

# Appendix D.1

## Biological Assessment MBI, 2022

Travertine SPA  
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Technical Appendices

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October 2023

# TRAVERTINE PROJECT

CITY OF LA QUINTA, COUNTY OF RIVERSIDE, CALIFORNIA

## Biological Resources Assessment

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March 2022  
JN 182517



# TRAVERTINE PROJECT

CITY OF LA QUINTA, COUNTY OF RIVERSIDE, CALIFORNIA

## Biological Resources Assessment

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The undersigned certify that the statements furnished in this report and exhibits present data and information required for this biological evaluation, and the facts, statements, and information presented is a complete and accurate account of the findings and conclusions to the best of our knowledge and beliefs.



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Tom Millington  
Senior Biologist



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March 2022  
JN 182517

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## **ACRONYMS AND ABBREVIATIONS**

° F	degrees Fahrenheit
amsl	above mean sea level
BLM	Bureau of Land Management
BO	Biological Opinion
CDFW	California Department of Fish and Wildlife
CDNPA	California Desert Native Plants Act
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGF	California Fish and Game Code
CIRP	California Inventory of Rare and Endangered Plants
CNDDB	California Natural Diversity Database RareFind 5
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CVAG	Coachella Valley Association of Governments
CVCC	Coachella Valley Conservation Commission
CVMSHCP	Coachella Valley Multiple Species Habitat Conservation Plan/Natural Community Conservation Plan
CVWD	Coachella Valley Water District
CWA	federal Clean Water Act
DDWW	Desert Dry Wash Woodland
FESA	federal Endangered Species Act
FE	federally Endangered
FP	Fully Protected
FT	federally Threatened
GIS	Geographic Information System
IPaC	Information for Planning and Consultation Project Planning Tool
JPR	Joint Project Review
MBTA	Migratory Bird Treaty Act
Michael Baker	Michael Baker International
mph	miles per hour
OCH	Other Conserved Habitat
NPDES	National Pollutant Discharge Elimination System
PA	Planning Area
project	Travertine Project
PWS	Professional Wetland Scientist

RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SE	State Endangered
SRSJM	Santa Rosa and San Jacinto Mountains
SSC	Species of Special Concern
ST	State Threatened
SWPPP	Stormwater Pollution Prevention Plan
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WDR	Waste Discharge Requirements
WEAP	Worker Environmental Awareness Program
WL	Watch List
WoS	waters of the State
WoUS	waters of the U.S.

# Section 1 Introduction

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This report contains the findings of Michael Baker International's (Michael Baker) biological resources assessment for the proposed Travertine Project (project or project site). Michael Baker biologists conducted a field survey/habitat assessment on February 17 and 24, 2022, and again on March 03, 2022. The field surveys were conducted to characterize existing site conditions and assess the potential for special-status<sup>1</sup> biological resources to occur within the project site that could pose a constraint to implementation of the proposed project. Special attention was given to the suitability of habitats within the project site and their potential to support special-status biological resources that were identified during reviews of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database RareFind 5 (CNDDDB; CDFW 2022a), the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California (CIRP; CNPS 2022), and the U.S. Fish and Wildlife Service (USFWS) online Information for Planning and Consultation Project Planning Tool (IPaC; USFWS 2022a), and other databases as potentially occurring in the vicinity of the project site.

## 1.1 PROJECT LOCATION

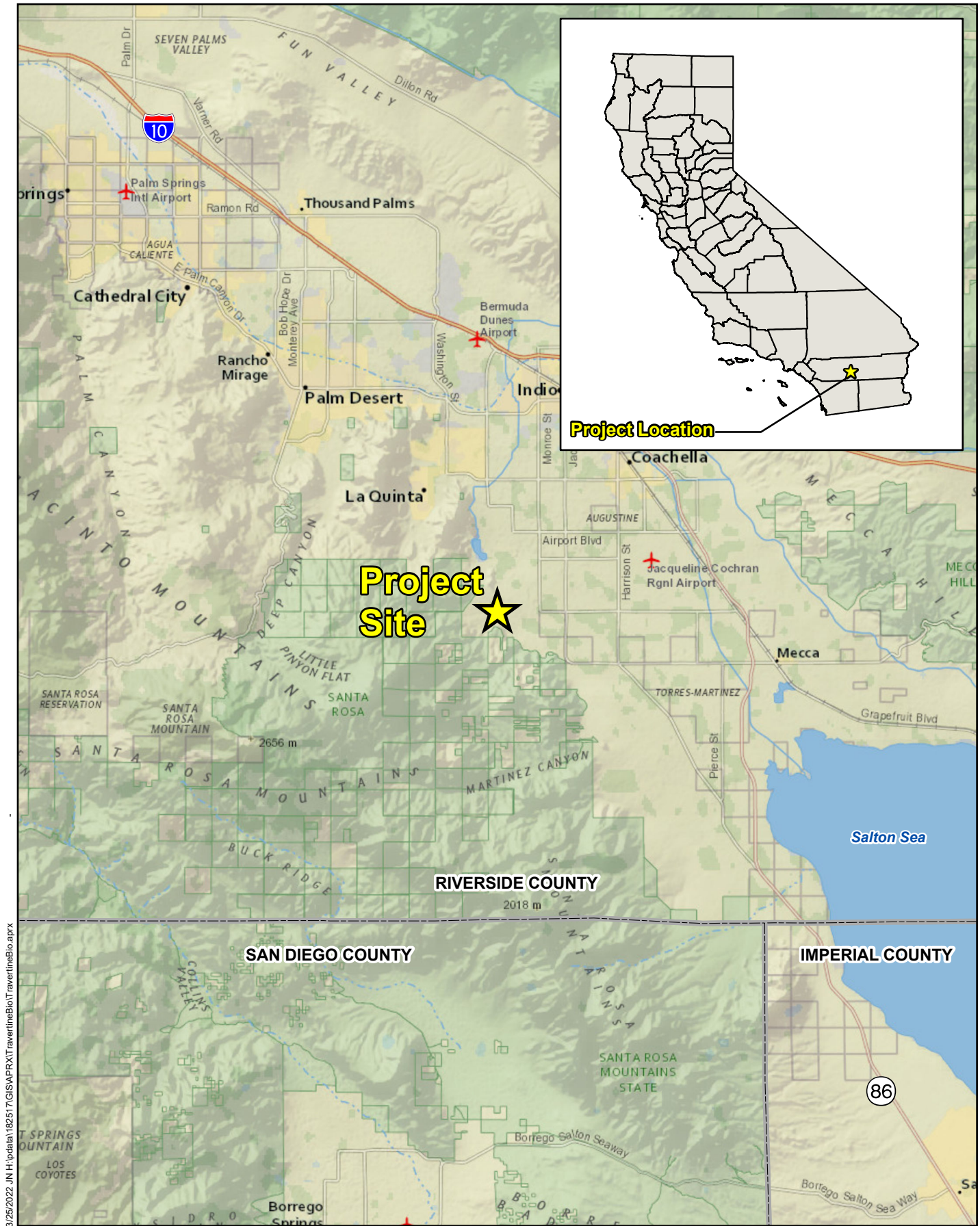
The project site is generally located north of the Martinez Mountains and south of Avenue 58 in the City of La Quinta, County of Riverside, California (refer to Figure 1, *Regional Vicinity*). The project site is depicted in the northeast quarter of the United States Geological Survey's (USGS) *Martinez Mountain, California* 7.5-minute quadrangle in Section 32, 33, and 34 of Township 6 South, Range 7 East and in Section 4, 5, and 5 of Township 7 South, Range 7 East (refer to Figure 2, *Project Vicinity*). The project site is located adjacent to the Martinez Rockslide and the Santa Rosa Mountains and is comprised of undeveloped land and a historic vineyard including unimproved dirt roads (refer to Figure 3, *Project Site*).

## 1.2 PROJECT DESCRIPTION

The proposed Specific Plan Amendment covers an area of approximately 969 acres. The proposed project will be comprised of a variety of land uses. Residential land uses will range from low density (1.5 to 4.5 dwelling units per acre) to medium density (4.5 to 8.5 dwelling units per acre) and total 1,200 residential units. A resort/spa facility located in Planning Area (PA) 1 will serve residents, tourists and recreational visitors and feature a 45,000-square-foot boutique hotel with a 175-seat restaurant, 97,500 square feet of resort lodging to allow 100 villas. An 8,700 square foot spa and wellness center will offer activities to include yoga, tennis, walking and hiking trails. Additional associated features associated with the project include a well field and substation, described herein.

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<sup>1</sup> As used in this report, "special-status" refers to species that are either federally-/State-listed, proposed, or candidates; species that have been designated a California Rare Plant Rank by the California Native Plant Society; species designated as Fully Protected, Species of Special Concern, or Watch List by the California Department of Fish and Wildlife; State/locally rare vegetation communities; or species covered under the Coachella Valley Multiple Species Habitat Conservation Plan/Natural Communities Conservation Plan.

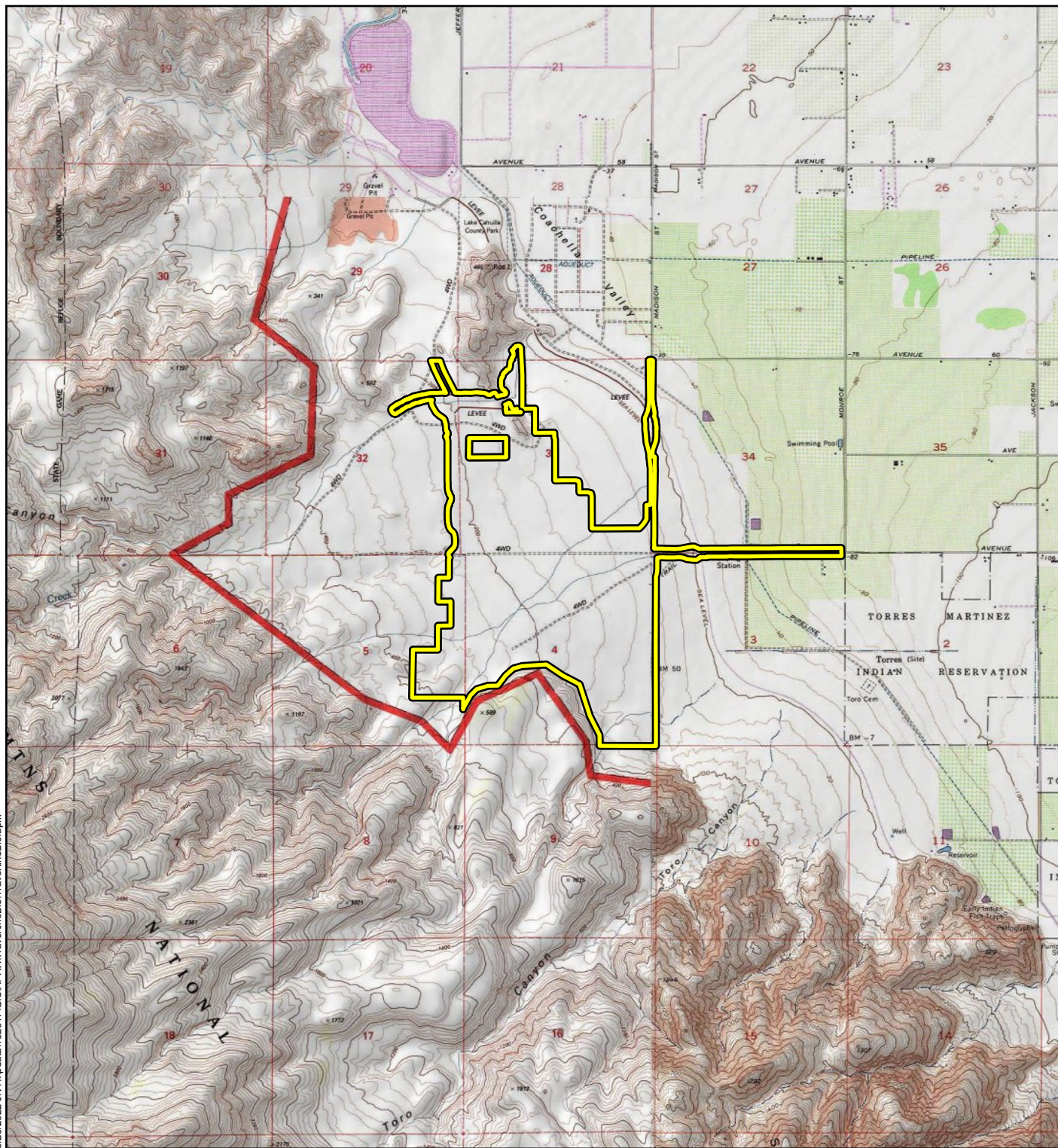


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### Legend

-  Project Site (969.02 acres)
-  Federal Boundary

**Michael Baker**  
INTERNATIONAL



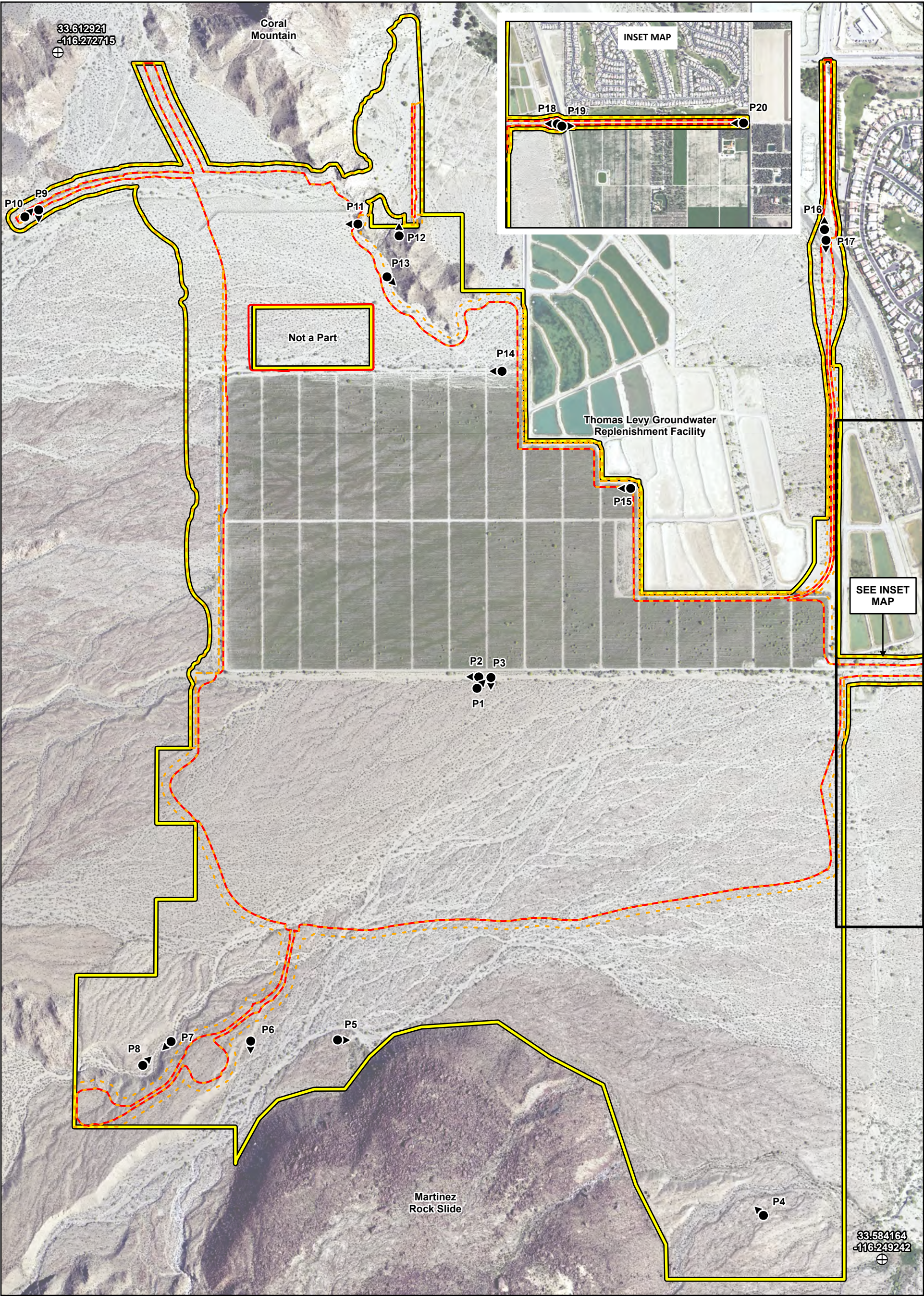
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Source: USGS 7.5-Minute topographic quadrangle maps: Martinez Mountain, California (2018)

## TRAVERTINE PROJECT BIOLOGICAL RESOURCES ASSESSMENT Site Vicinity

Figure 2





**Legend**

Project Site (969.02 acres)	Permanent Impact Area (553.14 acres)
Photograph Point and Direction	Temporary Impact Area (123.59 acres)
Reference Point	

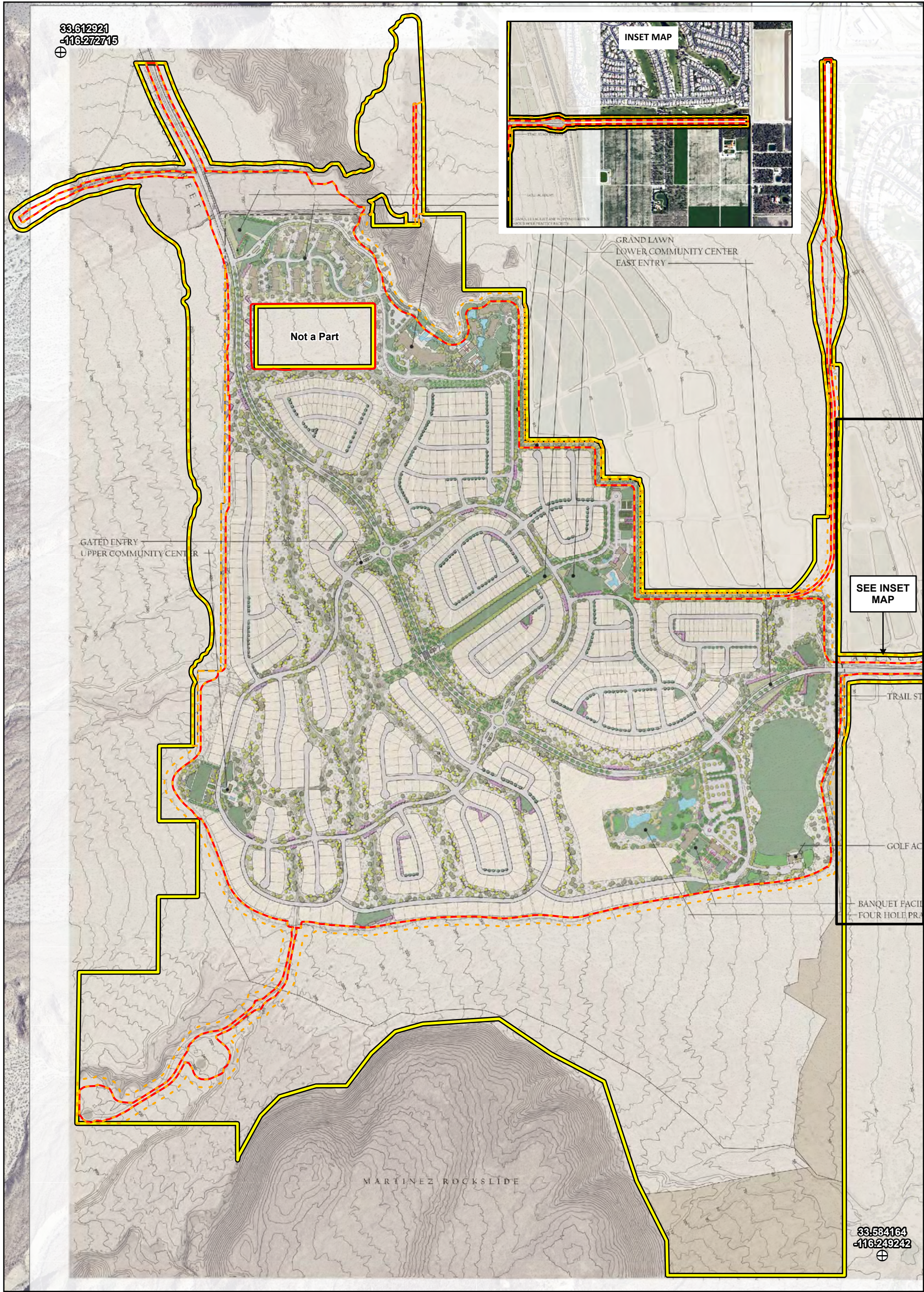


A 4-hole golf practice facility with clubhouse is located in PA-11 adjacent to a banquet and restaurant facility that will be shared with the wedding garden facilities. The private golf training academy is located in the southeastern corner of the project area. A public driving range, putting course with restaurant and bar, pro-shop and tracking bays will serve the daily needs of the community and its visitors in PA-19 (refer to Figure 4, *Conceptual Design Plan*). The project components shall include:

- 1,200 Dwelling Units of varying types
  - 758 Low Density Units and 442 Medium Density Units
  - Estate Homes, Single Family Luxury Homes, Single Family Mid Homes, Single Family Entry Homes, Patio Homes, Single Family Attached Units
- Golf training facility with public Driving Range, 4-hole practice facility, and private golf training academy
- Putting course with restaurant and bar
- Wedding garden and banquet facilities
- 100-villa resort
- Wellness Spa
- Tourist serving recreational facilities and amenities including restaurants, small shops, spa facilities, lounge and activity rooms, outdoor activities, tennis, yoga, etc.
- Bike lanes throughout community, including Class II bike lanes located along both sides of Jefferson Street
- Pedestrian walkways and a Travertine community trail – a network of trails suitable for pedestrian use planned throughout the community
- Recreational Open Space uses, including picnic tables, barbeques, golf practice facilities, a tot lot playground, and staging facilities for the regional interpretive trail
- Two community parks for residents
- One staging area located to the south of the Avenue 62 extension with parking
- Coachella Valley Water District (CVWD) Well Sites (quantity to be determined by CVWD)
- Future 5-acre substation will be located off-site within a 2.5-mile radius of the project area.
- Perimeter flood protection barrier along the western and southern boundaries to manage alluvial fan flows. The barrier will consist of a raised edge condition with a slope lining to protect against scour and erosion.
- Two booster stations. One facility located on Avenue 62 and Monroe, and the second to be located within the project site.



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**Legend**

Project Site (969.02 acres)	Permanent Impact Area (553.14 acres)
Reference Point	Temporary Impact Area (123.59 acres)



## Section 2 Methodology

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Michael Baker conducted thorough literature reviews and records searches to determine which special-status biological resources have the potential to occur on or within the general vicinity of the project site prior to conducting the field surveys. General habitat assessments or field surveys were conducted to document existing conditions and determine the potential for special-status plant and wildlife species to occur within the project site.

### 2.1 LITERATURE REVIEW

Prior to conducting the field surveys, literature reviews and records searches were conducted for special-status biological resources<sup>2</sup> potentially occurring on or within the vicinity of the project site. Special-status plant and wildlife occurrence records within the USGS *Indio*, *La Quinta*, *Martinez Mtn*, and *Valerie*, *California* 7.5-minute quadrangles were identified through a query of the CNDDB (CDFW 2022a), CIRP (CNPS 2022), and the Calflora Database (Calflora 2022), and for the project region through a review of IPaC (USFWS 2022a). Additionally, those species covered under the Coachella Valley Multiple Species Habitat Conservation Plan/Natural Community Conservation Plan (CVMSHCP) were identified and reviewed.

The current regulatory/conservation status of special-status plant and wildlife species was verified through lists and resources provided by the CDFW, specifically the *Special Animals List* (CDFW 2022b), *State and Federally Listed Endangered and Threatened Animals of California* (CDFW 2022c), *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2022d), and *State and Federally Listed Endangered, Threatened, and Rare Plants of California* (CDFW 2022e). USFWS-designated Critical Habitat for species listed under the federal Endangered Species Act (FESA) was reviewed online via the Critical Habitat Mapper (USFWS 2022b).

In addition to the databases referenced above, Michael Baker reviewed available reports, survey results, and literature detailing the biological resources previously observed on or within the vicinity of the project site to understand existing site conditions, confirm previous species observations, and note the extent of any disturbances, if present, that have occurred in the project site that would otherwise limit the distribution of special-status biological resources. Standard field guides and texts were reviewed for specific habitat requirements of special-status and non-special-status biological resources. Aerial photography was also reviewed prior to the field survey to locate potential natural corridors and linkages that may support the movement of wildlife through the area.

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<sup>2</sup> As used in this report, “special-status” refers to species that are either federally-/State-listed, proposed, or candidates; species that have been designated a California Rare Plant Rank by the California Native Plant Society; species designated as Fully Protected, Species of Special Concern, or Watch List by the California Department of Fish and Wildlife; State/locally rare vegetation communities; or species covered under the Coachella Valley Multiple Species Habitat Conservation Plan.

On-site and adjoining soils were researched prior to conducting the habitat assessment using the United States Department of Agriculture (USDA) *Custom Soil Resource Report for Anza-Borrego Area, California and Riverside County, Coachella Valley Area, California* (USDA 2022). In addition, a review of the local geological conditions and historical aerial photographs (Google, Inc. 2022) was conducted to assess the ecological changes and disturbances that may have occurred within the project site.

The literature review provided a baseline from which to inventory the existing biological resources and evaluate the suitability of the project site to support special-status biological resources. Additional occurrence records of those species that have been documented on or within the vicinity of the project site were derived from database queries. The CNDDDB was used in conjunction with GIS ArcView software to identify the locations of special-status species occurrence records identified within the USGS *Indio, La Quinta, Martinez Mtn, and Valerie, California 7.5-minute quadrangles*. Refer to Section 5 for a complete list of technical references that were reviewed by Michael Baker.

## 2.2 FIELD SURVEY/HABITAT ASSESSMENT

Michael Baker biologists and regulatory specialists conducted a biological field survey/habitat assessment on February 17, 2022, to document existing conditions and assess the potential for special-status biological resources to occur within the boundaries of the project site. Additional field surveys were conducted by Michael Baker on February 24 and March 3, 2022. All field surveys were conducted in accordance with applicable protocols and in a way to maximize the detectability of special-status species that may be present within the project site during the time of the survey. No limitations or access restrictions were encountered by Michael Baker during the field surveys. Based on a review of the survey requirements set forth in the CVMSHCP, results of previous biological studies, and coordination with the USFWS, focused surveys for special-status species, including desert tortoise (*Gopherus agassizii*; federally and State Threatened [FE; ST] species), Peninsular bighorn sheep (*Ovis canadensis nelsoni*; federally Endangered [FE], ST and State Fully Protected [FP] species), and burrowing owl (*Athene cunicularia*; State Species of Special Concern [SSC]), were not conducted. Refer to Table 1 below for a summary of specific field survey dates, times, surveyors, and weather conditions.

**Table 1: Survey Dates, Timing, Surveyors, and Weather Conditions**

Date	Time (start / finish)	Surveyors	Weather Conditions (start / finish)	
			Temperature (°F)	Wind Speed (mph)
02/17/2022	0800 / 1500	Trina Ming, April Nakagawa, Lauren Mapes, Tim Tidwell	63 / 73	3 - 10
02/24/2022	0900 / 1430	Trina Ming, April Nakagawa, Lauren Mapes, Tom Millington	57 / 74	1 - 4
03/03/2022	0800 / 1515	Trina Ming, April Nakagawa, Lauren Mapes, Tom Millington	67 / 83	1 - 2

Vegetation communities preliminarily identified on aerial photographs during the literature review were verified in the field by walking meandering transects through the vegetation communities and along boundaries between vegetation communities. Naturally-vegetated areas typically have a higher potential to support special-status plant and wildlife species than areas that are highly disturbed or developed, which have lower quality and/or reduced amounts of suitable habitat for plants and wildlife. All plant and wildlife species observed during the field surveys, as well as dominant plant species within each vegetation community, were recorded in a field notebook. In addition, site characteristics such as soil condition, topography, hydrology, anthropogenic disturbances, indicator species, and the overall condition of on-site vegetation communities were recorded.

## **2.3 VEGETATION COMMUNITIES**

Vegetation communities occurring within the project site were delineated on an aerial photograph during the field surveys and later digitized using the ArcView Geographic Information System (GIS) software to quantify the area of each vegetation community in acres. Vegetation communities occurring within the project site were classified in accordance with descriptions provided in the *Manual of California Vegetation* (Sawyer et al. 2009). For communities that did not meet membership rules within the *Manual of California Vegetation*, natural community descriptions from the CVMSHCP were used. Additionally, any vegetation communities occurring on-site that are listed by CDFW as a California Sensitive Natural Community (CDFW 2021) are identified in the vegetation community descriptions provided in Section 3.2 of this report.

## **2.4 PLANTS**

Plant species observed during the field surveys were identified by visual characteristics and morphology in the field and recorded in a field notebook. Unfamiliar plants were photographed in the field and later identified in the laboratory using taxonomic guides. Plant nomenclature used in this report follows the *Jepson Manual: Vascular Plants of California, Second Edition* (Baldwin et al. 2012). In this report, scientific names are provided immediately following common names of plant species (first reference only).

## **2.5 WILDLIFE**

Wildlife species detected during the field surveys by sight, calls, tracks, scat, or other types of evidence were recorded in a field notebook. Field guides used to assist with identification of species during the habitat assessment included *The Sibley Guide to Birds* (Sibley 2014) for birds, *A Field Guide to Western Reptiles and Amphibians* (Stebbins 2003) for herpetofauna, and *A Field Guide to Mammals of North America* (Reid 2006). Although common names of wildlife species are well standardized, scientific names are provided immediately following common names of wildlife species in this report (first reference only). To the extent possible, nomenclature of birds follows the most recent annual supplement of the American Ornithological Union's *Checklist of North American Birds* (Chesser et al. 2019), nomenclature of amphibians and reptiles follows *Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments Regarding Confidence in Our Understanding* (Crother 2017), and nomenclature

for mammals follows the *Bats of the United States and Canada* (Harvey et al. 2011) and *Revised Checklist of North American Mammals North of Mexico* (Bradley et al. 2014).

## **2.6 OTHER STUDIES**

### **2.6.1 DELINEATION OF STATE AND FEDERAL JURISDICTIONAL WATERS**

Michael Baker certified wetland delineators Josephine Lim, Professional Wetland Scientist (PWS), and Tim Tidwell, PWS, conducted a jurisdictional delineation for the proposed project on February 2, 3, 10, 19, and 24, 2021 to identify and map the extent of waters of the U.S. (WoUS), including potential wetlands, and waters of the State (WoS) within the boundaries of the project site. During the field delineation, Michael Baker utilized the methods outlined in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0* (United States Army Corps of Engineers [USACE] 2008) to document the presence and extent of jurisdictional features that would fall under the regulatory authority of the USACE, the Regional Water Quality Control Board (RWQCB), and the CDFW. The results of Michael Baker's jurisdictional delineation are provided within the *Delineation of State and Federal Jurisdictional Waters for the Travertine Project* (Michael Baker 2021), prepared under separate cover, and summarized in Section 3.5 of this report.



## Section 3 Results

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The project site is located within the southeast corner of the City of La Quinta, north of Martinez Rock Slide and the Santa Rosa Mountains. The project site is approximately 969 acres in size and is mainly comprised of undeveloped land and a historic vineyard including unimproved dirt roads. The topography of the project site is generally flat with rolling hills and desert washes that include natural communities comprised of rocky soils. The project site is surrounded by steep, rocky slopes to the south and west, and a small rocky outcropping to the north. Based on a review of Google Earth historical aerial imagery, there has been no change within the project site since 1985 (Google, Inc. 2022). Representative photographs taken throughout the project site are included in Appendix A, with the location and direction of each photograph depicted on Figure 3, *Project Site*. Land uses surrounding the project site to the south and west consist primarily of vacant land that transitions into the Martinez Rock Slide and the Santa Rosa Mountains. Vacant land under the Bureau of Land Management (BLM) management occurs along the western border and the existing Thomas E. Levy Groundwater Replenishment Facility and residential developments occur along the northeast border of the project site.

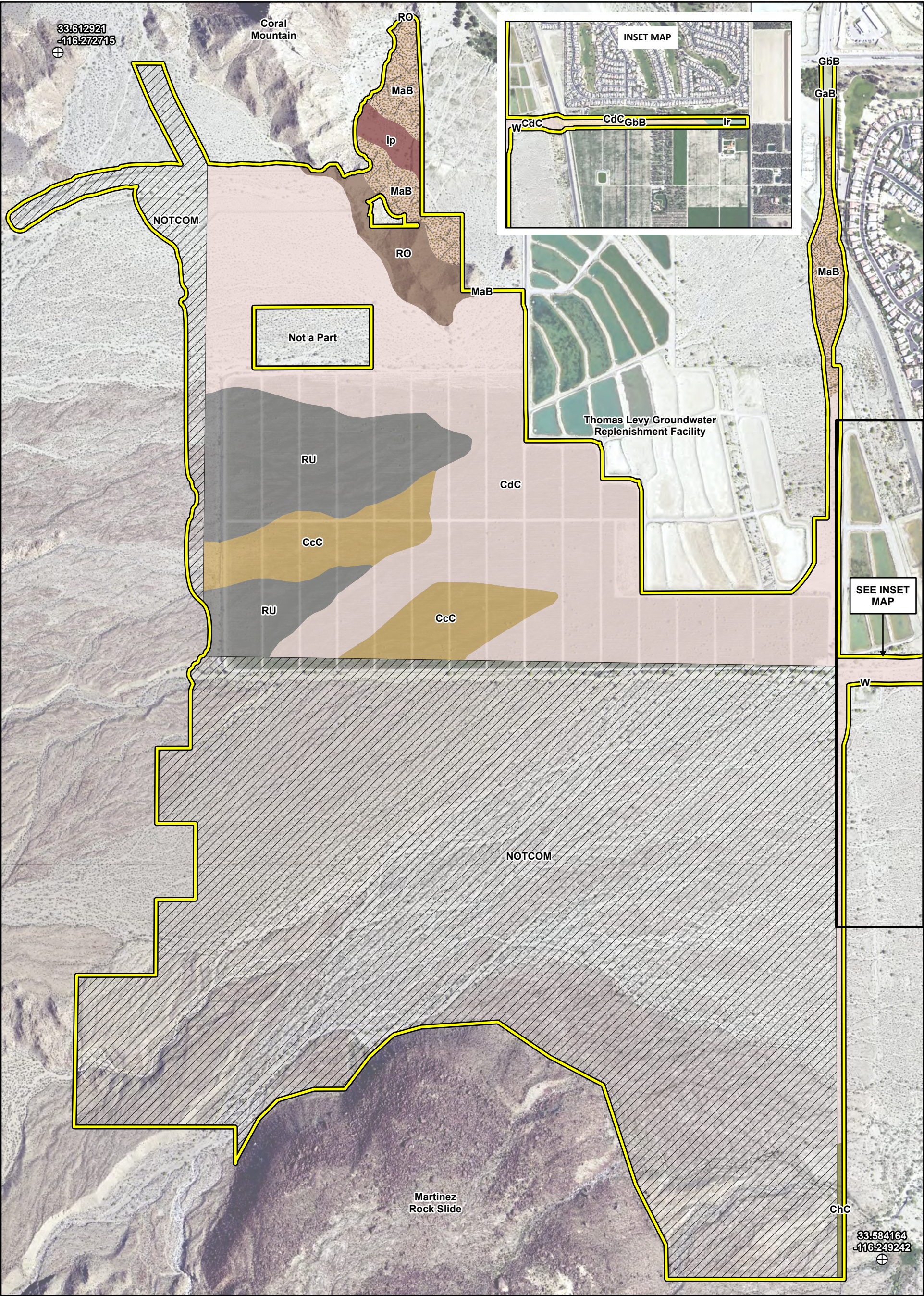
### 3.1 TOPOGRAPHY AND SOILS














On-site surface elevation ranges from approximately -80 to 425 feet above mean sea level (amsl) and generally slopes to the east. Most of the project site is generally flat with rolling hills and desert washes that encompasses natural communities comprised of rocky soils. According to the *Custom Soil Resource Report for Anza-Borrego Area, California and Riverside County, Coachella Valley Area, California* (USDA 2022), the project site is underlain by the following soil units: Carrizo stony sand, 2 to 9 percent slopes (CcC); Carsitas gravelly sand, 0 to 9 percent slopes (CdC); Carsitas cobbly sand, 2 to 9 percent slopes (ChC); Gilman fine sandy loam, 2 to 5 percent slopes (GbB); Indio fine sandy loam (Ip); Indio fine sandy loam, wet (Ir); Myoma fine sand, 0 to 5 percent slopes (MaB); rock outcrop (RO); rubble land (RU). Refer to Figure 5, *USDA Soils*, for a depiction of soil units within the project site.

### 3.2 VEGETATION COMMUNITIES AND LAND COVER TYPES

Five (5) natural vegetation communities were observed and mapped within the boundaries of the project site: *Larrea tridentata* Shrubland, *Parkinsonia florida* – *Olneya tesota* Woodland, *Atriplex polycarpa* Shrubland, Disturbed *Atriplex polycarpa* Shrubland, and *Ambrosia Salsola* – *Bebbia juncea* Shrubland. In addition, the project site contains five (5) land cover types classified as former agriculture, active agriculture, ornamental, disturbed/developed, and developed. These vegetation communities and land cover types are depicted on Figure 6, *Vegetation Communities and Other Land Uses*, and described in further detail below. The area of vegetation communities and land cover types identified within the project site and the impacts proposed to each are presented in Table 2 below. In addition, refer to Appendix B for a complete list of plant species that were observed within the project site during the field surveys.

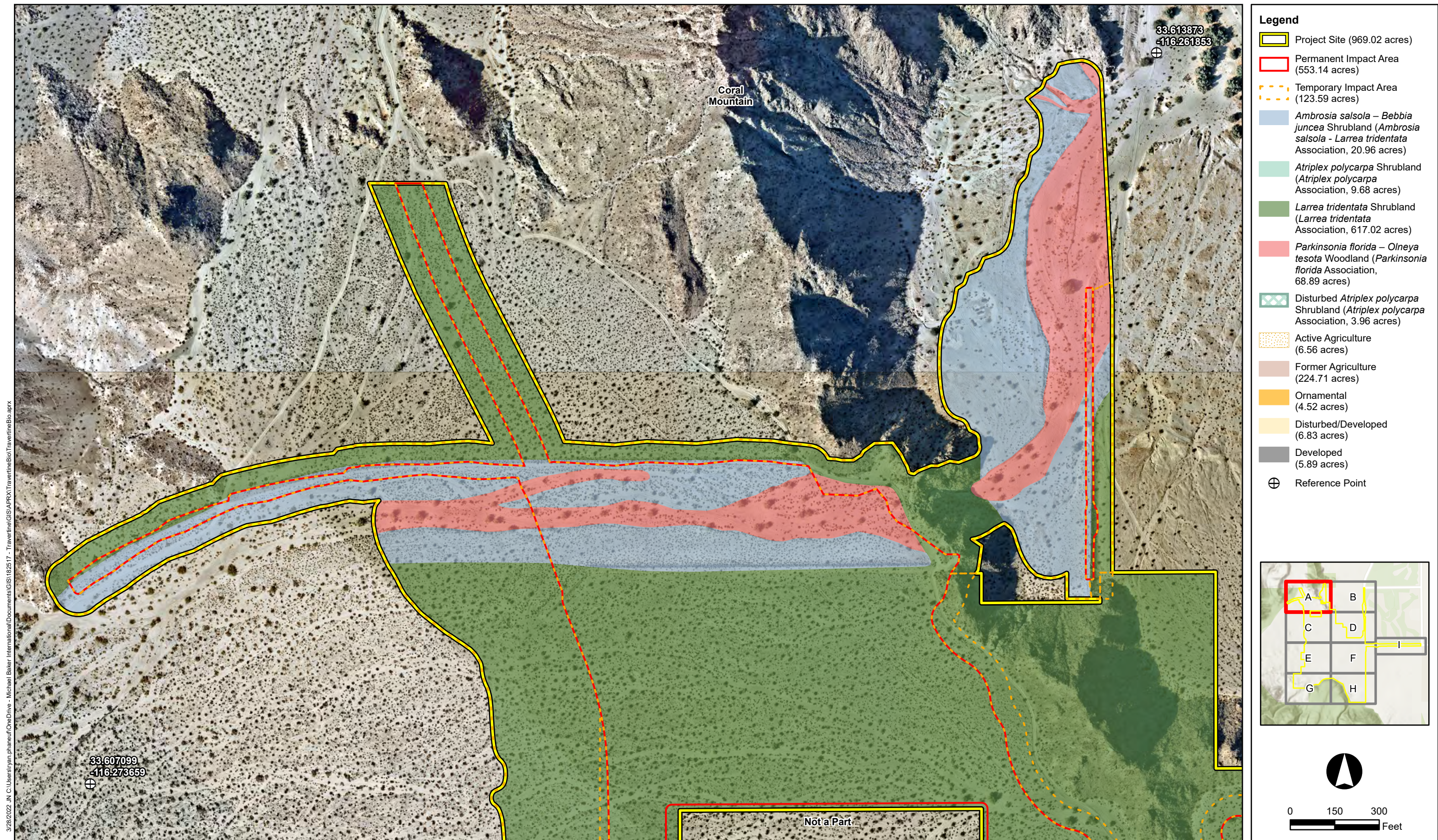




Legend							
	Project Site (969.02 acres)		Carrizo stony sand, 2 to 9 percent slopes		Gilman fine sandy loam, 2 to 5 percent slopes		Rock outcrop
	Reference Point		Carsitas cobbly sand, 2 to 9 percent slopes		Gilman loamy fine sand, 0 to 5 percent slopes		Rubble land
			Carsitas gravelly sand, 0 to 9 percent slopes		Indio fine sandy loam		Water
					Myoma fine sand, 0 to 5 percent slopes		No Digital Data Available







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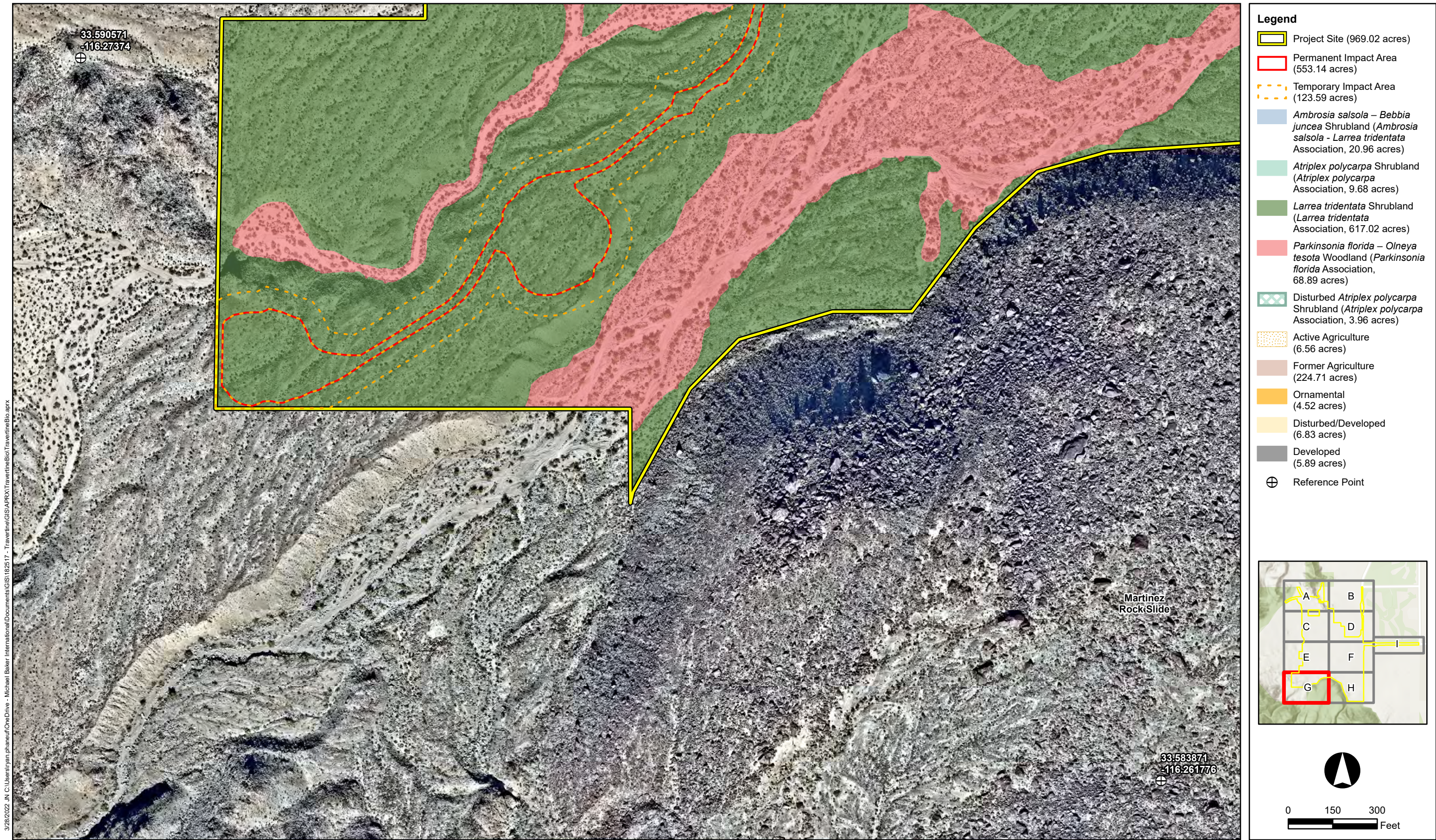
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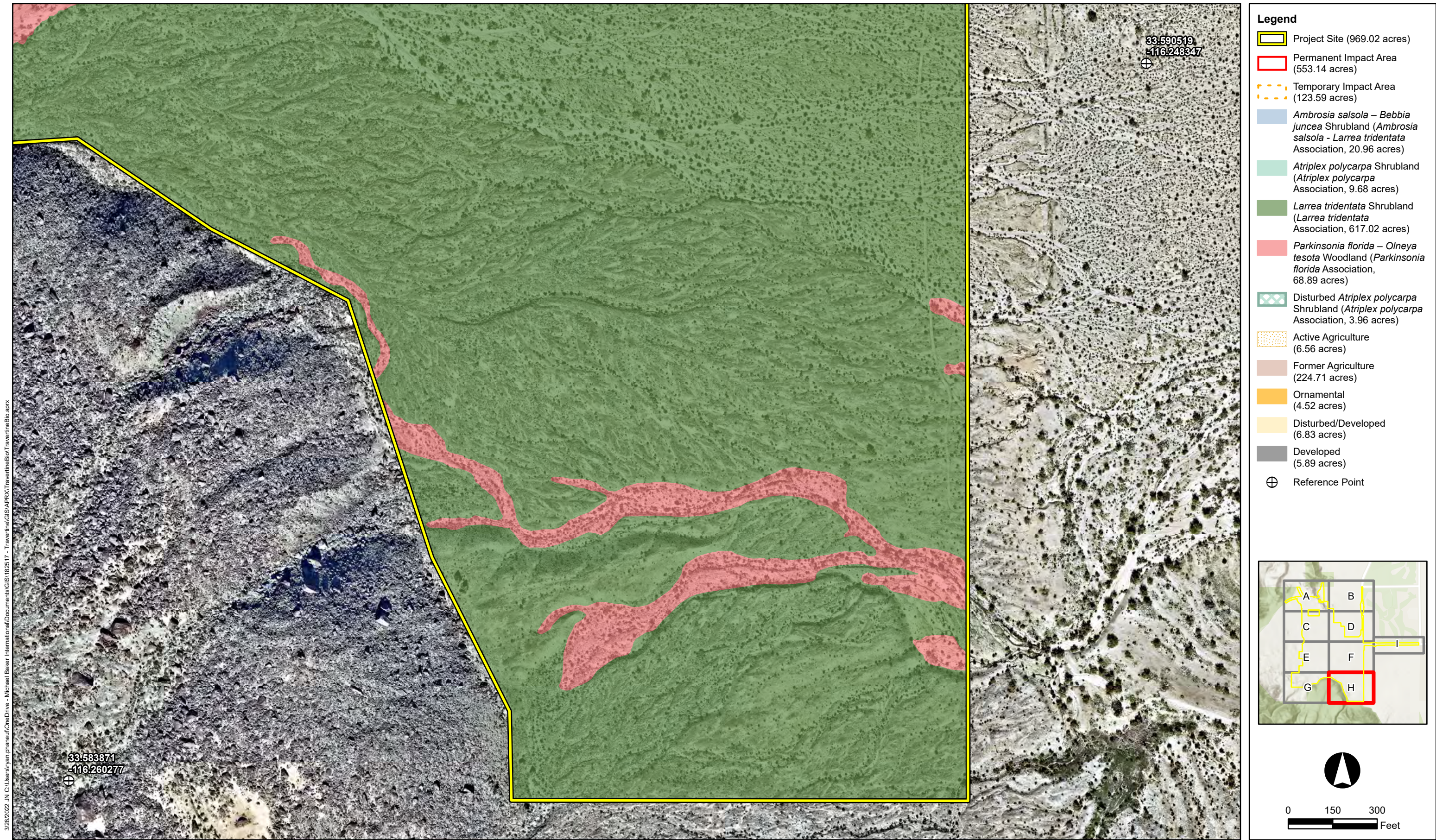
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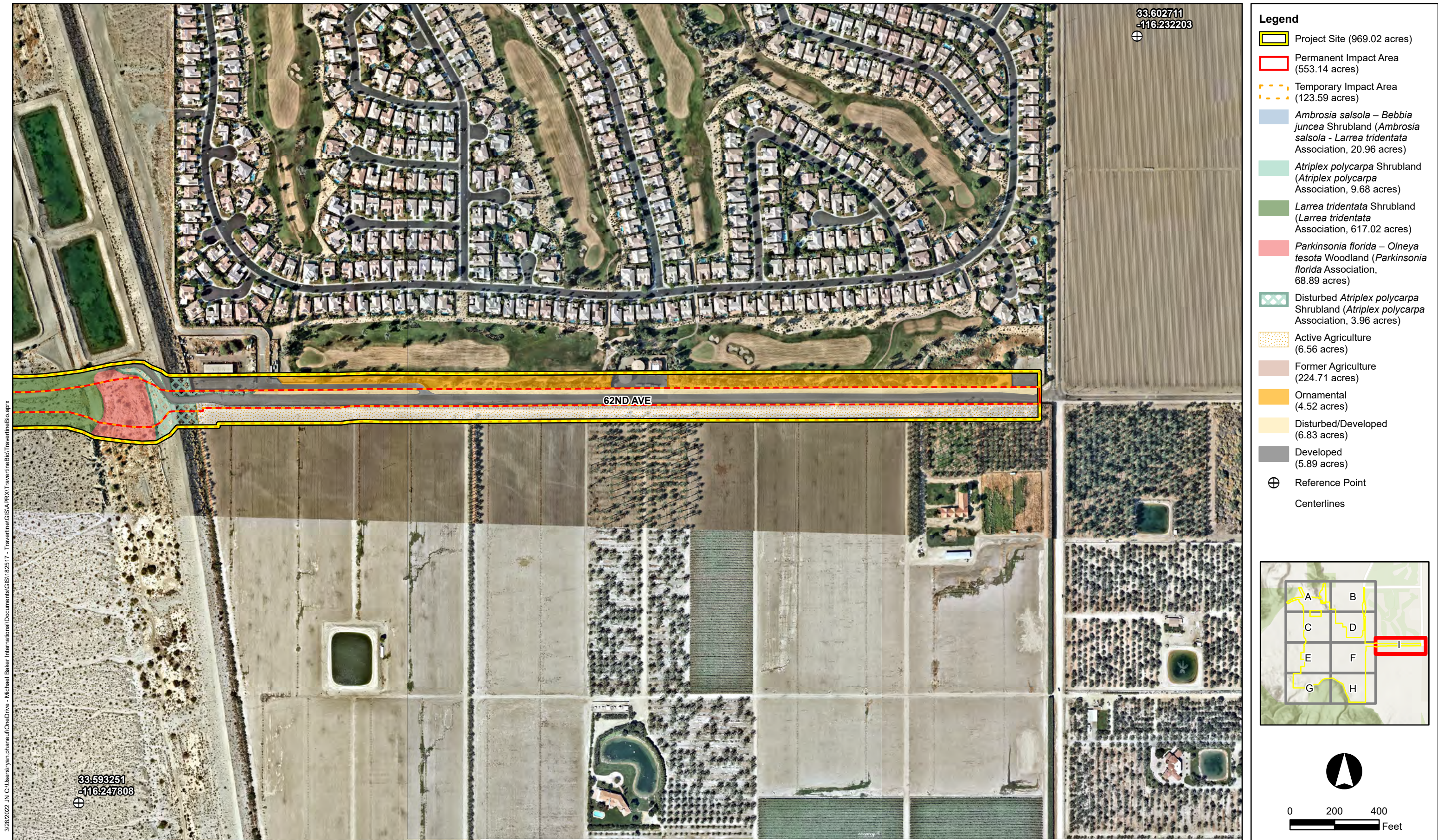


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**Table 2: Vegetation Communities/Land Cover Types and Proposed Impacts**

Vegetation Community/Land Cover Types	Acreage		
	Total Within Project Site	Proposed Impacts	
		Permanent	Temporary
<i>Larrea tridentata</i> Shrubland	617.01	301.72	68.57
<i>Parkinsonia florida</i> – <i>Olneya tesota</i> Woodland	68.89	15.48	10.82
<i>Atriplex polycarpa</i> Shrubland	9.68	2.47	5.77
Disturbed <i>Atriplex polycarpa</i> Shrubland	3.96	1.42	2.55
<i>Ambrosia salsola</i> – <i>Bebbia juncea</i> Shrubland	20.96	7.92	13.04
Former Agriculture	224.71	215.94	8.70
Active Agriculture	6.56	0.47	6.09
Ornamental	4.52	0.05	4.47
Disturbed/Developed	6.83	3.61	1.76
Developed	5.89	4.06	1.83
<b>TOTAL</b>	<b>969.1</b>	<b>553.14</b>	<b>123.6</b>

**Native Vegetation Communities**

This category includes vegetation communities dominated by plant species native to California.

**3.2.1 LARREA TRIDENTATA SHRUBLAND**

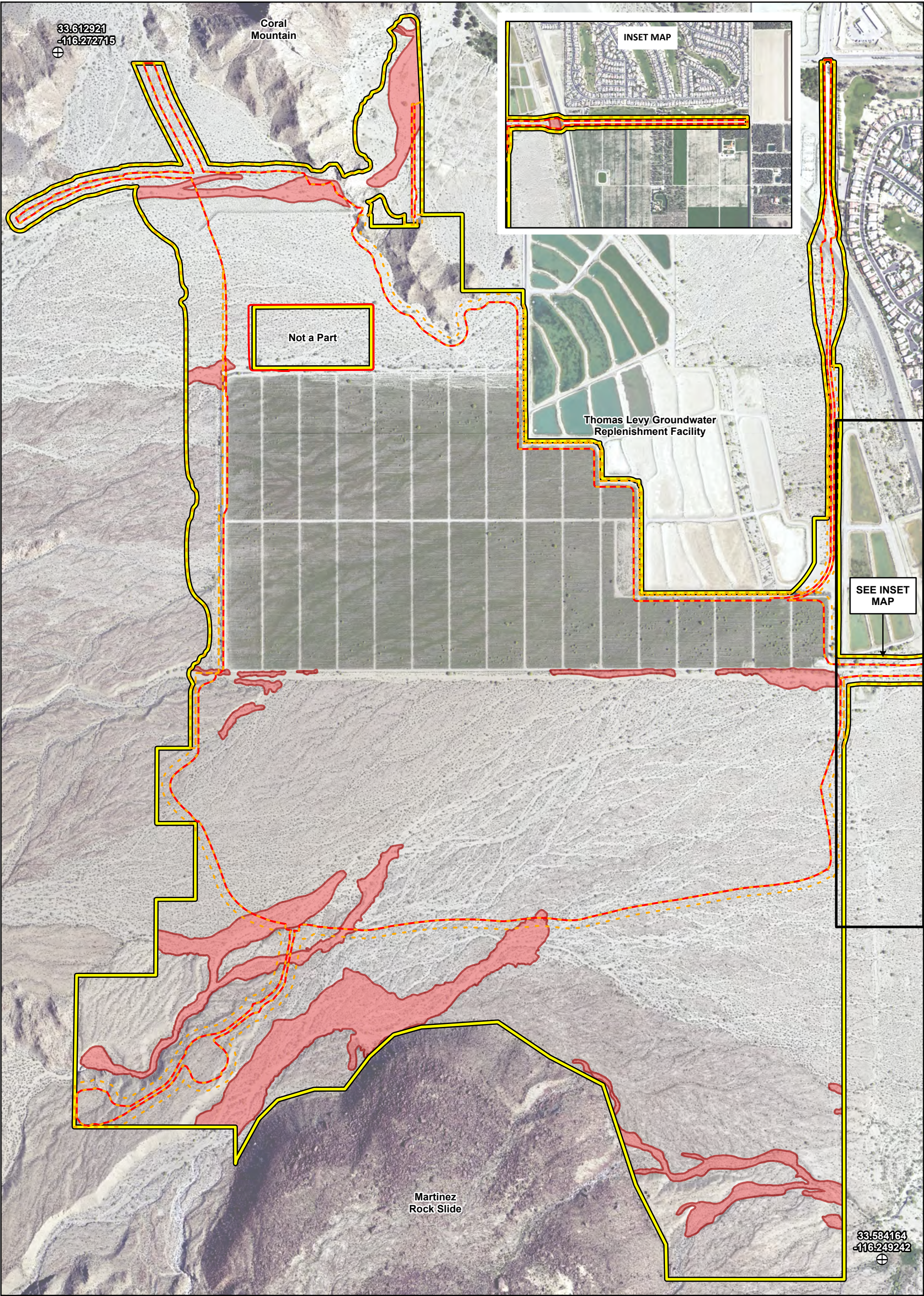
Approximately 617.01 acres of *Larrea tridentata* Shrubland is located generally along the northern portions of the project site. Creosote bush (*Larrea tridentata*) is the dominant species providing a majority of the vegetative cover in this alliance. Additional species present include burrow weed (*Ambrosia dumosa*), cheesebrush (*Ambrosia salsola*), branched pencil cholla (*Cylindropuntia ramossissima*), California barrel cactus (*Ferocactus cylindraceus*), catclaw (*Senegalia greggii*), Yuma sandmat (*Euphorbia setiloba*), wand holdback (*Hoffmannseggia microphylla*), and brittlebush (*Encelia farinosa*).

**3.2.2 PARKINSONIA FLORIDA – OLNEYA TESOTA WOODLAND**

Approximately 68.89 acres of *Parkinsonia florida* – *Olneya tesota* Woodland is located throughout the project site in areas associated with drainages or within areas of discontinuous sheet flow. Predominant vegetation cover consists of blue paloverde (*Parkinsonia florida*) trees ranging 10 to 20 feet in height and crown diameter, with smaller quantities of catclaw, smoke tree (*Psoralea spinosa*), jojoba (*Simmondsia chinensis*), and desert lavender (*Condea emoryi*) intermixed.

*Parkinsonia florida* – *Olneya tesota* Woodland is not formally listed as a California Sensitive Natural Community by CDFW; however, the *Parkinsonia florida* Association under this Alliance is currently listed as a California Sensitive Natural Community (CDFW 2021). Impacts to sensitive natural communities need to be addressed in the California Environmental Quality Act (CEQA) environmental review processes and its equivalents. The extent of this sensitive natural community is depicted on Figure 7, *California Sensitive Natural Communities*.





**Legend**

Project Site (696.02 acres)

Permanent Impact Area (553.14 acres)

*Parkinsonia florida* – *Olneya tesota* Woodland (*Parkinsonia florida* Association, 68.89 acres)

Reference Point

Temporary Impact Area (123.59 acres)



### 3.2.3 ATRIPLEX POLYCARPA SHRUBLAND

Approximately 9.68 acres of *Atriplex polycarpa* Shrubland is located along the northeastern portion of the project site and is dominated by allscale saltbush (*Atriplex polycarpa*). Additional species in lesser quantities observed in this community include blue paloverde trees, cheesebrush, and creosote bush. In addition, salt cedar (*Tamarix ramosissima*) is present along the northern perimeter of this community that experiences periods of discontinuous sheet flow during storm events.

### 3.2.4 DISTURBED ATRIPLEX POLYCARPA SHRUBLAND

Approximately 3.96 acres of disturbed *Atriplex polycarpa* Shrubland is located in two areas within the northeastern and eastern portions of the project site. These areas are composed of graded slopes, dirt roads, and levee construction and consist of bare, disturbed soils sparsely vegetated with allscale saltbush. Additional species observed within this community include occasional creosote bush and dyebush (*Psorothamnus emoryi*) shrubs.

### 3.2.5 AMBROSIA SALSOLA – BEBBIA JUNCEA SHRUBLAND

Approximately 20.96 acres of *Ambrosia salsola* – *Bebbia juncea* Shrubland is located along two areas within the northern portion of the project site. These areas are dominated by sweetbush (*Bebbia juncea*) with lower quantities of creosote bush and burrow weed.

### Land Cover Types

This category includes non-vegetated or sparsely vegetated areas with species generally not native to California.

### 3.2.6 FORMER AGRICULTURE

Approximately 224.71 acres of lands formerly used for agriculture are generally located within the central portion of the project site. This land cover type consists of compacted dirt roads surrounding plots of former vineyards, currently composed of disturbed soils and abandoned structures used for the agriculture operations. Revegetation by native species has occurred since vineyard operations have ceased, primarily by blue paloverde trees which comprise approximately one (1) to two (2) percent of absolute cover. Additional native species present in small quantities include fanleaf crinklemat (*Tiquilia plicata*), small datura (*Datura discolor*), cheesebrush, creosote bush, climbing milkweed (*Funastrum cynanchoides* var. *hartwegii*), sweetbush, allscale saltbush, coyote gourd (*Cucurbita palmata*), white-stemmed milkweed (*Asclepias albicans*), and desert pine (*Peucephyllum schottii*). Non-native species observed across the former agricultural lands include saltcedar (*Tamarix ramosissima*) and orange wattle (*Acacia saligna*).

### **3.2.7 ACTIVE AGRICULTURE**

Approximately 6.56 acres of active agriculture is located along the eastern portion of the project site. This land cover type currently consists of disturbed, bare soils utilized for agriculture bordered by ornamental plantings that function as windbreaks. These ornamental plantings consist of tamarisk (*Tamarix* sp.), oleander (*Nerium oleander*), and Canary Island date palm (*Phoenix canariensis*).

### **3.2.8 ORNAMENTAL**

Approximately 4.52 acres of ornamental landscaping associated with a golf course occurs along the eastern portion of the project site. Ornamental vegetation consists of non-native Jerusalem thorn (*Parkinsonia aculeata*) and eucalyptus (*Eucalyptus* sp.) trees intermixed with native big saltbush (*Atriplex lentiformis*) shrubs.

### **3.2.9 DISTURBED/DEVELOPED**

Approximately 6.83 acres of disturbed/developed land are located throughout the project site and consist primarily of compacted bare ground along paved roadways sparsely vegetated with non-native and native ruderal species, including cheeseweed (*Malva parviflora*), shortpod mustard (*Hirschfeldia incana*), London rocket (*Sisymbrium irio*), and Spanish needles (*Palafoxia arida*).

### **3.2.10 DEVELOPED**

Developed areas consisting of paved roadways and a water tank storage facility comprise approximately 5.89 acres of the project site. These areas have been physically altered to a degree that native vegetation is no longer supported.

## **3.3 WILDLIFE**

Natural vegetation communities provide foraging habitat, nesting/denning sites, and shelter from adverse weather or predation. This section provides a general discussion of those wildlife species that were observed during the field surveys or that are expected to occur based on existing site conditions. The discussion is to be used as a general reference and is limited by the season, time of day, and weather conditions in which the field surveys were conducted. Wildlife detections were based on calls, songs, scat, tracks, burrows, and direct observation. Refer to Appendix B for a complete list of wildlife species observed during the field surveys.

### **3.3.1 FISH**

No fish or hydrogeomorphic features (e.g., perennial creeks, ponds, lakes, reservoirs) with frequent sources of water that would be sufficient to support populations of fish were observed in the project site during the field survey. Therefore, no fish are expected to occur within the project site.

### 3.3.2 AMPHIBIANS

No amphibians or hydrogeomorphic features (e.g., perennial creeks, ponds, lakes, reservoirs) that would provide suitable breeding habitat for amphibians were observed within the project site during the field survey. Therefore, no amphibians are expected to occur within the project site.

### 3.3.3 REPTILES

Western side-blotched lizard (*Uta stansburiana elegans*), southern desert horned lizard (*Phrynosoma platyrhinos calidiarum*), and western zebra-tailed lizard (*Callisaurus draconoides rhodostictus*) were the only species of reptiles observed during the field surveys. Habitat within the project site is also suitable for a number of other common reptilian species known from the region, such as northern desert iguana (*Dipsosaurus dorsalis dorsalis*), Great Basin whiptail (*Aspidoscelis tigris tigris*), and red racer (*Coluber flagellum piceus*).

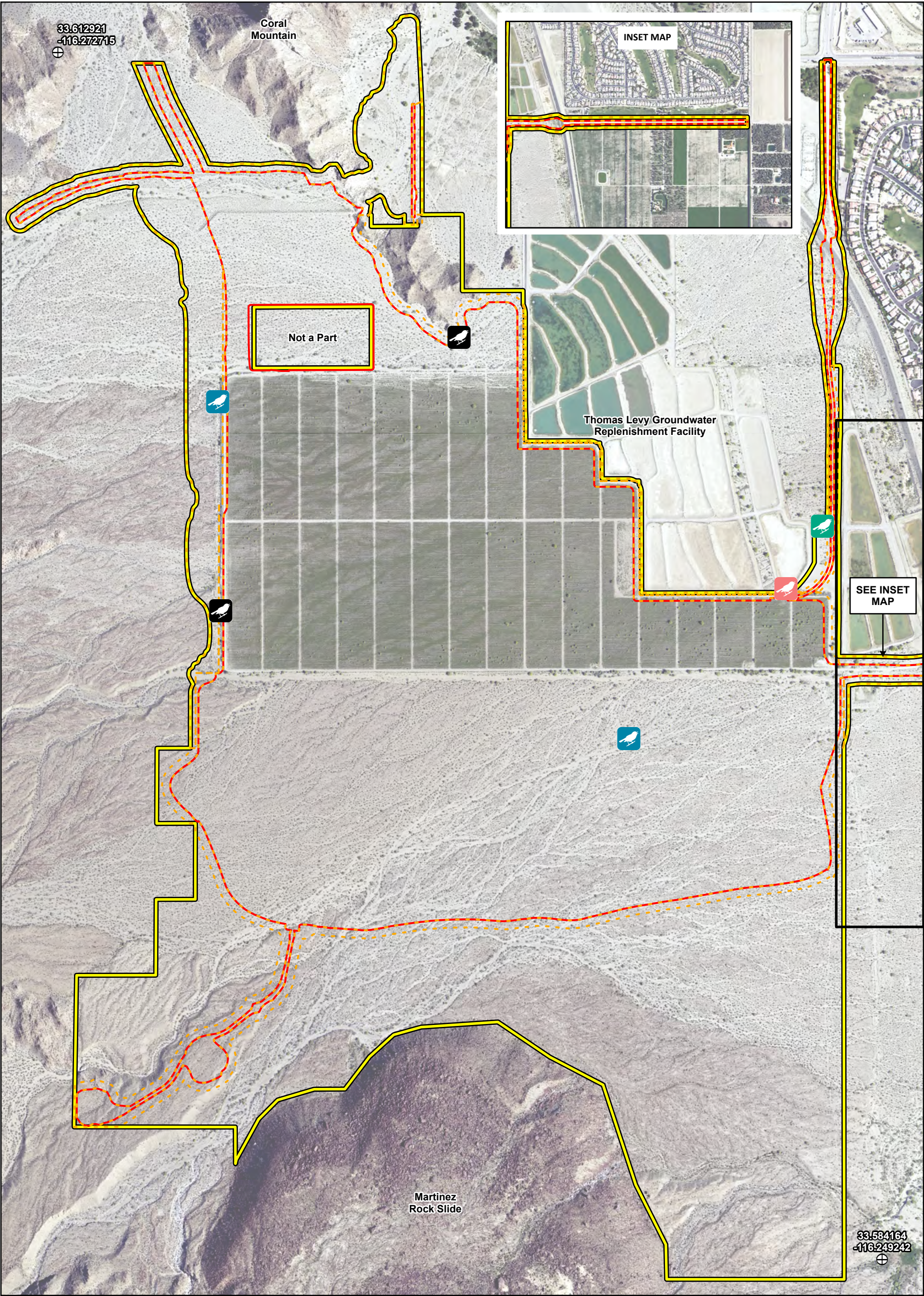
### 3.3.4 BIRDS

Common bird species that were observed within or adjacent to the project site included blue-grey gnatcatcher (*Poliophtila caerulea*), black phoebe (*Sayornis nigricans*), Say's phoebe (*Sayornis saya*), violet-green swallow (*Tachycineta thalassina*), black-throated sparrow (*Amphispiza bilineata*), Costa's hummingbird (*Calypte costae*), mourning dove (*Zenaida macroura*), common raven (*Corvus corax*), and red-tailed hawk (*Buteo jamaicensis*). In addition, four (4) special-status bird species were observed within or adjacent to the project site during the field surveys: black-tailed gnatcatcher (*Poliophtila melanura*; State Watch List [WL] species), loggerhead shrike (*Lanius ludovicianus*; State SSC), long-eared owl (*Asio otus*; State SSC), and osprey (*Pandion haliaetus*; State WL species). Refer to Appendix B for a full list of observed species, and Figure 8, *Special-Status Species Observations*, for a depiction of special-status bird observations within and adjacent to the project site.

Nesting birds are protected pursuant to the federal Migratory Bird Treaty Act (MBTA) of 1918 and the California Fish and Game Code<sup>3</sup> (CFGF). No active bird nests or birds displaying nesting behaviors were observed within the project site during the field surveys. However, the *Parkinsonia florida* – *Olneya tesota* Woodland, *Larrea tridentata* Shrubland, *Atriplex polycarpa* Shrubland, and ornamental vegetation communities within the project site provide suitable nesting opportunities for a variety of resident and migratory bird species, including those birds that nest on open ground or within cacti (e.g., burrowing owl, cactus wren [*Campylorhynchus brunneicapillus*]).

<sup>3</sup> Section 3503 makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by CFGF or any regulation made pursuant thereto; Section 3503.5 makes it unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey); and Section 3513 makes it unlawful to take or possess any migratory non-game bird except as provided by the rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA, as amended (16 U.S.C. § 703 *et. sq.*).





**Legend**

Project Site (696.02 acres)

Permanent Impact Area (553.14 acres)

Reference Point

Temporary Impact Area (123.59 acres)

Black-tailed Gnatcatcher (*Poliptila melanura*)  
General Sighting Location

Loggerhead Shrike (*Lanius ludovicianus*)  
General Sighting Location

Long-eared Owl (*Asio otu*)  
General Sighting Location

Osprey (*Pandion haliaetus*)  
General Sighting Location



### 3.3.5 MAMMALS

The project site has the potential to support a variety of mammalian species; however, most mammalian species in the region are nocturnal and are difficult to observe during a diurnal habitat assessment. Black-tailed jackrabbit (*Lepus californicus*) and white-tailed antelope squirrel (*Ammospermophilus leucurus*) were the only species directly observed during the field surveys. Coyote (*Canis latrans*), domestic dog (*Canis lupis familiaris*), and horse (*Equus* sp.) tracks/sign were observed within the project site.

There is no suitable roosting habitat for bat species (Order Chiroptera) within the project site, due to a lack of hollow trees, mines, caves, rock outcrops, deep rock crevices, and man-made structures (i.e., bridges, tunnels, and buildings) which may provide suitable bat roosting habitat. Although there are palm trees in the surrounding residential and commercial landscape, they are frequently trimmed and maintained, reducing their value as bat roosting habitat compared to palm trees that are unmaintained and retain dead palm fronds. Additionally, rock outcrops and deep rock crevices more suitable for bat roosting are likely present in the surrounding mountain landscape. However, because of the open vegetation landscape, the project site does have the potential to provide suitable foraging habitat for various species of bats.

## 3.4 MIGRATORY CORRIDORS AND LINKAGES

Wildlife corridors and linkages are key features for wildlife movement between habitat patches. Wildlife corridors are generally defined as those areas that provide opportunities for individuals or local populations to conduct seasonal migrations, permanent dispersals, or daily commutes, while linkages generally refer to broader areas that provide movement opportunities for multiple keystone/focal species or allow for propagation of ecological processes (e.g., for movement of pollinators), often between areas of conserved land.

Residential uses/urban areas adjoin the project site to the west. Wildlife movement, especially Peninsular bighorn sheep, potentially occurs within this open conservation area adjacent to the project site. Areas to the east and north of the project site primarily consist of residential and commercial land uses, and while some land to the west/northwest consists of BLM land. Any wildlife currently utilizing the project site and adjacent areas for dispersal and movement are likely adapted to disturbances associated with urban environments. Project activities are not expected to significantly impede wildlife movement through the area, as the project site does not coincide with or function as a significant wildlife movement corridor. Open conservation areas to the south and west would continue to provide opportunities for local wildlife movement and function as a corridor for highly mobile wildlife species.

## 3.5 STATE AND FEDERAL JURISDICTIONAL WATERS

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The USACE Regulatory Branch regulates discharge of dredged or fill material into “waters of the United States” pursuant to Section 404 of the federal Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. Of the State agencies, the RWQCB regulates discharges to surface waters pursuant

to Section 401 of the CWA and Section 13263 of the California Porter-Cologne Water Quality Control Act and the CDFW regulates alterations to streambed and associated vegetation communities under Section 1600 *et seq.* of the CFGC.

As documented in the *Delineation of State and Federal Jurisdictional Waters* (Michael Baker 2021), five (5) drainage features were documented within the boundaries of the project site (Drainage Area A through Drainage Area E). Refer to the following sections for a summary of jurisdictional features documented within the project site and impacts that are expected to occur as a result of the proposed project.

### **3.5.1 UNITED STATES ARMY CORPS OF ENGINEERS**

Evidence of an OHWM was noted within the boundaries of the project site. However, aquatic features within the project site are considered ephemeral and do not meet the definition of a WoUS pursuant to the latest USACE guidelines established in 2015 for the mapping of WoUS, including wetlands. Therefore, on-site aquatic features would not be subject to regulation under Section 404 of the CWA and would not fall under USACE' jurisdiction.

### **3.5.2 REGIONAL WATER QUALITY CONTROL BOARD**

The on-site aquatic features are considered ephemeral and therefore would not meet the definition of a WoUS. However, the on-site features qualify as WoS under RWQCB jurisdiction, consisting of approximately 90.96 acres of non-wetland WoS.

Based on a review of project design plans, the proposed project would temporarily impact approximately 12.15 acres and permanently impact 53.15 acres of non-wetland WoS (Michael Baker 2021). In the absence of a Section 404 permit issued from the USACE, a Section 401 Water Quality Certification is not applicable. However, a Waste Discharge Requirements (WDR) issued from the RWQCB would be required prior to commencement of any construction activities within RWQCB jurisdictional areas. The RWQCB also requires that CEQA compliance be obtained prior to issuance of the final WDR. Further, an application fee is required, which is based on both total temporary and permanent impact acreages (as applicable).

### **3.5.3 CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE**

The on-site drainage features exhibit a clear bed and bank and qualify as a CDFW jurisdictional streambed. Based on the results of the field investigations, a total of approximately 90.96 acres of CDFW jurisdictional streambed occurs within the boundaries of the project site. In addition, the on-site *Parkinsonia florida* – *Olneya tesota* Woodland (*Parkinsonia florida* Association) community, also identified as Desert Dry Wash Woodland habitat (DDWW; Michael Baker 2021), is considered CDFW jurisdiction totaling 55.98 acres, approximately 20.56 acres of which coincides with the 90.96 acres of CDFW jurisdictional streambed and an additional 35.42 acres of DDWW habitat is associated with the CDFW jurisdictional streambed.

Based on a review of project design plans, the proposed project would temporarily impact approximately 12.15 acres and permanently impact 53.15 acres of CDFW jurisdictional streambed. In addition, the

proposed project would temporarily impact approximately 2.67 acres and permanently impact 10.73 acres of DDWW habitat under CDFW jurisdiction. Approximately 1.26 acres of temporary impacts and 5.82 acres of permanent impacts to DDWW habitat occurs within the CDFW-jurisdictional streambed and the remaining 1.41 acres of temporary impacts and 4.91 acres of permanent impacts to DDWW habitat is associated with the CDFW-jurisdictional streambed. Therefore, prior to alteration of CDFW jurisdictional features, the project proponent must acquire a Section 1602 Streambed Alteration Agreement (SAA) prior to the initiation of project construction. This would include a formal SAA notification to, and subsequent authorization of a SAA from CDFW. The CDFW also requires that compliance with CEQA is completed prior to issuing a final SAA. In addition, a notification fee is required, which for a standard SAA is calculated based on anticipated cost of the project.

### 3.6 SPECIAL-STATUS BIOLOGICAL RESOURCES

The CNDDDB and CIRP were queried for reported locations of special-status plant and wildlife species as well as special-status natural vegetation communities in the USGS *Indio*, *La Quinta*, *Martinez Mtn*, and *Valerie, California* 7.5-minute quadrangles. The habitat assessment was conducted to assess and evaluate existing condition of the habitats within the boundaries of the project site to determine if the existing vegetation communities, at the time of the field surveys, have the potential to provide suitable habitat for special-status plant and wildlife species. Additionally, the potentials for special-status species to occur within the project site were determined based on the reported locations in the CNDDDB, CIRP, and Calflora databases using the following guidelines:

- **Present:** the species was observed or detected within the project site during the field surveys.
- **High:** Recent occurrence records (within 20 years) indicate that the species has been known to occur on or within one mile of the project site and the site is within the normal expected range of this species. Intact, suitable habitat preferred by this species occurs within the project site and/or there is viable landscape connectivity to a local known extant population(s) or sighting(s).
- **Moderate:** Recent occurrence records (within 20 years) indicate that the species has been known to occur within one mile of the project site and the site is within the normal expected range of this species. There is suitable habitat within the project site, but the site is ecologically isolated from any local known extant populations or sightings.
- **Low:** Recent occurrence records (within 20 years) indicate that the species has been known to occur within five miles of the project site, but the site is outside of the normal expected range of the species and/or there is poor quality or marginal habitat within the project site.
- **Not Expected:** There are no occurrence records of the species occurring within five miles of the project site, there is no suitable habitat within the project site, and/or the project site is outside of the known or expected range for the species.

The literature search identified thirty-six (36) special-status plant species, twenty-seven (27) special-status wildlife species, and one (1) special-status vegetation community as having the potential to occur within

the USGS *Indio, La Quinta, Martinez Mtn, and Valerie, California* 7.5-minute quadrangles. Special-status plant and wildlife species were evaluated for their potential to occur within the project site based on habitat requirements, availability and quality of suitable habitat, and known distributions. Special-status biological resources identified during the literature review as having the potential to occur within the vicinity of the project site are presented in *Table C-1: Potentially Occurring Special-Status Biological Resources*, provided in Appendix C.

### 3.6.1 SPECIAL-STATUS PLANT SPECIES

Thirty-six (36) special-status plant species have been recorded within the USGS *Indio, La Quinta, Martinez Mtn, and Valerie, California* 7.5-minute quadrangles. Each species' special-status ranking, preferred habitats, and potential to occur within the project site are provided in Appendix C. Based on the results of the literature review and field surveys, the following special-status plant species were determined to have a moderate to high potential to occur within the project site: California avenia (*Avenia compacta*; California Rare Plant Rank [CRPR] 2B.3), glandular ditaxis (*Ditaxis claryana*; CRPR 2B.2), California ditaxis (*ditaxis serrata* var. *californica*; CRPR 3.2), pink velvet-mallow (*Horsfordia alata*; CRPR 4.3), and Newberry's velvet-mallow (*Horsfordia newberryi*; CRPR 4.3). All other special-status plant species either have a low potential to occur or are not expected within the project site based on existing site conditions and a review of specific habitat requirements, occurrence records, and known distributions (refer to Appendix C).

Although not considered a special-status plant species, California barrel cactus, Gander's buckhorn cholla (*Cylindropuntia ganderi*), Englemann's hedgehog cactus (*Echinocereus engelmannii*), cottontop cactus (*Echinocactus polycephalus*), beavertail cactus (*Opuntia basilaris*), branched pencil cholla, ocotillo (*Fouquieria splendens*), catclaw, blue paloverde, and smoke tree were observed throughout the project site and are regulated under the California Desert Native Plants Act (CDNPA). Pursuant to the CDNPA, these species may not be harvested except under a permit issued by the commissioner of the County of Riverside.

### 3.6.2 SPECIAL-STATUS WILDLIFE SPECIES

Twenty-seven (27) special-status wildlife species have been recorded within the USGS *Indio, La Quinta, Martinez Mtn, and Valerie, California* 7.5-minute quadrangles. Each species' special-status ranking, preferred habitats, and potential to occur within the project site are provided in Appendix C. Based on Michael Baker's literature review and results of the field surveys, the following special-status wildlife species were determined to be either be present or have a moderate to high potential to occur within the project site: black-tailed gnatcatcher, loggerhead shrike, long-eared owl, osprey, burrowing owl, prairie falcon (*Falco mexicanus*; State WL species), Le Conte's thrasher (*Toxostoma lecontei*; State SSC), and Peninsular bighorn sheep. All other special-status wildlife species identified during the literature review either have a low potential to occur or are not expected within the project site based on existing site conditions and a review of specific habitat requirements, occurrence records, and known distributions (refer to Appendix C).

### 3.6.3 SPECIAL-STATUS VEGETATION COMMUNITIES

One (1) special-status vegetation community has been reported within the USGS *Indio, La Quinta, Martinez Mtn, and Valerie, California* 7.5-minute quadrangles by the CNDDDB: Desert Fan Palm Oasis Woodland. Based on the result of field surveys, this community is not present within the project site. There were no special-status vegetation communities tracked in the CNDDDB observed within the project area.

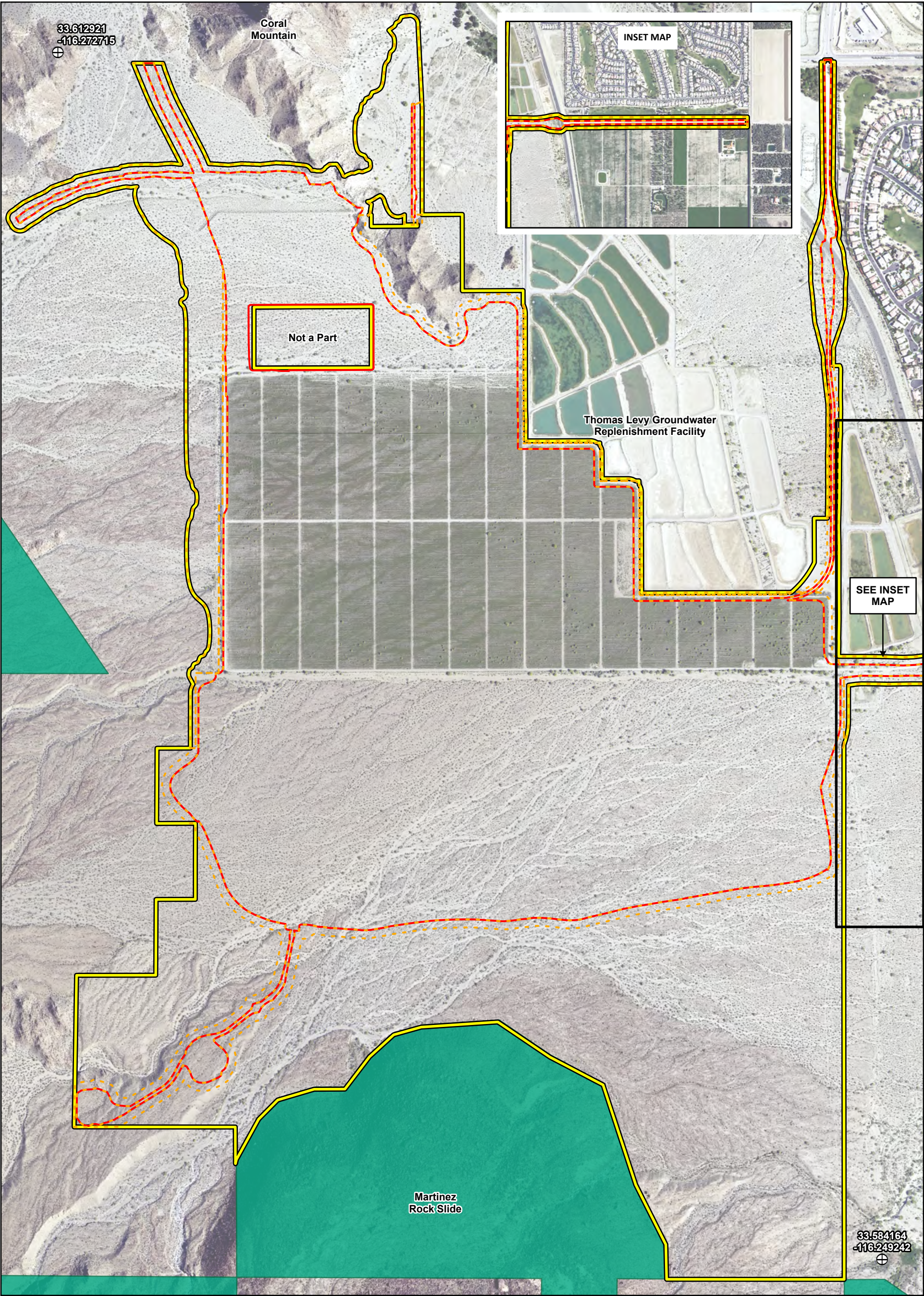
Although not identified in the CNDDDB during the literature search, the *Parkinsonia florida* – *Olneya tesota* Woodland (*Parkinsonia florida* Association) is currently listed as a California Sensitive Natural Community (CDFW 2021). Impacts to sensitive natural communities need to be addressed in the CEQA environmental review processes and its equivalents. Approximately 68.89 acres of *Parkinsonia florida* – *Olneya tesota* Woodland (*Parkinsonia florida* Association) is located throughout the project site (refer to Figure 7, *California Sensitive Natural Communities*).

## 3.7 CRITICAL HABITAT

Under the definition included in the FESA, designated Critical Habitat refers to specific areas within the geographical range of a species that were occupied at the time it was listed and that contain the physical or biological features that are essential to the survival and eventual recovery of that species. Areas of Critical Habitat may require special management considerations or protection, regardless of whether the species is still extant in the area. Areas that were not known to be occupied at the time a species was listed can also be designated as Critical Habitat if they contain one or more of the physical or biological features that are essential to that species' conservation and if the occupied areas are inadequate to ensure the species' recovery. If a project may result in take or adverse modification to a species' designated Critical Habitat and the project has a federal nexus, the project proponent may be required to provide suitable mitigation. Projects with a federal nexus include those that occur on federal lands, require federal permits (e.g., CWA Section 404 permit), or receive any federal oversight or funding. If there is a federal nexus, then the federal agency that is responsible for providing funds or permits would be required to consult with the USFWS pursuant to the FESA.

The project site does not coincide with any USFWS-designated Critical Habitat; however, Critical Habitat for Peninsular bighorn sheep is adjacent to the southern border of the project site and within approximately 700 feet of the western boundary (refer to Figure 9, *Peninsular bighorn sheep Critical Habitat*).





**Legend**

Project Site (969.02 acres)

Permanent Impact Area (553.14 acres)

Peninsular Bighorn Sheep (*Ovis canadensis nelsoni*)

Reference Point

Temporary Impact Area (123.59 acres)



### 3.8 COACHELLA VALLEY MSHCP/NCCP

The CVMSHCP or Plan was prepared for the entire Coachella Valley and surrounding mountains to address current and potential future FESA and CESA issues in the Plan Area. A Memorandum of Understanding (“Planning Agreement”) was developed to govern the preparation of the CVMSHCP. In late 1995 and early 1996, under the auspices of the Coachella Valley Association of Governments (CVAG), the cities of Cathedral City, Coachella, Desert Hot Springs, Indian Wells, Indio, La Quinta, Palm Desert, Palm Springs, and Rancho Mirage; County of Riverside; USFWS; CDFW; BLM; U.S. Forest Service; and National Park Service signed the Planning Agreement to initiate the planning effort. Subsequently, California Department of Transportation, CVWD, Imperial Irrigation District, Riverside County Flood Control and Water Conservation District, Riverside County Regional Park and Open Space District, Riverside County Waste Resources Management District, California Department of Parks and Recreation, and Coachella Valley Mountain Conservancy decided to participate in the Plan.

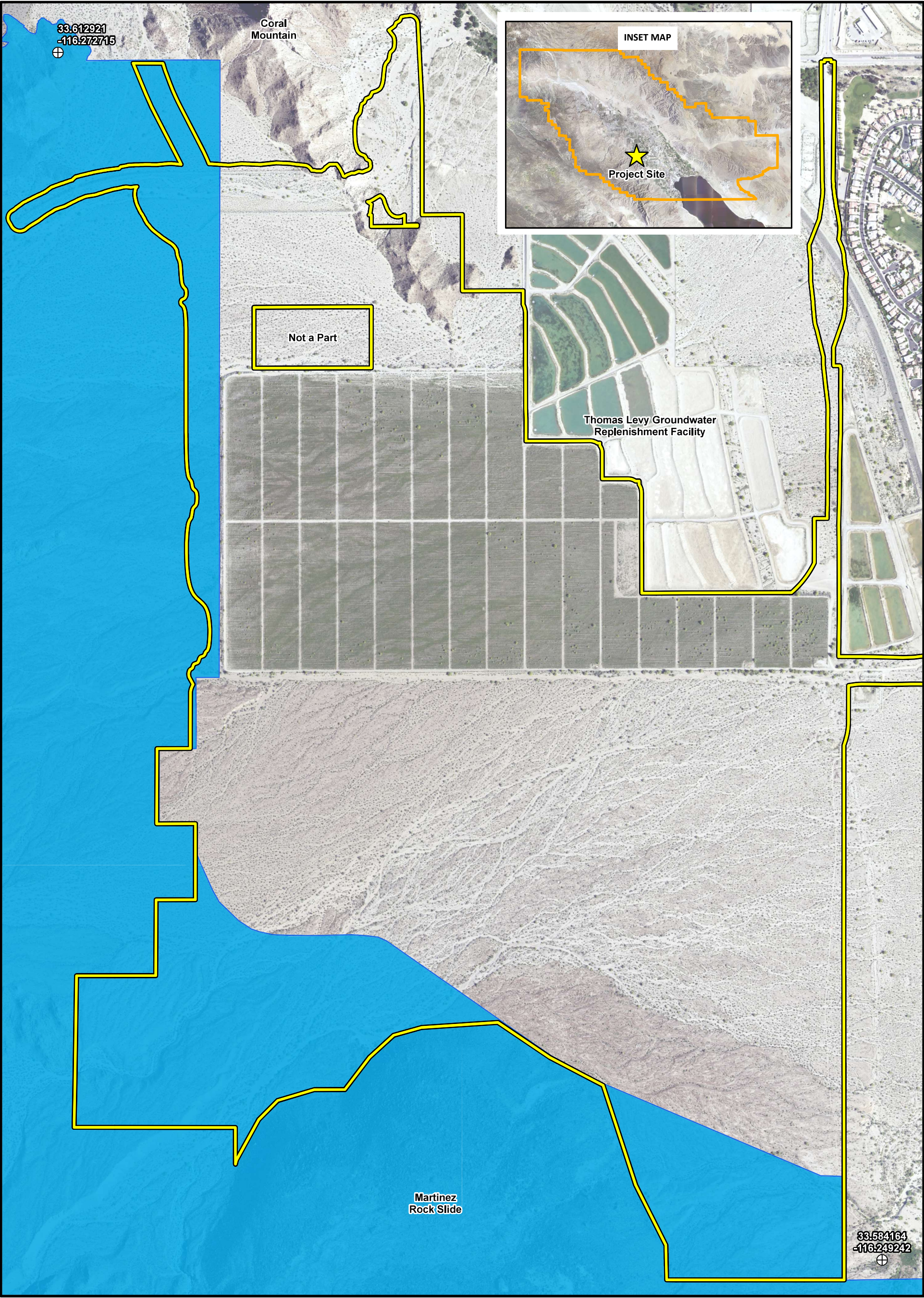
The CVMSHCP balances environmental protection and economic development objectives in the Plan Area and simplifies compliance with endangered species related laws. The CVMSHCP is intended to satisfy the legal requirements for the issuance of permits that will allow the Take of species covered by the Plan in the course of otherwise lawful activities. The CVMSHCP will, to the maximum extent practicable, minimize and mitigate the impacts of the taking and provide for conservation of the covered species.

The CVMSHCP includes the establishment of a Reserve System, setting Conservation Objectives to ensure the conservation of the covered species and conserved natural communities in the CVMSHCP Reserve System, provisions for management of the CVMSHCP Reserve System, and a Monitoring Program, and Adaptive Management. The CVMSHCP Reserve System will be established from lands within 21 Conservation Areas. Because some Take Authorization is provided under the Plan for development in Conservation Areas, the actual CVMSHCP Reserve System will be somewhat smaller than the total acres in the Conservation Areas. When assembled, the Reserve System will provide for the conservation of the covered species in the Plan Area.

Project activities that occur within or adjacent to CVMSHCP Conservation Areas are required to implement applicable measures identified in Section 4.5, *Land Use Adjacency Guidelines*, and Section 4.4, *Required Avoidance and Minimization Measures*, of the CVMSHCP, of the CVMSHCP. Further, if a project would encroach into the CVMSHCP Conservation Areas, a Joint Project Review (JPR) would be required as described in Section 6.6.1.1, *Joint Project Review Process within Conservation Areas*, of the CVMSHCP. The JPR process would be instituted by the Coachella Valley Conservation Commission (CVCC), for all projects under the Local Permittees’ jurisdiction in a CVMSHCP Conservation Area that would result in disturbance to covered species, habitat, natural communities, biological corridors, or essential ecological processes.

The proposed project occurs within the boundaries of the CVMSHCP. In addition, the southwest portion of the project site is located within the CVMSHCP Santa Rosa and San Jacinto Mountains (SRSJM) Conservation Area (refer to Figure 10, *Coachella Valley MSHCP/NCCP*).





- Legend**
- Project Site (969.02 acres)
  - Coachella Valley Multiple Species Habitat Conservation Plan Boundary
  - Reference Point
  - San Jacinto and Santa Rosa Mountains Conservation Area



## Section 4      Project Impact Analysis

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Direct impacts are considered to be those that involve the loss, modification or disturbance of plant communities, which in turn, directly affect the flora and fauna of those habitats. Direct impacts also include the destruction of individual plants or animals, which may also directly affect regional population numbers of a species or result in the physical isolation of populations thereby reducing genetic diversity and population stability.

Indirect impacts pertain to those impacts that result in a change to the physical environment, but which is not immediately related to a project. Indirect (or secondary) impacts are those that are reasonably foreseeable and caused by a project but occur at a different time or place. Indirect impacts can occur at the urban/wildland interface of projects, to biological resources located downstream from projects, and other off-site areas where the effects of the project may be experienced by plants and wildlife. Examples of indirect impacts include the effects of increases in ambient levels of noise or light; predation by domestic pets; competition with exotic plants and animals; introduction of toxics, including pesticides; and other human disturbances such as hiking, off-road vehicle use, unauthorized dumping, etc. Indirect impacts are often attributed to the subsequent day-to-day activities associated with project build-out, such as increased noise, the use of artificial light sources, and invasive ornamental plantings that may encroach into native areas. Indirect effects may be both short-term and long-term in their duration. These impacts are commonly referred to as “edge effects” and may result in a slow replacement of native plants by non-native invasives, as well as changes in the behavioral patterns of wildlife and reduced wildlife diversity and abundance in habitats adjacent to project sites.

Cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. A cumulative impact can occur from multiple individual effects from the same project, or from several projects. The cumulative impact from several projects is the change in the environment resulting from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.

### 4.1      IMPACTS TO SPECIAL-STATUS SPECIES

Appendix G(a) of the CEQA guidelines asks if a project is likely to “*have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.*”



#### **4.1.1 SPECIAL-STATUS PLANT SPECIES**

The proposed project will not impact any federal or State listed plant species, as none are expected to occur within the project site (refer to Appendix C). However, the proposed project has a potential to impact the following non-listed, special-status plant species: California avenia (CRPR 2B.3), glandular ditaxis (CRPR 2B.2), California ditaxis (CRPR 3.2), pink velvet-mallow (CRPR 4.3), and Newberry's velvet-mallow (CRPR 4.3). Each of these plant species are considered rare in California but are more common elsewhere. There are no occurrence records of these plant species within the project site, but each has a moderate to high potential to occur based on existing site conditions, occurrence records, and known distributions. However, due to the low sensitivity of the species, limited potential for impact, along with participation with the CVMSHCP, any impacts to these species, if present, would be less than significant without mitigation being required.

#### **4.1.2 SPECIAL-STATUS WILDLIFE SPECIES**

The proposed project has a potential to impact the following special-status wildlife species and/or their habitat: Peninsular bighorn sheep (FE, ST, and State FP species), black-tailed gnatcatcher (State WL species), loggerhead shrike (State SSC), long-eared owl (State SSC), osprey (State WL species), burrowing owl (State SSC), prairie falcon (State WL species), and Le Conte's thrasher (State SSC).

In 2004, the BLM and Bureau of Reclamation initiated consultation with USFWS under Section 7 of the FESA regarding the effects of the project on ten (10) federally-listed species that were identified in a regional species list generated by USFWS in 2003. Evaluations of the site's suitability to support the ten species were conducted and it was determined that seven of the species did not have potential to occur on or adjacent to the project site and were eliminated from further review. Evaluations conducted for triple-ribbed milk-vetch (FE and CRPR 1B.2 species) and desert tortoise indicated that the proposed project is unlikely to affect these two species; however, USFWS concluded that the proposed project could affect Peninsular bighorn sheep and its designated Critical Habitat. On December 7, 2005, USFWS issued a Biological Opinion (BO; USFWS 2005) addressing this species and its Critical Habitat (refer to Appendix D).

With Conservation Measures to 1) reconfigure the project's footprint to reduce potential effects of the project on Peninsular bighorn sheep and its critical habitat, 2) acquire lands adjacent to the project to permanently protect Peninsular bighorn sheep habitat, and 3) provide funds for additional habitat acquisition upon approval of the CVMSHCP, USFWS concluded in the BO that the proposed project and its cumulative effects are not likely to jeopardize the continued existence of the species, or adversely modify designated critical habitat for the species.

The BO further describes that direct take of Peninsular bighorn sheep would not occur, but that project construction, habituation by bighorn sheep to human activities at the initially unfenced golf course, and disturbances by recreational trespass from the proposed trail and improved public access to the project area, could reasonably result in incidental take of one individual bighorn sheep. For the proposed project, take is

also quantified by the permanent loss or alteration of 267 acres of designated critical habitat containing one or more primary constituent elements that support bighorn sheep populations. However, with implementation of the conservation measures included in the BO, incidental take would be minimized. Further, through avoidance of Critical Habitat areas and additional lands to the west and south, the loss of potential habitat for Peninsular bighorn sheep would be less than significant.

The proposed project has the potential to result in the direct loss of the following special-status bird species and/or their habitat: black-tailed gnatcatcher, loggerhead shrike, long-eared owl, osprey, burrowing owl, prairie falcon, and Le Conte's thrasher. In addition, construction-related disturbance may have an adverse impact on these species, especially during the breeding season when individuals may be attempting to incubate eggs or raise young within or adjacent to the project site. The permanent and temporary loss of these species and/or their habitat would be potentially significant.

Although burrowing owl and Le Conte's thrasher are the only covered species under the CVMSHCP, the loss of all special-status bird species identified above and/or their habitat would be reduced to below a level of significance through the permanent protection of avoided habitat on the project site and additional habitat on lands to the west and south through a formal conservation instrument (e.g., easement), and implementation of measures provided in CVCC's Final JPR (CVCC 2021; refer to Appendix E) and Section 4.9 below.

## 4.2 IMPACTS TO SENSITIVE VEGETATION COMMUNITIES

Appendix G(a) of the CEQA guidelines asks if a project is likely to “*have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.*”

The following natural vegetation communities occur within the boundaries of the project site: *Larrea tridentata* Shrubland, *Parkinsonia florida* – *Olneya tesota* Woodland (*Parkinsonia florida* Association), *Atriplex polycarpa* Shrubland, disturbed *Atriplex polycarpa* Shrubland, and *Ambrosia salsola* – *Bebbia juncea* Shrubland. In addition, the project site contains five (5) land cover types classified as former agriculture, active agriculture, ornamental, disturbed/developed, and developed.

The *Larrea tridentata* Shrubland, *Atriplex polycarpa* Shrubland, disturbed *Atriplex polycarpa* Shrubland, and *Ambrosia salsola* – *Bebbia juncea* Shrubland are not listed as a California Sensitive Natural Community by CDFW. However, the *Parkinsonia florida* – *Olneya tesota* Woodland (*Parkinsonia florida* Association) is currently listed as a California Sensitive Natural Community (CDFW 2021) and totals approximately 68.89 acres of *Parkinsonia florida* – *Olneya tesota* Woodland (*Parkinsonia florida* Association) is located throughout the project site (refer to Figure 7, *California Sensitive Natural Communities*). The proposed project would result in approximately 15.48 acres of permanent impacts and 10.82 acres of temporary impacts to *Parkinsonia florida* – *Olneya tesota* Woodland (*Parkinsonia florida* Association).



The permanent and temporary loss of this sensitive natural community would be potentially significant prior to mitigation. However, the permanent protection of avoided jurisdictional resources on the project site and additional habitat on lands to the west and south through a formal conservation instrument (e.g., easement), and implementation of measures provided in the BO (refer to Appendix D), CVCC's Final JPR (refer to Appendix E), and Section 4.9 below, impacts would be reduced to below a level of significance.

### 4.3 IMPACTS TO WETLANDS

Appendix G(c) of the CEQA guidelines asks if a project is likely to “*have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.*”

The project site does not contain any State or federally protected wetlands. As described in Section 3.5 above, aquatic features within the project site are considered ephemeral and do not meet the definition of a WoUS pursuant to the latest USACE guidelines established in 2015 for the mapping of WoUS, including wetlands. Therefore, on-site aquatic features would not be subject to regulation under Section 404 of the CWA and would not fall under USACE' jurisdiction. However, the on-site features qualify as WoS under RWQCB jurisdiction, consisting of approximately 90.96 acres of non-wetland WoS. Of this, the proposed project would temporarily impact approximately 12.15 acres and permanently impact 53.15 acres of RWQCB non-wetland WoS (Michael Baker 2021).

Additionally, the on-site drainage features exhibit a clear bed and bank and qualify as a CDFW jurisdictional streambed. Approximately 90.96 acres of CDFW jurisdictional streambed within the boundaries of the project site. In addition, the on-site *Parkinsonia florida* – *Olneya tesota* Woodland (*Parkinsonia florida* Association) community, also identified as DDWW habitat (Michael Baker 2021), is considered CDFW jurisdiction totaling 55.98 acres, approximately 20.56 acres of which coincides with the 90.96 acres of CDFW jurisdictional streambed and an additional 35.42 acres of DDWW habitat is associated with the CDFW jurisdictional streambed. Of this, the proposed project would temporarily impact approximately 12.15 acres and permanently impact 53.15 acres of CDFW jurisdictional streambed, as well as temporarily impact approximately 2.67 acres and permanently impact 10.73 acres of DDWW habitat under CDFW jurisdiction. Approximately 1.26 acres of temporary impacts and 5.82 acres of permanent impacts to DDWW habitat occurs within the CDFW-jurisdictional streambed and the remaining 1.41 acres of temporary impacts and 4.91 acres of permanent impacts to DDWW habitat is associated with the CDFW-jurisdictional streambed.

Permanent and temporary loss of RWQCB and CDFW jurisdiction described above would be potentially significant prior to mitigation. However, the permanent protection of avoided jurisdictional resources on the project site and additional habitat on lands to the west and south through a formal conservation instrument (e.g., easement), and implementation of measures provided in the BO (refer to Appendix D), CVCC's Final JPR (refer to Appendix E), and Section 4.9 below, impacts would be reduced to below a level of significance.

## 4.4 IMPACTS TO WILDLIFE MOVEMENT AND NURSERY SITES

Appendix G(d) of the CEQA guidelines asks if a project is likely to “*interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.*”

The proposed project will generally impact the movement of wildlife from the Santa Rosa Mountains to the west and south through the project site to the east. However, the proposed project through implementation of its proposed conservation/avoidance will still allow wildlife to move around the project site to the north and south. In addition, as noted above the USFWS determined that the proposed project will not adversely affect the Peninsular bighorn sheep.

The proposed project has the potential to impact active bird nests if vegetation is removed during the nesting season. Impacts to nesting birds are prohibited by the MBTA and CFGC. Therefore, a project-specific mitigation measure is provided in Section 4.9 of this report to avoid impacts to nesting birds.

## 4.5 IMPACTS TO LOCAL POLICIES AND ORDINANCES

Appendix G(e) of the CEQA guidelines asks if a project is likely to “*conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.*”

The proposed project will not conflict with any local policies or ordinances protecting biological resources.

## 4.6 IMPACTS TO HABITAT CONSERVATION PLANS

Appendix G(f) of the CEQA guidelines asks if a project is likely to “*conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.*”

As noted in Section 3.8 above, proposed project occurs within the boundaries of the CVMSHCP including portions of the SRSJM Conservation Area (refer to Figure 10, *Coachella Valley MSHCP/NCCP*). However, the CVMSHCP identifies the Travertine Specific Plan as a Covered Activity. The Travertine development was in the planning stages at the time that the CVMSHCP was adopted, and the original BO (USFWS 2005) for the proposed project had been issued when the CVMSHCP was being developed. The majority of the project footprint is located outside of the SRSJM Conservation Area. However, approximately 59.39 acres of the project footprint (12.25 acres of permanent impacts and 47.14 of temporary impacts) would occur within the SRSJM Conservation Area.

Since the proposed project would result in impacts to the SRSJM Conservation Area, the JPR process, whereby the CVCC and Wildlife Agencies (USFWS and CDFW) review the proposed project to ensure consistency with the CVMSHCP, was completed by the CVCC on March 31, 2021, and the proposed project was found to be consistent conditioned upon adherence to Avoidance and Minimization Measures,



Land Use Adjacency Guidelines, and project-specific financial requirements, as outlined by CVMSHCP plan documents (refer to Appendix E). As such, the proposed project will not conflict with the CVMSHCP.

## **4.7 INDIRECT IMPACTS**

In the context of biological resources, indirect effects are those effects associated with developing areas adjacent to adjacent native open space. Potential indirect effects associated with development include water quality impacts associated with drainage into adjacent open space/downstream aquatic resources; lighting effects; noise effects; invasive plant species from landscaping; and effects from human access into adjacent open space, such as recreational activities (including off-road vehicles, hiking, rock climbing), pets, dumping, etc. Temporary, indirect effects may also occur as a result of construction-related activities. As such, the proposed project will implement measures to address the following: drainage, toxics, lighting, noise, invasive, and barriers.

### **4.7.1 DRAINAGE**

Projects in proximity to conservation areas shall incorporate measures, including measures required through the National Pollutant Discharge Elimination System (NPDES) requirements, to ensure that the quantity and quality of runoff discharged to conservation lands is not altered in an adverse way when compared with existing conditions. Stormwater systems shall be designed to prevent the release of toxins, chemicals, petroleum products, exotic plant materials or other elements that might degrade or harm biological resources or ecosystem processes within adjacent conservation areas through the use of a variety of methods including natural detention basins, grass swales or mechanical trapping devices. Regular maintenance shall occur to ensure effective operations of runoff control systems. The proposed project will develop a Stormwater Pollution Prevention Plan (SWPPP) to address runoff and water quality during construction.

### **4.7.2 TOXICS**

Land uses proposed in proximity to conservation areas that use chemicals or generate bioproducts that are potentially toxic or may adversely affect wildlife species, habitat or water quality shall incorporate measures to ensure that application of such chemicals does not result in discharge to adjacent conservation areas. Measures such as those employed to address drainage issues shall be implemented. The proposed project will implement a SWPPP that will address runoff during construction.

### **4.7.3 LIGHTING**

Night lighting shall be directed away from adjacent conservation areas to protect wildlife from direct night lighting. If night lighting is required during construction, shielding shall be incorporated to ensure ambient lighting adjacent conservation areas are not increased. Refer to Section 4.9 for project-specific light spillage reduction measures.

#### **4.7.4 NOISE**

Proposed noise generating land uses with the potential to affect adjacent conservation lands shall incorporate setbacks, berms or walls to minimize the effects of noise on wildlife pursuant to applicable rules, regulations and guidelines related to land use noise standards. Refer to Section 4.9 for project-specific noise reduction measures.

#### **4.7.5 INVASIVES**

Projects adjacent to conservation lands shall avoid the use of invasive plant species in landscaping. Refer to Section 4.9 for project-specific invasive prevention measures.

#### **4.7.6 BARRIERS**

Proposed land uses adjacent to conservation lands shall incorporate barriers, where appropriate in individual project designs to minimize unauthorized public access, domestic animal predation, illegal trespass or dumping within conservation lands. Such barriers may include native landscaping, rocks/boulders, fencing, walls, signage and/or other appropriate mechanisms. Refer to Section 4.9 for a description of project-specific barriers.

### **4.8 CUMULATIVE IMPACTS**

Cumulative impacts are defined as the direct and indirect effects of a proposed project which, when considered alone, would not be deemed a substantial impact, but when considered in addition to the impacts of related projects in the area, would be considered potentially significant. “Related projects” refers to past, present, and reasonably foreseeable probable future projects, which would have similar impacts to the proposed project.

Through consultation with the USFWS and CVCC, the proposed project has been designed to avoid impacts to Peninsular bighorn sheep by incorporating project-specific design features, including an 8-foot wildlife fence and siting of features that may otherwise be attractive to Peninsular bighorn sheep within the interior. Therefore, the proposed project would not result in impacts to Peninsular bighorn sheep individuals. Through the implementation of measures included in Section 4.9, and through consistency with the BO (refer to Appendix D) and CVCC’s Final JPR (refer to Appendix E), the proposed project will not result in considerable cumulative impacts.

### **4.9 MITIGATION MEASURES**

The following sections provide project-specific mitigation measures for potential direct and indirect impacts to biological resources.



#### 4.9.1 SPECIAL-STATUS WILDLIFE SPECIES

Eighteen measures were included in the BO to avoid direct take of Peninsular bighorn sheep, limit habitat loss, and avoid indirect construction-related and post-construction-related impacts to Peninsular bighorn sheep, and to achieve consistency with the CVMSHCP in regard to Peninsular bighorn sheep. These measures focus on trail locations, habitat acquisition and long-term management, funding of research, future evaluations for the need of a wildlife fence, project design considerations, prohibition of invasive non-native plant species in project landscaped areas, noise reduction, the prevention of light spillage into open space and the SRSJM Conservation Areas, and provision of educational interpretive materials located along the proposed trail system. The following measures are recommended to avoid direct and indirect impacts to Peninsular bighorn sheep and to ensure consistency with the BO (refer to Appendix D) and CVCC's Final JPR (refer to Appendix E):

- BIO-1:** An 8-foot-tall wildlife fence constructed of tubular steel and painted to blend in with the desert environment will be installed where the project interfaces with Coral Mountain along the northern boundary and extend southward along the western and southern boundary of proposed development to minimize Peninsular bighorn sheep from entering the project. The fence will extend to where Avenue 62 intersects with the eastern project boundary (refer to Appendix F, *Overall Wall Plan*).
- BIO-2:** A Community Grand Loop Trail will be located along the outer perimeter of the proposed development, providing an additional buffer between the trail edge and the natural open space associated with the adjacent alluvial fan and the Santa Rosa Mountain foothills, including the Martinez Rock Slide. This trail system will incorporate educational elements highlighting native desert ecology and floral and faunal species, including Peninsular bighorn sheep.
- BIO-3:** All lighting located within the development footprint with the potential to illuminate the adjacent open space will be down-shielded to prevent light spillage. The trail separating the project from undeveloped native desert areas will only have four lights at each main loop trail rest area, and these will be 2-foot-tall path downlights. Where a community open space is against the project's perimeter, there will be only 2-foot-tall path lights in areas approved for human activities. Shade structures associated with community spaces adjacent to undeveloped native desert areas will not have lighting. All 2-foot-tall lights will be on a master timer will be turned off between 10:00 p.m. and civil morning twilight. The project will adhere to the City's Outdoor Lighting Ordinance.
- BIO-4:** Where the project is located adjacent to the SRSJM Conservation Area along its western edge, a minimum buffer of 74 feet will be incorporated between undeveloped native desert areas and private homeowner parcels and public gathering areas. Each private homeowner parcel along this western edge will have fencing at the top of slope with Lexan panels to dampen noise to an appropriate level. In addition, the project will adhere to the City's Noise Ordinance.



- BIO-5:** All plant species identified as invasive by the CVMSHP, or that are known to be toxic to Peninsular bighorn sheep, will be prohibited from inclusion in project landscaping. A project-specific list of prohibited plant species will be prepared by a qualified biologist for use in developing the Project Landscape Plan.

The project site contains suitable habitat for burrowing owls and Le Conte's thrasher. Pursuant to the CVMSHCP, take avoidance surveys are required prior to construction to avoid the direct harm to burrowing owls and Le Conte's thrasher. The following measure is recommended to avoid direct impacts to burrowing owls and to ensure consistency with the CVMSHCP:

- BIO-6:** A Qualified Biologist will prepare and present to each employee (including temporary, contractors, and subcontractors) a Worker Environmental Awareness Program (WEAP) prior to the initiation of work. They will be advised of the special-status wildlife species in the project site, the steps to avoid impacts to the species and the potential penalties for taking such species. At a minimum, the WEAP will include the following topics: occurrence of the listed and sensitive species in the area, their general ecology, sensitivity of the species to human activities, legal protection afforded to these species, penalties for violations of federal and State laws, reporting requirements, and project features designed to reduce the impacts to these species and promote continued successful occupation of habitats within the project area. Included in this WEAP will be color photographs of the listed species, which will be shown to the employees. Following the WEAP, the photographs will be posted in the contractor and resident engineer office, where they will remain through the duration of the project. The contractor, resident engineer, and the Qualified Biologist will be responsible for ensuring that employees are aware of the listed species. If additional employees are added to the project after initiation, they will receive instruction prior to working on the project.

- BIO-7:** Prior to construction, the construction area and adjacent habitat within 500 feet of the construction area, or to the edge of the property if less than 500 feet, will be surveyed by a Qualified Biologist for burrows that could be used by burrowing owl. Two (2) surveys will be conducted, with one survey to be conducted between 14 and 30 days prior to site disturbance, and a second survey to be conducted within 24 hours of site disturbance, following methods described in the *Staff Report on Burrowing Owl Mitigation* (California Department of Fish and Game 2012). If a burrow is located, the Qualified Biologist will determine if an owl is present in the burrow. If the burrow is determined to be occupied, the burrow will be flagged and a 160-foot buffer during the non-breeding season and a 250-foot buffer during the breeding season, or a buffer to the edge of the property boundary if less than 500 feet, will be established around the burrow. The buffer will be staked and flagged. No construction will be permitted within the buffer until the young are no longer dependent on the burrow.

If the burrow is unoccupied, the burrow will be made inaccessible to burrowing owls, and construction activities may proceed. If either a nesting or escape burrow is occupied, burrowing owls shall be relocated pursuant to accepted protocols and in coordination with the Wildlife



Agencies (CDFW and USFWS). A burrow is assumed occupied if records indicate that, based on surveys conducted following protocol, at least one burrowing owl has been observed occupying a burrow on site during the past three years. If there are no records for the site, surveys must be conducted to determine, prior to construction, if burrowing owls are present. Determination of the appropriate method of relocation, such as eviction/passive relocation or active relocation, shall be based on the specific site conditions (e.g., distance to nearest suitable habitat and presence of burrows within that habitat) in coordination with the Wildlife Agencies. Active relocation and eviction/passive relocation require the preservation and maintenance of suitable burrowing owl habitat determined through coordination with the Wildlife Agencies.

**BIO-8:** Prior to the start of construction activities during the nesting season (January 15 through June 15) in modeled Le Conte's thrasher habitat in the SRSJM Conservation Area, surveys will be conducted by a Qualified Biologist on the construction site and within 500 feet of the construction site, or to the property boundary if less than 500 feet. If nesting Le Conte's thrashers are found, a 500-foot buffer, or to the property boundary if less than 500 feet, will be established around the nest site. The buffer will be staked and flagged. No construction will be permitted within the buffer during the breeding season (January 15 through June 15) or until the young have fledged.

Habitats and vegetation within and surrounding the project site have the potential to support nesting black-tailed gnatcatcher, loggerhead shrike, long-eared owl, osprey, prairie falcon, and other common birds. Nesting birds are protected pursuant to the MBTA and CFGC. As such, the following measure is recommended to avoid impacts to nesting birds:

**BIO-9:** As feasible, vegetation clearing should be conducted outside of the nesting season, which is generally identified as February 1 through September 15. If avoidance of the nesting season is not feasible, then a qualified biologist shall conduct a nesting bird survey within three days prior to any disturbance of the site, including disking, demolition activities, and grading. If active nests are identified, the biologist shall establish suitable buffers around the nests, and the buffer areas shall be avoided until the nests are no longer occupied and the juvenile birds can survive independently from the nests.

#### 4.9.2 JURISDICTIONAL WATERS AND SENSITIVE NATURAL COMMUNITIES

As stated in Section 4.3 above, the proposed project would temporarily impact approximately 12.15 acres and permanently impact 53.15 acres of RWQCB non-wetland WoS. In addition, the proposed project would temporarily impact approximately 12.15 acres and permanently impact 53.15 acres of CDFW jurisdictional streambed, as well as temporarily impact approximately 2.67 acres and permanently impact 10.73 acres of DDWW habitat (*Parkinsonia florida* – *Olneya tesota* Woodland [*Parkinsonia florida* Association]) under CDFW jurisdiction. Approximately 1.26 acres of temporary impacts and 5.82 acres of permanent impacts to DDWW habitat occurs within the CDFW-jurisdictional streambed and the remaining 1.41 acres of temporary impacts and 4.91 acres of permanent impacts to



DDWW habitat (*Parkinsonia florida* – *Olneya tesota* Woodland [*Parkinsonia florida* Association]) is associated with the CDFW-jurisdictional streambed. As such, the following mitigation measures are recommended:

- BIO-10:** Prior to initiating any impacts to jurisdictional waters as a result of any components of the proposed project, the project proponent will obtain a Section 1602 Streambed Alteration Agreement from CDFW and will notify the RWQCB pursuant to WDR.
- BIO-11:** Impacts to RWQCB jurisdictional WoS and CDFW jurisdictional streambed, including DDWW habitat (*Parkinsonia florida* – *Olneya tesota* Woodland [*Parkinsonia florida* Association]) resulting at the project site will be mitigated through a combination of preserving existing jurisdictional waters within the project footprint, acquiring additional lands containing jurisdictional waters, and/or purchasing mitigation credits through an approved mitigation bank. The specific mitigation has not yet been identified, although it is expected to include the approximately 68.24 acres of jurisdictional waters identified by the 2021 delineation (Michael Baker 2021) to be avoided by the project and additional mitigation opportunities to be identified through coordination with CDFW and RWQCB either during the permitting process or potentially through early coordination with those agencies. Impacts to non-riparian waters will be mitigated at a minimum 1:1 ratio. Impacts to riparian vegetation will be mitigated at a minimum 2:1 ratio.

### 4.9.3 INDIRECT IMPACTS

As noted above in Section 5.9, the proposed project has the potential to result in indirect effects to sensitive resources, including Peninsular bighorn sheep, particularly along the western and southern edges of the project footprint. In general, the proposed project will include design features and other measures to avoid or minimize indirect effects as the result of drainage, toxics, artificial lighting, noise, invasive plant species, and/or unauthorized access to adjacent open space and SRSJM Conservation Area.

- BIO-12:** Drainage and Toxics: The project will drain away from the open space and SRSJM Conservation Area, and so is not expected to result in impacts to sensitive resources as a result of drainage, including toxics that be generated on site. Regardless, the project will develop a SWPPP to address runoff and water quality during construction, and the proposed project is designed to address water quality post-construction.
- BIO-13:** Artificial Lighting: Night lighting shall be directed away from adjacent open space and SRSJM Conservation Area to protect wildlife from direct night lighting. Light fixtures adjacent to open space will be shielded and utilize low intensity lighting. If night lighting is required during construction, shielding shall be incorporated to ensure ambient lighting adjacent conservation lands are not increased.



- BIO-14:** Noise: The project will incorporate setbacks, berms, and/or walls as applicable to minimize the effects of noise on wildlife pursuant to applicable rules, regulations and guidelines related to land use noise standards.
- BIO-15:** Invasive Plants: Landscaping areas adjacent to proposed open space will not include invasive plant species, including plants identified as invasive by the California Invasive Plant Council (Cal-IPC) and the CVMSHCP.
- BIO-16:** Unauthorized Access: The project will incorporate barriers to avoid/minimize unauthorized access to adjacent open space, including fencing, gates, or other effective barriers.



## Section 5      References

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## **Appendix A    Site Photographs**

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**Photograph 1:** Standing in the center of the project site, facing northeast.



**Photograph 2:** Standing in the center of the project site, facing west.





**Photograph 3:** Standing in the center of the project site, facing south.



**Photograph 4:** Standing in the south corner of the project site, facing west.





**Photograph 5:** Standing at middle of the south boundary of the project site, facing east.



**Photograph 6:** Standing at the middle of the south boundary of the project site, facing south.





**Photograph 7:** Standing at the wash near the southwest corner of the project site, facing southwest.



**Photograph 8:** Standing near southwest corner of the project site, facing northeast.





**Photograph 9:** Standing at the west spur of the project site, facing northeast.



**Photograph 10:** Standing at the west spur of the project site, facing south.





**Photograph 11:** Standing at the middle of north boundary of the project site, facing west.



**Photograph 12:** Standing at the middle of north boundary of the project site, facing north.





**Photograph 13:** Standing at the middle of north boundary of the project site, facing southwest.



**Photograph 14:** Standing north of agricultural portion of the project site, facing west.





**Photograph 15:** Standing at the northeast of agricultural portion of the project site, facing west.



**Photograph 16:** Standing at the center of the northeast spur of the project site, facing north.





**Photograph 17:** Standing at the center of the northeast spur of the project site, facing south.



**Photograph 18:** Standing at the center of east spur of the project site, facing west.





**Photograph 19:** Standing at the center of east spur of the project site, facing east.



**Photograph 20:** Standing at the east corner of the eastern spur of the project site, facing west.



## **Appendix B   Plant and Wildlife Species Observed List**

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**Table B-1: Plant and Wildlife Species Observed List**

<i>Scientific Name*</i>	<i>Common Name</i>	<i>Cal-IPC Rating**</i>	<i>Special-Status Rank***</i>
<b>Plants</b>			
<i>Acacia saligna*</i>	orange wattle	Moderate	
<i>Allionia incarnata</i>	windmills		
<i>Ambrosia dumosa</i>	burrobush		
<i>Ambrosia Salsola</i>	cheesbrush		
<i>Asclepias albicans</i>	white-stemmed milkweed		
<i>Atriplex lentiformis</i>	big saltbush		
<i>Atriplex polycarpa</i>	allscale saltbush		
<i>Bebbie juncea</i>	sweetbush		
<i>Brickellia desertorum</i>	desert brickellia		
<i>Condea emoryi</i>	desert lavender		
<i>Croton californicus</i>	California croton		
<i>Cryptantha</i> sp.	cryptantha		
<i>Cucurbita palmata</i>	coyote melon		
<i>Cylindropuntia gander</i>	Gander's buckhorn cholla		
<i>Cylindropuntia ramosissima</i>	branched pencil cholla		
<i>Dalea mollissima</i>	soft prairie clover		
<i>Datura discolor</i>	small datura		
<i>Ditaxis lanceolata</i>	lance leaved ditaxis		
<i>Echinocactus polycephalus</i>	cottontop cactus		
<i>Echinocereus engelmannii</i>	Engelmann's hedgehog cactus		
<i>Encelia farinosa</i>	desert brittlebush		
<i>Eriogonum thomasi</i>	Thomas eriogonum		
<i>Eriogonum inflatum</i>	desert trumpet		
<i>Eucalyptus</i> sp.*	eucalyptus		
<i>Euphorbia polycarpa</i>	smallseed sandmat		
<i>Euphorbia setiloba</i>	Yuma sandmat		
<i>Fagonia pachyacantha</i>	sticky fagonia		
<i>Ferocactus cylindraceus</i>	California barrel cactus		
<i>Fouquieria splendens</i>	ocotillo		
<i>Funastrum cynanchoides</i> var. <i>hartwegii</i>	Hatweg's twinevine		
<i>Hibiscus denudatus</i>	rock hibiscus		
<i>Hirschfeldia incana*</i>	shortpod mustard	Moderate	
<i>Hoffmannseggia microphylla</i>	wand holdback		
<i>Krameria erecta</i>	little leaved ratany		
<i>Justicia californica</i>	chuparosa		
<i>Larrea tridentata</i>	creosote bush		
<i>Malva parviflora</i>	cheeseweed		
<i>Nerium oleander*</i>	oleander		
<i>Opuntia basilaris</i>	beavertail cactus		
<i>Palafoxia arida</i>	Spanish needle		



**Table B-1: Plant and Wildlife Species Observed List**

<i>Scientific Name*</i>	<i>Common Name</i>	<i>Cal-IPC Rating**</i>	<i>Special-Status Rank***</i>
<i>Parkinsonia aculeata*</i>	Jerusalem thorn		
<i>Parkinsonia florida</i>	blue paloverde		
<i>Petalonyx thurberi</i>	sandpaper plant		
<i>Peucephyllum schottii</i>	desert pine		
<i>Phoenix canariensis</i>	Canary Island date palm		
<i>Psorothamnus emoryi</i>	dyebrush		
<i>Psorothamnus spinosus</i>	smoke tree		
<i>Senegalia greggii</i>	catclaw		
<i>Simmondsia chinensis</i>	jojoba		
<i>Sisymbrium irio*</i>	London rocket	Moderate	
<i>Tamarix ramosissima*</i>	salt cedar	High	
<i>Tidestromia suffruticosa</i>	honeysweet		
<i>Tiquilia palmeri</i>	Palmer's crinklemat		
<i>Tiquilia plicata</i>	fan-leaved tiquilia		
<i>Psora</i> sp.	pink scale lichen		
<b>Reptiles</b>			
<i>Callisaurus draconoides rhodostictus</i>	western zebra-tailed lizard		
<i>Phrynosoma platyrhinos calidiarum</i>	southern desert horned lizard		
<i>Uta stansburiana elegans</i>	western side-blotched lizard		
<b>Birds</b>			
<i>Amphispiza bilineata</i>	black-throated sparrow		
<i>Asio otus</i>	long-eared owl		SSC
<i>Auriparus flaviceps</i>	verdin		
<i>Aythya affinis</i>	lesser scaup		
<i>Bucephala albeola</i>	bufflehead		
<i>Buteo jamaicensis</i>	red-tailed hawk		
<i>Callipepla gambelii</i>	Gambel's quail		
<i>Calypte costae</i>	Costa's hummingbird		
<i>Campylorhynchus brunneicapillus</i>	cactus wren		
<i>Cathartes aura</i>	turkey vulture		
<i>Columba livia</i>	rock pigeon		
<i>Corvus brachyrhynchos</i>	American crow		
<i>Corvus corax</i>	common raven		
<i>Dryobates scalaris</i>	ladder-backed woodpecker		
<i>Falco sparverius</i>	American kestrel		
<i>Geococcyx californianus</i>	greater roadrunner		
<i>Junco hyemalis</i>	dark-eyed junco		
<i>Lanius ludovicianus</i>	loggerhead shrike		SSC
<i>Mareca strepera</i>	gadwall		
<i>Melospiza aberti</i>	Abert's towhee		
<i>Pandion haliaetus</i>	osprey		WL



**Table B-1: Plant and Wildlife Species Observed List**

<i>Scientific Name*</i>	<i>Common Name</i>	<i>Cal-IPC Rating**</i>	<i>Special-Status Rank***</i>
<i>Poliophtila caerulea</i>	blue-gray gnatcatcher		
<i>Poliophtila melanura</i>	black-tailed gnatcatcher		WL
<i>Salpinctes obsoletus</i>	rock wren		
<i>Sayornis nigricans</i>	black phoebe		
<i>Sayornis saya</i>	Say's phoebe		
<i>Setophaga coronate</i>	yellow-rumped warbler		
<i>Streptopelia decaocto</i>	Eurasian collared-dove		
<i>Tachycineta thalassina</i>	violet-green swallow		
<i>Thryomanes bewickii</i>	Bewick's wren		
<i>Tyto alba</i>	barn owl		
<i>Zenaida macroura</i>	mourning dove		
<b>Mammals</b>			
<i>Ammospermophilus leucurus</i>	white-tailed antelope squirrel		
<i>Lepus californicus</i>	black-tailed jackrabbit		

\* **Non-native species**

\*\* **California Invasive Plant Council (Cal-IPC) Ratings**

- High These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.
- Moderate These species have substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

\*\*\* **Special-Status Rank**

**California Department of Fish and Wildlife (CDFW)**

- SSC Species of Special Concern – any species, subspecies, or distinct population of fish, amphibian, reptile, bird, or mammal native to California that currently satisfies one or more of the following criteria:
- is extirpated from California or, in the case of birds, in its primary seasonal or breeding role;
  - is listed as Federally-, but not State-, threatened or endangered; meets the State definition of threatened or endangered but has not formally been listed.
  - is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status; or
  - has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for State threatened or endangered status.
- WL Watch List - taxa that were previously designated as “Species of Special Concern” but no longer merit that status, or which do not yet meet SSC criteria, but for which there is concern and a need for additional information to clarify status.



## **Appendix C   Potentially   Occurring   Special-Status Biological Resources**

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Table C-1: Potentially Occurring Special-Status Biological Resources

Scientific Name Common Name	Special- Status Rank*	CVMSHCP Covered Species	Habitat Preferences and Distribution Affinities	Observed On-site	Potential to Occur
<b>SPECIAL-STATUS PLANT SPECIES</b>					
<i>Abronia villosa</i> var. <i>aurita</i> chaparral sand- verbena	1B.1 G5T2? S2	No	Annual herb. Occurs on sandy soils within chaparral, coastal scrub, and desert dunes. Grows in elevations ranging from 245 to 5,250 feet above mean sea level (amsl). Blooming period is (January) March through September.	No	<b>Not Expected:</b> The project site does not provide suitable habitat for this species.
<i>Astragalus lentiginosus</i> var. <i>borreganus</i> Borrego milk-vetch	4.3 G5T5? S4	No	Annual herb. Grows on sandy soils within Mojavean desert scrub and Sonoran Desert scrub habitats. Grows in elevations ranging from 100 to 2,935 feet amsl. Blooming period is February through May.	No	<b>Not Expected:</b> The project site does not provide suitable habitat for this species.
<i>Astragalus lentiginosus</i> var. <i>coachellae</i> Coachella Valley milk-vetch	FE 1B.2 G5T1 S1	Yes	Annual/perennial herb. Occurs on dunes and sandy flats along disturbed margins of sandy washes and on sandy soils along roadsides adjacent to existing sand dunes. May also occur on sandy substrates in creosote bush scrub. Found at elevations ranging from 130 to 2,150 feet amsl. Blooming period is February through May.	No	<b>Not Expected:</b> The project site does not provide suitable habitat for this species.
<i>Astragalus preussii</i> var. <i>laxiflorus</i> Lancaster milk-vetch	1B.1 G4T2 S1	No	Perennial herb. Occurs on alkaline clay soils in flat, gravelly or sandy washes in chenopod scrub. Found at elevations ranging at or around 2,295 feet amsl. Blooming period is March through May.	No	<b>Not Expected:</b> The project site does not provide suitable habitat for this species and there are no occurrence records within five miles of the project site.
<i>Astragalus sabulonum</i> gravel milk-vetch	2B.2 G4G5 S2	No	Annual/perennial herb. Associated with sandy, sometimes gravelly flats, washes, and roadsides. Habitats include desert dunes, Mojavean desert scrub, and Sonoran Desert scrub. Found at elevations ranging from -195 to 3,050 feet amsl. Blooming period is February through June.	No	<b>Not Expected:</b> The project site does not provide suitable habitat for this species and there are no occurrence records within five miles of the project site.
<i>Astragalus tricarlinatus</i> triple-ribbed milk- vetch	FE 1B.2 G2 S2	Yes	Perennial herb. Found on sandy or gravelly soils within Joshua tree woodland and Sonoran Desert scrub habitats. Found at elevations ranging from 1,475 to 3,905 feet amsl. Blooming period is February through May.	No	<b>Not Expected:</b> The project site is located outside of the known elevation range.



Table C-1: Potentially Occurring Special-Status Biological Resources

Scientific Name Common Name	Special- Status Rank*	CVMSHCP Covered Species	Habitat Preferences and Distribution Affinities	Observed On-site	Potential to Occur
<i>Ayenia compacta</i> California ayenia	2B.3 G4 S3	No	Perennial herb. Grows on rocky canyon bottoms within Mojavean desert scrub and Sonoran Desert scrub habitats. Found at elevations ranging from 490 to 3,595 feet amsl. Blooming period is from March to April.	No	<b>Moderate:</b> The project site is located outside of the known elevation range. However, the project site does project suitable habitat and there are recent occurrence records for this species within one mile of the project site.
<i>Bursera microphylla</i> little-leaf elephant tree	2B.3 G4 S2	No	Perennial deciduous tree. Occurs in rocky environments found in Sonoran Desert scrub habitat. Found at elevations ranging from 655 to 2,295 feet amsl. Blooming period is June through July.	No	<b>Not Expected:</b> The project site is located outside of the known elevation range and there are no occurrence records within five miles of the project site.
<i>Chorizanthe leptotheca</i> Peninsular spineflower	4.2 G3 S3	No	Annual herb. Occurs on granitic soils in chaparral, coastal scrub, and lower montane coniferous forest habitats. Found at elevations ranging from 985 to 6,235 feet amsl. Blooming period is May through August.	No	<b>Not Expected:</b> The project site is located outside of the known elevation range and there are no occurrence records within five miles of the project site.
<i>Chorizanthe xanti</i> <i>var. leucotheca</i> white-bracted spineflower	1B.2 G4T3 S3	No	Annual herb. Occurs on sandy or gravelly soils in coastal scrub, Mohave desert scrub, and pinyon and juniper woodland habitats. Found at elevations ranging from 985 to 3,935 feet amsl. Blooming period is April through June.	No	<b>Not Expected:</b> The project site is located outside of the known elevation range and there are no occurrence records within five miles of the project site.
<i>Cryptantha ganderi</i> Gander's cryptantha	1B.1 G1G2 S1	No	Annual herb. Occurs in desert dunes and within sand soils in Sonoran Desert scrub habitats. Found at elevations ranging from 525 to 1,310 feet amsl. Blooming period is February through May.	No	<b>Not Expected:</b> The project site is located outside of the known elevation range and there are no occurrence records within five miles of the project site.
<i>Cylindropuntia munzii</i> Munz cholla	1B.3 G3 S1	No	Perennial stem succulent. Occurs in gravelly or sandy soil in Sonoran Desert scrub habitats. Found at elevations ranging from 490 to 1,970 feet amsl. Blooms during the month of May.	No	<b>Not Expected:</b> The project site is located outside of the known elevation range and there are no occurrence records within five miles of the project site.
<i>Ditaxis claryana</i> glandular ditaxis	2B.2 G3G4 S2	No	Perennial herb. Occurs on sandy soils in dry washes and on rocky hillsides in Mojavean desert scrub and Sonoran Desert scrub habitats. Found at elevations ranging from 0 to 1,525 feet amsl. Blooming period is October to March.	No	<b>High:</b> The project site provides suitable habitat for this species and there are recent occurrence records for this species within one mile of the project site.



Table C-1: Potentially Occurring Special-Status Biological Resources

<i>Scientific Name</i> Common Name	Special- Status Rank*	CVMSHCP Covered Species	Habitat Preferences and Distribution Affinities	Observed On-site	Potential to Occur
<i>Ditaxis serrata</i> var. <i>californica</i> California ditaxis	3.2 G5T3T4 S2?	No	Perennial herb. Occurs on sandy washes and alluvial fans of the foothills and lower desert slopes in Sonoran Desert scrub habitat at elevations ranging from 100 to 3,280 feet amsl. Blooming period is March through December.	No	<b>Moderate:</b> The project site provides suitable habitat for this species and there are recent occurrence records for this species within five miles of the project site.
<i>Eriastrum harwoodii</i> Harwood's eriastrum	1B.2 G2 S2	No	Annual herb. Found in desert dune habitats. Occurs at elevations ranging from 410 to 3,000 feet amsl. Blooming period is from March to June.	No	<b>Not Expected:</b> The project site does not provide suitable habitat for this species.
<i>Funastrum crispum</i> wavyleaf twinvine	2B.2 G4 S1	No	Perennial herb. Grows within chaparral and pinyon and juniper woodland. Found at elevations ranging from 3,820 to 6,035 feet amsl. Blooming period is May through August.	No	<b>Not Expected:</b> The project site is located outside of the known elevation range for this species and there are no occurrence records within five miles of the project site.
<i>Horsfordia alata</i> pink velvet-mallow	4.3 G5 S4	No	Perennial shrub. Grows on rocky soils within Sonoran Desert scrub. Found at elevations ranging from 330 to 1,640 feet amsl. Blooming period is February through December.	No	<b>High:</b> The project site provides suitable habitat and is within the known elevation range for this species. Further, there are recent occurrence records within one mile of the project site.
<i>Horsfordia newberryi</i> Newberry's velvet-mallow	4.3 G5 S4	No	Perennial shrub. Grows on rocky soils within Sonoran Desert scrub. Found at elevations ranging from 10 to 2,625 feet amsl. Blooming period is February through December.	No	<b>High:</b> The project site provides suitable habitat and is within the known elevation range for this species. Further, there are recent occurrence records within one mile of the project site.
<i>Jaffuelobryum raui</i> Rau's jaffuelobryum moss	2B.3 G4 S2	No	Moss. Occurs on carbonate dry, openings, and rock crevices within alpine dwarf scrub, chaparral, Mojavean Desert scrub, and Sonoran Desert scrub habitat. Found at elevations found from 1,610 to 6,890 feet amsl.	No	<b>Not Expected:</b> The project site is located outside of the known elevation range for this species.
<i>Johnstonella costata</i> ribbed cryptantha	4.3 G4G5 S4	No	Annual herb. Grows on sandy soils within desert dunes in Mojavean Desert scrub, and Sonoran Desert scrub habitats. Found at elevations ranging from -195 to 1,640 feet amsl. Blooming period is February through May.	No	<b>Not Expected:</b> There are no recent occurrence records within five miles of the project site.
<i>Johnstonella holoptera</i> winged cryptantha	4.3 G4G5 S4	No	Annual herb. Found in Mojavean desert scrub and Sonoran Desert scrub habitats. Grows in elevations ranging from 330 to 5,545 feet amsl. Blooming period is March through April.	No	<b>Not Expected:</b> There are no recent occurrence records within five miles of the project site.



Table C-1: Potentially Occurring Special-Status Biological Resources

<i>Scientific Name</i> Common Name	Special- Status Rank*	CVMSHCP Covered Species	Habitat Preferences and Distribution Affinities	Observed On-site	Potential to Occur
<i>Juncus acutus ssp. leopoldii</i> southwestern spiny rush	4.2 G5T5 S4	No	Perennial rhizomatous herb. Occurs within coastal dunes (mesic), meadows and seeps (alkaline seeps), and marshes and swamps (coastal salt). Found at elevations ranging from 10 to 2,955 feet amsl. Blooming period is (March) May through June.	No	<b>Not Expected:</b> The project site does not provide suitable habitat for this species and there are no occurrence records within five miles of the project site.
<i>Leptosiphon floribundus ssp. hallii</i> Santa Rosa Mountains leptosiphon	1B.3 G4T1T2 S1S2	No	Perennial herb. Occurs within pinyon and juniper woodland and Sonoran Desert scrub habitat. Found at elevations ranging from 3,280 to 6,560 feet amsl. Blooming period is May through July (November).	No	<b>Not Expected:</b> The project site is located outside of the known elevation range for this species.
<i>Linanthus maculatus ssp. maculatus</i> Little San Bernardino Mountains linanthus	1B.2 G2 S2	Yes	Annual herb. Occurs in sandy soils within desert dune, Joshua tree woodland, Mojave Desert scrub, and Sonoran Desert scrub habitats. Found at elevations ranging from 460 to 4,005 feet amsl. Blooming period is March to May.	No	<b>Not Expected:</b> The project site is located outside of the known elevation range for this species and there are no occurrence records within five miles of the project site.
<i>Lupinus albifrons var. medius</i> Mountain Springs bush lupine	1B.3 G4T2T3 S2	No	Perennial shrub. Occurs in pinyon and juniper woodland and Sonoran Desert scrub habitats. Found at elevations ranging from 1,395 to 4,495 feet amsl. Blooming period is March through May.	No	<b>Not Expected:</b> The project site is located outside of the known elevation range for this species.
<i>Marina orcuttii var. orcuttii</i> California marina	1B.3 G2G3T1T2 S2?	No	Perennial herb. Occurs on rocky soils within chaparral, pinyon and juniper woodland, and Sonoran Desert scrub habitats. Found at elevations ranging from 3,445 to 3,805 feet amsl. Blooming period is May through October.	No	<b>Not Expected:</b> The project site is located outside of the known elevation range for this species.
<i>Matelea parvifolia</i> spear-leaf matelea	2B.3 G5 S3	No	Perennial herb. Occurs on rocky soils within Mojavean desert scrub and Sonoran Desert scrub habitats. Found at elevations ranging from 1,445 to 3,595 feet amsl. Blooming period is March through May (July).	No	<b>Not Expected:</b> The project site is located outside of the known elevation range for this species.
<i>Mirabilis tenuiloba</i> slender-lobed four o'clock	4.3 G5 S4	No	Perennial herb. Occurs within Sonoran Desert scrub habitat. Found at elevations ranging from 755 to 3,595 feet amsl. Blooming period is (February) March through May.	No	<b>Not Expected:</b> The project site is located outside of the known elevation range for this species.



Table C-1: Potentially Occurring Special-Status Biological Resources

<i>Scientific Name</i> Common Name	Special- Status Rank*	CVMSHCP Covered Species	Habitat Preferences and Distribution Affinities	Observed On-site	Potential to Occur
<i>Nemacaulis denudata</i> <i>var. gracilis</i> slender cottonheads	2B.2 G3G4T3? S2	No	Annual herb. Occurs in coastal dunes, desert dunes, and Sonoran Desert scrub habitats. Found at elevations ranging from -165 to 1,310 feet amsl. Blooming period is (March) April through May.	No	<b>Not Expected:</b> There are no occurrence records within five miles of the project site.
<i>Phaseolus filiformis</i> slender-stem bean	2B.1 G5 S1	No	Annual herb. Occurs within Sonoran Desert scrub habitat. Found at elevations ranging from at or around 410 feet amsl. Blooms during the month of April.	No	<b>Not Expected:</b> There are no occurrence records within five miles of the project site.
<i>Pseudorontium cyathiferum</i> Deep Canyon snapdragon	2B.3 G4G5 S1	No	Annual herb. Grows on rocky soils within Sonoran Desert scrub habitat. Found at elevations ranging from 0 to 2,625 feet amsl. Blooming period is February through April.	No	<b>Not Expected:</b> There are no occurrence records within five miles of the project site.
<i>Salvia greatae</i> Orocopia sage	1B.3 G2G3 S2S3	Yes	Perennial shrub. Occurs in Mojave Desert scrub and Sonoran Desert scrub habitats. Found at elevations ranging from -130 to 2,705 feet amsl. Blooming period is March through April.	No	<b>Not Expected:</b> There are no occurrence records within five miles of the project site.
<i>Selaginella eremophila</i> desert spike-moss	2B.2 S2S3 G4	No	Perennial rhizomatous herb. Found in chaparral and Sonoran Desert scrub habitats on gravelly or rocky soils. Found at elevations ranging from 655 to 4,250 feet amsl. Blooming month is (May) June (July).	No	<b>Not Expected:</b> The project site is located outside of the known elevation range for this species.
<i>Senna covesii</i> Cove's cassia	2B.2 G5 S3	No	Perennial herb. Found on dry, sandy desert washes and slopes within Sonoran Desert scrub habitat. Found at elevations ranging from 740 to 4,250 feet amsl. Blooming period is from March to June (August).	No	<b>Not Expected:</b> The project site is located outside of the known elevation range for this species.
<i>Stemodia durantifolia</i> purple stemodia	2B.1 G5 S2	No	Perennial herb. Occurs on sandy soils and mesic sites within Sonoran Desert scrub. Found at elevations ranging from 591 to 984 feet amsl. Blooming period is from (January) April to December.	No	<b>Not Expected:</b> The project site is located outside of the known elevation range for this species.
<i>Xylorhiza cognata</i> Mecca-aster	1B.2 G2 S2	Yes	Perennial herb. Occurs in creosote bush scrub. Found at elevations ranging from 65 to 1,310 feet amsl. Blooming period is January to June.	No	<b>Not Expected:</b> There are no occurrence records within five miles of the project site.



Table C-1: Potentially Occurring Special-Status Biological Resources

Scientific Name Common Name	Special-Status Rank*	CVMSHCP Covered Species	Habitat Preferences and Distribution Affinities	Observed On-site	Potential to Occur
<b>SPECIAL-STATUS WILDLIFE SPECIES</b>					
<i>Athene cunicularia</i> burrowing owl	SSC G4 S3	Yes	Yearlong resident of California. Primarily a grassland species, but it persists and even thrives in some landscapes highly altered by human activity. Occurs in open, annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Also known to occur in along flood control channels, disturbed lots, and other lands devoid of vegetation. The overriding characteristics of suitable habitat appear to be the presence of suitable burrows for roosting and nesting in areas with relatively short vegetation with only sparse shrubs and limited taller vegetation.	No	<b>Moderate:</b> The project site provides suitable foraging habitat, but marginal nesting habitat for this species due on-site soil conditions (i.e., rocky) and minimal number of suitable burrows. Further, multiple burrowing owls were observed during surveys conducted in 2003 near to the northeast corner of the project site (AMEC 2010).
<i>Batrachoseps major aridus</i> desert slender salamander	FE SE G4T1 S1	No	Known only from Hidden Palm Canyon (2,800 feet amsl) and Guadalupe Creek on the eastern slope of the Santa Rosa Mountains in Riverside County. Inhabits year-round seeps and moist cliffs with limestone sheets, rocks, and talus, shaded by California fan palms and willow trees.	No	<b>Not Expected:</b> The project site does not provide suitable habitat for this species.
<i>Buteo regalis</i> ferruginous hawk	WL G4 S3S4	No	Common winter resident of grassland habitats and agricultural areas in southwestern California. Frequents open grasslands, sagebrush flats, desert scrub, low foothills surrounding valleys, and fringes of pinyon-juniper habitats. This species does not breed in California.	No	<b>Not Expected:</b> There is no suitable habitat for this species within the project site. Further, this species does not nest within California and only occur during the winter.
<i>Chaetodipus fallax pallidus</i> pallid San Diego pocket mouse	SSC G5T3T4 S3S4	No	Common resident of sandy herbaceous areas, usually in association with rocks or coarse gravel in southwestern California. Occurs mainly in arid coastal and desert border areas in eastern San Diego County. Habitats include coastal scrub, chamise-redshank chaparral, mixed chaparral, sagebrush, desert wash, desert scrub, desert succulent shrub, pinyon-juniper, and annual grassland.	No	<b>Not Expected:</b> The project site does not provide suitable habitat for this species and there are no occurrence records within five miles of the project site.



Table C-1: Potentially Occurring Special-Status Biological Resources

<i>Scientific Name</i> Common Name	Special- Status Rank*	CVMSHCP Covered Species	Habitat Preferences and Distribution Affinities	Observed On-site	Potential to Occur
<i>Crotalus ruber</i> red-diamond rattlesnake	SSC G4 S3	No	Found in southwestern California, from the Morongo Valley west to the coast and south along the peninsular ranges to mid Baja California. It can be found from the desert, through dense chaparral in the foothills (it avoids the mountains above around 4,000 feet amsl), to warm inland mesas and valleys, all the way to the cool ocean shore. It is most commonly associated with heavy brush with large rocks or boulders. Dense chaparral in the foothills, boulders associated coastal sage scrub, oak/pine woodlands, and desert slope scrub associations; however, chamise and red shank associations may offer better structural habitat for refuges and food resources for this species than other habitats.	No	<b>Not Expected:</b> The project site does not provide suitable habitat for this species.
<i>Cyprinodon macularius</i> desert pupfish	FE SE G1 S1	Yes	Historically occurred in several springs, seeps, and slow-moving streams in the Salton Sink Basin, as well as in backwaters and sloughs along the lower Colorado River. Currently, natural populations of desert pupfish occur in the Salton Sea and nearby shoreline pools, freshwater ponds, and irrigation drains, as well as in portions of creeks/washes that are tributary to the Salton Sea. The desert pupfish tolerates an extreme range of environmental conditions: salinities ranging from freshwater to 68-90 parts per thousand, water temperatures as high as 108 °F and as low as 40 °F.	No	<b>Not Expected:</b> The project site does not provide suitable habitat for this species.
<i>Danaus plexippus</i> (California overwintering population) monarch butterfly	FC G4T2T3 S2S3	No	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts are located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	No	<b>Not Expected:</b> The project site does not provide suitable habitat for this species. Based on maps of known wintering roosts for this species, there are no known roosts in this area (Xerces Society 2022).



Table C-1: Potentially Occurring Special-Status Biological Resources

Scientific Name Common Name	Special- Status Rank*	CVMSHCP Covered Species	Habitat Preferences and Distribution Affinities	Observed On-site	Potential to Occur
<i>Dinacoma caseyi</i> Casey's June beetle	FE G1 S1	No	Only two known populations in a small area of southern Palm Springs. Found in sandy soils within desert wash and Mojavean desert scrub habitat; the females live underground and only come to the ground surface to mate.	No	<b>Not Expected:</b> The project site is located more than 5 miles away and separate from the species known populations.
<i>Empidonax traillii extimus</i> southwestern willow flycatcher	FE SE G5T2 S1	Yes	Uncommon summer resident in southern California primarily found in lower elevation riparian habitats occurring along streams or in meadows. The structure of suitable breeding habitat typically consists of a dense mid-story and understory and can also include a dense canopy. Nest sites are generally located near surface water or saturated soils. The presence of surface water, swampy conditions, standing or flowing water under the riparian canopy are preferred.	No	<b>Not Expected:</b> There is no suitable habitat within the project site and there are no occurrence records for this species within five miles of the project site.
<i>Eumops perotis californicus</i> western mastiff bat	SSC G4G5T4 S3S4	No	Primarily a cliff-dwelling species, roost generally under exfoliating rock slabs. Roosts are generally high above the ground, usually allowing a clear vertical drop of at least 10 feet below the entrances for flight, in crevices in cliff faces, high buildings, trees, and tunnels. In California, it is most frequently encountered in broad open areas. Its foraging habitat includes dry desert washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland, and agricultural areas.	No	<b>Low:</b> The project site provides marginal foraging habitat for this species. However, suitable roosting habitat is not present and there are no recent occurrence records within five miles of the project site.
<i>Falco mexicanus</i> prairie falcon	WL G5 S4	No	The prairie falcon is associated primarily with perennial grasslands, savannahs, rangeland, some agricultural fields during the winter season, and desert scrub areas, all typically dry environments of western North American where there are cliffs or bluffs for nest sites. The species requires sheltered cliff ledges for cover and nesting which may range in height from low rock outcrops of 30 feet to vertical, 400 feet high (or more) cliffs and typically overlook some treeless country for hunting. Open terrain is used for foraging.	No	<b>High:</b> The project provides suitable foraging habitat. However, there is no suitable nesting habitat within the project site.



Table C-1: Potentially Occurring Special-Status Biological Resources

<i>Scientific Name</i> Common Name	Special- Status Rank*	CVMSHCP Covered Species	Habitat Preferences and Distribution Affinities	Observed On-site	Potential to Occur
<i>Gopherus agassizii</i> desert tortoise	FT ST G3 S2S3	Yes	Can be found in a wide variety of habitats, such as alluvial fans, desert washes, canyons, and saltbush plains; most tortoises in the Mojave Desert are usually associated with creosote bush scrub on alluvial fans and bajadas. Wildflowers, grasses, and in some cases, cacti make up the bulk of their diet. Some of the more common forbs consumed by the tortoise include desert dandelion, primrose, gilia, desert plantain, milkvetches, desert marigold, Mojave lupine, phacelia, desert wishbone bush, forget-me-knots, lotus, goldfields, California coreopsis, white-margin sandmat, and the introduced red stemmed filaree.	No	<b>Not Expected:</b> The project site contains suitable habitat for this species. However, there are no occurrence records within five miles of the project site and the project site is not connected to any known populations.
<i>Lanius ludovicianus</i> loggerhead shrike	SSC G4 S4	No	Yearlong resident of California. Prefers open habitats with bare ground, scattered shrubs, and areas with low or sparse herbaceous cover including open-canopied valley foothill hardwood, riparian, pinyon-juniper desert riparian, creosote bush scrub, and Joshua tree woodland. Requires suitable perches including trees, posts, fences, utility lines, or other perches. Nests in branches up to 14 feet above the ground frequently in a shrub with thorns or with tangled branching habitats.	Yes	<b>Present:</b> The project site provides suitable nesting and foraging habitat, and the species was observed during field surveys.
<i>Lasiurus xanthinus</i> western yellow bat	SSC G4G5 S3	Yes	Uncommon in California, known only in Los Angeles and San Bernardino Counties. Occurs in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. Prefers to roost and feed in, and near, palm oases and riparian habitats. Commonly found in the southwestern U.S. roosting in the skirt of dead fronds in both native and non-native palm trees.	No	<b>Low:</b> The project site provides marginal foraging habitat for this species. However, suitable roosting habitat is not present and there are no recent occurrence records within five miles of the project site.



Table C-1: Potentially Occurring Special-Status Biological Resources

<i>Scientific Name</i> Common Name	Special-Status Rank*	CVMSHCP Covered Species	Habitat Preferences and Distribution Affinities	Observed On-site	Potential to Occur
<i>Nyctinomops femorosaccus</i> pocketed free-tailed bat	SSC S3S4 S3	No	Often found in pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree woodland, and palm oasis habitats. The species roosts primarily in crevices of rugged cliffs, high rocky outcrops, and slopes. May also roost in buildings, caves, and under roof tiles.	No	<b>Low:</b> The project site provides marginal foraging habitat for this species. However, suitable roosting habitat is not present and there are no recent occurrence records within five miles of the project site.
<i>Ovis canadensis nelsoni pop. 2</i> Peninsular bighorn sheep DPS	FE ST FP G4T3Q S2	Yes	Eastern slopes of the Peninsular Ranges below 4,600 feet asml. This DPS of the subspecies inhabits the Peninsular Ranges in southern California from the San Jacinto Mountains south to the US-Mexico International Border. Optimal habitat includes steep walled canyons and ridges bisected by rocky or sandy washes, with available water. Alluvial fans and washes in flatter terrain are also used for foraging and water. Peninsular bighorn sheep in particular avoid higher elevations that support chaparral.	No	<b>Moderate:</b> The native Vegetation communities within the southern portions of the project site provide suitable foraging habitat for this species, but the project site is unlikely to be used for lambing. In addition, Critical Habitat is designated for this species is located along the southern boundary and adjacent to the western boundary of the project site. Further, there are recent occurrence records for this species within one mile of the project site.
<i>Perognathus longimembris bangsi</i> Palm Springs pocket mouse	SSC G5T2 S2	Yes	Known from various vegetation communities, including creosote scrub, desert scrub, and grasslands, generally occurring on loosely packed or sandy soils with sparse to moderately dense vegetative cover. No longer occur on the valley floor from Palm Springs to the Salton Sea in areas developed for urban and agricultural land uses.	No	<b>Not Expected:</b> There is no suitable habitat within the project site and there are no occurrence records for this species within five miles of the project site.
<i>Phrynosoma mcallii</i> flat-tailed horned lizard	SSC G3 S2	Yes	Restricted to desert washes and desert flats in desert dunes, Mojavean desert scrub, and Sonoran Desert scrub. Critical habitat element is fine sand with high density of harvester ants and fine windblown sand, but do not normally occur in habitats characterized as marshes and tamarisk-arrowweed thickets, or agricultural and developed areas.	No	<b>Not Expected:</b> The project site does not provide suitable habitat for this species.



Table C-1: Potentially Occurring Special-Status Biological Resources

<i>Scientific Name</i> Common Name	Special- Status Rank*	CVMSHCP Covered Species	Habitat Preferences and Distribution Affinities	Observed On-site	Potential to Occur
<i>Poliopitila melanura</i> black-tailed gnatcatcher	WL G5 S3S4	No	In Mojave, Great Basin, Colorado and Sonoran Desert communities, prefers nesting and foraging in densely lined arroyos and washes dominated by creosote bush and saltbush, with scattered bursage, ocotillo, saguaro, barrel cactus, prickly pear cactus, and cholla.	Yes	<b>Present:</b> The project site provides suitable nesting and foraging habitat, and the species was observed during field surveys.
<i>Pyrocephalus rubinus</i> vermillion flycatcher	SSC G5 S2S3	No	Occurs in a variety of open habitats including open woodland, clearings, desert scrub, savannah, agricultural land, golf courses, and recreational parks. The species tends to stay near water, often occurring in riparian vegetation characterized by Fremont cottonwoods, mesquite, willows, and California sycamores.	No	<b>Not Expected:</b> The project site does not provide suitable habitat for this species.
<i>Rallus obsoletus</i> [= <i>longirostris</i> ] <i>yumanensis</i> Yuma Ridgways (clapper) Rail	FE	Yes	Consistently found in freshwater marshes that are composed of bulrush and cattail with an average height greater than 6 feet tall.	No	<b>Not Expected:</b> The project site does not provide suitable habitat for this species.
<i>Taxidea taxus</i> American badger	SSC G5 S3	No	Occupies a wide variety of habitats including dry, open grassland, sagebrush, and woodland habitats. Require dry, friable, often sandy soil to dig burrows for cover, food storage, and giving birth. Occasionally found in riparian zones and open chaparral with less than 50% plant cover.	No	<b>Low:</b> The project site provides marginal habitat for this species. Additionally, there are no known sightings within five miles of the project site.
<i>Toxostoma crissale</i> Crissal thrasher	SSC G5 S3	Yes	Common yearlong resident in southern California. Occupies arid habitats including desert washes, riparian brush, and mesquite thickets at lower elevations and dense scrub in arroyos at higher elevations. Nests in dense vegetation along streams/washes dominated by mesquite, screwbean mesquite, ironwood, catclaw, acacia, arrowweed, willow.	No	<b>Not Expected:</b> There is no suitable habitat for this species within the project site.



Table C-1: Potentially Occurring Special-Status Biological Resources

<i>Scientific Name</i> Common Name	Special-Status Rank*	CVMSHCP Covered Species	Habitat Preferences and Distribution Affinities	Observed On-site	Potential to Occur
<i>Toxostoma lecontei</i> Le Conte's thrasher	SSC G4 S3	Yes	Common yearlong resident in southern California. Primarily occurs in open desert wash, desert scrub, alkali desert scrub, and desert succulent shrub habitats; also occurs in Joshua tree habitat with scattered shrubs. Habitats with a high proportion of one or more species of saltbush and/or cylindrical cholla cactus is preferred. The ground is generally bare or with sparse patches of grasses and annuals forming low ground cover. Commonly nests in a dense, spiny shrub or densely branched cactus in desert wash habitat, usually 2 to 8 feet above ground.	No	<b>Moderate:</b> The project site provides suitable foraging habitat, but marginal nesting habitat for this species. However, there are no occurrence records for this species within five miles of the project site.
<i>Uma inornata</i> Coachella Valley fringe-toed lizard	FT SE G1Q S1	Yes	Sparsely vegetated arid areas with fine wind-blown sand, including dunes, washes, alkali scrub, and flats with sandy hummocks formed around the bases of vegetation. Requires fine, loose, wind-blown sand for burrowing.	No	<b>Not Expected:</b> There is no suitable habitat within the project site.
<i>Vireo bellii pusillus</i> least Bell's vireo	FE SE SSC G5T2 S2	Yes	Summer resident in southern California. Breeding habitat generally consists of dense, low, shrubby vegetation in riparian areas, and mesquite brushlands, often near water in arid regions. Early successional cottonwood-willow riparian groves are preferred for nesting. The most critical structural component of nesting habitat in California is a dense shrub layer that is 2 to 10 feet above ground. The presence of water, including ponded surface water or moist soil conditions, may also be a key component for nesting habitat.	No	<b>Not Expected:</b> There is no suitable habitat within the project site and there are no occurrence records for this species within five miles of the project site.
<i>Xerospermophilus tereticaudus chlorus</i> Palm Springs round-tailed ground squirrel	SSC G5T2Q S2	Yes	Prefers open, flat, grassy areas in fine-textured, sandy soil. Habitats include mesquite- and creosote-dominated sand dunes, creosote bush scrub, creosote-paloverde, and saltbush/alkali scrub. Substrates include wind-blown sand, coarse sand, and packed silt with desert pavement.	No	<b>Not Expected:</b> Although there is creosote dominated habitats there is little to no sandy soils, grasses, or flat open areas which this species prefers. Additionally, there are no occurrence records within five miles of the project site.



Table C-1: Potentially Occurring Special-Status Biological Resources

<i>Scientific Name</i> Common Name	Special- Status Rank*	CVMSHCP Covered Species	Habitat Preferences and Distribution Affinities	Observed On-site	Potential to Occur
<b>SPECIAL-STATUS VEGETATION COMMUNITIES</b>					
<u>CNDDDB/Holland (1986)</u> Desert Fan Palm Oasis Woodland  <u>MCV (1995)</u> Fan Palm Series  <u>NVCS (2009)</u> <i>Washingtonia filifera</i> seasonally flooded woodland alliance	G3 S3.2	N/A	Found at elevations ranging from 328 to 2,952 feet amsl in desert springs in canyon waterways or along fault lines where underground water is continuously available. The USFWS Wetland Inventory (1996 national list) recognizes <i>Washingtonia filifera</i> as a FACW plant. <i>Washingtonia filifera</i> is dominant or co-dominant in the tree canopy with white alder ( <i>Alnus rhombifolia</i> ), Arizona ash ( <i>Fraxinus velutina</i> ), California sycamore, Fremont cottonwood, honey mesquite ( <i>Prosopis glandulosa</i> ), screwbean mesquite ( <i>Prosopis pubescens</i> ), narrow leaved willow ( <i>Salix exigua</i> ), Goodding's black willow ( <i>Salix gooddingii</i> ), and arroyo willow ( <i>Salix lasiolepis</i> ). Trees are less than 98 feet tall; canopy is open to continuous. Shrubs include saltbush, willow baccharis ( <i>Baccharis salicina</i> ), brittlebush ( <i>Encelia farinosa</i> ), arrowweed, bush seepweed ( <i>Suaeda nigra</i> ) or tamarix. Herbaceous layer is open to continuous.	No	<b>Absent:</b> This vegetation community does not occur within or adjacent to the project site.

\* U.S. Fish and Wildlife Service (USFWS)

- FE      Endangered – any species which is in danger of extinction throughout all or a significant portion of its range.
- FT      Threatened – any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

California Department of Fish and Wildlife (CDFW)

- SE      Endangered – any native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.
- ST      Threatened – any native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required under the California Endangered Species Act.
- FP      Fully Protected – any native species or subspecies of bird, mammal, fish, amphibian, or reptile that were determined by the State of California to be rare or face possible extinction.
- SSC      Species of Special Concern – any species, subspecies, or distinct population of fish, amphibian, reptile, bird, or mammal native to California that currently satisfies one or more of the following criteria:
- is extirpated from California or, in the case of birds, in its primary seasonal or breeding role;
  - is listed as Federally-, but not State-, threatened or endangered; meets the State definition of threatened or endangered but has not formally been listed.
  - is experiencing, or formerly experienced, serious (nonscyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status; or
  - has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for State threatened or endangered status.
- WL      Watch List - taxa that were previously designated as “Species of Special Concern” but no longer merit that status, or which



do not yet meet SSC criteria, but for which there is concern and a need for additional information to clarify status.

**California Native Plant Society (CNPS) California Rare Plant Rank**

- 1B Plants rare, threatened, or endangered in California and elsewhere.
- 2B Plants rare, threatened, or endangered in California but more common elsewhere.
- 3 Plants about which more information is needed – Review List.
- 4 Plants of limited distribution – Watch List.

**Threat Ranks**

- .1 Seriously threatened in California (over 80% of occurrences threatened/high degree any immediacy of threat).
- .2 Moderately threatened in California (20 to 80 percent of occurrences threatened/moderate degree and immediacy of threat).
- .3 Not very threatened in California (less than 20 percent of occurrences threatened/low degree and immediacy of threat or no current threats known).

**NatureServe Conservation Status Rank**

The Global Rank (G#) reflects the overall condition and imperilment of a species throughout its global range. The Intraspecific Taxon Rank (T#) reflects the global situation of just the subspecies or variety. The State Rank (S#) reflects the condition and imperilment of an element throughout its range within California. (G#Q) reflects that the element is very rare but there are taxonomic questions associated with it; the calculated G rank is qualified by adding a Q after the G#. Adding a ? to a rank expresses uncertainty about the rank.

- G1/T1 Critically Imperiled – At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
- G2/T2 Imperiled— At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.
- G3/T3 Vulnerable— At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.
- G4/T4 Apparently Secure— Uncommon but not rare; some cause for long-term concern due to declines or other factors.
- G5/T5 Secure – Common; widespread and abundant.
- S1 Critically Imperiled – Critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the State.
- S2 Imperiled – Imperiled in the State because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or State.
- S3 Vulnerable – Vulnerable in the State due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
- S4 Apparently Secure – Uncommon but not rare; some cause for long-term concern due to declines or other factors.

**Coachella Valley Multiple Species Habitat Conservation Plan**

- Yes – Fully Covered.
- No – Not Covered.



## **Appendix D    USFWS Biological Opinion**

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# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Ecological Services  
Carlsbad Fish and Wildlife Office  
6010 Hidden Valley Road  
Carlsbad, California 92011



In Reply Refer To:  
FWS-ERIV-2735.3

DEC 07 2005

### Memorandum

To: Field Manager, Bureau of Land Management, Palm Springs, California  
Area Manager, Bureau of Reclamation, Yuma Area Office, Yuma, Arizona

From: Assistant Field Supervisor, Carlsbad Fish and Wildlife Office, Carlsbad, California  
*OKR*

Subject: Endangered Species Consultation on the Proposed Travertine Project, City of La Quinta, Riverside County, California

This biological opinion responds to your request to initiate consultation under section 7 of the Endangered Species Act of 1973, as amended [16 U.S.C. 1531 *et seq.*, (Act)]. Your request dated June 25, 2004, was received by the U.S. Fish and Wildlife Service (Service) on June 28, 2004. At issue are the effects of the subject project on the Peninsular bighorn sheep (*Ovis canadensis*) and its designated critical habitat.

After receipt of a regional species list from the Service dated February 3, 2003, representatives of the Service, Bureau of Land Management (BLM), Bureau of Reclamation (BOR), and Travertine Corporation further assessed the suitability of the project site and environs to support the ten listed species included in the list. Based on this review, the Service agreed that seven of the species were unlikely to be found on or adjacent to the project site but that a more refined assessment was needed for the remaining three species. Travertine then sponsored a habitat assessment for the endangered triple-ribbed milk-vetch (*Astragalus tricarlinatus*). In a letter from Dr. Andrew Sanders, dated September 16, 2003, the author concluded that the species was unlikely to be present based on a map/photograph that was provided for his review. Travertine also sponsored a field survey for the threatened desert tortoise (*Gopherus agassizii*), which was conducted in September 2003 largely following Service protocol but did not detect any tortoise or tortoise sign (letter from Ecological Ventures California, Inc., dated September 12, 2003). Based on numerous site visits by Service personnel, reconfiguration of project boundaries, and results of species surveys and habitat assessments, the Service agrees that the proposed project is unlikely to affect the milk-vetch or tortoise, which will not be addressed further in this opinion.

This biological opinion is based on (1) the *Biological Assessment of the Impacts to Peninsular Bighorn Sheep, Desert Tortoise, and Triple-ribbed milkvetch for the Proposed Travertine Development, City of La Quinta, Riverside County, California*, dated June 2004; (2) an addendum to the biological assessment, entitled *Addendum to Biological Assessment for the*

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*Travertine Development, La Quinta, CA*, dated February 2005; (3) another addendum to the biological assessment, entitled *Section 5 Addendum to Travertine Biological Assessment*, transmitted by email on September 29, 2005; (4) various email and verbal communications between representatives of the project proponent, Service, California Department of Fish and Game, BOR, BLM, and City of La Quinta (City); and (5) the scientific literature, unpublished data, various maps, file materials, and meeting notes.

## CONSULTATION HISTORY

Originally, BLM requested on April 8, 1997, initiation of a conference on Peninsular bighorn sheep pursuant to 50 CFR 402.10. However, based on a memo from the Service dated June 18, 1998, the conference was not completed. Subsequently, after meeting with prospective partners and their representatives with an interest in the project, and learning that a right-of-use application had been submitted to the BOR for access across Federal lands, the Service wrote BOR on March 12, 2002, requesting project-related information and initiation of formal consultation. This request led to a series of meetings involving representatives of the permit applicant, BOR, BLM, Service, California Department of Fish and Game (CDFG), Coachella Valley Association of Governments (CVAG), and City. On March 21, 2003, BOR requested initiation of consultation but the Service responded on June 2, 2003, and deferred initiation pending completion of a biological assessment per 50 CFR 402.1(c)(6). After numerous additional meetings among the interests listed above, and reviews of several draft biological assessments, BLM requested initiation of consultation with submittal of the biological assessment on June 25, 2004, which was received by the Service on June 28, 2004. Numerous additional meetings were held, primarily between the permit applicant and Service, and an addendum to the biological assessment was received by the Service on March 12, 2005. Following another series of meetings, Travertine submitted the *Section 5 Addendum to the Travertine Biological Assessment*. A complete administrative record of this consultation is on file in the Carlsbad Fish and Wildlife Office.

## DESCRIPTION OF THE PROPOSED ACTION

The proposed Travertine development is located in the City of La Quinta (City) at the base of the Santa Rosa Mountains in the Coachella Valley, Riverside County, California. The project area is in T6S, R7E, Section 33, and T7S, R7E, Sections 3, 4, and 5, San Bernardino Base Meridian (Figure 1). About one section of land within the current Travertine project site was acquired into private ownership through the Toro Canyon land exchange in a trade for public acquisition of about five sections of land within the Santa Rosa Mountains National Scenic Area by BLM. In addition to the public interest benefits of acquiring in-holdings within the National Scenic Area, the Toro Canyon exchange was to have a positive impact on management of public lands that also provided habitat for Peninsular bighorn sheep. Once the land exchange was approved, the City annexed the project site and adjoining areas from the County in 1993, and the site was incorporated into the City as Low Density Residential (LDR, 2 to 4 dwelling units per acre) and



Open Space. In 1995, the proposed Travertine development (Specific Plan 94-026) and Environmental Impact Report (EIR) (State Clearinghouse No. 94112047) were approved by the City through adoption of Resolution 95-39. In 1999, the City approved an indefinite time extension of the final specific plan by adoption of Resolution 99-061.

The original project area was 906 acres but Travertine Corporation currently has acquired an additional 35 acres in Section 5 immediately adjacent to Travertine's western boundary for conservation of bighorn sheep habitat and golf course expansion. Travertine continues to investigate the acquisition of additional lands in Section 5 for conservation of bighorn sheep. Additional lands not to exceed about 150 acres in Section 33 along the project's northeastern corner outside of designated critical habitat may also be added to the project site. This increase in acreage would potentially accommodate larger lot sizes with the total number of residential units not exceeding 2,000 units and an additional nine holes of golf to bring the total to 36 holes.

The proposed Travertine development is a master-planned resort community that would include a variety of land uses, including residential, recreational/open space, commercial, and resort hotel/conference center. At least three proposed residential types, including estate homes, resort homes, and villas, would be oriented around up to 36 holes of golf and a driving range. A neighborhood commercial site is proposed to provide local services. A resort hotel/conference center will include the opportunity for a tennis facility, which may provide additional recreational opportunities for both residents and visitors to the Travertine community.

The project would be developed in multiple phases over a number of years. The anticipated project phases are depicted in Table 1. After construction of the golf course, phasing of project area development would be driven primarily by the construction of the two water reservoirs, each of which would serve a different portion of the development. At build-out, the project would result in impacts to approximately 826 acres, of which about 267 acres are in designated critical habitat. The total acreage of Travertine could increase as described above, in consultation with the Service. This information is from the Travertine Specific Plan and exhibits prepared by The Keith Companies (1995a, 1995b, 1999) and Travertine Corporation.

Table 1. Proposed Phasing of the Travertine Development, City of La Quinta, Riverside County, California.

Phase	Description
1	Selective grading of project site, and construction of Madison Street from Avenue 60 to Avenue 62.
2	Construction of lower contour water reservoir, water mains, sewer, & other backbone infrastructure.
3	Golf course development (driving range & first 18 holes around southern perimeter).



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4	Phase 1 of residential development of approximately 500 units and construction of Jefferson Street.
5	Clubhouse construction.
6	Phase 2 of residential development of approximately 500 units.
7	Golf course development (second 18 holes).
8	Phase 3 of residential development of approximately 500 units.
9	Construction of upper water reservoir.
10	Phase 4 of residential development of approximately 500 units.
11	Construction of Resort Hotel & associated facilities.
12	Construction of Commercial Site & associated facilities.
13	Construction of Connector Trail & Trail User Parking Lot (to connect CVRPD, Madison Street, and Dike #4 Trail, with Boo Hoff Trail).

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**Residential Land Use:** The project could include a total of 2,000 home sites, consisting of multiple residential land uses consistent with local concepts of Estate Homes, Resort Homes, and Villas. This land use concept provides for a variety of residential housing and lot sizes. The combination of lot numbers, sizes, and residential acreage is the best projection available based on current market conditions. The actual combination at the time of development will be determined through the entitlement process with the City.

**Commercial Land Use:** The neighborhood commercial site would be approximately 10 acres in size, although the exact size has not been determined at this time. The commercial site will provide local services such as a dry cleaner, a convenience store, and restaurants.

**Resort Hotel & Tennis Facility:** The project includes an approximately 25-acre, 500-room resort hotel with associated visitor facilities, including tennis club and spa. (The exact number of rooms and the exact size of these facilities have not been determined at this time.)

**Recreational/Open Space:** Encompassing about 298 acres, the desert-style golf facilities will consist of up to 36 holes and a driving range. Associated with the golf facility will be a single clubhouse and related uses, including a driving range and maintenance facilities that would encompass an additional 4 acres. The desert golf course design will maximize retention of native open space that will naturally merge into the adjoining desert scrub and woodland. A 100-foot wide recreational trail corridor and the golf course will front the project: habitat edge, providing a minimum 200-foot wide buffer between residential units and desert habitat proposed for conservation. These setback measures provide additional buffer between the development and bighorn sheep habitat. Together, natural and artificial open space uses, including golf course and intermixed desert open space, trail corridor, and conserved habitat for bighorn sheep, total approximately 413 acres.

The trail corridor proposed along the golf course perimeter is intended to connect with other trail segments on adjoining properties that would link the Coachella Valley Recreation and Park

District's (CVRPD) Dike #4 Trail with the Boo Hoff Trail. This altered alignment of the City's General Plan trail network was agreed to by Travertine, the City, BLM, BOR, and the Service. The Travertine connector trail, to be located along the Madison Street alignment south of Avenue 62, will provide public access for viewing of the Martinez Rockslide, a prominent geological feature adjacent to Travertine and is hereafter referred to as the Rockslide Access Trail. Unauthorized trails currently in use on Travertine's property will be closed to minimize impacts to bighorn sheep.

The proposed Rockslide Access Trail begins on Dike #4 at Avenue 62 and proceeds south on the Madison Street alignment, as requested by the City to the development: habitat edge, where it then roughly follows the golf course alignment to the base of the Martinez Rockslide. The trail then follows the base of the rockslide until it veers in a northwesterly direction toward the junction of sections 4, 5, 32 and 33, again following along or through the golf course. The Trail would then parallel the section line between Section 32 and Section 33 on the west side of the proposed Jefferson Street (i.e., until it connects with the Boo Hoff Trail. Parking for trail users will be located on the project site at two locations: one at Madison Street and Avenue 62, and the other approximately 0.75 miles south of there near the southern terminus of the proposed Madison Street extension.

*Support Facilities:* All project infrastructures will be designed and constructed to serve only the Travertine project or lands east of Travertine. No additional capacity will be installed to provide service for potential projects in Section 5. Support facilities for the Travertine development would entail two gravity-distribution water reservoirs. Imperial Irrigation District Energy (IIDE) is the local electric power provider to the project. Coachella Valley Water District (CVWD) is the local water and sewer services provider to the project site. Currently, domestic water service lines exist in the area of the intersection of Avenue 60 and Madison Street.

*Electrical Power:* IIDE plans to provide electrical power to the Travertine project. Travertine anticipates that the electrical power lines will be located within Madison Street and possibly within Avenue 62. All distribution lines would be under-grounded. Section 5 landowners other than Travertine will be solely responsible for providing utilities, adequate utility system capacities, and any associated system upsizing for potential developments there. Please refer to the *Section 5 Addendum to the Travertine Biological Assessment* for a detailed discussion of the impacts of the Travertine project on Section 5.

*Reservoirs:* CVWD plans to provide the Travertine project with water by dividing Travertine into two pressure zones, each of which will be served by a separate reservoir. CVWD has determined that the only locations suitable for the two proposed water reservoirs are in Section 5, with one placed at the 332-foot elevation and the other at the 405-foot elevation. Both reservoirs will be depressed and screened to the greatest extent possible. Any above-ground tank appurtenances will be painted with non-reflective paint colored to blend with the surrounding habitat. The post-construction footprint of the reservoirs and access road is expected to be about



6 acres and all areas temporarily disturbed during construction will be revegetated using locally endemic native plant species/materials. Access would be strictly limited to CVWD personnel and maintenance vehicles. An access road would be constructed with an all-weather, typical Class 2 road base of compacted gravel. An access gate will be constructed to prevent public use and proliferation of unauthorized trailheads. Electrical power to the reservoirs will be undergrounded and no night-lighting will be used.

#### *Federal Action*

To access and develop the proposed project site, Travertine Corporation requires three ROW permits, two from BOR and one from BLM. Specifically, Travertine requires a new ROW permit from BOR for an extension of Madison Street, and an amendment to an existing permit for expansion of Avenue 62 across BOR Levee No. 4 and adjacent BOR lands. Madison Street would provide primary access to the development. The Avenue 62 permit is required by the City to provide access for local traffic from the east. From BLM, Travertine requires a ROW permit for an extension of Jefferson Street across BLM-managed lands. Jefferson Street would provide secondary access to the development. The Madison Street and Jefferson Street ROW permits are also needed because the Riverside County Fire Marshal requires two all-weather public access roads at separate locations to and from the Travertine project site. Details regarding these roadway extensions are provided below.

The need for these ROW permits arises from the fact that the property is virtually surrounded by Federal lands. Without the permits, the Travertine property would remain landlocked, with no access via public roads. Also, acquisition of the ROW permits is required as a condition of approval imposed by the City for approval of the land use entitlements sought by Travertine.

**Madison Street:** The Madison Street ROW, which would provide primary access to the project area, would extend across BOR Levee No. 4 between Avenue 60 and Avenue 62, located along the section line between Sections 33 and 34 (Figure 2b). This stretch is designated as a secondary arterial street in the City's General Plan. By agreement with BOR, the Madison Street ROW will be in the form of a recorded easement. The ROW that Travertine is requesting would be approximately 2,600 feet long and 100 feet wide. The ultimate ROW will include a 12-foot parkway with sidewalk, curb and gutter, a six-foot wide bike lane (each side), painted median, and two 12-foot wide travel lanes. There will also be additional slope and drainage easements, since Madison Street must cross Dike No. 4 between Avenue 60 and Avenue 62. These easements will be needed as part of the proposed street improvements.

All construction staging would take place from nearby privately owned lands. Buried utilities planned within the access road easement would include water and sewer, electric distribution lines, and storm drains sized for the Travertine project only. Dry utilities (e.g., cable television, telephone, and gas lines) would also be buried within the ROW. After construction of this portion of Madison Street is completed, BOR will require that the ROW be conveyed to the City,

who will be responsible for long-term operation and maintenance of the roadway and appurtenances.

Jefferson Street: The Jefferson Street ROW, which would provide secondary access to the development site, would extend across BLM-managed lands located in the northeast corner of Section 32 (Figure 2b). The ROW would consist of four lanes (two lanes in either direction). Buried utilities planned within the access road easement would include water, sewer, electric distribution lines, and storm drains sized for the Travertine project only. Dry utilities (e.g., cable television, telephone, and gas lines) would also be buried within the ROW. The ROW would be approximately 1,600 feet long and 100 feet wide. All construction staging would take place from nearby privately owned lands. After the construction of this portion of Jefferson Street is completed, BLM will assign the ROW license to the City, who will be responsible for operation and maintenance of the roadway and appurtenances.

Avenue 62: BOR and Travertine Corporation are parties to a ROW agreement, which allows vehicular traffic across Levee No. 4 at the Avenue 62 alignment (Figure 2b). The Riverside County Fire Department has indicated to Travertine Corporation that it may be necessary to use this access point for fire and other public safety vehicles. Avenue 62 is also designated as a public street in the City's General Plan for local traffic to and from the east. As in the other rights-of-way above, any utilities and infrastructure would be restricted in size to meet the needs only of Travertine. This proposed use would expand the current authorized use of the existing ROW. Therefore, Travertine Corporation requires BOR approval to expand the scope of the existing ROW permit. The existing loose gravel road would be improved to conform to the City's standards for public asphalted streets.

#### *Conservation Measures*

Following several meetings in 2002 and 2003 with the Service and CDFG, the development plan was extensively modified and reconfigured to remove development in bighorn sheep habitat from the southern portion of the Travertine property, specifically in Sections 4 and 5 in the vicinity of the Martinez Rockslide. Based on these discussions, the project boundary was established on May 1, 2003, during a field visit with Travertine, Service, and CDFG, which was depicted in the draft Coachella Valley Multiple Species Habitat Conservation Plan, dated October 15, 2004 (CVMSHCP). Subsequent meetings with the Service in 2005 refined the project boundary to encompass approximately 170 acres of conserved habitat within Travertine's original land holdings (Figure 1). This area to be conserved as bighorn sheep habitat lies in the southern portion of the project site adjacent to the Martinez Rockslide and would be preserved in perpetuity through a deed restriction consistent with California Civil Code Section 815, *et seq.*, as approved by the Service, prior to recording the first final map for the project. The only project-related development within this area of conserved habitat would be the two subterranean water reservoirs located in Section 5, and associated access roads, which would encompass about



6 acres. These conserved lands would become part of the habitat reserve system proposed by the CVMSHCP, if that plan is adopted.

In addition to the lands subject to Specific Plan 94-026, Travertine has acquired 35 acres additional acres in Section 5, of which 14.4 acres would be used for the proposed golf course and about 19.7 acres would be permanently protected as bighorn sheep habitat. These parcels are strategically located to make development in Section 5 beyond the Travertine ownership more difficult (see the *Section 5 Addendum to the Travertine Biological Assessment* for more details). Travertine also has committed to acquire an additional approximately 100 acres of bighorn sheep habitat in Section 5 that is strategically located to fragment larger blocks of land into smaller units with significantly reduced development potential (Figure 1).

Travertine Corporation proposes a variety of additional conservation measures to avoid and minimize potential impacts to bighorn sheep, based on discussions with the Service, BLM, BOR, and the City. The following measures augment the conservation commitments described in the BA, which may contain more detail in certain instances:

(1) Relocation of the City's General Plan trails out of the central portions of Sections 5 and 32, to the Rockslide Access Trail along the golf course buffer zone of the Travertine project. The final design and location of the Rockslide Access Trail will be approved by the Service and the City to minimize disturbance to bighorn sheep. If necessary, the southern and/or western boundaries of the trail and golf course alignments will be fenced, as described in Conservation Measure 5 below.

Unauthorized trails currently in use on Travertine's property will be closed to minimize impacts to bighorn sheep and replaced with the Rockslide Access Trail described above. Other than this trail, no additional trails would be proposed or allowed as part of the Travertine development. A variety of other measures will be implemented to restrict human access to surrounding hills, including: (a) placement of "no trespass" signs at legally enforceable intervals along the trail and habitat/development interface, with legally enforceable language; (b) development of CC&Rs and educational materials that explain to residents and members the ecology of bighorn sheep and the rules concerning unauthorized hiking into sheep habitat; (c) the strategic location of select golf holes outside (i.e., south) of the Rockslide Access Trail at certain points to serve as passive restraints to inhibit users of the trail from venturing into the canyons situated on east and west sides of the rockslide; and (d) implementation of a program to train golf course marshals and other personnel to monitor and control human access to adjacent hills.

(2) Strategic acquisition of land in Section 5. In addition to the lands subject to Specific Plan 94-026, Travertine has acquired 35 acres in Section 5, of which 14.4 acres would be used for the proposed golf course and 19.7 acres would be permanently protected as bighorn sheep habitat. Due to recent escalation in land values, Travertine accelerated the purchase and acquisition of

these lands to make development in Section 5 beyond the Travertine ownership more difficult due to economic, topographic, regulatory, and land planning constraints.

Prior to recording the first final map, Travertine also has committed to acquire an additional approximately 100 acres of bighorn sheep habitat in Section 5 that also are strategically located to fragment larger blocks of land into smaller units with reduced development potential. All lands proposed for conservation in Section 5 will be approved by the Service and protected in perpetuity consistent with California Civil Code Section 815, *et seq.* For more detail, please refer to the *Section 5 Addendum to the Travertine Biological Assessment*.

In addition, if the CVMSHCP is adopted, Travertine has agreed to loan \$2 million to CVAG or Coachella Valley Conservation Commission (CVCC), as specified at Section 4.3.21 of the CVMSHCP and per separate agreement between the parties. CVAG/CVCC would be obligated per the terms of the CVMSHCP to use the loan to acquire additional bighorn sheep habitat within Section 5, and would guarantee repayment of the \$2 million loan without interest to Travertine or its successor if the CVMSHCP is adopted.

(3) Establishment of a \$500,000 endowment with the Center for Natural Lands Management (CNLM) to be managed by the Service to assist with the long-term management of bighorn sheep. Of this total, \$100,000 will be provided upon issuance of the first grading permit on the Travertine site with the balance of \$400,000 paid in installments of \$100,000 per year over the next four years.

(4) Provision of an additional \$100,000 to the CNLM endowment above to support the gathering of information on the effects of the regional trails system on bighorn sheep, including trails in and around the Travertine development.

(5) Because fences could block wildlife movement, fences will not be used as an initial deterrent to unauthorized access; however, a fencing contingency plan is needed to address potential indirect effects of the project. To avoid complications with the installation of any future fence, Travertine will (1) provide appropriate wildlife fence easements that will be located at the exterior boundary of either the golf course or the trail corridor, whichever is the outer most perimeter of the project; (2) create a Home Owners Association (HOA) as the legally responsible party for such installation; and (3) provide or identify a dedicated source of funds to construct the fence, all to be completed prior to recording the first final map. Following formation of the HOA and prior to completion of the habitat interface golf course, Travertine Corporation will establish and convene a three-person committee consisting of a representative from the HOA, the Service, and CDFG, which will be charged with the responsibility to assess the need for a buffer fence between the development and adjoining habitat to keep bighorn sheep off the project site and control human access to sheep habitat. Based on these two criteria, the committee will cooperate in good faith in determining a need for the fence, and agreeing on its design and specific location. The committee members shall have access to the habitat-urban interface areas on the project site to monitor sheep activity through various means, including interviews with residents



and staff, and the use/collection of any scientific information. If available information suggests that either of the above two criteria has been met, the committee may decide to conduct further studies on the extent of the problem, funded by the HOA, before voting on whether to require the HOA to construct an 8-foot fence (or functional equivalent) between the development and the adjoining habitat. Though the Service may decide in its sole discretion whether a fence is required, it will not require construction of a fence without evidence that either of the above criteria have occurred. Prior to construction of any fence, the committee shall coordinate and solicit views on fence design issues with local interests and only approve a given design after a meeting with residents of the Travertine project. The committee shall exist for ten years from the date of creation of the HOA, but the committee may be extended indefinitely if recommended by any of the committee members. Violators of CC&Rs and club rules will be subject to increasingly severe penalties. Travertine will consult with the Service during the drafting of the initial set of Rules and Regulations concerning appropriate rules and regulations to protect the bighorn sheep. With Travertine's consent, the Master Declaration of Conditions, Covenants and Restrictions for the entire Travertine project will incorporate certain rules and regulations specifically addressing the bighorn sheep, which rules and regulations may be modified, amended or deleted only with the express written consent of the Service.

(6) The Jefferson Street extension through Section 32 will be constructed using active and passive design features to prevent public roadside parking and foot access into bighorn sheep habitat (e.g., boulders, k-rail, berm, narrow road shoulder, bar ditch, and restrictive signage), subject to review and approval by the Service.

(7) Within the project boundary, approximately 100 yards at the west end of the newly constructed Jefferson Street Loop in the southwest corner of Section 33, where it connects with the Avenue 62 alignment, will be left as undeveloped desert. This design feature, in combination with enhanced native landscaping, will discourage unauthorized vehicle access into bighorn sheep habitat in Section 5 adjacent to the Travertine project boundary.

(8) The golf course will be designed in a desert/links-style to minimize loss of native plants and wildlife (compared to conventional golf courses) and reduce potential impediment to movement wildlife movement. The golf course design will use a locally endemic native plant species palette for restoration of any areas that may be disturbed during development.

(9) No exotic plants known to be toxic to Peninsular bighorn sheep, or invasive in desert environments, will be used in project landscaping.

(10) All internal streets would be separated from the hillsides by golf holes and home sites (i.e., there would be no direct public access from internal streets to hillside sheep habitat).

(11) The Martinez Rockslide Access Trail and golf holes will form the southern and western perimeters of the Travertine project.

(12) Berms will be located at various points on the golf course to deter bighorn sheep access to the project site. Natural landscaping and berms around residential areas and golf courses would reduce noise, light, and visual impacts on surrounding hills.

(13) The best management practices will be used to preclude the establishment of potential disease vectors at open water features (i.e., water bodies will be designed with steep, unvegetated slopes and deep enough water to prevent establishment of emergent wetland vegetation).

(14) CC&R's, Specific Plan conditions, and club rules will prohibit activities that emit noise above specified levels (not to exceed 60 dB(A) for sensitive receptors or 75 dB(A) for non-residential receptors (per City Ordinance 9.100.210 Noise Control). For example, Travertine will require that only quiet electric golf carts will be used for service, maintenance, and play. Whenever possible, automobiles, gasoline-powered golf carts, and gasoline-powered leaf-blowers will be prohibited from the completed golf course.

(15) Outdoor lighting will be down-shielded and directed away from the hillsides in accordance with the City municipal code.

(16) To increase public awareness regarding the sensitivity of Peninsular bighorn sheep in the region, educational materials will be provided to homeowners and made available to users of the public facilities within the Travertine development. This material will be prepared in cooperation with the Service and CDFG. In addition, Travertine will provide within the project an area dedicated as an interpretive center concerning the bighorn sheep.

(17) The two water reservoirs will be constructed of steel or concrete and buried underground to the extent possible. Any tank appurtenances (e.g., valves) remaining above-ground will be painted with non-reflective paint colored to blend with the surrounding habitat and to prevent light from being reflected toward sheep habitat in the Santa Rosa Mountains.

(18) Dogs and other pets are not allowed within the National Monument and Travertine will install appropriate signage at the designated trailhead parking areas and any other access points to prohibit dogs along the Rockslide Access Trail. Travertine project homeowner CC&Rs and club rules will require pets to remain on a leash while outside enclosed areas, and will prohibit pets from entering the hills at any time. Compliance with the local "leash law" will also be enforced pursuant to City ordinance and the project's Specific Plan conditions.

#### STATUS OF THE SPECIES/CRITICAL HABITAT

*Legal/Listing Status:* The Peninsular bighorn sheep was federally listed as endangered on March 18, 1998 (63 FR 13134). A recovery plan was approved in October 2000 and 844,897 acres of critical habitat were designated on February 1, 2001 (66 FR 8649). The decision to list the Peninsular bighorn sheep was made because of declining population numbers and continuing



habitat loss, degradation, and fragmentation throughout a significant portion of bighorn sheep habitat within the Peninsular Ranges. In addition, periods of depressed recruitment, likely associated with disease, and high predation, coincided with low population numbers endangering the continued existence of these animals in southern California. The California Fish and Game Commission listed bighorn sheep inhabiting the Peninsular Ranges as "rare" in 1971. In 1984, the designation was changed to "threatened" by the CDFG to conform with the terminology in the amended California Endangered Species Act.

*Species Description:* Bighorn sheep inhabiting the Peninsular Ranges were once considered a separate subspecies (*Ovis canadensis cremnobates*) and were one of the 4 desert subspecies (*O. c. nelsoni*, *O. c. mexicana*, *O. c. cremnobates*, and *O. c. weemsi*) recognized by Cowan (1940). The validity of these subspecies delineations was questioned and reassessed. Based on morphometric and genetic results, Wehausen and Ramey (1993) placed Peninsular bighorn within the *O. c. nelsoni* subspecies, which is the current taxonomy.

The overall range of the subspecies extends from the San Jacinto Mountains near Palm Springs, California south to Volcan Tres Virgenes near Santa Rosalia, Baja California, Mexico. However, only the distinct vertebrate population segment within the United States is listed as endangered and addressed in this document. For a population to be listed under the Act as a distinct vertebrate population segment, three elements are considered (61 FR 4722): 1) the discreteness of the population segment in relation to the remainder of the species to which it belongs; 2) the significance of the population segment to the species to which it belongs, and 3) the population segment's conservation status in relation to the Act's standards for listing. Within the United States, the range extends along the Peninsular Ranges from the San Jacinto Mountains of southern California south to the United States - Mexico border. Bighorn sheep habitat in the Peninsular Ranges is restricted to the east facing, lower elevation slopes typically below 4,600 feet along the northwestern edge of the Sonoran Desert.

*Distribution:* An examination of past records and current data suggests that the distribution of bighorn sheep has been altered during the past 25 years. Ewe groups along the Mexican border and in the northern San Jacinto Mountains (north of Chino Canyon) have disappeared since the 1980's. DeForge *et al.* (1997) suggested disturbance and habitat fragmentation were the primary factors driving the changes in bighorn distribution in the northern San Jacinto Mountains. Ewes ceased occupying the northern San Jacinto Mountains about 20 years after construction of the Palm Springs Aerial Tramway in Chino Canyon, though rams still occasionally cross Chino Canyon and use the area formerly occupied by the ewe group. Loss of the border population was poorly documented, but the construction of Interstate 8 in the mid-1960's, railroad activity, livestock grazing, poaching, and fire suppression appear to be the most likely factors contributing to the isolation and decline of bighorn sheep in the area (Rubin *et al.* 1998).

In the northern Santa Rosa Mountains, the number and distribution of bighorn sheep is substantially reduced from the 1980's, with formerly important use areas, such as Carrizo and

Dead Indian Canyons, currently supporting few animals (DeForge and Scott 1982; DeForge *et al.* 1995; Bighorn Institute 1998, 1999). Rubin *et al.* (1998) suggested that in portions of the range, roads or increased traffic have contributed to fragmentation by restricting ewe movement, as evidenced by 4 ewe groups having home ranges delineated by roadways. In the 1970's, ewes were observed to cross Highway 74 in the Santa Rosa Mountains (V. Bleich, pers. comm.; D. Jessup, *in litt.* 1999). No radio-collared ewes were observed to cross this road from 1993 to 2001. California Department of Transportation records indicate that Highway 74 traffic has approximately tripled since 1970. In addition, bighorns use significantly less of the Santa Rosa Mountains since the construction of the Dunn Road (DeForge *in litt.* 1997).

The Peninsular Ranges of California are northern extensions of the mountain ranges of Baja California, Mexico, and the majority of Peninsular bighorn sheep are located in Mexico. Peninsular bighorn sheep are found along steep, east-facing escarpments in the desert regions of the Baja Peninsula, south to the Las Virgenes Mountains near the town of San Ignacio. The mountain ranges of Baja are remote and rugged, thus obtaining accurate population estimates is very difficult. Biologists currently estimate that approximately 2,500 Peninsular bighorn sheep inhabit northern Baja, much less than the estimates of over 28,000 from the turn of the century. The problems facing Peninsular bighorns in Baja are different than the challenges facing them in the United States. Habitat loss resulting from housing, resort, and golf course development does not currently pose the same level of threat present in the United States, but poaching, competition with domestic and feral livestock, predation, and diseases introduced from domestic livestock continue to impact these herds (DeForge *et al.* 1999).

*Habitat Affinities:* Bighorn sheep in the Peninsular Ranges have important habitat requirements that relate to topography, visibility, water availability, and forage quality and quantity. Bighorn sheep evolved predator evasion behaviors that depend critically on the use of escape terrain, which is generally defined as steep, rugged slopes (Hansen 1980c, Cunningham 1989). Escape terrain is important because bighorn sheep typically do not outrun their predators, but depend upon their climbing abilities to escape their enemies (Geist 1971, McQuivey 1978). When ewes are ready to give birth they will typically seek out the most precipitous terrain, where their lambs will presumably be safest (Geist 1971). The presence of such steep terrain for predator evasion and lambing is, therefore, a crucial component of bighorn sheep habitat. Variation in slope and aspect also help bighorn sheep to survive in a harsh environment. During hot weather, desert bighorn seek shade under boulders and cliffs, or may move to north facing slopes (Merriitt 1974, Andrew 1994). During inclement weather they may again seek protected caves or overhangs, or move to sunny, south facing slopes (Andrew 1994), or slopes that are protected from strong winds.

In addition to mountainous terrain, other types of habitat are crucial to bighorn sheep populations. Areas of flat terrain, such as valley floors, serve as important linkages between neighboring mountainous regions, thereby providing bighorn sheep temporary access to resources (e.g., forage, water, or lambing habitat) in neighboring areas, and allowing gene flow



to occur between subpopulations (Krausman and Leopold 1986, Schwartz *et al.* 1986, Bleich *et al.* 1990a, Bleich *et al.* 1996). Low rolling terrain and washes seasonally provide an important source of high quality forage, with a greater diversity of browse species than steeper terrain (Leslie and Douglas 1979). In summer, washes also provide a source of high quality browse longer than other areas (Andrew 1994). Leslie and Douglas (1979) noted that these areas became increasingly important to bighorn sheep not only in summer, but during any period of limited forage availability.

The predator evasion behavior of bighorn sheep depends on the ability to visually detect danger at a distance. Bighorn sheep will avoid habitat in which dense vegetation reduces visibility (Risenhoover and Bailey 1985, Etchberger *et al.* 1989). This appears to be the case in the Peninsular Ranges, where bighorn sheep usually remain below the elevation of chaparral and other dense vegetation associations. In the Peninsular Ranges, bighorn sheep habitat occurs along the east-facing desert slopes, typically below approximately 1,400-meter (4,600-foot) elevations (Jorgensen and Turner 1975, DeForge *et al.* 1997). The elevational patterns of vegetation associations in the Peninsular Ranges, in combination with bighorn sheep predator avoidance behavior, result in habitat use patterns that are more restricted to lower elevations than in most other bighorn populations. The available habitat of Peninsular bighorn sheep can, therefore, be visualized as a long, narrow band that runs north-south along the lower elevations of the Peninsular Ranges.

In hot, arid deserts, water is an important resource for bighorn sheep (Jones *et al.* 1957, Blong and Pollard 1968, Leslie and Douglas 1979, Turner and Weaver 1980, Elenowitz 1984, Cunningham and Ohmart 1986). A number of studies have shown that desert bighorn sheep will concentrate around water sources in the summer, with most animals found within a 3- to 5-kilometer (2- to 3-mile) radius of water (Jones *et al.* 1957, Leslie and Douglas 1979, Cunningham and Ohmart 1986). During periods of high rainfall, sheep distribution is less coincident with permanent water sources (Leslie and Douglas 1979). Apparently, bighorn sheep obtain enough water from forage to meet their requirements during wetter portions of the year. Lactating ewes and lambs appear to be more dependent on free-standing water and are often found closer to water sources (Blong and Pollard 1968, Leslie and Douglas 1979, Bleich *et al.* 1997). Water sources are most valuable to bighorn sheep if they occur in proximity to adequate escape terrain with good visibility. Therefore, the juxtaposition of open escape terrain to water sources is an important factor in their utilization (Cunningham 1989, Andrew 1994). The critical importance of free-standing water to bighorn sheep has been questioned (Krausman and Leopold 1986, Broyles 1995), and some small populations apparently exist without free-standing water (Krausman *et al.* 1985, Krausman and Leopold 1986, Broyles 1995). However, in most populations, bighorn sheep will drink regularly when water is available and concentrate near water sources during the warmer months.

In the Peninsular Ranges, bighorn sheep use a wide variety of plant species as their food source (Weaver *et al.* 1968, Jorgensen and Turner 1973). Turner (1973) recorded the use of at least 43

species, with browse being the food category most frequently consumed. Cunningham and Ohmart (1986) determined that the bighorn sheep diet in Carrizo Canyon (at the south end of the U.S. Peninsular Ranges) consisted of 57 percent shrubs, 32 percent forbs, 8 percent cacti, and 2 percent grasses. Scott (1986) and Turner (1976) reported similar diet compositions at the north end of the range. Diet composition varied among seasons (Cunningham and Ohmart 1986, Scott 1986), presumably because of variability in forage availability, selection of specific plant species during different times of the year (Scott 1986), and seasonal movements of bighorn sheep.

The time period surrounding late gestation, lambing, and nursing is very demanding in terms of the energy and protein required by bighorn ewes. Failure to acquire sufficient nutrients during late gestation and during nursing adversely affects the survival of newborn ungulates (Thorne *et al.* 1976, Julander *et al.* 1961, Holl *et al.* 1979). Crude protein and digestible energy values of early green-up species are usually much higher than those of dormant forages during the critical late gestation, lambing, and rearing seasons. With their high nutrient content, even minor volumes of these forages within the overall diet composition may contribute important nutritional value at critical life stages (Wagner 2000). However, during the reproductive season, due to the varied topography of bighorn sheep habitat, these forages typically are concentrated on specific sites, such as alluvial fans and washes, where more productive soils support greater herbaceous growth than steeper, rockier soils. Furthermore, forage green-up follows an elevational gradient with lower elevations beginning spring growth earlier than higher elevations (Wehausen 1980, Berger 1991). Access to a range of elevations provides bighorn sheep enhanced opportunities to acquire nutrients during critical seasons.

*Life History:* The movement patterns and habits of ewes are learned by their offspring (Geist 1971). By following older animals, young bighorn sheep gather knowledge about escape terrain, water sources, foraging areas, and lambing habitat (Geist 1971). As young rams reach 2 to 4 years of age, they begin to follow older rams away from their natal group (Geist 1971, Festa-Bianchet 1991). Because, bighorn sheep rely on vigilance to detect predators, they benefit from gregariousness and group alertness (Geist 1971, Berger 1978).

The adult sexes tend to loosely segregate during much of the year, coming together primarily during the rut (Geist 1971, Bleich *et al.* 1997), which typically peaks from August through October in the Peninsular Ranges (Rubin *et al.* 2000). During the rut, rams join the ewe groups and compete to breed with receptive ewes. The largest rams presumably are the most successful breeders, but smaller rams have been reported to breed as well (Hogg 1984). During the period of sexual segregation, ewes and their lambs are typically found in steeper, more secure habitat, while rams may be found in less steep or rugged terrain (Geist 1971, Bleich *et al.* 1997).

Desert bighorn sheep are primarily diurnal (Krausman *et al.* 1985) but may be active at any time of day or night (Miller *et al.* 1984). Their daily activity pattern includes alternating feeding and resting/ruminating periods. Forage quality influences activity patterns because when forages are low in digestibility, bighorn sheep must spend more time ruminating and digesting forage.



Consequently, bighorn sheep may establish a cycle of feeding and ruminating that reflects forage quality and optimizes nutrient intake (Wagner and Peck 1999, Wagner 2000).

Size of individual or group home range depends on the juxtaposition of required resources (water, forage, escape, or lambing habitat) and, therefore, varies geographically. Home range size also is affected by forage quantity and quality, season, sex, and age of the animal (Leslie 1977, McQuivey 1978). Although most desert bighorn sheep do not seasonally migrate along elevational gradients like many populations in higher latitude mountain ranges, they do exhibit seasonal differences in habitat use patterns. In many populations, animals will have a smaller home range in summer (McQuivey 1978, Leslie and Douglas 1979, Elenowitz 1983), presumably due to their limited movement away from permanent water sources. During the cooler or wetter months of the year, bighorn sheep often exhibit an expanded range as animals move farther from water sources (Simmons 1980). Ewes generally display a higher degree of philopatry to their seasonal home ranges than do rams. Rams tend to range more widely, often moving among ewe groups (Boyce *et al.* 1997, DeForge *et al.* 1997, Rubin *et al.* 1998). In most populations of desert bighorn sheep, ram home ranges have been found to be larger than those of ewes (Simmons 1980, DeForge *et al.* 1997).

The gregarious and philopatric behavior of ewes limits their dispersal and exploratory abilities relative to those of rams (Geist 1967, 1971). Geist (1971) theorized, however, that a young ewe might switch to a new ewe group if she encountered neighboring sheep and followed them away from her natal ewe group. In the Peninsular Ranges, movement of radio-collared ewes between ewe groups is rare, however, inter-group movement does occasionally occur. During a 3-year study, one ewe moved over 30 kilometers (18.6 miles) and temporarily joined another ewe group (Rubin *et al.* 1998). No emigration of ewes has been observed even though radio-collared animals have been regularly monitored in the northern Santa Rosa Mountains since 1981 (Ostermann *et al.* 2001) and throughout the range since 1993 (E. Rubin, pers. comm.; DeForge *et al.* 1997). Genetic analyses reflect a low rate of ewe dispersal across the Peninsular Ranges in the evolutionary past (Boyce *et al.* 1999).

An important consideration in the conservation of Peninsular bighorn sheep is their behavioral response to humans and human activity. Bighorn have been considered a wilderness species, because they do not thrive in contact with human development (Leopold 1933). The impacts of human development extend beyond the urban edge into bighorn sheep habitat. A growing human population and increased activity adjacent to and within bighorn sheep habitat have the potential to adversely affect bighorn sheep. Numerous researchers have expressed concern over the impact of human activity on Peninsular bighorn sheep (Jorgensen and Turner 1973, Hicks 1978, Olech 1979, Cunningham 1982, DeForge and Scott 1982, Gross 1987, Sanchez *et al.* 1988), as well as on sheep in other areas (Graham 1980, Gionfriddo and Krausman 1986, Smith and Krausman 1988). A variety of human activities such as hiking, mountain biking, hang gliding, horseback riding, camping, hunting, livestock grazing, dog walking, and use of aircraft and off-road-vehicles have the potential to disrupt normal bighorn sheep social behaviors and use

of essential resources, and cause bighorn sheep to abandon traditional habitat (McQuivey 1978, MacArthur *et al.* 1979, Olech 1979, Wehausen 1979, Leslie and Douglas 1980, Graham 1980, MacArthur *et al.* 1982, Bates and Workman 1983, Wehausen 1983, Miller and Smith 1985, Krausman and Leopold 1986, Krausman *et al.* 1989, Goodson 1999, Papouchis *et al.* 1999). Etchberger *et al.* (1989) found that habitat abandoned by bighorn sheep in the Pusch Ridge Wilderness had greater human disturbance than currently occupied habitat. Etchberger and Krausman (1999) observed the abandonment of lambing habitat while construction activities were ongoing within the home range of the ewe group. Ewes eventually returned to the area following cessation of construction activities.

Although cases have been cited in which bighorn sheep populations did not appear to be greatly affected by human activity, numerous researchers have documented altered bighorn sheep behavior in response to anthropogenic disturbance. Even when bighorn sheep appear to be tolerant of a particular activity, continued and frequent human use of an area can cause them to avoid the area, eventually interfering with use of resources, such as water, mineral licks, lambing or feeding areas, or use of traditional movement routes (Jorgensen and Turner 1973, McQuivey 1978, Graham 1980, Leslie and Douglas 1980, DeForge and Scott 1982, Hamilton *et al.* 1982, Krausman and Leopold 1986, Rubin *et al.* 1998). In addition, disturbance can result in physiological responses, such as elevated heart rate, even when no behavioral response is discernable, and the cumulative energetic cost of such responses may potentially affect the nutritional status of individuals potentially populations (MacArthur *et al.* 1979, 1982).

Bighorn response to human activity is variable and depends on many factors, including but not limited to: the type and predictability of the activity, presence of domestic dogs, the animal's previous experience with humans, size or composition of the bighorn sheep group, location of bighorn sheep relative to the elevation of the activity, distance to escape terrain, and distance to the activity (Weaver 1973; McQuivey 1978; Hicks 1977, 1978; Hicks and Elder 1979; MacArthur *et al.* 1979, 1982; Wehausen 1980; Hamilton *et al.* 1982; Whitacker and Knight 1998; Papouchis *et al.* 1999). Ewes with lambs typically are more sensitive to disturbance (Light and Weaver 1973, Wehausen 1980). Responses can range from cautious curiosity to immediate flight or abandonment of habitat. Bighorn sheep use of an area within the Peninsular Ranges was reduced by 50 percent when off-road vehicle use was allowed (Jorgensen 1974). Cardiac and behavioral responses of bighorn sheep to an approaching human were determined to be greatest when a person was accompanied by a dog or approached from over a ridge (MacArthur *et al.* 1979, 1982). Though the effect of human activity in bighorn sheep habitat is not always obvious, human presence or activity in many cases has been found to detrimentally alter normal behavioral and habitat use patterns. Bighorn sheep have evolved to deal with occasional stress, such as the presence of a predator. However, long-term chronic stress may cause physiological reactions that impair immune function, endocrine regulation, and growth and development (Desert Bighorn Council 1991). Bighorn sheep prevented from using their normal range by frequent human disturbance or dogs may be subject to nutritional deprivation, which can also adversely affect the immune system (Festa-Bianchet 1988).



Desert bighorn sheep have fared poorly when urban areas have expanded around and within their ranges. In the Sandia Mountains of New Mexico and the Santa Catalina Mountains of Arizona, two populations of desert bighorn sheep faced situations very similar, to the one now challenging the bighorn sheep inhabiting the Peninsular ranges of California. The bighorn sheep population in the Sandia Mountains has declined to extinction, and the population in the Santa Catalina Mountains appears to be extinct (Krausman *et al.* 2001). Factors, such as predation or disease, do not appear to have played a significant role in either of the above extinctions. Instead, in both cases the level of human activity appears to have been too great for bighorn sheep to survive. In the Sandia Mountains human activity doubled from 1975 to 1990, as hiking trails, ski areas, restaurants, and a tramway were built (Krausman *et al.* 2001). In the Santa Catalina Mountains, real estate developments directly eliminated bighorn sheep habitat (Krausman 1993), hiking activity, dog use, and other recreational activities increased in more remote areas (Schoenecker 1997), and fire suppression allowed the vegetation in some areas to become too dense for bighorn sheep (Gionfriddo and Krausman 1985, Krausman *et al.* 1996). In San Bernardino National Forest, California, Light and Weaver (1973) studied the reaction of bighorn sheep to human activities when ski areas and other developments were built in their habitat. They concluded bighorns abandoned suitable habitat to ostensibly remain out-of-sight.

The breeding period, or rut, occurs in the late summer and fall months. In the Peninsular Ranges, ewes estimated to be between 2 and 16 years of age have been documented to produce lambs (Rubin *et al.* 2000, Ostermann *et al.* 2001). As parturition approaches, ewes seek isolated sites with shelter and unobstructed views (Turner and Hansen 1980), and seclude themselves from other females while finding sites to bear their lambs (Etchberger and Krausman 1999). Lambs are born after a gestation of approximately 6 months-171 to 185 days (Turner and Hansen 1980, Shackleton *et al.* 1984, Hass 1995). During a 4-year (1993 to 1996) study conducted in the Peninsular Ranges south of the San Jacinto Mountains, the lambing season extended from February through August; however, 87 percent of the lambs were born from February to April, and 55 percent of the lambs were born in March (Rubin *et al.* 2000). DeForge *et al.* (1997) and Cunningham (1982) reported a similar onset of the lambing season in the San Jacinto Mountains and in Carrizo Canyon, respectively. In the San Jacinto and northern Santa Rosa Mountains, ewe groups, the lambing season begins in January during some years (Bighorn Institute 1997). Lambs usually are weaned by 6 months of age (Hansen and Deming 1980, Wehausen 1980).

From 1993 to 1996, the reproductive patterns of five ewe groups (Carrizo Canyon, south San Ysidro Mountains, north San Ysidro Mountains, Santa Rosa Mountains [Deep Canyon], and northern Santa Rosa Mountains) were monitored and annual lamb production averaged 77 percent (0.77 lambs born per "ewe-year") for the 4-year period (E. Rubin, pers. comm.). Using a fecal-based enzyme immunoassay, Borjesson *et al.* (1996) determined that in the fall of 1992, at least 85 percent of sampled adult ewes were pregnant. Both of these observations suggest that conception rates are not currently limiting population growth in the Peninsular Ranges.

Lamb survival (to 6 months of age) was variable among groups and across years. A year of high lamb survival in one group was not necessarily a high survival year in another group (Rubin *et al.* 2000). Of the four groups studied, the northern Santa Rosa Mountains group typically had the lowest lamb survival, while the neighboring Deep Canyon group, located less than 8 kilometers (5 miles) away, had the highest lamb survival. Researchers working in the northern portion of the Santa Rosa Mountains have expressed concern over the low lamb recruitment observed in this area since approximately 1977 (DeForge *et al.* 1982, DeForge and Scott 1982, Turner and Payson 1982). Periods of low lamb to ewe ratios, as well as clinical signs of pneumonia among lambs, have occasionally been observed in Anza-Borrego Desert State Park (Jorgensen and Turner 1973, Jorgensen and Turner 1975, Hicks 1978), but years of high lamb to ewe ratios (Cunningham 1982; M. Jorgensen, pers. comm.) have been observed in these areas as well (Rubin *et al.* 2000).

Wehausen (1992) suggested that periods of low recruitment may not warrant alarm because long-lived animals such as bighorn sheep can exist in viable populations if periods of low offspring recruitment are interrupted by periodic pulses of high offspring recruitment. Most ewe groups in the Peninsular Ranges appear to have exhibited such pulses of high recruitment but declining population trends suggest that they have not been sufficient to balance adult mortality over longer time periods.

In ruminants, reproductive success is related to the mother's body weight, access to resources, quality of home range, and age (Etchberger and Krausman 1999). Survival of offspring also depends on birth weight and parturition date. Festa-Bianchet and Jorgenson (1996) found that female sheep reduce the care of lambs when resources are scarce to favor their own nutritional requirements over their lamb's development. Ewes that fail to acquire a minimum level of energy reserves (i.e., body weight) may not conceive (Wehausen 1984) or will produce smaller offspring with a poorer chance of survival (Price and White 1985). Several studies have documented a positive relationship between winter precipitation and lamb recruitment in the following year (Douglas and Leslie 1986, Wehausen *et al.* 1987). However, the relationships between climate, lamb recruitment, and population trends likely differ among different bighorn sheep populations, and are not fully understood (Rubin *et al.* 2000).

Lamb and yearling age classes experience high mortality rates relative to adult bighorns. After reaching adulthood at two years of age, most bighorn sheep survive high until ten years of age (Hansen 1980b), or until shortly before the age of ecological longevity (Cowan and Geist 1971). However, observed values of annual adult survivorship in the Peninsular bighorn sheep appear low relative to other reported desert populations. During November 1992 to May 1998, survivorship of 113 adult radio-collared bighorn sheep (97 ewes and 16 rams) was monitored between Highway 74 (in the Santa Rosa Mountains) and the U.S.-Mexico border. During this period, overall annual adult survival was 0.79, with no significant difference among three age classes of adults (Hayes *et al.* 2000). Annual survivorship of individual ewe groups ranged from 0.70 to 0.87, and a year of high survivorship in one group was not necessarily a year of high



survivorship in other groups (Rubin *et al.* 1998). In the northern Santa Rosa Mountains ewe group, adult survivorship was monitored during a 14-year period (1985 to 1998), and was found to range between 0.50 and 1.00 annually (Osternann *et al.* 2001). In the San Jacinto Mountains, DeForge *et al.* (1997) monitored the survival of adult (2 or more years of age) radio-collared bighorn sheep during 1993 to 1996 and estimated annual adult survival to be 0.75.

Survival of desert bighorn sheep in greater southeastern California averaged 0.91 (Andrew 1994), 0.86 or greater in northwest Arizona (when highway mortalities were excluded, (Cunningham and deVos 1992), 0.82 in New Mexico (Logan *et al.* 1996), and 0.85 or greater for four populations studied in the Mojave Desert (Wehausen 1992).

*Population Trends:* Bighorn sheep have been documented in the Peninsular Ranges since early explorers, such as Anza, observed them in the 1700's (Bolton 1930). Grinnell and Swarth (1913) described the area of Deep Canyon in the southern Santa Rosa Mountains, "...well worn trails, footprints, and feces were plentiful. In places it looked as though a herd of domestic sheep had been over the region." Rangewide population estimates were not made until the 1970's. Published estimates were as high as 971 in 1972 (Weaver 1972), and 1,171 in 1974 (Weaver 1975).

Recent range-wide population estimates were 570 in 1988 (Weaver 1989), 400 in 1992 (U.S. Fish and Wildlife Service 1992), and between 327 and 524 in 1993 (Torres *et al.* 1994). Starting in 1994 biennial helicopter census were conducted throughout the Peninsular Ranges using radio-collared animals to correct for visibility bias. The population estimates were 347, 276, 334, and 400 for the years 1991-2000, respectively. From the historic highs of the 1970's, population estimates declined to a low of 276 adults in 1996 (Service 2000); since that low, the population has apparently increased. Currently, at least 8 ewe groups exist in the range, and the population trajectory of each ewe group appears to be determined independently (Rubin *et al.* 1998). Climatic patterns are correlated across the Peninsular Ranges, suggesting that other local factors specific to ewe groups play important roles in determining long-term abundance trends (Rubin *et al.* 1998). Independent population trends also were observed among ewe groups in the Mojave Desert (Wehausen 1992).

In the southern part of the San Jacinto Mountains, a ewe group currently consists of 29 adult male and female bighorn sheep, with only 4 native adult ewes and 6 captive-released ewes. The subpopulation has remained approximately stable (17-26 individuals) from 1992-2000, but the unbalanced sex ratio causes concern (Bighorn Institute 2000). The three Santa Rosa Mountain ewe groups declined 69 percent from 1984 to 1990, remained stable at 115-120 individuals from 1990-1995, until declining in 1996 to approximately 95 adults. Currently, these 3 ewe groups total approximately 129 adults (CDFG 2004 helicopter surveys, unpublished data). The ewe groups in the northern Santa Rosas and southern San Jacinto Mountains continue to receive intensive monitoring from the Bighorn Institute, and have periodically been augmented with captive-reared individuals.

Helicopter surveys south of the Santa Rosa Mountains, indicated a 28 percent decline in ewe numbers in a recent 2-year period (from an estimate of 141 females in 1994 to 102 females in 1996; Rubin *et al.* 1998), and a statistically non-significant increase (from approximately 102 to 112 females) from 1996 to 1998 (Rubin *et al.* 1999). Ewe groups in Coyote Canyon, North San Ysidro Mountains, and South San Ysidro Mountains currently average approximately 36 individuals each, with the number of ewes ranging from 17 to 27. The 2000 helicopter survey indicated that the Vallecitos Mountains and Carrizo Canyon (southern) ewe groups have increased significantly since 1996.

Bighorn sheep are relatively long-lived animals that have the potential to reproduce over an extended period of time (2-16 years). Therefore, periods of above average recruitment may compensate for periods of low recruitment (Wehausen 1992). Forage quality and quantity vary with environmental conditions, and thus female condition, and conception, parturition and lamb survival rates reflect this natural variation. However, if mortality agents begin impacting adult survival, then subpopulation levels may drop dramatically, endangering the existence of a ewe group. Consequently, a ewe group's persistence is always vulnerable to disease outbreaks, high levels of predation, mortality caused by urbanization, and habitat loss from human disturbance and development.

**Threats:** Cause specific mortality in the San Jacinto Mountains was studied from 1992 to 1998. During this period, five mortalities were attributed to mountain lion (*Puma concolor*) predation, two were attributed to bobcat or mountain lion predation, and three died of unknown causes (DeForge *et al.* 1997; Bighorn Institute 1997, 1998).

In the northern Santa Rosa Mountains, artificially irrigated vegetation attracts bighorn sheep and creates a hazard for them. Though often thought to be the product of releasing captive-reared animals into the wild, behavioral habituation to urban sources of food and water began when urbanization started encroaching into bighorn habitat in the 1950's, several decades before population augmentation began in 1985 (Tevis 1959, DeForge and Scott 1982, Ostermann *et al.* in press, V. Bleich, pers. comm.). A study of cause-specific mortality conducted from 1991 to 1996 revealed that predation accounted for 28 percent of 32 adult bighorn sheep mortalities (25 percent due to lion predation and 3 percent due to either lion or bobcat predation) and 34 percent were directly caused by urbanization (DeForge and Ostermann 1998b). The remaining mortalities were due to disease (3 percent) and undetermined causes (34 percent). Of the 11 adult mortalities attributed to urbanization, 5 were due to automobile collisions, 5 were caused by exotic plant poisoning, and 1 bighorn ram was strangled in a wire fence. An additional four bighorn sheep were struck but not killed by vehicles. Toxic plants causing mortality included oleander (*Nerium oleander*) and laurel cherry (*Prunus* sp.) (Bighorn Institute 1995, 1996). Preliminary results from an ongoing study of radio collared lambs indicate that urbanization is also affecting lamb survival in this ewe group. Eight of nine deaths occurred within 300 meters (980 feet) of the urban interface (Bighorn Institute 1999). Of the nine lamb mortalities recorded in 1998 and 1999, five were attributed to coyote or bobcat predation, one to mountain lion



predation, and three to the direct and indirect effects of urbanization (automobile collision and drowning in a swimming pool). Dogs also have been observed to chase bighorn ewes and their lambs near residential areas (E. Rubin, pers. comm.), and dogs likely caused the death of 2 yearlings in April 2001 (J. DeForge, pers. comm.).

Though mule deer (*Odocoileus hemionus*) are the primary prey of mountain lions in North America (Anderson 1983), and the range of bighorn sheep in the Peninsular Ranges largely avoids overlap with mule deer, lion predation may threaten individual ewe groups in the Peninsular Ranges (Hayes *et al.* 2000), and has the potential to affect population recovery. From November 1992 to May 1998, Hayes *et al.* (2000) found the primary cause of death of radio-collared adult bighorn sheep between Highway 74 (in the Santa Rosa Mountains) and the U.S.-Mexico border was predation by mountain lions. Lion predation accounted for at least 69 percent of the 61 adult mortalities and occurred in each of the ewe groups in this portion of the range (Hayes *et al.* 2000). Annually, lion predation accounted for 50 to 100 percent of the bighorn sheep mortality, and did not exhibit a decreasing or increasing trend during 1993 to 1997. Lion predation appeared to show a seasonal pattern, with the majority of incidents occurring during the cooler and wetter months of the year. A bighorn sheep's risk of predation did not appear to be related to its age. It is unknown, however, how current levels of lion predation observed throughout the Peninsular Ranges compare to historic levels. Reported incidents of lion predation were not common in the past and predation was not considered to be a serious risk to bighorn sheep (Weaver and Mensch 1970, Jorgensen and Turner 1975, Cunningham 1982). It is important to note that the increase in the number of radio-collared bighorn sheep since 1993 has greatly increased the detection of such mortalities, and it is possible that other factors influencing Peninsular bighorn sheep and alternate prey species have altered the proportion of mortalities caused by lion predation. Bighorn sheep evolved in the presence of predators, and developed effective physical and behavioral mechanisms for dealing with them. Similar to other desert bighorn populations, sheep in the Peninsular Ranges have likely experienced varying levels of lion predation for thousands of years. However, when other factors, such as drought, habitat loss and fragmentation due to urbanization, diseases, and other mortality factors reduce populations to low levels and/or alter the abundance and distribution of alternate prey species, such as mule deer, then the influence of predation on population dynamics may increase (Logan and Sweanor 2001).

In areas of the Peninsular Ranges beyond the Coachella Valley, past field observations and records documented mortalities resulting from predation (of lambs) by coyotes (*Canis latrans*) (Weaver and Mensch 1970, Jorgensen and Turner 1975, DeForge and Scott 1982), train collisions (Jorgensen and Turner 1973), automobile collisions (Turner 1976, Hicks 1978), poaching (Jones *et al.* 1957, Jorgensen and Turner 1973, Cunningham 1982), and accidental falls (Turner 1976). Golden eagles (*Aquila chrysaetos*) and bobcats (*Lynx rufus*) are also potential predators.

The westward spread of Europeans and their domestic livestock across North America was thought to play a significant role in reducing the distribution and abundance of bighorn sheep due to the introduction of new infectious diseases (Spraker 1977, Onderka and Wishart 1984). In particular, domestic sheep have been repeatedly implicated in *Pasteurella* pneumonia die-offs of bighorn sheep. It has been hypothesized that disease has played an important role in the population dynamics of bighorn sheep in the Peninsular Ranges (DeForge *et al.* 1982, DeForge and Scott 1982, Turner and Payson 1982, Wehausen *et al.* 1987). Numerous pathogens have been isolated or detected by serologic assay from bighorn sheep in these ranges. These pathogens include bluetongue virus, contagious ecthyma virus, parainfluenza-3 virus, bovine respiratory syncytial virus, *Anaplasma*, *Chlamydia*, *Leptospira*, *Pasteurella*, *Psoroptes*, and *Dermacentor* (DeForge *et al.*, 1982; Clark *et al.* 1985, 1993; Mazet *et al.* 1992; Elliott *et al.* 1994; Boyce 1995; Crosbie *et al.*, 1997, DeForge *et al.* 1997).

DeForge *et al.* (1982) found multiple pathogens (contagious ecthyma virus, blue tongue, *Pasteurella*, and parainfluenza virus) and low lamb recruitment in association with overall population declines. Between 1982 and 1998, 39 lambs showing signs of illness (lethargy, droopy ears, nasal discharge, and lung consolidation) were collected from the Santa Rosa (northern and southern), Jacumba, and In-Ko-Pah Mountains for disease research and rehabilitation at the Bighorn Institute (Ostermann *et al.* 2001). Additionally, DeForge *et al.* (1995) documented a population decline throughout the Santa Rosa Mountains during 1983 to 1994, resulting from inadequate recruitment. Although a cause and effect relationship between disease and population decline has not been clearly established in the Peninsular Ranges, results from several studies provide support for this hypothesis (DeForge *et al.* 1982, Clark *et al.* 1985, Wehausen *et al.* 1987, Clark *et al.* 1993, Elliot *et al.* 1994, DeForge *et al.* 1995). Analysis of spatial variation in pathogen exposure among bighorn sheep sampled between 1978 to 1990 showed that Peninsular bighorn sheep populations and other populations in southern California have higher levels of pathogen exposure than other populations of bighorn sheep in the State (Elliott *et al.* 1994). The presence of feral goats in portions of the Santa Rosa Mountains until the late 1970's to early 1980's may have contributed to exposure of wild bighorn to disease during this period of population decline (D. Jessup, *in litt.* 1999). All evidence indicates that the influence of disease in the Peninsular Ranges has subsided in recent years. For example, recent sampling and examination of bighorn sheep throughout the range indicated that most animals were clinically normal (Boyce 1995; DeForge *et al.* 1997; Bighorn Institute 1997, 1998, 1999). Additional research is necessary to better understand the relationship between disease and population trajectories. Furthermore, it appears that risk of disease and parasites might differ among ewe groups based on their exposure and habitat use patterns, therefore future research should address these questions at the level of the ewe group and population. Although an epizootic does not currently appear to be occurring in the Peninsular Ranges, diseases pose a threat that could potentially occur at any time, especially if sheep experience chronic levels of disturbance (Geist 1971, Hamilton *et al.* 1982, Spraker *et al.* 1984, King and Workman 1986, Festa-Bianchet 1988, Desert Bighorn Council 1992).



Habitat loss is a leading cause of current species extinctions and endangerment worldwide (Burgman *et al.* 1993). It represents a particularly serious threat to Peninsular bighorn sheep, because they live in a narrow band of lower elevation habitat that represents some of the most desirable real estate in the California desert, and it is being developed at a rapid pace. At least 7,490 hectares (18,500 acres or about 30 square miles) of suitable habitat has been lost to urbanization and agriculture within the range of the three ewe groups that occur along the urban interface between Palm Springs and La Quinta. Within the narrow band of habitat, bighorn sheep make use of sparse and sometimes sporadically available resources found within their home ranges. As humans encroach into this habitat, these resources are eliminated or reduced in value, and the survival of ewe groups is threatened. Bighorn sheep are also sensitive to habitat loss or modification because they are poor dispersers (Geist 1967, 1971), largely learning their ranging patterns from older animals. When habitat is lost or modified, the affected group is likely to remain within their familiar surroundings but with a reduced likelihood of population persistence, due to the reduced quantity and/or quality of resources.

Encroaching urban development and anthropogenic disturbances have the dual effect of restricting animals to a smaller area and severing connections between ewe groups. Fragmentation poses a particularly severe threat to species with a metapopulation structure because overall survival depends on interaction among subpopulations. The movement of rams and occasional ewes between ewe groups maintains genetic diversity and augments populations of individual ewe groups (Brown and Kodric-Brown 1977, Soulé 1980, Krausman and Leopold 1986, Schwartz *et al.* 1986, Burgman *et al.* 1993). Temporary moves by females between neighboring ewe groups could also provide new habitat knowledge facilitating future range expansion (Geist 1971). Increased fragmentation reduces such possibilities.

Beyond physical barriers to movement, fragmentation also can result from less obvious forms of habitat modification. Increased traffic on roads apparently make bighorn sheep, especially ewes, hesitant to cross these roads (Rubin *et al.* 1998). Animals that do cross suffer an additional risk of mortality from automobile collisions (Turner 1976, McQuivey 1978, Cunningham and deVos 1992, DeForge and Ostermann 1998b, Bighorn Institute 1999), with the result that a group whose range is bisected by a road can have reduced viability in the long term (Cunningham and deVos 1992). Human disturbance along trails can cause sheep to avoid those areas (Papouchis *et al.* 1999), potentially affecting bighorn sheep movement and habitat use, thereby fragmenting bighorn sheep distribution, although the habitat appears to be intact.

Development and human populations along the eastern slope of the Peninsular Ranges continue to grow at a rapid pace at the lower and upper elevational boundaries of Peninsular bighorn sheep habitat. The Coachella Valley Association of Governments anticipates that by the year 2010, the human population in the Coachella Valley will increase from 227,000 to over 497,000, not including 165,000 to 200,000 seasonal residents. Bighorn population declines typically have been most pronounced in ewe groups adjoining the urban interface in the Coachella Valley.

Similar to predation, prolonged drought is a natural factor that can have negative impacts on desert bighorn sheep populations, either by limiting water sources or by affecting forage quality (Rosenzweig 1968, Hansen 1980a, Monson 1980, Douglas and Leslie 1986, Wehausen *et al.* 1987). During drought years, the concentration of bighorn sheep near remaining water sources may increase competition for forage as well as water, thereby limiting population growth through density dependent regulation (Caughley 1977, Gotelli 1995). In addition, increased density potentially renders animals more susceptible to diseases or parasites (Anderson and May 1979, May and Anderson 1979).

Domestic livestock and feral animals can reduce the availability and quality of resources (water and forage) required by bighorn sheep, and can function as potential vectors for diseases such as bluetongue virus (Mullens *et al.* 1986). In portions of the range, water has been pumped from aquifers and diverted away from springs for use by ranches and private residences, reducing and eliminating the water sources upon which bighorn sheep depend (Tevis 1961; Blong 1967; Turner 1976; M. Jorgensen, pers. comm., Anza-Borrego State Park).

In the Peninsular Ranges, the presence of tamarisk (*Tamarix* sp.), also known as saltcedar, represents a serious threat to bighorn sheep. This exotic plant consumes large amounts of water and has rapid reproductive and dispersal rates (Sanchez 1975, Lovich *et al.* 1994), enabling it to out compete native plant species in canyon bottoms and washes. It has the following negative effects on bighorn sheep: 1) it reduces or eliminates the standing water on which bighorn sheep depend, 2) it out competes plant species on which bighorn sheep feed, and 3) it occurs in thick, often impenetrable stands that block access to water sources and provide cover for predators.

Fire suppression can influence the distribution and habitat use patterns of bighorn sheep by causing avoidance of areas with low visibility (Risenhoover and Bailey 1985, Wakelyn 1987, Etchberger *et al.* 1989, Etchberger *et al.* 1990, Krausman 1993, Krausman *et al.* 1996). Long-term fire suppression results in taller, denser stands of vegetation, thereby reducing openness and visibility making bighorn sheep more susceptible to predation (Sierra Nevada Bighorn Sheep Interagency Advisory Group 1997). In addition, Graf (1980) suggested that fire suppression reduces forage conditions in some bighorn sheep ranges. In the Peninsular Ranges, changes in vegetation succession are evident in some portions of bighorn sheep range, primarily in higher elevation chaparral and pinyon-juniper habitats, and have apparently decreased bighorn sheep use of certain canyons and springs (M. Jorgensen, pers. comm.).

Disease problems have periodically caused die-offs of bighorn sheep herds throughout their range, and the Peninsular Ranges have not escaped this problem (DeForge *et al.* 1982, DeForge and Scott 1982, Turner and Payson 1982, Wehausen *et al.* 1987). The most virulent pathogens appear to originate from domestic livestock, and are not endemic to bighorn sheep.

Consequently, bighorns have not evolved with these pathogens and have little resistance compared to domestic livestock. The threat of novel strains of previously experienced pathogens



and entirely new ones is always present. Potential vectors for disease transmission vary from domestic livestock and insects to other native wild ungulates. For example, if the current foot and mouth disease being experienced in Europe eventually reaches North America, then white-tailed deer and mule deer may become infected. This scenario could eventually lead to a serious problem for all North American ungulates. Chronic wasting disease is currently a problem within commercial cervid operations and currently exists within wild cervid populations in the central Rocky Mountains. This disease could potentially spread westward, and its ecosystem level effects could cause major problems for all native wild ungulates.

The number of illegal immigrants entering the U.S. from Mexico continues to increase despite the efforts of the U.S. Border Patrol. Some of these immigrants travel through the Peninsular Ranges and camp at water sources where they may occasionally kill and consume bighorn sheep, or displace them. The Border Patrol is responding by increasing its activity along the border and in the southern Peninsular Ranges. Consequently the level of human disturbance in the area is increasing. This scenario may cause bighorn sheep to avoid areas they once utilized.

#### *Synopsis of Status/Critical Habitat*

Since listing in 1998, biennial range-wide surveys have estimated that the Peninsular bighorn sheep population has increased from about 280 adult and yearling sheep to about 700 sheep in 2004 (CDFG unpubl. data). Over this time frame, mountain lion predation has become less pronounced in the Anza-Borrego Desert State Park area compared to predation rates observed in the mid-1990s (Hayes *et al.* 2000). The apparent absence of major disease outbreaks in the same area has benefited recruitment of lambs into the breeding population. This combination of improved adult survivorship and lamb recruitment appear to be the primary factors contributing to population expansion in the southern ranges. In the Santa Rosa Mountains, ewe subpopulations generally have increased as well, though in part for different reasons, since ewe group population dynamics are typically independent from each other (Rubin *et al.* 1998). In the northern Santa Rosa Mountains, the recent population expansion appears largely attributable to completion of a barrier fence that has improved survivorship of adults and lambs by eliminating formerly high levels of urban related mortality, including death from vehicle collisions, strangulation in fences, drowning in swimming pools, ingestion of toxic plants, etc (DeForge and Ostermann 1998). In the San Jacinto Mountains, the population has fluctuated at low numbers (approximately 20-30 adult bighorn) since 1993 (DeForge *et al.* 1997; Bighorn Institute 1998-2004 annual reports). As in the northern Santa Rosas, population augmentation through the release of captive-reared sheep has been an important contributing factor to the maintenance and recovery of the population. Of the 10 ewes currently extant in the San Jacintos, six sheep are captive releases. Incidence of disease has been relatively quiescent in sheep subpopulations in the Coachella Valley, which also has contributed to overall population growth. However, a disease outbreak of unknown cause and origin was documented in the Santa Rosa Mountains in the summer of 2005, and may have reduced the population in the northern Santa Rosa Mountains by about 38 percent (Bighorn Institute, unpubl. data).

The 844,897 acres of designated critical habitat were primarily based on the prior delineation of essential habitat in the Recovery Plan (Service 2000). At the time of listing and preparation of the Recovery Plan, the Peninsular bighorn sheep population was near its historic low point and one of the primary considerations in preparation of the Recovery Plan was protecting sufficient space to support population growth needed to support the recovery objectives of maintaining subpopulations of at least 25 adult ewes within each of nine designated recovery regions of delineated essential habitat and an overall population level of 750 adults and yearlings. The critical habitat designation was intended to maintain connectivity across the nine recovery regions so that the metapopulation dynamics among these subpopulations would be allowed to continue. Within the critical habitat designation, the primary constituent elements included space for the normal behavior of groups and individuals; protection from disturbance; availability of various native desert plant communities found on different topographic slopes, aspects, and landforms, such as steep slopes, rolling foothills, alluvial fans, and canyon bottoms; a range of habitats that provide forage, especially during periods of drought; steep, remote habitat for lambing, rearing of young, and escape from disturbance and/or predation; water sources; and suitable linkages allowing individual bighorn to move freely between ewe groups and maintain connections between subpopulations. These constituent elements were recognized as essential to meet the biological needs of feeding, resting, reproduction and population recruitment, dispersal, connectivity, and isolation from detrimental disturbances.

#### ENVIRONMENTAL BASELINE

The area affected directly and/or indirectly by the proposed project includes all areas that would be developed or conserved areas on the project site, as well as the adjoining sections 5 and 32, and is hereinafter referred to as the action area.

Two major native vegetation communities occur on the project site (Thomas Olsen Associates, Inc. 1994): Sonoran Creosote Bush Scrub and Desert Dry Wash Woodland. These two communities encompass approximately 680 acres or about 75 percent of the project site. The remainder of the project site, 226 acres or about 25 percent, is a cultivated vineyard. Native vegetation community types described below follow Holland (1986).

**Sonoran Creosote Bush Scrub:** This vegetation community is similar to the Mojave Creosote Bush Scrub but has a greater diversity of plant species and growth forms, likely due to warmer temperatures and a seasonally split rainfall regime. The dominant woody perennial shrub in the project area is creosote bush (*Larrea tridentata*). Other plants found onsite include pencil cholla (*Opuntia ramosissima*), indigo bush (*Psoralea fremontii*), sweetbush (*Bebbia* sp.), brittlebush (*Encelia farinosa*), desert lavender (*Hyptis emoryi*), white bursage (*Ambrosia dumosa*), and ocotillo (*Fouquieria splendens*). A variety of annual forbs, which typically flower in late February and March, are also found in the project area. This vegetation community occurs on slopes, fans, and valleys with high soil salinity and winter temperatures usually above freezing.



**Desert Dry Wash Woodland:** Desert Dry Wash Woodland is associated with sandy or gravelly washes and arroyos of the lower Mojave and Colorado deserts and occurs mainly in frost-free areas. This vegetation community is a drought deciduous, microphyllous xeroriparian thorn scrub woodland dominated by various trees and shrubs of the legume family, including blue palo verde (*Cercidium floridum*), smoke tree (*Psoralea argophylla*), sweetbush, desert lavender, brittlebush, and catclaw acacia (*Acacia greggii*). Compared to the Sonoran Creosote Bush Scrub, vegetation in this community is more abundant. During a field survey after summer rains, a desert seep was observed at the confluence of two large ephemeral washes in the narrow linear portion of the property near the southwestern corner of Section 3 (Ecological Ventures California, Inc. 2003).

Existing structures and disturbances on the project site include a cultivated vineyard, groundwater wells, a mobile home compound, and dumping sites (SFC Consultants 1998). These are discussed in greater detail below. Existing roads on the property consist of dirt and gravel tracks in and around the vineyard. Dirt roads or vehicle trails also lead southward toward the Martinez Rockslide, and generally crisscross the site. The vineyard is located entirely outside the boundaries of critical habitat for Peninsular bighorn sheep, where grapes have been cultivated since at least 1981.

Though bighorn sheep in the action area have not been the focus of intensive study, sheep have been documented consistently on the mountain slopes south and west of the project site during annual surveys (Bighorn Institute, unpubl. data). Consistent observations over time of sheep in the same general area typically indicate habitation as part of a home range of one or more sheep. CDFG surveys (K. Brennan, *in litt.*) also have documented sheep use (two rams and one ewe) in alluvial habitat near the vineyard, over 0.5 miles from the closest escape terrain. In addition, data are available for one radio-collared ewe with a GPS unit, which showed regular use in the main canyon draining into the southwestern portion of the project site. Consultants hired by the project proponent also documented sheep sign on the property in this area (S. Delateur, pers. comm., P. Krausman, *in litt.*).

The project site encompasses about 457 acres of designated critical habitat for Peninsular bighorn sheep. Of this about 267 acres would be developed and about 290 acres would be permanently conserved on and off-site in sections 4 and 5. The primary function and particular constituent elements in the action area include foraging habitat and water sources, escape terrain, isolation from human disturbance, and lambing and rearing habitat. Compared to critical habitat areas farther north along the urban interface, critical habitat in the action area is not as heavily disturbed by human activities, and therefore, provides greater sanctuary for the resident sheep population. This relative lack of disturbance and habitat loss is related to the extensive and undeveloped alluvial fan system that has functioned in absorbing and curtailing sources of disturbance beyond the limits of established sheep home ranges largely centered along the bordering mountain sides, and absence of recognized trails and high recreational use levels, to

date. As an apparent result, sheep population levels in this ewe group have been more stable, without the dramatic declines observed in more urbanized areas to the north.

## EFFECTS OF THE ACTION

### *Direct Effects*

For the purposes of this analysis, all references to bighorn sheep habitat below also pertain to designated critical habitat for Peninsular bighorn sheep; in other words, loss of lands outside critical habitat were not considered to represent a loss of bighorn sheep habitat because the critical habitat designation in this area was sufficiently robust to capture those areas typically expected to be used by bighorn sheep.

The proposed project would directly eliminate about 267 acres of designated critical habitat for Peninsular bighorn sheep and permanently conserve a minimum of about 290 acres of on-site and off-site critical habitat in sections 4 and 5. The reconfiguration of the project footprint discussed above under the project description was designed to avoid the most biologically valuable portions of the project site and reduce the intrusion of development into bighorn sheep habitat. By scaling back the project along its southern boundaries on the eastern and western sides of the Martinez Rockslide, the revised project boundary now largely avoids the canyon mouths with alluvial fan plant communities (primarily desert dry wash woodland), thereby maintaining a portion of this habitat type available to bighorn sheep in the project area. Radio-collar data indicate that the alluvial habitat avoided in the southwestern corner of the project site occurs within the northernmost portion of a ewe home range that otherwise extends over the rockslide south into Martinez Canyon. Field work by biological contractors of the project proponent also located bighorn sign in this area, as referenced above.

The loss of desert dry wash woodland would primarily affect bighorn sheep by further reducing the seasonal availability of nutritious forage found in this increasingly scarce alluvial fan plant community. However, the extent to which this area has been used by bighorn sheep is not known because of the limited amount of field work on sheep that has been conducted in the project vicinity. CDFG data (K. Brennan, *in litt.*) documented sheep use in the northwestern corner of Section 4, which indicates that sheep occasionally venture far into the fan, well away from the closest escape terrain. Extensive use of alluvial slopes distant from escape terrain also has been documented repeatedly in portions of Anza-Borrego Desert State Park, which suggests that regular use in areas without nearby escape terrain can be expected in remote areas with a general absence of human-related disturbance. Though this loss of foraging habitat represents a reduction in ecological value for bighorn sheep in the general area, redesign of the project configuration, as discussed above, retained about 110 acres of alluvial habitat on-site for the benefit of sheep, which would continue to help meet the nutritional needs of current and future sheep generations inhabiting the project area, provided that cross-country hiking and proliferation of trails are effectively prevented so that bighorn sheep will continue to feel secure



in using these foraging areas more distant from available escape cover (see the *Indirect Effects* section below for more detail).

Travertine's stated off-site habitat conservation strategy of acquiring discontinuous parcels in Section 5 also is designed to protect valuable alluvial foraging habitat, as well as indirectly protecting even more such habitat on intervening parcels by reducing their development potential through fragmentation of land into smaller units with reduced economic development potential. To date, Travertine has acquired over 20 acres of scattered parcels for conservation of bighorn sheep critical habitat and has committed to purchase an additional approximately 100 acres in some of the more developable portions of Section 5. In addition, Travertine has agreed to loan CVAG or CVCC \$2 million for additional habitat acquisition in Section 5 if the CVMSHCP is approved. When combined with a recent parcel acquisition by the Friends of the Desert Mountains, BLM and Coachella Valley Mountains Conservancy land acquisition programs, and grant-in-aid funding from the Service through CDFG for acquiring bighorn sheep habitat, the emerging pattern of conservation in Section 5 can be expected to continue. Please see below for expanded discussion on this topic.

#### *Indirect Effects*

For the purposes of this analysis, indirect effects are defined as those that are caused by the proposed action and are later in time but still are reasonably certain to occur (50 CFR 402.02). We anticipate three potential types of indirect effects from the proposed project that likely would be minimized and partially avoided by the various conservation measures agreed to by the project proponent: (1) construction/operation-related disturbance, (2) potential maladaptive behaviors associated with bighorn sheep attraction to artificial sources of food and water on the proposed golf course, and (3) inducement of future development on private lands in Section 5 adjoining the project site on the west.

The project reconfiguration discussed above was designed to minimize impacts to sheep use in adjoining habitat. Nonetheless, project construction activities likely would disrupt sheep behavior in surrounding areas by causing sheep to avoid using portions of their home ranges and alluvial fan foraging habitat, on a temporary basis. Avoidance behavior would potentially expose sheep to higher predation risk if sheep movement is restricted to smaller use areas. If dust control measures during construction are not adequate or properly applied, airborne particulates could be inhaled by bighorn sheep and cause adverse pulmonary reactions and health effects. However, the project's construction must comply with the PM 10 regulations controlling all grading activity in the Coachella Valley. Airborne dust from a major construction activity is thought to have led to an all-age die-off of sheep in the Rocky Mountains (Spraker *et al.* 1984). The proposed conservation measures of using passive design features, such as berms, juxtaposition of golf and trail components to prevent off-trail excursions by recreationists, and monitoring/trespass enforcement by golf course marshals should curtail most human disturbance levels in adjoining bighorn sheep habitat, though some harassment of sheep by noncompliant

individuals may be unavoidable. Overall, the proposed project design, including contingency fencing measures, would effectively manage edge effects of the project to a level that would not appreciably detract from sheep use in adjoining habitats, except for a typical pattern of apparent avoidance of disturbance that is evident in the compilation of sheep data along the existing urban interface north of the project site.

The fencing contingency plan also would minimize exposure of bighorn sheep to the hazards associated with artificial sources of food and water on the golf course that fronts adjacent habitat. Though sheep in this ewe group have not generally habituated to urban settings, a bighorn ewe with a rumen full of green grass was recently found drowned in the Coachella Canal adjoining PGA West (CDFG, unpubl. information). Thus, the initially unfenced golf course would pose a risk of habituation and exposure to disease and parasite hazards that have been documented elsewhere (DeForge and Ostermann 1998, as cited in Service 2000). However, we anticipate that if sheep begin to habituate to on-site urban environments, the fencing committee (composed of HOA, CDFG, and Service representatives) would oversee construction of a sheep-proof fence along a predetermined easement with a funding source created prior to project construction, as described in Conservation Measure 5.

A fence also would be constructed if recreational trespass occurs along the Rockslide Access Trail into bighorn sheep habitat in the canyons bordering the east and west edges of the rockslide, or creates spur trails upslope into the canyons west of the project site.

The last and potentially most damaging indirect effect of the project would be the extension of (1) legal access across BLM and BOR lands that connects with an existing 30-foot wide easement along the northern boundary of sections 4 and 5 (Avenue 62), and (2) physical access to a point in Section 4 about 100 yards east of the corner of sections 4, 5, 32, and 33. Currently, there is no all-weather road access into Section 5, without which, development in Section 5 would not be possible. With access provided by the proposed rights-of-way across BLM and BOR lands, the economics of delivering utilities and related infrastructure, and associated effects to projected return on investment, would likely influence, as one of many development considerations, future development patterns in Section 5.

As described above, legal access for Section 5 lies within an existing 30-foot wide public right-of-way easement along the northern border of Section 5. About 100 yards east of the northwestern corner of Section 4, the easement largely lies in the main wash along Avenue 62 where it turns to Jefferson Street. Any future all-weather roadway to City standards within this easement would have to be constructed in the bottom of that wash for about 0.25 mile due west before the wash bends south out of the easement, at which point the access road would have to be graded up the north cut bank of the wash. If a construction design were physically and economically feasible, which may be questionable, given the uneven terrain and hydrological challenges of designing a roadway to City standards in a deeply incised major wash, a Streambed Alteration Agreement with CDFG and a section 404 permit from the U.S. Army Corps of



Engineers would be needed. Among other requirements, CDFG would typically examine the effects on threatened and endangered species and the U.S. Army Corps would require a section 7 consultation with the Service. Moreover, both agencies typically require the loss of desert washes and microphyllous woodland to be mitigated by the acquisition of equivalent value habitat at a 3:1 acreage ratio. Access to individual parcels across the dissected surface of the alluvial fan would require the crossing of numerous other washes as well. Any road construction to the north of this existing easement in Section 32 would require BLM approval, as Section 32 is BLM land. Any road construction to the south of this easement would require approval of the various owners of parcels within Section 5. Travertine owns several of these parcels and has committed to not provide approval for right-of-way access rights outside of the existing easement.

Associated with the potential growth inducement associated with its proposed action, Travertine Corporation assessed the feasibility of residential construction in Section 5 by conducting an investigation into the economic and regulatory logistics of delivering necessary infrastructure to this section (*Section 5 Addendum to the Travertine Biological Assessment*), including roads, water, sewer, electricity, gas, and telephone/cable. Because Travertine has agreed not to provide additional capacity or discretionary hookups to meet potential infrastructural needs in Section 5, any future development would have to tap into utility trunk lines down-slope from Travertine, more than 1.5 miles away, or potentially north of Travertine in the Green Specific Plan area, about 1 mile way. The estimated costs of extending infrastructural capacity from the valley floor, through Travertine, and up to the eastern boundary of Section 5, and of extending Avenue 62 from Section 4 into Section 5 by 1,100 and 2,350 lineal feet, totaled about \$8.8 and \$11.9 million, respectively. Prorated over a hypothetical 80-unit subdivision, these off-site infrastructural costs added about \$148,000 per house. If only 40 units are built, these off-site cost double to nearly \$300,000 per lot. This estimate does not include the substantial costs related to development of on-site water retention, water improvements, sewer improvements, off-site drainage and hillside grading. By agreeing not to provide infrastructural capacity for additional development beyond the needs of Travertine itself, the proposed project likely would partially subsidize possible development in Section 5 for transportation (legal and physical access) costs only, but would increase the other development costs, due to the need for re-excavation and installation of greater capacity within utility easements that already would have been installed for the proposed Travertine project.

Whether this partial transportation subsidy would tip the economic balance in favor of development in Section 5, despite the other substantial development costs involved, is arguable. All else being equal, a reduction in transportation-related costs would be an appreciable inducement to development. However, as discussed in the *Section 5 Addendum to the Travertine Biological Assessment*, numerous other substantial economic and regulatory issues would remain. Legal access along the possible extension of Avenue 62 into Section 5 would be constrained to an existing 30-foot wide public right-of-way easement, given Travertine's commitment to not grant access to prospective developers. However, a subdivision would

typically require a collector street (74 feet wide) or a secondary arterial (88 feet wide) (La Quinta Municipal Code 13.24.070 Street Design—Generally, & Table 13.24.060). But since the potential Avenue 62 extension is not a General Plan street, the City typically would not use eminent domain to condemn private property in Section 5 to provide a developer with a right-of-way wide enough to meet City codes. Therefore, assuming a developer could not obtain necessary additional right-of-way width from certain landowners in Section 5, such a developer would likely seek a right-of-way expansion into Section 32 and initiate a grant application with BLM. However, with legal access already provided on private lands in Section 5, BLM would not be under a legal obligation to grant a license on public lands. If BLM were so inclined to grant a right-of-way easement, BLM would be required to consult with the Service under section 7 of the Act. Such consultation likely would incur a variety of minimization, conservation, or compensation measures to offset adverse effects. Thus, the commitment of Travertine to not sell or otherwise provide approval on its lands for an expanded easement, would appear to restrict future development in Section 5 to an unknown but limited number of units that could be safely served under the existing 30-foot wide easement. Considering the extraordinary infrastructural costs needed to meet City codes for residential development, the regulatory delays and cost to comply with CDFG and the Corps requirements, and the strategic conservation acquisitions proposed by Travertine to breakup large blocks of potentially developable lands, any development that might still occur likely would be substantially less than current City zoning.

Regardless, even a few residences if constructed at the mid- to upper elevations of Section 5, would render most or all down-slope habitat largely unusable because bighorn sheep typically avoid areas separated by sources of disturbance from the nearest escape terrain. This avoidance reaction by sheep would also eliminate most or all habitat value on the approximately 120 acres of conserved lands acquired by Travertine for the benefit of sheep in Section 5. Moreover, the urban interface design of the Travertine project that prevents human intrusion into bighorn sheep habitat, and sheep from accessing urban sources of food and water, would prove largely pointless and ineffective if incremental development were permitted in Section 5.

A scenario where exclusive homes on large lots are scattered across the hillsides of Section 5 would extend the familiar pattern found along much of the urban interface to the north, where trails would proliferate off vehicular access points (in this case the extension of Avenue 62), creating an unplanned network up the numerous canyons and ridgelines along the toe of slope, which provide essential lambing, rearing and escape habitat, seasonal/perennial water, and other vital resources for sheep. As a result, sheep home ranges would withdraw upslope as human disturbance dramatically increased along lower elevation canyons and ridgelines, thereby diminishing seasonal/perennial resources essential to sustain stable population levels.

Sheep populations in the Deep Canyon and Martinez Canyon areas have been stable over the known past, in contrast to the ewe groups in the northern Santa Rosa and San Jacinto Mountains that declined to near extinction but were then rescued by release of captive-reared animals. This pattern of population decline in ewe groups where development encroaches to the toe of slope



and consequently results in extensive cross country hiking and trails proliferation, likely would be repeated in this area as well, unless Section 5 is protected with more space for sheep at the lower elevations of their home ranges along the alluvial fan up to the western edge of the Travertine project. As Krausman *et al.* (2003) have observed, "Avoiding extinction for the northern Santa Rosa population and other mountain sheep populations faced with urban expansion will require aggressive management. If encroachment is unavoidable because of political or economic pressures, then every action should be taken to minimize mountain sheep and human encounters....When development occurs adjacent to and in mountain sheep habitat, the sheep eventually decline and ultimately become extinct. Society is faced with a difficult choice: either restrict suburban expansion and control human activities within sheep habitat or accept the reality that sheep and expanding developments are simply not compatible."

As explained in detail in the *Section 5 Addendum to the Travertine Biological Assessment*, the combined effects of Travertine's targeted conservation acquisitions in Section 5, the high cost to bring road access and utilities up the slope into Section 5 west of Travertine's development boundary, and the numerous regulatory requirements, arguably would not make future development in Section 5 more likely as a result of the Travertine project. Were it not for Travertine's proposed strategic conservation acquisitions, a developer potentially could assemble enough acreage in the areas outside of La Quinta's Hillside Conservation Overlay District over which to spread the costs of development and still leave the project economically viable. Consequently, the development potential of Section 5 has been significantly diminished. Thus, as reconfigured through this section 7 consultation, the Travertine project would minimize the potential growth-inducing effects in Section 5 and potentially accelerate the dynamics for permanent conservation of this area for bighorn sheep.

**Summary:** All the effects to bighorn sheep described in the above analysis pertain to areas designated as critical habitat. Therefore, the various direct and indirect effects, together with the associated conservation measures in the proposed action that would avoid, minimize, and compensate for adverse effects to bighorn sheep, also pertain to designated critical habitat. Overall, the direct elimination of about 267 acres of critical habitat was designed in a way that retained most of the foraging habitat in close proximity to escape habitat. Thus, the conservation strategy agreed to by the project proponent was to protect those foraging areas used most frequently by bighorn sheep, and to allow the loss of those foraging areas farthest from escape terrain that are used the least by sheep. By reconfiguring the project design in this way, the primary role and function of critical habitat on and adjacent to the project site can be conserved without appreciably diminishing the carrying capacity for bighorn sheep in the project area.

## CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local, or private actions that are unrelated to the proposed action and reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA.

We are aware that CVWD is intending to construct water percolation basins behind the existing dike to the east of the Travertine project site; however, these sites occur outside critical habitat and per our understanding of how they would be constructed and maintained, likely would not adversely affect bighorn sheep.

If the CVMSHCP is approved, any potential development within Section 5 would be regulated under what is termed under the CVMSHCP as the HANS process, which is designed to determine whether all or parts of individual parcels are needed to meet the various conservation goals and objectives of the plan, and to provide an acquisition mechanism for those parcels needed for conservation. For the reasons discussed above, Section 5 west of the proposed Travertine site is essential for the conservation of Peninsular bighorn sheep, and therefore, would need to be conserved under the CVMSHCP.

## CONCLUSION

After reviewing the current status and environmental baseline of the species, effects of the proposed action, and cumulative effects, it is our biological opinion that the proposed action is not likely to jeopardize the continued existence of the Peninsular bighorn sheep, or adversely modify designated critical habitat. This biological opinion does not rely on the regulatory definition of "destruction or adverse modification" of critical habitat at 50 CFR 402.02. Instead, we have relied upon the statutory provisions of the Act to reach these conclusions, which are based on the following reasons:

1. The proposed project design has been substantially altered to better protect important habitat features and primary constituent elements of critical habitat on the project site.
2. The numerous conservation measures would (a) minimize human intrusion into adjoining critical habitat, (b) strategically acquire conservation lands to fragment otherwise developable, larger blocks of land in Section 5, thereby temporarily/indirectly protecting additional critical habitat from development until conservation funding becomes available to permanently conserve these intervening private lands, (c) permanently protect 290 acres of critical habitat, and (d) provide funding for bighorn sheep recovery implementation.



3. The proposed project site is located along the edge of designated critical habitat, and consequently would not fragment habitat, disrupt connectivity, or displace individual sheep from current home ranges.

#### INCIDENTAL TAKE STATEMENT

Sections 7(b)(4) and 7(o)(2) of the Act do not apply to the incidental take of listed plant species. However, protection of listed plants is provided in that the Act to the extent that removal or reduction to possession of endangered or threatened plants from Federal lands requires a Federal permit. It is unlawful for any person to remove, cut, dig up, damage or destroy a listed plant species in knowing violation of any law or regulation of any state or in the course of any violation of a State criminal trespass law [section 9(a)(2)(B) of the Act].

Sections 4(d) and 9 of the Act, as amended, prohibit taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct) of listed species of fish and wildlife without a special exemption. Harm is further defined to include significant habitat degradation or modification that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Harass is defined as actions that significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is any take of listed animal species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or the applicant.

The measures described below are non-discretionary, and must be undertaken by the BLM and BOR for the exemption in 7(o)(2) to apply. The BLM and BOR have a continuing duty to regulate the activity covered by this incidental take statement. If the BLM and BOR fail to assume and implement the terms and conditions, the protective coverage of 7(o)(2) may lapse. To monitor the impact of the incidental take, the BLM and BOR must report the progress of the action and its impact on species to the Service as specified in this incidental take statement [50 CFR 402.14(i)(3)].

#### *Amount or Extent of Take*

Though we do not anticipate that any Peninsular bighorn sheep would be directly injured or killed as a result of the proposed project, we do anticipate that sheep in the vicinity of the project would be harmed as a result of (1) project construction, (2) potential habituation to the initially unfenced golf course, with consequent health and safety effects, and (3) disturbance by recreational trespass from the proposed trail and improved public access to the site. Harm would result from sheep avoiding and withdrawing from these sources of disturbance and noise associated with the project and project-associated recreational-associated disturbance within sheep habitat. Avoidance reactions and habituation to the same stimulus can both occur within a given population of bighorn sheep due to behavioral variances among individuals. The scientific

literature shows that not all bighorn sheep react in the same way to human disturbance, and a portion of the individuals in the same population do not react as strongly and can habituate to certain human activities (see for example Hicks and Elder 1979, Leslie and Douglas 1980, Papouchis *et al.* 2001); therefore it is not possible to quantify to number of individuals that would be affected, but it is reasonable to conclude that it would be at least one. Take is given in acres of disturbed habitat. Two hundred and sixty seven acres containing one or more primary constituent elements of designated critical habitat will be permanently lost or altered due to the proposed project and associated edge effects.

#### *Reasonable and Prudent Measures*

This reasonable and prudent measure, with its accompanying term and condition, are necessary and appropriate to minimize the impact of the incidental take associated with the proposed project.

BLM and BOR shall ensure that the conservation obligations described in the biological opinion are fully implemented over the life of the project.

#### *Terms and Conditions*

To be exempt from the prohibitions of section 9 of the Act, BLM and BOR must comply with the following terms and condition, which implements the reasonable and prudent measure described above. This term and condition is non-discretionary and requires that implementation details are subject to the continuing oversight and concurrence of the Service.

BLM and BOR shall require in all access approvals crossing Federal lands that Travertine Corporation and successors, and/or City of La Quinta, as appropriate (1) implement the project description and conservation measures as described in this biological opinion, and (2) submit all project design drawings, trail alignments, landscape plans, and grading plans along the development: habitat edge, for Service review and approval, and ensure that any Service-required modifications to these plans be incorporated into the final approvals before the beginning of each phase of project construction. BLM and BOR shall immediately notify the Service of any noncompliance with adherence to the project description and conservation measures described in the biological opinion. BLM and BOR shall require corrective measures where direct jurisdiction exists. Where direct BLM and BOR jurisdiction does not exist, BLM and BOR shall direct the City to rectify any compliance issues. If not rectified per the above, noncompliance shall be regarded as new information or a project modification that requires reinitiation of formal consultation under 50 CFR 402.16.

These incidental take measures and conditions are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If during the course of the action, the



level of take is exceeded or the terms and conditions are not complied with, these circumstances would constitute new information requiring reinitiation of consultation and review of the reasonable and prudent measures. BLM and BOR must immediately provide an explanation for the causes of the taking or noncompliance with the terms and conditions and review with the Service the need for possible modification of the reasonable and prudent measures.

#### REINITIATION NOTICE

This concludes formal consultation on the proposed action. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated may be affected by the action

If you have any questions regarding this biological and conference opinion, please contact Pete Sorensen at (760) 431-9440.

Attachment (Figure 1)

#### LITERATURE CITED

The literature cited in this biological opinion is available upon request to the Carlsbad Fish and Wildlife Office.



**Figure 1. Proposed Tevetine Project  
Development and Conservation  
Boundaries**

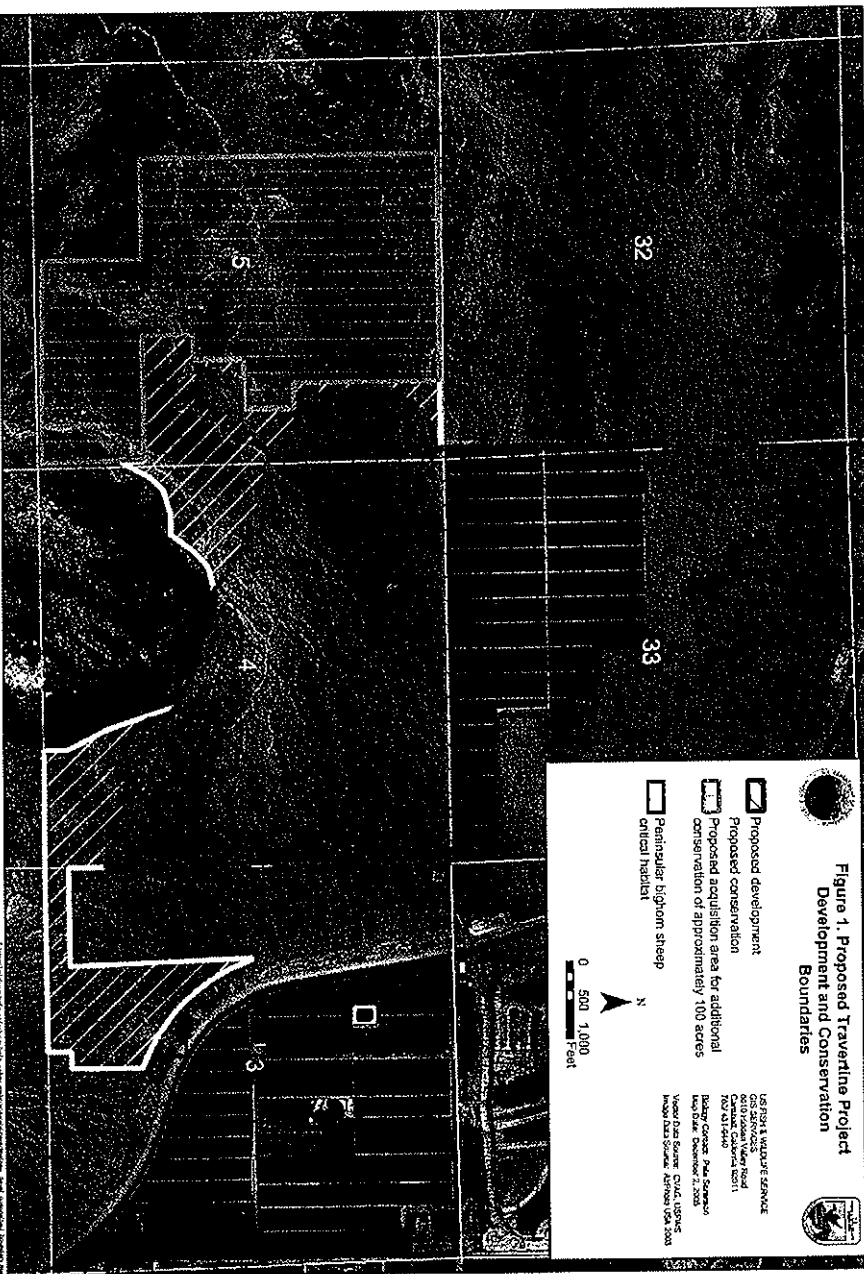


U.S. FISH & WILDLIFE SERVICE  
GIS SERVICES - PMD  
Columbus, Colorado 80511  
703.433.6440  
Biology Center, New Brighton  
Map Date: December 7, 2005  
Vector Data Source: CIVIL, USGS  
Maped Data Source: Airphoto 1991, 2001

- ☒ Proposed development
- ☒ Proposed conservation
- ☐ Proposed acquisition area for additional conservation of approximately 700 acres
- ☐ Peninsular high-mountain sheep critical habitat



0 500 1,000  
Feet









## **Appendix E    CVCC Final Joint Project Review**

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## COACHELLA VALLEY CONSERVATION COMMISSION



Cathedral City ◦ Coachella ◦ Desert Hot Springs ◦ Indian Wells ◦ Indio ◦ La Quinta ◦ Palm Desert  
◦ Palm Springs ◦ Rancho Mirage ◦ County of Riverside ◦ Coachella Valley Water District ◦ Imperial Irrigation District

31 March 2021

Cheri Flores  
Planning Manager  
City of La Quinta  
78495 Calle Tampico  
La Quinta, CA 92253  
760.777.7067

RE: Final Joint Project Review for CVCC 20-006 Travertine development project

Dear Ms. Flores:

The Coachella Valley Conservation Commission (CVCC) has completed its Joint Project Review (JPR) as required by section 6.6.1.1 of the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) for the Travertine development project proposed by TRG Land, Inc.

The project is located partially within the Santa Rosa and San Jacinto Conservation Area and proposes an 855-acre mixed use development to include low and medium density residential housing, hospitality and commercial services, and recreation, open space, and natural areas. The project will impact 6.5 acres with the conservation area, but does not overlap with any modeled habitat. A further 2.25 acres of disturbance within the Conservation Area will occur on land owned by the Bureau of Land Management, who is not a permittee under the CVMSHCP and is therefore not reviewed in this report.

The Santa Rosa and San Jacinto Conservation Area contains Essential Habitat for Peninsular bighorn sheep, a species fully protected by the State of California. A separate Biological Opinion provided by the United States Fish and Wildlife Service covers federal permitting for that species, but neither that document nor this JPR allow for the take of any individual. The Conservation Area also contains habitat for desert tortoise and Le Conte's thrasher.

A draft JPR was submitted to the US Fish and Wildlife Service, California Department of Fish and Wildlife, and the project applicant on 2 February 2021. Agency comments, and any response, are summarized in the JPR and included in full as an Appendix.

This JPR has found the project as proposed consistent with the CVMSHCP if conditioned on the implementation of required Avoidance and Minimization Measures and applicable Land Use Adjacency guidelines as described in the Plan documents. The Travertine project also has specific financial requirements that must be met prior to its implementation, further described in Plan documents.

## COACHELLA VALLEY CONSERVATION COMMISSION



Cathedral City ◦ Coachella ◦ Desert Hot Springs ◦ Indian Wells ◦ Indio ◦ La Quinta ◦ Palm Desert  
◦ Palm Springs ◦ Rancho Mirage ◦ County of Riverside ◦ Coachella Valley Water District ◦ Imperial Irrigation District

If you have any questions, please do not hesitate to contact me at [psatin@cvag.org](mailto:psatin@cvag.org), or 760.346.1127.

Sincerely,

Peter Satin  
Regional Planner

CC: Carly Beck, CDFW  
Jacob Skaggs, CDFW  
Heather Pert, CDFW  
Alicia Thomas, USFWS  
Jenness McBride, USFWS  
Mark Rogers, TRG Land, Inc

Attachments:

JPR 20-006: Travertine

Appendix A: Applicant project description

Appendix B: Agency comments

Appendix C: Avoidance, Minimization, and Mitigation Measures and Land Use Adjacency  
Guidelines

JPR Application



# Coachella Valley Conservation Commission

## Draft Joint Project Review

Submitted 31 March 2021



### Project Summary

Applicant	TRG Land, Inc
CVCC ID	20-006
Permittee(s)	City of La Quinta
APN	753040014, 753040016, 753040017, 753050007, 753050013, 753050029, 753060003, 753070005, 753080003, 753080005, 753080006, 764280057, 764280059, 764280061, 766110002, 766110003, 766110004, 766110005, 766110007, 766110009, 766120001, 766120002, 766120003, 766120006, 766120015, 766120016, 766120018, 766120021, 766120023
Total Acreage	855.4 acres
Conservation Area	Santa Rosa and San Jacinto Mountains
Conservation Area Disturbance Acreage	6.5 acres

### Introduction

The Coachella Valley Conservation Commission (CVCC) is a joint powers authority tasked with overseeing the implementation of the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP or Plan). Among other responsibilities, CVCC is tasked with conducting the Joint Project Review (JPR) process as defined in section 6.6.1.1 of the Plan for any potential development taking place in a Conservation Area that may impact Conservation Objectives. The JPR process allows CVCC to facilitate and monitor the implementation of the CVMSHCP and to assist Local Permittees in meeting the Conservation Goals and Objectives of the Plan. The intention of this JPR document is to inform Permittee(s) whether a proposed development project complies with Plan requirements, and in no way limits their land use authority.

The JPR process is designed to streamline appropriate development projects while maintaining adequate time for regulatory review. Within 30 days of receipt of project information from a Local Permittee, CVCC will conduct a geospatial analysis of how the project may impact Conservation Area Conservation Objectives and Required Measures as described in section 4.3, rough step parameters as described in section 6.5, and Covered Species Goals and Objectives as described in section 9. CVCC will prepare their findings for comment and submit them to the Local Permittee, the project applicant, and the United States Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) (collectively, Wildlife Agencies). The Wildlife Agencies will provide any comments to CVCC within 30 days, after which CVCC will finalize its recommendation regarding project compliance and submit to the Local Permittee. Additional consultation between CVCC, the project applicant, and the Local Permittee may be required if inconsistencies with Plan requirements are identified.

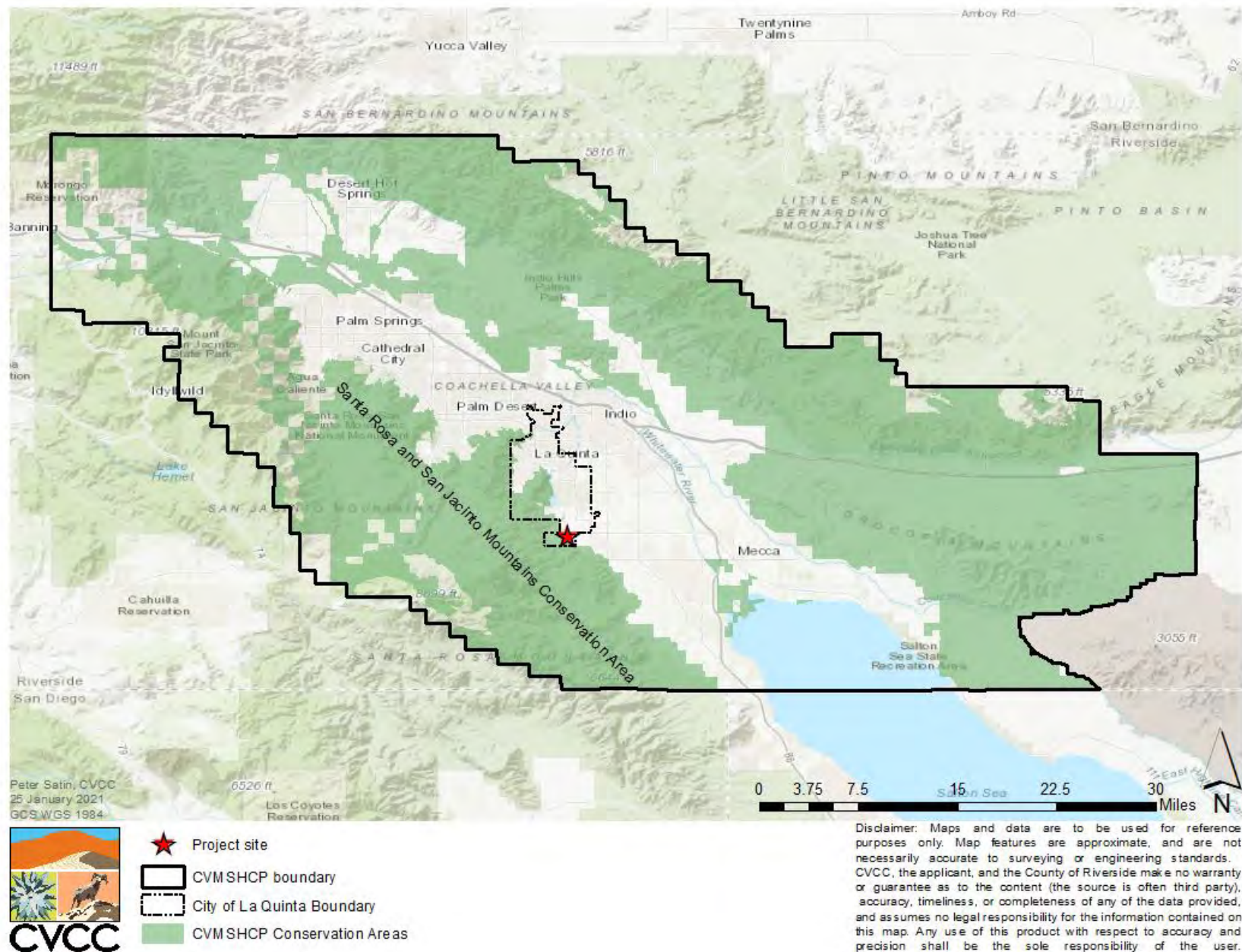


Figure 1: Project location with the Coachella Valley.



## *Project Description*

The proposed Travertine project (Project) is located primarily within the boundaries of the City of La Quinta and will impact land within the Santa Rosa and San Jacinto Mountains Conservation Area (SRSJM) (Figure 1). A small portion of the project will impact land owned by the Bureau of Land Management (BLM) within SRSJM (Figure 2); however, because the BLM is not a signatory to the CVMSHCP and BLM land is not covered, that portion will not be reviewed here. The Project proposes an 855-acre mixed use development to include low and medium density residential housing, hospitality and commercial services, and recreation, open space, and natural areas. A full project description provided by the applicant is included as Appendix A.

The proposed Project warrants special consideration under the CVMSHCP. Prior to the approval of state and federal permits for the Plan, the Project had initiated Section 7 consultations with USFWS. As detailed in section 4.3.21 of the CVMSHCP under Required Measures for the SRSJM Conservation Area, any species issued permits through the USFWS Biological Opinion for this Project would not require take authorization through the Plan. Any conservation measures listed for those species would not apply unless incorporated into the Biological Opinion. For those Covered Species not included in the Biological Opinion, the Project constitutes a Covered Activity governed by special provisions.

## *Project Impacts and Proposed Conservation Measures*

The impacts subject to this review involve the construction of two water tanks and associated infrastructure resulting in disturbance of 6.5<sup>1</sup> acres of land within SRSJM (Figure 2). No additional areas for fuel modification zones are anticipated for the development. As noted in the findings section of this report, this 6.5 acres of disturbance does not impact the conservation objectives for Peninsular bighorn sheep, desert tortoise, or Le Conte's thrasher. The proposed trail plan for Travertine has been revised in consultation with the CVCC to relocate trail routes to avoid entry into the Conservation Area. As depicted in Figure 2, portions of the trail now abut the Conservation Area, but the trail does not enter into it. With this change, the trail plan is no longer subject to the JPR process.

As required by the Biological Opinion, the Project applicant will permanently conserve through deed restriction 294.75 acres of on-site property, with 147.75 acres occurring within SRSJM. An additional 10.75 acres of off-site conservation also falls within the Conservation Area. Since this is required mitigation acreage, it cannot be counted toward the Conservation Objectives of the Plan.

The Biological Opinion further requires a fencing contingency plan to be drafted by the applicant and for fencing easements to be granted to the appropriate agency along the outermost perimeter of the project. This conservation measure supersedes required measure 11 of section 4.3.21 of the CVMSHCP describing similar actions.

The portion of the project on BLM land and not subject to this review is projected to disturb 2.25 acres. All disturbance acreages were determined independently by CVCC staff using impact data provided by the applicant and controlling for acreage previously considered disturbed.

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<sup>1</sup> All acreages are rounded to the nearest quarter-acre.

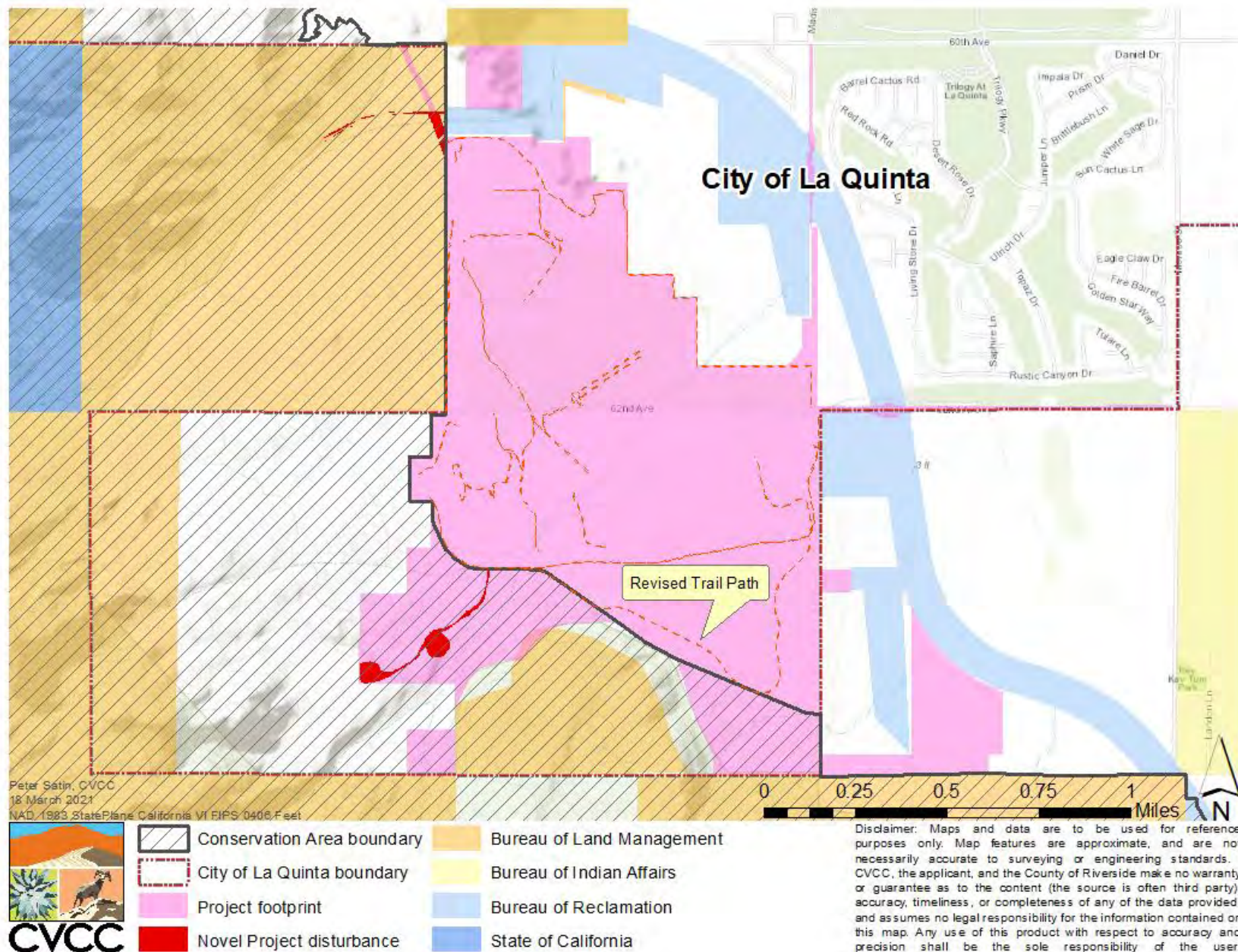


Figure 2: Project footprint and surrounding land status.



## Conservation Assessment

### *Santa Rosa and San Jacinto Mountains Conservation Area*

The primary conservation focus of SRSJM is to protect essential habitat for Peninsular bighorn sheep. This Conservation Area also provides potential habitat for gray vireo and desert tortoise, although respective occupation and population densities for these species is not well known. It also provides migration and breeding habitat for many of the Plan's riparian species, and natural communities including desert fan palm oases. Of note, SRSJM contains at least one occurrence of triple-ribbed milkvetch that appears to be disjunct from other known occurrences within the CVMSHCP and numerous recorded burrowing owl locations. Small amounts of Other Conserved Habitat (OCH) for Coachella Valley milkvetch, Coachella Valley giant sand-treader cricket, Coachella Valley Jerusalem cricket, Coachella Valley fringe-toed lizard, flat-tailed horned lizard, Le Conte's thrasher, Coachella Valley round-tailed ground squirrel, and Palm Springs pocket mouse are also found in SRSJM. Hydrological processes necessary for the maintenance of desert dry wash, desert fan palm oases, and other riparian habitats are considered Essential Ecological Processes for the Conservation Area.

Conservation Objectives for SRSJM include the conservation of essential habitat for Peninsular bighorn sheep, the conservation of known and potential habitat for gray vireo, the conservation of OCH for Le Conte's thrasher and desert tortoise, and the conservation of occupied burrowing owl burrows. Natural communities prioritized for conservation include southern willow arroyo riparian forest, desert fan palm oasis woodland, and semi desert chaparral. Conservation Objectives are detailed more fully in section 4.3.21 of the Plan. Conservation and take authorization specific to the City of La Quinta pertain to OCH for Le Conte's thrasher and desert tortoise, essential habitat for Peninsular bighorn sheep, and desert dry wash woodland.

Note that Peninsular bighorn sheep are fully protected by the State of California, meaning that no individual may be taken or possessed at any time, and that no licenses or permits may be issued for their take. Only take of habitat is permitted through the Plan and Biological Opinion.

### *USFWS 2005 Biological Opinion*

The Project applicant initiated a Section 7 consultation with USFWS in 2004, which was finalized in 2005. USFWS was concerned about impacts to triple-ribbed milkvetch, desert tortoise, and Peninsular bighorn sheep. Following expert review, field surveys, and Project reconfiguration, USFWS determined that milkvetch and desert tortoise were unlikely to be affected, and the resulting Biological Opinion applies exclusively to Peninsular bighorn sheep. In accordance with the special provisions discussed above, the Project applicant will not require federal take authorization through the Plan for bighorn sheep habitat.

In light of the 2005 Biological Opinion providing take for Peninsular bighorn sheep habitat, this report applies only to federal take authorizations for OCH for Le Conte's thrasher and desert tortoise, and state take authorizations for essential habitat for Peninsular bighorn sheep, OCH for Le Conte's thrasher and desert tortoise, and desert dry wash woodland.

### *Findings*

Geospatial analysis of the disturbance footprint subject to review determined that the Project would have no detrimental impact on modeled essential habitat for Peninsular bighorn sheep, modeled OCH for Le Conte's thrasher and desert tortoise, or modeled desert dry wash woodland (Table 1). A small, 0.5-acre

portion of the impact from the water tanks intersects some of the modeled habitat for each of the above, but after reviewing County of Riverside parcel data and consulting with the Project applicant, this overlap is believed to be the result of a mapping error (Figure 3).

### *Rough Step Analysis*

The rough step analysis, as described in section 6.5 of the CVMSHCP, is used to determine whether a proposed disturbance would have an outsized negative impact on the availability of conservation land within a given Conservation Area for a specific Conservation Objective. It is meant to ensure that the potential conservation opportunities remain in “rough step” with the projected development. A positive rough step calculation indicates a surplus of allowable disturbance acreage for a particular Conservation Objective, while a negative rough step calculation signifies that the target habitat is being overdeveloped by the resulting acreage. In such an instance, the planned disturbance would be outside the parameters of the Plan and conservation actions must take place prior to the authorization of additional habitat disturbance.

The Project as proposed maintains a positive rough step balance for each of the relevant Conservation Objectives (Table 1).

*Table 1: Project impacts per Conservation Objective for the City of La Quinta.*

<i>Conservation Objective</i>	<i>Proposed Disturbance<sup>1</sup> (ac)</i>	<i>Authorized Disturbance<sup>2</sup> (ac)</i>	<i>Rough Step<sup>3</sup></i>	<i>Project Conservation<sup>4</sup> (ac)</i>	<i>Required Conservation<sup>5</sup> (ac)</i>
<i>Le Conte's thrasher – Other Conserved Habitat</i>	0	43	15.75	0	387
<i>Desert tortoise – Other Conserved Habitat</i>	0	157	57.25	0	1409
<i>Peninsular bighorn sheep – Essential Habitat (R3)</i>	0	159	40	0	2545
<i>Desert dry wash</i>	0	8	2.25	0	76

<sup>1</sup>The proposed Project disturbance after subtracting existing disturbance.

<sup>2</sup>The maximum amount of disturbance allowed to be consistent with Plan requirements for the Project area.

<sup>3</sup>Rough step is calculated based on all development and conservation from 1996 to present.

<sup>4</sup>Acres of land within Conservation Area conserved by applicant.

<sup>5</sup>Target conservation acres as proposed by the Plan.

## **Agency Comments**

A draft version of this report was submitted to the Wildlife Agencies for comment on 2 February 2021, and CVCC received a joint comment letter on 4 March 2021. Agency comments are summarized below and included in full in Appendix B.

Comments focused on the design of the proposed nature trail as well as design of and operations and maintenance activities for the water tanks. Agencies further requested an updated work plan to determine if provisions required in the Biological Opinion had been incorporated. Finally, the Wildlife Agencies requested the addition of language pertaining to the protected status of the Peninsular bighorn sheep and a revised trail map. Relevant comments have been incorporated into this report.



## Conclusions

This report has found the Project as proposed consistent with the CVMSHCP, notwithstanding those elements covered by the 2005 USFWS Biological Opinion. Projected impacts to Essential Habitat for Peninsular bighorn sheep, Other Conserved Habitat for Le Conte's thrasher and desert tortoise, and desert dry wash woodland are all within authorized limits for the City of La Quinta. Rough step analysis for each of the Conservation Objectives yields a positive result, indicating development has not outpaced conservation for the City within SRSJM. This finding assumes the Project applicant will implement all required Avoidance, Minimization, and Mitigation measures (AMMs) and Land Use Adjacency Guidelines. If, during a subsequent project review, it is identified that the Project has failed to implement these practices, or if the disturbance footprint has changed substantially from that reviewed here, this consistency finding shall be rendered null and void.

Project approval by the Local Permittee shall be conditioned on the incorporation of all pertinent AMMs and Land Use Adjacency Guidelines as described in sections 4.4 and 4.5 of the Plan and included here as Appendix C. Special consideration should be given to AMMs for burrowing owl, desert tortoise, Le Conte's thrasher, and Peninsular bighorn sheep habitat. Special consideration should also be given the Land Use Adjacency Guidelines as detailed in 4.5.3 and 4.5.6: lighting should be directed downward and away from the Conservation Area, and trails should include features to deter users from entering into the Conservation Area, as unauthorized trail development into bighorn sheep habitat is prohibited under the Plan. Approval shall further be contingent on the applicant's fulfillment of the financial responsibilities identified in item 2.e of the required measures for SRSJM in section 4.3.21.

As discussed above, this JPR has not identified any impacts to the modeled habitat for covered species, natural communities, or essential ecological processes protected by the Plan. Nonetheless, CVCC encourages the applicant to restore any temporary disturbance resulting from the construction of the water tanks and access road, and to ensure that any operation and maintenance activities minimize disturbance to surrounding wildlife resources. CVCC further encourages the City and the applicant to consider design features that minimize edge effects for Peninsular bighorn sheep, especially in regard to the water tanks and nature trail. CVCC recommends limiting trail use to daylight hours only. CVCC has developed informational signs for use on trails that pass through bighorn sheep habitat that can be shared with the applicant.

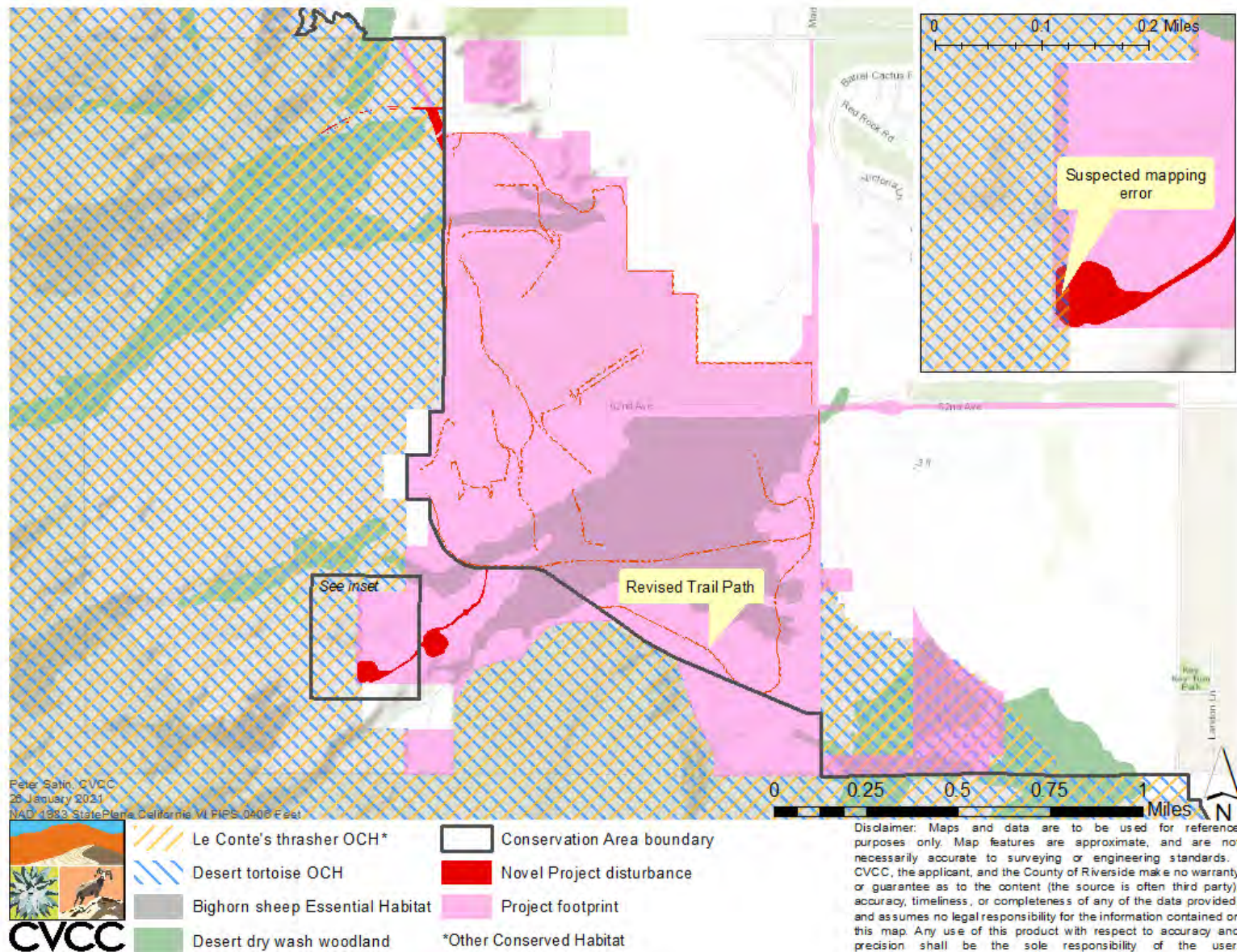


Figure 3: Project impacts to modeled habitat



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# TRAVERTINE PROJECT

Coachella Valley Conservation Commission

December 3, 2020

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# TRAVERTINE PROJECT



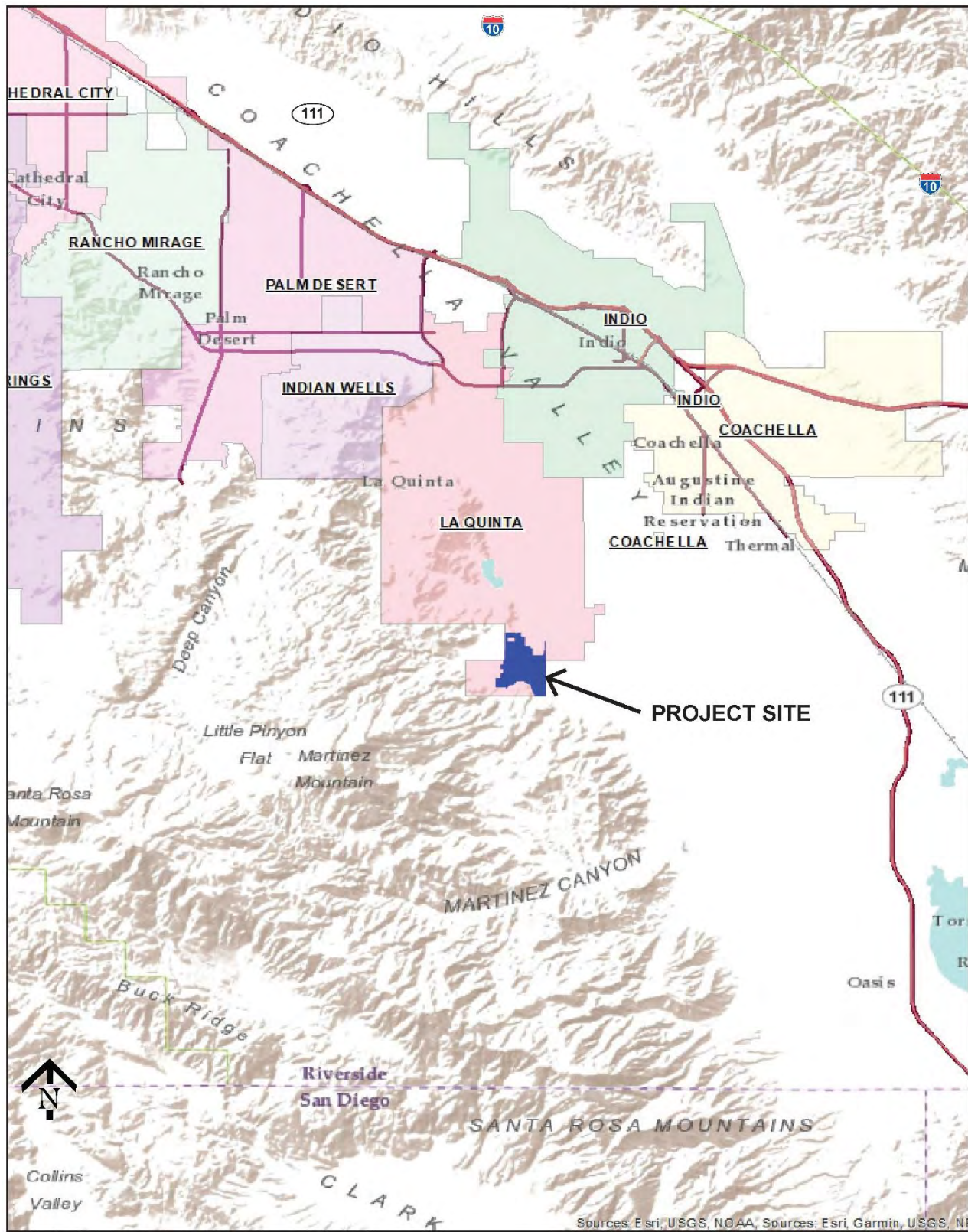
# TRAVERTINE PROJECT

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# TRAVERTINE PROJECT

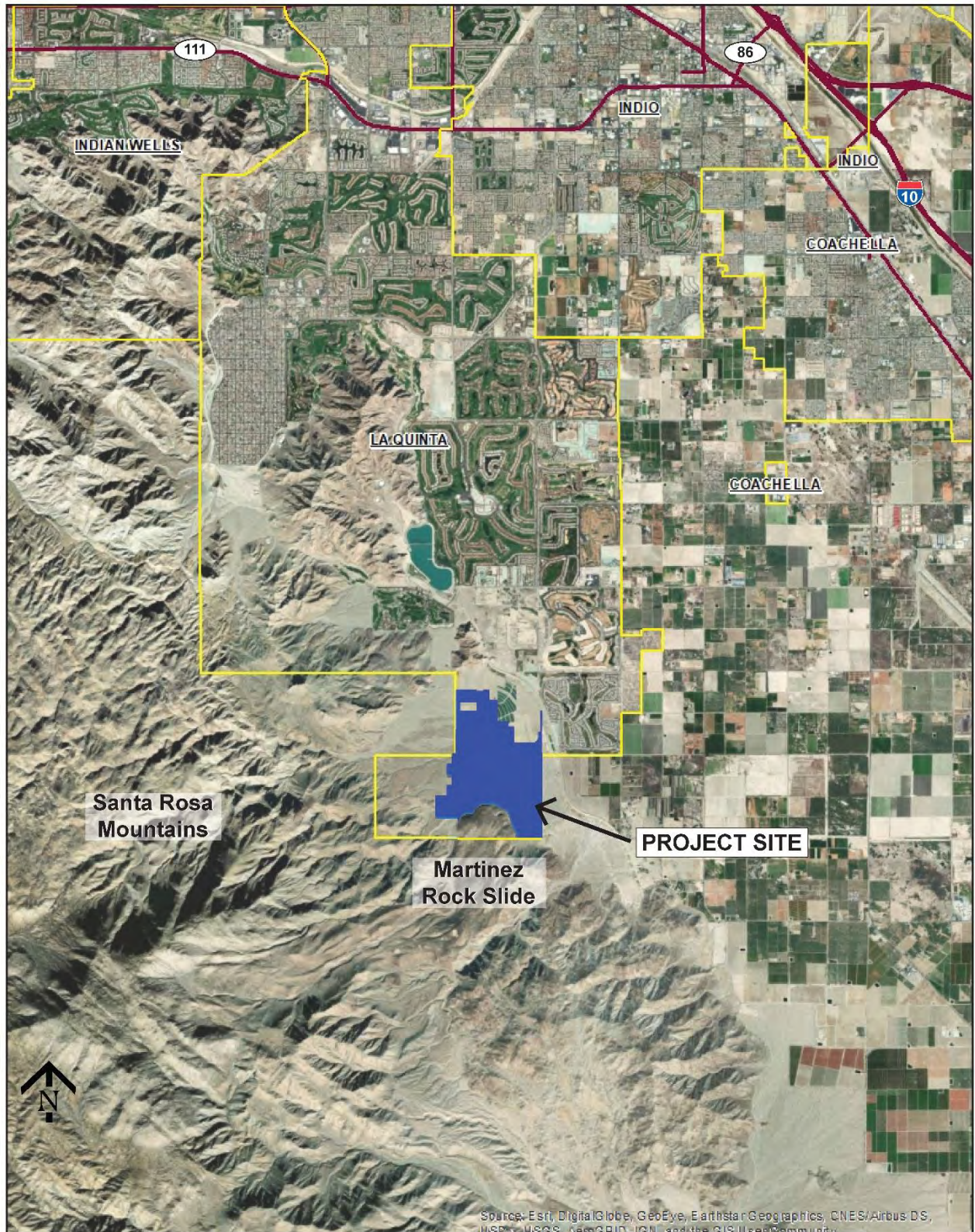
*Exhibit 1 - Regional Location Map*





# TRAVERTINE PROJECT

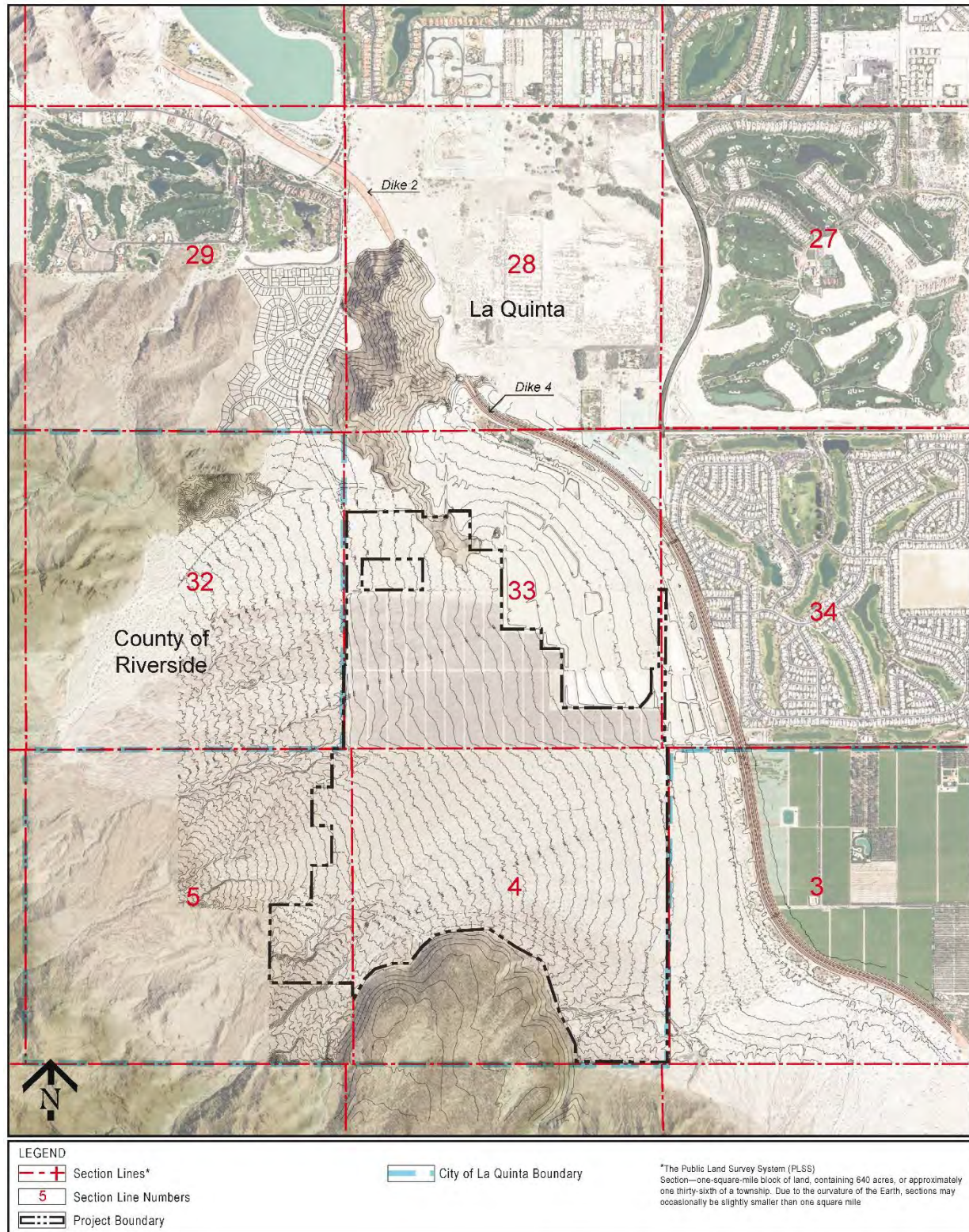
*Exhibit 2 - Vicinity Map*





# TRAVERTINE PROJECT

**Exhibit 3 – Site Location Map**





# TRAVERTINE PROJECT

## 1. PROPOSED PROJECT

### 1.1 Project Objectives

The Travertine Specific Plan serves as an overall framework to conscientiously guide development of the proposed project. To ensure the functional integrity, economic viability, environmental sensitivity, and positive aesthetic impact of this Specific Plan, planning and development goals for the project were established and supported through an extensive analysis. This analysis includes an examination of project environmental constraints, engineering feasibility, market acceptance, economic viability, City General Plan goals, development phasing, and local community goals.

The Travertine Specific Plan has identified the following Project objectives:

- To enhance the existing trail system by adding a staging and parking area and access from the proposed extension of Jefferson.
- Provide an interpretive trail element that circumnavigates the project and identifies the unique features both historical and current within the project setting.
- To focus the activities for the community on walking and hiking as well as providing a major recreational facility along the eastern edge of the project.
- The primary goal of the Amendment is to reduce the overall intensity of the 1995 approved Specific Plan.
- Establish a distinctive community character through place-making elements that embrace and respect the site's special physical attributes, as well as authentic architecture that reflects local heritage.
- Provide a comprehensive system of parks and recreation facilities and services that meet the active and passive needs of all residents and visitors.
- Contribute to the preservation, conservation and management of open space lands and scenic resources for enhanced recreational, environmental and economic purposes.
- Provide protection of the health, safety, and welfare of the community from flooding and hydrological hazards.

The following Project objectives have been identified for the EIR:

- To contribute to the reduction of air emissions generated within the City.
- Provide a regulatory framework that facilitates and encourages energy and water conservation through sustainable site planning, project design, and green technologies and building materials.

# TRAVERTINE PROJECT

- Assist in the protection and preservation of native and environmentally significant biological resources and their habitats.
- Assist in the protection and preservation of cultural resources.
- Contribute to the preservation, conservation and management of the City's open space lands and scenic resources for enhanced recreation, environmental and economic purposes.
- Provide protection of the residents' health and safety, and of their property, from geologic and seismic hazards.
- Provide protection of the health and safety, and welfare of the community from flooding and hydrological hazards.
- Provide protection of residents from the potential impacts of hazardous and toxic materials.
- Provide a healthful noise environment which complements the City's residential and Resort/Spa character.
- Provide housing opportunities that meet the diverse needs of the City's existing and projected population.
- Provide public facilities and services that are available, adequate and convenient to all City residents.
- Provide a circulation system that promotes and enhances transit, alternative vehicle, bicycle and pedestrian systems.
- Provide domestic water, sewer and flood control infrastructure and services which adequately serve the project development and the existing and long-term needs of the City.

## 1.2 Project History

The project site is located on an alluvial fan emanating from the Santa Rosa Mountains in the southeast portion of the City of La Quinta. The only known land use of the site can be seen in an area near the center of the site, see *Exhibit 3*; this area was used as a vineyard that included, grape vines, irrigation lines, access roads. The vineyard is no longer active and appears to have ceased operation sometime in 2005-2006.

In 1988-1989 the project site was part of a proposed land exchange, the Toro Canyon Land Exchange, between the Bureau of Land Management (BLM) and the Nature Conservancy, to dispose of public lands that would be more suitable for development in exchange for private land further to the south that provides important habitat for Bighorn Sheep. An EA was prepared for the land exchange. The EA concluded that the private land offered in the exchange would now be protected as federal resources in support of Bighorn Sheep and critical habitat. Also, as part of the land exchange, the Travertine project site would be available for development in accordance with the land use planning designations imposed by the City of La Quinta. The exchange consisted of the following:

- Five sections of land within the Santa Rosa Mountains, four sections owned by Travertine property owners and one section owned by the Nature Conservancy; together comprising 3,207 acres within the Santa Rosa Mountain National Scenic Area, offered to the BLM.



## TRAVERTINE PROJECT

- One section of land owned by the BLM comprising approximately 639 acres offered to the Travertine property owners.
- Upon approval of the Toro Canyon land exchange, the 639 acres were combined with approximately 270 acres of adjacent acres to create the Travertine project site for a total of approximately 909 acres of developable land.

The County of Riverside included the Travertine project site within its Eastern Coachella Valley Community Plan (ECVCP). The ECVCP land use designation for the site's lower elevation - the flatter portions of the site - was "Planned Residential Reserve". This designation was intended to allow for large scale, self-contained Resort/Spa communities. The steeper portions of the site were designated as "Mountainous Areas" in the ECVCP where limited land uses permitted in areas covered by this designation included Open Space, limited recreational uses, limited single family residential, landfills and resource development.

Once the Toro Canyon land exchange was approved, the City of La Quinta began annexation proceedings with the county of Riverside for the Travertine project site. The annexation was completed in 1993 with the project site designated as Low Density Residential (LDR, 2 to 4 du/ac) and Open Space (1 du/ac) land uses.

In June 1995, the Travertine Specific Plan was approved and an EIR was certified by the La Quinta City Council by adoption of Resolutions 95-38 and 95-39, subject to conditions of approval and a Mitigation Monitoring and Reporting Program (MMRP). Along with the Specific Plan, the corresponding General Plan Amendment and Change of Zone were also approved. The Specific Plan identified a number of land uses including:

- Very Low Density Residential
- Medium Residential
- Medium High Residential
- Neighborhood Commercial
- Tourist Commercial
- Golf Course Open Space

In June 1999, the La Quinta Planning Commission re-approved the Specific Plan for the Travertine project site to allow for an indefinite extension of time by adoption of Resolution 99-061.

In June 2004, a request was submitted to the U.S. Fish and Wildlife Service (USFWS) to initiate a Section 7 consultation regarding the impacts to the Peninsular Bighorn Sheep and its designated critical habitat. A Biological Opinion (BO) was completed by the USFWS in December 2005 that evaluated the biological resources on the project site in a Biological Assessments (BA). The Travertine property owners had acquired several areas off-site to preserve open space habitat for the Bighorn Sheep and had proposed several mitigation measures in the time between the initial Specific Plan approval (1995) and the start of the Section 7 consultations (2005). The BO concluded that the mitigation measures proposed by Travertine, including the setbacks from habitat and the types of vegetation allowed near the southern and western property lines, would be appropriate for the preservation of any critical habitat that existed in the area and that the development of the site as

# TRAVERTINE PROJECT

previously approved, would not interfere with the Bighorn Sheep or its critical habitat.

**Table 1: Approved Specific Plan and Proposed Specific Plan Comparison**

<b>Previously Approved Specific Plan</b>	<b>Proposed Specific Plan Amendment</b>
Bounded by Avenue 60 to the North, Avenue 64 and BLM Land to the South, Madison Street to East and Jefferson Street to the West	Bounded by Avenue 60 to the North, Avenue 64 and BLM Land to the South, Madison Street to East and Jefferson Street to the West
909-acres	855-acres
2,300 Residential Dwelling Units	1,200 Residential Dwelling Units
10-acres of Commercial	
500 Room Resort / Hotel	100 Villa Resort and Wellness Spa
36 – Hole Golf Course	Golf Facility with associated Recreational and Commercial Elements
Tennis Club	Tennis Club Removed
Private Recreation in Individual Developments	Private Recreation in Individual Developments
378-acres of Open Space Recreation (all golf course)	55.9-acres Open Space / Recreational
	301.2 Open Space Natural/ Preserved



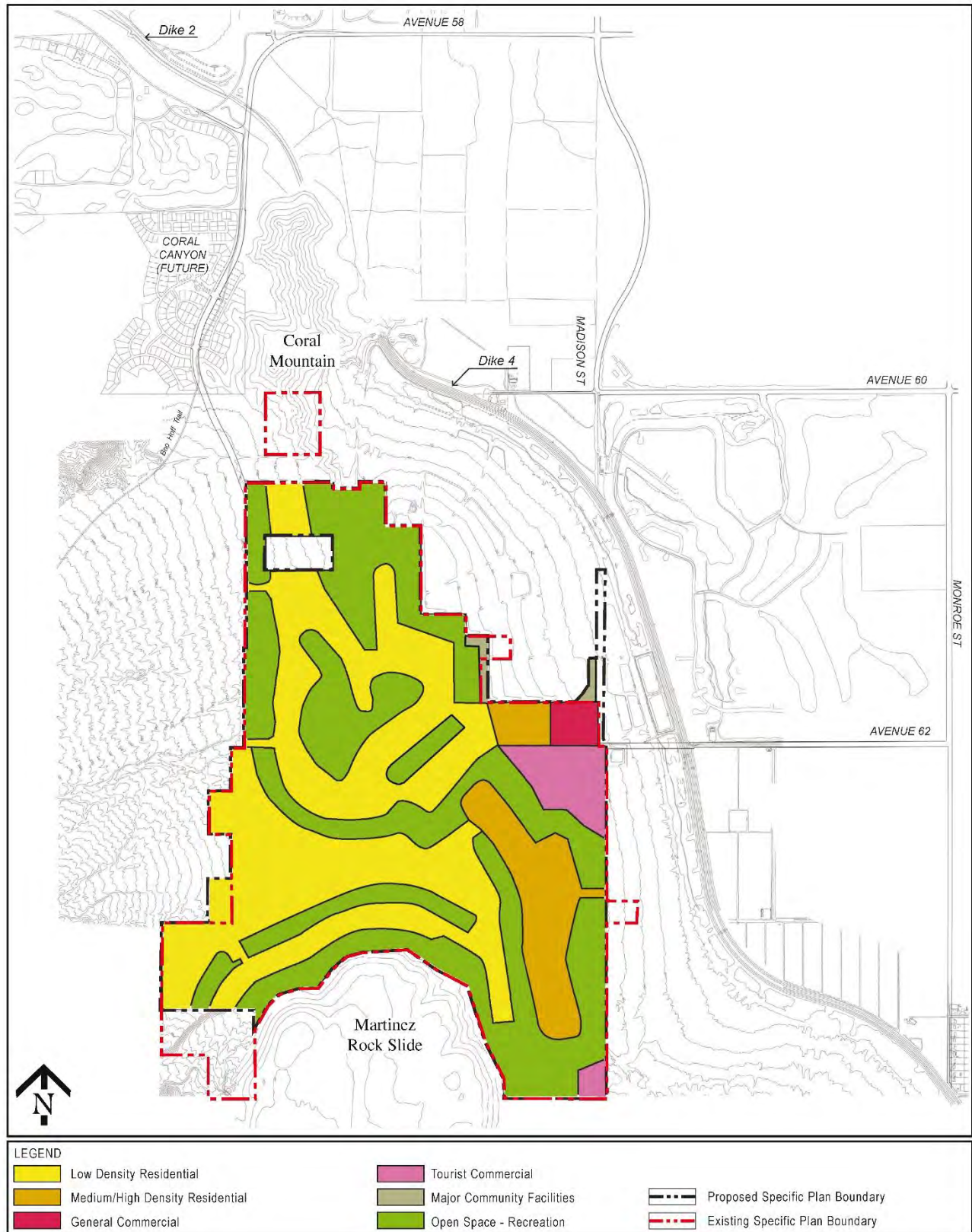
## TRAVERTINE PROJECT

The current plan:

- Preserves 35% of the project area as permanent open space.
- Reduces the number of dwelling units by 1,100 residences or 52%
- Reduces the acreage of golf uses from 363 acres to 46.2 acres or 79%
- Reduces the number of resort rooms from 500 to 100 or 80%

# TRAVERTINE PROJECT

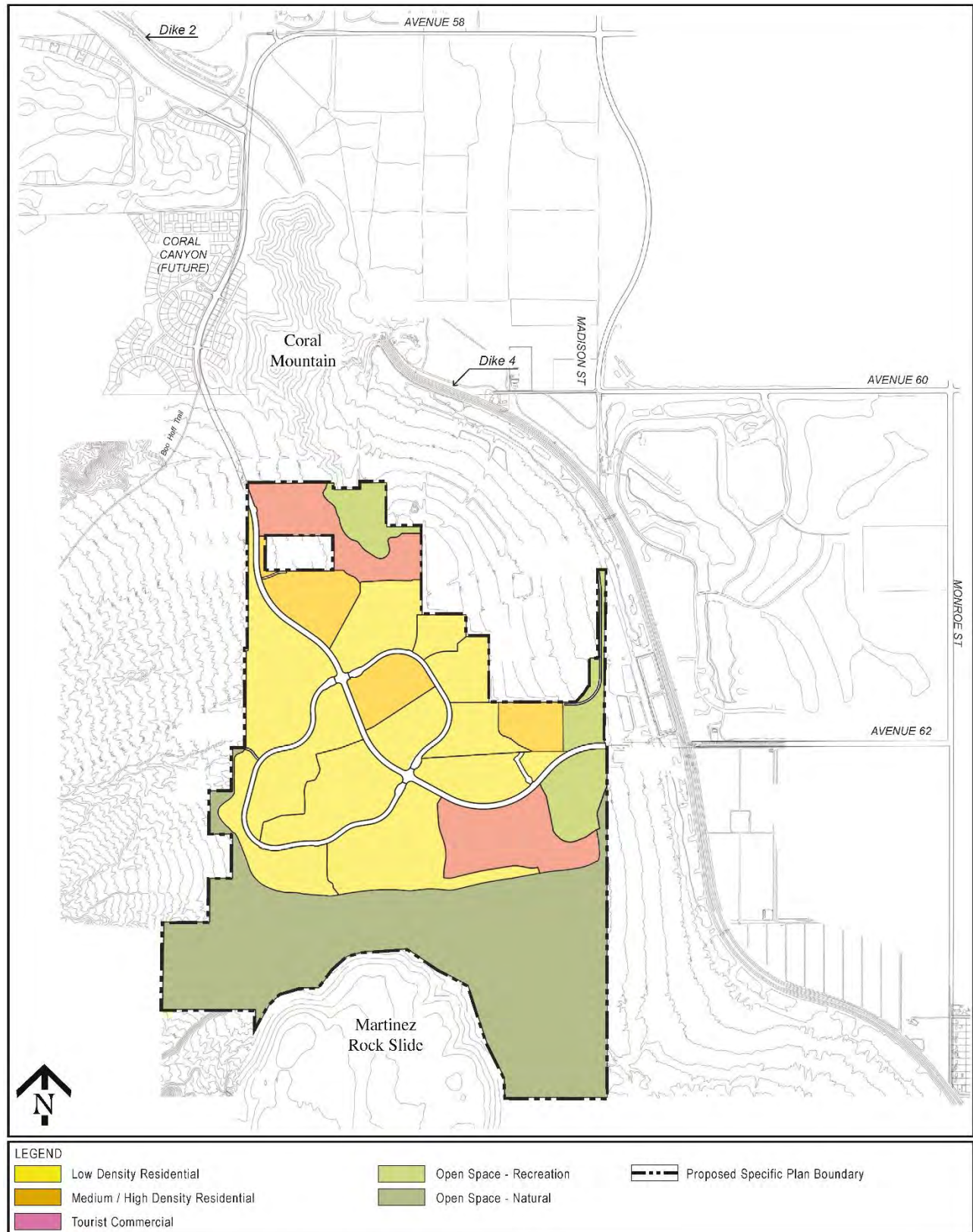
## Exhibit 4 – City of La Quinta – Existing General Plan / 1999 Specific Plan





# TRAVERTINE PROJECT

**Exhibit 5 – Proposed General Plan Land Use**



# TRAVERTINE PROJECT

## 1.3 Project Description

The proposed Specific Plan Amendment area covers an area of approximately 855 acres. As shown in *Exhibit 5, Proposed General Plan Land Use Map*, the proposed project will be comprised of a variety of land uses. Residential land uses will range from low density (1.5 to 4.5 dwelling units per acre) to medium density (4.5 to 8.5 dwelling units per acre). A resort/spa facility will serve residents, tourists and recreational visitors, including a 40,058-square-foot boutique hotel with a 175-seat restaurant, and 100 resort villas totaling 210,000 square-foot. The resort/spa will also allow for a 11,654-square-foot spa and wellness center. The golf training facility with a 2,000-square-foot clubhouse/locker room and 46,378-square-foot banquet facility and 15,904 square foot restaurant will provide recreational and dining opportunities to serve the daily needs of the community and its visitors. *Table 1, Proposed Planning Area Summary*, shows the land use associated with each planning area. *Exhibit 6, Planning Area Land Use Plan*, shows the location of each project planning area.

The project components shall include:

- 1,200 Dwelling Units of varying types
  - 758 Low Density Units and 442 Medium Density Units
  - Estate Homes, Single Family Luxury Homes, Single Family Mid Homes, Single Family Entry Homes, Patio Homes, Single Family Attached Units
- Golf training facility
- 100-villa resort
- Wellness Spa
- Tourist serving recreational facilities and amenities including restaurants, small shops, spa facilities, lounge and activity rooms, outdoor activities, tennis, yoga, etc.
- Bike lanes throughout community, including Class II bike lanes located along both sides of Jefferson Street
- Pedestrian walkways and a Travertine community trail – a network of trails suitable for pedestrian use planned throughout the community
- Recreational Open Space uses, including picnic tables, barbeques, golf training facilities, a tot lot playground and staging facilities for the regional interpretive trail
- One staging area located to the south of the Avenue 62 extension with parking
- CVWD Well Sites (quantity to be determined by CVWD)
- Future 5-acre IID substation will be located off-site within a 2.5-mile radius of the project area.
- Perimeter flood protection barrier along the western and southern boundaries to manage alluvial fan flows. The barrier will consist of a raised edge condition with a slope lining to protect against scour and erosion.
- Two off-site booster stations. One on Avenue 62, east of the project site, and the second at Avenue 58 and Dike #2, north of the project site.



# TRAVERTINE PROJECT

**Table 2: Proposed Planning Area Summary**

PA	Land Use	Acres	Density Range (du/ac)	Target Density (du/ac)	Target Units
1	Resort/Spa Boutique Hotel (175-seat restaurant) – 40,058 sf Resort Villas – 210,000 sf Spa and Wellness – 11,654 sf	38.3			100 villas
2	Medium Density Residential	25.9	4.5-8.5	7.9	205
3	Low Density Residential	29.4	1.5-4.5	2.9	85
4	Low Density Residential	9.6	1.5-4.5	2.8	27
5	Low Density Residential	16.2	1.5-4.5	1.9	31
6	Medium Density Residential	20.1	4.5-8.5	8.1	163
7	Low Density Residential	18.7	1.5-4.5	3.2	61
8	Low Density Residential	16.9	1.5-4.5	4.3	73
9	Medium Density Residential	14.8	4.5-8.5	5.0	74
10	Low Density Residential	25.6	1.5-4.5	2.9	75
11	Resort / Golf Banquet Facility – 46,378 sf Golf Clubhouse Restaurant – 15,904 sf Golf Clubhouse Locker Room – 2,000 sf	46.2			
12	Low Density Residential	52.2	1.5-4.5	2.3	107
13	Low Density Residential	26.7	1.5-4.5	1.8	48
14	Low Density Residential	39.0	1.5-4.5	1.6	65
15	Low Density Residential	33.3	1.5-4.5	2.2	70
16	Low Density Residential	50.4	1.5-4.5	2.3	116
17	Open Space Recreational	18.1			
18	Open Space Recreational	14.7			
19	Open Space Recreational	23.1			
20	Open Space Natural	301.2			
21	Master Planned Roadways	35.0			
<b>Total</b>		<b>855.4</b>			<b>1,200 DU 100 villas</b>

Master Planned Roadways	
Roadways	Acres
Jefferson Street	17.1
Loop West	9.7
Loop East	5.5
Section 5 Access & PA Access	1.2
Madison EVA	1.5
<b>Total</b>	<b>35.0</b>

# TRAVERTINE PROJECT

## 1.3.1 Residential Planning Areas

Residential areas account for approximately 44.2 percent of the project's total land area. The project proposes a maximum of 1,200 dwelling units based on a range of lot sizes. Residential planning areas would vary in density from 1.5 du/ac to 8.5 du/ac, resulting in an overall average density for the project of 1.4 du/gross ac. Planning areas 2 through 10, and 12 through 16, totaling approximately 378.9 acres, are designated for residential land uses. (*See Exhibit 6 – Planning Area Land Use Plan*).

Planning Areas 3, 4, 5, 7, 8, and 10 and 12 through 16 will have a maximum overall density of 4.5 du/ac and Planning Areas 2, 6 and 9 would have maximum overall density of 8.5 du/ac. Based on the target density for each residential planning area the proposed project would include 442 medium density (4.5-8.5 du/ac) residential dwelling units and 758 low density (1.5-4.5 du/ac) residential dwelling units. The Low-Density Residential category will be characterized by larger single-family residential lots (6,300 to 9,600 square feet). The Medium Density Residential planning areas are intended to provide medium density, single-family residential products to accommodate lots ranging from 4,000 to 5,775 square feet.

In conformance with project goals, several housing styles are proposed that comply with the maximum density for each planning area. Residential product types would vary to meet market demand but are anticipated to include the following:

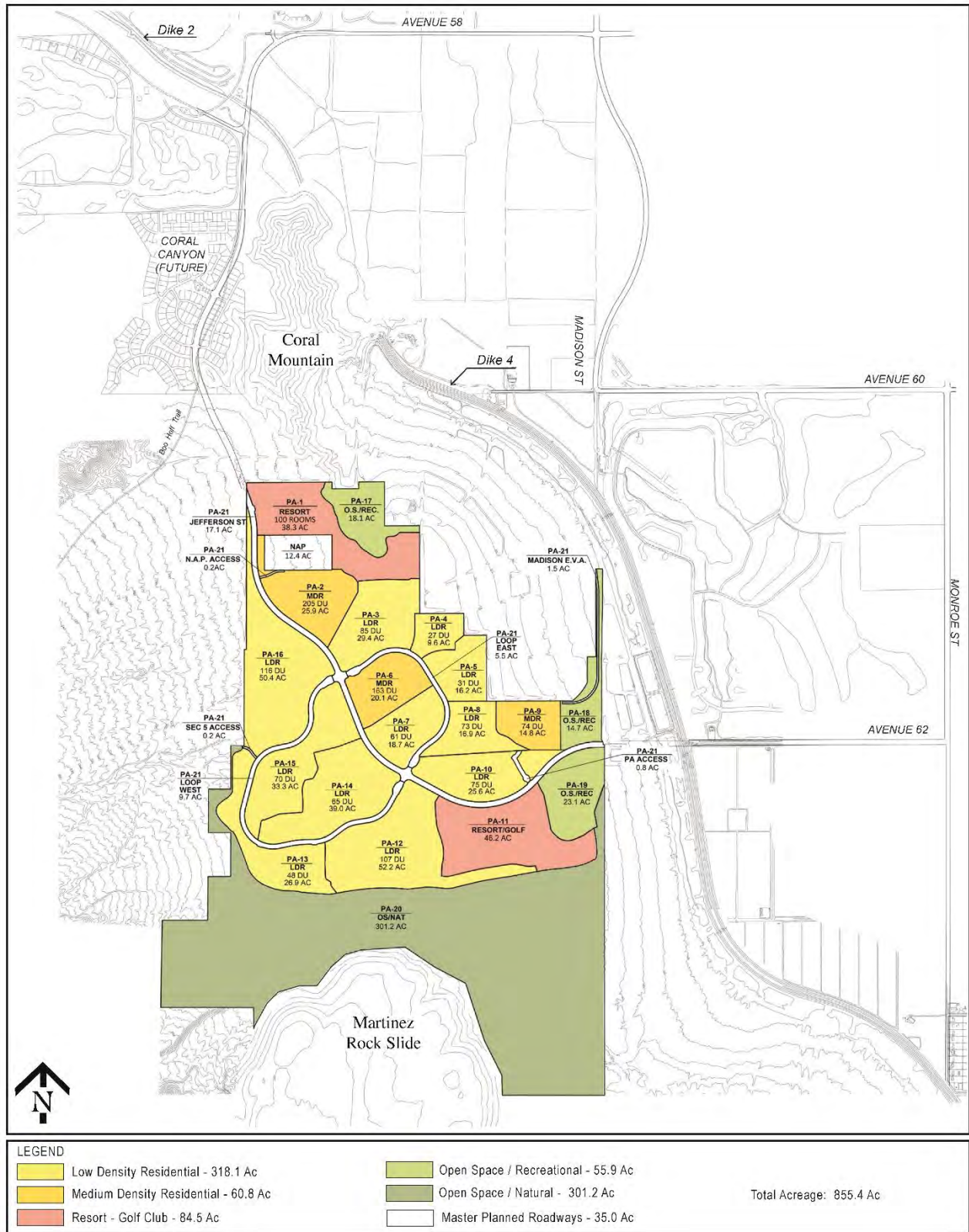
- Estate Homes
- Single Family Luxury Homes
- Single Family Mid Homes
- Single Family Entry Homes
- Patio Homes
- Single Family Attached Units

Travertine will offer a variety of housing sizes and styles designed to meet the needs of all age groups. The Specific Plan Amendment incorporates neighborhood design and sustainability principles.



# TRAVERTINE PROJECT

## Exhibit 6 – Planning Area Land Use Plan



## TRAVERTINE PROJECT

### 1.3.2 Tourist Serving Recreational Facilities

A luxury resort, wellness spa and golf training facility are planned for an approximately 84.5-acre site located in Planning Areas 1 and 11. These areas will consist of resort related amenities including restaurants, small shops, spa facilities, lounge and activity rooms, outdoor activities, yoga, walking and hiking trails. The resort planning areas are anticipated to provide 100-villas and a golf training facility. *Table 2 Proposed Uses and Amenities for Resort/Golf Planning Areas* shows additional details.

***Table 3: Proposed Uses and Amenities for Resort/Golf Planning Areas***

Planning Area	Proposed Use	Estimated Indoor Area (Square Feet)
1	Boutique Hotel & (175-seat restaurant)	40,058
1	Resort Villas	210,000
1	Spa and Wellness	11,654
11	Banquet Facility	46,378
11	Banquet Facility Restaurant	15,904
11	Golf Clubhouse Locker Room	2,000

### 1.3.3 Open Space/Recreation Planning Areas

Open Space Recreational areas include Planning Areas 17, 18, and 19, and encompass a total of 55.9 acres of the approximately 855-acre site. *Exhibit 6* shows the proposed planning area land use locations. *Exhibit 7, Recreation Plan*, shows areas designated as Open Space, as well as the proposed recreational trails.

A golf training facility is located near the southeastern entry to the project on approximately 46.2 acres (Planning Area 11). This will provide a high-end practice and training facility for both the residents and guests.

### 1.3.4 Open Space/Natural Planning Areas

Open Space Natural Areas include Planning Area 20 and encompass approximately 301.2 acres. An area of land along the southern, western and eastern boundaries of the site is restricted from development due to various environmental constraints including biological, geological and cultural resources.

Portions of the open space/natural area were determined to be of biological importance by the US Fish and Wildlife Service (USFWS) through the Biological Opinion completed in 2005 and the subsequent federal Environmental Assessment completed in 2006.



## TRAVERTINE PROJECT

Equestrian/multi-use trails are provided in the Specific Plan. This plan will incorporate access, signage, and detailed design. The area along the southern edge of this site, adjacent to the Martinez Rock Slide, will be limited to recreational uses. As part of the recreational plan and trail system, an interpretive design element will provide signage and educational information to discourage trespassing on unauthorized areas of cultural significance. A cultural resources study has been conducted for development near the Martinez Rock Slide, and local tribes have been contacted as part of the procedures. This area is designated as a buffer between the residential development and the natural open space of the foothills of the Santa Rosa Mountains. This area will not include permanent structures as required by the Biological Opinion completed by the US Fish and Wildlife Service in 2005.

The Conceptual Land Use Plan was developed with consideration of the environmental constraints associated with the surrounding land, including adjacency to the Santa Rosa Mountains and Martinez Rock Slide area to the south, Coral Mountain to the north, and the CVWD spreading grounds to the east and northeast. *Exhibit 6, Planning Area Land Use Plan* shows the proposed land use locations.

Access to the proposed water tanks will be provided from the project internal loop road, into Planning Area 20 Open Space/Natural area and development of this area will be limited to the project's water tanks and related infrastructure.

# TRAVERTINE PROJECT

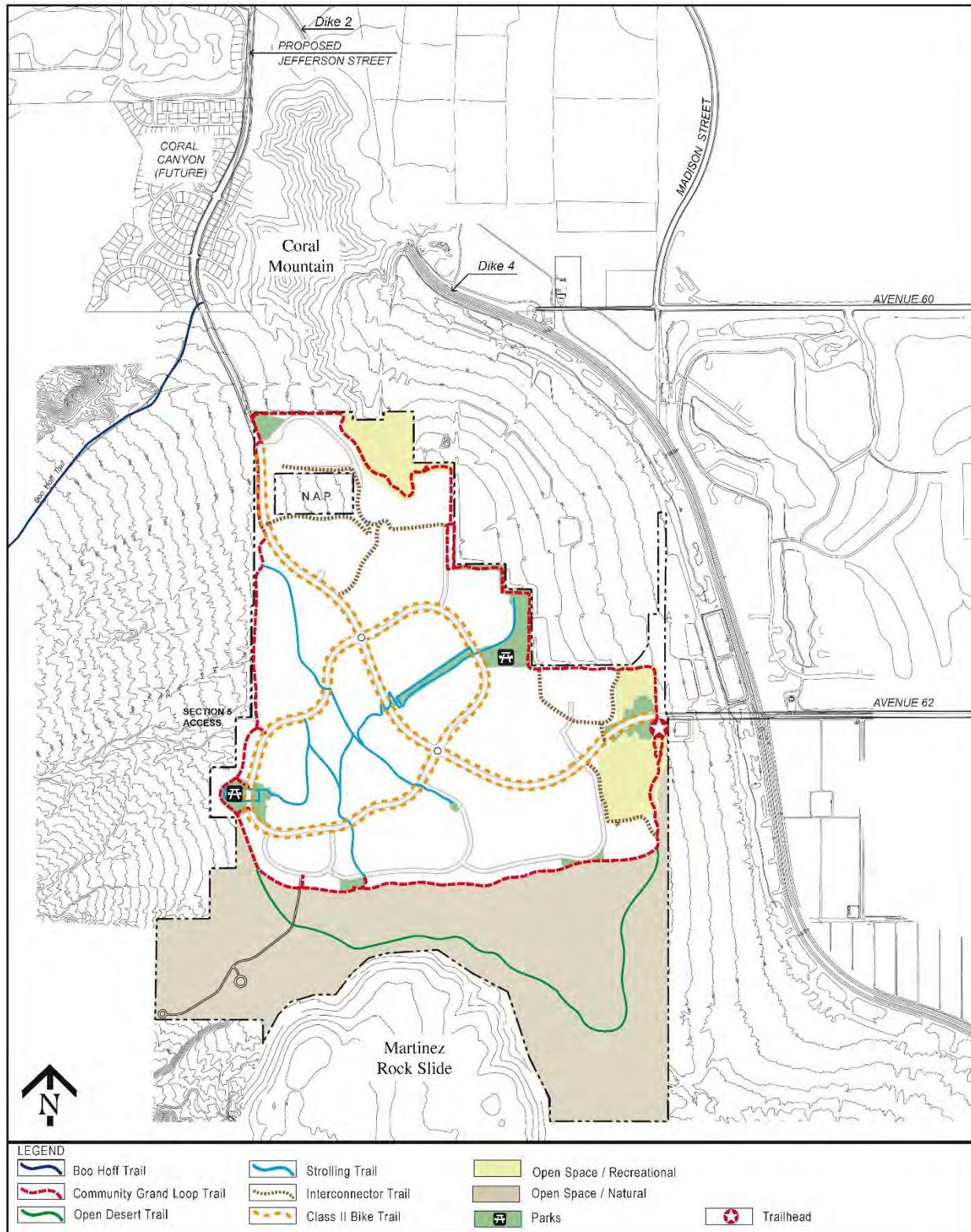
## **1.3.5 Recreational Amenities**

The Travertine project will offer a range of amenities that will be accessible to neighborhood homeowners and the public. These recreational amenities include a two-mile long public trail that will be developed around the perimeter of the project site; a central private spine trail that bisects the residential areas of the property; on-street biking paths; preservation of natural open space; and additional private parks located within the development areas. A golf training facility with club facilities such as banquet facilities, will be open to residents, citizens of La Quinta and tourists. A resort and spa with restaurants, shops and activities and a wellness facility will attract both residents and visitors to the community.



# TRAVERTINE PROJECT

## Exhibit 7 – Recreation Plan



# TRAVERTINE PROJECT

## **1.3.6 Master Planned Roads**

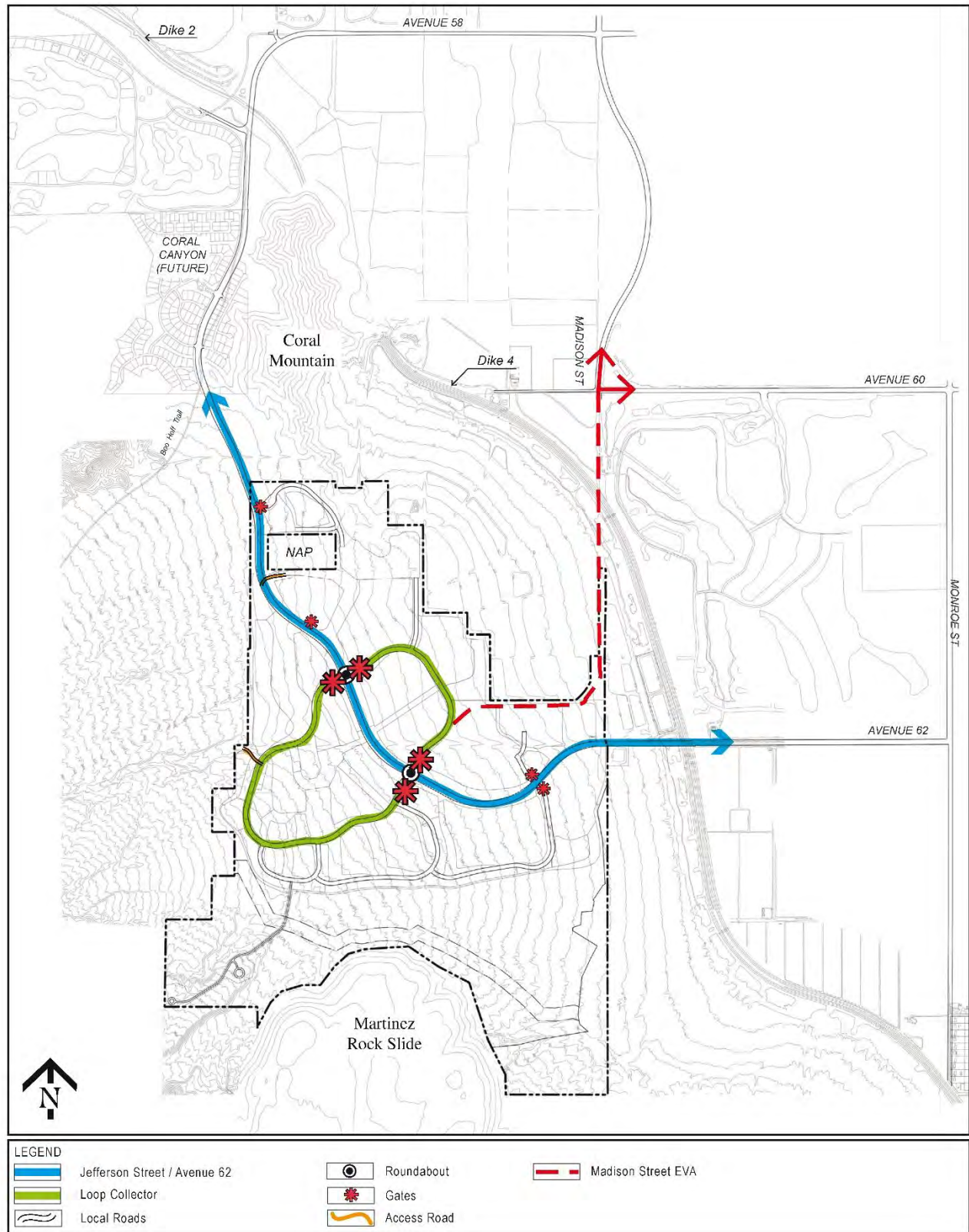
The development of the Travertine site provides for substantial improvements to several roadways, including the southerly extension of Jefferson Street as a private Modified Secondary Arterial south of the proposed Coral Mountain property and the westerly extension of Avenue 62 as a Modified Secondary Arterial. Loop roads extended from both sides of the Jefferson Street spine via roundabout intersections.

Exhibit 8, *Circulation Plan*, shows the proposed alignment of Jefferson Street and the main loop road within the project site. Access to the southwest portion of the development area (access to the proposed water tanks) will be provided from the internal loop road. This area is Restricted Open Space, and development of this area will be limited to the project's water tanks and related infrastructure.



# TRAVERTINE PROJECT

## Exhibit 8 – Circulation Plan



# TRAVERTINE PROJECT

## 1.3.7 Infrastructure

Existing infrastructure on the project site is very limited as the site has not been previously developed. The former vineyard area was provided with water from an on-site well. In addition to the Master Planned Roadway system, the project also includes a master plan for infrastructure including drainage features, underground utilities and water tanks.

### ***Grading and Drainage***

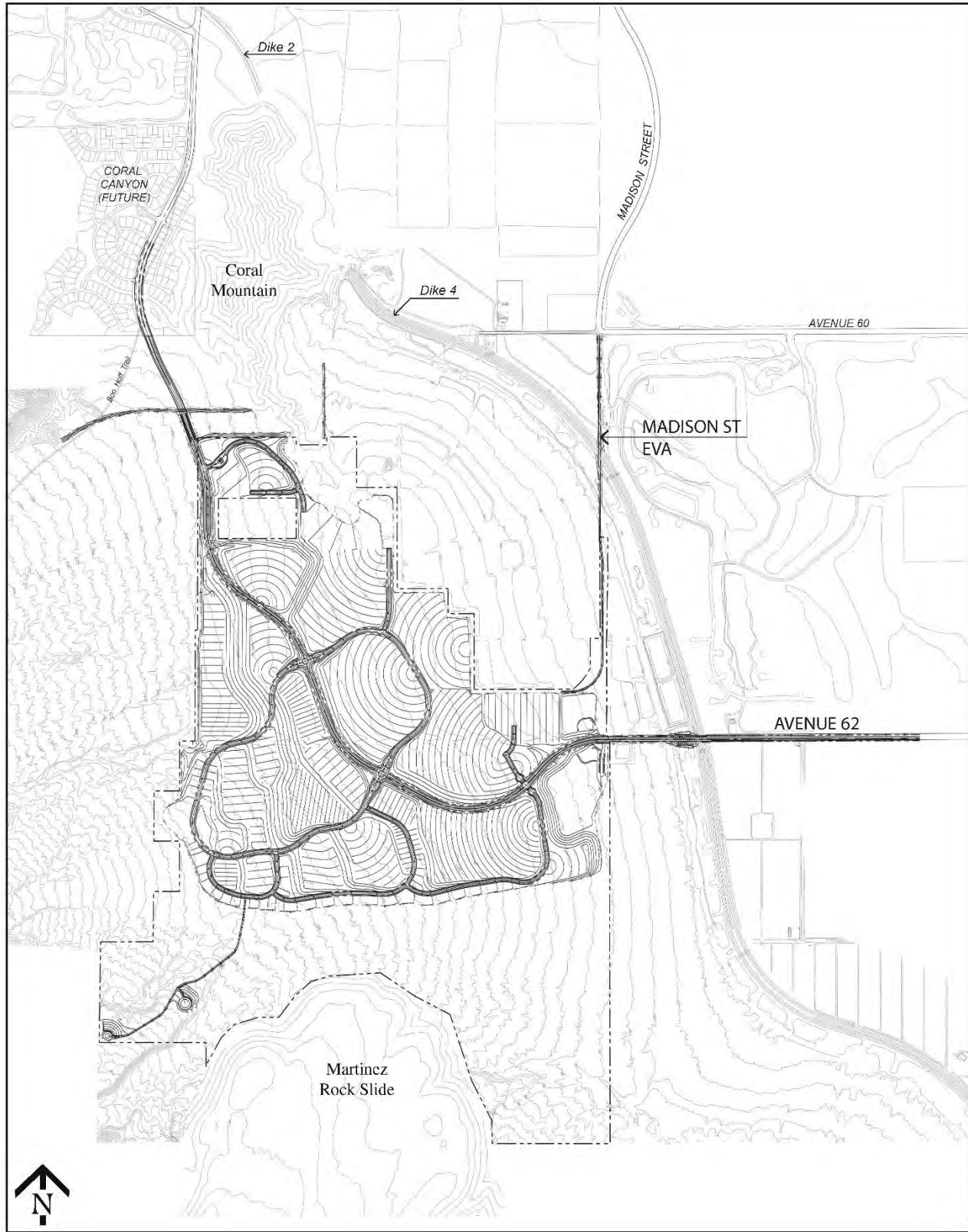
The project site slopes gently in a downslope direction from west to east and is subject to two types of drainage conditions: alluvial fan flow and incised drainage corridors along inactive fans. Existing drainages originate in the Santa Rosa Mountains to the west. *Exhibit 9*, shows the proposed *Grading Plan* for the project. *Exhibit 10, Conceptual Hydrology*, illustrates the off-site and proposed on-site water flow., The exhibit also shows a proposed perimeter flood barrier to divert watershed flows. The project's flood control berms will be constructed to shield and encompass the project's developable planning areas and convey upstream flow from Devils Canyon/Guadalupe Creek, Middle North Canyon, Middle South Canyon, and Rock Avalanche Canyon downward towards Dike No. 4 south of the proposed Avenue 62 crossing.

The drainage plan proposes to capture on-site flows and direct them across the project to the eastern side of the project site. The intent is to capture all flows and detain them on-site in a series of basins that will be developed with water quality best management practices (BMPs) to treat the water before percolation into the ground. The proposed basins are designed to detain and percolate the projected on-site flows created from impervious surfaces. Excess water relative to existing flows will not be released unimpeded into the adjacent CVWD groundwater recharge ponds.



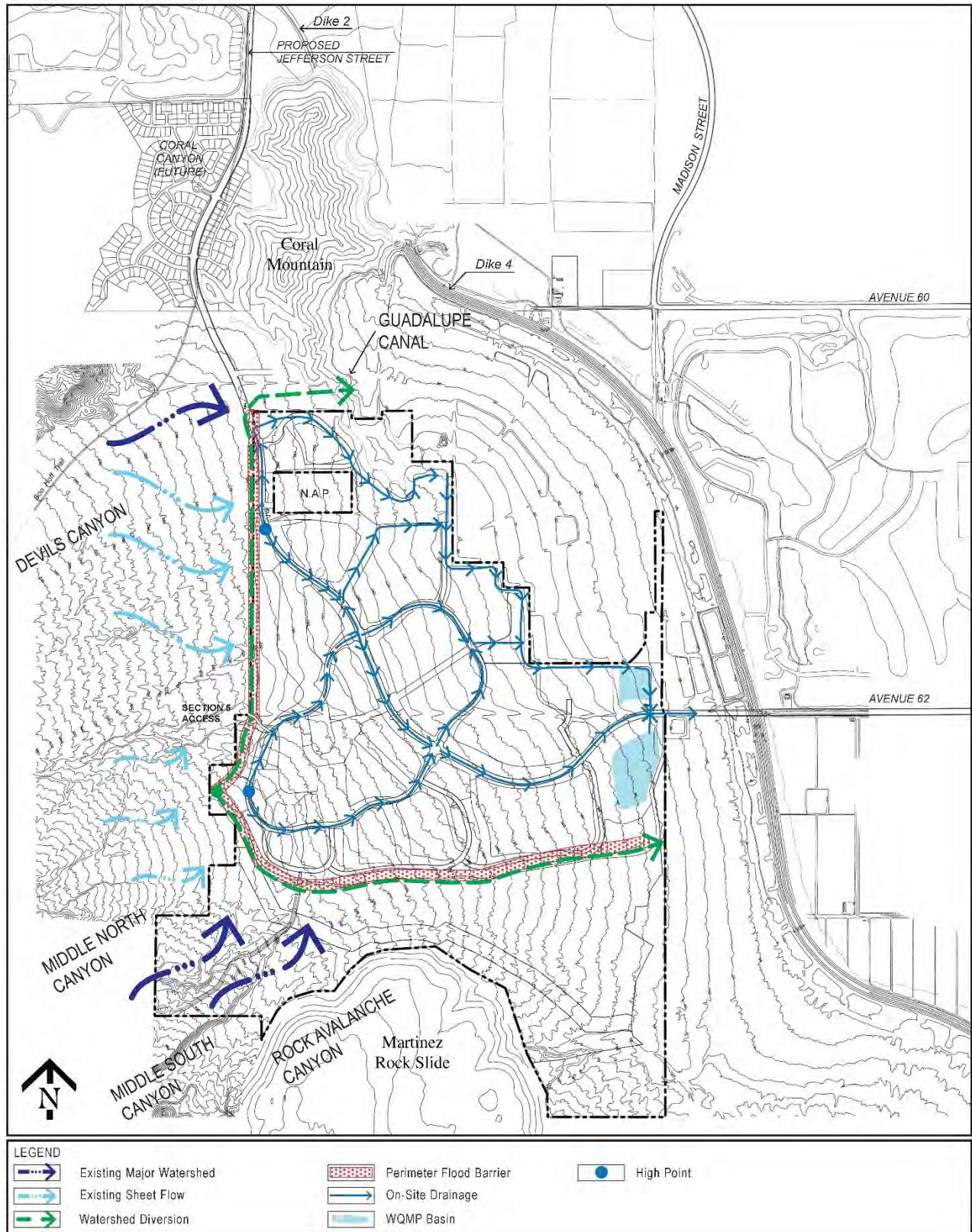
# TRAVERTINE PROJECT

## Exhibit 9 – Grading Plan



# TRAVERTINE PROJECT

**Exhibit 10 – Conceptual Hydrology**





# TRAVERTINE PROJECT

## *Water*

The Coachella Valley Water District (CVWD) currently has jurisdiction over domestic water service to the project property illustrated in *Exhibit 11, Conceptual Water Plan*. Currently, domestic water service lines exist in three areas near the project. These include the intersection of Avenue 60 and from the Jefferson extension and Avenue 62. Water lines will be extended from Avenue 62 and the proposed EVA to serve the project. Water lines will be connected prior to any construction.

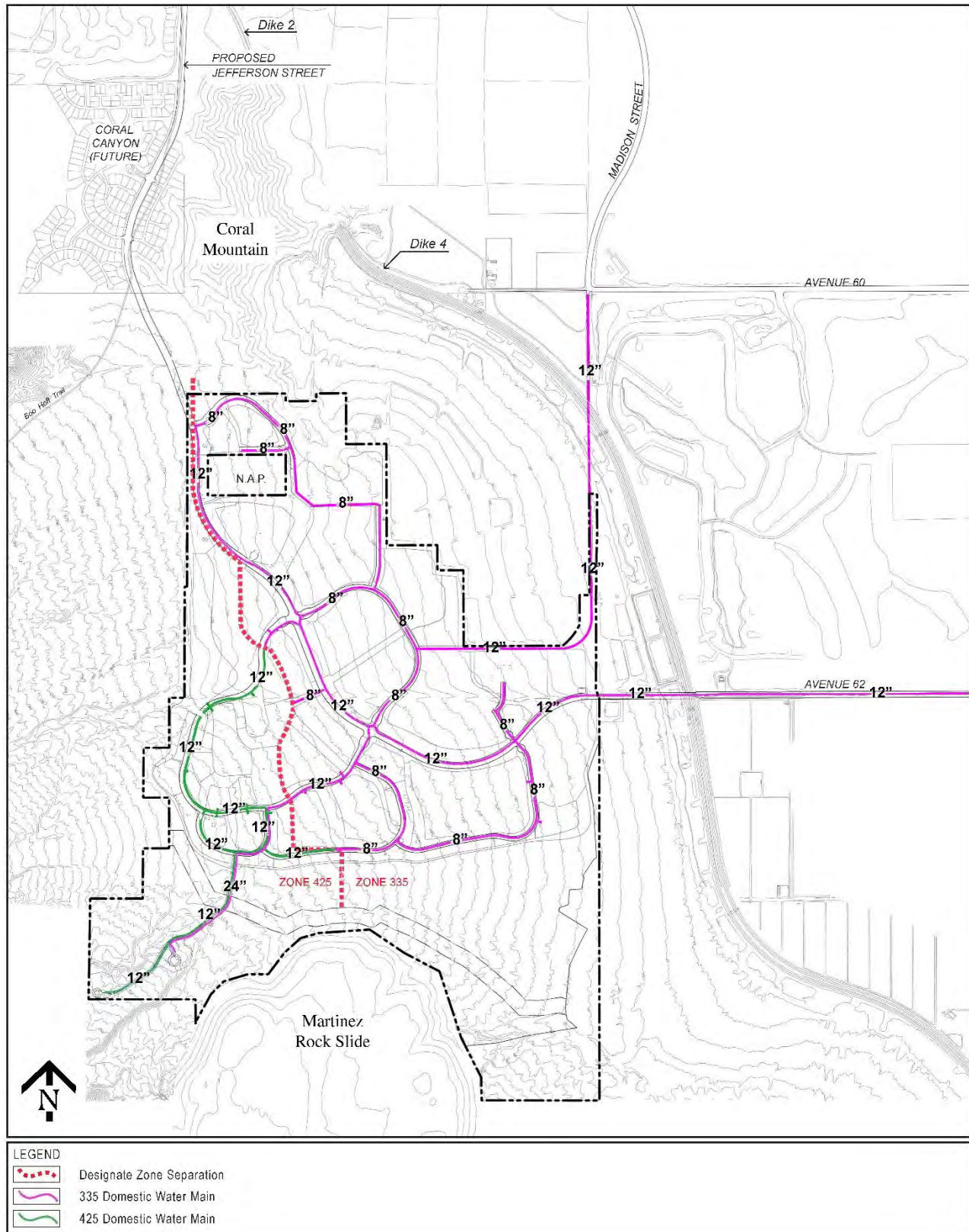
Nine additional well sites are necessary to serve the project. One well will be constructed during Phase I, located off the Travertine project site. The locations of the future well sites are currently under discussion with CVWD and will be identified and analyzed in the EIR.

Additional facilities will include two water reservoirs and booster station(s) to collect well water and store it at the appropriate elevation to provide the required water pressure for the site. Two off-site booster stations currently exist near the project property. One booster station is located on Avenue 62, east of the project site, while the second booster station is located at Avenue 58 and Dike #2, north of the project site. The project site will be served with a thirty-inch main line within Jefferson Street/Madison Street alignments. Twelve-inch and smaller lines will then feed off the main line to serve the individual developments along these public streets.

Water tanks are proposed to be developed to serve the site in Planning Area 23. The water tank locations, including related facilities (road, pipelines, etc.), are subject to review and approval by the USFWS. Permanent structures, with the exception of two water reservoirs, service roadway, underground pipelines and ancillary facilities, as allowed through the consultation with the USFWS, will be prohibited in the Restricted Open Space (Natural) area. A portion of the Open Space Natural Planning Areas is located in a conservation area of the Coachella Valley Multiple-Species Habitat Conservation Plan (CVMSHCP). The project will be required to undergo Joint Project Review (JPR) for development of the water infrastructure improvements within the conservation area. During the JPR process, the Coachella Valley Conservation Commission and other interested Wildlife Agencies have the opportunity to comment on the proposed development. The JPR will be analyzed in the EIR.

# TRAVERTINE PROJECT

**Exhibit 11 –Conceptual Water Plan**





# TRAVERTINE PROJECT

## Sewer

The closest Coachella Valley Water District sewer connection currently exists at Monroe Street and Avenue 62, approximately one mile east. The proposed facilities are comprised of a series of eight-inch sewer lines serving the individual developments and flowing into the main sewer line located within Jefferson Street/spine road alignment. The main sewer line increases in size as it extends eastward, ranging from eight inches on the west side to 15 inches at Madison Street, where the line exits the project site. The offsite sewer alignment and improvements will come from the east in Avenue 62. The EIR will further analyze the impacts to sewer and the offsite extension. *(See Exhibit 12, Conceptual Sewer Plan)*

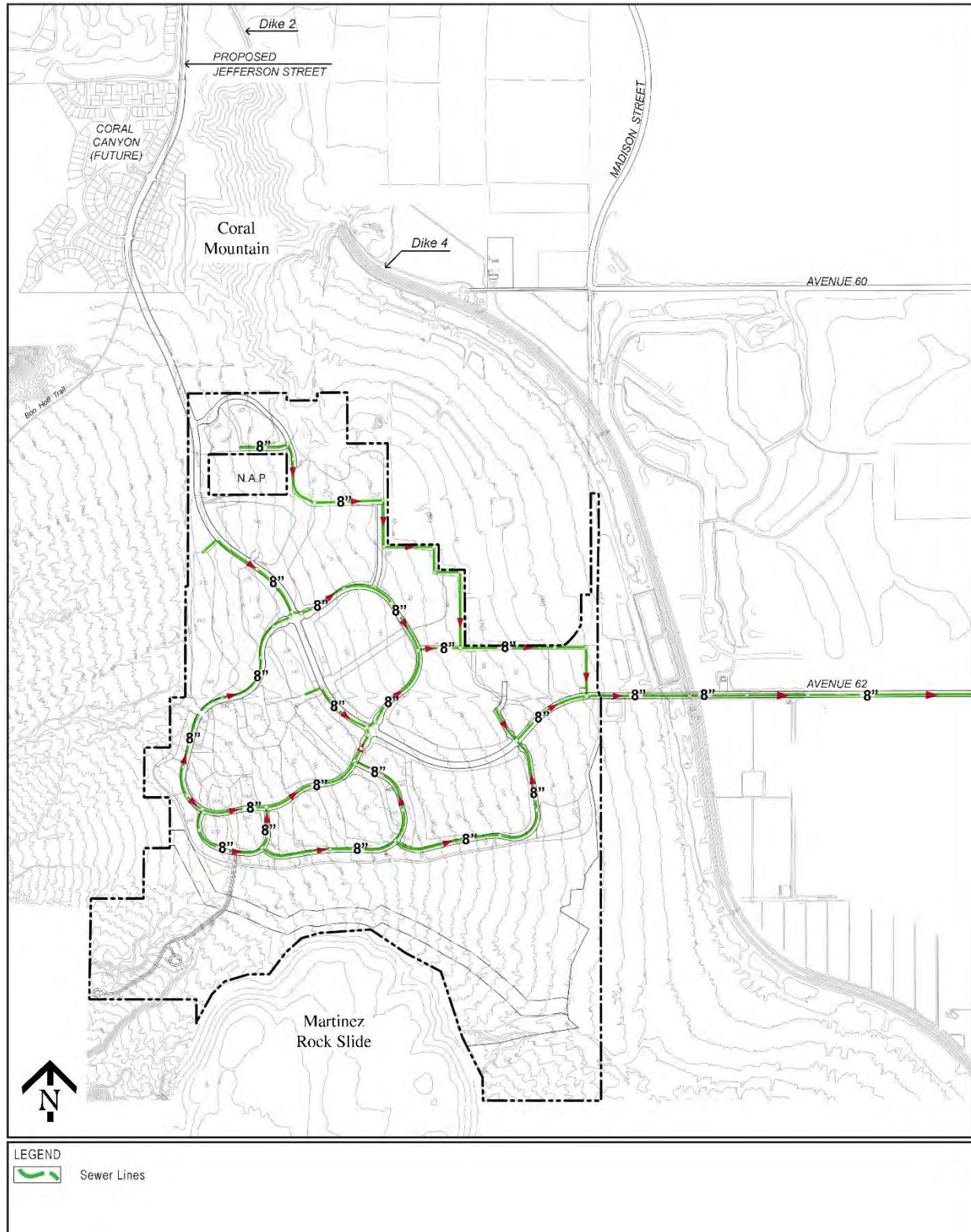
## Utilities

Southern California Gas Company provides natural gas to the project site. Electric service to Travertine will be provided by Imperial Irrigation District. An offsite substation will be required for the Travertine development and will be located and constructed during Construction Phase I. The five-acre site required by IID for a substation will be studied in the EIR.

The location of the five-acre site will be within a two-mile radius of the project. The routing of the proposed service lines along the route to the site will be studied in the EIR.

# TRAVERTINE PROJECT

**Exhibit 12 –Conceptual Sewer Plan**







U.S. FISH AND WILDLIFE SERVICE  
Palm Springs Fish and Wildlife Office  
777 E. Tahquitz Canyon Way, Suite 208  
Palm Springs, California 92262



CALIFORNIA DEPARTMENT OF  
FISH AND WILDLIFE  
Inland Deserts Region  
3602 Inland Empire Blvd., Suite C-220  
Ontario, California 91764

In Reply Refer to:  
FWS/CDFW-ERIV-21TA0680

March 4, 2021  
*Sent Electronically*

Peter Satin  
Coachella Valley Conservation Commission  
73-710 Fred Waring Drive, Suite 200  
Palm Desert, California 92260

Subject: Joint Project Review 20-006 for the Travertine Residential Development, Coachella Valley Multiple Species Conservation Plan

Dear Mr. Satin:

The U.S. Fish and Wildlife Service (Service) and the California Department of Fish and Wildlife (CDFW), hereafter collectively referred to as the Wildlife Agencies, have reviewed the Joint Project Review (JPR) for the Travertine Project (Project), which we received from the Coachella Valley Conservation Commission (CVCC) on February 2, 2021. In accordance with the Coachella Valley Multiple Species Habitat Conservation Plan (MSHCP), the Wildlife Agencies are providing the following comments to assist in your consistency determination for the subject JPR.

## **PROJECT DESCRIPTION**

The Project is located in the City of La Quinta, within the Santa Rosa and San Jacinto Mountains Conservation Area (Conservation Area) of the MSHCP. Features of the Project include two water tanks, ancillary infrastructure, and an access road anticipated to result in a total of 6.5 acres of novel disturbance within the Conservation Area. This Project is a component of the Travertine Residential Development, a proposed 855-acre mixed-use residential, recreational, and commercial complex situated on a large alluvial fan at the base of the Santa Rosa Mountains and Martinez Rockslide, west of Madison Street and north of 62<sup>nd</sup> Avenue. The development's footprint includes 315 acres of land within the Conservation Area.

Prior to the implementation of the MSHCP, section 7 consultation for the Travertine Development was initiated by the Bureau of Reclamation (BOR) and Bureau of Land Management (BLM) in 2005 to analyze effects to federally listed species from the proposed issuance of three right-of-way (ROW) grants and amendments to the Project proponents. The Service issued a Biological Opinion (BO) on December 7, 2005 which evaluated impacts of the development's entire footprint within the action area. JPR 20-006 evaluates the Project's consistency with MSHCP requirements for the proposed disturbance on the private land within the Conservation Area subject to review under section 6.6.1.1 of the MSHCP.

**Joint Project Review Process:**

The purpose of the Joint Project Review Process is to allow CVCC to facilitate and monitor implementation of the MSHCP. The Joint Project Review Process requires that the project application shall include, at a minimum, a project description; a map in either electronic format compatible with CVCC's GIS or a map on a USGS 7.5 minute topographic map, indicating the location of the proposed project, including section, township, and range; and Assessor's Parcel Number(s). CVCC is required to provide the Local Permittee an analysis of how the proposed project would impact: (1) the Conservation Area, and (2) Conservation Objectives and Required Measures delineated in Section 4.3 for each Conservation Area and in Section 9 for each proposed Covered Species' Goals and Objectives. Additionally, CVCC would analyze how the project would affect the maintenance of Rough Step in the affected Conservation Area. The project application information provided has insufficient information to evaluate if the Required Measures for the Conservation Area include the Covered Species Conservation Goals and Objectives in Section 9. These objectives include: (1) Objective 1b: Ensure implementation of avoidance, minimization, and mitigation measures as described in Section 4.4, and Land Use Adjacency Guidelines as described in Section 4.5; and (2) Objective 1d: Ensure that any development allowed does not fragment Habitat, and that edge effects from such Development are minimized. Insufficient information has been provided to adequately review if Land Use Adjacency Guidelines have been addressed. The Wildlife Agencies have outlined our comments and concerns below that should be addressed such that CVCC has adequate information to conclude the projects consistency determination.

**Wildlife Agencies Project Concerns**

The Wildlife Agencies have reviewed the JPR and would like to request the following items that pertain to the development as a whole:

1. In addition to being state and federally listed, Nelson bighorn sheep [Peninsular Range DPS; Peninsular bighorn sheep (*Ovis canadensis nelsoni*); bighorn sheep] have the classification of Fully Protected by the State of California. This means that they may not be taken or possessed at any time and no licenses or permits may be issued for their take. Impacts to the habitat of bighorn sheep are permitted per the terms of the Service's BO and the MSHCP. The Wildlife Agencies ask that all project documents, including the JPR, are updated to accurately reflect this fact.
2. Please clarify if there are plans for fuel modification zones surrounding any of the development facilities. If so, please describe these fuel modification activities and their timing and location, and associated avoidance and minimization measures and land use adjacency guidelines to minimize impacts on the Conservation Area, bighorn sheep and their critical habitat.
3. Please clarify that all outdoor lighting associated with the development plan will be down-shielded and directed away from the hillsides in accordance with the City of La Quinta municipal code.



**Avoidance and Minimization Measures: Water Tanks and Nature Trail**

As discussed in the BO, the canyon mouth and alluvial fans extending from the southwest corner of the project site are essential foraging habitat for bighorn sheep. Because these habitats are located at a distance from escape habitat, bighorn sheep are cautious when foraging in these areas, while these habitats provide forage that is important for their survival. For this reason, the edge effects caused by the construction, operations, and maintenance of the water tanks and nature trail should be closely considered, minimized, and documented. The Wildlife Agencies concerns, and comments are outlined below:

***Water Tanks:***

The BO includes avoidance and minimization measures associated with the construction of the water tanks including, but not limited to, depressing and screening the tanks, painting above-ground portions of the tanks with non-reflective paint that blends with surrounding habitat, installing access gates to the maintenance road to reduce recreational use and development of new trails, and avoiding nighttime lighting of the water tank facilities. The JPR however, does not identify avoidance and minimization measures. Thus, the Wildlife Agencies request additional information, and recommend incorporation into the JPR specific avoidance and minimization measures to reduce impacts on the nearby Conservation Area and the area's important wildlife resources.

1. The JPR states that 6.5 acres of additional disturbance are anticipated inside the Conservation Area for work related to the construction of two water tanks and the associated maintenance road. The BO states that the footprint of the water tanks and access road is expected to be 6 acres. Please clarify this discrepancy in impact acreage and any implications for compensatory mitigation. Please update the work plan with the anticipated timeline/phasing for the construction of the water tanks and associated road in relation to other project components. Some conditions and measures in the BO are expected to occur at certain points in the Project's timeline.
2. Please identify any areas where temporary impacts associated with the construction of the water tanks and/or road will take place. This should include an exhibit of the temporary impacts and restoration plans for these areas. Additionally, the Wildlife Agencies recommend that habitats are restored using native plant seeds sourced from the nearby area.
3. Please outline any operations and maintenance activities that will be required on the water tanks or associated road. This should include details on how impacts to wildlife resources will be avoided and/or minimized.

***Nature Trail:***

The BO includes avoidance and minimization measures associated with the construction and use of the nature trail including, but not limited to, fencing to discourage off-trail recreational use, signage on permitted uses of the trail, educational materials on bighorn sheep, and personnel to

monitor trail use and control access to adjacent hills. The JPR however, does not identify avoidance and minimization measures; thus, the Wildlife Agencies are requesting additional information, and incorporation into the JPR specific avoidance and minimization measures to reduce impacts on the nearby Conservation Area and the area's important wildlife resources.

1. Maps provided with the JPR show that a trail enters the Conservation Area (Exhibit 7 – Recreation Plan), and this is also reflected in the BO. Please confirm whether these trails have since been rerouted to avoid the Conservation Area.
2. The BO (pg. 4) states there will be a 200 ft buffer between the development and bighorn sheep habitat (100 ft buffer plus an additional 100 ft buffer associated with the nature trail). Are these setbacks consistent with the current development plan?
3. In previous meetings, Wildlife Agencies have discussed the idea of moving the nature trail further away from the Conservation Area. However, the Wildlife Agencies are unable to determine if that recommendation was implemented. Thus, we recommend that a larger buffer area is created between the nature trail and the Martinez Rockslide to minimize edge effects.
4. Please indicate if any nighttime artificial lighting will be used in association with the nature trail. The Wildlife Agencies recommend no nighttime artificial lighting is used along the trail to avoid negative impacts the wildlife resources. Trail use curfews should be clearly identified using signage and specific measures identified on how curfews will be enforced and who is responsible for enforcement.
5. Please add additional details on the permitted uses of the nature trail as the JPR does not clearly identify the types of use that will be allowed on the nature trail. The Wildlife Agencies recommend the Project ensures compatibility of recreation types to avoid and/or minimize impacts to wildlife resources. For instance, equestrian use and mountain biking are generally not compatible on the same trail system.
6. Please clarify what enforcement mechanisms will exist to identify, control, and enforce the construction of new trails, off-trail use, and other prohibited recreational activities.
7. In addition to fencing plans in the BO, the Wildlife Agencies recommend that a post and cable type fencing is used along the nature trail and in other areas adjacent to conserved areas. This type of fencing has proven helpful at keeping recreational users on the nature trail and out of sensitive resource areas.

## SUMMARY

The Wildlife Agencies are unable to complete their comments on the JPR given the outstanding questions included in this response letter. We recommend addressing the insufficient information identified above to make determination of consistency with the MSHCP. We appreciate the efforts by the project applicant and CVCC to work with the Wildlife Agencies to address the concerns regarding consistency with the MSHCP. We are available to continue to work with the project



applicant and CVCC to define a project that is consistent with the conservation goals and objectives identified in the MSHCP.

We appreciate the opportunity to provide comments on this Joint Project Review. If you have any questions regarding our comments, please contact [Alicia Thomas](#)<sup>1</sup> at the Service, or [Carly Beck](#)<sup>2</sup> of the CDFW.

Sincerely,

DocuSigned by:  
  
DF423498814B441...

for Rollie White  
Assistant Field Supervisor  
U.S. Fish and Wildlife Service

for Scott Wilson  
Environmental Program Manager  
California Department of Fish and Wildlife

cc:  
Cheri Flores, Planning Manager, City of La Quinta

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<sup>2</sup> carly.beck@wildlife.ca.gov

## **Appendix C: Avoidance, minimization, and mitigation measures and land use adjacency guidelines**

### ***4.4 Avoidance, Minimization, and Mitigation Measures***

**Biological Corridors.** Specific roads in Conservation Areas, where culverts or undercrossings are required to maintain Biological Corridors, are delineated in the Section 4.3 subsections on individual Conservation Areas.

**Burrowing Owl.** This measure does not apply to single-family residences and any non-commercial accessory uses and structures including but not limited to second units on an existing legal lot, or to O&M of Covered Activities other than levees, berms, dikes, and similar features that are known to contain burrowing owl burrows. O&M of roads is not subject to this requirement. For other projects that are subject to CEQA, the Permittees will require burrowing owl surveys in the Conservation Areas using an accepted protocol (as determined by the CVCC in coordination with the Permittees and the Wildlife Agencies). Prior to Development, the construction area and adjacent areas within 500 feet of the Development site, or to the edge of the property if less than 500 feet, will be surveyed by an Acceptable Biologist for burrows that could be used by burrowing owl. If a burrow is located, the biologist will determine if an owl is present in the burrow. If the burrow is determined to be occupied, the burrow will be flagged and a 160-foot buffer during the non-breeding season and a 250-foot buffer during the breeding season, or a buffer to the edge of the property boundary if less than 500 feet, will be established around the burrow. The buffer will be staked and flagged. No Development or O&M activities will be permitted within the buffer until the young are no longer dependent on the burrow.

If the burrow is unoccupied, the burrow will be made inaccessible to owls, and the Covered Activity may proceed. If either a nesting or escape burrow is occupied, owls shall be relocated pursuant to accepted Wildlife Agency protocols. A burrow is assumed occupied if records indicate that, based on surveys conducted following protocol, at least one burrowing owl has been observed occupying a burrow on site during the past three years. If there are no records for the site, surveys must be conducted to determine, prior to construction, if burrowing owls are present. Determination of the appropriate method of relocation, such as eviction/passive relocation or active relocation, shall be based on the specific site conditions (e.g., distance to nearest suitable habitat and presence of burrows within that habitat) in coordination with the Wildlife Agencies. Active relocation and eviction/passive relocation require the preservation and maintenance of suitable burrowing owl habitat determined through coordination with the Wildlife Agencies.

Within one (1) year of Permit issuance, CVCC will cooperate with County Flood Control, CVWD and IID to conduct an inventory of levees, berms, dikes, and similar features in the Plan Area maintained by those Permittees. Burrowing owl burrow locations will be mapped and each of these Permittees will incorporate the information into its O&M practices to avoid impacts to the burrowing owl to the maximum extent Feasible. CVCC in cooperation with County Flood Control, CVWD, and IID will prepare a manual for maintenance staff, educating them about the burrowing owl and appropriate actions to take when owls are encountered to avoid impacts to the maximum extent Feasible. The manual will be submitted to the Wildlife Agencies for review and comment within two (2) years of Permit issuance. In conjunction with the Monitoring Program, the maps of the burrowing owl locations along the above-described levees, berms, dikes, and similar features will be periodically updated.



**Covered Riparian Bird Species.** This measure does not apply to single-family residences and any non-commercial accessory uses and structures including but not limited to second units on an existing legal lot. Riparian Habitat here refers to the following natural communities: southern arroyo willow riparian forest, Sonoran cottonwood-willow riparian forest, desert fan palm oasis woodland, and southern sycamore-alder riparian woodland in the Cabazon, Stubbe and Cottonwood Canyons, Whitewater Canyon, Upper Mission Creek/Big Morongo Canyon, Thousand Palms, Indio Hills Palms, Joshua Tree National Park, Mecca Hills and Orocopia Mountains, Dos Palmas, Coachella Valley Stormwater Channel and Delta, and Santa Rosa and San Jacinto Mountains Conservation Areas. Covered Activities, including O&M of facilities and construction of permitted new projects, in riparian Habitat will be conducted to the maximum extent Feasible outside of the March 15 – September 15 nesting season for least Bell's vireo, and the May 1 – September 15 nesting season for southwestern willow flycatcher, summer tanager, yellow warbler, and yellow-breasted chat. If Covered Activities must occur during the nesting season, surveys shall be conducted to determine if any active nests are present. If active nests are identified, the Covered Activity shall not be conducted within 200 feet of an active nest. If surveys conducted during the nesting season document that Covered nesting riparian bird Species are not present, the Covered Activity may proceed.

**Crissal Thrasher.** This measure does not apply to single-family residences and any non-commercial accessory uses and structures including but not limited to second units on an existing legal lot, or to O&M of Covered Activities. In modeled crissal thrasher Habitat in the Willow Hole, Thousand Palms, Indio Hills Palms, East Indio Hills, Dos Palmas, and Coachella Valley Stormwater Channel and Delta Conservation Areas, surveys will be conducted by an Acceptable Biologist prior to the start of construction activities during the nesting season, January 15 – June 15, to determine if active nest sites for this species occur on the construction site and/or within 500 feet of the construction site, or to the edge of the property boundary if less than 500 feet. If nesting crissal thrashers are found, a 500-foot buffer, or a buffer to the edge of the property boundary if less than 500 feet, will be established around the nest site. The buffer will be staked and flagged. No construction activities will be permitted within the buffer during the breeding season of January 15 – June 15 or until the young have fledged.

**Desert tortoise.** This measure does not apply to single-family residences and any non-commercial accessory uses and structures, including but not limited to second units on an existing legal lot, or to O&M of Covered Activities for Permittee infrastructure facilities. Within Conservation Areas, the Permittees will require surveys for desert tortoise for Development in modeled desert tortoise Habitat. Prior to Development, an Acceptable Biologist will conduct a presence/absence survey of the Development area and adjacent areas within 200 feet of the Development area, or to the property boundary if less than 200 feet and permission from the adjacent landowner cannot be obtained, for fresh sign of desert tortoise, including live tortoises, tortoise remains, burrows, tracks, scat, or egg shells. The presence/absence survey must be conducted during the window between February 15 and October 31. Presence/absence surveys require 100% coverage of the survey area. If no sign is found, a clearance survey is not required. A presence/absence survey is valid for 90 days or indefinitely if tortoise-proof fencing is installed around the Development site. If fresh sign is located, the Development area must be fenced with tortoise-proof fencing and a clearance survey conducted during the clearance window. Desert tortoise clearance surveys shall be conducted during the clearance window from February 15 to June 15 and September 1 to October 31 or in accordance with the most recent Wildlife Agency protocols. Clearance surveys must cover 100% of the Development area. A clearance survey must be conducted during different tortoise activity periods (morning and afternoon). All tortoises encountered will be moved from the Development site to a specified location. Prior to issuance of the Permits, CVCC will either use the *Permit Statement Pertaining to High Temperatures for Handling Desert Tortoises*

and *Guidelines for Handling Desert Tortoises During Construction Projects*, revised July 1999, or develop a similar protocol for relocation and monitoring of desert tortoise, to be reviewed and approved by the Wildlife Agencies. Thereafter, the protocol will be revised as needed based on the results of monitoring and other information that becomes available.

***Inactive Season Protocol.*** This protocol is applicable to pre-construction and construction phases of utility Covered Activity projects occurring between November 1 and February 14. These protocols apply only to the site preparation and construction phases of projects. The project proponent must follow the eight pre-construction protocol requirements listed below.

1. A person from the entity contracting the construction shall act as the contact person with the representative of the appropriate RMUC. He/she will be responsible for overseeing compliance with the protective stipulations as stated in this protocol.
2. Prior to any construction activity within the Conservation Areas, the contact person will meet with the representative of the appropriate RMUC to review the plans for the project. The representative of the appropriate RMUC will review alignment, pole spacing, clearing limits, burrow locations, and other specific project plans which have the potential to affect the desert tortoise. He or she may recommend modifications to the contact person to further avoid or minimize potential impacts to desert tortoise.
3. The construction area shall be clearly fenced, marked, or flagged at the outer boundaries to define the limits of construction activities. The construction right of- way shall normally not exceed 50 feet in width for standard pipeline corridors, access roads and transmission corridors, and shall be minimized to the maximum extent Feasible. Existing access roads shall be used when available, and rights-of way for new and existing access roads shall not exceed 20 feet in width unless topographic obstacles require greater road width. Other construction areas including well sites, storage tank sites, substation sites, turnarounds, and laydown/staging sites which require larger areas will be determined in the preconstruction phase. All construction workers shall be instructed that their activities shall be confined to locations within the fenced, flagged, or marked areas.
4. An Acceptable Biologist shall conduct pre-construction clearance surveys of all areas potentially disturbed by the proposed project. Any winter burrows discovered in the Conservation Areas during the pre-construction survey shall be avoided or mitigated. The survey shall be submitted to the representative of the appropriate RMUC as part of plan review.
5. All site mitigation criteria shall be determined in the pre-construction phase, including but not limited to seeding, barrier fences, leveling, and laydown/staging areas, and will be reviewed by the representative of the appropriate RMUC prior to implementation.
6. A worker education program shall be implemented prior to the onset of each construction project. All construction employees shall be required to read an educational brochure prepared by the representative of the appropriate RMUC and/or the RMOC and attends a tortoise education class prior to the onset of construction or site entry. The class will describe the sensitive species which may be found in the area, the purpose of the MSHCP Reserve System, and the appropriate measures to take upon discovery of a sensitive species. It will also cover construction techniques to minimize potential adverse impacts.
7. All pre-construction activities which could Take tortoises in any manner (e.g., driving off an established road, clearing vegetation, etc.) shall occur under the supervision of an Acceptable Biologist.
8. If there are unresolvable conflicts between the representative of the appropriate RMUC and the contact person, then the matter will be arbitrated by the RMOC and, if necessary, by CVCC.



The following terms are established to protect the desert tortoise during utility related construction activities in the Conservation Areas and are to be conducted by an Acceptable Biologist.

- An Acceptable Biologist shall oversee construction activities to ensure compliance with the protective stipulations for the desert tortoise.
- Desert tortoises found above ground inside the project area during construction shall be moved by an Acceptable Biologist out of harm's way and placed in a winter den (at a distance no greater than 250 feet). If a winter den cannot be located, the USFWS or CDFG shall determine appropriate action with respect to the tortoise. Tortoises found above ground shall be turned over to the Acceptable Biologist
- No handling of tortoises will occur when the air temperature at 15 centimeters above ground exceeds 90 degrees Fahrenheit.
- Desert tortoise burrows shall be avoided to the maximum extent Feasible. An Acceptable Biologist shall excavate any burrows which cannot be avoided and will be disturbed by construction. Burrow excavation shall be conducted with the use of hand tools only, unless the Acceptable Biologist determines that the burrow is unoccupied immediately prior to burrow destruction.
- Only burrows within the limits of clearing and surface disturbance shall be excavated. Burrows outside these limits, but at risk from accidental crushing, shall be protected by the placement of deterrent barrier fencing between the burrow and the construction area. Installation and removal of such barrier fencing shall be under the direction and supervision of an Acceptable Biologist.
- For electrical transmission line and road construction projects, only burrows within the right-of-way shall be excavated. Burrows outside the right-of-way, but at risk from accidental crushing, shall be protected by the placement of deterrent barrier fencing between the burrow and the right-of-way. Installation and removal of such barrier fencing shall be under the direction and supervision of an Acceptable Biologist.
- Tortoises in the Conservation Areas are not to be removed from burrows until appropriate action is determined by USFWS or CDFG with respect to the tortoise. The response shall be carried out within 72 hours.
- Blasting is not permissible within 100 feet of an occupied tortoise burrow.

During construction, contractors will comply with the mitigation and minimization measures contained within this protocol. These measures are:

- All trenches, pits, or other excavations shall be inspected for tortoises by an Acceptable Biologist prior to filling.
- All pipes and culverts stored within desert tortoise Habitat shall have both ends capped to prevent entry by desert tortoises. During construction, all open ended pipeline segments that are welded in place shall be capped during periods of construction inactivity to prevent entry by desert tortoises.
- Topsoil removed during trenching shall be re-spread on the pipeline construction area following compaction of the backfill. The area shall be restored as determined during the environmental review.
- All test pump water will be routed to the nearest wash or natural drainage. The route will be surveyed by an Acceptable Biologist. If tortoises are found in the drainage area the Acceptable Biologist will remove the tortoises.
- Powerlines associated with water development, such as to provide power for pumps, should be buried underground adjacent to the pipe. All above ground structures deemed to be necessary shall be equipped with functional anti-perching devices that would prevent their use by ravens and other predatory birds, and shall adhere to the electrical distribution protocol which follows.

- In order to perform routine O&M of the water systems such as wells, pumps, water lines and storage tanks, etc., employees are to be trained in the area of desert tortoise education. This training will be performed on a regular basis by an Acceptable Biologist for those personnel not previously trained. The training will include at a minimum the following: identification of tortoises, burrows, and other sign; and instructions on installing tortoise barrier fencing. During the course of basic O&M, desert tortoise will be avoided. Untrained employees shall not perform maintenance operations within the reserve.
- All disturbance areas around poles or concrete pads will be reduced to a size just large enough for the construction activity.
- Areas disturbed around poles or construction pads will be restored as determined during the pre-construction process.
- Poles or other above ground structures necessary for electrical distribution development shall be minimized as much as possible. All above ground structures shall be equipped with functional anti-perching devices that would prevent their use by ravens and other predatory birds.
- In order to perform routine O&M of the electrical distribution systems such as transmission lines and poles, substations, etc., employees are to be trained in the area of desert tortoise education. This training will be performed on a regular basis by a qualified biologist for those personnel not previously trained. The training will include at a minimum the following: identification of tortoises, burrows, and other sign; and instructions on installing tortoise barrier fencing. During the course of basic O&M, desert tortoise will be avoided. Untrained employees shall not perform maintenance operations within the non-Take areas.
- All trash and food items shall be promptly contained and removed daily from the project site to reduce the attractiveness of the area to common ravens and other desert tortoise predators.
- Construction activities which occur between dusk and dawn shall be limited to areas which have already been cleared of desert tortoises by the Acceptable Biologist and graded or located in a fenced right-of-way. Construction activities shall not be permitted between dusk and dawn in areas not previously graded. **Active Season Protocol.** This protocol is applicable to pre-construction and construction phases of utility development projects occurring between February 15 and November 1. It is identical to the Inactive Season Protocol with the following additions:
- Work areas shall be inspected for desert tortoises within 24 hours of the onset of construction. To facilitate implementation of this condition, burrow inspection and excavation may begin no more than seven (7) days in advance of construction activities, as long as a final check for desert tortoises is conducted at the time of construction.
- All pre-construction activities which could Take tortoises in any manner (e.g., driving off an established road, clearing vegetation, etc.) shall occur under the overall supervision of an Acceptable Biologist. Any hazards to tortoises created by this activity, such as drill holes, open trenches, pits, other excavations, or any steep-sided depressions, shall be checked three times a day for desert tortoises. These hazards shall be eliminated each day prior to the work crew leaving the site, which may include installing a barrier that will preclude entry by tortoises. Open trenches, pits or other excavations will be backfilled within 72 hours, whenever possible. A 3:1 slope shall be left at the end of every open trench to allow trapped desert tortoises to escape. Trenches not backfilled within 72 hours shall have a barrier installed around them to preclude entry by desert tortoises. All trenches, pits, or other excavations shall be inspected for tortoises by a biological monitor trained and approved by the Acceptable Biologist prior to filling.



- If a desert tortoise is found, the biological monitor shall notify the Acceptable Biologist who will remove the animal as soon as possible.
- Only burrows within the limits of clearing and surface disturbance shall be excavated. Burrows outside these limits, but at risk from accidental crushing, shall be protected by the placement of deterrent barrier fencing between the burrow and the construction area. The barrier fence shall be at least 20 feet long and shall be installed to direct the tortoise leaving the burrow away from the construction area. Installation and removal of such barrier fencing shall be under the direction and supervision of the biological monitor.
- If blasting is necessary for construction, all tortoises shall be removed from burrows within 100 feet of the blast area.

***Disposition of Sick, Injured, or Dead Specimens.*** Upon locating dead, injured, or sick desert tortoises under any utility or road project, initial notification by the contact representative or Acceptable Biologist must be made to the USFWS or CDFG within three (3) working days of its finding. Written notification must be made within five (5) calendar days with the following information: date; time; location of the carcass; photograph of the carcass; and any other pertinent information. Care must be taken in handling sick or injured animals to ensure effective treatment and care. Injured animals shall be taken care of by the Acceptable Biologist or an appropriately trained veterinarian. Should any treated tortoises survive, USFWS or CDFG should be contacted regarding the final disposition of the animals.

**Fluvial Sand Transport.** Activities, including O&M of facilities and construction of permitted new projects, in fluvial sand transport areas in the Cabazon, Stubbe and Cottonwood Canyons, Snow Creek/Windy Point, Whitewater Canyon, Whitewater Floodplain, Upper Mission Creek/Big Morongo Canyon, Mission Creek/Morongo Wash, Willow Hole, Long Canyon, Edom Hill, Thousand Palms, West Deception Canyon, and Indio Hills/Joshua Tree National Park Linkage Conservation Areas will be conducted in a manner to maintain the fluvial sand transport capacity of the system.

**Le Conte's Thrasher.** This measure does not apply to single-family residences and any non-commercial accessory uses and structures including but not limited to second units on an existing legal lot, or to O&M of Covered Activities. In modeled Le Conte's thrasher Habitat in all the Conservation Areas, during the nesting season, January 15 - June 15, prior to the start of construction activities, surveys will be conducted by an Acceptable Biologist on the construction site and within 500 feet of the construction site, or to the property boundary if less than 500 feet. If nesting Le Conte's thrashers are found, a 500 foot buffer, or to the property boundary if less than 500 feet, will be established around the nest site. The buffer will be staked and flagged. No construction will be permitted within the buffer during the breeding season of January 15 - June 15 or until the young have fledged.

**Little San Bernardino Mountains Linanthus.** This measure does not apply to single-family residences and any non-commercial accessory uses and structures, including but not limited to second units on an existing legal lot, or to O&M of Covered Activities. To avoid and minimize impacts to this species as much as possible, the following avoidance and minimization effort shall occur:

- **Salvage:** Salvage of top soil and/or seeds should occur prior to ground disturbance in accordance with Section 6.6.1. Salvage should be conducted by or in cooperation with the CVCC.

**Mesquite Hummocks and Mesquite Bosque Natural Communities.** This measure does not apply to single-family residences and any non-commercial accessory uses and structures including but not limited to second units on an existing legal lot, or to O&M of Covered Activities. Construction activities in the Cabazon, Willow Hole, Thousand Palms, Indio Hills Palms, East Indio Hills, Dos Palmas, Coachella Valley Stormwater Channel and Delta, and Santa Rosa and San Jacinto Mountains Conservation Areas will avoid mesquite hummocks and mesquite bosque to the maximum extent Feasible.

**Palm Springs Pocket Mouse.** To avoid impacts to the Palm Springs pocket mouse and its habitat in the Upper Mission Creek/Big Morongo Canyon and Willow Hole Conservation Areas, Flood Control-related construction activities will comply with the following avoidance and minimization measures.

- **Clearing:** For construction that would involve disturbance to Palm Springs pocket mouse habitat, activity should be phased to the extent feasible and practicable so that suitable habitat islands are no farther than 300 feet apart at any given time to allow pocket mice to disperse between habitat patches across unsuitable habitat (i.e., unvegetated and/or compacted soils). Prior to project construction, a biological monitor familiar with this species should assist construction crews in planning access routes to avoid impacts to occupied habitat as much as feasible (i.e., placement of preferred routes on project plans and incorporation of methods to avoid as much suitable habitat/soil disturbance as possible). Furthermore, during construction activities, the biological monitor will ensure that connected, naturally vegetated areas with sandy soils and typical native vegetation remain intact to the extent feasible and practicable. Finally, construction that involves clearing of habitat should be avoided during the peak breeding season (approximately March to May), and activity should be limited as much as possible during the rest of the breeding season (January to February and June to August).
- **Revegetation:** Clearing of native vegetation (e.g., creosote, rabbitbrush, burrobush, cheesebush) should be followed by revegetation, including natural reestablishment and other means, resulting in habitat types of equal or superior biological value for Palm Springs pocket mouse.
- **Trapping/Holding:** All trapping activity should be conducted in accordance with accepted protocols and by a qualified biologist who possesses a Memorandum of Understanding with CDFG for live-trapping of heteromyid species in Southern California.
- **Translocation:** Should translocation between distinct population groups be necessary, as determined through the Adaptive Management and Monitoring Program, activity should be conducted by a qualified biologist who possesses a Memorandum of Understanding with CDFG for live-trapping of heteromyid species in Southern California. Trapping and subsequent translocation activity should be conducted in accordance with accepted protocols. Translocation programs should be coordinated by or conducted by the CVCC and/or RMOC to determine the appropriate trapping, holding, marking, and handling methods and potential translocation sites.

**Peninsular Bighorn Sheep Habitat.** Completion of Covered Activities in Peninsular bighorn sheep Habitat in the Cabazon, Snow Creek/Windy Point, and Santa Rosa and San Jacinto Mountains Conservation Areas will be conducted outside of the January 1 - June 30 lambing season unless otherwise authorized through a Minor Amendment to the Plan with concurrence from the Wildlife Agencies. O&M of Covered Activities, including but not limited to refinishing the inside of water storage tanks, shall be scheduled to avoid the lambing season, but may extend into the January 1 – June 30 period if necessary to complete the activity, upon concurrence with the Wildlife Agencies.



For new projects in the above listed Conservation Areas, no toxic or invasive plant species may be used for landscaping. For existing public infrastructure facilities which have landscaping in Peninsular bighorn sheep Habitat in the Cabazon, Snow Creek/Windy Point, and Santa Rosa and San Jacinto Mountains Conservation Areas, the Permittees who have such facilities will, with respect to those facilities, develop and implement a plan and schedule to remove or prevent access to oleander and any other plants known to be toxic to Peninsular bighorn sheep. The plan and schedule will be prepared within one (1) year of Permit issuance.

**Triple-ribbed milkvetch.** This measure does not apply to single-family residences and any non-commercial accessory uses and structures including but not limited to second units on an existing legal lot, or to O&M of Covered Activities. It is understood that O&M for infrastructure developed as part of a private development approved in compliance with the MSHCP that is later transferred to a public entity is included as a Covered Activity. For Covered Activities within modeled triple-ribbed milkvetch Habitat in the Whitewater Canyon, Whitewater Floodplain, Upper Mission Creek/Big Morongo Canyon, and Santa Rosa and San Jacinto Mountains Conservation Areas, surveys by an Acceptable Biologist will be required for activities during the growing and flowering period from February 1 - May 15. Any occurrences of the species will be flagged and public infrastructure projects shall avoid impacts to the plants to the maximum extent Feasible. In particular, known occurrences on a map maintained by CVCC shall not be disturbed.

#### **4.5 Land Use Adjacency Guidelines**

The purpose of Land Use Adjacency Guidelines is to avoid or minimize indirect effects from Development adjacent to or within the Conservation Areas. Adjacent means sharing a common boundary with any parcel in a Conservation Area. Such indirect effects are commonly referred to as edge effects, and may include noise, lighting, drainage, intrusion of people, and the introduction of non-native plants and non-native predators such as dogs and cats. Edge effects will also be addressed through reserve management activities such as fencing. The following Land Use Adjacency Guidelines shall be considered by the Permittees in their review of individual public and private Development projects adjacent to or within the Conservation Areas to minimize edge effects, and shall be implemented where applicable.

##### **4.5.1 Drainage**

Proposed Development adjacent to or within a Conservation Area shall incorporate plans to ensure that the quantity and quality of runoff discharged to the adjacent Conservation Area is not altered in an adverse way when compared with existing conditions. Stormwater systems shall be designed to prevent the release of toxins, chemicals, petroleum products, exotic plant materials or other elements that might degrade or harm biological resources or ecosystem processes within the adjacent Conservation Area.

##### **4.5.2 Toxics**

Land uses proposed adjacent to or within a Conservation Area that use chemicals or generate bioproducts such as manure that are potentially toxic or may adversely affect wildlife and plant species, Habitat, or water quality shall incorporate measures to ensure that application of such chemicals does not result in any discharge to the adjacent Conservation Area.

##### **4.5. Lighting**

For proposed Development adjacent to or within a Conservation Area, lighting shall be shielded and directed toward the developed area. Landscape shielding or other appropriate methods shall be incorporated in project designs to minimize the effects of lighting adjacent to or within the adjacent Conservation Area.

##### **4.5.4 Noise**

Proposed Development adjacent to or within a Conservation Area that generates noise in excess of 75 dBA  $L_{eq}$  hourly, as measured at the property line, shall incorporate setbacks, berms, or walls, as appropriate, to minimize the effects of noise on the adjacent Conservation Area.

##### **4.5.5 Invasives**

Invasive, non-native plant species shall not be incorporated in the landscape for land uses adjacent to or within a Conservation Area. Landscape treatments within or adjacent to a Conservation Area shall incorporate native plant materials to the maximum extent Feasible; recommended native species are listed in Table 4-112. The plants listed in Table 4-113 shall not be used within or adjacent to a Conservation Area. This list may be amended from time to time through a Minor Amendment with Wildlife Agencies' concurrence.



#### **4.5.6 Barriers**

Land uses adjacent to or within a Conservation Area shall incorporate barriers in individual project designs to minimize unauthorized public access, domestic animal predation, illegal trespass, or dumping in a Conservation Area. Such barriers may include native landscaping, rocks/boulders, fencing, walls and/or signage.

#### **4.5.7 Grading/Land Development**

Manufactured slopes associated with site Development shall not extend into adjacent land in a Conservation Area.

**Table 4-112: Coachella Valley Native Plants Recommended for Landscaping<sup>1</sup>**

<b>BOTANICAL NAME</b>	<b>COMMON NAME</b>
<b>Trees</b>	
<i>Washingtonia filifera</i>	California Fan Palm
<i>Cercidium floridum</i>	Blue Palo Verde
<i>Chilopsis linearis</i>	Desert Willow
<i>Olneya tesota</i>	Ironwood Tree
<i>Prosopis glandulosa</i> var. <i>torreyana</i>	Honey Mesquite
<b>Shrubs</b>	
<i>Acacia greggii</i>	Cat's Claw Acacia
<i>Ambrosia dumosa</i>	Burro Bush
<i>Atriplex canescens</i>	Four Wing Saltbush
<i>Atriplex lentiformis</i>	Quailbush
<i>Atriplex polycarpa</i>	Cattle Spinach
<i>Baccharis sergiloides</i>	Squaw Water-weed
<i>Bebia juncea</i>	Sweet Bush
<i>Cassia (Senna) covesii</i>	Desert Senna
<i>Condalia parryi</i>	Crucillo
<i>Crossosoma bigelovii</i>	Crossosoma
<i>Dalea emoryi</i>	Dye Weed
<i>Dalea (Psoralea) schottii</i>	Indigo Bush
<i>Datura meteloides</i>	Jimson Weed
<i>Encelia farinosa</i>	Brittle Bush
<i>Ephedra aspera</i>	Mormon Tea
<i>Eriogonum fasciculatum</i>	California Buckwheat
<i>Eriogonum wrightii membranaceum</i>	Wright's Buckwheat
<i>Fagonia laevis</i>	(No Common Name)
<i>Gutierrezia sarothrae</i>	Matchweed
<i>Haplopappus acradenius</i>	Goldenbush
<i>Hibiscus denudatus</i>	Desert Hibiscus
<i>Hoffmannseggia microphylla</i>	Rush Pea
<i>Hymenoclea salsola</i>	Cheesebush
<i>Hyptis emoryi</i>	Desert Lavender
<i>Isomeris arborea</i>	Bladder Pod
<i>Juniperus californica</i>	California Juniper
<i>Krameria grayi</i>	Ratany
<i>Krameria parvifolia</i>	Little-leaved Ratany
<i>Larrea tridentate</i>	Creosote Bush
<i>Lotus rigidus</i>	Desert Rock Pea
<i>Lycium andersonii</i>	Box Thorn
<i>Petalonyx linearis</i>	Long-leaved Sandpaper Plant
<i>Petalonyx thurberi</i>	Sandpaper Plant
<i>Peucephyllum schottii</i>	Pygmy Cedar
<i>Prunus fremontii</i>	Desert Apricot
<i>Rhus ovata</i>	Sugar-bush
<i>Salazaria mexicana</i>	Paper-bag Bush
<i>Salvia apiana</i>	White Sage
<i>Salvia eremostachya</i>	Santa Rosa Sage
<i>Salvia vaseyi</i>	Wand Sage
<i>Simmondsia chinensis</i>	Jojoba



<b>BOTANICAL NAME</b>	<b>COMMON NAME</b>
<i>Sphaeralcea ambigua</i>	Globemallow (Desert Mallow)
<i>Sphaeralcea ambigua rosacea</i>	Apricot Mallow
<i>Trixis californica</i>	Trixis
<i>Zauschneria californica</i>	California Fuchsia
<b>Groundcovers</b>	
<i>Mirabilis bigelovii</i>	Wishbone Bush (Four O'Clock)
<i>Mirabilis tenuiloba</i>	White Four O'Clock (Thin-lobed)
<b>Vines</b>	
<i>Vitis girdiana</i>	Desert Grape
<b>Accent</b>	
<i>Muhlenbergia rigens</i>	Deer Grass
<b>Herbaceous Perennials<sup>2</sup></b>	
<i>Adiantum capillus-veneris</i>	Maiden-hair Fern (w)
<i>Carex alma</i>	Sedge (w)
<i>Dalea parryi</i>	Parry Dalea
<i>Eleocharis montevidensis</i>	Spike Rush (w)
<i>Equisetum laevigatum</i>	Horsetail (w)
<i>Juncus bufonis</i>	Toad Rush (w)
<i>Juncus effuses</i>	Juncus (w)
<i>Juncus macrophyllus</i>	Juncus (w)
<i>Juncus mexicanus</i>	Mexican Rush (w)
<i>Juncus xiphioides</i>	Juncus (w)
<i>Notholaena parryi</i>	Parry Cloak Fern
<i>Pallaea mucronata</i>	Bird-foot Fern
<b>Cacti and Succulents</b>	
<i>Agave deserti</i>	Desert Agave
<i>Asclepias albicans</i>	Desert Milkweed (Buggy-whip)
<i>Asclepias subulata</i>	Ajamete
<i>Dudleya arizonica</i>	Live-forever
<i>Dudleya saxosa</i>	Rock Dudleya
<i>Echinocereus engelmannii</i>	Calico Hedgehog Cactus
<i>Ferocactus acanthodes</i>	Barrel Cactus
<i>Fouquieria splendens</i>	Ocotillo
<i>Mamillaria dioica</i>	Nipple Cactus
<i>Mamillaria tetrancistra</i>	Corkseed Cactus
<i>Nolina parryi</i>	Parry Nolina
<i>Opuntia acanthocarpa</i>	Stag-horn or Deer-horn Cholla
<i>Opuntia bigelovii</i>	Teddy Bear or Jumping Cholla
<i>Opuntia basilaris</i>	Beavertail Cactus
<i>Opuntia echinocarpa</i>	Silver or Golden Cholla
<i>Opuntia ramosissima</i>	Pencil Cholla, Darning Needle Cholla
<i>Yucca schidigera</i>	Mojave Yucca, Spanish Dagger
<i>Yucca whipplei</i>	Our Lord's Candle

<sup>1</sup> Source: "Coachella Valley Native Plants, Excluding Annuals (0 ft. to approximately 3,000 ft. elevation)." Compiled by Dave Heveron, Garden Collections Manager, and Kirk Anderson, Horticulturist, The Living Desert, May, 2000, for the Coachella Valley Mountains Conservancy.

<sup>2</sup> Common names for herbaceous perennials that are followed by "(w)" indicate a water or riparian species.

**Table 4-113: Prohibited Invasive Ornamental Plants<sup>1</sup>**

<b>BOTANICAL NAME</b>	<b>COMMON NAME</b>
<i>Acacia</i> spp. (all species except <i>A. greggii</i> )	Acacia (all species except native catclaw acacia)
<i>Arundo donax</i> (✓)	Giant Reed or Arundo Grass
<i>Atriplex semibaccata</i> (✓)	Australian Saltbush
<i>Avena barbata</i>	Slender Wild Oat
<i>Avena fatua</i>	Wild Oat
<i>Brassica tournefortii</i> (✓✓)	African or Saharan Mustard
<i>Bromus madritensis</i> ssp. <i>rubens</i> (✓)	Red Brome
<i>Bromus tectorum</i> (✓✓)	Cheat Grass or Downy Brome
<i>Cortaderia jubata</i> [syn. <i>C. atacamensis</i> ]	Jubata Grass or Andean Pampas Grass
<i>Cortaderia dioica</i> [syn. <i>C. selloana</i> ]	Pampas Grass
<i>Descurainia sophia</i>	Tansy Mustard
<i>Eichhornia crassipes</i>	Water Hyacinth
<i>Elaeagnus angustifolia</i>	Russian Olive
<i>Foeniculum vulgare</i>	Sweet Fennel
<i>Hirschfeldia incana</i>	Mediterranean or Short-pod Mustard
<i>Lepidium latifolium</i>	Perennial Pepperweed
<i>Lolium multiflorum</i>	Italian Ryegrass
<i>Nerium oleander</i>	Oleander
<i>Nicotiana glauca</i> (✓)	Tree Tobacco
<i>Oenothera berlandieri</i> (#)	Mexican Evening Primrose
<i>Olea europea</i>	European Olive Tree
<i>Parkinsonia aculeata</i> (✓)	Mexican Palo Verde
<i>Pennisetum clandestinum</i>	Kikuyu Grass
<i>Pennisetum setaceum</i> (✓✓)	Fountain Grass
<i>Phoenix canariensis</i> (#)	Canary Island Date Palm
<i>Phoenix dactylifera</i> (#)	Date Palm
<i>Ricinus communis</i> (✓)	Castorbean
<i>Salsola tragus</i> (✓)	Russian Thistle
<i>Schinus molle</i>	Peruvian Pepper Tree or California Pepper
<i>Schinus terebinthifolius</i>	Brazilian Pepper Tree
<i>Schismus arabicus</i>	Mediterranean Grass
<i>Schismus barbatus</i> (✓✓)	Saharan Grass, Abu Mash
<i>Stipa capensis</i> (✓✓)	No Common Name
<i>Tamarix</i> spp. (all species) (✓✓)	Tamarisk or Salt Cedar
<i>Taeniatherum caput-medusae</i>	Medusa-head
<i>Tribulus terrestris</i>	Puncturevine
<i>Vinca major</i>	Periwinkle
<i>Washingtonia robusta</i>	Mexican fan palm
<i>Yucca gloriosa</i> (#)	Spanish Dagger

<sup>1</sup> Sources: California Exotic Pest Plant Council, United States Department of Agriculture-Division of Plant Health and Pest Prevention Services, California Native Plant Society, Fremontia Vol. 26 No. 4, October 1998, The Jepson Manual; Higher Plants of California, and County of San Diego Department of Agriculture.

Key to Table 4-113:

# indicates species not on CalEPPC October 1999 "Exotic Pest Plants of Greatest Ecological Concern in California" list

✓ indicates species known to be invasive in the Plan Area

✓✓ indicates particularly troublesome invasive species



## **Appendix F    Overall Wall Plan**

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