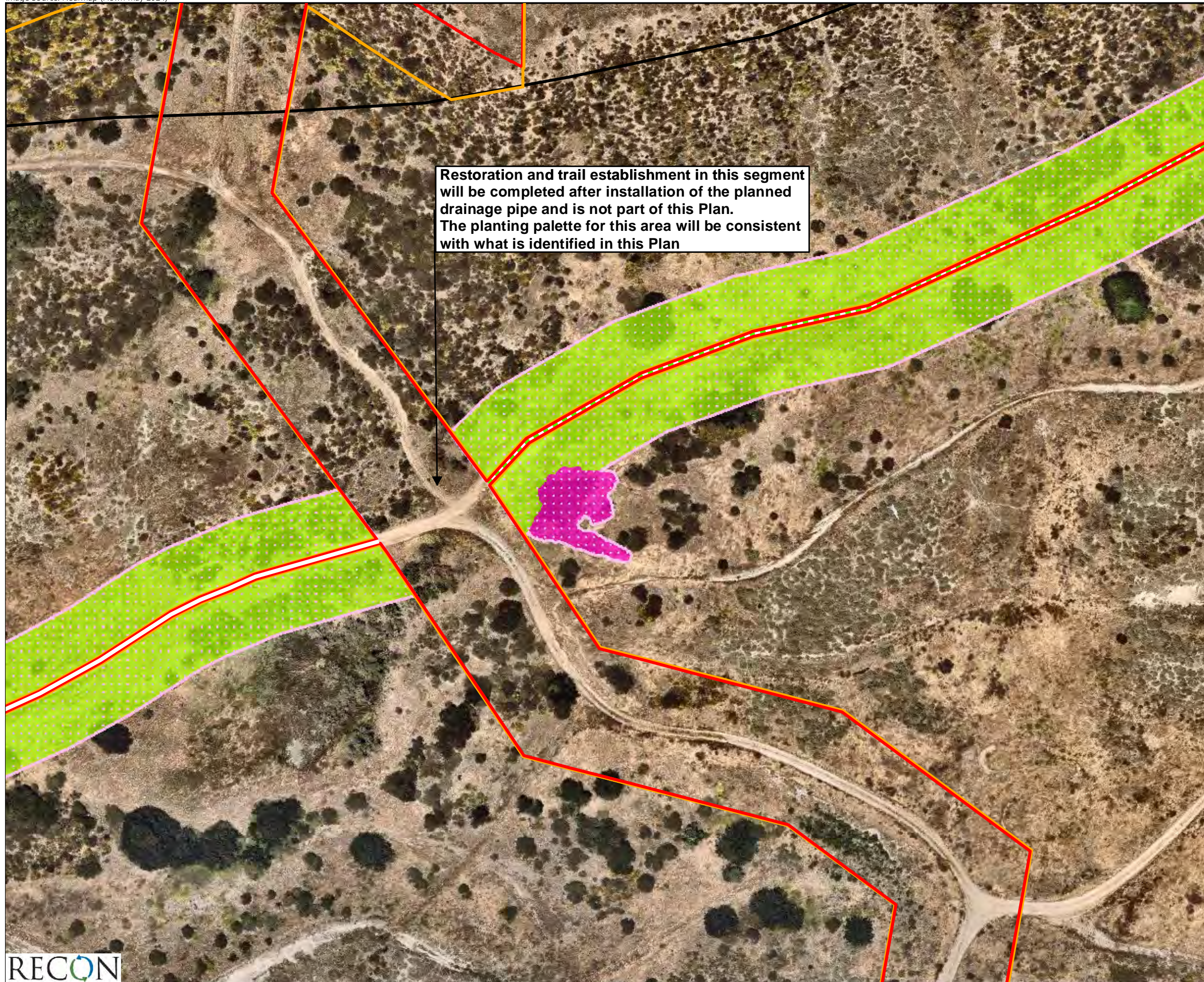
FIGURE 11.1
Proposed Restored Vegetation
Communities within Trail Restoration Areas



- Project-level Analysis Area
- Trail Restoration
- Land to be Conserved and Managed by the City
- Specific Plan Boundary
- Primitive Trail Alignment
- Proposed Restored Vegetation Communities**
 - Maritime Succulent Scrub
 - Vernal Pool with Fairy Shrimp



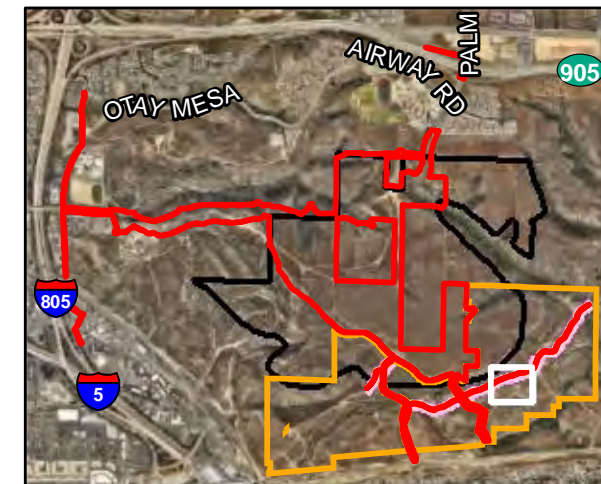
FIGURE 11.2
Proposed Restored Vegetation
Communities within Trail Restoration Areas



- Project-level Analysis Area
 - Trail Restoration
 - Land to be Conserved and Managed by the City
 - Specific Plan Boundary
 - Primitive Trail Alignment
- Proposed Restored Vegetation Communities**
- Maritime Succulent Scrub
 - Vernal Pool with Fairy Shrimp



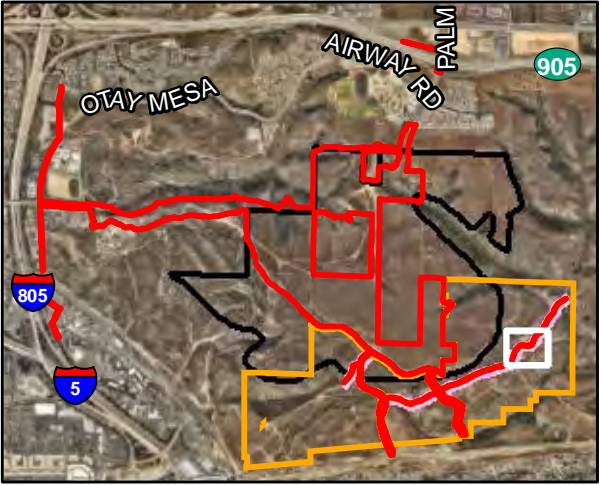
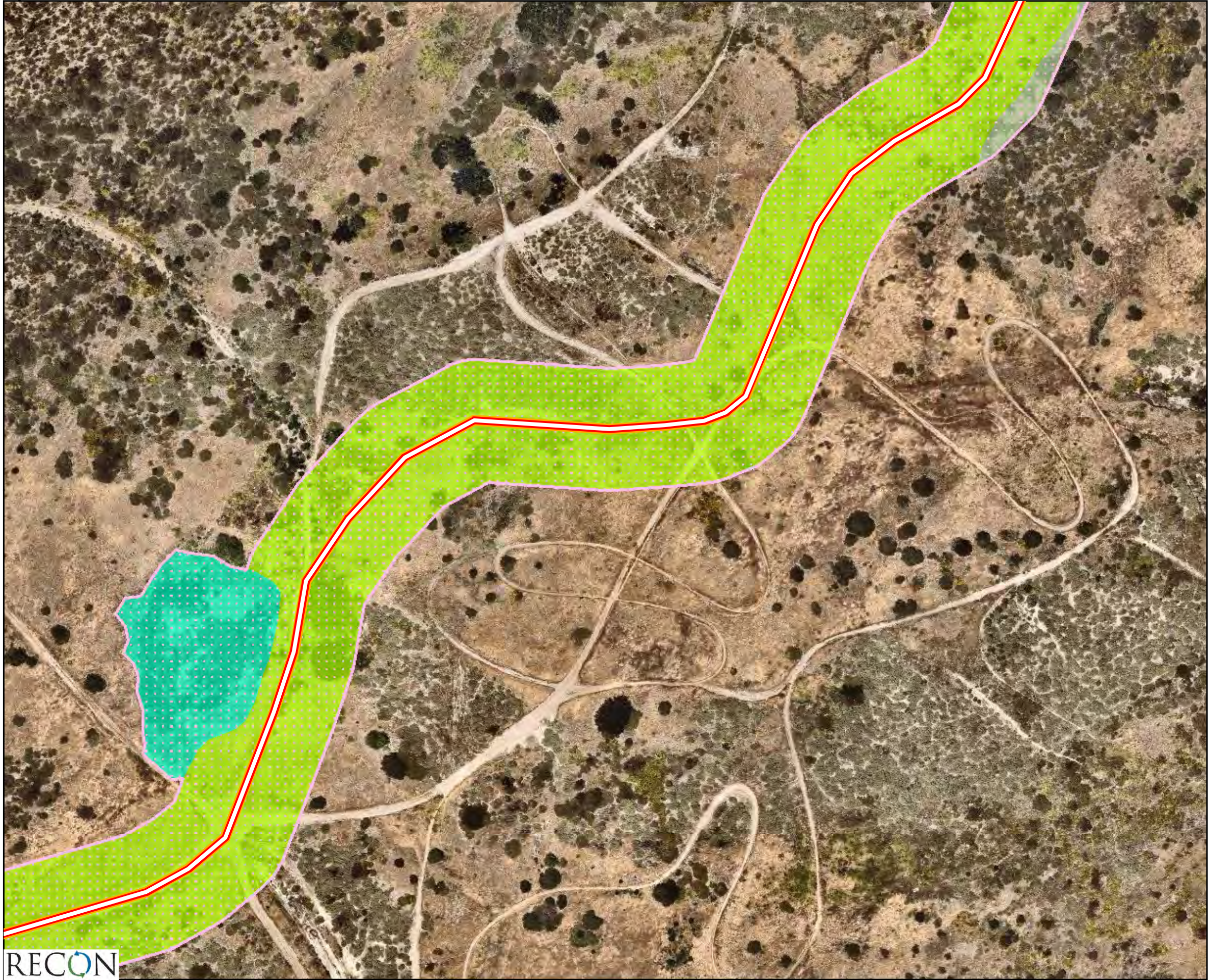
FIGURE 11.3
Proposed Restored Vegetation
Communities within Trail Restoration Areas



- Project-level Analysis Area
 - Trail Restoration
 - Land to be Conserved and Managed by the City
 - Specific Plan Boundary
 - Primitive Trail Alignment
- Proposed Restored Vegetation Communities**
- Maritime Succulent Scrub
 - Vernal Pool



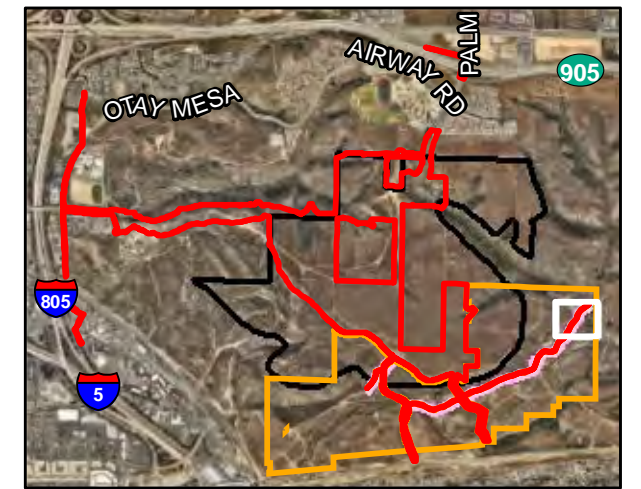
FIGURE 11.4
Proposed Restored Vegetation
Communities within Trail Restoration Areas



- Project-level Analysis Area
 - Trail Restoration
 - Land to be Conserved and Managed by the City
 - Primitive Trail Alignment
- Proposed Restored Vegetation Communities**
- Diegan Coastal Sage Scrub
 - Maritime Succulent Scrub
 - Vernal Pool



FIGURE 11.5
Proposed Restored Vegetation
Communities within Trail Restoration Areas



- Project-level Analysis Area
 - Trail Restoration
 - Land to be Conserved and Managed by the City
 - Primitive Trail Alignment
- Proposed Restored Vegetation Communities**
- Diegan Coastal Sage Scrub
 - Maritime Succulent Scrub



FIGURE 11.6
Proposed Restored Vegetation
Communities within Trail Restoration Areas

Table 2 Existing and Proposed Vegetation Communities within the One mile, 100 foot wide Restoration Corridor			
Existing Vegetation Community	Existing Vegetation Community Acreage	Proposed Restored Vegetation Community	Proposed Vegetation Community Acreage
Vegetation Communities Proposed for Revegetation or Enhancement			
Disturbed Maritime Succulent Scrub	1.86	Maritime Succulent Scrub	1.86
Non-native Grassland	6.02	Maritime Succulent Scrub	6.02
Disturbed Lands	1.10	Maritime Succulent Scrub	1.07
		Diegan Coastal Sage Scrub	0.03
Tamarisk Scrub	0.08	Maritime Succulent Scrub	0.08
Disturbed Wetland	0.44	Vernal Pool	0.44
Subtotal	9.50		9.50
Existing Vegetation Communities Not Proposed to Change			
Maritime Succulent Scrub	2.18	No change	2.18
Diegan Coastal Sage Scrub	0.41	No change	0.41
Vernal Pools with Fairy Shrimp	0.09	No change	0.09
Subtotal	2.68		2.68
TOTAL	12.18		12.18
Note: Vegetation and restoration acreages are based on conditions at the time of preparation of this report and a verification survey would be conducted to document updated site conditions prior to restoration as conditions may change prior to implementation of the restoration effort.			

Detailed vegetation descriptions, presented below, include those vegetation communities that would be restored and/or enhanced and include representative plant species found on-site for each habitat type.

5.1.1 Jurisdictional Resources

A total of 0.09 acre of vernal pools with fairy shrimp, and 0.44 acre of disturbed wetlands fall within the restoration buffer outline (see Figures 9.1 and 9.2). The proposed enhancement activities for these wetland features are discussed below.

5.1.1.1 Vernal Pools

San Diego mesa claypan vernal pools are shallow, isolated, seasonal wetlands distinguished from other ephemeral wetlands in the region by characteristic plant and animal species. San Diego mesa claypan vernal pools typically support a characteristic suite of plant and animal species. Plants in vernal pools may be aquatic or may germinate following the drying of the pool. Pool sizes range from very small to moderate (up to 700 square meters).

Within the restoration buffer, two vernal pools with fairy shrimp occur, totaling 0.09 acre (see Figure 9.2). These pools are located along roadsides and are regularly disturbed by off-road and passenger vehicles and therefore are considered to be low-quality. Vernal pools that contain non-native species would be enhanced through non-native weed removal. To ensure avoidance of

sensitive species that may be present (e.g., San Diego fairy shrimp or spadefoot), all enhancement activities would occur when no ponding is present.

5.1.1.2 Disturbed Wetlands

Disturbed wetlands meet the 3-parameter criteria to be a United States Army Corps of Engineers wetland. While they are similar to vernal pools, being isolated ponding basins, they have no vernal pool flora indicator species. Like vernal pools, these disturbed wetlands may contain San Diego fairy shrimp.

There are two disturbed wetlands (0.44 acre) that fall within the restoration buffer. These areas would be enhanced through weed removal and the addition of common vernal pool plant species via hand seeding and/or plant installation. This enhancement effort would result in the 0.44 acre of disturbed wetlands to meet the criteria of a vernal pool. Additionally, the watersheds of these disturbed wetlands would be improved by planting native container stock. To ensure avoidance of sensitive species that may be present (e.g., San Diego fairy shrimp or spadefoot), all enhancement activities would occur when no ponding is present.

5.1.2 Disturbed Maritime Succulent Scrub

Disturbed maritime succulent scrub is considered a Tier I (rare uplands) vegetation community by the City's Biology Guidelines (City of San Diego 2018). Maritime succulent scrub is a low (two to three feet high), open (25-75 percent cover) vegetation community dominated by drought deciduous, subligneous (somewhat woody), malacophyllous (soft-leaved) shrubs with a rich mixture of stem and leaf succulents. The proportion of cacti is typically highest in inland areas. Ground cover is somewhat devoid of vegetation between shrubs. Growth and flowering are concentrated in the spring.

Maritime succulent scrub occurs on thin, rocky, or sandy soils, often on steep slopes of coastal headlands and bluffs. This type of succulent scrub intergrades with southern coastal bluff scrub on more exposed headlands and bluffs and with sage scrub on better developed, moister soils away from the immediate coast (Holland 1986). This community is typically dominated by jojoba (*Simmondsia chinensis*), San Diego sunflower (*Bahiopsis laciniata*), San Diego bur-sage (*Ambrosia chenopodiifolia*), and coast barrel cactus (*Ferocactus viridescens*). Other associated species typically include California buckwheat, California sagebrush, lemonadeberry (*Rhus integrifolia*), and California adolphia (*Adolphia californica*).

For disturbed maritime succulent scrub, the dominant shrub species are similar to what occurs in maritime succulent scrub; however, the density of native shrub and herbaceous species is much less in the disturbed community and there are much wider interspaces between the native shrubs. The understory in disturbed maritime succulent scrub consists of brome grasses including ripgut grass (*Bromus diandrus*) and red brome (*Bromus madritensis* ssp. *rubens*), and native species fascicled tarplant (*Deinandra fasciculata*), and ashy spike-moss (*Selaginella cinerascens*). Additionally, there is evidence of trash dumping within this vegetation community. Enhancement activities would be performed in disturbed maritime succulent scrub areas through the removal of non-native invasive species.

5.1.3 Non-Native Grassland

Non-native grassland is considered a Tier IIIB (common uplands) species by the City's Biology Guidelines (City of San Diego 2018). Non-native grassland is a vegetation community characterized by a dense to sparse cover of annual grasses reaching up to 3 feet high, which may include numerous native wildflowers, particularly in years of high rainfall. Typically, non-native grassland includes at least 50 percent cover of the entire herbaceous layer attributable to annual non-native grass species, although other plant species (native and non-native) may be intermixed (City of San Diego 2018).

Non-native grassland contains species including, but not limited to, bromes (*Bromus* spp.), wild oat, ryegrass (*Lolium* spp.), and fescues (*Vulpia* spp.). These annuals germinate with the onset of the rainy season and set seeds in the late winter or spring. With a few exceptions, the plants are dead through the summer-fall dry season, persisting as seeds.

Non-native grassland is usually found on fine-textured, usually clay soils that range from being moist or waterlogged in the winter to being very dry during the summer and fall. Typically, the plant community is found in valleys and foothills throughout most of California (except for the north coastal and desert regions) at elevations below 3,000 to 4,000 feet (Holland 1986).

The non-native grassland in the project area is dominated by ripgut grass, red brome, and fascicled tarplant. The vegetation height ranges from six inches to two feet in height. Restoration of non-native grasslands would be to either Diegan coastal sage scrub or maritime succulent scrub, based on which native habitats are dominant in the immediate vicinity. Restoration would be accomplished through weed removal, native container stock installation, and seed application.

5.1.4 Disturbed Lands

Disturbed lands are composed of areas that have been previously disturbed and no longer function as a native or naturalized vegetation community. Vegetation, if present, is dominated by opportunistic non-native species. Disturbed land can also include previously graded lands such as fire breaks, off-road vehicle trails, and construction staging sites (Oberbauer et al. 2008).

The disturbed land is comprised mainly of unauthorized trails and dirt access roads, roads created by off-road vehicles, and artificial earthen berms. These roads traverse primarily through the non-native grassland vegetation, but also travel through maritime succulent scrub and Diegan coastal sage scrub habitats. For the most part, these disturbed lands are unvegetated or have minimal vegetation comprised of non-native species. Restoration of disturbed lands would be to either Diegan coastal sage scrub or maritime succulent scrub, based on which native habitats are dominant in the immediate vicinity. Restoration would be accomplished through weed removal, native container stock installation, and seed application.

5.2 Implementation Activities

Implementation activities include seed collection and bulking, non-native weed biomass dethatching, container plant installation, and seeding. The implementation schedule is shown in Table 3.

Table 3 Restoration Implementation Activities Schedule	
Task	Time of Year
1. Seed Collection and Bulking	Fall through spring three years prior to Step 4, plant installation
2. Sign Installation	Summer/Fall - 1 year prior to Step 4 (native plant installation) and prior to dethatching task
3. Dethatching	Summer/Fall - 1 year prior to Step 4 (native plant installation)
4. Native Plant Installation	To be implemented after sign-off of the Otay tarplant/native grassland and wetland restoration effort in the winter, after first winter rains and prior to a predicted rain event
5. Seeding	Winter, prior to a predicted rain event and following plant installation

5.2.1 Seed Collection and Bulking

Once species targeted for seed collection have set seed, typically between late spring to early fall with variability due to species and seasonal weather patterns, seed would be collected from the existing plant populations found within adjacent intact native habitat. The collected seed would be taken to an approved native plant nursery, rough cleaned, and stored until the fall. In the fall, when temperatures cool and conditions begin to favor native plant germination, a portion of the seed would be sown into flats to germinate over the winter for seed bulking. Individuals would be properly cared for through flowering and seed set and seed would be collected and rough cleaned. The bulking process would continue until adequate seed quantities and container plants are obtained to meet the project requirements, which may require several seasons (at least two) of bulking. Seed collection and bulking activities would be closely coordinated between the restoration specialist and native plant nursery to ensure proper timing of collection, bulking, and storage activities. Species targeted for collection have been included in Table 4.

Table 4 Plant Species Targeted for Collection	
Scientific Name	Common Name
<i>Achillea millefolium</i>	yarrow
<i>Adolphia californica</i>	California adolphia
<i>Ambrosia chenopodiifolia</i>	San Diego bur-sage
<i>Amsinckia menziesii</i>	rancher's fiddleneck
<i>Artemisia californica</i>	coastal sage brush
<i>Bahiopsis laciniata</i>	San Diego sunflower
<i>Bloomeria crocea</i>	common goldenstar
<i>Dichelostemma capitatum</i>	blue dicks
<i>Encelia californica</i>	California encelia
<i>Eriogonum fasciculatum</i>	California buckwheat
<i>Eriophyllum confertiflorum</i>	golden yarrow
<i>Grindelia camporum</i>	common gumplant

Table 4 Plant Species Targeted for Collection	
Scientific Name	Common Name
<i>Isocoma menziesii</i>	coastal goldenbush
<i>Lasthenia gracilis</i>	common goldfields
<i>Lupinus succulentus</i>	arroyo lupine
<i>Peritoma arborea</i>	bladderpod
<i>Salvia apiana</i>	white sage
<i>Salvia mellifera</i>	black sage
<i>Simmondsia chinensis</i>	jojoba
<i>Sisyrinchium bellum</i>	blue-eyed grass
<i>Stipa pulchra</i>	purple needlegrass
NOTE: Quantities to be determined based on seed collection and bulking quantities.	

5.2.2 Sign Installation

Signs would be installed at strategic points along the trails to provide notice that the buffer areas are part of an ecological preserve, notify that trespassing is prohibited, and cite penalties for trespass violation including liability for repair of any damage to soil or biological resources. Signs in both Spanish and English would be installed at approximately 200-foot intervals along the trails and would be mounted onto metal T-posts or similar.

5.2.3 Dethatching

Prior to planting or seeding, crews familiar with native and non-native plants would remove the accumulated weedy thatch throughout the restoration site using mechanical line trimmers and rakes. Weedy thatch biomass may be removed using mechanized equipment such as a ride-on mower or tracked skid steer with mowing attachment, if site conditions allow, and would not disturb the soil.

Cut material would be raked into piles, removed from the site, and taken to a landfill or put into a green waste dumpster for disposal. Removal of the thatch aides in preparing the site for seeding and reducing future weed growth that may inhibit establishment of native container plants and seed.

5.2.4 Native Plant Installation

The areas of the restoration site that are to be restored to Diegan coastal sage scrub and maritime succulent scrub habitat would be prepared for planting by decompacting the topsoil with hand tools, if needed. All native container planting would be installed in a way that mimics natural plant distribution, and not in rows.

Native container stock grown from seed collected from within the project vicinity would be installed within these restoration areas. For the maritime succulent scrub and Diegan coastal sage scrub restoration areas, approximately 1,500 plants per acre would be procured from a local nursery, such as Native West Nursery, that specializes in the propagation of native plants from locally grown seed. Planting within disturbed areas that offer access to unauthorized trails would include plant selections that would deter access such as plants that would grow large and/or plants with spines that would make human entry undesirable.

Final planting quantities would be based upon existing conditions, with some areas adjacent to the trails having higher densities of native cover than other areas. Container plant installation is anticipated to occur in the winter season following the onset of the rainy season to ensure high survivorship of container stock. Plants would be installed following the standard procedure for container plant installation. Holes would be dug equal in depth and approximately twice the width of the root ball. Plants would be positioned in the holes so that the surface of the root ball is slightly above grade, and the holes would be backfilled with native soil. Each plant would then be watered.

The species and quantities anticipated to be installed within the maritime succulent scrub and Diegan coastal sage scrub restoration areas are presented in Tables 5 and 6. Container plantings would be placed within disturbed areas to achieve an approximate plant density of 1,500 plants per acre.

Table 5 Anticipated Maritime Succulent Scrub Container Plant Species and Quantities ¹		
Scientific Name	Common Name	Quantity of Plants (per acre) ²
<i>Adolphia californica</i>	California adolphia	95
<i>Ambrosia chenopodiifolia</i>	San Diego bur-sage	125
<i>Artemisia californica</i>	California sagebrush	150
<i>Bahiopsis laciniata</i>	San Diego sunflower	85
<i>Cylindropuntia prolifera</i>	coast cholla	115
<i>Dudleya pulverulenta</i>	chalk dudleya	70
<i>Eriogonum fasciculatum</i>	California buckwheat	175
<i>Euphorbia misera</i>	cliff spurge	85
<i>Opuntia littoralis</i>	coast prickly pear	135
<i>Rhus integrifolia</i>	lemonadeberry	50
<i>Simmondsia chinensis</i>	jojoba	230
<i>Stipa lepida</i>	foothill needlegrass	110
<i>Yucca schidigera</i>	Mohave yucca	75
TOTAL		1,500
¹ Species and quantities may be adjusted based on availability at the time of implementation.		
² Up to 1,500 plants per acre may be installed, taking into account existing native plant density.		

Table 6 Anticipated Diegan Coastal Sage Scrub Container Plant Species and Quantities ¹		
Scientific Name	Common Name	Quantity of Plants (per acre) ²
<i>Artemisia californica</i>	California sagebrush	200
<i>Baccharis sarothroides</i>	broom baccharis	175
<i>Cylindropuntia californica</i>	coast cholla	100
<i>Encelia californica</i>	California encelia	175
<i>Eriogonum fasciculatum</i>	California buckwheat	200
<i>Isocoma menziesii</i>	coastal goldenbush	175
<i>Malosma laurina</i>	laurel sumac	75
<i>Opuntia littoralis</i>	coast prickly pear	100
<i>Salvia apiana</i>	white sage	150
<i>Salvia mellifera</i>	black sage	150
TOTAL		1,500
¹ Species and quantities may be adjusted based on availability at the time of implementation.		
² Final quantities would be based on a 1,500 plants per acre density, taking into account existing native plant density.		

5.2.5 Seed Installation

5.2.5.1 Diegan Coastal Sage Scrub and Maritime Succulent Scrub

Native species seed would be distributed within the restoration areas following native container stock installation. The exact quantities for seed dispersion would be based on the results of the seed collection and bulking efforts (see Table 4 for proposed species). The methods of seed dispersal would be determined based upon site access at the time of restoration implementation. Seeding methods would be as recommended by the restoration specialist and may include application via hydroseeding, drill seeding, seed imprinting, or hand seeding. Seed would be scheduled for distribution in the fall/winter sometime following the first significant rain event of the season, after a weed maintenance event, and immediately prior to a forecasted rain event (not more than 48 hours). All seed used for restoration purposes would be collected from the site vicinity where feasible and as approved by the restoration specialist.

5.2.5.2 Jurisdictional Resources

Enhancement of jurisdictional resources including disturbed wetlands and vernal pools (see Figures 9.1 and 9.2) may be achieved through the reintroduction of plants into the jurisdictional features on-site.

This may be accomplished by one or a combination of the following:

- The redistribution of topsoil containing seeds, spores, bulbs, invertebrate eggs, fairy shrimp cysts, and other propagules salvaged from on-site vernal pools to be impacted; and
- The distribution of vernal pool plant seed collected from an off-site source approved by the City MSCP and Wildlife Agencies.

The vernal pool plant indicator species listed in Table 7 should be considered for introduction into the enhanced vernal pools. The hand-collected or bulked vernal pool seeds would be distributed in the enhanced vernal pools at the discretion of the restoration specialist. Re-introduction of vernal pool biota into vernal pools to be enhanced would not be conducted until the City MSCP, CDFW, and USFWS (cumulatively known as the Wildlife Agencies) have approved the site preparation.

If natural rain is inadequate to support the plant establishment of vernal pool indicator species, then artificial watering of the established/enhanced pools and their watersheds may be done upon approval by the City MSCP and Wildlife Agencies and in order to establish plants but not hydrate shrimp. Any artificial watering shall be done in a manner that prevents ponding in the pools. Any water to be used shall be identified and documented to be free of contaminants that could harm the pools.

Table 7 Vernal Pool Plant Indicator Species Occurring on the Southwest Village Vernal Pool Mitigation Sites	
Plant Species	Common Name
<i>Callitriche marginata</i>	water-starwort
<i>Crassula aquatica</i>	stone-crop
<i>Eleocharis macrostachya</i>	pale spikerush
<i>Eryngium aristulatum</i> var. <i>parishii</i>	San Diego button celery
<i>Isoetes orcuttii</i>	Orcutt's quillwort
<i>Juncus bufonius</i>	toad rush
<i>Lepidium latipes</i>	dwarf peppergrass
<i>Plagiobothrys acanthocarpus</i>	adobe popcornflower
<i>Plantago elongata</i>	plantain
<i>Psilocarphus brevissimus</i>	dwarf woolly-heads
<i>Triglochin scilloides</i>	flowering quillwort

5.3 As-Built Reporting

At the completion of implementation, the installation shall be approved by the City MMC prior to entering into the 120-day PEP. An as-built report would be submitted that documents implementation activities and the dates they were completed. The report would include but not be limited to dates of on-site work, final container plant lists and quantities, final seed lists and quantities, and any modifications to the restoration program. The report may be a brief letter report with photos of the final site design and figures with locations of site elements.

5.4 120-day Plant Establishment Period

The 120-day PEP would begin once the implementation activities are approved by the City MMC, likely once all native container stock and native seeding have been completed. The PEP shall last for 120 calendar days and shall consist of all maintenance activities and methods discussed in Section 6.0. Regular (at least every other week) qualitative monitoring would be conducted to assess native plant growth from container stock and seed germination, non-native weed germination, and to make recommendations for maintenance activities, as needed (Table 8). Year 1 would begin after successful completion of the PEP and any required remedial plant and/or seed installation has been completed. At the completion of the PEP, the restoration specialist would prepare a letter report for submittal to the City MMC to document activities conducted during the PEP and the site progress towards final success criteria.

Table 8 Maintenance Schedule			
Task	120-day PEP	Year 1	Year 2
Weed Control (herbicide treatment)	As needed	Monthly ¹	Monthly ¹
Watering	As needed	As needed	As needed
Supplemental Planting/Seeding	At end of PEP	Fall/Winter	Fall/Winter
Trash Removal	In conjunction with weed control	In conjunction with weed control	In conjunction with weed control
Barrier/Sign Maintenance	As needed	As needed	As needed
¹ Minimum frequency			

6.0 Maintenance Plan

Regular maintenance of the trails restoration site would be required during the 25-month maintenance period to establish and enhance native vegetation and control non-native invasive species. The need for weeding is expected to decrease substantially by the end of the maintenance period provided successful habitat restoration has been achieved. Maintenance activities would include weed control, watering, supplemental planting/seeding of native species, trash removal, and sign maintenance. Maintenance activities would be conducted at a frequency and duration that ensures attainment of the final success criteria. Maintenance activities would be performed per the schedule in Table 8 or as needed to achieve project success.

6.1 Weed Control

Weed control would be performed consistent with the Avoidance and Minimization Measures detailed in Section 4.0, in addition to the following:

- All herbicide and pesticide use would be under the direction of a licensed qualified applicator and would be applied by personnel trained to apply herbicide. All weeding personnel would be trained to distinguish between native and non-native species.
- Herbicide would only be applied when wind speed is less than five miles per hour, and spray nozzles would be of a design to maximize the size of droplets, to reduce the potential for drift of herbicide to non-target plants. Application of herbicide would not occur if rain is projected within 12 hours of the scheduled application.
- Weeds would only be removed by hand from within the vernal pool areas, and by line-trimmers in areas immediately adjacent to the vernal pools.
- When vernal pools are ponding or close to saturation, weeds germinating along the basin edge would be cut using line trimmers by specially trained field personnel to ensure that germinating native species are not harmed. Cut material would be lightly raked away from the pools and care would be taken to not disturb the soil with raking activities.

- Weeding of the uplands would be done at a frequency and duration to ensure that weeds are not allowed to flower and set seed within the site. During the growing season this may be as frequently as weekly, depending on weather patterns. Any weeds that have set seed would be removed by hand and disposed of off-site.
- Herbicide treatment would be avoided within a 10-foot buffer from any concentrations of sensitive plant species and would not be applied within vernal pools or disturbed wetlands.
- Timing of herbicide and pesticides application would take into consideration proximity to known Crotch's bumble bee occurrences/nests (within 1 kilometer of the mitigation site) during nesting season (approximately February 15 to September 15), and to the extent feasible avoid the peak blooming season for potential foraging resources.

6.2 Watering

Hand watering would be performed consistent with the following:

- The watering frequency and duration would be done in a manner to mimic natural rainfall, support annual plants through seed set, and encourage deep root establishment of shrubs, but not enough to create runoff.
- Watering would be carefully tapered off once installed native plants and seed begin to reach their flowering stages, to allow for the plants to experience their typical summer dormancy and avoid over-watering, or excessive soil shrinking and swelling, that can damage plant roots.

6.3 Supplemental Planting

Supplemental planting would be performed consistent with the following:

- Cactus cuttings would be installed, as needed, adjacent to the trails to deter trespassing and/or increase vegetative coverage.
- Additional containers of Diegan coastal sage scrub and maritime succulent scrub plant species may be installed to provide competition for non-native weed species and preclude weed encroachment along the trail edges.

6.4 Supplemental Seeding

Remedial seeding would be performed consistent with the following:

- Restoration areas where native seed struggled to recruit would be remedially seeded during Years 1 and 2.
- Remedial seeding of native grasses and forbs would be conducted to increase native competition with weed species.

6.5 Trash Removal and Sign Maintenance

Trash removal and barrier/sign maintenance would be performed consistent with the following:

- Trash and other debris would be removed as necessary.
- All signs would be checked and repaired as necessary.
- Other site problems, such as vehicle damage and trespassing, would be reported to the City MMC and the Applicant.

6.6 Adaptive Management Approach

While the restoration and maintenance measures proposed by this plan are intended to close unauthorized trails and improve the quality of the habitat around the trails, unforeseen changes may occur because of unpredictable weather patterns, ecological processes, or other natural or anthropogenic stressors. The contractor would respond to any unexpected events that have a detrimental impact on the restoration site using an adaptive management approach. Adaptive management is defined, for the purposes of this restoration project, as a flexible, iterative approach to the management of biological resources that is directed over time by the results of ongoing monitoring activities, and direct observation of environmental stressors that are producing adverse results within the restoration site.

Achieving the key goals of the restoration program and establishing self-sustaining native habitats would be the focus of all adaptive management decisions. Adaptive management measures would be based on qualitative data gathered in the field throughout the maintenance and monitoring period and may include remedial container plant installation, collection and dispersal of seed, additional weed control efforts, additional watering, and other actions deemed appropriate through consultation with the City MMC.

If the performance standards (see Section 7.0) are not met at the end of the 25-month maintenance period, remedial actions may be required and the City MMC may extend the required maintenance period. Maintenance and monitoring obligations would continue until the City MMC deems the restoration site successful.

7.0 Performance Standards

Restoration would be considered successful when the final performance standards have been met. At the end of the 25-month monitoring and maintenance period, the restoration site should meet the following performance standards:

- 50 percent or more of native cover within restored CSS and MSS habitats.
- 10 percent or less of non-native herbaceous cover within restored CSS and MSS habitats.

- 0 percent of perennial or Cal-IPC listed “high” weed species present within enhanced vernal pools and restored CSS and MSS habitats.
- Access to unauthorized trails effectively blocked by established vegetation or other methods such as placement of boulders or other barriers.

8.0 Monitoring Requirements

Biological monitoring goals would include qualitative monitoring, quantitative vegetation monitoring, and photographic documentation. The monitoring schedule is presented in Table 9.

Table 9 Monitoring Schedule		
Task	Year 1	Year 2
Qualitative Monitoring	Monthly	Monthly during growing season and quarterly during dormant stage
Quantitative Monitoring ¹	Annually	Annually
Photograph Documentation	As Needed	Annually
¹ Quantitative monitoring to begin in Year 1.		

8.1 Qualitative Monitoring

The overall health and growth of native and non-native vegetation cover, and native species richness would be qualitatively evaluated starting in Year 1 of the restoration project. Qualitative monitoring of the restoration site would also be performed to guide maintenance activities and would be conducted as follows:

- Qualitative monitoring would occur every month during Year 1, and during the growing season in Year 2 (January – June).
- Monitoring would include, but not be limited to, assessment of native seed germination, weed presence, and unauthorized trespassing. Monitoring results would be used to determine the timing and frequency of maintenance activities.

8.2 Quantitative Monitoring

Quantitative monitoring would be performed annually, during the spring season, by a restoration biologist to assess the percent of native versus non-native cover within the restoration site, as well as to determine native species richness and container plant survival. The percent cover of both native and non-native species would be determined using ocular estimates.

8.3 Photographic Documentation

Permanent photo points would be established prior to the start of restoration activities. Representative photographs would be taken before implementation, at the completion of

implementation, completion of the PEP, and annually to visually document the progress of vegetation cover development over the monitoring period.

8.4 Reporting

Annual reports that assess the progress toward the final performance standards for the site would be submitted to the City's MMC by December 1 of each year. The reports would also summarize the restoration project's compliance with all applicable permit conditions. A final monitoring report would be prepared and submitted to the City MMC for use in the notification of completion and final acceptance of the restoration effort. A copy of the final report would also be submitted to CDFW.

9.0 Notification of Completion

If the restoration site is not meeting its performance standards at the end of the 25-month monitoring program, the project proponent's maintenance and monitoring obligations would continue, until the City MMC deems the restoration program as successful.

Following receipt of the final annual report, the City MMC shall be invited to visit the restoration site to confirm completion of the restoration effort. The project would be deemed complete once the final success criteria are met and after written approval by the City MMC has been received.

10.0 References Cited

Holland, R. F.

- 1986 Preliminary Descriptions of the Terrestrial Natural Communities of California. State of California Department of Fish and Game.

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ATTACHMENT 2

Spring Survey Report, Southwest Village Wildlife Movement/Crossing Study



June 3, 2020

Ms. Jennifer Campos and Ms. Beth Procsal
RECON Environmental, Inc.
3111 Camino del Rio North, Suite 600
San Diego, CA 92108

SUBJECT: Spring Survey Report, Southwest Village Wildlife Movement/Crossing Study

Dear Ms. Campos and Procsal,

This letter report presents observations obtained during a wildlife survey conducted by Wildlife Tracking Company, Inc. for the Southwest Village Project. This report describes the study methodology, the terrestrial wildlife resources present in the study area and addresses wildlife crossing locations with regard to the proposed project.

Introduction

The proposed Southwest Village Project site is located in San Diego County, California. It is located east of Interstate 805, west of Caliente Avenue, south of State Route 905 (Otay Mesa Freeway), and north of the United States border with Mexico, and is situated within the U.S. Geological Survey 7.5-minute Imperial Beach quadrangle (Figure 1). The proposed Southwest Village Project is within the City of San Diego Multiple Species Conservation Plan (MSCP) Subarea Plan and portions of the project site are within the City of San Diego Multi-Habitat Planning Area (MHPA). Elevations range from approximately 210 feet above mean sea level (AMSL) to 504 AMSL.

The proposed Southwest Village Project is designed as a village-concept plan with a mix of uses including residential and commercial areas and community facilities such as schools and parks, transit sites, public facilities, and permanently protected open space. The project would also include extending the existing Beyer Boulevard easterly to facilitate traffic flow into and out of the proposed Southwest Village Project. Because the road extension would have the effect of further fragmenting existing habitat, a wildlife undercrossing has been proposed under the road extension to allow movement of wildlife between the areas that lie north and south of the proposed road.

Field Methodology

The study area comprises an area larger than the Southwest Village Project area, being bound approximately by Otay Mesa Road and the railroad to the west, State Route 905/Otay Mesa Road to the north, Cactus Road to the east and the United States/Mexico border to the south (Figure 2). The study area extends to the east to be included also within the U.S. Geological Survey 7.5-minute Otay Mesa quadrangle. Property ownership in the study area is a patchwork including ownership by private citizens, County of San Diego, City of San Diego, Caltrans, and Pardee Homes (the project proponent). Various portions of the site have been in continuous use for decades until the recent past, having supported homesteads, agricultural establishments, etc. The study area contains a mix of mesa and canyon areas that support a variety of scrub and riparian habitats, with elevations ranging from approximately 120 feet above mean sea level (AMSL) to 505 feet AMSL. Several vegetated ephemeral water bodies traverse the site.

Various properties in the study area are within the City of San Diego MSCP Subarea Plan and the City of San Diego MHPA. Most of the site is undeveloped; and includes a network of primarily dirt roads within the area along with remnants of a few single-family dwellings. The study area is crisscrossed with a maze of fencing of various types.

Access to all properties within the study area was not available at the commencement of the survey, and at the time of the preparation of this report, had not been granted for the County of San Diego parcel that contains the area proposed for the wildlife crossing. Furthermore, during the survey period, access to several parcels was questionable and were avoided (Figure 1).

The spring 2020 field surveys consisted of three phases, augmented by literature searches, reconnaissance-level desktop analyses, aerial imagery and topographic maps. The Phase 1 survey of spring 2020 was an extensive overview to determine species presence/absence, movement regimens, connectivity (gene pool exchange integrity), prey presence/absence, habitat quality related to specific species, i.e. cover sufficiency, resource availability and birthing areas. Animal presence was determined by direct observation or by sign including tracks, scat, scrapes, rubs, kill sites, cache sites, dens, burrows, trails, runs, hair, feathers, etc.

- 1) Phase 1: Point Data Collection. This included a reconnaissance survey and spring 2020 baseline data collection. Eighty-two 50-meter diameter data collection points were assigned throughout the study area. Each data collection point was inspected for animal sign. All evidence found in these circles was recorded on an Apple iPad Mini 4 using ESRI Collector. Incidental observations were also recorded.
- 2) Phase 2: Trailing. This included following up on evidence found in Phase 1, including following fresh tracks for a preliminary determination of movement direction and habits. Squeeze points such as culverts and canyon bottoms or washes that include steep slopes were examined to the extent possible, ranging out from the points that the

topography allowed or within and/or on either end of culverts to ascertain species movement.

- 3) Phase 3: Cameras. Cameras were placed at key locations on a 5 to 7-day check interval for one month. Camera locations were determined by detections and observations in Phases 1 and 2.
- 4) Phase 4: Seasonal repetition of Phases 1-3. This would include an abbreviated version of Phases 1-3 (less survey points in Phase 1 and narrower focus in Phases 2 and 3). The number of remaining surveys will be determined after consultation with the client and the City of San Diego.

Results

Nineteen mammal species and five reptile species were detected or observed during the spring 2020 survey. Predator species detected or observed include gray fox (*Urocyon cinereoargenteus*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*) and long-tailed weasel (*Mustela frenata*) with the apex predators onsite being the coyote (*Canis latrans*) and bobcat (*Lynx rufus*). Prey species detected or observed include cottontail (*Sylvilagus*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), pocket gopher (*Thomomys bottae*), kangaroo rat (*Dipodomys simulans*), pocket mice (*Chaetodipus* sp.), deer mice (*Peromyscus* sp.) and shrew (*Soricidae* sp.). A species list is included in Appendix B.

The survey resulted in the detection of one wildlife access point into the study area from the north. This connection facilitates animal movement between a Dennery Canyon finger that reaches south and connects to a small culvert that runs diagonally beneath the intersection of Otay Mesa Road and Corporate Center Road. This culvert connects to a canyon that meanders into the area northeast of the Southwest Village project site. Numerous raccoon tracks were present in the culvert and canyon, as were one set each of coyote and bobcat.

Sixteen points were not surveyed due to delays in right-of-entry permissions (Figure 1).

The study area was divided into three areas (Figure 3) for ease in describing features or animal movement. Area A is comprised of the western portion of the study area and contains the proposed Beyer Boulevard extension and the proposed wildlife undercrossing. Area B is comprised of the south-central portion of the study area and Area C is comprised of the eastern portion of the study area.

Sign observed of coyote demonstrated regular movement of these animals on the dirt roads along the mesa edge as well as several north-south natural pathways in Area A, in particular the swales highlighted in Figure 4. High-use transit areas were found in east-west directions through Area B with some north-south movement on and off the mesa. One high use zone for coyote was found in Area B (Figure 8). Bobcat movement patterns were more compact than those of coyotes and centered more in Areas A and C.

Discussion

The area surveyed contains a mix of mesa and canyon habitats and water sources capable of supporting a diversity of wildlife. Coyote and bobcat are the dominant carnivores in the study area and their presence is an indication of the health of the ecosystem and an indicator of the abundance of the smaller prey species (Gehrt et al. 2009). Sign of diverse prey species was also found. Coyote and bobcat are the focal species for this study and will help determine the best placement for a wildlife crossing location. Specific recommendations regarding wildlife crossing placement(s) will be made after the summer survey have been completed.

The coyote is the largest wild carnivore in most metropolitan areas across its range (Gehrt et al 2009), and coyotes in the southwest are smaller than northern and eastern coyotes. Typical coyote populations are comprised of resident groups, or packs, maintaining exclusive territories across the landscape, with solitary individuals of both sexes inhabiting large home ranges that overlap one another and the smaller group territories (Bekoff and Wells 1980; Gese and Ruff 1997, 1998; Gese 2001). A Ventura County, California study found conservative minimum population density estimates of 0.21 coyotes per km² in fragmented areas and 0.53 coyotes per km² in the contiguous natural areas adjacent to urbanization (Tigas et al. 2002). Packs are composed of an alpha adult male and female that breed and are dominant over one or more associates that help defend territories and provision the young of the alpha pair.

Most studies of urban coyotes have focused on resident, territorial individuals when attempting to determine home range sizes. For annual home ranges, a mean value of 13.4 km² (5.17 mi²) was derived from an aggregate of urban coyote studies and for solitary nomad coyotes the range sizes are quite large, 90-100 km² (Gehrt et al. 2009).

The Ventura County study documented coyotes crossing roads, both freeways and secondary roads, and dispersing between habitat fragments (Tigas et al. 2002) and from fragmented urban areas to large contiguous natural areas. While 52% of 110 radio-collared coyotes crossed major secondary roads in the area, only 4.5% of 110 coyotes crossed US 101, a 10 to 12 lane freeway.

Activity patterns of urban coyotes tend to be primarily during night, and this allows less likelihood of human encounters or traffic. They have a free-flowing pattern of movement with several areas wherein more evidence of activity appears, indicating potential seasonal range centers within the natural areas. Diet studies of coyotes in urban areas are dominated by small mammals such as rodents and lagomorphs with human related food sources such as pet food, cats and garbage as high as 25-30% in fragmented areas. In less fragmented areas generally more diverse diets including birds and woodrats among other species are prevalent.

The bobcat is the most adaptable cat species in the Western Hemisphere. On average an adult bobcat is twice the size of a typical house cat and about 10 times smaller than a mountain lion. An adult bobcat's weight averages 9.6 kg (21.1 pounds) for males and 6.8 kg (15 pounds) for females (Gehrt et al 2009). Bobcats are strict carnivores that focus on large rodents or

lagomorphs but can also rely on a variety of prey. Scat studies have found that while rabbits are the most common prey, woodrats, pocket gophers and voles, among others, can be included.

Potentially active at any time of the day or night, bobcats are often considered to be primarily nocturnal or crepuscular, with most activity occurring in the evening and early morning (Anderson and Lovallo 2003). Forays into developed areas occur primarily between 2200 and 0500 (Tigas et al. 2002). In the Ventura County study, on average, female home ranges (95% MCPs) were 2.3 kilometers (km)² (.888 miles²) and male home ranges were 5.2 km² (2.01 miles²). Some studies have found smaller urban home ranges, including in San Diego (Lembeck 1978; Lembeck and Gould 1979) where two adult female home ranges averaged 1.0 km² and male home ranges averaged 3.1 km².

Bobcat populations in Ventura, San Diego and Orange County studies that included radio-tracking in highly fragmented landscapes have found that bobcats utilize the entire landscape, including developed areas, although they still predominantly used natural habitat.

Bobcats have been detected across a broad range of fragment sizes, including in fragments smaller than even a single female's home range (Tigas et al. 2003). It has been discovered that up to 3 different bobcats may use small fragments simultaneously and that they will move between them, even across very busy roads and freeways. However, Crooks (2002) found that bobcats were absent from most (27 out of 29) isolated fragments smaller than 1 km² but present in all nine sites surveyed larger than 2.5 km². This has implications for the Southwest Village Project.

Habitat fragmentation caused by development, as seen in Southern California, leads to smaller home ranges and greater home range overlap when animals are restricted in their regular movement across the landscape (Young et al. 2019) (assuming that resources are sufficiently dense to support all individuals). However, if urban areas represent lower-quality habitat than natural areas, we might expect bobcat home ranges that include developed areas to be larger. Both effects could also be occurring simultaneously: animals whose ranges abut, but do not include, developed areas may have smaller ranges (this currently appears to be the case in much of the current Southwest Village Project study area), while animals whose ranges include development may use more area as the amount of development increases. If the ranges of the focal species are consistent with the two above cited studies (Tigas et al. 2002, Young et al. 2019) then we can expect that the coyote and bobcat ranges may be smaller here than in other parts of the country, and expect that the study area comprises a portion of the coyote range and potentially a large portion of the bobcat ranges. The initial fieldwork for this wildlife survey series resulted in the identification of several hotspots of activity for the focal species. The remaining surveys may enable a better understanding of how large the seasonal areas of focal species use are within the study area. Refining data on species movements with emphasis on Area A will be the priority in the next surveys.

For discussion of the movements of the two focal species, the area was divided into three areas (Figures 3, 4, 5 and 6). Area A is comprised of the western portion of the study area and contains the proposed Beyer Boulevard extension and the proposed wildlife undercrossing. Area B is comprised of the southern portion of the study area and Area C is comprised of the eastern portion of the study area. Each of these areas contains a mix of habitat types with resources capable of supporting a wide variety of species. The observations thus far have identified several coyote and bobcat high use zones or hot spots within each of these areas (Figures 6, 7, and 8). For the purposes of this report high use zones or hot spots are defined as areas containing evidence of high species activity. While coyotes are much more mobile and their range centers are more fluid than bobcats, the observations indicate coyote high use areas which are also depicted in Figure 8.

Area A is the westernmost segment of the overall area (Figure 4). The southern extent of Area A contains a system of east/west ridges and canyons with a prime feature being two deep canyons. The deep canyon in the middle of the area curves south and joins the adjacent east/west deep canyon at its western mouth. In the vicinity of this confluence, and just north, are coyote and bobcat high use areas. The canyons are well vegetated and provide excellent cover and resources for these focal species. The canyon topography gives way to a more plain-like or rolling hill area that gradually slopes up toward the primary area of interest to the north, where the easterly/westerly oriented Beyer canyon network provides another high use area for both focal species. The more plain-like area contains a small seasonal pond, abundant prey species, and a mix of chaparral and grassland with ample rolling hill terrain, vegetative cover, and a “tri-swale” topographical feature situated on a generally northwest/southeast alignment. This is strongly conducive to unfettered movement of the focal species. There is a strong presence of both bobcat and coyote throughout Area A with a tendency of movement into and out of the two southern canyons as well as along the adjacent canyon ridges. The focal species’ flow pattern favors the northwest-southeast oriented swales with evidence of movement via the dirt roads through these three swales and along the mesa east of the swales from between the canyon complex that lies south and the Beyer Canyon complex in the north part of Area A. There is also substantial movement between the Area A south canyon complex and Area B to the east. The mid-section plain/rolling hill zone in Area A is liberally used by focal species for hunting as are the north and south canyon complexes (Photos 1 and 2) (Figures 4 and 8).

Area B is the south section (Figure 5). Within the northern part of this area lies a mesa which descends from the mesa top in roughly 3 steps in a southerly direction. The focal species make liberal use of the mesa, primarily patrolling along the dirt road along the mesa edge during hunting forays. The mesa supports abundant prey and as they move along the mesa edge, bobcat and coyote have access to vegetative cover just below the mesa top. The first level below the mesa is relatively heavily vegetated compared to the mesa and has plenty of resources for survival. The focal species use Area B extensively, primarily as a transit zone however there are water catches in several locations through here and plenty of prey. The third and lowest level contains a stream riparian zone that supports considerable activity of the focal species. This riparian zone contained evidence of being a high use zone for bobcat. The network

of dirt roads facilitates mobility for the focal species in each of the three areas (A, B, C) but more so in Area B where there is a much greater border patrol presence/activity. The riparian zone in the southern part of Area B is an extension of, and downstream from, the canyon complex in Area C.

Area C contains a main canyon on a primarily north/south orientation with a complex network of finger canyons feeding into the main canyon, spilling south and curving westerly as it nears the United States/Mexico border (Figure 6). As with the rest of the overall area, canyons are interspersed with flat mesa areas. Area C is quite diverse and supports the focal species with all the elements a natural area can offer. Area C is the beneficiary of a lone, tenuous culvert connection that runs under Otay Mesa Road at Corporate Center Drive. This culvert is at the north origin of the main Area C trunk canyon. The culvert is small and not capable of functioning as a sufficient wildlife corridor for larger mammals such as mule deer (*Odocoileus hemionus*) given its relatively small dimensions and overall length. No mule deer sign was found here or anywhere south of this culvert. In years past deer were present to the north of this culvert. Gene pool exchange between areas north and south of Otay Mesa Road and the 905 Freeway is possible via this passage for smaller animals but it is not ideal for frequent safe passages. No other connections to the study area have been found. At the present time, the area detailed in Figure 2 is relatively large and varied enough to accommodate a diverse array of species, despite being a habitat fragment. This one culvert connection is, therefore, very important but could use improvement or augmentation and the entire area would benefit by the installation of additional crossings. Area C supports several high activity bobcat hotspots and coyote movement is prevalent throughout. The movement frequency is very high between mesas and canyons throughout this area for both species. While the same pattern of mesa forays for hunting exists in Area C as in Areas A and B, the extensive and larger canyon complex here offers a comparatively more diverse array of resources. The potential for human intrusion in Area C, while still significant, is less pronounced than in the other areas. Consequently, there was found to be more evidence of focal species activity overall in Area C. There is an overall north/south focal species flow pattern up and down the main canyon. This flow connects with an east/west hunting pattern linking to several hunting areas interspersed along the expanse of Area C and into Area B to the west. Several hotspot areas were found in Area C (Figure 8). Photographs 3 and 4 are from the center of Area C.

The study area is constricted on the west and north by roads and to the south by border activities; therefore, the positioning of wildlife crossings in a developed setting such as this would be critical in order to accommodate the natural movements of the animals as development proceeds, thereby minimizing the potential of vehicle encounters as animals adjust to the changing land use.

Conclusions

The area surveyed contains a mix of mesa and canyon habitats and water sources capable of supporting a diversity of wildlife. Coyote and bobcat are the dominant carnivores in the study

area and their presence is an indication of the health of the ecosystem and an indicator of the abundance of the smaller prey species (Gehrt et al. 2009). Sign of diverse prey species was also found. Coyote and bobcat are the designated focal species for this study and further evidence of their movements will help determine the best placement for a wildlife crossing location.

Several high use areas and regularly-used transit areas for each species has been identified.

One corridor facilitating movement in and out of the study area was identified and determined to be a tenuous connection between the project area and the Otay River watershed via a small culvert undercrossing at the south end of Dennery Canyon. While evidence of focal species use of this tunnel was found, the culvert's small size makes it useful primarily for small animals. No other connections to the overall area have been found. It would be beneficial to enhance this culvert.

Specific recommendations regarding Beyer Boulevard wildlife crossing placement(s) will be made after the summer survey has been completed, provided appropriate right of entry permissions are acquired to the County of San Diego parcels that contain the lands proposed for the wildlife tunnel.

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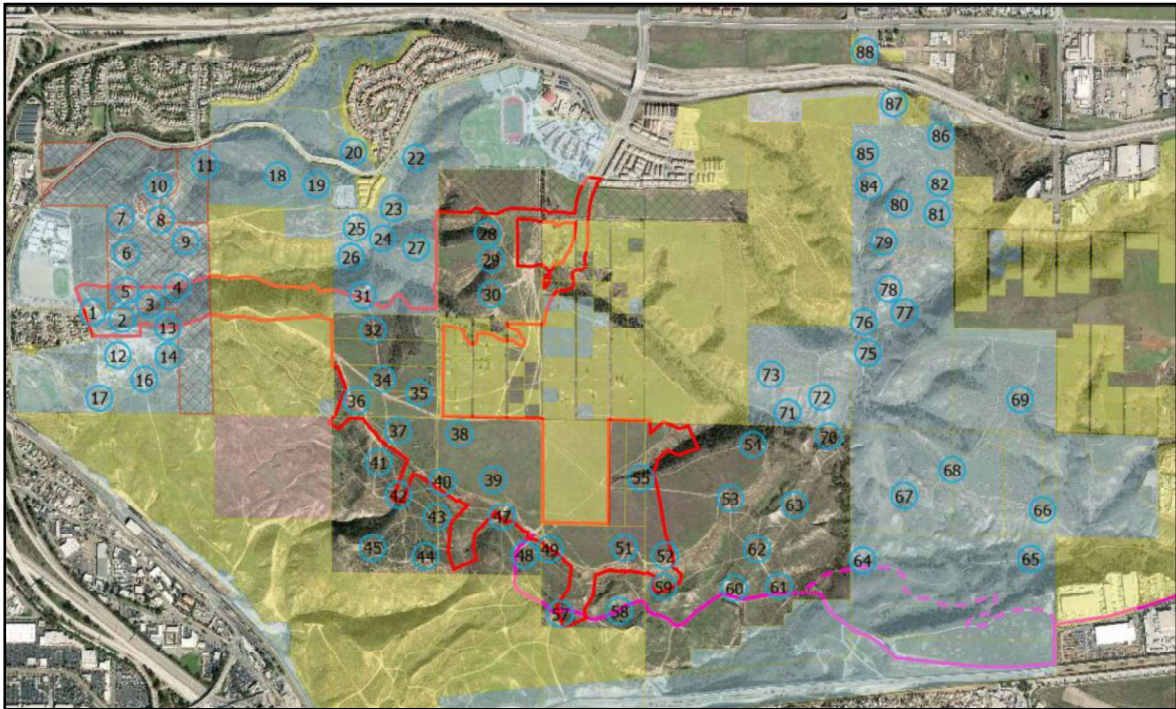
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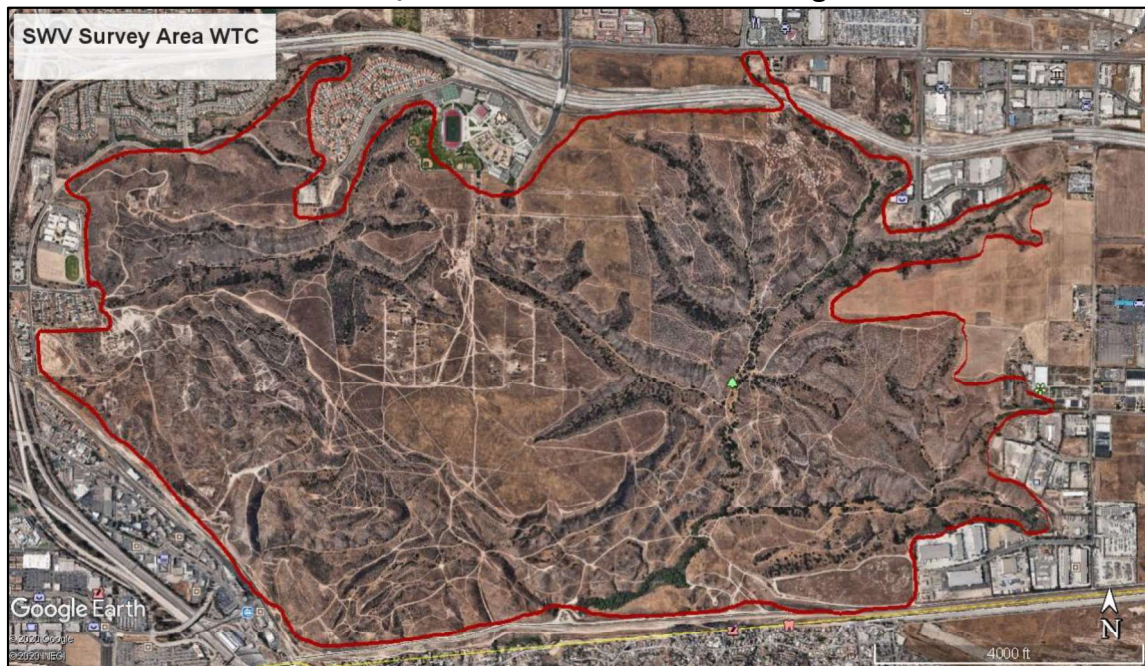
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Appendix A Figures

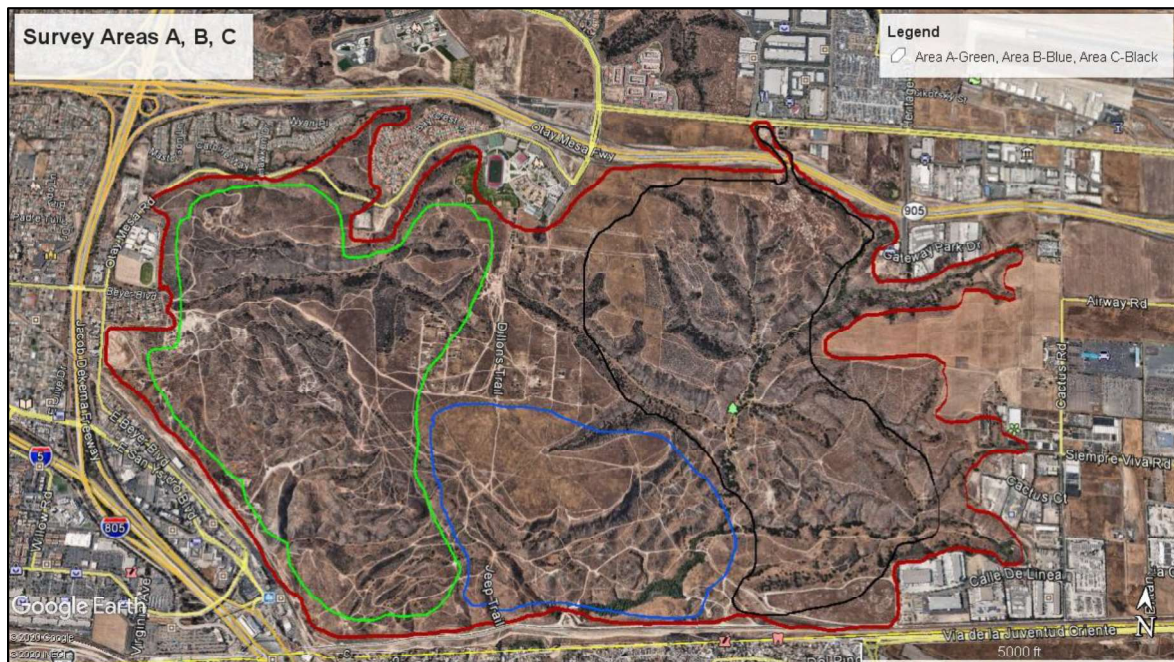


1. Project Area, Access Permissions and Sample Points. No Color = Client, Full Access. Yellow/Pink = Private, No Entry. Blue = County or City of San Diego, Notice Required. Blue/Red Hash = Permission Pending

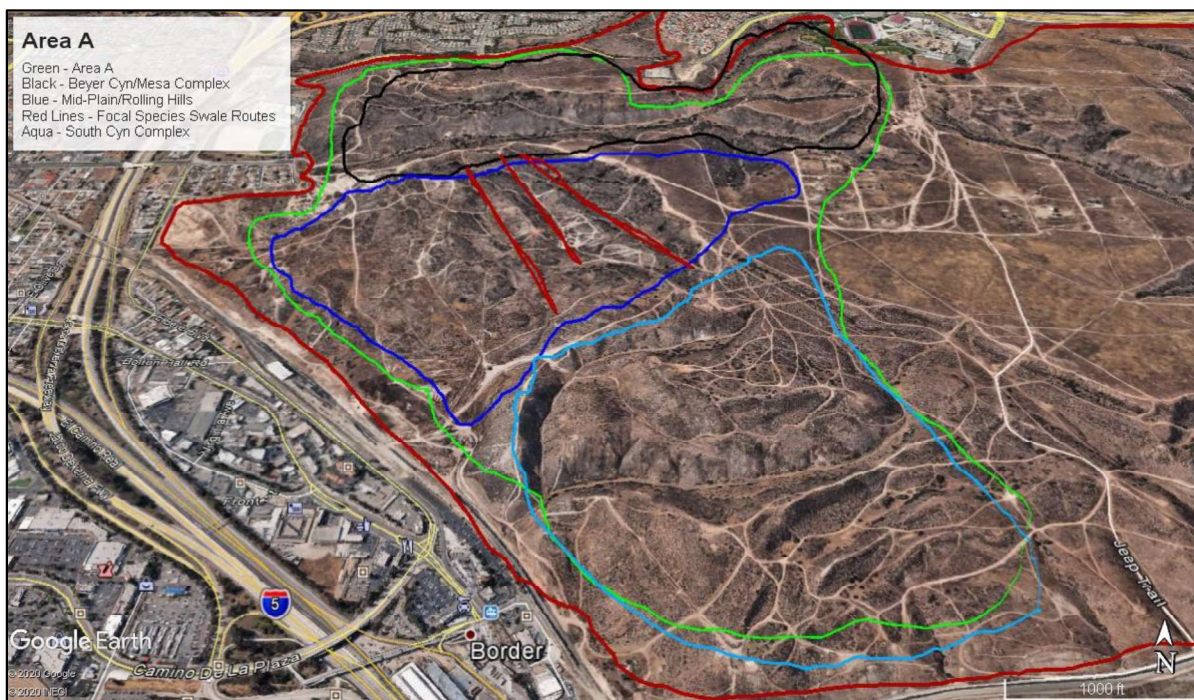


2. Study Area

Wildlife Tracking Company 12774 La Tortola, San Diego, CA 92129 858-775-7227



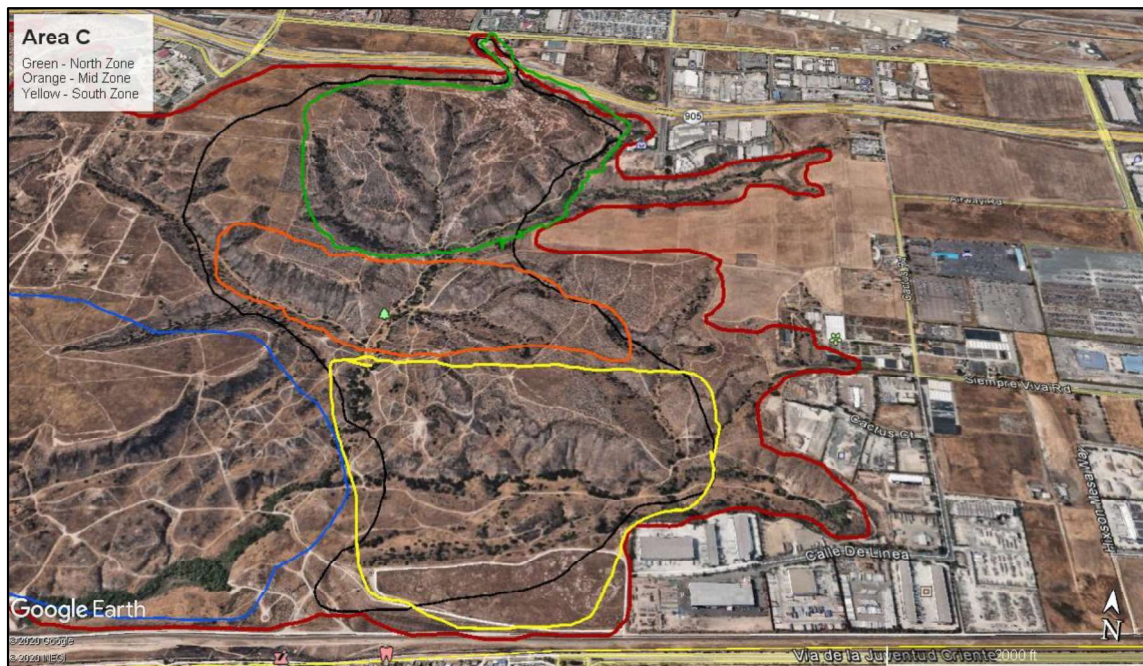
3. Areas A, B, and C



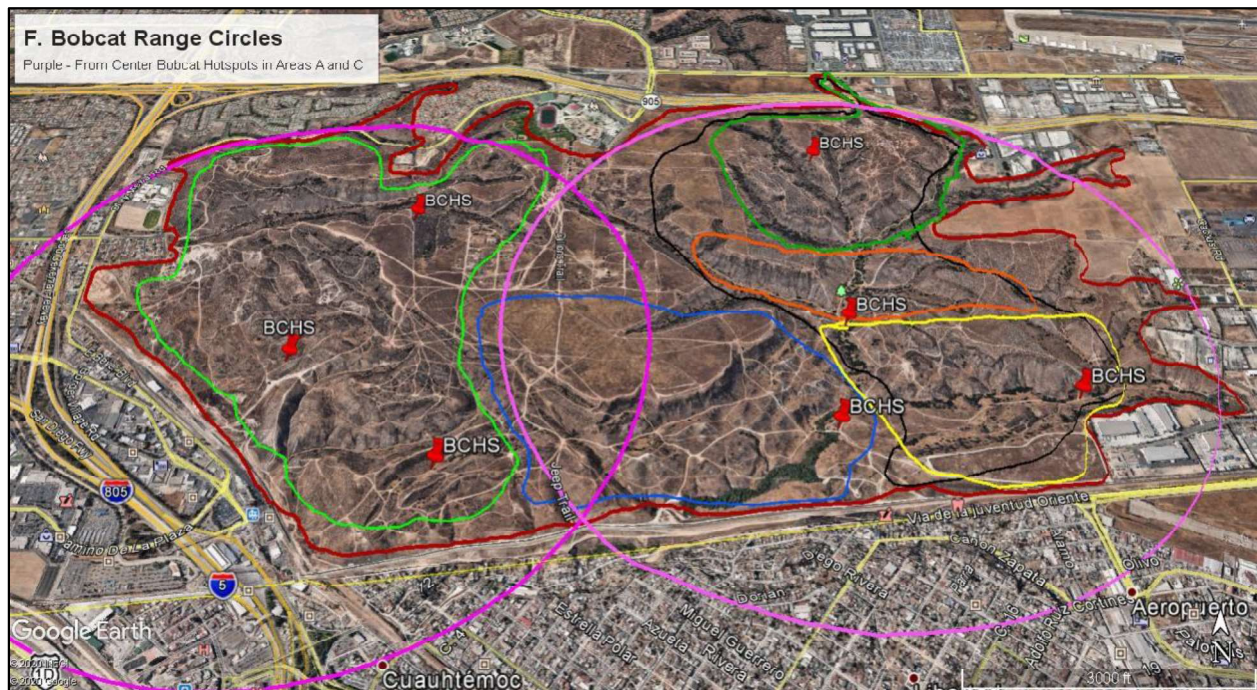
4. Area A



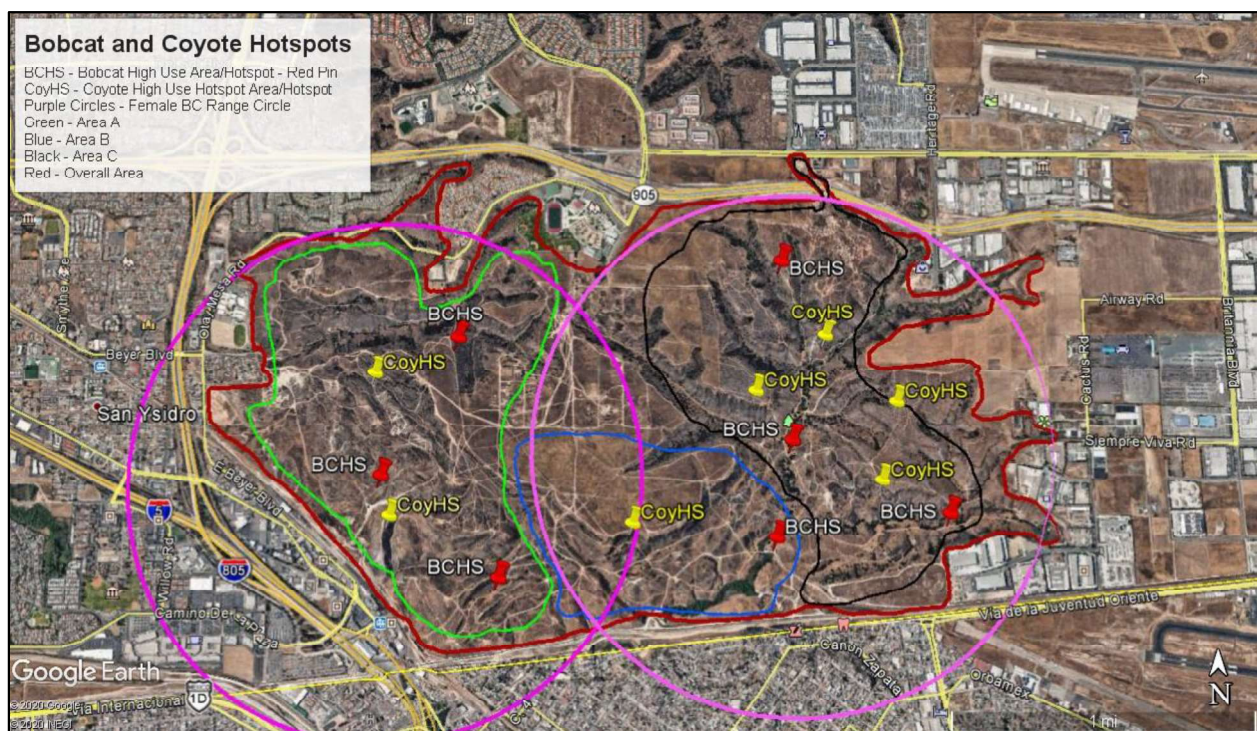
5. Area B



6. Area C



7. Bobcat High Use (Hotspots) and Range Circles



8. Coyote/Bobcat Hotspots

Appendix B

Animal Species Observed

SCIENTIFIC NAME	COMMON NAME
BIRDS	
	Kites, Eagles and Hawks
<i>Circus hudsonius</i>	Northern harrier†
<i>Buteo jamaicensis</i>	Red-tailed hawk
<i>Cathartes aura</i>	Turkey vulture
	Caracaras and Falcons
<i>Falco sparverius</i>	American kestrel
	Upland Game Birds
<i>Callipepla californica</i>	California quail
	Pigeons and Doves
<i>Zenaida macroura</i>	Mourning dove
	Hummingbirds
<i>Calypte anna</i>	Anna's hummingbird
	Tyrant Flycatchers
<i>Tyrannus vociferans</i>	Cassin's kingbird
<i>Sayornis nigricans</i>	Black phoebe
<i>Sayornis saya</i>	Say's phoebe
	Jays, Crows, and Allies
<i>Corvus brachyrhynchos</i>	American crow
<i>Corvus corax</i>	Common raven
	Chickadees, Nuthatches, and Allies
<i>Psaltiriparus minimus</i>	American bushtit
	Cuckoos and Allies
<i>Geococcyx californianus</i>	Greater roadrunner
	Mockingbirds and Thrashers
<i>Mimus polyglottos</i>	Northern mockingbird
<i>Toxostoma redivivum</i>	California thrasher
	Waxwings, Flycatchers, and Starlings
<i>Sturnus vulgaris</i>	European starling
	Wrens
<i>Troglodytes aedon</i>	House wren
	Kinglets, Old World Warblers, and Gnatcatchers
<i>Polioptila californica</i>	California gnatcatcher†
<i>Chamaea fasciata</i>	Wrentit

	Wood Warblers
	Orange crowned warbler
	Emberizen Sparrows and Allies
<i>Melospiza crissalis</i>	California towhee
	Icterids
<i>Sturnella neglecta</i>	Western meadowlark
Reptiles	
	Anguid Lizards
<i>Elgaria multicarinata</i>	Southern alligator lizard
	Spiny Lizards
<i>Sceloporus occidentalis</i>	Western fence lizard
<i>Phrynosoma blainvillii</i>	Blainville's horned lizard†
	Non-Venomous Colubrid Snakes
<i>Pacific gopher snake</i>	Pacific gopher snake
	Vipers
<i>Crotalus helleri</i>	Southern pacific rattlesnake
Mammals	
	Hedgehogs, Moles, and Shrews
<i>Soricidae</i> sp.	Shrew
	Rodents
<i>Thomomys bottae</i>	Botta's pocket gopher
<i>Otospermophilus beechyi</i>	California ground squirrel
<i>Microtus californicus</i>	California vole
<i>Peromyscus</i> sp.	Deer mouse
<i>Reithrodontomys</i> sp.	Harvest mouse
<i>Dipodomys simulans</i>	Dulzura kangaroo rat
<i>Chaetodipus</i> sp.	Pocket mouse
<i>Neotoma bryanti</i>	Bryant's (San Diego) woodrat
<i>Neotoma macrotis</i>	Big-eared woodrat
	Lagomorphs
<i>Lepus californicus bennettii</i>	San Diego black-tailed jackrabbit†
<i>Sylvilagus bachmani</i>	Brush rabbit
<i>Sylvilagus audubonii</i>	Desert cottontail
	Mustelids
<i>Mustela frenata</i>	Long-tailed weasel†
	Procyonids
<i>Procyon lotor</i>	Raccoon
	Canids
<i>Canis familiaris</i>	Domestic dog

<i>Canis latrans</i>	Coyote
<i>Urocyon cinereoargenteus</i>	Gray fox
	Felids
<i>Lynx rufus</i>	Bobcat
†Sensitive species on a state or local level	

Appendix C

Site Photographs



1. Coyote - Beyer Canyon



2. Bobcat Kill Site – Jackrabbit rumen and skull, Area A.



3. Coyote – Area C



4. Bobcat – Area C



MARCH 2022 ADDENDUM



To The

SOUTHWEST VILLAGE WILDLIFE MOVEMENT STUDY

Pertaining to the Proposed Beyer Boulevard Wildlife Underpass

Dated September 2020



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Prepared for:

**RECON Environmental, Inc.
3111 Camino del Rio North,
Suite 600 San Diego, CA 92108 (619) 308-9333 X111**

Prepared by:

**Barry Martin dba, Wildlife Tracking Company
12774 La Tortola San Diego, CA 92129 858-775-7227**

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EXECUTIVE SUMMARY AND INTRODUCTION

During 2020 Wildlife Tracking Company conducted wildlife tracking surveys for the Southwest Village Project to discern wildlife presence, wildlife movement patterns, identify focal mammal species, and to identify connectivity constraints to adjacent areas. Dated September 14, 2020, a report, derived from the data gathered during these surveys, was submitted with recommendations regarding placement and design of a proposed wildlife undercrossing. Bobcat, coyote and gray fox were the most prevalent medium-to-large mammals documented within the study area, and sign of numerous species of small mammals were observed.

The purpose of the 2020 study was to recommend crossing points to facilitate wildlife movement across the proposed Beyer Boulevard extension. It was made clear to WTC that an undercrossing was the preferred method of conveyance for species between the areas north and south of the Beyer Boulevard extension. Suggestions regarding a bridge possibility, were not considered. Recommendations were given for an undercrossing and after consultations with the road construction engineers a location and design features for the undercrossing was negotiated and agreed upon.

In February 2022 WTC was asked to give input on a wildlife bridge alternative. This is an addendum to the original 2020 report and will deal with the newly proposed overcrossing and some considerations intended to optimize its success.

EXISTING WILDLIFE MOVEMENT

This addendum is based upon the 2020 findings detailed in the original September 2020 report. For clarity purposes the entire area surveyed was divided into sections. The proposed location of the Beyer Boulevard extension and overcrossing lies within the northern tier of the section designated Area A. (Fig. A) Moody Canyon is an east/west oriented landscape feature that lies within Area A. The Beyer Boulevard extension will traverse parallel to the canyon along its north facing rim. (See Figs 3 and 8 in the 2020 report).

As detailed in the 2020 report with regard to the “Focal Species” (the more mobile predators that are resident to the project area and surroundings), “The canyonland topography in the south of Area A gives way to a more plain-like or rolling hill area that gradually slopes up toward the primary area of interest to the north, where the east/west oriented Moody Canyon network provides another high use area for focal species. The more plain-like area in the middle of area A contains a small seasonal pond, abundant prey species for coyote, bobcat and gray fox, and a mix of chaparral and grassland with ample rolling hill terrain, vegetative cover, and a tri-swale topographical feature situated on a generally northwest-southeast alignment. This feature is strongly conducive to, and evidence supports, movement of the focal species.” (See Addendum Fig. A).

"Bobcat, coyote, and gray fox sign was found throughout the Moody Canyon area. All three species use the canyon bottom extensively, moving along the dry watercourse and adjacent trails, and hunting along the canyon sides and the overlooking mesas north and south."

"The north-facing slope in the vicinity of the proposed undercrossing has sign of coyote, bobcat and gray fox in addition to abundant sign of their prey species. Just across Moody Canyon from here to the north on the mesa, presence of coyote and bobcat was recorded on the dirt road along the mesa edge overlooking the canyon from the north; however not as much focal species activity was recorded on this mesa as in the canyon or south of the canyon."

"South of Moody Canyon along the rim trail and off the trail to the north, in the vicinity of the proposed undercrossing location, there was abundant focal species' evidence during both survey seasons. This indicates that this is an area of habitual use by bobcat and coyote. This section is near the northern terminus area of the three Area A swales mentioned above. Focal species movement occurs to and from the south from this area. The canyon rim trail ties in to the mesa trail that comes from the mesa southeast of this location. There was evidence of coyote, gray fox and bobcat using this mesa route regularly."

All of this is justification for creating a situation conducive to free-flowing movement over and under any potential obstruction to the already free flow of wildlife movement in this location. The report findings indicate that resources in the entire area are widely spread and any restrictions to movement or further fragmentation of habitat will have a negative impact on satisfaction of basic needs, especially in the case of a road being cut through a transition area.

OVERCROSSING LOCATION

The proposed location of the overcrossing lines up closer to where the Area A northwest/southeast oriented swales terminate at the existing Moody Canyon rim road. This location is closer to the originally suggested undercrossing location which was proposed on the basis of accommodating what already seems to be a natural movement pattern of the focal species in the area. It also appears to take advantage of a small leveling of the topography situated below the present canyon north rim that contained ample evidence of focal species' activity during the 2020 survey cycle.

OVERCROSSING vs UNDERCROSSING

While there are many very successful under-crossings throughout San Diego County and the world, new technologies and evidence of success with overcrossings is becoming prevalent and design technologies are advancing the state of the art. (Arc Solutions 2017) (Conservation NW I-90).

The situation in Area A regarding the movement patterns of the focal species (Bobcat, Coyote and Gray Fox) are conducive to utilization of the more natural features an overpass would present, if properly incorporated, since these species are accustomed to using the swales, mentioned above, to move north and south, and the canyon rim road where the swales terminate. This rim road that parallels Moody Canyon facilitates movement along the edge of the transition zone from plateau habitat to a lush canyon-side habitat where there is a more secluded area that currently contains abundant prey, good cover and plenty of evidence of hunting activity. An overpass would blend with the existing situation and be more inviting to the focal species.

In a 2002 study on behavioral responses of bobcats and coyotes to habitat fragmentation and corridors in an urban environment Tigas et. al. states, “.... Both species tended to cross over roads rather than use culverts. Culverts were more likely to be used earlier in the night, during heavier traffic, and if they contained less water. Bobcats and coyotes used corridors as habitat and, less often, for travel. Both species also crossed development to move between fragments, but seemed to prefer corridors when available. Our results indicate that bobcats and coyotes persisting in an urban environment adjust behaviorally to habitat fragmentation and human activities, in part through temporal and spatial avoidance. **Both species appeared willing to cross well-travelled roads despite the availability of culverts; consequently, vehicular collision is an important cause of mortality (50%) and needs attention.**” (Tigas, et. al. 2002).

This research supports a more natural overpass alternative particularly considering the willingness of both bobcats and coyotes to cross well-travelled roads despite the availability of culverts.

Under-crossings have been successful in accommodating movement of a variety of species and the addition of frequently spaced culverts will aid in perforating the barrier effect of the road especially for smaller species. The openness ratio is an important factor for larger animals such as mule deer, which are not presently found in the study area. By combining non-flooding 6-foot culverts spaced on either side of an overcrossing (in which openness ratio becomes moot), a more optimal situation under the SWV development plan is presented for all the species currently found in this area. If coyotes and bobcats have a propensity to attempt to cross roads even when a culvert exists in the area, fencing as recommended, will help mitigate this but the presence of an overpass provides a preferable alternative as well.

Regarding inclusion of culverts and an over-crossing for enhanced permeability, “Even roads that are not well traveled and are fairly narrow can have devastating effects on animals’ movements; however, the extent to which an animal is affected varies greatly between species. Deer mice, meadow voles, and red-backed voles preferred small crossing structures having larger diameters. Small mammals prefer dense and proximate overhead cover because smaller structures seem safer for them. Smaller mammals are less likely to use overpasses due to energy demands and predator risks. Small- and medium-sized animals use crossing structures having lower traffic volume during night time. Enhancing entrance cover at crossing structures and along the exclusion fence influence small mammals’ movement across the crossing structures and fence. Simple crossing structures may reduce energy demands and confusion. Mice travel easily on ground and arboreal substrates, so they had success in all cover amounts, while meadow voles felt discomfort on non-grassy substrates under heavy cover.” (Stewart, Lauren, et al. 2020).

These points are applicable to the species mix found in the SWV project area. Including both types of crossings will improve the chances of the whole habitat remaining viable for a variety of species. Both appeal to specific species, i.e., some preferring the openness of the over-crossing and others preferring a culvert, with some comfortable using either option under certain circumstances.

CULVERT CONSIDERATIONS

Wildlife crossings have been important for protecting biodiversity in many areas of southern California. Wildlife in areas that have been increasingly fragmented by road construction have benefitted greatly from culvert perforations under the roads (Haas 2000). Within the 2020 study area related to the SWV project is a 6-foot culvert connecting Dennerly Canyon with Area C of the study area which lies east of the SWV project site. While this is a substandard culvert in terms of providing for movement of large mammals such as mule deer, it does accommodate smaller mammals including our focal species and a variety of smaller prey species, when it isn't flooded.

Having 6-foot, non-flooding culverts per the proposed Beyer Boulevard plan would afford another alternative to small species *and* the larger focal species that will help ensure an abundant species mix and genetic transfer between both sides of the road (Haas 2000).

This comports well with the Stewart, Lauren, et. al. (2020) study cited above and further bolsters the argument for inclusion of both these alternatives (over and under-crossings) in this project in order to maintain diverse species viability in the area.

FENCING

Section 7.2.2 in the September 2020 report recommends 6- or 8-foot fencing depending upon whether it is placed on the upslope or downslope side of the road. Fencing is an essential part of ensuring the success of all wildlife crossings and must be an integral part of the final product in the SWV project. Burying the foot of the fencing 6 to 12 inches to discourage digging is also an essential element of the total mix. In San Bernardino County, biologists have erected fences along SR 58 to complement underpasses (culverts) that are being used by the threatened desert tortoise. Tortoise deaths on the highway declined by 93% during the first four years after the introduction of the fences, proving that even makeshift wildlife crossings (storm-drainage culverts in this case) have the ability to increase highway permeability and protect sensitive species (Chilson 2003). Additionally, studies by Haas (2000) and Lyren (2001) report that underpasses in Orange, Riverside, and Los Angeles Counties have drawn significant use from a variety of species including bobcats, coyotes, gray fox, mule deer and long-tailed weasels.

OVERCROSSING CONSIDERATIONS

The overcrossing should have wide (flared) approaches with the appropriate mix of area specific, naturally occurring flora interspersed along the extent of the bridge replicating the surrounding habitat. Guiding fencing must be incorporated into the design.

Surface soil endemic to the immediate area should be used and be of sufficient depth over the bridge (3') to support the root structures of the plants.

The surface should be irregular in a way that replicates the surrounding natural terrain.

Refugia should be incorporated into the surface landscape in order to provide for safe passage of small species using the overcrossing. These may include rocky structures, thick bushes, appropriate bunch grasses, piles of decaying woody plant material, etc.

The sides of the bridge should be designed to discourage any climbing animals (gray fox, opossum, raccoon) from using it as a pathway due to the danger of falling onto the road below. Dimensions recommended by the DOT for "large mammals, high-mobility medium-sized mammals, low mobility medium-sized mammals, small mammals, amphibians (if adapted) and reptiles: Minimum width, 32' (10 m), Recommended width, 50-130' (15-40m). (USDOT 2011).

Bushes such as lemonade berry and others that develop good height (6-8') interspersed along the bridge, especially the edges, would shield the road from view and be conducive to bird movement. Regarding bird movements across roads Johnson, et al (2017) writes, "...serious consideration should be given to the implementation of vegetated wildlife overpasses over larger roads and motorways. Although costly, this method has previously proven to be highly successful in promoting the movements of several species and has additional mitigation value for multiple taxa beyond birds. (Johnson et al 2017).

In the interest of keeping human traffic from using the overcrossing, a 6' to 8' tall metal fence at the entrances, with relatively widely spaced (12-16") horizontal metal bars supported by vertical bars every 6' would allow wildlife to pass through but discourage humans. Signage informing that this is a "sensitive wildlife crossing, please stay out," would be incorporated into the structure or visible just beyond it on posts. The bottom bars of the of the fence would be up to 20" from the ground to encourage wildlife movement through.

CONCLUSIONS/OPINION

From the Department of Transportation Federal Highway Administration; "*Landscape connectivity is the degree to which the landscape facilitates animal movement and other ecological flows.* High levels of landscape connectivity occur when the area between core habitats in the landscape comprise relatively benign types of habitats without barriers, thus allowing wildlife to move freely through them in meeting their biological needs.

Landscape connectivity is important for two reasons:

1. Many animals regularly move through the landscape to different habitats to meet their daily, seasonal and basic biological needs.
2. Connectivity allows areas to be recolonized, for dispersal, for maintaining regional metapopulations and minimizing risks of inbreeding within populations.

Reduced landscape connectivity and limited movements due to roads may result in higher wildlife mortality, lower reproduction rates, ultimately smaller populations and overall lower population viability. These harmful effects have underscored the need to maintain and restore essential movements of wildlife across roads to maintain within population movements and genetic interchange. This is particularly important on roads with high traffic volumes that can be complete barriers to movement.

The fragmentation effect of roads begins as animals become reluctant to move across roads to access mates or preferred habitats for food and cover. The degree of aversion to roads may vary by age group and gender. The reasons why roads are avoided can generally be attributed to features associated with the road, e.g., traffic volume, road width *or major habitat alterations caused by the road.*

High-volume and high-speed roads tend to be the greatest barriers and most effective in disrupting animal movements and population interchange. *However, some studies have shown that secondary highways and unpaved roads can also impede animal movements.*" (USDOT 2011) (Italics by author for emphasis).

In the literature dealing with habitat fragmentation, combined with the anecdotal experience of this author after over 30 years of observations involving fragmented habitat, introducing a road into an already fractured landscape is a death knell for species there. Will there be a gradual decline in the efficacy of Moody Canyon and surrounding habitat areas as a result of the new development? Based upon experience and the literature, this observer's opinion is an unqualified yes. However, the idea of requiring an overpass is a refreshing change in attitude and it will be interesting to observe, post construction, focal species' activity trends over time. Successful outcomes in this case may be precedent setting.

It has become widely accepted, after years of resistance, mainly due to cost factors, that the open and more natural overcrossing alternatives are worth pursuing. "The total number of motor vehicle accidents with large wildlife each year has been estimated at one to two million in the United States and at 45,000 in Canada. These numbers have increased even more in the last decade. In the United States alone, these collisions were estimated to cause 211 human fatalities, 29,000 human injuries and over US\$1 billion in property damage annually." (USDOT 2011)

Based upon work by researchers such as Crooks and Riley on small and medium carnivores in fragmented habitats, it was pointed out in the September 2020 report that there are adaptations these carnivores make in order to survive and thrive. At what point do these adaptations begin to crumble if further fragmentation compromises the prey base to the point that the carnivore population is unable to sustain itself at the level it had enjoyed previously.

Current examples of successful overcrossings indicate that these concerns may be mitigated by inclusion of an adequately designed and constructed overcrossing in conjunction with strategically placed 6-foot dry culverts and directive fencing. With maximum permeable features build into the road, recent research indicates that wildlife benefit greatly and the effects of fragmentation are decreased.

In summation, the addition of a wildlife overcrossing to this project is supported by the successful outcomes of many overcrossing projects worldwide. A more open and natural appearing crossing such as the one proposed is likely to be a more attractive alternative to a wider variety of species seeking to move between the north and south sides of the Beyer Boulevard extension.

Barry Martin
Wildlife Tracking Company

bmartinwti@gmail.com

CITATIONS

ARC SOLUTIONS 2017 <https://arc-solutions.org/wp-content/uploads/2017/04/ARC-Special-Pub-Design-Parameters.pdf>

Chilson, P. (June 2003). "Cutting Edge: Right of Way" Audubon Magazine

Christopher D. Johnson, Daryl Evans, Darryl Jones (2017). Birds and Roads: Reduced Transit for Smaller Species over Roads within an Urban Environment. *Frontiers in Ecology and Evolution*, 2017; 5 DOI: [10.3389/fevo.2017.00036](https://doi.org/10.3389/fevo.2017.00036)

Conservation Northwest <https://www.conservationnw.org/our-work/habitat/i-90/>

Haas, C. D. (2000). Distribution, relative abundance, and roadway underpass responses of carnivores throughout the Puente-Chino Hills (Master Thesis). California State Polytechnic University.

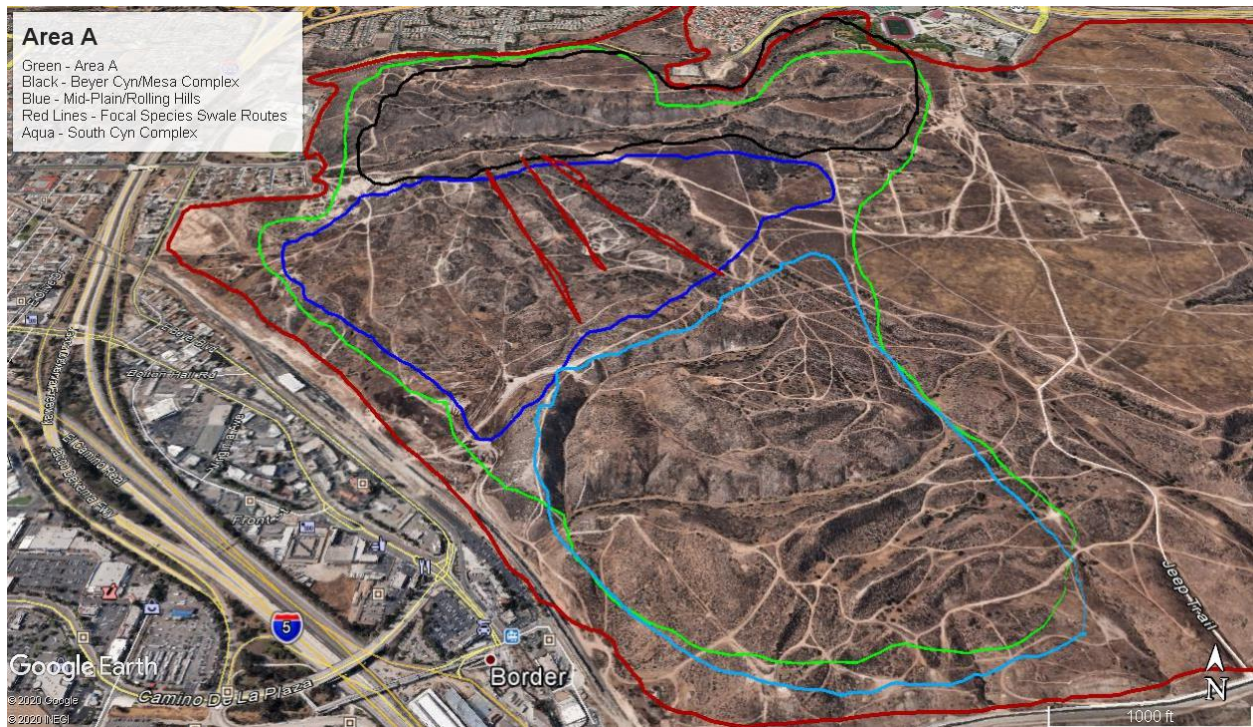
Lyren, L. M. (2001). Movement patterns of coyotes and bobcats relative to road underpasses in Chino Hills of southern California (Master Thesis). California State Polytechnic University.

Stewart, Lauren, et al. (2020). "Wildlife Crossing Design Influences Effectiveness for Small and Large Mammals in Banff National Park." *Case Studies in the Environment* 4.1.

Tigas, Lourraine & Vuren, Dirk & Sauvajot, Raymond. (2002). Behavioral responses of bobcats and coyotes to habitat fragmentation and corridors in an urban environment. *Biological Conservation*. 108. 299-306. [10.1016/S0006-3207\(02\)00120-9](https://doi.org/10.1016/S0006-3207(02)00120-9).

USDOT Federal Highway Administration (March 2011) WILDLIFE CROSSING STRUCTURE HANDBOOK DESIGN AND EVALUATION IN NORTH AMERICA Publication No. FHWA-CFL/TD-11-003.

FIGURE A



ATTACHMENT 3

Survey Dates, Times, and Weather Conditions

Attachment 3
Survey Dates, Times, and Weather Conditions

Date	Surveyors	Survey Type	Beginning Conditions	Ending Conditions
General Biological/Vegetation Mapping				
11/5/2017	E. McKinney, M. Weston	General Biological in Phase 1 and Beyer Boulevard	8:30 a.m.	2:30 p.m.
12/5/2017	E. McKinney, M. Weston	General Biological in Phase 1 and Beyer Boulevard	11:00 a.m.	3:00 p.m.
1/12/2018	E. McKinney, M. Weston	General Biological in mitigation lands and proposed vernal pool restoration areas	8:30 a.m.	2:30 p.m.
9/11/2019	A. Leavitt, R. Atik	General Biological in Beyer Boulevard, Phase 2, Phase 4, and within storm drain outfalls	8:30 a.m.	2:00 p.m.
9/17/2019	A. Leavitt, M. Doderio	General Biological in Phase 2, Phase 4, proposed vernal pool restoration areas, and mitigation lands	8:00 a.m.	12:30 p.m.
9/24/2019	A. Leavitt, M. Doderio	General Biological in Beyer Boulevard, Phase 2, Phase 4 and mitigation lands	8:00 a.m.	3:00 p.m.
10/7/2019	B. Procsal, R. Atik	General Biological on Beyer Boulevard	8:30 a.m.	12:30 p.m.
10/18/2019	B. Procsal, R. Atik	General Biological on Beyer Boulevard	8:30 a.m.	12:30 p.m.
2/10/2020	J. Sundberg	General Biological on portion of Phase 4 and Phase 2	8:30 a.m.	9:30 a.m.
3/24/2020	R. Atik, J. Mercado	General Biological in Phase 1 and Beyer Boulevard	8:30 a.m.	2:30 p.m.
3/26/2020	R. Atik, J. Sundberg	General Biological in Phase 1 and Beyer Boulevard	3:00 p.m.	3:30 p.m.
4/6/2020	B. Parker, R. Atik	Programmatic Trail surveys – Phases 3-7	8:30 a.m.	2:15 p.m.
4/15/2020	B. Parker, R. Atik	Programmatic Trail surveys – Phases 3-7	9:00 a.m.	2:30 p.m.
4/17/2020	B. Parker, A. Leavitt	Programmatic Trail surveys – Phases 3-7	9:30 a.m.	2:00 p.m.
2/8/2023	J. Woll, C. Thomson	Reverifying vegetation mapping in all Phases and spring rare plant survey, verifying limits of cactus wren habitat, snake cholla, and searches for burrowing owl sign	8:00 a.m.	3:00 p.m.
2/9/2023	J. Woll, C. Thomson	Reverifying vegetation mapping in all Phases and spring rare plant survey, verifying limits of cactus wren habitat, snake cholla, and searches for burrowing owl sign	8:00 a.m.	3:00 p.m.
3/24/2023	B. Procsal, A. Leavitt, K. Valenti, J. Sundberg, A. Smisek	Verification of suitable habitat for Quino checkerspot butterfly within the project-level analysis area	-	-

Attachment 3
Survey Dates, Times, and Weather Conditions

Date	Surveyors	Survey Type	Beginning Conditions	Ending Conditions
3/27/2023	B. Procsal, W. Loeffler, C. Thomson, J. Sundberg, A. Smisek	Verification of suitable habitat for Quino checkerspot butterfly within the project-level analysis area	-	-
3/28/2023	B. Procsal, J. Woll	Verification of suitable habitat for Quino checkerspot butterfly within the vernal pool restoration areas	-	-
6/14/2023	B. Procsal, G. Scheid	Survey of all disturbed wetlands for vernal pool plant indicator species	-	-
10/16/2023	C. Thomson	Off-site project improvement areas	8:35 a.m.	12:15 p.m.
1/17/2024	A. Smisek, J. Sundberg	EVA Road and Phase 4 Development Area Verification	-	-
5/30/2024	C. Thomson	Mesa top replacement lands	9:20 a.m.; 61°F; winds 0–1 mph; 80% cloud cover	12:25 p.m.; 67°F; winds 1-4 mph; 0% cloud cover
Jurisdictional Waters/Wetland Delineations				
3/4/2018	J. Sundberg, B. Procsal	Wetland Delineation in Phase 1 and Beyer Boulevard-ponding areas	-	-
3/6/2018	J. Sundberg, B. Procsal	Wetland Delineation in Phase 1 and Beyer Boulevard-ponding areas	-	-
3/15/2018	J. Sundberg, B. Procsal	Wetland Delineation in Phase 1a and Phase 1b-drainages	8:30 a.m.	2:00 p.m.
3/19/2018	B. Procsal, J. McBee	Wetland Delineation in Phase 1a and Phase 1b-ponding areas	8:30 a.m.	10:45 a.m.
3/26/2018	B. Procsal, M. Dodero	Wetland Delineation in Phase 1a and Phase 1b-ponding areas	11:30 a.m.	3:15 p.m.
3/29/2018	J. Sundberg, B. Procsal	Wetland Delineation in Phase 1a and Phase 1b-ponding areas	-	-
4/4/2018	J. Sundberg, B. Procsal	Wetland Delineation in Phase 1a and Phase 1b-ponding areas	8:00 a.m.	3:00 p.m.
4/6/2018	J. Sundberg, B. Procsal	Wetland Delineation in Phase 1a and Phase 1b-ponding areas	8:00 a.m.	2:00 p.m.
3/29/2019	J. Sundberg, B. Procsal, J. McBee	Wetland Delineation in Phase 1, Beyer Boulevard, Portion of Phase 4 and 2, and proposed vernal pool restoration areas-ponding areas	8:00 a.m.	3:00 p.m.
4/11/2019	J. Sundberg, B. Procsal, J. McBee	Wetland Delineation in Phase 1 Beyer Boulevard, Portion of Phase 4 and 2, and proposed vernal pool restoration areas-ponding areas	8:00 a.m.	2:00 p.m.

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Date	Surveyors	Survey Type	Beginning Conditions	Ending Conditions
4/23/2019	J. Sundberg, B. Procsal, J. McBee	Wetland Delineation in Phase 1 Beyer Boulevard, Portion of Phase 4 and 2, and proposed vernal pool restoration areas-ponding areas	8:00 a.m.	2:00 p.m.
12/9/2019	B. Procsal; J. Sundberg	Wetland Delineation – Phase 1b and Phase 2a-drainages	8:00 a.m.	12:00 p.m.
12/13/2019	B. Procsal; J. Sundberg	Wetland Delineation – Phase 1, Beyer Boulevard, Phase 2, Phase 4, and within storm drain outfalls- drainages	8:00 a.m.	3:00 p.m.
1/14/2020	B. Procsal; G. Scheid	Wetland Delineation – Phase 1 Beyer Boulevard, Phase 2, Phase 4, and within storm drain outfalls- drainages	9:00 a.m.	3:00 p.m.
2/13/2020	J. Sundberg	Wetland Delineation – Phase 1, Beyer Boulevard, Phase 2, and Phase 4-drainages	9:00 a.m.	3:00 p.m.
2/27/2020	B. Procsal; R. Atik	Wetland Delineation – Phase 1, Beyer Boulevard, Phase 2 Phase 4, -ponding areas	9:00 a.m.	4:00 p.m.
3/3/2020	B. Procsal; J. Sundberg; A. Smisek; K. Chappaz	Wetland Delineation – Phase 1, Beyer Boulevard, Phase 2, Phase 4, -ponding areas	9:00 a.m.	4:00 p.m.
3/26/2020	J. Sundberg; R. Atik	Wetland Delineation – Phase 1, Beyer Boulevard, Phase 2, Phase 4, and Mitigation Lands-ponding areas	9:00 a.m.	4:00 p.m.
4/14/2020	B. Procsal; A. Leavitt	Wetland Delineation –Phase 1, Beyer Boulevard, Phase 2, Phase 4, -ponding areas and drainages	9:00 a.m.	4:30 p.m.
6/24/2020	B. Procsal; G. Scheid	Wetland Delineation –Phase 1, Beyer Boulevard, Phase 2, Phase 4, Areas-ponding areas	1:00 p.m.	4:00 p.m.
7/13/2020	G. Scheid	Wetland Delineation – Phase 1, Beyer Boulevard and Phase 2- ponding areas	8:00 a.m.	11:00 a.m.
3/17/2021	B. Procsal; G. Scheid	Wetland Delineation – Mitigation Lands- ponding areas and drainages	9:00 a.m.	4:30 p.m.
4/19/2021	B. Procsal, A. Smisek	Wetland Delineation – Mitigation Lands-ponding areas	9:00 a.m.	4:30 p.m.
8/18/2021	B. Procsal; G. Scheid	Stream Duration Assessment Method forms– Phases 1 & 2 Areas and Mitigation Lands	-	-
8/20/2021	B. Procsal; G. Scheid	Stream Duration Assessment Method forms– Phases 1 & 2 Areas and Mitigation Lands	-	-

Attachment 3 Survey Dates, Times, and Weather Conditions				
Date	Surveyors	Survey Type	Beginning Conditions	Ending Conditions
2/9/2022	B. Procsal; A. Smisek	Wetland Delineation – Phases 1 & 2 Areas-drainages and vernal pools	-	-
5/5/2023	A. Smisek; C. Polevy; C. Thomson; J. Sundberg	Wetland Delineation – Phases 1 & 2 Areas-soil pits and paired sample points for ponding areas	-	-
5/8/2023	A. Smisek; C. Polevy; C. Thomson; J. Sundberg	Wetland Delineation – Phases 1 & 2 Areas-soil pits and paired sample points for ponding areas	-	-
6/16/2023	A. Smisek; C. Polevy; C. Thomson; J. Sundberg	Wetland Delineation – Phases 1 & 2 Areas- soil pits and paired sample points for ponding areas	-	-
6/20/2023	A. Smisek; C. Polevy; C. Thomson; J. Sundberg	Wetland Delineation – Mitigation Lands-soil pits and paired sample points for ponding areas	-	-
6/21/2023	A. Smisek; C. Polevy; C. Thomson; J. Sundberg	Wetland Delineation – Phases 1 & 2 Areas-soil pits and paired sample points for ponding areas	-	-
6/27/2023	A. Smisek; C. Polevy; C. Thomson; J. Sundberg	Wetland Delineation – Mitigation Lands -soil pits and paired sample points for ponding areas	-	-
7/5/2023	A. Smisek; C. Polevy; C. Thomson; J. Sundberg	Wetland Delineation – Phases 1 & 2 Areas-soil pits and paired sample points for ponding areas	-	-
8/8/2023	A. Smisek; D. Gadia	Wetland Delineation – Phases 1 & 2 Areas-paired sample points for ponding areas	-	-
8/17/2023	A. Smisek; D. Gadia	Wetland Delineation – Phases 1 & 2 Areas-paired sample points for ponding areas	-	-
1/17/2024	A. Smisek; J. Sundberg	EVA Road and Phase 4 Development Area Verification	-	-
Rare Plant Surveys				
4/9/2018	J. Sundberg	Rare Plant Survey in Phase 1, Beyer Boulevard, and portion of Phase 2	8:30 a.m.	3:30 p.m.
4/16/2018	J. Sundberg, A. Smisek, K. Valenti	Rare Plant Survey in Phase 1, Beyer Boulevard, and portion of Phase 2	8:30 a.m.	3:30 p.m.
5/30/2018	J. Sundberg, A. Capobianco	Rare Plant Survey in Phase 1, Beyer Boulevard, and a portion of Phase 2	8:30 a.m.	3:30 p.m.
6/24/2019	R. Atik, J. Mercado	Rare Plant Survey in Phase 1, 2 and Beyer Boulevard	9:00 a.m.	3:00 p.m.
7/23/2019	J. Sundberg, J. Mercado	Rare Plant Survey in Phase 1, 2, Beyer Boulevard, within storm drain outfalls, and within the vernal pool restoration areas	7:30 a.m.	3:00 p.m.

Attachment 3
Survey Dates, Times, and Weather Conditions

Date	Surveyors	Survey Type	Beginning Conditions	Ending Conditions
2/10/2020	J. Sundberg, M. Dodero	Rare Plant Survey in Phase 1, 2, Beyer Boulevard, and Mitigation Lands	8:30 a.m.	3:30 p.m.
2/11/2020	J. Sundberg, M. Dodero	Rare Plant Survey in Phase 1 and Beyer Boulevard	9:00 a.m.	3:00 p.m.
2/26/2020	J. Sundberg	Rare Plant Survey in Phase 2, , proposed vernal pool restoration areas, and mitigation lands	8:30 a.m.	3:30 p.m.
2/28/2020	J. Sundberg	Rare Plant Survey in Phase 1 and Beyer Boulevard, proposed vernal pool restoration areas, and mitigation lands	8:30 a.m.	12:00 p.m.
3/2/2020	J. Sundberg, K. Chappaz, J. Mercado	Rare Plant Survey in Beyer Boulevard, Phase 2, within storm drain outfalls, and within the vernal pool restoration areas	8:30 a.m.	3:30 p.m.
3/3/2020	J. Sundberg, K. Chappaz, A. Smisek	Rare Plant Survey in Beyer Boulevard, Phase 2, within storm drain outfalls, and within the vernal pool restoration areas	8:30 a.m.	3:30 p.m.
3/4/2020	J. Sundberg, K. Valenti	Rare Plant Survey in Phase 1, and Beyer Boulevard, and portion of Phase 2	9:00 a.m.	3:00 p.m.
3/6/2020	J. Sundberg	Rare Plant Survey in Phase 2, proposed vernal pool restoration areas, and mitigation lands	8:30 a.m.	3:30 p.m.
5/5/2020	J. Sundberg, M. Dodero, J. Mercado	Rare Plant Survey in Phase 1, portion of Phase 2 Beyer Boulevard, proposed vernal pool restoration areas, and mitigation lands	8:30 a.m.	3:30 p.m.
5/6/2020	J. Sundberg, K. Valenti, J. Mercado	Rare Plant Survey in Phase 1, Beyer Boulevard, portion of Phase 2, proposed vernal pool restoration areas, and mitigation lands	8:30 a.m.	3:00 p.m.
5/7/2020	J. Sundberg, J. Mercado	Rare Plant Survey in Beyer Boulevard, Phase 2, within storm drain outfalls, and within the vernal pool restoration areas	8:30 a.m.	3:30 p.m.
5/8/2020	J. Sundberg, K. Chappaz	Rare Plant Survey in Beyer Boulevard, Phase 2, storm drain outfalls, and within the vernal pool restoration areas	8:30 a.m.	3:30 p.m.
6/8/2020	J. Sundberg, A. Smisek	Rare Plant Survey with focus on Otay Tarplant within Beyer Boulevard	9:00 a.m.	4:00 p.m.

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Survey Dates, Times, and Weather Conditions

Date	Surveyors	Survey Type	Beginning Conditions	Ending Conditions
6/10/2020	J. Sundberg, A. Smisek	Rare Plant Survey with focus on Otay Tarplant within Beyer Boulevard	9:00 a.m.	4:00 p.m.
3/31/2021	J. Mercado	Rare plant survey within Phase Beyer Boulevard, storm drain outfalls, additional Phase 1 and 2 areas, and trails in Mitigation Lands	7:00 a.m.	2:00 p.m.
6/4/2021	J. Mercado	Rare plant survey within Beyer Boulevard, storm drain outfalls, additional Phase 2 areas, and trails in Mitigation Lands	8:30 a.m.	11:30 a.m.
6/14/2023	B. Procsal, G. Scheid	Verification of the limits of Otay tarplant within the Beyer Boulevard alignment	-	-
4/12/2024	J. Sundberg	Rare plant survey #1 within the EVA Road and Phase 4 Development Area	-	-
6/7/2024	J. Sundberg	Rare plant survey #2 within the EVA Road and Phase 4 Development Area	-	-
Coastal California Gnatcatcher (CAGN) Surveys				
4/3/2018	M. Weston, K. Valenti ¹	CAGN Protocol Survey #1 – Mitigation Lands	6:50 a.m.; 55°F; winds 0–1 mph; 95% cloud cover	10:10 a.m.; 64°F; winds 1–3 mph; 95% cloud cover
4/11/2018	B. Procsal, K. Valenti ¹	CAGN Protocol Survey #2 – Mitigation Lands	7:45 a.m.; 63°F; winds 0–1 mph; 99% cloud cover	10:25 a.m.; 75°F; winds 0–3 mph; 10% cloud cover
4/18/2018	M. Weston, K. Valenti ¹	CAGN Protocol Survey #3 – Mitigation Lands	7:50 a.m.; 56°F; winds 0–1 mph; 5% cloud cover	10:40 a.m.; 68°F; winds 2–4 mph; 0% cloud cover
4/30/2018	M. Weston, B. Rigley ¹	CAGN Protocol Survey #1a – Phase 1, Beyer Boulevard, and a portion of Phase 2	6:15 a.m.; 56°F; winds 4–7 mph; 100% cloud cover	11:30 a.m.; 62°F; winds 4–7 mph; 100% cloud cover
5/1/2018	M. Weston, A. Fromer ¹ B. Procsal, J. McBee ¹	CAGN Protocol Survey #1b – Phase 1, Beyer Boulevard, and a portion of Phase 2	8:10 a.m.; 58°F; winds 3–5 mph; 80% cloud cover	9:45 a.m.; 58°F; winds 4–7 mph; 100% cloud cover
5/8/2018	M. Weston, K. Valenti ¹	CAGN Protocol Survey #2a – Phase 1, Beyer Boulevard, and a portion of Phase 2	6:35 a.m.; 56°F; winds 0–1 mph; 100% cloud cover	10:30 a.m.; 72°F; winds 1–3 mph; 15% cloud cover
5/10/2018	M. Weston, J. McBee ¹	CAGN Protocol Survey #2b – Phase 1, Beyer Boulevard, and a portion of Phase 2	6:30 a.m.; 58°F; winds 0–2 mph; 100% cloud cover	10:05 a.m.; 64°F; winds 0–2 mph; 5% cloud cover
5/16/2018	M. Weston, K. Valenti ¹	CAGN Protocol Survey #3a – Phase 1, Beyer Boulevard, and a portion of Phase 2	6:55 a.m.; 60°F; winds 0–1 mph; 100% cloud cover	11:05 a.m.; 73°F; winds 3–5 mph; 3% cloud cover
5/17/2018	M. Weston, K. Valenti ¹	CAGN Protocol Survey #3b – Phase 1, Beyer Boulevard, and a portion of Phase 2	6:40 a.m.; 59°F; winds 0–2 mph; 30% cloud cover	10:30 a.m.; 73°F; winds 1–5 mph; 10% cloud cover

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Survey Dates, Times, and Weather Conditions

Date	Surveyors	Survey Type	Beginning Conditions	Ending Conditions
2/19/2020	B. Procsal, B. Parker ¹ / M. Dodero, A. Fromer ¹	CAGN Protocol Survey #1 – Beyer Boulevard, portion of Phase 1 and 2, and within storm drain outfalls	8:30 a.m.; 54°F; winds 0–1 mph; 30% cloud cover	12:00 p.m.; 66°F; winds 0–2 mph; 0% cloud cover
2/26/2020	B. Procsal, R. Atik ¹ / M. Dodero, A. Fromer ¹	CAGN Protocol Survey #2 — Beyer Boulevard, portion of Phase 1 and 2 and within storm drain outfalls	8:15 a.m.; 66°F; winds 0–3 mph; 0% cloud cover	12:00 p.m.; 73°F; winds 5–10 mph; <5% cloud cover
3/4/2020	B. Procsal, B. Parker ¹ / M. Dodero, A. Fromer ¹	CAGN Protocol Survey #3 — Beyer Boulevard, portion of Phase 1 and 2, and within storm drain outfalls	7:30 a.m.; 52°F; winds 0–2 mph; 0% cloud cover	11:20 a.m.; 68°F; winds 2–4 mph; 15% cloud cover
Quino Checkerspot Butterfly (QCB) Surveys				
2/16/2018	B. Procsal, E. McKinney	QCB Habitat Assessment – Phase 1, Beyer Boulevard, and a portion of Phase 2	10:50 a.m.	2:10 p.m.
2/24/2018	D. Saucedo, T. Cooper, V. Novik	QCB Protocol Survey #1 – Phase 1, Beyer Boulevard, and a portion of Phase 2	10:00 a.m.; 60°F; winds 3–5 mph; 0% cloud cover	12:45 p.m.; 68°F; winds 0–2 mph; 0% cloud cover
2/26/2018	W. Loeffler, A. Smisek	QCB Protocol Survey #2 – Phase 1, Beyer Boulevard, and a portion of Phase 2	11:00 a.m.; 63°F; winds 3–8 mph; 1% cloud cover	2:55 p.m.; 67°F; winds 4–6 mph; 3% cloud cover
3/05/2018	J. Sundberg, A. Smisek	QCB Protocol Survey #3 – Phase 1, Beyer Boulevard, and a portion of Phase 2	10:00 a.m.; 61°F; winds 3–5 mph; 0% cloud cover	2:45 p.m.; 74°F; winds 0–4 mph; 70% cloud cover
3/12/2018	B. Procsal, A. Smisek	QCB Protocol Survey #4 – Phase 1, Beyer Boulevard, and a portion of Phase 2	11:25 a.m.; 74°F; winds 0–2 mph; 50% cloud cover	3:45 p.m.; 70°F; winds 4–7 mph; 20% cloud cover
3/19/2018	B. Procsal, A. Fromer	QCB Protocol Survey #5 – Phase 1, Beyer Boulevard, and a portion of Phase 2	10:45 a.m.; 66°F; winds 3–5 mph; 30% cloud cover	2:45 p.m.; 67°F; winds 3–5 mph; 10% cloud cover
3/28/2018	E. McKinney, A. Fromer	QCB Protocol Survey #6 – Phase 1, Beyer Boulevard, and a portion of Phase 2	10:10 a.m.; 65°F; winds 1–3 mph; 0% cloud cover	2:30 p.m.; 74°F; winds 7–8 mph; 0% cloud cover
4/02/2018	D. Saucedo, A. Smisek	QCB Protocol Survey #7a – Phase 1, Beyer Boulevard, and a portion of Phase 2	11:45 a.m.; 71°F; winds 4–7 mph; 100% cloud cover	3:20 p.m.; 69°F; winds 5–8 mph; 100% cloud cover
4/03/2018	V. Novik	QCB Protocol Survey #7b – Phase 1, Beyer Boulevard, and a portion of Phase 2	11:00 a.m.; 70°F; winds 4–7 mph; 50% cloud cover	1:00 p.m.; 71°F; winds 2–6 mph; 10% cloud cover
4/09/2018	D. Saucedo, A. Smisek	QCB Protocol Survey #8 – Phase 1, Beyer Boulevard, and a portion of Phase 2	9:30 a.m.; 71°F; winds 1–4 mph; 0% cloud cover	1:40 p.m.; 79°F; winds 4–7 mph; 10% cloud cover
4/16/2018	D. Saucedo, B. Procsal	QCB Protocol Survey #9 – Phase 1, Beyer Boulevard, and a portion of Phase 2	10:00 a.m.; 66°F; winds 0–1 mph; 45% cloud cover	2:00 p.m.; 70°F; winds 4– mph; 20% cloud cover
4/23/2018	J. Sundberg, A. Smisek	QCB Protocol Survey #10 – Phase 1, Beyer Boulevard, and a portion of Phase 2	10:15 a.m.; 70°F; winds 0–3 mph; 0% cloud cover	2:35 p.m.; 74°F; winds 6–8 mph; 0% cloud cover

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Survey Dates, Times, and Weather Conditions

Date	Surveyors	Survey Type	Beginning Conditions	Ending Conditions
5/04/2018	D. Saucedo, B. Procsal	QCB Protocol Survey #11 – Phase 1, Beyer Boulevard, and a portion of Phase 2	9:15 a.m.; 74°F; winds 1–4 mph; 0% cloud cover	1:35 p.m.; 83°F; winds 2–5 mph; 0% cloud cover
5/07/2018	D. Saucedo, J. Sundberg	QCB Protocol Survey #12 – Phase 1, Beyer Boulevard, and a portion of Phase 2	8:55 a.m.; 67°F; winds 1–3 mph; 5% cloud cover	12:45 p.m.; 73°F; winds 5–7 mph; 0% cloud cover
2/15/2019	J. Sundberg, J. McBee	QCB Habitat Assessment – Phase 1b, areas adjacent to Phase 1b, VP Restoration Areas	8:30 a.m.	2:00 p.m.
2/19/2019	B. Procsal, A. Smisek	QCB Protocol Survey #1a – Beyer Blvd, Phase 2, VP Restoration Areas	12:15 p.m.; 60°F; winds 0–3 mph; 1% cloud cover	3:30 p.m.; 60°F; winds 2–6 mph; 1% cloud cover
2/22/2019	B. Procsal, J. Sundberg	QCB Protocol Survey #1b – Beyer Blvd, Phase 2, VP Restoration Areas	1:30 p.m.; 60°F; winds 5–8 mph; 10% cloud cover	2:30 p.m.; 60°F; winds 3–5 mph; 10% cloud cover
2/27/2019	B. Procsal, B. Ogg	QCB Protocol Survey #2 – Beyer Blvd, Phase 2, VP Restoration Areas	11:20 a.m.; 67°F; winds 2–8 mph; <1% cloud cover	3:35 p.m.; 64°F; winds 3–7 mph; 4% cloud cover
3/5/2019	J. Sundberg, A. Smisek	QCB Protocol Survey #3a – Beyer Blvd, Phase 2, VP Restoration Areas	1:45 p.m.; 70.5°F; winds 6–8 mph; 30% cloud cover	2:30 p.m.; 63°F; winds 7–10 mph; 90% cloud cover
3/9/2019	A. Leavitt, B. Ogg	QCB Protocol Survey #3b – Beyer Blvd, Phase 2, VP Restoration Areas	11:10 a.m.; 70°F; winds 2–6 mph; 70% cloud cover	1:30 p.m.; 69°F; winds 3–10 mph; 70% cloud cover
3/13/2019	A. Smisek, B. Ogg	QCB Protocol Survey #3c – Beyer Blvd, Phase 2VP Restoration Areas	12:00 p.m.; 67°F; winds 1–5 mph; 45% cloud cover	4:30 p.m.; 70°F; winds 2–6 mph; 5% cloud cover
3/15/2019	B. Procsal, A. Fromer	QCB Protocol Survey #4 – Beyer Blvd, Phase 2, VP Restoration Areas	10:30 a.m.; 62°F; winds 2–4 mph; 50% cloud cover	4:10 p.m.; 74°F; winds 2–5 mph; 40% cloud cover
3/19/2019	B. Procsal, W. Loeffler	QCB Protocol Survey #5 – Beyer Blvd, Phase 2, VP Restoration Areas	10:45 a.m.; 74°F; winds 0–1 mph; 2% cloud cover	3:00 p.m.; 68°F; winds 2–6 mph; 3% cloud cover
3/26/2019	B. Procsal, A. Smisek	QCB Protocol Survey #6 – Beyer Blvd, Phase 2, VP Restoration Areas	12:00 p.m.; 68°F; winds 2–4 mph; 45% cloud cover	3:40 p.m.; 71°F; winds 2–6 mph; 45% cloud cover
4/1/2019	B. Ogg, A. Smisek	QCB Protocol Survey #7 – Beyer Blvd, Phase 2, VP Restoration Areas	12:13 p.m.; 78°F; winds 2–6 mph; 10% cloud cover	4:15 p.m.; 81°F; winds 3–7 mph; 15% cloud cover
4/8/2019	B. Parker, A. Leavitt	QCB Protocol Survey #8 – Beyer Blvd, Phase 2, VP Restoration Areas	9:50 a.m.; 81°F; winds 4–6 mph; 40% cloud cover	2:00 p.m.; 85°F; winds 7–9 mph; 20% cloud cover
4/17/2019	B. Parker, A. Fromer, B. Ogg	QCB Protocol Survey #9 – Beyer Blvd, Phase 2, VP Restoration Areas	9:30 a.m.; 62°F; winds 1–3 mph; 0% cloud cover	12:00 p.m.; 74°F; winds 5–8 mph; 0% cloud cover
4/24/2019	B. Procsal, A. Fromer, B. Ogg	QCB Protocol Survey #10 – Beyer Blvd, Phase 2, VP Restoration Areas	10:30 a.m.; 74°F; winds 0–2 mph; 0% cloud cover	12:30 p.m.; 78°F; winds 2–9 mph; 0% cloud cover

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Survey Dates, Times, and Weather Conditions

Date	Surveyors	Survey Type	Beginning Conditions	Ending Conditions
5/1/2019	A. Leavitt, A. Fromer	QCB Protocol Survey #11 – Beyer Blvd, Phase 2, VP Restoration Areas	10:30 a.m.; 65°F; winds 0–4 mph; 50% cloud cover	1:20 p.m.; 71°F; winds 5–10 mph; <5% cloud cover
5/8/2019	A. Smisek, B. Procsal, A. Fromer	QCB Protocol Survey #12 – Beyer Blvd, Phase 2, VP Restoration Areas	1:00 p.m.; 72°F; winds 1–4 mph; 100% cloud cover	2:45 p.m.; 72°F; winds 2–5 mph; 100% cloud cover
2/03/2020	A. Leavitt, J. Sundberg	QCB Habitat Assessment – Survey Area A	-	-
2/04/2020	A. Leavitt, J. Sundberg, J. Mercado	QCB Habitat Assessment – Survey Area B	-	-
2/05/2020	A. Leavitt, J. Sundberg	QCB Habitat Assessment – Survey Area C	-	-
2/17/2020	B. Parker	QCB Protocol Survey #1 – Survey Area A	9:40 a.m.; 64°F; winds 1-3 mph; 0% cloud cover	1:40 p.m.; 70°F; winds 3-5 mph; 0% cloud cover
2/17/2020	K. Valenti, A. Leavitt	QCB Protocol Survey #1 – Survey Area B and D	10:00 a.m.; 64°F; winds 1-3 mph; 0% cloud cover	1:43 p.m.; 69°F; winds 3-6 mph; 0% cloud cover
2/17/2020	B. Procsal	QCB Protocol Survey #1 – Survey Area C	9:15 a.m.; 66°F; winds 0-3 mph; <1% cloud cover	1:20 p.m.; 70°F; winds 2-6 mph; 0% cloud cover
2/24/2020	K. Valenti	QCB Protocol Survey #2a – Survey Area A	9:55 a.m.; 62°F; winds 0-3 mph; 0% cloud cover	1:38 p.m.; 75°F; winds 2-5 mph; 0% cloud cover
2/24/2020	W. Loeffler	QCB Protocol Survey #2a – Survey Area B	10:10 a.m.; 65°F; winds 2-4 mph; 0% cloud cover	2:00 p.m. ; 68°F; winds 5-10 mph 0% cloud cover
2/24/2020	B. Procsal	QCB Protocol Survey #2a – Survey Area C	10:00 a.m.; 67°F; winds 0-2 mph; 0% cloud cover	2:15 p.m.; 68°F; winds 5-10 mph 0% cloud cover
2/24/2020	B. Parker	QCB Protocol Survey #2a – Survey Area D	10:00 a.m.; 65°F; winds 1-3 mph; 0% cloud cover	2:02 p.m.; 68°F; winds 5-10 mph 0% cloud cover
2/27/2020	B. Procsal, B. Ogg	QCB Protocol Survey #2b – Survey Area D	11:20 a.m.; 67°F; winds 2-8 mph; <1% cloud cover	3:35 p.m.; 64°F; winds 3-7 mph; 4% cloud cover
3/4/2020	A. Smisek, J. Sundberg	QCB Protocol Survey #3a – Survey Area A	10:15 a.m.; 65°F; winds 2-7 mph; 10% cloud cover	11:40 a.m.; 67°F; winds 3-8 mph 10% cloud cover
3/4/2020	A. Smisek, J. Sundberg	QCB Protocol Survey #3a – Survey Area C and D	11:45 a.m.; 67°F; winds 3-7 mph; 10% cloud cover	2:20 p.m.; 68°F; winds 3-6 mph 10% cloud cover
3/4/2020	E. LaCoste	QCB Protocol Survey #3a – Survey Area A	9:00 a.m.; 66°F; winds 2-4 mph; 5% cloud cover	12:45 p.m.; 68°F; winds 2-4 mph 5% cloud cover
3/5/2020	E. LaCoste	QCB Protocol Survey #3b – Survey Area B	9:30 a.m.; 75°F; winds 1-2 mph; 5% cloud cover	2:00 p.m.; 75°F; Winds 4-7 mph; 10% cloud cover

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Survey Dates, Times, and Weather Conditions

Date	Surveyors	Survey Type	Beginning Conditions	Ending Conditions
3/9/2020	M. Busby	QCB Protocol Survey #4 – Survey Area A	9:30 a.m.; 67°F; winds 2-4 mph; 30% cloud cover	1:45 p.m.; 72°F; Winds 5-8 mph; 10% cloud cover
3/9/2020	D. Busby, E. LaCoste	QCB Protocol Survey #4 – Survey Area B	1:30 p.m.; 72°F; winds 2-4 mph; 30% cloud cover	3:30 p.m.; 75°F; winds 3-5 mph; 100% cloud cover
3/9/2020	E. LaCoste	QCB Protocol Survey #4 – Survey Area C	9:20 p.m.; 67°F; winds 1-3 mph; 40% cloud cover	1:30 p.m.; 72°F; winds 3-6 mph; 30% cloud cover
3/9/2020	D. Busby	QCB Protocol Survey #4 – Survey Area D	9:30 a.m.; 67°F; winds 2-4 mph; 30% cloud cover	12:30 p.m.; 72°F; winds 2-4 mph; 30% cloud cover
3/21/2020	D. Busby, E. LaCoste	QCB Protocol Survey #5a – Survey Area B	10:00 a.m.; 64°F; winds 2-4 mph; 20% cloud cover	2:00 p.m.; 66°F; winds 2-4 mph; 30% cloud cover
3/21/2020	E. LaCoste	QCB Protocol Survey #5a – Survey Area D	10:00 a.m.; 64°F; winds 1-2 mph; 5% cloud cover	1:00 p.m.; 66°F; winds 2-4 mph; 30% cloud cover
3/22/2020	D. Busby, E. LaCoste	QCB Protocol Survey #5b – Survey Area A	1:00 p.m.; 71°F; winds 2-4 mph; 100% cloud cover	3:15 p.m.; 70°F; winds 3-6 mph; 20% cloud cover
3/22/2020	E. LaCoste	QCB Protocol Survey #5b – Survey Area C	10:30 a.m.; 73°F; winds 1-2 mph; 70% cloud cover	1:00 p.m.; 63°F; winds 2-4 mph; 30% cloud cover
3/27/2020	E. LaCoste	QCB Protocol Survey #6a – Survey Area C	10:45 a.m.; 65°F; winds 3-5 mph; 20% cloud cover	4:15 p.m.; 65°F; winds 5-10 mph; 10% cloud cover
3/27/2020	D. Busby, E. LaCoste	QCB Protocol Survey #6a – Survey Area D	2:15 p.m.; 68°F; winds 3-5 mph; 40% cloud cover	4:15 p.m.; 65°F; winds 5-10 mph; 10% cloud cover
3/28/2020	D. Busby	QCB Protocol Survey #6b – Survey Area A	10:15 a.m.; 68°F; winds 3-5 mph; 40% cloud cover	2:30 p.m.; 70°F; winds 3-7 mph; 10% cloud cover
3/28/2020	E. LaCoste	QCB Protocol Survey #6b– Survey Area B	9:30 a.m.; 62°F; winds 2-4 mph; 5% cloud cover	2:00 p.m.; 67°F; winds 5-8 mph; 50% cloud cover
4/2/2020	E. LaCoste	QCB Protocol Survey #7 – Survey Area B (portion of Survey Area B)	12:45 p.m.; 71°F; winds 7-10 mph; 50% cloud cover	4:00 p.m.; 70°F; winds 7-10 mph; 40% cloud cover
4/2/2020	K. Valenti	QCB Protocol Survey #7 – Survey Area C (southwest portion)	11:00 a.m.; 72°F; winds 1-4 mph; 90% cloud cover	3:10 p.m.; 78°F; winds 3-5 mph; 40% cloud cover
4/2/2020	M. Dodero	QCB Protocol Survey #7– Survey Area D	11:25 a.m.; 70°F; winds 3-8 mph; 85% cloud cover	2:11p.m.; 63°F; winds 2-10 mph; 40% cloud cover
4/2/2020	M. Dodero	QCB Protocol Survey #7 – Survey Area C (northeast portion)	2:20 p.m.; 63°F; winds 5-10 mph; 30% cloud cover	3:05 p.m.; 62°F; winds 8-10 mph; 35% cloud cover

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Survey Dates, Times, and Weather Conditions

Date	Surveyors	Survey Type	Beginning Conditions	Ending Conditions
4/3/2020	E. LaCoste	QCB Protocol Survey #7b – Survey Area B (remainder of Survey Area B)	10:00 a.m.; 67°F; winds 1-3 mph; 5% cloud cover	11:15 a.m.; 70°F; winds 1-3 mph; 5% cloud cover
4/3/2020	E. LaCoste	QCB Protocol Survey #7b – Survey Area A	11:15 a.m.; 70°F; winds 1-3 mph; 5% cloud cover	2:45 a.m.; 75°F; winds 5-8 mph; 10% cloud cover
4/11/2020	E. LaCoste	QCB Protocol Survey #8a – Survey Area B	10:00 a.m.; 65°F; winds 2-4 mph; 50% cloud cover	3:30 p.m.; 68°F; winds 4-7 mph; 30% cloud cover
4/11/2020	D. Busby	QCB Protocol Survey #8a – Survey Area A	10:30 a.m.; 65°F; winds 2-4 mph; 30% cloud cover	3:00 p.m.; 68°F; winds 3-5 mph; 30% cloud cover
4/14/2020	A. Fromer	QCB Protocol Survey #8b – Survey Area C	10:00 a.m.; 73°F; winds 1-3 mph; 10% cloud cover	1:45 p.m.; 72°F; winds 6-13 mph; <5% cloud cover
4/14/2020	A. Smisek	QCB Protocol Survey #8b – Survey Area D	10:10 a.m.; 73.9°F; winds 3-5 mph; 10% cloud cover	12:55 p.m.; 73.6°F; winds 5-10 mph; 1% cloud cover
4/15/2020	E. LaCoste	QCB Protocol Survey #9a – Survey Area A	11:00 a.m.; 76°F; winds 2-4 mph; 0% cloud cover	3:00 p.m.; 78°F; winds 2-4 mph; 0% cloud cover
4/15/2020	D. Busby	QCB Protocol Survey #9a – Survey Area B	9:15 a.m.; 64°F; winds 2-5 mph; 0% cloud cover	2:00 p.m.; 78°F; winds 2-5 mph; 0% cloud cover
4/16/2020	K. Valenti A. Leavitt	QCB Protocol Survey #9b – Survey Area C and D	10:00 a.m.; 71°F; winds 0-5 mph; 0% cloud cover	1:45 p.m.; 81°F; winds 2-7 mph; 0% cloud cover
4/22/2020	D. Busby	QCB Protocol Survey #10a – Survey Area B	9:00 a.m.; 68°F; winds 1-3 mph; 10% cloud cover	3:00 p.m.; 83°F; winds 4-7 mph; 0% cloud cover
4/22/2020	J. Sundberg, B. Parker	QCB Protocol Survey #10a – Survey Area C and D	10:15 a.m.; 72°F; winds 0-3 mph; 0% cloud cover	1:45 p.m.; 78°F; winds 3-6 mph; 0% cloud cover
4/22/2020	J. Sundberg, B. Parker	QCB Protocol Survey #10a – Survey Area C and D (remainder of Survey Areas C and D)	9:45 a.m.; 72°F; winds 0-3 mph; 0% cloud cover	1:45 p.m.; 78°F; winds 3-6 mph; 0% cloud cover
4/24/2020	D. Busby	QCB Protocol Survey #10b – Survey Area A	10:30 a.m.; 78°F; winds 2-4 mph; 0% cloud cover	3:00 p.m.; 82°F; winds 3-7 mph; 0% cloud cover
4/27/2020	J. Sundberg, B. Parker	QCB Protocol Survey #11a – Survey Area C and D	10:15 a.m.; 72°F; winds 2-5 mph; 60% cloud cover	2:05 p.m.; 78°F; winds 4-8 mph; 5% cloud cover
4/29/2020	E. LaCoste	QCB Protocol Survey #11b – Survey Area A	11:15 a.m.; 70°F; winds 1-2 mph; 100% cloud cover	3:15 p.m.; 76°F; winds 2-4 mph; 25% cloud cover
4/30/2020	E. LaCoste	QCB Protocol Survey #11c – Survey Area B	10:30 a.m.; 70°F; winds 2-4 mph; 10% cloud cover	3:30 p.m.; 80°F; winds 3-6 mph; 0% cloud cover

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Survey Dates, Times, and Weather Conditions

Date	Surveyors	Survey Type	Beginning Conditions	Ending Conditions
5/4/2020	J. Sundberg, B. Parker	QCB Protocol Survey #12a – Survey Area C and D	9:50 a.m.; 73°F; winds 0-2 mph; 0% cloud cover	2:10 p.m.; 75°F; winds 4-8 mph; 0% cloud cover
5/6/2020	D. Busby	QCB Protocol Survey #12b – Survey Area A	11:15 a.m.; 86°F; winds 4-8 mph; 10% cloud cover	3:30 p.m.; 92°F; winds 4-8 mph; 10% cloud cover
5/7/2020	D. Busby	QCB Protocol Survey #12c – Survey Area B	10:00 a.m.; 76°F; winds 3-5 mph; 0% cloud cover	2:10 p.m.; 91°F; winds 4-6 mph; 0% cloud cover
2/17/2021	B. Parker	QCB Protocol Survey #1 – Survey Area 1	10:00 a.m.; 65°F; winds 2-5 mph; 25% cloud cover	11:40 a.m.; 67°F; winds 5-8 mph; 10% cloud cover
2/17/2021	B. Procsal	QCB Protocol Survey #1 – Survey Area 2	10:30 a.m.; 62°F; winds 0-1 mph; 10% cloud cover	11:40 a.m.; 64°F; winds 2-3 mph; 10% cloud cover
2/24/2021	B. Parker	QCB Protocol Survey #2 – Survey Area 1	1:00 p.m.; 74°F; winds 1-3 mph; 0% cloud cover	2:30 p.m.; 70°F; winds 6-9 mph; 0% cloud cover
2/24/2021	A. Fromer	QCB Protocol Survey #2 – Survey Area 2	1:20 p.m.; 68°F; winds 3-5 mph; 0% cloud cover	2:10 p.m.; 68°F; winds 3-6 mph; 0% cloud cover
3/4/2021	B. Parker	QCB Protocol Survey #3 – Survey Area 1	10:40 a.m.; 66°F; winds 1-3 mph; 15% cloud cover	11:50 a.m.; 65°F; winds 5-7 mph; 15% cloud cover
3/4/2021	A. Fromer	QCB Protocol Survey #3 – Survey Area 2	10:30 a.m.; 64°F; winds 3-5 mph; <5% cloud cover	11:50 a.m.; 70°F; winds 5-7 mph; 15% cloud cover
3/9/2021	J. Sundberg	QCB Protocol Survey #4 – Survey Area 1	1:00 p.m.; 61°F; winds 5-8 mph; 40% cloud cover	2:00 p.m.; 60°F; winds 7-9 mph; 45% cloud cover
3/9/2021	A. Fromer	QCB Protocol Survey #4 – Survey Area 2	1:20 p.m.; 61°F; winds 5-10 mph; 40% cloud cover	2:00 p.m.; 60°F; winds 7-9 mph; 45% cloud cover
3/19/2021	A. Smisek	QCB Protocol Survey #5 – Survey Area 1	11:50 a.m.; 65°F; winds 0-3 mph; 0% cloud cover	1:40 p.m.; 70°F; winds 4-7 mph; 0% cloud cover
3/19/2021	B. Procsal	QCB Protocol Survey #5 – Survey Area 2	12:05 p.m.; 64°F; winds 2-5 mph; 0% cloud cover	1:25 p.m.; 64°F; winds 1-5 mph; 0% cloud cover
3/24/2021	K. Valenti	QCB Protocol Survey #6 – Survey Area 1	12:25 p.m.; 74°F; winds 1-3 mph; 0% cloud cover	2:15 p.m.; 68°F; winds 5-8 mph; 10% cloud cover
3/24/2021	B. Procsal	QCB Protocol Survey #6 – Survey Area 2	12:40 p.m.; 66°F; winds 2-5 mph; <1% cloud cover	1:55 p.m.; 68°F; winds 5-8 mph; 2% cloud cover
3/31/2021	A. Fromer	QCB Protocol Survey #7 – Survey Areas 1 and 2	12:00 p.m.; 90°F; winds 8-15 mph; 0% cloud cover	2:40 p.m.; 88°F; winds 6-12 mph; 0% cloud cover

Attachment 3
Survey Dates, Times, and Weather Conditions

Date	Surveyors	Survey Type	Beginning Conditions	Ending Conditions
4/8/2021	A. Fromer	QCB Protocol Survey #8 – Survey Areas 1 and 2	3:15 p.m.; 80°F; winds 3-7 mph; <10% cloud cover	5:30 p.m.; 67°F; winds 5-7 mph; <10% cloud cover
4/16/2021	A. Fromer	QCB Protocol Survey #9 – Survey Areas 1 and 2	12:00 p.m.; 69°F; winds 3-8 mph; <10% cloud cover	2:00 p.m.; 72°F; winds 2-6 mph; <5% cloud cover
4/20/2021	A. Fromer	QCB Protocol Survey #10 – Survey Area 1	3:50 p.m.; 71°F; winds 4-8 mph; <5% cloud cover	4:55 p.m.; 68°F; winds 3-6 mph; <10% cloud cover
4/20/2021	B. Procsal	QCB Protocol Survey #10 – Survey Area 2	4:05 p.m.; 80°F; winds 2-4 mph; <1% cloud cover	4:45 p.m.; 68°F; winds 2-4 mph; <3% cloud cover
4/28/2021	B. Parker	QCB Protocol Survey #11 – Survey Area 1	10:30 a.m.; 68°F; winds 2-5 mph; 0% cloud cover	11:45 a.m.; 74°F; winds 4-7 mph; 0% cloud cover
4/28/2021	A. Fromer	QCB Protocol Survey #11 – Survey Area 2	10:10 a.m.; 70°F; winds 1-3 mph; 0% cloud cover	11:20 a.m.; 71°F; winds 5-10 mph; 0% cloud cover
5/4/2021	B. Parker	QCB Protocol Survey #12 – Survey Areas 1 and 2	11:00 a.m.; 74°F; winds 3-5 mph; 0% cloud cover	1:40 p.m.; 74°F; winds 3-5 mph; 0% cloud cover
2/18/2022	A. Fromer	Habitat Assessment	-	-
2/20/2022	J. Sundberg	QCB Protocol Survey #1 – Survey Area 1	1:00 p.m.; 68°F; winds 3 mph; 10% cloud cover	1:31 p.m.; 69°F; winds 2 mph; 10% cloud cover
2/20/2022	J. Sundberg	QCB Protocol Survey #1 – Survey Area 2	10:10 a.m.; 65°F; winds 3 mph; 5% cloud cover	11:36 a.m.; 68°F; winds 5 mph; 5% cloud cover
2/25/2022	B. Procsal	QCB Protocol Survey #1 – Survey Area 1 (additional areas)	11:46 a.m.; 62°F; winds 0-2 mph; 10% cloud cover	12:15 p.m.; 62°F; winds 0-2 mph; 5% cloud cover
2/28/2022	A. Fromer	QCB Protocol Survey #2 – Survey Area 1	10:30 a.m.; 61°F winds 2-4 mph 0% cloud cover	10:55 a.m.; 61°F winds 1-3 mph 0% cloud cover
2/28/2022	A. Fromer	QCB Protocol Survey #2 – Survey Area 2	11:45 a.m.; 76°F winds 3-5 mph 0% cloud cover	12:55 p.m.; 78°F winds 2-4 mph 0% cloud cover
3/2/2022	A. Fromer	QCB Protocol Survey #2 – Survey Area 1 (additional areas)	9:30 a.m.; 71°F winds 0-1 mph 10% cloud cover	9:45 a.m.; 71°F winds 0-2 mph 10% cloud cover
3/7/2022	A. Fromer	QCB Protocol Survey #3 – Survey Area 1	10:30 a.m.; 60°F winds 2-5 mph 0% cloud cover	10:50 a.m.; 63°F winds 1-3 mph 0% cloud cover
3/7/2022	A. Fromer	QCB Protocol Survey #3 – Survey Area 2	11:15 a.m.; 63°F winds 3-6 mph 0% cloud cover	12:15 p.m.; 65°F winds 3-7 mph 0% cloud cover
3/14/2022	A. Fromer	QCB Protocol Survey #4 – Survey Area 1	11:15 a.m.; 63°F winds 0-2 mph 0% cloud cover	11:45 a.m.; 64°F winds 0-2 mph 0% cloud cover

Attachment 3
Survey Dates, Times, and Weather Conditions

Date	Surveyors	Survey Type	Beginning Conditions	Ending Conditions
3/14/2022	A. Fromer	QCB Protocol Survey #4 – Survey Area 2	12:15 p.m.; 70°F winds 3-7 mph 0% cloud cover	1:15 p.m.; 70°F winds 4-7 mph 0% cloud cover
3/21/2022	A. Fromer	QCB Protocol Survey #5 – Survey Area 1	11:40 a.m.; 62°F winds 3-5 mph 15% cloud cover	12:15 p.m.; 64°F winds 5-7 mph 15% cloud cover
3/21/2022	A. Fromer	QCB Protocol Survey #5 – Survey Area 2	12:30 p.m.; 73°F winds 5-8 mph 15% cloud cover	1:40 p.m.; 74°F winds 2-6 mph 25% cloud cover
3/30/2022	A. Fromer	QCB Protocol Survey #6 – Survey Area 1	11:50 a.m.; 63°F winds 1-2 mph 10% cloud cover	12:30 p.m.; 64°F winds 2-4 mph 10% cloud cover
3/30/2022	A. Fromer	QCB Protocol Survey #6 – Survey Area 2	12:45 p.m.; 65°F winds 1-3 mph 10% cloud cover	1:45 p.m.; 67°F winds 2-5 mph <5% cloud cover
4/4/2022	A. Fromer	QCB Protocol Survey #7 – Survey Area 1	12:30 p.m.; 69°F winds 2-4 mph 0% cloud cover	1:00 p.m.; 69°F winds 3-5 mph 0% cloud cover
4/4/2022	A. Fromer	QCB Protocol Survey #7 – Survey Area 2	1:30 p.m.; 72°F winds 3-6 mph 0% cloud cover	2:35 p.m.; 70°F winds 5-8 mph <5% cloud cover
4/11/2022	A. Fromer	QCB Protocol Survey #8 – Survey Area 1	1:15 p.m.; 70°F winds 3-5 mph 35% cloud cover	1:45 p.m.; 72°F winds 2-4 mph 30% cloud cover
4/11/2022	A. Fromer	QCB Protocol Survey #8 – Survey Area 2	2:45 p.m.; 75°F winds 5-8 mph 25% cloud cover	3:40 p.m.; 68°F winds 3-6 mph 35% cloud cover
4/18/2022	A. Fromer	QCB Protocol Survey #9 – Survey Area 1	1:00 p.m.; 70°F winds 4-7 mph 30% cloud cover	1:30 p.m.; 70°F winds 3-4 mph 25% cloud cover
4/18/2022	A. Fromer	QCB Protocol Survey #9 – Survey Area 2	1:55 p.m.; 75°F winds 2-4 mph 25% cloud cover	2:45 p.m.; 78°F winds 5-7 mph 15% cloud cover
4/28/2022	A. Fromer	QCB Protocol Survey #10 – Survey Area 1	1:15 p.m.; 69°F winds 5-8 mph 15% cloud cover	1:45 p.m.; 69°F winds 6-9 mph 15% cloud cover
4/28/2022	A. Fromer	QCB Protocol Survey #10 – Survey Area 2	2:10 p.m.; 70°F winds 4-6 mph 15% cloud cover	2:55 p.m.; 71°F winds 2-4 mph 5% cloud cover
5/2/2022	J. Sundberg	QCB Protocol Survey #11 – Survey Area 1	11:58 a.m.; 65°F winds 3 mph 0% cloud cover	1:02 p.m.; 71°F winds 4 mph 0% cloud cover
5/2/2022	J. Sundberg	QCB Protocol Survey #11 – Survey Area 2	10:03 a.m.; 63°F winds 3 mph 0% cloud cover	10:58 a.m.; 71°F winds 4 mph 0% cloud cover
5/9/2022	A. Fromer	QCB Protocol Survey #12 – Survey Area 1	11:00 a.m.; 71°F winds 2-4 mph 5% cloud cover	11:20 a.m.; 74°F winds 2-4 mph 5% cloud cover

Attachment 3
Survey Dates, Times, and Weather Conditions

Date	Surveyors	Survey Type	Beginning Conditions	Ending Conditions
5/9/2022	A. Fromer	QCB Protocol Survey #12 – Survey Area 2	11:50 a.m.; 71°F winds 2-5 mph; 5% cloud cover	12:50 p.m.; 71°F winds 3-7 mph; 5% cloud cover
3/24/2023	A. Smisek, K. Valenti, A. Leavitt, B. Procsal J. Sundberg	QCB Habitat Assessment	-	-
3/27/2023	A. Smisek	QCB Protocol Survey #1 – Survey Area 1	10:25 a.m.; 68°F winds 6 mph; 35% cloud cover	2:15 p.m.; 71°F winds 6 mph; 1% cloud cover
3/27/2023	W. Loeffler	QCB Protocol Survey #1 – Survey Area 2	11:10 a.m.; 66°F; winds 4-8 mph; 30% cloud cover	3:28 p.m.; 75°F; winds 3-6 mph; 1% cloud cover
3/27/2023	B. Procsal	QCB Protocol Survey #1 – Survey Area 3	11:01 a.m.; 66°F; winds 4-7 mph; 30% cloud cover	3:40 p.m.; 66°F; winds 2-6 mph; 0% cloud cover
3/27/2023	C. Thomson	QCB Protocol Survey #1 – Survey Area 4	10:58 a.m.; 72°F; winds 6-11 mph; 30% cloud cover	3:46 p.m.; 75°F; winds 5-9 mph; 0% cloud cover
3/27/2023	J. Sundberg	QCB Protocol Survey #1 – Survey Area 5	10:06 a.m.; 62°F; winds 7 mph; 30% cloud cover	3:22 p.m.; 72°F; winds 4 mph; 1% cloud cover
3/28/2023	B. Procsal, J. Woll	Habitat Assessment – Vernal Pool Restoration Areas	-	-
4/5/2023	A. Smisek	QCB Protocol Survey #2 – Survey Area 1	9:49 a.m.; 61°F; winds 2 mph; 0% cloud cover	2:16 p.m.; 64°F; winds 7 mph; 0% cloud cover
4/5/2023	K. Valenti	QCB Protocol Survey #2 – Survey Area 2	10:25 a.m.; 70°F; winds 3-5 mph; 0% cloud cover	2:31 p.m.; 68°F; winds 4-7 mph 0% cloud cover
4/5/2023	A. Leavitt	QCB Protocol Survey #2 – Survey Area 3	10:15 a.m.; 70°F; winds 3-5 mph; 0% cloud cover	2:41 p.m.; 66°F; winds 6-9 mph 0% cloud cover
4/5/2023	C. Thomson	QCB Protocol Survey #2 – Survey Area 4	10:16 a.m.; 60°F; winds 3 mph; 0% cloud cover	2:21 p.m.; 69°F; winds 7 mph 0% cloud cover
4/5/2023	B. Procsal	QCB Protocol Survey #2 – Survey Area 5	9:59 a.m.; 62°F; winds 3-4 mph; 0% cloud cover	1:41 p.m.; 66°F; winds 7-14 mph 0% cloud cover
4/10/2023	A. Smisek	QCB Protocol Survey #3 – Survey Area 1	10:40 a.m.; 66°F; winds 3 mph; 0% cloud cover	3:12 p.m.; 69°F; winds 2-5 mph 0% cloud cover
4/11/2023	W. Loeffler	QCB Protocol Survey #3 – Survey Area 2	11:49 a.m.; 70°F; winds 2-4 mph; 10% cloud cover	4:09 p.m.; 70°F; winds 4-6 mph 30% cloud cover
4/10/2023	C. Thomson	QCB Protocol Survey #3 – Survey Area 3	11:13 a.m.; 68°F; winds 2 mph; 0% cloud cover	3:32 p.m.; 71°F; winds 6 mph 0% cloud cover

Attachment 3
Survey Dates, Times, and Weather Conditions

Date	Surveyors	Survey Type	Beginning Conditions	Ending Conditions
4/10/2023	B. Procsal	QCB Protocol Survey #3 – Survey Area 3 (additional areas)	3:13 p.m.; 66°F; winds 4-8 mph; 0% cloud cover	3:30 p.m.; 66°F; winds 3-8 mph 0% cloud cover
4/11/2023	C. Thomson	QCB Protocol Survey #3 – Survey Area 4	11:47 a.m.; 68°F; winds 2 mph; 0% cloud cover	4:01 p.m.; 74°F; Winds 4 mph; 15% cloud cover
4/10/2023	B. Procsal	QCB Protocol Survey #3 – Survey Area 5	10:52 a.m.; 69°F; winds 2-5 mph; 0% cloud cover	2:45 p.m.; 66°F; Winds 4-8 mph; 0% cloud cover
4/20/2023	K. Valenti	QCB Protocol Survey #4 – Survey Area 1	9:55 a.m.; 73°F; winds 1-3 mph; 0% cloud cover	2:17 p.m.; 84°F; winds 2-5 mph; <5% cloud cover
4/20/2023	A. Smisek	QCB Protocol Survey #4 – Survey Area 2	10:19 a.m.; 71°F; winds 5 mph; 0% cloud cover	2:33 p.m.; 78°F; winds 5 mph; 5% cloud cover
4/20/2023	B. Procsal	QCB Protocol Survey #4 – Survey Area 3	10:02 a.m.; 70°F; winds 0-1 mph; 0% cloud cover	2:29 p.m.; 75°F; winds 4-6 mph; 0% cloud cover
4/20/2023	C. Thomson	QCB Protocol Survey #4 – Survey Area 4	10:06 a.m.; 72°F; winds 2 mph; 0% cloud cover	2:09 p.m.; 75°F; winds 7 mph; 1% cloud cover
4/20/2023	J. Sundberg	QCB Protocol Survey #4 – Survey Area 5	9:53 a.m.; 68°F; winds 1 mph; 0% cloud cover	2:40 p.m.; 75°F; winds 4 mph; 2% cloud cover
4/25/2023	A. Smisek	QCB Protocol Survey #5 – Survey Area 1	11:29 a.m.; 70°F; winds 1 mph; 35% cloud cover	3:55 p.m.; 76°F; winds 4 mph; 85% cloud cover
4/25/2023	W. Loeffler	QCB Protocol Survey #5 – Survey Area 2	11:57 a.m.; 72°F; winds 3-6 mph; 40% cloud cover	3:30 p.m.; 75°F; winds 3-8 mph; 30% cloud cover
4/25/2023	B. Procsal	QCB Protocol Survey #5 – Survey Area 3 (additional areas)	11:39 a.m.; 72°F; winds 0-4 mph; 15% cloud cover	3:57 p.m.; 70°F; winds 3-6 mph; 80% cloud cover
4/25/2023	W. Loeffler	QCB Protocol Survey #5 – Survey Area 3 (additional areas)	3:43 p.m.; 70°F; winds 1-5 mph; 85% cloud cover	4:01 p.m.; 70°F; winds 3-6 mph 80% cloud cover
4/25/2023	C. Thomson	QCB Protocol Survey #5 – Survey Area 4 (additional areas)	11:45 a.m.; 72°F; winds 3 mph; 30% cloud cover	3:43 p.m.; 72°F; winds 6 mph; 80% cloud cover
4/28/2023	A. Fromer	QCB Protocol Survey #5 – Survey Area 4 (additional areas)	11:10 a.m.; 68°F; winds 1-4 mph; 10% cloud cover	11:20 a.m.; 68°F; winds 1-4 mph; 10% cloud cover
4/25/2023	J. Sundberg	QCB Protocol Survey #5 – Survey Area 5	11:36 a.m.; 72°F; winds 1 mph; 20% cloud cover	3:58 p.m.; 74°F; winds 5 mph; 80% cloud cover
5/5/2023	A. Smisek	QCB Protocol Survey #6 – Survey Area 1	11:05 a.m.; 73°F; winds 1 mph; 95% cloud cover	3:19 p.m.; 71°F; winds 3 mph; 85% cloud cover

Attachment 3
Survey Dates, Times, and Weather Conditions

Date	Surveyors	Survey Type	Beginning Conditions	Ending Conditions
5/5/2023	W. Loeffler	QCB Protocol Survey #6 – Survey Area 2	11:43 a.m.; 70°F; winds 3-7 mph; 90% cloud cover	3:49 p.m.; 71°F; winds 3 mph; 85% cloud cover
5/5/2023	A. Fromer	QCB Protocol Survey #6 – Survey Area 3 (additional areas)	11:34 a.m.; 70°F; winds 3-5 mph; 95% cloud cover	4:00 p.m.; 70°F; winds 4-8 mph; 80% cloud cover
5/5/2023	C. Thomson	QCB Protocol Survey #6 – Survey Area 3 (additional areas)	3:12 p.m.; 70°F; winds 4 mph; 80% cloud cover	3:42 p.m.; 70°F; winds 5 mph; 75% cloud cover
5/5/2023	C. Thomson	QCB Protocol Survey #6 – Survey Area 4	11:09 a.m.; 74°F; winds 1 mph; 95% cloud cover	3:09 p.m.; 70°F; winds 4 mph; 80% cloud cover
5/5/2023	J. Sundberg	QCB Protocol Survey #6 – Survey Area 5	11:13 a.m.; 74°F; winds 1 mph; 95% cloud cover	3:34 p.m.; 71°F; winds 4 mph; 80% cloud cover
5/12/2023	A. Smisek	QCB Protocol Survey #7 – Survey Area 1	11:03 a.m.; 74°F; winds 2 mph; 000% cloud cover	3:18 p.m.; 76°F; winds 6 mph; 30% cloud cover
5/12/2023	W. Loeffler	QCB Protocol Survey #7 – Survey Area 2	10:59 a.m.; 74°F; winds 3-7 mph; 100% cloud cover	3:05 p.m.; 72°F; winds 3-7 mph; 40% cloud cover
5/12/2023	C. Thomson	QCB Protocol Survey #7 – Survey Area 3	10:39 a.m.; 71°F; winds 3 mph; 100% cloud cover	3:18 p.m.; 72°F; winds 5 mph; 40% cloud cover
5/12/2023	K. Valenti	QCB Protocol Survey #7 – Survey Area 4	11:03 a.m.; 73°F; winds 2-4 mph; 100% cloud cover	3:07 p.m.; 72°F; winds 5-7 mph; 40% cloud cover
5/12/2023	J. Sundberg	QCB Protocol Survey #7 – Survey Area 5	10:59 a.m.; 72°F; winds 2 mph; 100% cloud cover	3:17 p.m.; 76°F; winds 3 mph; 40% cloud cover
2/16/2024	B. Procsal, C. Defrenne	QCB Habitat Assessment - EVA Road and Phase 4 Development Area	9:00 a.m.	2:00 p.m.
2/23/2024	A. Fromer	QCB Protocol Survey #1 – EVA Road and Phase 4 Development Area	10:15 a.m.; 63°F; winds 1-3 mph; 5% cloud cover	12:40 p.m.; 73°F; winds 3-6 mph; 65% cloud cover
2/29/2024	A. Fromer, C. Thomson	QCB Protocol Survey #2 – EVA Road and Phase 4 Development Area	12:50 p.m.; 64°F; winds 3 mph; 50% cloud cover	2:13 p.m.; 65°F; winds 3 mph; 45% cloud cover
3/8/2024	A. Fromer	QCB Protocol Survey #3 – EVA Road and Phase 4 Development Area	1:00 p.m.; 70°F; winds 0-3 mph; 0% cloud cover	2:50 p.m.; 65°F; winds 0-2 mph; 0% cloud cover
3/15/2024	A. Fromer	QCB Protocol Survey #4 – EVA Road and Phase 4 Development Area	12:10 p.m.; 68°F; winds 0-1 mph; 15% cloud cover	2:10 p.m.; 68°F; winds 2-6 mph; 40% cloud cover
3/21/2024	A. Fromer, C. Thomson	QCB Protocol Survey #5 – EVA Road and Phase 4 Development Area	12:10 p.m.; 73°F; winds 0-3 mph; 0% cloud cover	3:43 p.m.; 72°F; winds 6 mph; 80% cloud cover

Attachment 3
Survey Dates, Times, and Weather Conditions

Date	Surveyors	Survey Type	Beginning Conditions	Ending Conditions
3/25/2024	A. Fromer	QCB Protocol Survey #6 – EVA Road and Phase 4 Development Area	11:30 a.m.; 73°F; winds 2-4 mph; 100% cloud cover	2:10 p.m.; 63°F; winds 1-3 mph; 50% cloud cover
4/1/2024	A. Fromer	QCB Protocol Survey #7 – EVA Road and Phase 4 Development Area	2:00 p.m.; 71°F; winds 1-4 mph; 15% cloud cover	4:15 p.m.; 65°F; winds 3-6 mph; 10% cloud cover
4/9/2024	A. Fromer	QCB Protocol Survey #8 – EVA Road and Phase 4 Development Area	12:45 p.m.; 75°F; winds 2-4 mph; 0% cloud cover	3:20 p.m.; 70°F; winds 3-8 mph; 15% cloud cover
4/16/2024	A. Fromer	QCB Protocol Survey #9 – EVA Road and Phase 4 Development Area	1:15 p.m.; 77°F; winds 2-5 mph; 0% cloud cover	3:50 p.m.; 72°F; winds 2-6 mph; 0% cloud cover
4/23/2024	A. Fromer	QCB Protocol Survey #10 – EVA Road and Phase 4 Development Area	11:30 a.m.; 72°F; winds 0-2 mph; 75% cloud cover	1:50 p.m.; 70°F; winds 3-4 mph; 0% cloud cover
5/2/2024	C. Thomson	QCB Protocol Survey #11 – EVA Road and Phase 4 Development Area	9:55 a.m.; 66°F; winds 2 mph; 40% cloud cover	1:42 p.m.; 72°F; winds 3 mph; 0% cloud cover
5/9/2024	A. Fromer	QCB Protocol Survey #12 – EVA Road and Phase 4 Development Area	12:20 p.m.; 78°F; winds 2-3 mph; 10% cloud cover	2:50 p.m.; 79°F; winds 2-4 mph; 0% cloud cover
3/20/2024	A. Fromer, C. Beck	QCB Extensive Habitat Assessment-Mitigation Lands-#1	-	-
3/21/2024	A. Fromer, C. Beck, C. Defrenne	QCB Extensive Habitat Assessment-Mitigation Lands-#1	-	-
3/26/2024	A. Fromer, C. Beck, C. Thomson, C. Defrenne	QCB Extensive Habitat Assessment-Mitigation Lands-#1	-	-
3/27/2024	A. Fromer, C. Beck, C. Thomson,	QCB Extensive Habitat Assessment-Mitigation Lands-#1	-	-
4/2/2024	A. Fromer, C. Beck, C. Thomson, C. Defrenne	QCB Extensive Habitat Assessment-Mitigation Lands-#1	-	-
4/12/2024	A. Fromer, C. Beck, E. Procsal, C. Defrenne	QCB Extensive Habitat Assessment-Mitigation Lands-#1	-	-
4/15/2024	C. Polevy, C. Beck, M. Hughes	QCB Extensive Habitat Assessment-Mitigation Lands-#1	-	-
4/16/2024	D. Gadia, C. Beck, M. Hughes	QCB Extensive Habitat Assessment-Mitigation Lands-#1	-	-
4/17/2024	A. Fromer, C. Thomson, D. Gadia	QCB Extensive Habitat Assessment-Mitigation Lands-#1	-	-
4/18/2024	A. Fromer, C. Polevy, C. Defrenne	QCB Extensive Habitat Assessment-Mitigation Lands-#2	-	-
4/23/2024	C. Beck, E. Procsal, C. Defrenne, R. Smith	QCB Extensive Habitat Assessment-Mitigation Lands-#2	-	-
4/24/2024	C. Beck, C. Thomson, C. Defrenne, R. Smith	QCB Extensive Habitat Assessment-Mitigation Lands-#2	-	-
4/25/2024	C. Beck, C. Thomson, C. Polevy, R. Smith	QCB Extensive Habitat Assessment-Mitigation Lands-#2	-	-
4/29/2024	C. Beck, C. Defrenne, R. Smith	QCB Extensive Habitat Assessment-Mitigation Lands-#2	-	-

Attachment 3
Survey Dates, Times, and Weather Conditions

Date	Surveyors	Survey Type	Beginning Conditions	Ending Conditions
Wet Season Fairy Shrimp (FS) Surveys²				
1/18/2018	V. Novik	FS Wet Season Protocol Survey #1 – Phase 1, Beyer Blvd, and portion of Phase 2	7:30 a.m.; 61° F; winds 1.5–2 mph; 10% cloud cover	12:33 p.m.; 78° F; winds 3–6 mph; 10% cloud cover
1/25/2018	V. Novik	FS Wet Season Protocol Survey #2 – Phase 1, Beyer Boulevard, portion of Phase 2	7:13 a.m. 48° F; winds 2–3 mph; 30% cloud cover	9:50 a.m.; 62° F; winds 4–6 mph; 40% cloud cover
2/1/2018	V. Novik	FS Wet Season Protocol Survey #3 – Phase 1, Beyer Boulevard, portion of Phase 2	7:15 a.m.; 62° F; winds 4–7 mph; 5% cloud cover	8:00 a.m.; 61.5° F; winds 0–2 mph; 5% cloud cover
3/6/2018	V. Novik	FS Wet Season Protocol Survey #4 – Phase 1, Beyer Boulevard, portion of Phase 2	7:33 a.m.; 65° F; winds 1–2 mph; 25% cloud cover	10:30 a.m.; 76° F; winds 3–6 mph; 10% cloud cover
3/13/2018	V. Novik	FS Wet Season Protocol Survey #5 – Phase 1, Beyer Boulevard, portion of Phase 2	7:20 a.m.; 63° F; winds 0 mph; 100% cloud cover	11:09 a.m.; 64° F; winds 4–6 mph; 100% cloud cover
3/20/2018	V. Novik	FS Wet Season Protocol Survey #6 – Phase 1, Beyer Boulevard, portion of Phase 2	7:50 a.m.; 56° F; winds 3–6 mph; 15% cloud cover	4:40 p.m.; 70° F; winds 5–10 mph; 35% cloud cover
3/27/2018	V. Novik	FS Wet Season Protocol Survey #7 – Phase 1, Beyer Boulevard, portion of Phase 2	7:30 a.m.; 54° F; winds 2–6 mph; 0% cloud cover	2:00 p.m.; 74° F; winds 9–15 mph; 0% cloud cover
4/3/2018	V. Novik	FS Wet Season Protocol Survey #8 – Phase 1, Beyer Boulevard, portion of Phase	8:30 a.m.; 65° F; winds 0 mph; 65% cloud cover	10:45 a.m.; 69° F; winds 2–5 mph; 55% cloud cover
4/10/2018	V. Novik	FS Wet Season Protocol Survey #9 – Phase 1, Beyer Boulevard, portion of Phase 2	7:30 a.m.; 68° F; winds 3–6 mph; 20% cloud cover	8:20 a.m.; 68° F; winds 3–6 mph; 20% cloud cover
12/4/2018	E. LaCoste, M. Weston ¹	FS Wet Season Protocol Survey #1 – Phase 1, Beyer Boulevard, portion of Phase 2, VP Restoration Areas	8:00 a.m.; 57 F; winds 3–6 mph; 90% cloud cover	11:00 a.m.; 70°F; winds 5–8 mph; 60% cloud cover
12/10/2018	E. LaCoste, J. McBee ¹	FS Wet Season Protocol Survey #2a – Phase 1, Beyer Boulevard, portion of Phase 2, VP Restoration Areas	8:45 a.m.; 59°F; winds 1–3 mph; 100% cloud cover	2:30 p.m.; 65°F; winds 1–3 mph; 100% cloud cover
12/11/2018	E. LaCoste, J. McBee ¹	FS Wet Season Protocol Survey #2b – Phase 1, Beyer Boulevard, portion of Phase 2 VP Restoration Areas	8:15 a.m.; 60°F; winds 1–3 mph; 75% cloud cover	9:45 a.m.; 65°F; winds 1–3 mph; 65% cloud cover
12/17/2018	D. Busby, J. McBee ¹	FS Wet Season Protocol Survey #3 – Phase 1, Beyer Boulevard, portion of Phase 2, VP Restoration Areas	8:15 a.m.; 57°F; winds 1–3 mph; 90% cloud cover	1:00 p.m.; 75°F; winds 1–3 mph; 75% cloud cover
12/23/2018	E. LaCoste, J. McBee ¹	FS Wet Season Protocol Survey #4 – Phase 1, Beyer Boulevard, portion of Phase 2 VP Restoration Areas	9:15 a.m.; 61°F; winds 1–2 mph; 50% cloud cover	10:15 a.m.; 66°F; winds 1–2 mph; 50% cloud cover

Attachment 3
Survey Dates, Times, and Weather Conditions

Date	Surveyors	Survey Type	Beginning Conditions	Ending Conditions
12/31/2018	E. LaCoste, J. McBee ¹	FS Wet Season Protocol Survey #5 – Phase 1, Beyer Boulevard, portion of Phase 2 VP Restoration Areas	8:45 a.m.; 60°F; winds 3–5 mph; 100% cloud cover	10:00 a.m.; 60°F; winds 3–5 mph; 100% cloud cover
1/7/2019	D. Busby, J. McBee ¹	FS Wet Season Protocol Survey #6 – Phase 1, Beyer Boulevard, portion of Phase 2 VP Restoration Areas	7:20 a.m.; 48°F; winds 1–3 mph; 5% cloud cover	7:45 a.m.; 50°F; winds 1–3 mph; 5% cloud cover
1/11/2019	M. Busby, J. McBee ¹	FS Wet Season Protocol Survey #7 – Phase 1, Beyer Boulevard, portion of Phase 2 VP Restoration Areas	7:25 a.m.; 50°F; winds 0–1 mph; 95% cloud cover	9:50 a.m.; 57°F; winds 0–1 mph; 95% cloud cover
1/18/2019	D. Busby, M. Busby, J. McBee ¹	FS Wet Season Protocol Survey #8a – Phase 1, Beyer Boulevard, portion of Phase 2 VP Restoration Areas	8:22 a.m.; 58°F; winds 1–3 mph; 95% cloud cover	1:35 p.m.; 63°F; winds 3–5 mph; 95% cloud cover
1/21/2019	E. LaCoste, J. McBee ¹	FS Wet Season Protocol Survey #8b – Phase 1, Beyer Boulevard, portion of Phase 2 VP Restoration Areas	8:00 a.m.; 56°F; winds 3–6 mph; 50% cloud cover	12:00 p.m.; 61°F; winds 5–10 mph; 5% cloud cover
1/24/2019	D. Busby, E. LaCoste, J. McBee ¹	FS Wet Season Protocol Survey #9 – Phase 1, Beyer Boulevard, portion of Phase 2 VP Restoration Areas	7:20 a.m.; 64°F; winds 1–3 mph; 5% cloud cover	1:20 p.m.; 72°F; winds 1–3 mph; 50% cloud cover
1/30/2019	E. LaCoste, J. McBee ¹	FS Wet Season Protocol Survey #10 – Phase 1, Beyer Boulevard, portion of Phase 2 VP Restoration Areas	8:30 a.m.; 63°F; winds 1–3 mph; 50% cloud cover	11:30 a.m.; 65°F; winds 1–3 mph; 50% cloud cover
2/6/2019	E. LaCoste, J. McBee ¹	FS Wet Season Protocol Survey #11 – Phase 1, Beyer Boulevard, portion of Phase 2 VP Restoration Areas	7:30 a.m.; 47°F; winds 1–3 mph; 75% cloud cover	1:15 p.m.; 55°F; winds 1–3 mph; 15% cloud cover
2/12/2019	D. Busby, M. Busby	FS Wet Season Protocol Survey #12 – Phase 1, Beyer Boulevard, portion of Phase 2 VP Restoration Areas	8:15 a.m.; 55°F; winds 3–5 mph; 0% cloud cover	4:00 p.m.; 60°F; winds 3–5 mph; 75% cloud cover
2/19/2019	D. Busby, E. LaCoste, J. McBee ¹	FS Wet Season Protocol Survey #13a – Phase 1, Beyer Boulevard, portion of Phase 2 VP Restoration Areas	9:00 a.m.; 52°F; winds 1–3 mph; 0% cloud cover	2:45 p.m.; 56°F; winds 1–3 mph; 0% cloud cover
2/20/2019	M. Busby, J. McBee ¹	FS Wet Season Protocol Survey #13b – Phase 1, Beyer Boulevard, portion of Phase 2 VP Restoration Areas	7:30 a.m.; 42°F; winds 1–3 mph; 10% cloud cover	12:30 p.m.; 54°F; winds 3–5 mph; 100% cloud cover
2/26/2019	D. Busby, E. LaCoste, J. McBee ¹	FS Wet Season Protocol Survey #14 – Phase 1, Beyer Boulevard, portion of Phase 2 VP Restoration Areas	7:15 a.m.; 47°F; winds 1–3 mph; 100% cloud cover	2:00 p.m.; 61°F; winds 1–3 mph; 100% cloud cover

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Survey Dates, Times, and Weather Conditions

Date	Surveyors	Survey Type	Beginning Conditions	Ending Conditions
3/4/2019	C. Dixon, A. Kort ¹	FS Wet Season Protocol Survey #15a – Phase 1, Beyer Boulevard, portion of Phase 2 VP Restoration Areas	8:30 a.m.; 58°F; winds 0–2 mph; 90% cloud cover	1:30 p.m.; 60°F; winds 3–5 mph; 75% cloud cover
3/5/2019	C. Dixon, A. Kort ¹	FS Wet Season Protocol Survey #15b – Phase 1, Beyer Boulevard, portion of Phase 2 VP Restoration Areas	8:18 a.m.; 57°F; winds 1–3 mph; 0% cloud cover	11:30 a.m.; 68°F; winds 1–3 mph; 5% cloud cover
3/12/2019	C. Dixon, J. McBee ¹	FS Wet Season Protocol Survey #16 – Phase 1, Beyer Boulevard, portion of Phase 2, VP Restoration Areas	8:40 a.m.; 54°F; winds 1–3 mph; 100% cloud cover	4:20 p.m.; 61°F; winds 5–7 mph; 5% cloud cover
3/19/2019	C. Dixon, J. McBee ¹ , M. Weston ¹	FS Wet Season Protocol Survey #17 – Phase 1, Beyer Boulevard, portion of Phase 2 VP Restoration Areas	8:20 a.m.; 55°F; winds 1–3 mph; 20% cloud cover	4:20 p.m.; 66°F; winds 3–5 mph; 5% cloud cover
3/25/2019	C. Dixon, K. Israel ¹	FS Wet Season Protocol Survey #18 – Phase 1, Beyer Boulevard, portion of Phase 2 VP Restoration Areas	8:34 a.m.; 63°F; winds 1–5 mph; 0% cloud cover	1:45 p.m.; 66°F; winds 3–8 mph; 0% cloud cover
4/2/2019	C. Dixon, J. McBee ¹	FS Wet Season Protocol Survey #19 – Phase 1, Beyer Boulevard, portion of Phase 2 VP Restoration Areas	8:00 a.m.; 59°F; winds 2–3 mph; 0% cloud cover	9:40 a.m.; 70°F; winds 2–3 mph; 0% cloud cover
4/9/2019	M. Busby, N. Yerka ¹	FS Wet Season Protocol Survey #20 – Phase 1, Beyer Boulevard, portion of Phase 2 VP Restoration Areas	8:45 a.m.; 64°F; winds 3–5 mph; 75% cloud cover	9:30 a.m.; 66°F; winds 3–5 mph; 75% cloud cover
4/16/2019	E. LaCoste, J. McBee ¹	FS Wet Season Protocol Survey #21 – Phase 1, Beyer Boulevard, portion of Phase 2 VP Restoration Areas	8:00 a.m.; 57°F; winds 3–5 mph; 100% cloud cover	8:40 a.m.; 60°F; winds 3–5 mph; 100% cloud cover
4/22/2019	M. Busby	FS Wet Season Protocol Survey #22 – Phase 1, Beyer Boulevard, portion of Phase 2, VP Restoration Areas	9:30 a.m.; 63°F; winds 1–3 mph; 25% cloud cover	10:00 a.m.; 64°F; winds 1–3 mph; 25% cloud cover
5/6/2019	E. LaCoste, J. McBee ¹	FS Wet Season Protocol Survey #23 – Phase 1, Beyer Boulevard, portion of Phase 2 VP Restoration Areas	9:15 a.m.; 65°F; winds 2–3 mph; 50% cloud cover	9:45 a.m.; 66°F; winds 2–3 mph; 50% cloud cover
5/14/2019	M. Busby	FS Wet Season Protocol Survey #24 – Phase 1, Beyer Boulevard, portion of Phase 2 VP Restoration Areas	10:00 a.m.; 59°F; winds 4–7 mph; 80% cloud cover	11:15 a.m.; 60°F; winds 5–7 mph; 80% cloud cover
5/23/2019	E. LaCoste, A. Kort ¹	FS Wet Season Protocol Survey #25 – Phase 1, Beyer Boulevard, portion of Phase 2 VP Restoration Areas	10:00 a.m.; 68°F; winds 5–8 mph; 95% cloud cover	12:00 a.m.; 69°F; winds 5–8 mph; 80% cloud cover

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Survey Dates, Times, and Weather Conditions

Date	Surveyors	Survey Type	Beginning Conditions	Ending Conditions
5/30/2019	D. Busby, C. Vettes ¹	FS Wet Season Protocol Survey #26 – Phase 1, Beyer Boulevard, portion of Phase 2 VP Restoration Areas	7:05 a.m.; 55°F; winds 0 mph; 100% cloud cover	8:40 a.m.; 59°F; winds 0 mph; 100% cloud cover
6/4/2019	E. LaCoste	FS Wet Season Protocol Survey #27 – Phase 1, Beyer Boulevard, portion of Phase 2 VP Restoration Areas	7:30 a.m.; 63°F; winds 0–1 mph; 100% cloud cover	8:00 a.m.; 63°F; winds 0–1 mph; 100% cloud cover
11/24/2019	E. LaCoste, A. Kort	FS Wet Season Protocol Survey #1 – Phases 1, 2, 4, and vernal pool restoration areas, program-level trails, and Mitigation Lands	8:00 a.m.; 56°F; winds 0–6 mph; 0% cloud cover	3:30 p.m.; 74°F; winds 0–6 mph; 25% cloud cover
12/2/2019	E. LaCoste, D. Busby, A. Kort	FS Wet Season Protocol Survey #2 – Phases 1, 2, 4, Beyer Boulevard, and vernal pool restoration areas, program-level trails, and Mitigation Lands	8:30 a.m.; 56°F; winds 0–6 mph; 25% cloud cover	3:00 p.m.; 71°F; winds 0–6 mph; 50% cloud cover
12/9/2019	E. LaCoste, D. Busby, A. Kort	FS Wet Season Protocol Survey #3a – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	8:00 a.m.; 59°F; winds 0–2 mph; 0% cloud cover	3:15 p.m.; 64°F; winds 0–2 mph; 10% cloud cover
12/10/2019	E. LaCoste, D. Busby, A. Kort	FS Wet Season Protocol Survey #3b – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	8:00 a.m.; 57°F; winds 0–6 mph; 15% cloud cover	2:45 p.m.; 64°F; winds 0–6 mph; 80% cloud cover
12/16/2019	E. LaCoste, D. Busby, C. Vettes	FS Wet Season Protocol Survey #4a – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	8:00 a.m.; 60°F; winds 0–5 mph; 0% cloud cover	3:00 p.m.; 68°F; winds 0–5 mph; 5% cloud cover
12/17/2019	E. LaCoste, D. Busby, C. Vettes	FS Wet Season Protocol Survey #4b – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	8:00 a.m.; 59°F; winds 5–15 mph; 5% cloud cover	1:30 p.m.; 68°F; winds 5–15 mph; 30% cloud cover
12/24/2019	E. LaCoste, C. Vettes	FS Wet Season Protocol Survey #5a – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	8:00 a.m.; 53°F; winds 0–8 mph; 65% cloud cover	2:00 p.m.; 59°F; winds 0–8 mph; 80% cloud cover
12/27/2019	E. LaCoste, C. Vettes	FS Wet Season Protocol Survey #5b – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	8:30 a.m.; 51°F; winds 0–3 mph; 5% cloud cover	3:00 p.m.; 59°F; winds 0–3 mph; 15% cloud cover

Attachment 3
Survey Dates, Times, and Weather Conditions

Date	Surveyors	Survey Type	Beginning Conditions	Ending Conditions
12/30/2019	E. LaCoste, C. Vettes	FS Wet Season Protocol Survey #6a – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	8:00 a.m.; 53°F; winds 3–5 mph; 60% cloud cover	3:00 p.m.; 59°F; winds 3–5 mph; 100% cloud cover
12/31/2019	E. LaCoste, C. Vettes	FS Wet Season Protocol Survey #6b – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	8:00 a.m.; 50°F; winds 0–3 mph; 10% cloud cover	2:30 p.m.; 64°F; winds 0–3 mph; 20% cloud cover
1/6/2020	D. Busby, C. Vettes	FS Wet Season Protocol Survey #7a – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	9:00 a.m.; 63°F; winds 0–1 mph; 5% cloud cover	3:45 p.m.; 72°F; winds 0–1 mph; 5% cloud cover
1/7/2020	D. Busby, C. Vettes	FS Wet Season Protocol Survey #7b – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	8:00 a.m.; 61°F; winds 1–3 mph; 10% cloud cover	1:45 p.m.; 68°F; winds 1–3 mph; 20% cloud cover
1/13/2020	E. LaCoste, C. Vettes	FS Wet Season Protocol Survey #8a – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	8:00 a.m.; 50°F; winds 2–5 mph; 0% cloud cover	12:00 p.m.; 63°F; winds 2–5 mph; 10% cloud cover
1/14/2020	E. LaCoste, C. Vettes	FS Wet Season Protocol Survey #8b – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	8:00 a.m.; 49°F; winds 0–4 mph; 0% cloud cover	2:00 p.m.; 63°F; winds 0–4 mph; 10% cloud cover
1/20/2020	E. LaCoste, C. Vettes	FS Wet Season Protocol Survey #9 – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	8:15 a.m.; 50°F; winds 1–3 mph; 100% cloud cover	12:30 p.m.; 59°F; winds 1–3 mph; 100% cloud cover
1/27/2020	E. LaCoste, C. Vettes	FS Wet Season Protocol Survey #10 – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	8:30 a.m.; 54°F; winds 0–6 mph; 0% cloud cover	2:30 p.m.; 64°F; winds 0–6 mph; 10% cloud cover
2/4/2020	E. LaCoste, C. Vettes	FS Wet Season Protocol Survey #11 – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	8:15 a.m.; 47°F; winds 4–9 mph; 0% cloud cover	12:15 p.m.; 57°F; winds 4–9 mph; 0% cloud cover

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Survey Dates, Times, and Weather Conditions

Date	Surveyors	Survey Type	Beginning Conditions	Ending Conditions
2/11/2020	D. Busby	FS Wet Season Protocol Survey #12 – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	11:30 a.m.; 66°F; winds 1–4 mph; 1% cloud cover	12:50 p.m.; 66°F; winds 1–4 mph; 1% cloud cover
2/18/2020	E. LaCoste, A. Kort	FS Wet Season Protocol Survey #13 – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	8:30 a.m.; 59°F; winds 0–3 mph; 50% cloud cover	11:30 a.m.; 64°F; winds 0–3 mph; 100% cloud cover
2/24/2020	E. LaCoste, A. Kort	FS Wet Season Protocol Survey #14 – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	9:30 a.m.; 63°F; winds 0–4 mph; 0% cloud cover	3:00 p.m.; 68°F; winds 0–4 mph; 0% cloud cover
3/3/2020	E. LaCoste	FS Wet Season Protocol Survey #15 – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	8:30 a.m.; 59°F; winds 0–4 mph; 0% cloud cover	12:00 p.m.; 70°F; winds 0–4 mph; 0% cloud cover
3/9/2020	E. LaCoste	FS Wet Season Protocol Survey #16 – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	8:30 a.m.; 62°F; winds 0–1 mph; 50% cloud cover	9:30 a.m.; 63°F; winds 0–1 mph; 50% cloud cover
3/15/2020	E. LaCoste, C. Vettes	FS Wet Season Protocol Survey #17a – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	8:30 a.m.; 54°F; winds 1–7 mph; 60% cloud cover	2:45 p.m.; 63°F; winds 1–7 mph; 90% cloud cover
3/16/2020	E. LaCoste, C. Vettes	FS Wet Season Protocol Survey #17b – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	8:30 a.m.; 57°F; winds 1–5 mph; 95% cloud cover	12:30 p.m.; 63°F; winds 1–5 mph; 95% cloud cover
3/22/2020	E. LaCoste, D. Busby	FS Wet Season Protocol Survey #18a – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	8:00 a.m.; 57°F; winds 1–4 mph; 0% cloud cover	10:30 a.m.; 63°F; winds 1–4 mph; 0% cloud cover
3/24/2020	E. LaCoste, D. Busby	FS Wet Season Protocol Survey #18b – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	8:00 a.m.; 60°F; winds 1–6 mph; 0% cloud cover	3:30 p.m.; 66°F; winds 1–6 mph; 0% cloud cover

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Survey Dates, Times, and Weather Conditions

Date	Surveyors	Survey Type	Beginning Conditions	Ending Conditions
3/30/2020	D. Busby, C. Vettes	FS Wet Season Protocol Survey #19a – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	10:00 a.m.; 61°F; winds 3–8 mph; 0% cloud cover	3:15 p.m.; 66°F; winds 3–8 mph; 5% cloud cover
3/31/2020	D. Busby, C. Vettes	FS Wet Season Protocol Survey #19b – Phases 1, 2, and vernal pool restoration areas, program-level trails, and Mitigation Lands	12:20 p.m.; 64°F; winds 2–3 mph; 80% cloud cover	4:00 p.m.; 64°F; winds 2–3 mph; 100% cloud cover
4/7/2020	E. LaCoste, C. Vettes	FS Wet Season Protocol Survey #20a – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	8:00 a.m.; 54°F; winds 1–3 mph; 100% cloud cover	1:40 p.m.; 61°F; winds 1–3 mph; 100% cloud cover
4/8/2020	E. LaCoste, C. Vettes	FS Wet Season Protocol Survey #20b – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	8:00 a.m.; 52°F; winds 1–7 mph; 65% cloud cover	11:30 p.m.; 57°F; winds 1–7 mph; 80% cloud cover
4/13/2020	E. LaCoste, C. Vettes	FS Wet Season Protocol Survey #21a – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	8:30 a.m.; 57°F; winds 0–5 mph; 90% cloud cover	3:15 p.m.; 57°F; winds 0–5 mph; 90% cloud cover
4/14/2020	E. LaCoste, C. Vettes	FS Wet Season Protocol Survey #21b – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	8:30 a.m.; 61°F; winds 0–8 mph; 0% cloud cover	3:00 p.m.; 66°F; winds 0–8 mph; 40% cloud cover
4/15/2020	E. LaCoste, C. Vettes	FS Wet Season Protocol Survey #21c – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	8:30 a.m.; 64°F; winds 1–5 mph; 0% cloud cover	11:00 a.m.; 64°F; winds 1–5 mph; 0% cloud cover
4/20/2020	E. LaCoste, C. Vettes	FS Wet Season Protocol Survey #22a – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	8:00 a.m.; 57°F; winds 0–7 mph; 80% cloud cover	2:15 p.m.; 64°F; winds 0–7 mph; 100% cloud cover
4/21/2020	E. LaCoste, C. Vettes	FS Wet Season Protocol Survey #22b – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	9:30 a.m.; 61°F; winds 0–8 mph; 25% cloud cover	2:45 p.m.; 66°F; winds 0–8 mph; 55% cloud cover
4/27/2020	E. LaCoste	FS Wet Season Protocol Survey #23 – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	8:30 a.m.; 65°F; winds 0–4 mph; 0% cloud cover	2:00 p.m.; 75°F; winds 0–4 mph; 0% cloud cover

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Survey Dates, Times, and Weather Conditions

Date	Surveyors	Survey Type	Beginning Conditions	Ending Conditions
5/4/2020	D. Busby, C. Vettes	FS Wet Season Protocol Survey #24 – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	10:45 a.m.; 75°F; winds 3–12 mph; 0% cloud cover	1:00 p.m.; 76°F; winds 3–12 mph; 0% cloud cover
5/11/2020	D. Busby	FS Wet Season Protocol Survey #25 – Phases 1, 2, 4, Beyer Boulevard and vernal pool restoration areas, program-level trails, and Mitigation Lands	11:30 a.m.; 73°F; winds 3–7 mph; 0% cloud cover	1:30 p.m.; 75°F; winds 3–7 mph; 0% cloud cover
Dry Season Fairy Shrimp Surveys				
6/14/2018	W. Loeffler, J. McBee ¹ , M. Weston ¹ , J. Sundberg ¹	FS Dry Season Survey-soil collection	8:00 a.m.	3:00 p.m.
6/20/2018	W. Loeffler, J. McBee ¹ , M. Weston ¹ , J. Sundberg ¹	FS Dry Season Survey-soil collection	8:00 a.m.	3:00 p.m.
7/30/2019	A. Leavitt, J. Mercado ¹	FS Dry Season Survey-soil collection	8:00 a.m.	2:30 p.m.
7/31/2019	A. Leavitt, K. Valenti	FS Dry Season Survey-soil collection	8:00 a.m.	3:00 p.m.
8/8/2019	K. Valenti, S. Vargas ¹	FS Dry Season Survey-soil collection	8:00 a.m.	3:00 p.m.
7/30/2020	K. Valenti, A. Smisek ¹ , K. Israel ¹	FS Dry Season Survey-soil collection	8:00 a.m.	4:00 p.m.
8/3/2020	Kayo Valenti, J. Mercado ¹ , J. Sundberg ¹	FS Dry Season Survey-soil collection	8:00 a.m.	4:00 p.m.
8/13/2020	Kayo Valenti, J. Mercado ¹ , A. Smisek ¹	FS Dry Season Survey-soil collection	8:00 a.m.	4:00 p.m.
Burrowing Owl (BUOW) Surveys				
3/14/2018	M. Weston, J. McBee	BUOW Habitat Assessment	8:30 a.m.	10:00 a.m.
4/5/2018	M. Weston, J. McBee	BUOW Survey – Phase 1, Beyer Boulevard, and portion of Phase 2 and Phase 1b	6:20 a.m.; 55°F; winds 0–2 mph; 100% cloud cover	10:00 a.m.; 62°F; winds 0–2 mph; 20% cloud cover
4/26/2018	D. Saucedo, J. McBee	BUOW Survey – Phase 1, Beyer Boulevard, and portion of Phase 2	6:20 a.m.; 56°F; winds 1–2 mph; 100% cloud cover	10:00 a.m.; 65°F; winds 1–3 mph; 65% cloud cover
5/21/2018	M. Weston, J. McBee	BUOW Survey – Phase 1, Beyer Boulevard, and portion of Phase 2	6:10 a.m.; 57°F; winds 1–3 mph; 99% cloud cover	08:30 a.m.; 62°F; winds 2–5 mph; 99% cloud cover
6/26/2018	M. Weston, J. McBee	BUOW Survey – Phase 1, Beyer Boulevard, and portion of Phase 2	7:00 a.m.; 64°F; winds 1–3 mph; 100% cloud cover	8:40 a.m.; 64°F; winds 1–3 mph; 95% cloud cover
3/23/2018	D. Saucedo, J. McBee	BUOW Survey #1a – Mitigation Lands	6:20 a.m.; 55°F; winds 0–2 mph; 100% cloud cover	10:00 a.m.; 62°F; winds 0–2 mph; 20% cloud cover
4/13/2018	D. Saucedo, J. McBee	BUOW Survey #1b – Mitigation Lands	6:20 a.m.; 56°F; winds 1–2 mph; 100% cloud cover	10:00 a.m.; 65°F; winds 1–3 mph; 65% cloud cover

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Survey Dates, Times, and Weather Conditions

Date	Surveyors	Survey Type	Beginning Conditions	Ending Conditions
4/27/2018	M. Weston, J. McBee	BUOW Survey #2a – Mitigation Lands	6:10 a.m.; 57°F; winds 1–3 mph; 99% cloud cover	08:30 a.m.; 62°F; winds 2–5 mph; 99% cloud cover
5/18/2018	M. Weston, J. McBee	BUOW Survey #2b – Mitigation Lands	7:00 a.m.; 64°F; winds 1–3 mph; 100% cloud cover	8:40 a.m.; 64°F; winds 1–3 mph; 95% cloud cover
6/12/2018	M. Weston, J. McBee	BUOW Survey #3a – Mitigation Lands	6:10 a.m.; 57°F; winds 1–3 mph; 99% cloud cover	08:30 a.m.; 62°F; winds 2–5 mph; 99% cloud cover
6/21/2018	M. Weston, J. McBee	BUOW Survey #3b – Mitigation Lands	7:00 a.m.; 64°F; winds 1–3 mph; 100% cloud cover	8:40 a.m.; 64°F; winds 1–3 mph; 95% cloud cover
7/9/2018	M. Weston, J. McBee	BUOW Survey #4a – Mitigation Lands	6:10 a.m.; 57°F; winds 1–3 mph; 99% cloud cover	08:30 a.m.; 62°F; winds 2–5 mph; 99% cloud cover
7/12/2018	M. Weston, J. McBee	BUOW Survey #4b – Mitigation Lands	7:00 a.m.; 64°F; winds 1–3 mph; 100% cloud cover	8:40 a.m.; 64°F; winds 1–3 mph; 95% cloud cover
2/4/2020	B. Procsal, R. Atik	Habitat Assessment - Phases 1, 2, Beyer Boulevard, Phase 4 and vernal pool restoration areas plus a 150-meter buffer, and Mitigation Lands	9:00 a.m.; 56°F; winds 0-4 mph; 0% cloud cover	2:00 9.m.; 58°F; winds 5-7 mph; 0% cloud cover
2/21/2020	B. Procsal, K. Israel B. Parker, A. Fromer	BUOW Survey #1a – Phases 1, 2, Beyer Boulevard, Phase 4 and vernal pool restoration areas plus a 150-meter buffer, and Mitigation Lands	7:00 a.m.; 58°F; winds 0-2 mph; 2% cloud cover	10:00 a.m.; 68°F; winds 0-2 mph; 20% cloud cover
2/25/2020	K. Israel, T. Chase	BUOW Survey #1b – Phases 1, 2, Beyer Boulevard, Phase 4 and vernal pool restoration areas plus a 150-meter buffer, and Mitigation Lands	6:50 a.m.; 50°F winds 0-1 mph; 0% cloud cover	9:00 a.m.; 68°F; winds 0-1 mph; 0% cloud cover
4/30/2020	B. Procsal, T. Chase B. Parker, A. Fromer	BUOW Survey #2a – Phases 1, 2, Beyer Boulevard, Phase 4 and vernal pool restoration areas plus a 150-meter buffer, and Mitigation Lands	7:00 a.m.; 62°F; winds 0-1 mph; 100% cloud cover	10:00 a.m.; 65°F; winds 0-21 mph; 100% cloud cover
5/6/2020	A. Fromer, T. Chase	BUOW Survey #2b – Phases 1, 2, Beyer Boulevard, Phase 4 and vernal pool restoration areas plus a 150-meter buffer, and Mitigation Lands	6:40 a.m., 59°F winds 0-2 mph; 5% cloud cover	9:10 a.m., 76°F winds 0-2 mph; 5% cloud cover
6/24/2020	A. Fromer, B. Parker K. Israel, T. Chase	BUOW Survey #3a – Phases 1, 2, Beyer Boulevard, Phase 4 and vernal pool restoration areas plus a 150-meter buffer, and Mitigation Lands	6:30 a.m.; 63°F; winds 0-2 mph; 100% cloud cover	10:00 a.m.; 71°F; winds 1-2 mph; 100% cloud cover

Attachment 3 Survey Dates, Times, and Weather Conditions				
Date	Surveyors	Survey Type	Beginning Conditions	Ending Conditions
6/25/2020	K. Israel, T. Chase	BUOW Survey #3b – Phases 1, 2, Beyer Boulevard, Phase 4 and vernal pool restoration areas plus a 150-meter buffer, and Mitigation Lands	6:20 a.m.; 61°F; wind not recorded; 100% cloud cover	9:30 a.m.; 63°F; wind not recorded; 100% cloud cover
7/7/2020	B. Parker, K. Israel, T. Chase	BUOW Survey #4a – Phases 1, 2, Beyer Boulevard, Phase 4 and vernal pool restoration areas plus a 150-meter buffer, and Mitigation Lands	6:30 a.m.; 33°F; winds 0-2 mph; 100% cloud cover	10:00 a.m.; 70°F; winds 3-6 mph; 0% cloud cover
7/9/2020	A. Fromer, K. Israel, T. Chase	BUOW Survey #4b – Phases 1, 2, Beyer Boulevard, Phase 4 and vernal pool restoration areas plus a 150-meter buffer, and Mitigation Lands	6:35 a.m.; 64°F; winds 0-1 mph; 100% cloud cover	10:00 a.m.; 73°F; winds 3-5 mph; 0% cloud cover
2/22/2021	A. Fromer, T. Chase	BUOW Survey #1 – Phases 1, 2, Beyer Boulevard, Phase 4 and vernal pool restoration areas plus a 150-meter buffer, and Mitigation Lands	8:15 a.m.; 66°F; winds 0-2 mph; 0% cloud cover	9:00 a.m.; 68°F; winds 0-2 mph; 0% cloud cover
4/28/2021	A. Fromer, J. Woll	BUOW Survey #2 – Phases 1, 2, Beyer Boulevard, Phase 4 and vernal pool restoration areas plus a 150-meter buffer, and Mitigation Lands	9:00 a.m.; 66°F; winds 0-1 mph; 0% cloud cover	10:00 a.m.; 70°F; winds 1-2 mph; 0% cloud cover
5/27/2021	A. Fromer, J. Woll	BUOW Survey #3 – Phases 1, 2, Beyer Boulevard, Phase 4 and vernal pool restoration areas plus a 150-meter buffer, and Mitigation Lands	8:45 a.m.; 65°F; winds 1-3 mph; 15% cloud cover	10:00 a.m.; 68°F; winds 2-4 mph; 5% cloud cover
6/24/2021	A. Fromer, J. Woll	BUOW Survey #4 – Phases 1, 2, Beyer Boulevard, Phase 4 and vernal pool restoration areas plus a 150-meter buffer, and Mitigation Lands	8:15 a.m.; 66°F; winds 3-5 mph; 100% cloud cover	10:00 a.m.; 70°F; winds 6-8 mph; 40% cloud cover
Western Spadefoot Surveys				
2/14/2024	B. Procsal, C. Polevy, C. Thomson	Western spadefoot survey	10:30 a.m.	4:00 p.m.
2/15/2024	W. Loeffler, B. Procsal	Western spadefoot survey	11:00 a.m.	4:00 p.m.
2/27/2024	W. Loeffler, B. Procsal	Western spadefoot survey	9:30 a.m.	3:30 p.m.
2/28/2024	A. Fromer, C. Polevy, D. Gadia	Western spadefoot survey	8:00 a.m.	4:00 p.m.
2/29/2024	W. Loeffler, A. Fromer, D. Gadia	Western spadefoot survey	8:00 a.m.	4:00 p.m.
3/6/2024	C. Thomson, C. Beck	Western spadefoot survey	8:00 a.m.	4:30 p.m.
3/13/2024	A. Fromer	Western spadefoot survey	-	-
Crotch's Bumble Bee Habitat Assessment				
3/20/2024	A. Fromer, C. Beck	Extensive Habitat Assessment-Mitigation Lands	-	-

Attachment 3 Survey Dates, Times, and Weather Conditions				
Date	Surveyors	Survey Type	Beginning Conditions	Ending Conditions
3/21/2024	A. Fromer, C. Beck, C. Defrenne	Extensive Habitat Assessment-Mitigation Lands	-	-
3/26/2024	A. Fromer, C. Beck, C. Thomson, C. Defrenne	Extensive Habitat Assessment-Mitigation Lands	-	-
3/27/2024	A. Fromer, C. Beck, C. Thomson,	Extensive Habitat Assessment-Mitigation Lands	-	-
4/2/2024	A. Fromer, C. Beck, C. Thomson, C. Defrenne	Extensive Habitat Assessment-Mitigation Lands	-	-
4/12/2024	A. Fromer, C. Beck, E. Procsal, C. Defrenne	Extensive Habitat Assessment-Mitigation Lands	-	-
4/15/2024	C. Polevy, C. Beck, M. Hughes	Extensive Habitat Assessment-Mitigation Lands	-	-
4/16/2024	D. Gadia, C. Beck, M. Hughes	Extensive Habitat Assessment-Mitigation Lands	-	-
4/17/2024	A. Fromer, C. Thomson, D. Gadia	Extensive Habitat Assessment-Mitigation Lands	-	-
4/18/2024	A. Fromer, C. Polevy, C. Defrenne	Extensive Habitat Assessment-Project Area	-	-
4/23/2024	C. Beck, E. Procsal, C. Defrenne, R. Smith	Extensive Habitat Assessment-Project Area	-	-
4/24/2024	C. Beck, C. Thomson, C. Defrenne, R. Smith	Extensive Habitat Assessment-Project Area	-	-
4/25/2024	C. Beck, C. Thomson, C. Polevy, R. Smith	Extensive Habitat Assessment-Project Area	-	-
4/29/2024	C. Beck, C. Defrenne, R. Smith	Extensive Habitat Assessment-Project Area	-	-
Wildlife Tracking Surveys				
4/20/2020	B. Martin	Spring wildlife tracking survey	-	-
4/21/2020	B. Martin	Spring wildlife tracking survey	-	-
4/23/2020	B. Martin	Spring wildlife tracking survey	-	-
4/24/2020	B. Martin	Spring wildlife tracking survey	-	-
4/27/2020	B. Martin	Spring wildlife tracking survey	-	-
4/29/2020	B. Martin	Spring wildlife tracking survey	-	-
5/1/2020	B. Martin	Spring wildlife tracking survey	-	-
5/8/2020	B. Martin	Camera check	-	-
5/15/2020	B. Martin	Camera check	-	-
5/22/2020	B. Martin	Camera retrieval	-	-
<p>NOTE: Additional details related to these surveys are included in the text of this report, and species-specific reports submitted as part of this project's survey efforts (RECON 2018a–2018f; 2019a–2019c; 2020a–2020b; 2021a–2021b; 2022; 2023a; 2024; Busby Biological 2019). For non-wildlife surveys, beginning and ending weather conditions were not recorded.</p> <p>VTM = Vesting Tentative Map; °F = degrees Fahrenheit at ground level; mph = miles per hour; % = percent</p> <p>¹Under Supervision.</p> <p>²Fairy shrimp protocol surveys for resources within the Candlelight project area were conducted by Alden Environmental to support the 401 Water Quality Certification No. R9-2023-0080 for the Candlelight Project issued March 13, 2023 and California Department of Fish and Wildlife Streambed Alteration Agreement Notification #1600-2016-0206-R5 issued January 24, 2022.</p>				

ATTACHMENT 4

Plant Species Observed

Attachment 4
Plant Species Observed

Scientific Name	Common Name	Habitat	Origin
LYCOPODS			
ISOETACEAE	QUILLWORT FAMILY		
<i>Isoetes orcuttii</i> A.A. Eaton	Orcutt's quillwort	V, W	N
SELAGINELLACEAE	SPIKE-MOSS FAMILY		
<i>Selaginella cinerascens</i> A.A. Eaton	ashy spike-moss	CSS, MSS	N
FERNS			
PTERIDACEAE	BRAKE FAMILY		
<i>Pentagramma triangularis</i> (Kaulf.) Yatsk. Windham & E. Wollenw.	goldback fern	CSS	N
GYMNOSPERMS			
CUPRESSACEAE	CYPRESS FAMILY		
<i>Hesperocyparis macrocarpa</i> (Hartw.) Bartel [= <i>Callitropsis macrocarpa</i>]	Monterey cypress	DL	I
PINACEAE	PINE FAMILY		
<i>Pinus halepensis</i> Mill.	Aleppo pine	DL	I
ANGIOSPERMS: MONOCOTS			
AGAVACEAE	AGAVE FAMILY		
<i>Agave americana</i> L.	American century plant	DCSS	I
<i>Chlorogalum parviflorum</i> S. Watson	small-flower soap-plant, amole	CSS	N
<i>Yucca guatemalensis</i> Baker	bluestem yucca	DMSS	I
<i>Yucca schidigera</i> Ortgies	Mojave yucca	CSS	N
ALLIACEAE	ONION FAMILY		
<i>Allium praecox</i> Brandege	early onion	CSS	N
IRIDACEAE	IRIS FAMILY		
<i>Sisyrinchium bellum</i> S. Watson	western blue-eyed grass	CSS	N
JUNCACEAE	RUSH FAMILY		
<i>Juncus bufonius</i> L.	toad rush	V	N
JUNCAGINACEAE	ARROW-GRASS FAMILY		
<i>Triglochin scilloides</i> (Poir.) Mering & Kadereit [= <i>Lilaea scilloides</i>]	flowering-quillwort	V	N

Attachment 4
Plant Species Observed

Scientific Name	Common Name	Habitat	Origin
LILIACEAE	LILY FAMILY		
<i>Calochortus splendens</i> Benth.	splendid mariposa lily	NNG	N
<i>Fritillaria biflora</i> Lindl.	chocolate lily, mission bells	NNG	N
POACEAE (GRAMINEAE)	GRASS FAMILY		
<i>Agrostis pallens</i> Trin.	dune bent grass	NNG	N
<i>Arundo donax</i> L.	giant reed	DL	I
<i>Avena</i> sp.	oats	NNG	I
<i>Avena barbata</i> Pott ex Link	slender wild oat	NNG	I
<i>Brachypodium distachyon</i> (L.) P. Beauv.	purple falsebrome	NNG	I
<i>Bromus diandrus</i> Roth	ripgut grass	NNG	I
<i>Bromus hordeaceus</i> L.	soft chess	NNG	I
<i>Bromus madritensis</i> L. ssp. <i>rubens</i> (L.) Husn.	red brome	NNG	I
<i>Cynodon dactylon</i> (L.) Pers.	Bermuda grass	NNG, DL	I
<i>Distichlis spicata</i> (L.) Greene	salt grass	NNG, V	N
<i>Festuca</i> [= <i>Vulpia</i>] <i>myuros</i> L.	rattail sixweeks grass	NNG	I
<i>Festuca perennis</i> (L.) Columbus & J.P. Sm. [= <i>Lolium multiflorum</i> and <i>Lolium perenne</i>]	rye grass	NNG	I
<i>Hordeum depressum</i> (Scribn. & J. G. Sm.) Rydb.	dwarf barley	NNG	N
<i>Hordeum intercedens</i> Nevski	bobtail barley, vernal barley*	NNG	N
<i>Hordeum murinum</i> L.	wall barley	NNG	I
<i>Lamarckia aurea</i> (L.) Moench	golden-top	DL	I
<i>Muhlenbergia microsperma</i> (DC.) Kunth	littleseed muhly	CSS	N
<i>Phalaris angusta</i> Nees ex Trin.	timothy canary grass	NNG	N
<i>Phalaris minor</i> Retz.	little-seeded canary grass	NNG	I
<i>Poa annua</i> L.	annual blue grass	NNG	I
<i>Schismus barbatus</i> (L.) Thell.	Mediterranean schismus	DL, NNG, DCSS	I
<i>Stipa</i> [= <i>Nassella</i>] sp.	needle grass	CSS, MSS	N
<i>Stipa</i> [= <i>Achnatherum</i>] <i>diegoensis</i> Swallen	San Diego needle grass	MSS	N
<i>Stipa</i> [= <i>Nassella</i>] <i>lepida</i> Hitchc.	foothill needle grass	CSS, MSS	N

Attachment 4
Plant Species Observed

Scientific Name	Common Name	Habitat	Origin
THEMIDACEAE	BRODIAEA FAMILY		
<i>Bloomeria crocea</i> (Torr.) Coville	common goldenstar	NNG	N
<i>Brodiaea terrestris</i> Kellogg ssp. <i>kernensis</i> (Hoover) T.F. Niehaus	dwarf brodiaea	NNG	N
<i>Dichelostemma capitatum</i> (Benth.) Alph. Wood	blue dicks	CSS, MSS	N
<i>Muilla maritima</i> (Torr.) S. Watson	common muilla	NNG	N
ANGIOSPERMS: DICOTS			
ADOXACEAE	ADOXA FAMILY		
<i>Sambucus nigra</i> L. ssp. <i>caerulea</i> (Raf.) Bolli [= <i>Sambucus mexicana</i>]	blue elderberry	CSS, DCSS	N
AIZOACEAE	FIG-MARIGOLD FAMILY		
<i>Mesembryanthemum crystallinum</i> L.	crystalline iceplant	DL, DMSS	I
<i>Mesembryanthemum nodiflorum</i> L.	slender-leaved iceplant	DL, DMSS	I
<i>Tetragonia tetragonioides</i> (Pall.) Kuntze	New Zealand spinach	DMSS	I
AMARANTHACEAE	AMARANTH FAMILY		
<i>Amaranthus albus</i> L.	tumbleweed	DL, NNG	I
ANACARDIACEAE	SUMAC OR CASHEW FAMILY		
<i>Malosma laurina</i> Nutt. ex Abrams	laurel sumac	CSS, DCSS, MSS, DMSS	N
<i>Rhus integrifolia</i> (Nutt.) Benth. & Hook. f. ex Rothr.	lemonade berry	CSS, DCSS, MSS, DMSS, SWS	N
<i>Schinus molle</i> L.	Peruvian pepper tree	DL, SWS	I
APIACEAE (UMBELLIFERAE)	CARROT FAMILY		
<i>Apiastrum angustifolium</i> Nutt.	mock-parsley	CSS	N
<i>Daucus pusillus</i> Michx.	rattlesnake weed	CSS	N
<i>Eryngium aristulatum</i> Jeps. var. <i>parishii</i> (J.M. Coult. & Rose) Mathias & Constance	San Diego button-celery	V	N
<i>Foeniculum vulgare</i> Mill.	fennel	DCSS, NNG, DL	I
<i>Sanicula arguta</i> J.M. Coult. & Rose	sharp-tooth sanicle	CSS	N
ASTERACEAE	SUNFLOWER FAMILY		
<i>Amblyopappus pusillus</i> Hook. & Arn.	pineapple weed	NNG, DL	N

Attachment 4
Plant Species Observed

Scientific Name	Common Name	Habitat	Origin
<i>Ambrosia chenopodiifolia</i> (Benth.) Payne	San Diego bur-sage	CSS, MSS, DMSS, DL	N
<i>Ambrosia confertiflora</i> DC.	weak-leaf bur-sage	CSS, MSS, DMSS	N
<i>Ambrosia psilostachya</i> DC.	western ragweed	CSS	N
<i>Artemisia californica</i> Less.	California sagebrush	CSS, DCSS, MSS, DMSS	N
<i>Baccharis salicifolia</i> (Ruiz & Pav.) Pers. ssp. <i>salicifolia</i>	mule fat, seep-willow	CSS, DCSS, MFS, SWS	N
<i>Baccharis sarothroides</i> A. Gray	broom baccharis	CSS, DCSS	N
<i>Bahiopsis</i> [= <i>Viguiera</i>] <i>laciniata</i> (A. Gray) E.E. Schilling & Panero	San Diego viguiera, San Diego County viguiera	CSS, MSS	N
<i>Brickellia californica</i> (Torr. & A. Gray) A. Gray	California brickellbush	CSS	N
<i>Carduus pycnocephalus</i> L.	Italian thistle	DMSS, NNG	I
<i>Centaurea melitensis</i> L.	totalote, Maltese star-thistle	NNG, CSS, DCSS, MSS, DMSS	I
<i>Corethrogyne filaginifolia</i> [= all previously known <i>Lessingia filaginifolia</i> varieties in California] (Hook. & Arn.) Nutt.	California-aster, San Diego sand aster*, San Dieguito sand aster*	CSS	N
<i>Deinandra</i> [= <i>Hemizonia</i>] <i>conjugens</i>	Otay tarplant	MSS, DCSS	N
<i>Deinandra</i> [= <i>Hemizonia</i>] <i>fasciculata</i> (DC.) Greene	fascicled tarweed	NNG, MSS, CSS	N
<i>Dittrichia graveolens</i> (L.) Greuter	stinkwort	DCSS, DMSS, NNG	I
<i>Encelia californica</i> Nutt.	California encelia	CSS, DCSS	N
<i>Erigeron</i> [= <i>Conyza</i>] <i>bonariensis</i> L.	flax-leaved horseweed	DL, NNG	I
<i>Erigeron</i> [= <i>Conyza</i>] <i>canadensis</i> L.	horseweed	NNG, CSS, DCSS	N
<i>Eriophyllum confertiflorum</i> (DC.) A. Gray var. <i>confertiflorum</i>	long-stem golden-yarrow	CSS	N
<i>Glebionis coronaria</i> (L.) Spach [= <i>Chrysanthemum coronarium</i>]	garland, crown daisy	NNG, DL, DCSS	I
<i>Hazardia squarrosa</i> (Hook. & Arn.) Greene	saw-toothed goldenbush	CSS	N
<i>Hedypnois cretica</i> (L.) Dum. Cours.	crete weed	DL, NNG	I
<i>Helminthotheca</i> [= <i>Picris</i>] <i>echioides</i> (L.) Holub	bristly ox-tongue	CSS, DCSS	I
<i>Heterotheca grandiflora</i> Nutt.	telegraph weed	CSS, DCSS, DL	N
<i>Hypochaeris glabra</i> L.	smooth cat's-ear	CSS, NNG	I
<i>Isocoma menziesii</i> (Hook. & Arn.) G.L. Nesom	coastal goldenbush	CSS, DCSS	N

Attachment 4
Plant Species Observed

Scientific Name	Common Name	Habitat	Origin
<i>Isocoma menziesii</i> (Hook. & Arn.) G.L. Nesom var. <i>decumbens</i> (Greene) G.L. Nesom	decumbent goldenbush	CSS	N
<i>Lactuca serriola</i> L.	prickly lettuce	NNG, CSS, DL	I
<i>Lasthenia gracilis</i> (DC.) Greene [<i>L. californica</i> Lindley, misapplied in San Diego County]	common goldfields	NNG	N
<i>Logfia</i> [= <i>Filago</i>] sp.	herba impia	CSS, NNG	I
<i>Logfia</i> [= <i>Filago</i>] <i>gallica</i> (L.) Coss. & Germ.	daggerleaf cottonrose	CSS, NNG	I
<i>Matricaria discoidea</i> [= <i>Chamomilla suaveolens</i>] DC.	pineapple weed, rayless chamomile	CSS, MSS, NNG	N
<i>Oncosiphon piluliferum</i> (L. f.) Källersjö	stinknet, globe chamomile	DL, NNG	I
<i>Osmadenia tenella</i> Nutt.	osmadenia	NNG	N
<i>Pentachaeta aurea</i> Nutt. ssp. <i>aurea</i>	golden-ray pentachaeta	NNG	N
<i>Pseudognaphalium biolettii</i> Anderb. [= <i>Gnaphalium bicolor</i>]	bicolor cudweed	CSS	N
<i>Pseudognaphalium</i> [= <i>Gnaphalium</i>] <i>californicum</i> (DC.) Anderb.	California everlasting, green everlasting	CSS, NNG	N
<i>Psilocarphus brevissimus</i> Nutt. var. <i>brevissimus</i>	dwarf woollyheads	V	N
<i>Psilocarphus tenellus</i> Nutt.	slender woolly-marbles	V	N
<i>Senecio vulgaris</i> L.	common groundsel	DL, NNG	I
<i>Sonchus asper</i> (L.) Hill ssp. <i>asper</i>	prickly sow thistle	DL, NNG, CSS	I
<i>Sonchus oleraceus</i> L.	common sow thistle	DL, NNG	I
<i>Stephanomeria</i> sp.	wreath-plant	CSS	N
<i>Stephanomeria diegensis</i> Gottlieb	San Diego wreath-plant	CSS	N
<i>Uropappus lindleyi</i> (DC.) Nutt.	silver puffs	NNG	N
BORAGINACEAE	BORAGE FAMILY		
<i>Amsinckia</i> sp.	fiddleneck	NNG	N
<i>Amsinckia menziesii</i> (Lehm.) A. Nelson & J.F. Macbr.	common fiddleneck, small-flowered fiddleneck, rancher's fireweed	NNG, CSS	N
<i>Cryptantha</i> sp.	cryptantha	NNG	N
<i>Cryptantha intermedia</i> (A. Gray) Greene	nievitas cryptantha	NNG	N
<i>Eucrypta chrysanthemifolia</i> (Benth.) Greene	eucrypta	CSS	N
<i>Harpagonella palmeri</i> A. Gray	Palmer's grapplinghook	NNG	N
<i>Pectocarya linearis</i> (Ruiz & Pav.) DC. ssp. <i>ferocula</i> (I.M. Johnst.) Thorne	narrow-toothed pectocarya, comb-bur	CSS	N
<i>Phacelia</i> sp.	phacelia	CSS	N

Attachment 4
Plant Species Observed

Scientific Name	Common Name	Habitat	Origin
<i>Phacelia cicutaria</i> Greene var. <i>hispida</i> (A. Gray) J.T. Howell	caterpillar phacelia	CSS	N
<i>Phacelia distans</i> Benth.	wild-heliotrope	CSS	N
<i>Phacelia minor</i> (Harvey) Thell. ex F. Zimm.	wild canterbury bells	CSS	N
<i>Pholistoma racemosum</i> (Nutt. ex A. Gray) Constance	San Diego fiesta flower, pholistoma	NNG, CSS	N
<i>Plagiobothrys</i> sp.	popcornflower	NNG	N
<i>Plagiobothrys acanthocarpus</i> (Piper) I.M. Johnst.	adobe popcornflower	NNG	N
<i>Plagiobothrys collinus</i> (Phil.) I.M. Johnst.	valley popcornflower	NNG	N
BRASSICACEAE (CRUCIFERAE)	MUSTARD FAMILY		
<i>Brassica nigra</i> (L.) W.D.J. Koch	black mustard	NNG, DL, CSS, DCSS	I
<i>Brassica tournefortii</i> Gouan	Sahara mustard	NNG, DL	I
<i>Descurainia pinnata</i> (Walter) Britton	tansy-mustard	CSS, MSS	N
<i>Hirschfeldia incana</i> (L.) Lagr.-Fossat	short-pod mustard	NNG, CSS, DCSS	I
<i>Lepidium latipes</i> Hook.	San Diego pepperweed	NNG, DL	I
<i>Lepidium nitidum</i> Nutt.	shining peppergrass	CSS	N
<i>Raphanus sativus</i> L.	radish	DL, NNG	I
<i>Sisymbrium</i> sp.	mustard	NNG	I
<i>Sisymbrium irio</i> L.	London rocket	NNG, DCSS	I
CACTACEAE	CACTUS FAMILY		
<i>Cylindropuntia californica</i> (Torr. & A. Gray) F.M. Knuth var. <i>californica</i>	snake cholla	MSS	N
<i>Cylindropuntia [=Opuntia] prolifera</i> (Engelm.) F.M. Knuth	coast cholla	MSS	N
<i>Ferocactus viridescens</i> (Torr. & A. Gray) Britton & Rose	San Diego barrel cactus, coast barrel cactus*	MSS	N
<i>Mammillaria dioica</i> K. Brandegee	fish-hook cactus	MSS	N
<i>Opuntia littoralis</i> (Engelm.) Cockerell.	coast prickly-pear, shore cactus	CSS, MSS	N
CARYOPHYLLACEAE	PINK FAMILY		
<i>Cardionema ramosissimum</i> (Weinm.) A. Nelson & J.F. Macbr.	tread lightly	CSS	N
<i>Silene gallica</i> L.	small-flower catchfly, windmill pink	CSS	I
<i>Spergularia bocconi</i> (Scheele) Graebn.	Boccone's sand-spurrey	NNG	I
<i>Stellaria</i> sp.	chickweed	NNG	I

Attachment 4
Plant Species Observed

Scientific Name	Common Name	Habitat	Origin
CHENOPODIACEAE	GOOSEFOOT FAMILY		
<i>Atriplex canescens</i> (Pursh) Nutt.	four-wing saltbush, shad-scale	DMSS	N
<i>Atriplex pacifica</i> A. Nelson	south coast saltscale, south coast saltbush*	MSS, DMSS	N
<i>Atriplex semibaccata</i> R. Br.	Australian saltbush	DL, NNG	I
<i>Chenopodium murale</i> L.	nettle-leaf goosefoot	DL, NNG	I
<i>Salsola tragus</i> L.	Russian thistle, tumbleweed	DL, NNG, DCSS	I
CLEOMACEAE	SPIDERFLOWER FAMILY		
<i>Peritoma [=Isomeris] arborea</i> (Nutt.) H. H. Iltis	bladderpod	CSS	N
CONVOLVULACEAE	MORNING-GLORY FAMILY		
<i>Convolvulus arvensis</i> L.	bindweed, orchard morning-glory	CSS	I
<i>Cressa truxillensis</i> Kunth	alkali weed	V	N
<i>Dichondra occidentalis</i>	western dichondra	MMS	N
CRASSULACEAE	STONECROP FAMILY		
<i>Crassula aquatica</i> (L.) Schönl.	water pygmy-weed, stone-crop	V	N
<i>Crassula connata</i> (Ruiz & Pav.) A. Berger	pygmy-weed	V	N
<i>Dudleya pulverulenta</i> (Nutt.) Britton & Rose	chalk lettuce, chalk dudleya	CSS, MSS	N
<i>Dudleya variegata</i> (S. Watson) Moran	variegated dudleya	CSS, MSS	N
CUCURBITACEAE	GOURD FAMILY		
<i>Marah macrocarpa</i> (Greene) Greene	wild cucumber	CSS	N
EUPHORBIACEAE	SPURGE FAMILY		
<i>Croton [=Eremocarpus] setiger</i> Hook.	turkey-mullein, dove weed	DL, NNG	N
<i>Euphorbia misera</i> Benth.	cliff spurge	MSS	N
<i>Euphorbia [=Chamaesyce] polycarpa</i> Benth.	smallseed sandmat	CSS	N
<i>Ricinus communis</i> L.	castor bean	DL, NNG, DCSS, MFS, SWS	I
FABACEAE (LEGUMINOSAE)	LEGUME FAMILY		
<i>Acmispon glaber</i> (Vogel) Brouillet [=Lotus scoparius]	deerweed, California broom	CSS	N
<i>Astragalus trichopodus</i> (Nutt.) A. Gray var. <i>lonchus</i> (M.E. Jones) Barneby	ocean locoweed	CSS	N
<i>Lupinus concinnus</i> J. Agardh	bajada lupine	NNG	N
<i>Medicago polymorpha</i> L.	California burclover	DL, NNG	I

Attachment 4
Plant Species Observed

Scientific Name	Common Name	Habitat	Origin
<i>Melilotus</i> sp.	sweetclover	DL, NNG	I
<i>Melilotus indicus</i> (L.) All.	sourclover	DL, NNG	I
<i>Trifolium willdenovii</i> Spreng.	tomcat clover	NNG	N
GENTIANACEAE	GENTIAN FAMILY		
<i>Zeltnera [=Centaurium] venusta</i> (A. Gray) G. Mans.	California centaury, charming centaury	NNG	N
GERANIACEAE	GERANIUM FAMILY		
<i>Erodium botrys</i> (Cav.) Bertol.	long-beak filaree	DL, NNG	I
<i>Erodium cicutarium</i> (L.) L'Hér. ex Aiton	redstem filaree	DL, NNG, DCSS, CSS, MSS, DMSS	I
<i>Erodium moschatum</i> (L.) L'Hér. ex Aiton	greenstem filaree	DL, NNG	I
LAMIACEAE	MINT FAMILY		
<i>Marrubium vulgare</i> L.	horehound	NNG, DCSS	I
<i>Salvia apiana</i> Jeps.	white sage	CSS	N
<i>Salvia mellifera</i> Greene	black sage	CSS	N
LYTHRACEAE	LOOSESTRIFE FAMILY		
<i>Lythrum hyssopifolia</i> L.	grass poly, hyssop loosestrife	V	I
MALVACEAE	MALLOW FAMILY		
<i>Malva parviflora</i> L.	cheeseweed, little mallow	DL, NNG	I
MONTIACEAE	MONTIA FAMILY		
<i>Cistanthe maritima</i> [=Calandrinia maritima] (Nutt.) Hershk.	seaside cistanthe, seaside calandrinia*	MSS	N
<i>Claytonia perfoliata</i> Donn ex Willd.	miner's lettuce	CSS, MSS	N
MYRTACEAE	MYRTLE FAMILY		
<i>Eucalyptus</i> sp.	gum tree	DL	I
<i>Eucalyptus conferruminata</i> D.J. Carr & S.G.M. Carr	spider gum	DL	I
<i>Eucalyptus globulus</i> Labill.	blue gum	EUC	I
<i>Eucalyptus sideroxylon</i> A. Cunn. ex Woolls	red iron bark	DL	I
MYRSINACEAE	MYRSINE FAMILY		
<i>Lysimachia [=Anagallis] arvensis</i> (L.) U. Manns & Anderb.	scarlet pimpernel	DL, NNG	I

Attachment 4
Plant Species Observed

Scientific Name	Common Name	Habitat	Origin
<i>Mirabilis laevis</i> [= <i>Mirabilis californica</i>] (Benth.) Curran var. <i>crassifolia</i> (Choisy) Spellenb.	wishbone bush	CSS, MSS	N
OLEACEAE	OLIVE FAMILY		
<i>Olea europaea</i> L.	olive	DL	I
OXALIDACEAE	OXALIS FAMILY		
<i>Oxalis pes-caprae</i> L.	Bermuda buttercup	DL, NNG, CSS	I
PAPAVERACEAE	POPPY FAMILY		
<i>Papaver heterophyllum</i> (Benth.) Greene [= <i>Stylomecon heterophylla</i>]	wind poppy	NNG, MSS	N
PHYTOLACCACEAE	POKEWEED FAMILY		
<i>Phytolacca americana</i> L.	pokeweed, pokeberry, pigeonberry	DL, NNG	I
PLANTAGINACEAE	PLANTAIN FAMILY		
<i>Nuttallanthus texanus</i> (Scheele) D.A. Sutton [= <i>Linaria canadensis</i>]	blue toadflax	NNG	N
<i>Plantago erecta</i> E. Morris	dot-seed plantain	NNG	N
POLEMONIACEAE	PHLOX FAMILY		
<i>Gilia</i> sp.	gilia	NNG	N
<i>Gilia angelensis</i> V.E. Grant	chaparral gilia	NNG	N
<i>Linanthus dianthiflorus</i> (Benth.) Greene	farinose ground pink	CSS	N
<i>Navarretia hamata</i> Greene	hooked navarretia	CSS, MSS	N
POLYGONACEAE	BUCKWHEAT FAMILY		
<i>Chorizanthe</i> sp.	spineflower	CSS	N
<i>Eriogonum fasciculatum</i> Benth.	California buckwheat	CSS, DCSS	N
<i>Pterostegia drymarioides</i> Fisch. & C.A. Mey.	California thread-stem, granny's hairnet	NNG	N
<i>Rumex crispus</i> L.	curly dock	DL	I
RHAMNACEAE	BUCKTHORN FAMILY		
<i>Adolphia californica</i> S. Watson	California adolphia, spineshrub, San Diego adolphia*	MSS	N
ROSACEAE	ROSE FAMILY		
<i>Heteromeles arbutifolia</i> (Lindl.) M. Roem.	toyon, Christmas berry	CSS	N

Attachment 4
Plant Species Observed

Scientific Name	Common Name	Habitat	Origin
RUBIACEAE	MADDER FAMILY		
<i>Galium angustifolium</i> Nutt. ex A. Gray ssp. <i>angustifolium</i>	narrow-leaf bedstraw	NNG	N
<i>Galium aparine</i> L.	stickywilly	NNG, CSS	N
SALICACEAE	WILLOW FAMILY		
<i>Salix lasiolepis</i> Benth.	arroyo willow	MFS, SWS	N
SIMMONDSIACEAE	JOJOBA FAMILY		
<i>Simmondsia chinensis</i> (Link) C.K. Schneid.	jojoba, goatnut	MSS, DMSS	N
SOLANACEAE	NIGHTSHADE FAMILY		
<i>Lycium andersonii</i> A. Gray	waterjacket	CSS, MSS	N
<i>Lycium californicum</i> Nutt.	California box-thorn, California lycium	MSS	N
<i>Nicotiana attenuata</i> Torr. ex S. Watson	coyote tobacco	MSS	N
<i>Nicotiana glauca</i> Graham	tree tobacco	DL, MFS, NNG	I
<i>Solanum americanum</i> Mill.	white nightshade	CSS	N
<i>Solanum parishii</i> A. Heller	Parish's nightshade	CSS	N
TAMARICACEAE	TAMARISK FAMILY		
<i>Tamarix ramosissima</i> Ledeb.	saltcedar	DL, MFS, SWS	I
URTICACEAE	NETTLE FAMILY		
<i>Parietaria hespera</i> Hinton var. <i>californica</i> Hinton	California pellitory	MSS	N
<i>Urtica urens</i> L.	dwarf nettle	DL	I
VERBENACEAE	VERVAIN FAMILY		
<i>Verbena menthifolia</i> Benth.	mint-leaf vervain	CSS	N

Attachment 4
Plant Species Observed

Scientific Name	Common Name	Habitat	Origin
<p><i>Notes:</i> Scientific and common names were primarily derived from the Jepson Online Interchange (University of California 2018). In instances where common names were not provided in this resource, common names were obtained from Rebman and Simpson (2014). Additional common names were obtained from the USDA maintained database (USDA 2013) or the Sunset Western Garden Book (Brenzel 2001) for ornamental/horticultural plants.</p>			
<p>HABITATS</p> <p>CSS = Diegan coastal sage scrub</p> <p>DCSS = disturbed Diegan coastal sage scrub</p> <p>DEV = urban/developed</p> <p>DL = disturbed land</p> <p>DMSS = disturbed maritime succulent scrub</p> <p>EUC = eucalyptus woodland</p> <p>MFS = mule fat scrub</p> <p>MSS = maritime succulent scrub</p> <p>NNG = non-native grassland</p> <p>SWS = southern willow scrub</p> <p>V = vernal pools</p> <p>W = wetlands</p>		<p>ORIGIN</p> <p>N = Native to locality</p> <p>I = Introduced species from outside locality</p>	

ATTACHMENT 5

Jurisdictional Resource Delineation for the Southwest Village Specific Plan

ATTACHMENT 6

Wildlife Species Observed

ATTACHMENT 7

Sensitive Plant Species Observed or with the
Potential to Occur within the Program-level and Project-level
Analysis Areas

ATTACHMENT 8

Sensitive Wildlife Species Observed or with the Potential to
Occur within the Program-level and Project-level Analysis
Areas

ATTACHMENT 9

Southwest Village Specific Development Project: 2023 Quino Checkerspot Butterfly Survey Report

ATTACHMENT 10

U.S. Fish and Wildlife Service Letters

ATTACHMENT 10a

U.S. Fish and Wildlife Service Letter to City of San Diego,
Dated January 31, 2025

*Multi-Habitat Planning Area Boundary Line Adjustment and
Biologically Superior Option Wetland Deviation for the
Southwest Village Specific Plan, Project 614791, San Diego,
California*

ATTACHMENT 10b

U.S. Fish and Wildlife Service Letter to City of San Diego,
Dated September 4, 2024

*Conceptual Conservation Strategy and Regulatory Approach
for the Tri Pointe Homes Southwest Village Specific Plan
Project in the City of San Diego, California*

ATTACHMENT 11

Southwest Village Specific Plan – Beyer Boulevard Alternatives Analysis Update Memo

ATTACHMENT 12

Geotechnical Study, Southwest Village Emergency Vehicle Access Road

ATTACHMENT 13

Coastal Cactus Wren Mitigation Plan for the Southwest Village Specific Plan Project

ATTACHMENT 14

Vernal Pool and Quino Checkerspot Butterfly Mitigation Plan for the Southwest Village Specific Plan

ATTACHMENT 15

Otay Tarplant and Native Grassland Mitigation Plan for the Southwest Village Specific Plan Project

ATTACHMENT 16

Long-Term Management and Monitoring Plan for the Beyer Boulevard Extension Wildlife Movement Features

ATTACHMENT 17

Vernal Pool and Quino Checkerspot Butterfly Habitat Management Plan for the Southwest Village Specific Plan Project

ATTACHMENT 18

Wetland Mitigation Plan for the Southwest Village Specific Plan

ATTACHMENT 19

Conservation Easement Deed