APPENDIX G BIOLOGICAL RESOURCES REPORT

Version 9

BIOLOGICAL RESOURCES REPORT
El Monte Sand Mining Project

Prepared for
County of San Diego

August 2018

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A	APN	assessor's parcel number
	AMSL	above mean sea level
B	BSA	biological survey area
	BMO	County of San Diego Biological Mitigation Ordinance
	BRCA	Biological Resource Core Area
C	CAGN	Coastal California gnatcatcher
	CCR	California Code of Regulations
	CDFW	California Department of Fish and Wildlife
	CEQA	California Environmental Quality Act
	CESA	California Endangered Species Act
	CFR	Code of Federal Regulations
	CNDDB	California Natural Diversity Database
	CRPR	California Rare Plant Rank
	CSS	coastal sage scrub
	CWA	Clean Water Act
D	-	
E	ESA	Environmental Science Associates
F	F	Fahrenheit
	FESA	federal Endangered Species Act
G	-	
H	HCP	Habitat Conservation Plan
	HMP/RMP	Habitat/Resource Management Plan
I	-	
J	-	
K	-	
L	LBVI	least Bell's vireo
M	MBTA	Migratory Treaty Bird Act
	MSCP	Multiple Species Conservation Program
	MUP	Major Use Permit
N	NCCP	Natural Community Conservation Planning
O	-	
P	-	
	project	El Monte Sand Mining Project
Q	-	
R	RPO	Resource Protection Ordinance
	RWQCB	Regional Water Quality Control Board
S		
	SMARA	Surface Mining and Reclamation Act
	SSC	Species of Special Concern
T	-	
U	USFWS	U.S. Fish and Wildlife Service
	USACE	U.S. Army Corps of Engineers
V	-	
W	-	
X	-	
Y	-	
Z	-	

SUMMARY

Environmental Science Associates (ESA) has prepared this biological resources report for the proposed El Monte Sand Mining Project (project) in Lakeside Community Planning Area, within an unincorporated community of San Diego County, California. The purpose of this report is to identify the existing biological resources within and adjacent to the proposed project area, assess the potential impacts to these biological resources associated with the proposed project, and recommend mitigation for impacts that are considered significant under California Environmental Quality Act guidelines and County of San Diego Significance Guidelines (County of San Diego 2010a).

The proposed project is a combined mineral extraction and reclamation project. The project would extract, process, and market aggregate using conventional earth moving and processing equipment. Extractive and reclamation operations for the project are expected to continue for approximately 16 years (12 years of mining and reclamation, with an additional 4 years of reclamation following completion of mining). The project includes the three principal components: (1) Mining Component; (2) Reclamation Component; and (3) Revegetation Component. The Mining Component would consist of active mining that would occur over approximately 12 years, and would be completed in four distinct phases. The Reclamation Component consists of progressively reclaiming the disturbed areas previously mined. Reclamation is an ongoing process that commences when mining operations have ceased within a given area and continues until all mining related disturbance is reclaimed and all equipment involved in these operations have been removed. Reclaimed areas would be restored to an end use of undeveloped land with a recreational trail system. The Revegetation Component is to ensure successful restoration/creation of self-sustaining native habitats, which would serve as mitigation for impacts to sensitive vegetation communities, pursuant to County regulations. In contrast to the Reclamation Plan, the goal of the Revegetation Plan is to restore the ecological functions and values of the impacted habitats, rather than to provide landscape stability.

In addition, the project proposes a Boundary Line Adjustment (BLA) to the Pre-Approved Mitigation Area (PAMA) of the County's Multiple Species Conservation Program (MSCP) Subarea Plan (County of San Diego 1997). In accordance with the MSCP, adjustments to the preserve boundaries can be made without amending a subarea plan if the adjustment would result in the same or higher biological value of the preserve and with concurrence from the wildlife agencies (i.e., CDFW and USFWS). The proposed BLA would contribute the total 479.5-acre project area to the PAMA of the County's MSCP Subarea Plan thereby increasing the total size of the PAMA. A written request for the BLA has been submitted to the wildlife agencies for concurrence and is included as Appendix V to the Draft EIR (ESA 2018a). If the BLA request is not approved, another process may be implemented as agreed upon by the state and federal wildlife agencies.

The project would directly impact approximately 262 acres of land located in El Monte Valley on approximately 479.5 acres currently owned by El Monte Nature Preserve. A Major Use Permit (MUP) was previously approved for the 479.5-acre area in 2000 for the El Capitan Golf Course project. Following approval of the golf course project, site grading commenced, but was discontinued over market concerns with the golf use. The current project proposes to modify the MUP approved for the golf project to allow mineral extraction within a portion of the project area followed by revegetation to undeveloped open space with a recreational trail system. Various biological surveys were conducted for the project area, herein referred to as the Biological Study Area (BSA).

Biological studies were conducted in 2006, 2010, 2011, 2015 2016, and 2017. The surveys and investigations that were conducted between 2006 and 2015 include a biological reconnaissance survey, vegetation mapping, routine wetland delineation, focused rare plant surveys, focused tree surveys, focused coastal California gnatcatcher (*Polioptila californica californica*) surveys, focused least Bell's vireo (*Vireo belli pusillus*) surveys, and a focused habitat assessment for the Quino checkerspot butterfly (*Euphydryas editha quino;* Quino). In 2016, a jurisdictional delineation survey was completed to update the previous effort for the proposed project area. Several sensitive biological resources are known to occur within and adjacent to the proposed project area based on direct or indirect observations made during the surveys and investigations that were conducted for the BSA and the proposed project. Other sensitive biological resources were determined to have the potential to occur within and adjacent to the proposed project area based on evaluations made during these surveys and investigations. Additionally, existing information known about the general project vicinity was reviewed to determine species occurrences. Several sensitive biological resources were detected within and adjacent to the proposed project area during these surveys and have the potential to be impacted by the proposed project.

Seven sensitive vegetation communities or other land cover types occur within the proposed project area, which include southern cottonwood-willow riparian forest, southern willow scrub, tamarisk scrub, non-vegetated channel, Diegan coastal sage scrub, non-native grassland and Mature Riparian Woodland.

One special-status, narrow endemic plant is known to occur within the site, Palmer's goldenbush (*Ericameria palmeri* var. *palmeri*). Several sensitive wildlife species have been found and/or detected on or adjacent to the proposed project area during surveys conducted for the BSA, including the Cooper's hawk (*Accipiter cooperi*), sharp-shinned hawk (*Accipiter striatus*), red-shouldered hawk (*Buteo lineatus*), osprey (*Pandion haliaetus*), turkey vulture (*Cathartes aura*), white-tailed kite (*Elanus leucurus*), yellow-breasted chat (*Icteria virens*), loggerhead shrike (*Lanius ludovicianus*), coastal California gnatcatcher, and least Bell's vireo. Any impacts to federally listed, state listed, and/or fully protected species would be considered significant according to County guidelines; therefore, mitigation would be required. Impacts to nesting raptors or any other

nesting bird are considered significant under California Fish and Game Code 3503.5 and the Migratory Bird Treaty Act.

A herpetofaunal study conducted by U.S. Geological Survey (USGS) in 2016 confirmed the presence of the following sensitive species within the BSA: western spadefoot toad (*Spea hammondii*), coastal whiptail (*Aspidoscelis tigris stejnegeri*), southern California legless lizard (*Anniella stebbinsi*), San Diego banded gecko (*Coleonyx variegatus abbotti*), coast patch-nosed snake (*Salvadora hexalepis virgultea*), glossy snake (*Arizona elegans*), and red-diamond rattlesnake (*Crotalus ruber*) (Richmond et al. 2016).

All of the sensitive vegetation communities or other land cover types occurring within the proposed project area would be directly impacted by the proposed project. Mitigation ratios for impacts to these vegetation communities and other land cover types are recommended under the County's Guidelines for Determining Significance for Biological Resources for impacts that occur outside approved Multiple Species Conservation Program (MSCP) Plans. Mitigation for unavoidable permanent impacts to the native and naturalized habitats that require mitigation would be provided in compliance with mitigation ratios approved for the project by the County and the resource agencies.

Jurisdictional features were delineated within the proposed project area during surveys conducted in 2011 and updated in 2016. The general methodology detailed in the 1987 USACE Manual was used as the basis to delineate wetland waters of the United States. The 2008 Arid West Supplement was used as the basis for determining and recording indicators for hydrophytic vegetation, hydric soils, and wetland hydrology. Any impacts to state or federal jurisdictional areas would be considered adverse and significant and potential mitigation would be required.

Potentially significant impacts include indirect impacts to the Palmer's goldenbush. However, mitigation measures would minimize potential impacts. Construction of the proposed project would not result in direct or indirect impacts to other sensitive plants.

Potentially significant impacts would affect the federally listed and/or Group I animal species San Diego banded gecko, coastal California gnatcatcher, least Bell's vireo, Cooper's hawk, sharp-shinned hawk, red-shouldered hawk, osprey, turkey vulture, white-tailed kite, yellow breasted chat, and loggerhead shrike that are known to occur within the BSA. Direct impacts include direct mortality of individuals and nests, loss of foraging and breeding habitat, and construction-generated noise, dust, sedimentation into adjacent habitats, and nighttime lighting. However, mitigation measures would be implemented to avoid/minimize impacts. Avoidance of the bird breeding season, preconstruction surveys to confirm absence, and biological monitoring during mining and construction activities would reduce potential impacts to breeding least Bell's vireo and coastal California gnatcatcher, as well as other nesting birds covered under the Migratory Bird Treaty Act (MBTA). With impact avoidance, minimization, and

compensation measures incorporated, the impacts of the proposed project on sensitive wildlife species are avoided or reduced. With the implementation of those measures, the proposed project would avoid or minimize construction-generated effects including noise, fugitive dust, sedimentation, erosion, and runoff into occupied habitat within the vicinity of the proposed project.

Avoidance of the bird breeding season, preconstruction surveys to confirm absence, and biological monitoring during mining and construction activities would reduce potential impacts to breeding least Bell's vireo and coastal California gnatcatcher, as well as other nesting birds covered under the MBTA and other special-status wildlife. Mining activities would be phased and revegetated once mining is complete, thus habitats that would be temporarily lost during mining would be replaced and mitigated at required ratios to increase available suitable habitats. Reclamation and revegetation of habitats would be compensated in accordance with County guidelines.

1. INTRODUCTION

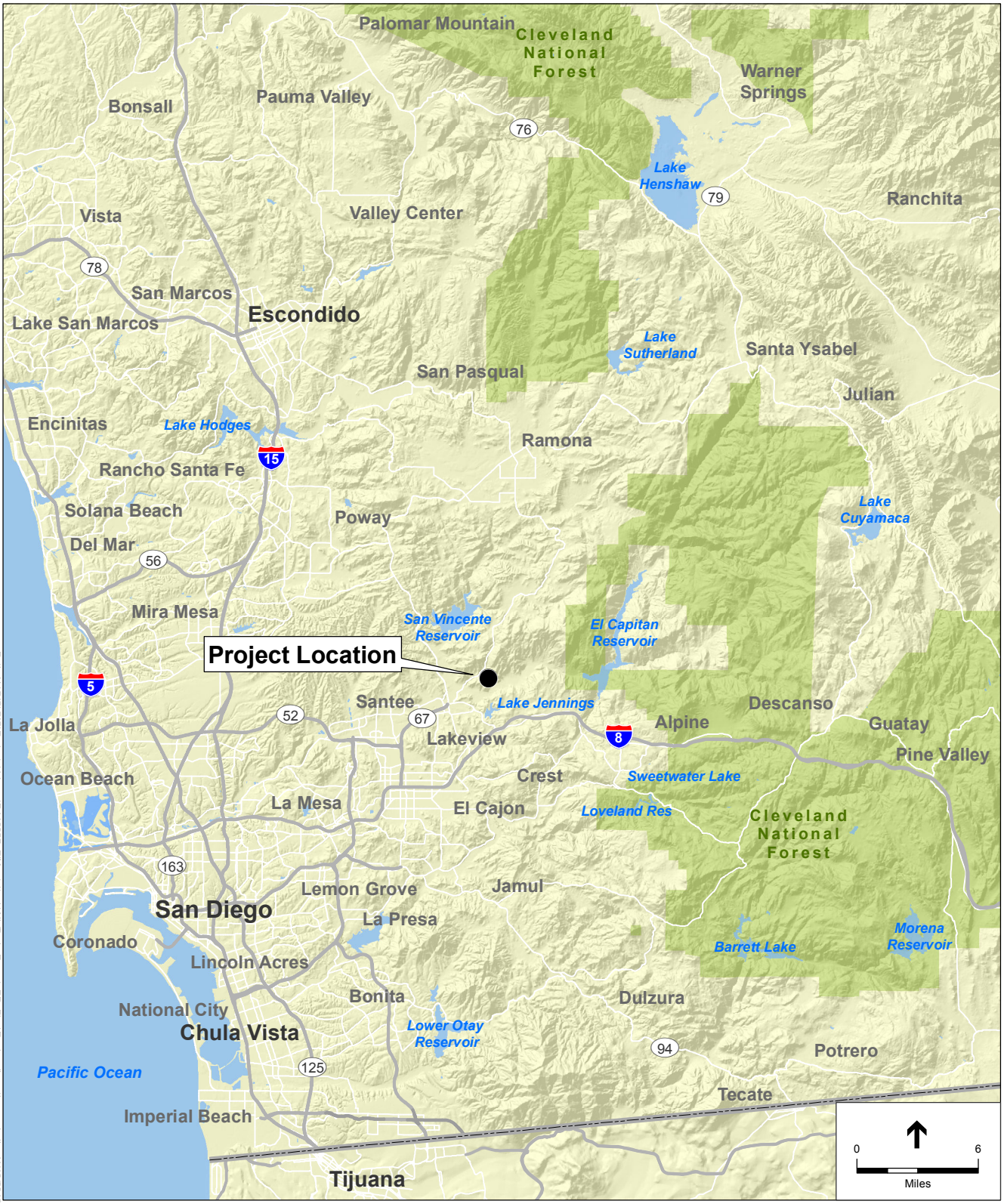
1.1 Purpose of the Report

El Monte Nature Preserve, L.L.C. (Proponent) is proposing the El Monte Sand Mining and Project (project), a combined mineral extraction and reclamation project. The purpose of this report is to document the biological resources identified as occurring or potentially occurring on the proposed project area (project area); provide an analysis of the biological impacts related to all phases of the proposed project, including direct, indirect, permanent, and temporary impacts; and propose applicable and feasible measures to avoid, minimize, and/or mitigate significant impacts consistent with federal, state, and local policies and regulations, including the California Environmental Quality Act (CEQA), San Diego County's Resource Protection Ordinance (RPO), the federal Endangered Species Act, and the California Endangered Species Act (CESA). The proposed project does not occur within the planning area of the County of San Diego South or North County MSCP.

1.2 Project Location and Description

1.2.1 Project Location

The project area totals approximately 479.5 acres and is located in the San Diego River watershed in the Lakeside Community Planning Area, within the unincorporated portion of San Diego County (**Figure 1**). The project would affect approximately 262 acres of land located in El Monte Valley on approximately 479.5 acres currently owned by El Monte Nature Preserve. The project is bordered by El Monte Road to the south and Willow Road to the north. Highway 67 is located approximately 1.2 miles to the west, and El Capitan Reservoir (also known as El Capitan Lake) is located approximately 2 miles upstream (**Figure 2**). The proposed project is located within Township 15 South; Range 1 East; of portions of Sections 9, 10, and 16 of the El Cajon Mountain, California; USGS 7.5-minute quadrangle; San Bernardino Base and Meridian. A total of six assessor's parcel numbers (APNs) are included within the project area, as shown in **Figure 3**.



SOURCE: ESRI; SanGIS 2015

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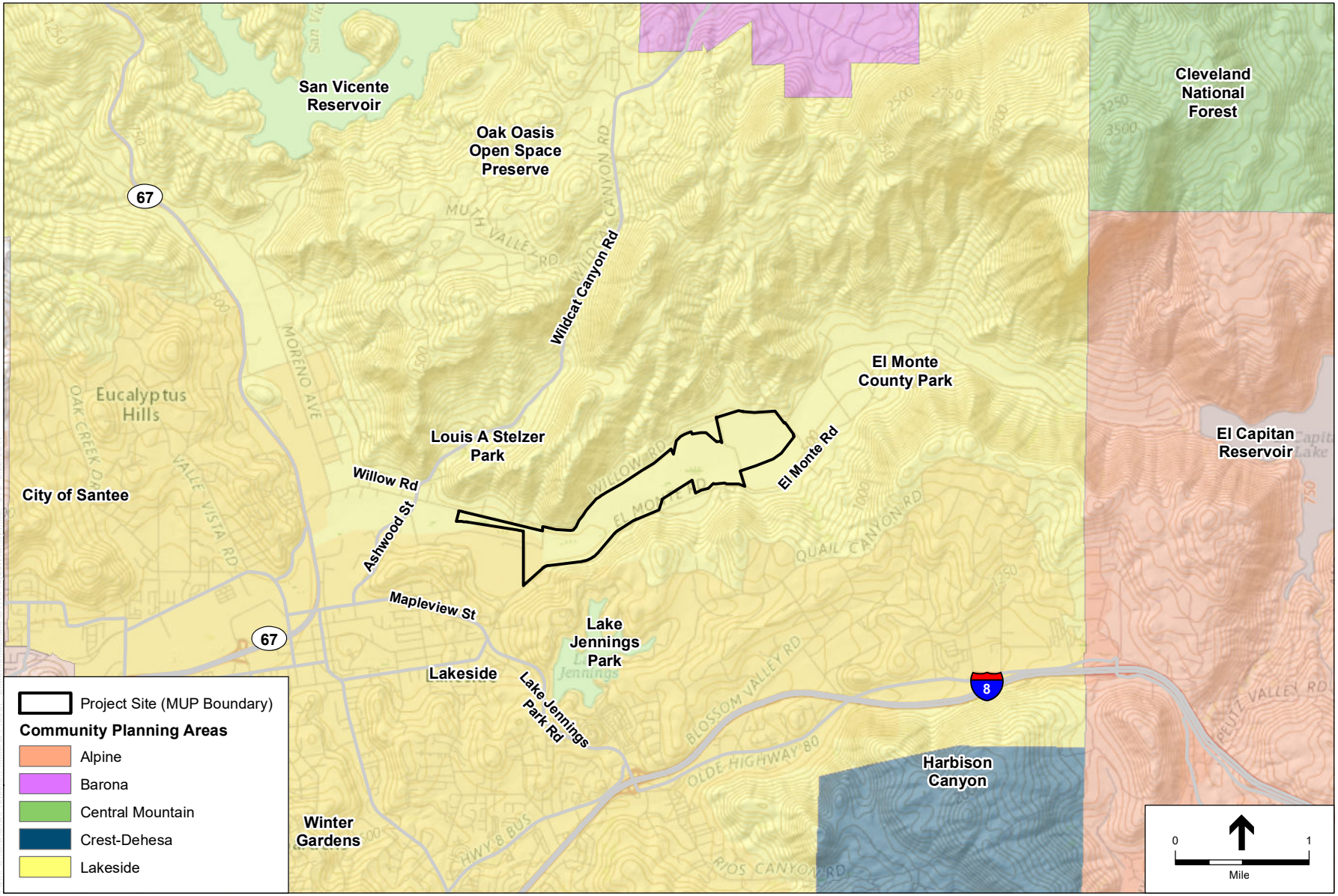
Figure 1

Regional Location



SOURCE: ESRI; EnviroMine; The Altum Group; Chang Consultants; ESA; SanGIS

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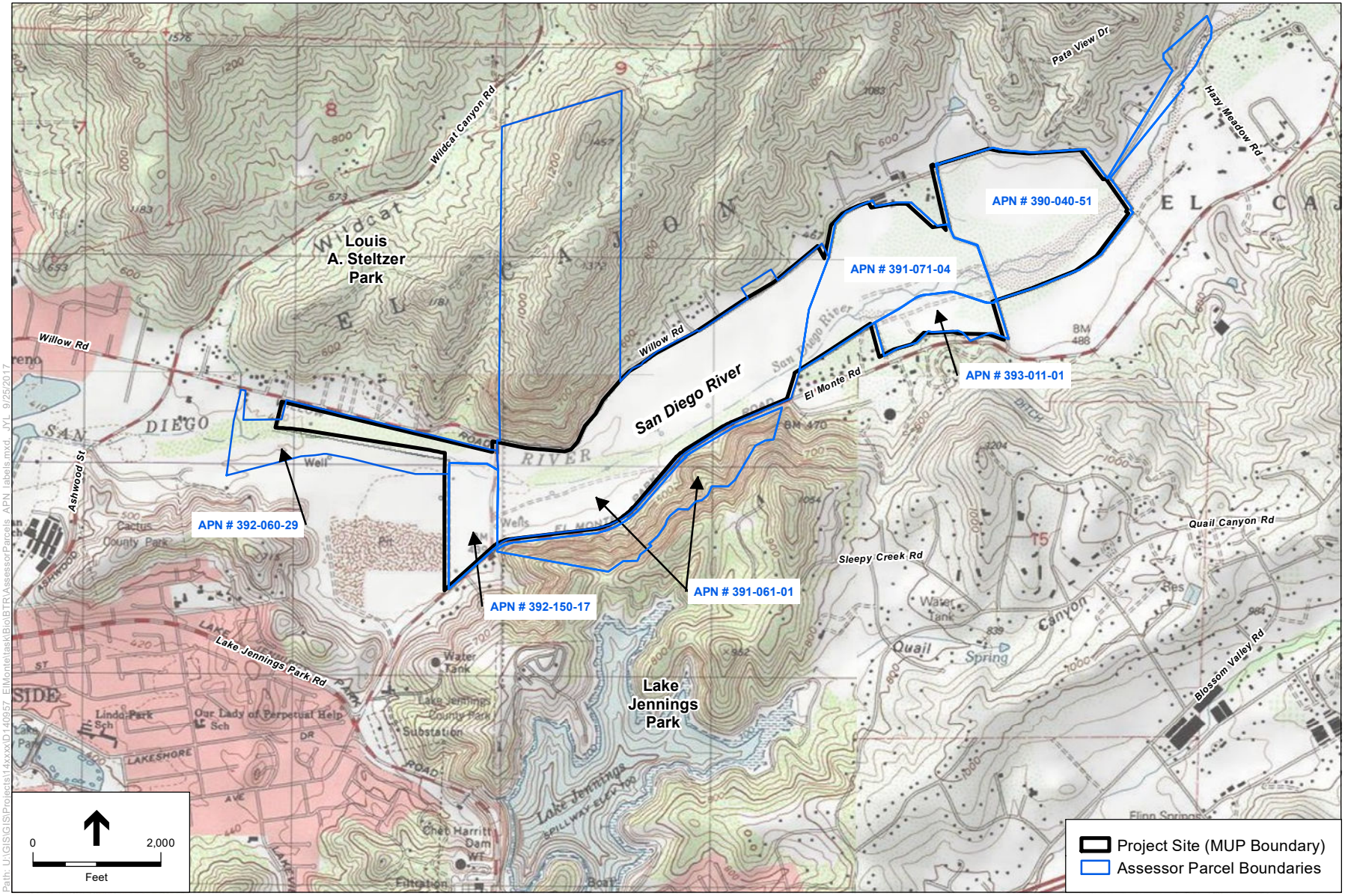
Figure 2

Project Vicinity



SOURCE: ESRI; EnviroMine; The Altum Group; Chang Consultants; ESA;
USGS 7.5' Topo Quad El Cajon 1975, 1978; San Vicente Reservoir 1971, 1973, 1975;
El Cajon Mountain 1980, 1985

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Figure 3

Assessor Parcels

1.2.2 Project Background

MUP PDS2015-MUP-98-014W2 was approved by the Planning Commission on February 16, 2000, for the El Capitan Golf Course in the project area. Following approval of the golf course project, site grading commenced, but was discontinued over market concerns with the golf use. The grading plan that was issued in 2003 (L-14105) was for approximately 1.1 million cubic yards of grading onsite. Between 2003 and 2005, grading activities were conducted onsite to create golf course ponds, but grading activities were terminated in 2005 and the Golf Course Project was abandoned in 2008. Initial site grading included establishment of the land form for the golf course, including a number of surface depressions that were intended for use as water hazards/storage ponds. County records indicate the grading permit expired in 2010. In 2016 Helix Water District provided a maintenance routine to the County to close out L-14105. In May of 2016 the County provided a letter to Helix Water District confirming that L-14105 was closed and recorded as an as-built condition. Since that time, no further grading or coordinated land use activities have been conducted at the site, although the MUP continues to regulate use. No mitigation was implemented for this project. The current project proposes to modify the MUP approved for the golf project to allow mineral extraction and revegetation to undeveloped open space with a recreational trail system.

Additionally, the project proposes a Boundary Line Adjustment (BLA) to the Pre-Approved Mitigation Area (PAMA) of the County's Multiple Species Conservation Program (MSCP) Subarea Plan (County of San Diego 1997). Section 10.11 of the County's MSCP Subarea Plan Implementing Agreement (San Diego County 1998) allows for BLAs, and Section 5.4.2 of the MSCP (Ogden Environmental and Energy Services 1998) and Section 1.4 of the County's MSCP Subarea Plan outline the preserve boundary adjustment process. In accordance with the MSCP, adjustments to the preserve boundaries can be made without amending a subarea plan if the adjustment would result in the same or higher biological value of the preserve and with concurrence from the wildlife agencies (i.e., CDFW and USFWS). The proposed BLA would contribute the total 479.5-acre project area to the PAMA of the County's MSCP Subarea Plan thereby increasing the total size of the PAMA. A written request for the BLA has been submitted to the wildlife agencies for concurrence and is included as Appendix V to the Draft EIR (ESA 2018a). If the BLA request is not approved, another process may be implemented as agreed upon by the state and federal wildlife agencies.

1.2.3 Project Description

The project consists of the extraction of approximately 12.5 million tons of aggregate material from the El Monte Valley for commercial use. The project would extract, process, and market aggregate using conventional earth moving and processing equipment. Extractive and reclamation operations for the project are expected to continue for approximately 16 years (12 years of mining and

reclamation, with an additional 4 years of reclamation following completion of mining).

The project includes the following three principal components described below; a sand mining component, a reclamation component, and a revegetation component. Additional project description detail is provided in the draft Environmental Impact Report (ESA 2018a).

1.2.3.1 Sand Mining Component

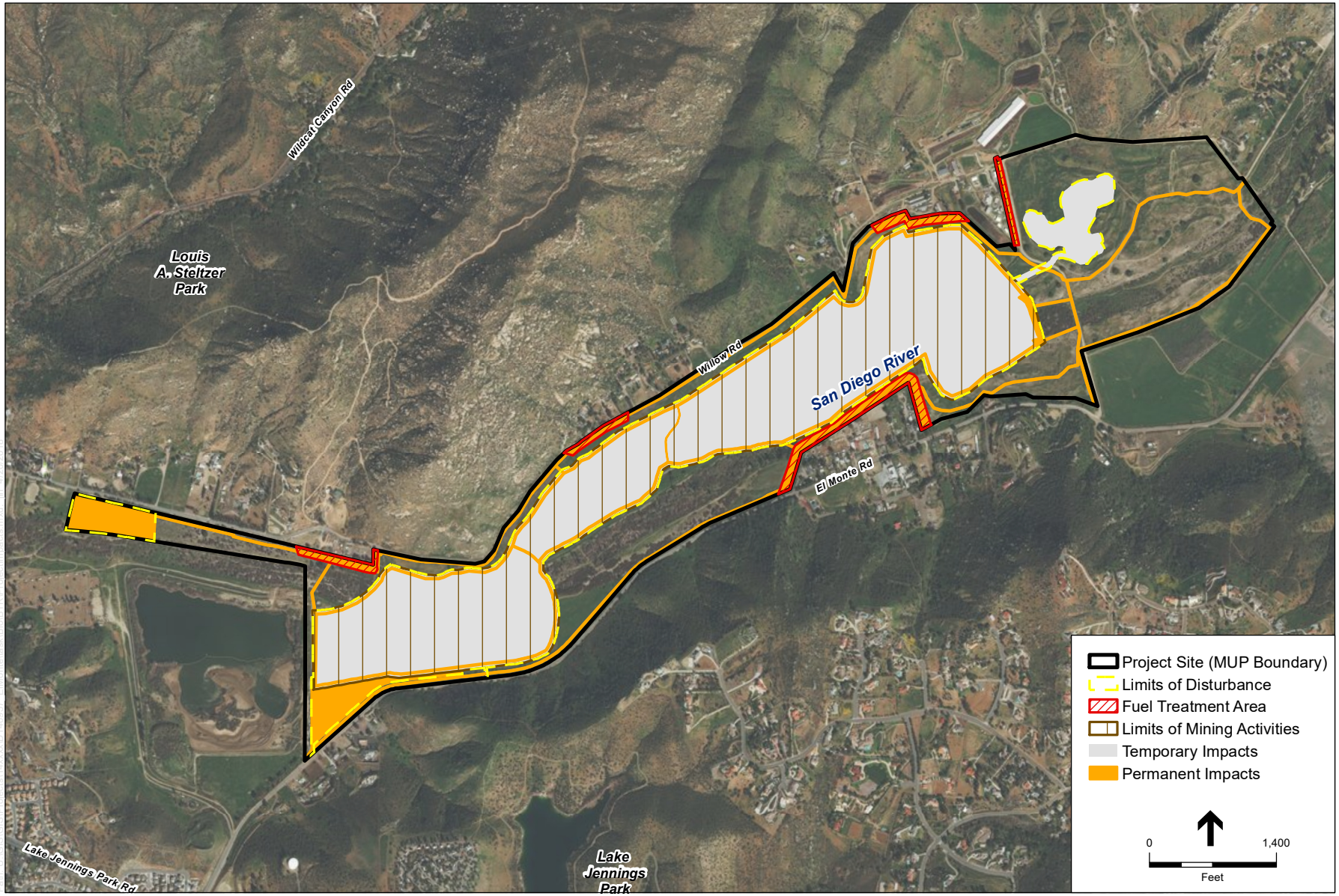
The proposed project would extract approximately 12.5 million tons of PCC-grade construction sand and gravel (aggregate) over a 12-year period, subject to market conditions. The project site is a total of approximately 479.5 acres, and mining activities would occur within approximately 243 acres. The approximate 243-acre mining area includes three dry depressions that were previously excavated for the golf course. The maximum excavation depth for the proposed mining activities would be between 36 to 41 feet below normal ground surface. Mining would proceed according to four phases as described in **Table 1** and depicted in **Figure 4**. Excavated material would total 13.5 million tons with approximately 12.5 million tons of construction aggregate produced and 1.0 million tons of overburden retained onsite.

TABLE 1. PROPOSED MINING AND RECLAMATION PHASING

Mining Phase	Area of Disturbance (acres)	Mining Duration (years)	Mining Initiation Date (est.)	Mining Completion Date (est.)	Reclamation Completion Date (est.)
1	93	4	2019	2023	2027
2	52	3	2023	2026	2030
3	48	3	2026	2029	2033
4	50	2	2029	2031	2035
Total	243[1]	12	-	-	-

[1] Rounded to the nearest acre; note that this does not include trails and fuel modification zones outside the mining phases. Fuel modification zones would be located onsite, in areas adjacent to existing residences.
Source: ESA 2018a; Chang Consultants 2018

Mining operations would consist of excavating materials with wheeled front-end loaders; moving the material directly into the processing plant. One off-road haul truck would be used to transport wash fines from the plant for use as fill in the depression east of Dairy Road, and to transport wash fines for use as backfill for construction of the final topography. A slurry pipeline may also be used to transport wash fines to the depression. Prior to filling the depression, sediment would be stockpiled near the depression parallel to the prevailing wind direction for dewatering prior to being used as fill. Fugitive dust control measures for these stockpiles would include surface watering, use of wind barriers, and if necessary, covering with polyethylene tarps.



SOURCE: NAIP 2014; EnviroMine March 11, 2016

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Figure 4

Project Impacts

Operations would commence at the eastern limits of the excavation area where a channel erosion barrier, or drop structure, would be constructed across the San Diego River channel to prevent head cutting of the channel to the east during periods of water flow in the river channel. The drop structure would be located approximately 300 feet west of Dairy Road, and would consist of grouted rip rap approximately 2.7 feet thick. Cut slopes would be mined at a constant 3H:1V (horizontal: vertical) slope.

A 20-foot-wide bench would be constructed around the entire pit, excluding the drop structure. The bench would be located approximately 30 feet interior of the 150-foot setback and 10-feet below the setback elevation. The bench would have approximately 20 feet of flat to gently sloped surface with a 3H:1V slope between the bench and the 150-foot setback area. There would be approximately 20 feet of elevation difference between the surface of the bench and the bottom of the pit. Final cut slopes would be at a 3H:1V ratio (**Figure 5**).

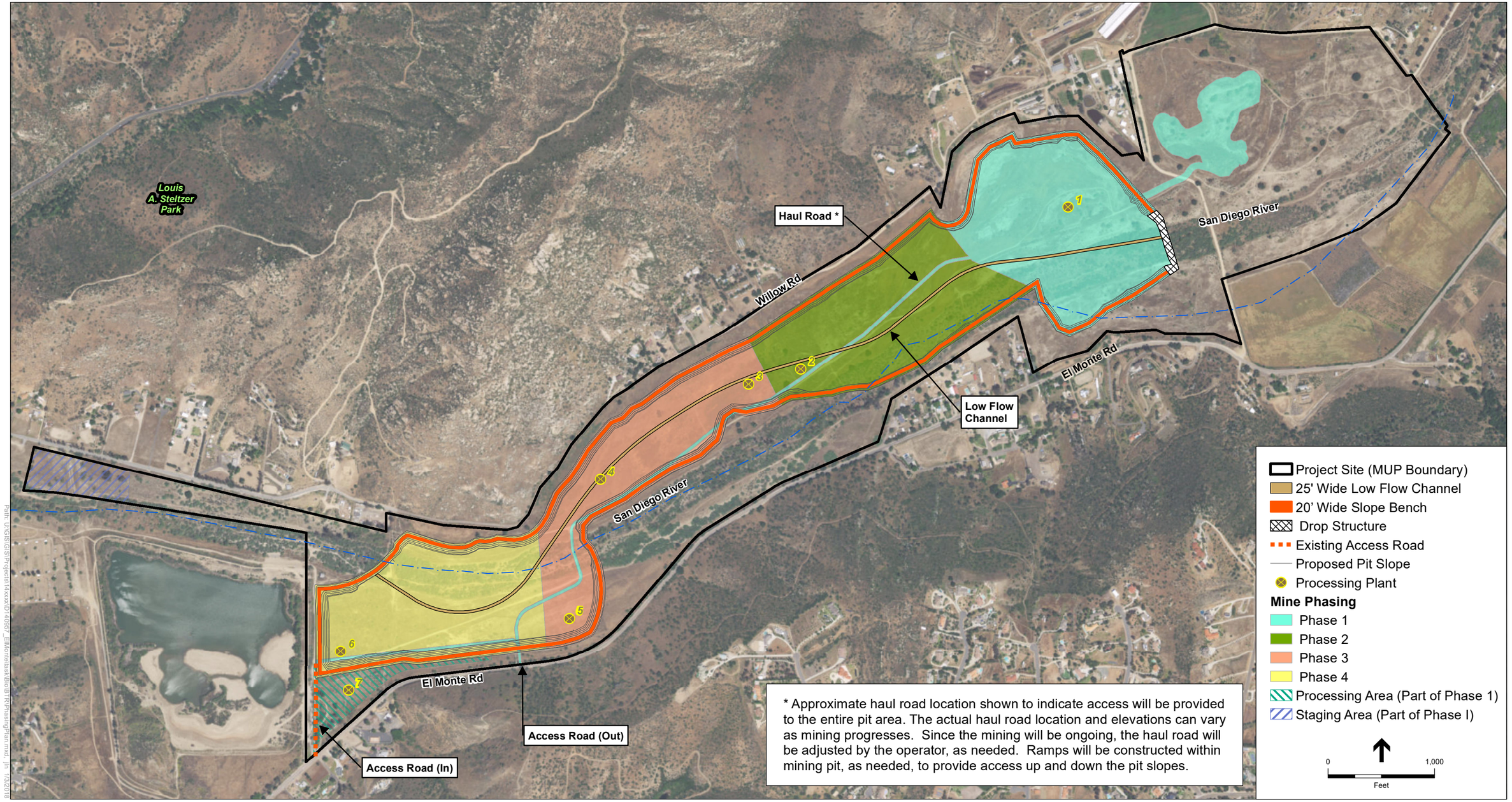
Mining would begin with site preparation, and progress in a series of westerly advancing phases (Phases 1 through 4) generally moving from upstream to downstream, as described in detail below. with reclamation completed as final reclaimed surfaces are established. In the final phase (Phase 4), the western portion of the project would be extracted, all equipment removed from the property, and the final area (52 acres) of mining related disturbance reclaimed.

Phase 1

During the first phase (Phase 1), extractive operations would commence at the far eastern portion of the mining area approximately 300 feet west of Dairy Road for a 4-year duration (Figure 4).

Initial mining operations would involve removal of all materials from the surface to approximately 10 feet above the water table (approximately 36 to 41 feet bgs) with wheeled front-end-loaders. Approximately 93 acres would be included in Phase 1, including the previously excavated depressions.

A portion of the wash fines produced from the processing plant would be used to refill a large depression created by the abandoned golf course project. This depression is located east of the extraction area and east of Dairy Road. Once filled, the resulting surface and surrounding areas would be revegetated. The depression would be backfilled with approximately 450,000 tons of wash fines as part of the proposed project. Fill would be transported by truck or pumped using a slurry pipe. Once the depression is filled, wash fines would be directed through a series of settling basins near the processing plant area. The settling basins would be used to collect wash fines, which would be sold as a soil amendment or incorporated into surface areas to be reclaimed. The wash fines would be spread evenly onsite and incorporated into the surface areas in preparation for planting. Loaders or a haul truck would be used to transport wash fines in the pit area.



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SOURCE: ESRI; EnviroMine; The Altum Group; Chang Consultants; ESA; SanGIS

El Monte Sand Mining Project . 140957

Figure 5

Phasing Plan

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Phase 2

Phase 2 would continue the same extraction process as Phase 1 for approximately 52 acres in an east to west direction on the adjacent area west of Phase 1 (Figure 4). In addition, the processing plant area and access road would be moved westward. Phase 2 is anticipated to last approximately three years, and the maximum depth of excavation would be approximately 36 to 41 feet below the ground surface. Excavated materials would be loaded directly into the processing plant by a wheeled front-end-loader. At the same time, reclamation of Phase 1 would begin as the final land forms are established, and would include the establishment of all final slopes, incorporation of any accumulated wash fines and topsoil, and revegetation using native species, weed control, and monitoring.

Phase 3

Phase 3 would continue the same extraction process as Phase 2 on approximately 48 acres in an east to west direction on the adjacent area west of Phase 2 (Figure 4). Phase 3 is anticipated to last approximately three years. During Phase 3, the processing plant would be moved south of the channel. At the same time, reclamation of Phase 2 would begin and monitoring of the Phase 1 reclamation would continue.

Phase 4

Phase 4 would continue the same extraction process as Phase 3 on approximately 50 acres in an east to west direction on the western end of the project site (Figure 4). Following the cessation of extractive operations (approximately two years), all equipment and temporary structures would be removed from the project site. Remaining access road segments and operational related disturbance would be graded to the final reclamation contours and revegetated. Reclamation of Phase 3 would begin and monitoring of Phase 2 would continue as Phase 4 commences.

1.2.3.2 Reclamation Plan Component

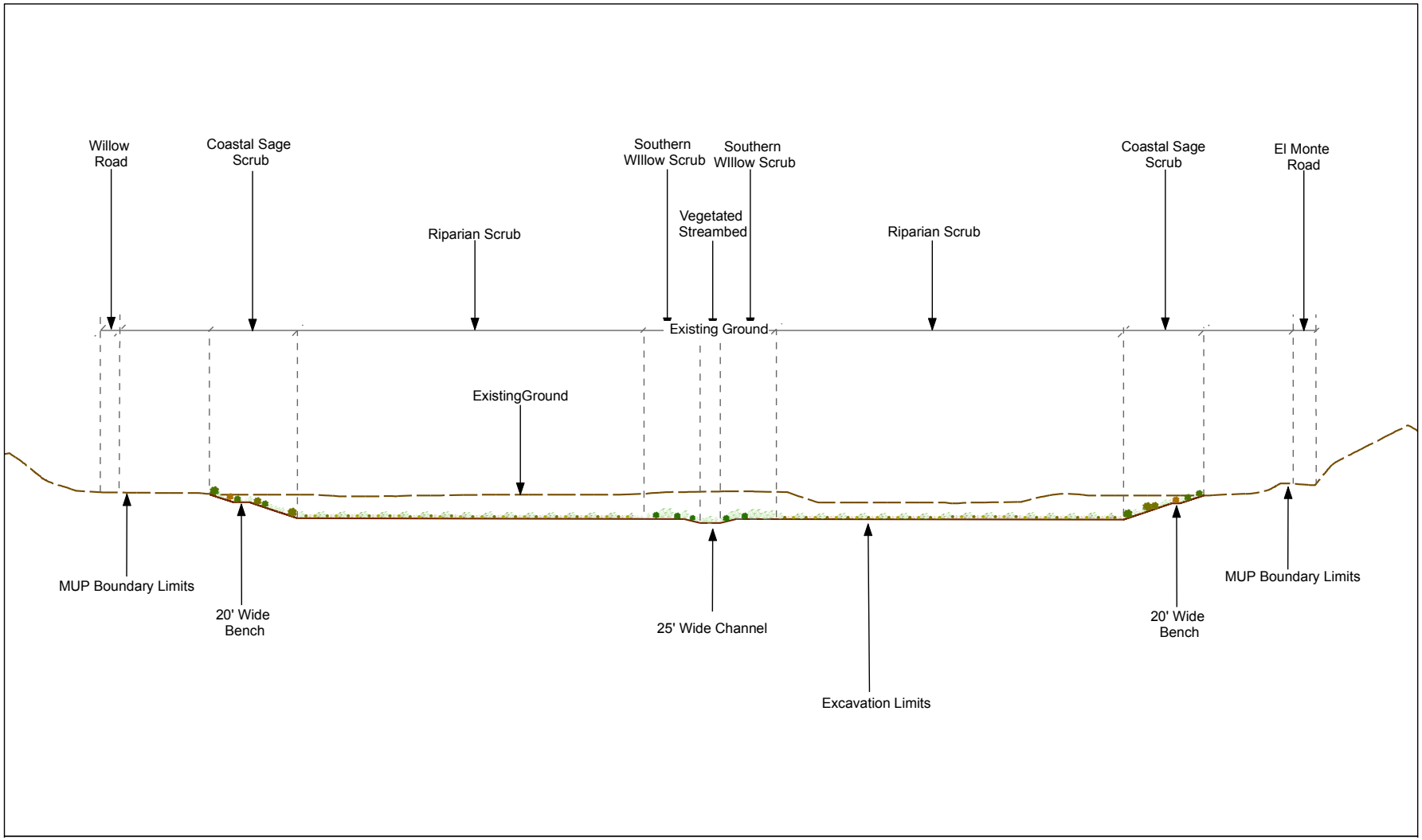
The Reclamation Plan Component includes the reclamation of mined lands to a usable condition for beneficial end uses, pursuant to SMARA requirements. Reclamation of the project site would be continuous and follow the mining phases across the site from east to west. Successful reclamation would return the project site to a beneficial end use of open space with recreational trail easements. A Draft Reclamation Plan has been prepared (ESA 2018b). The Draft Reclamation Plan is included in **Appendix A**.

The Reclamation Plan Component consists of removing all equipment used for mining activities, establishing the final topography, stabilizing the soil, and revegetating the area disturbed by mining activity. Reclamation is an ongoing process that commences when mining operations have ceased within a given area and continues until all mining related disturbance is reclaimed and all equipment involved in these operations have been removed. The Reclamation

Plan is intended primarily to stabilize the soil, as well as restore the project area to open space with a recreational trail system as the end use. It would stabilize the post-extraction landform, provide visual integration with the natural landscape, and establish a native vegetative cover. The Reclamation Plan has been prepared for the proposed project that describes the methods that would be used to reclaim the project area following the completion of mining, according to SMARA and Sections 1810 and 6550-6556 of the County Zoning Ordinance (Appendix A and **Figure 6**) (ESA 2018b).

In accordance with SMARA (1975), reclamation would be conducted over all areas disturbed from mining and processing activities, not including permanent impact areas (i.e., drop structure/rock dam, fuel management zones, trails, and staging areas), and designated compensatory habitat mitigation areas. The objectives are to utilize native plants species (capable of self-regeneration without dependence on irrigation) applied by seeding to (1) provide vegetative cover sufficient to stabilize the surface against the effects of long-term erosion, (2) provide vegetative cover that visually integrates the site with surrounding areas, and (3) to meet the post-extraction land use objectives of the site. As part of this effort, if soil analysis conducted prior to implementation of the revegetation plan shows that fertility levels or soil constituents are inadequate to successfully implement the reclamation, soil amendments would be incorporated. As presented in the draft Reclamation Plan (2018), wetland/riparian and upland native plant seed mixes and container plant palettes have been prepared which would be applied to areas based on post-mining grades and ecological conditions. As stated in the draft Reclamation Plan, reclamation is not intended to meet natural habitat (i.e., compensatory mitigation) performance standards. The reclamation performance standards presented in the plan, which are sufficient to meet SMARA standards, include 50 percent cover of all native species combined, 100 percent of the most prevalent species shall be native, and management (control) of noxious weed species. Monitoring by visual observation would occur periodically to determine whether noxious weed control is necessary. And reclamation areas would be quantitatively monitored (by sampling 12 randomly placed 50-meter by 1-meter transects) once per year to compare actual reclamation performance with the performance standards. As presented in the draft Reclamation Plan (ESA 2018b), when the County agrees the reclamation areas meet performance standards for two consecutive years, no further monitoring would be required and the operator may apply for release of financial assurances. Additional information on reclamation is included in the Reclamation Plan (ESA 2018b).

Reclamation would be completed for each phase after the completion of mining in that specific area. Final landforms would be established and the area planted with the native species identified in the reclamation plan. This procedure would result in approximately 75 to 80 percent of the disturbed lands being reclaimed by the time extractive operations are complete. The remaining twenty percent would be reclaimed thereafter during the appropriate season.



SOURCE: EnviroMine, Inc.

El Monte Sand Mining Project . 140957

Figure 6
Reclamation Plan

Approximately 400,000 cubic yards of wash fines would be used as backfill in the pit. Wash fines would be used as a top dressing and incorporated into the surface by ripping or disking. During the late summer or early fall months these final land form areas would be prepared for seeding and irrigation pipelines (if used) installed. Seeding and planting would occur in the November to February time period to take advantage of the natural precipitation season for Southern California. At the end of the extraction operations in Phase 4, about 50 acres of disturbed land would remain to be graded and revegetated, as the majority of land disturbed by the operation would have already been reclaimed and revegetated. Reclamation is expected to continue for up to four years after the cessation of mining. Work completed during this time would include removal of all equipment, final grading, removal of roads, preparation for seed beds and planting. Monitoring of the revegetation effort and weed control of all the reclaimed areas would continue to be implemented. Erosion and sediment control would also be monitored and repaired if necessary.

The final landform would be a depression in the excavated area with a single 20-foot-wide bench located 20 feet above the bottom of the excavated plain. A low-flow meandering channel would be constructed in the pit bottom to direct water westward from storm events that produce runoff from the surrounding hillsides. This channel would be approximately 5 feet deep, with a 25-foot-wide bottom and 4:1 side slopes. The pit bottom would slope up at the western end to the existing grade.

If enough water runs off the surrounding slopes of the 8,400-acre watershed and/or water is released from El Capitan Reservoir during flood events a pond may form in the pit. . Approximately 2,000 acre-feet would be temporarily stored within approximately 75 acres if the pit were completely filled. This pond would gradually decrease in size and depth during dry seasons/periods as water infiltrates into the groundwater system and evaporates.

1.2.3.3 Revegetation Plan Component

A Draft Conceptual Revegetation Plan has been prepared that describes the methods of habitat revegetation, performance standards, success criteria, monitoring, and potential remedial measures (ESA 2018c). Although the Revegetation Plan is a separate document from the Reclamation Plan, it was designed to be compatible with the goals and methods of the Reclamation Plan, and implemented concurrently. In the event that the plans differ from one another, the more stringent of the two would be implemented. For example, if the Revegetation Plan (per the County's requirements for habitat mitigation) requires higher standards for the final success criteria than are in the Reclamation Plan (per the requirements of SMARA), the higher standards would be implemented. Reclamation and revegetation would be completed 4 years after mining is complete. The Draft Conceptual Revegetation Plan is included in **Appendix B**.

The Revegetation Plan includes the restoration and creation of self-sustaining riparian and native upland habitat, and describes the methods of habitat restoration, performance standards, success criteria, monitoring, and potential remedial measures. Implementation of the Revegetation Plan would result in the restoration/creation of habitat that exceeds the minimum mitigation and reclamation plan requirements. Jurisdictional resource (wetland/riparian) and upland compensatory mitigation areas would be implemented within the project limits based on final mitigation replacement ratios for sensitive habitats and areas approved by the County and regulatory resource agencies. Planned compensatory mitigation to address County requirements is presented in this plan herein, and objectives include establishment and preservation of good quality, self-sustaining natural habitats. Good quality habitat is defined as a vegetation community that includes a diverse assemblage of native plant species appropriate for site conditions and limited presence of non-native plant species, plus functional attributes including positive buffer and landscape connectivity, and appropriate hydrology, physical structure, and biotic structure. All these conditions and attributes are included in the project's proposed monitoring program and success standards. Final compensatory mitigation areas and requirements of the County and resource agencies may, or may not be, the same. Compensatory mitigation presented herein would include a combination of native container plants and seed; temporary irrigation; maintenance activities including weed control; qualitative and quantitative (e.g., transect) monitoring including a functional assessment of wetland/riparian habitat; success standards for 5 years with annual milestones to verify establishment; and provisions for mitigation area preservation and long-term management. Successful implementation of compensatory mitigation areas would concurrently meet reclamation objectives and performance standards. Additional information on reclamation is included in the Reclamation Plan (ESA 2018b) and additional detail on the revegetation is provided in the Revegetation Plan (ESA 2018c).

Project site revegetation/restoration activities will be implemented in a phased approach moving from east to west across the project site as mining is completed. An overall restoration plan shall be approved by the County prior to the initiation of Phase 1 mining operations, including invasive species removal outside of the mining limits. Individual 40-scale restoration plans will be prepared for each phase and approved prior to the initiation of mining for the phase. Once Phase 1 mining has been completed and prior to the second half of Phase 2 mining operations being initiated, Phase 1 revegetation/restoration shall be implemented including, but not limited to, final restoration grading/slope stabilization, salvaged top soil placement and amendment, container planting, hydro-seed application/imprinting, temporary irrigation, erosion control, fencing and signage. Partial grading/mining of the subsequent mining phase is required to create a safe means of access for equipment and personnel to the previously mined phase to facilitate initiation the above outlined restoration activities. Once the revegetation/restoration installation has been completed for a particular phase, it will be reviewed by the County for conformance with the approved Revegetation Plan and will trigger the beginning of the monitoring and reporting

period. Restoration/revegetation activities may be further broken down into sub-phases at the discretion of the mine operator. Ongoing maintenance is required to manage invasive species and trespass and is not part of the revegetation/ restoration activities that must be completed prior to moving on to the next phase of mining, as it is an ongoing activity. Revegetation/restoration bonding is required by phase prior to phase mining and will be released upon the successful completion of the phase restoration/revegetation installation, as determined by the county. Reclamation/revegetation would be completed four years after the fourth phase of proposed sand mining is complete.

The Conceptual Revegetation Plan prepared for this proposed project also incorporates riparian habitat mitigation required for impacts that occurred on the property in 2005 to disturbed riparian habitat (tamarisk scrub). In 2005, grading that had been underway on the El Monte project site for a previously approved golf course project was halted and the golf course project was not completed. As a result, 200.56 acres of the El Monte mine project site was disturbed by the grading activities, 91.86 acres of which are located within the currently proposed mine impact area and 108.7 which are located outside of the currently proposed mine impact area. As part of the entitlement process for the golf course project, biological resource-related EIR mitigation measures (as documented in the EIR for the golf course project) and golf course project conditions of approval were adopted and were required to be implemented to mitigate golf course-related grading impacts to onsite biological resources. The EIR mitigation measures and conditions of approval were never implemented, and as a result, are now being included with the biological resource mitigation measures for the proposed mine project. A total of 0.18 acre of disturbed riparian scrub was impacted by the golf course project grading outside of the proposed mine impact area which requires mitigation, and the balance of the golf course-related grading impacts outside of the mine impact area were to agricultural land which does not require mitigation. Golf course-related grading biological resource impacts to the area currently proposed for the mine area are covered by the proposed mine project biological resource mitigation measures. The previous golf course-related impact to 0.18 acre of disturbed riparian scrub is now being incorporated in this Revegetation Plan and mitigated at the current County of San Diego 3:1 replacement ratio (for impacts to riparian scrub habitat) through the restoration of 0.54 acre of riparian scrub onsite. This golf course-related grading impact and mitigation measure has been incorporated into the proposed mine project Conceptual Revegetation Plan, Reclamation Plan and biological resources EIR section.

Recreational Use

Implementation of the proposed project would include a new recreational trail system. As shown in Figure 7, the proposed project has been designed to incorporate the trails and pathways conceptually depicted on the County Community Trails Master Plan and the Lakeside Community Trails Master Plan. There is currently unauthorized use of the project site by equestrians, bicyclists,

and pedestrians; however, there are no dedicated trails on the project site. Trails were determined in coordination with the project applicant and the County of San Diego Department of Parks and Recreation in accordance with these trails plans. The trails/pathways would generally border the area of disturbance and the MUP boundary. Proposed onsite trails/pathways have been designed to connect to existing and planned future offsite trails/pathways in the vicinity of the project site with consideration given to the biological and habitat restoration goals of the proposed project (e.g., trails at river crossings were determined where mining limits are the narrowest and/or where there are existing roads or trails). The final precise alignments are dependent upon several variables including input from state/federal resource agencies regarding sensitive resources, as well as public stakeholders.

The locations of the trails and pathways depicted in Figure 7 form the basis for the trails/pathways-related impact analysis and development of mitigation measures, with consideration given to the reclamation, restoration, and revegetation plans for the proposed project. The 10-foot wide pathways and two-foot wide trails would be located within respective 20-foot wide easements. In addition to the trail/pathway alignments shown in Figure 5, the locations of two proposed trail/pathway staging areas, and associated trail construction phasing is also shown.

In general, the onsite Regional Trail (Type D) will be designed to accommodate Regional Trail users, with Community Pathways (Type C) designed to accommodate trail users along the perimeter of the project site/MUP boundary. The onsite trails are proposed to cross the San Diego River bed three times and the mining pit low flow channel once with Arizona crossings. The Arizona crossings will traverse the onsite low flow channel/riverbed side slopes (with switchbacks if required) and cross the channel /riverbed at grade. Riverbed/channel crossings will be closed during the infrequent storm events with active surface water flow.

The applicant would be responsible for constructing and maintaining the onsite trails and staging areas until such a time that they are dedicated to the County. Once dedicated to the County, the County would take responsibility of maintenance. If the trails are not dedicated to the County, they would be maintained by a future conservation organization that the site would be eventually transferred to.

Revegetation Methods

Because the Owner proposes to mitigate for impacts associated with the mining component on the project area, the County requires the preparation of a conceptual Revegetation Plan, Open Space Map, fencing and sign exhibit, and Resource Management Plan (RMP) for the mitigation areas. The RMP must be prepared in accordance with the County's Report Format and Content Requirements for Biological Resources and approved by the County of San Diego and Wildlife Agencies (CDFW and USFWS), and the conceptual

Revegetation Plan must be prepared in accordance with the County's Report Format and content Requirements for Revegetation Plans. The Revegetation Plan focuses on the methods of habitat restoration that is required as mitigation for impacts to sensitive native vegetation communities (ESA 2018c; Appendix B). Revegetation would be conducted on the entire disturbed area. Mitigation and enhancement occurring in each phase by vegetation type is provided in **Figure 7**. The Revegetation Plan covers restoration of 113.92 acres and enhancement of 64.16 acres within the project area. As described previously, the Revegetation Plan was designed to be consistent with the Reclamation Plan, and the two plans can be implemented concurrently. Both plans must be approved by the County prior to initiation of the project.

Revegetation would occur where temporary impacts occur to address Reclamation Plan, County, and resource agency requirements for compensatory mitigation. The restoration plan was designed to provide high quality habitat that is compatible with the post-project topography and hydrology. As such, some of the temporarily impacted habitat, non-native grassland and tamarisk scrub, would be mitigated out-of-kind (i.e., with a different, habitat type with a similar biological function and value). This revegetation would result in a net increase in native habitat acreage onsite and improve overall native habitat quality and functions. Restoration of habitat beyond those limits is not required or proposed.

Pursuant to the Revegetation Plan, soils would be stabilized, irrigation systems and drainage contours would be installed, overburden/topsoil and mulch would be spread onsite, and native vegetation would be planted and/or seeded. Prior to seeding, materials used as final cover would be analyzed to determine the presence of elements essential for plant growth. If the soils analysis shows that fertility levels or soil constituents are inadequate to successfully implement the revegetation program, fertilizer or other soil amendments may be incorporated into the soil through direct broadcasting and/or hydro seeding. Equipment that could be required during construction and maintenance of the reclamation and revegetation components of the project include pickup trucks, a backhoe, water trucks, a hydro seeder, a bobcat, and sprinklers/bubblers. Work crews would use the project staging/access areas for reclamation and revegetation activities.

A native species plant palette appropriate for each target vegetation community and local site conditions would be used. All restored areas would be planted with hydro seed, pole cuttings, potted plants, and/or hand sowing. The upper bench/slopes, and the filled-in dry depression, previously excavated as a golf course pond, would be planted with coastal sage scrub. The bottom of the mining pit would be planted with riparian habitat; southern willow riparian forest would be planted along the low flow channel and would transition to riparian scrub between the channel and perimeter slopes. It is expected that some intermixing of these species would occur along the edges of each area.

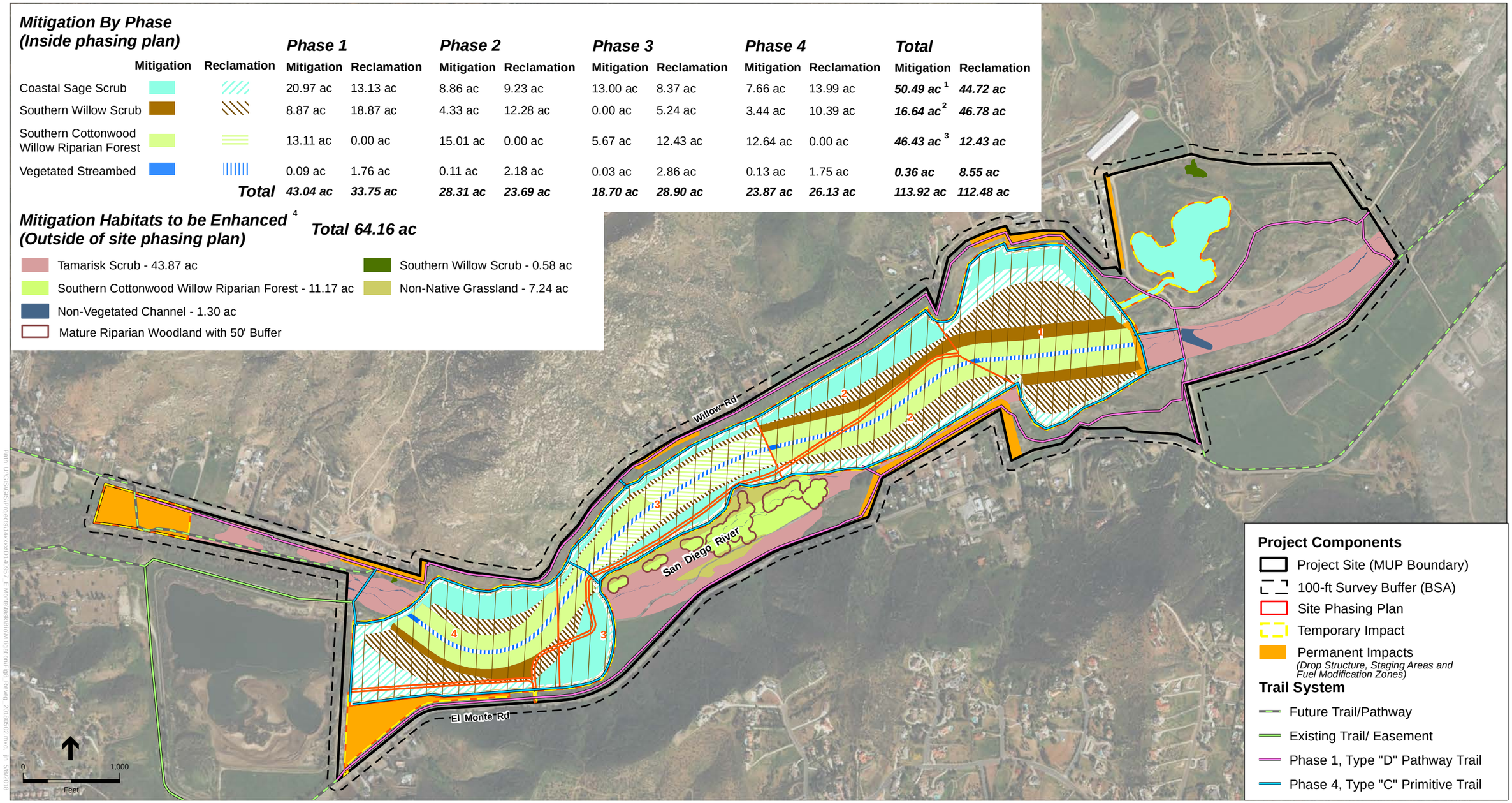
Mitigation By Phase (Inside phasing plan)

	Mitigation	Reclamation	Phase 1 Mitigation	Phase 1 Reclamation	Phase 2 Mitigation	Phase 2 Reclamation	Phase 3 Mitigation	Phase 3 Reclamation	Phase 4 Mitigation	Phase 4 Reclamation	Total Mitigation	Total Reclamation
Coastal Sage Scrub			20.97 ac	13.13 ac	8.86 ac	9.23 ac	13.00 ac	8.37 ac	7.66 ac	13.99 ac	***50.49 ac*** [1]	***44.72 ac***
Southern Willow Scrub			8.87 ac	18.87 ac	4.33 ac	12.28 ac	0.00 ac	5.24 ac	3.44 ac	10.39 ac	***16.64 ac*** [2]	***46.78 ac***
Southern Cottonwood Willow Riparian Forest			13.11 ac	0.00 ac	15.01 ac	0.00 ac	5.67 ac	12.43 ac	12.64 ac	0.00 ac	***46.43 ac*** [3]	***12.43 ac***
Vegetated Streambed			0.09 ac	1.76 ac	0.11 ac	2.18 ac	0.03 ac	2.86 ac	0.13 ac	1.75 ac	***0.36 ac***	***8.55 ac***
Total			***43.04 ac***	***33.75 ac***	***28.31 ac***	***23.69 ac***	***18.70 ac***	***28.90 ac***	***23.87 ac***	***26.13 ac***	***113.92 ac***	***112.48 ac***

Mitigation Habitats to be Enhanced [4] *(Outside of site phasing plan)*

Total 64.16 ac

- Tamarisk Scrub - 43.87 ac
- Southern Willow Scrub - 0.58 ac
- Southern Cottonwood Willow Riparian Forest - 11.17 ac
- Non-Native Grassland - 7.24 ac
- Non-Vegetated Channel - 1.30 ac
- Mature Riparian Woodland with 50' Buffer



Project Components

- Project Site (MUP Boundary)
- 100-ft Survey Buffer (BSA)
- Site Phasing Plan
- Temporary Impact
- Permanent Impacts *(Drop Structure, Staging Areas and Fuel Modification Zones)*

Trail System

- Future Trail/Pathway
- Existing Trail/ Easement
- Phase 1, Type "D" Pathway Trail
- Phase 4, Type "C" Primitive Trail

SOURCE: ESRI; ESA 2016; EnviroMine 2016

[1] Coastal sage scrub mitigation includes mitigation for coastal sage scrub (7.22 acres) and nonnative grassland (43.27 acres).

[2] Southern willow scrub mitigation includes mitigation for southern willow scrub (0.36 acre) and a portion of mitigation for tamarisk scrub (16.28 acres) within the site phasing plan.

[3] Southern cottonwood willow riparian forest mitigation includes mitigation for a portion of mitigation for tamarisk scrub within the site phasing plan (46.43 acres)

[4] Mitigation habitats to be enhanced include restoration of riparian and transitional habitat via exotic plant removal and activities to promote native plant revegetation (62.72 acres required, rounded to 64.16 acres).

Figure 7

Habitat Mitigation and Reclamation / Revegtation

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To ensure the success of plantings, post-revegetation monitoring would occur for 5 years following plant installation or until performance standards are met. Revegetation would provide higher-quality, self-sustaining native habitat, satisfy mitigation requirements for impacts to sensitive habitats, adequately drain water, and comply with the surrounding topography and land uses. Once the revegetation is deemed successful by the County, U.S. Fish and Wildlife Service (USFWS), and California Department of Fish and Wildlife (CDFW), the total mitigation area would be conserved in perpetuity (i.e., protected through a Biological Open Space Easement and placed under long-term preserve management).

1.3 Survey Methods

1.3.1 Literature Review

ESA conducted a review of available background information that included the following:

- Proposed project grading plans, site plans, project plot plan
- Aerial photography covering the project study area
- National Wetlands Inventory (NWI 2011) and US Geological Survey (USGS 2011) topographic maps
- Soils survey (Bowman 1973)
- El Capitan Golf Course Project EIR (EnviroMINE 1999)
- El Monte Nature Park Biological Technical Report (EDAW 2007)
- Draft El Monte Valley Mining, Reclamation, and Groundwater Recharge Project (ESA 2011a)
- El Monte Valley Oak Tree Assessment (ESA 2011b)
- Jurisdictional Determination and Wetland Delineation (ESA 2011c, 2016b)
- 2009 USGS San Diego River Least Bell's Vireo Summary Report (Lynn 2009)
- Focused Surveys for California Coastal Gnatcatcher (ESA 2015a)
- Focused Surveys for Least Bell's Vireo (ESA 2010, 2015b)

In addition, ESA conducted a review of the current California Natural Diversity Database (CNDDB) (2015), USFWS species database (USFWS 2015a), and USFWS Designated Critical Habitat data (USFWS 2015b) for known occurrences of special-status species and sensitive habitat types within a 5-mile radius of the project (**Appendix C**). ESA also reviewed the County's Comprehensive List of Sensitive Species. Sensitive species were then evaluated for their potential to occur within the survey area based on species' habitat requirements, habitat conditions onsite, known species distribution, and recorded observations.

Throughout this report, scientific nomenclature conforms to the Complete List of Amphibian, Reptile, Bird and Mammals Species in California for wildlife (CDFW 2014), and the Checklist of Vascular Plants of San Diego for plants (Rebman and Simpson 2014).

1.3.2 Field Survey Methods

The biological survey area (BSA) includes the project boundary and immediate vicinity consisting of a 100-foot buffer around the project perimeter. Biological surveys were conducted in 2006, 2010, 2015, and 2016 (EDAW 2007; ESA 2011a, 2015a, 2015b, and 2016b). During these surveys, the entire BSA was walked and all biological resources were recorded and mapped according to the County's Biological Resource Mapping Requirements (County 2010). Surveys were conducted in 2006 and 2010 based on previous proposed projects (that were not implemented) with similar boundaries to the current project. Biological survey methods conducted from 2006-2016 are discussed in the following pages; results of these surveys are discussed in within the confines of the current project boundary. For a complete list of all species observed onsite during the biological surveys, see **Appendix D**.

In 2006, Bloom Biological biologists conducted baseline vegetation community mapping and general biological surveys throughout the BSA (i.e., project boundary plus a 100-foot buffer). The vegetation communities were identified based on the composition and structure of the dominant vegetation observed at the time field reconnaissance was conducted. The vegetation types are based on the Holland (1986) classification system, as amended by Oberbauer et al. (2008). In addition, eight presence/absence protocol-level surveys were conducted for both least Bell's vireo and California coastal gnatcatcher from April 27, 2006, to July 25, 2006; these were conducted on-foot throughout the BSA with extra survey efforts expended in areas of particularly suitable habitat (**Table 2**) (EDAW 2007). Rare plant surveys were not conducted; however, all plant species encountered during the other surveys described above were recorded (see Appendix D, Table 1). All wildlife species observed during field surveys by sight, call, tracks, nests, scat (fecal droppings), remains, or other sign were also recorded (Appendix D, Table 2). Binoculars and field guides were used for identification, as necessary.

In 2010, ESA biologists Mark Tucker and Mitch Jenkins conducted general field reconnaissance and rare plant surveys within the BSA to document the existing site conditions, map habitat types, and determine the presence or absence of target plant and wildlife species (**Table 3**). Eight focused surveys for least Bell's vireo were also conducted by Mark Tucker and Mitch Jenkins from May 11 to July 31, 2010 (ESA 2010). The field surveys were conducted on foot throughout the BSA with extra survey effort expended in areas of highly suitable habitat. All plant species observed in the field were recorded. All wildlife species observed during field surveys by sight, call, tracks, nests, scat, remains, or other sign were

also recorded (Appendix D, Table 2). Binoculars and field guides were used for identification, as necessary.

In November 2010, ESA biologists Mark Tucker and Darren Burton conducted a jurisdictional delineation within the BSA (Table 3). The general methodology detailed in the 1987 USACE Manual was used as the basis to delineate wetland waters of the United States. The 2008 Arid West Supplement was used as the basis for determining and recording indicators for hydrophytic vegetation, hydric soils, and wetland hydrology. Both the USACE Manual and Arid West Supplement were consulted for the determination and evaluation of any normal circumstances, atypical situations, and problem area wetlands.

In January 2011, ESA biologist and certified arborist Greg Ainsworth conducted an oak tree assessment within the BSA. The purpose of this oak tree assessment was to map the locations of oak trees throughout the project area, identify trees that could be considered for preservation and retention, and identify protection and enhancement measures that could be implemented as part of the project design (ESA 2011b).

In 2015, ESA biologists Rosanne Humphrey and Alanna Bennett conducted focused species surveys for the least Bell's vireo and coastal California gnatcatcher. Eight least Bell's vireo surveys were conducted between May 8 and July 28, 2015 (**Table 4**), within suitable riparian habitat pursuant to current USFWS protocol (USFWS 2001). Nine coastal California gnatcatcher surveys were conducted in suitable coastal sage scrub habitat between July 10 and November 5, 2015, pursuant to current USFWS protocol (USFWS 1997). Rosanne Humphrey holds a valid USFWS permit for the coastal California gnatcatcher (Permit TE50466A-2). Breeding season protocol-level surveys conducted within areas not covered by the Natural Communities Conservation Planning (NCCP) program between February 15 and August 30 require six surveys to be conducted a minimum of one week apart. However, because of the timing of the County's scoping letter request, non-breeding protocol-level surveys were required, consisting of nine surveys conducted two weeks apart. During both the least Bell's vireo and coastal California gnatcatcher surveys, all plant species observed in the field were recorded, and the previous vegetation communities mapping was confirmed in the field by spot checking a variety of locations throughout the BSA. Additionally, wildlife species observed during field surveys were detected by sight, call, tracks, nests, scat, remains, or other signs, and were recorded in Appendix D, Table 2. Binoculars and field guides were used for identification, as necessary.

TABLE 2. 2006 SURVEY DATES AND ACTIVITIES

Date	Personnel	Purpose of Survey	Start Time	End Time	Area Surveyed	Observations	Environmental Conditions
4/27/2006	Bloom Biological	LBVI and CAGN surveys, general biological surveys	0600	1300	Entire BSA	No LBVI or CAGN detected	Overcast, 57 °F
5/6/2006	Bloom Biological	LBVI and CAGN surveys, general biological surveys	0600	1130	Entire BSA	No LBVI or CAGN detected	Partly cloudy, 73 °F
5/18/2006	Bloom Biological	LBVI and CAGN surveys, general biological surveys	0600	1200	Entire BSA	No LBVI or CAGN detected	Overcast, 72 °F
6/3/2006	Bloom Biological	LBVI and CAGN surveys, general biological surveys	0545	1100	Entire BSA	No LBVI or CAGN detected	Clear, 77 °F
6/17/2006	Bloom Biological	LBVI and CAGN surveys, general biological surveys	0530	1100	Entire BSA	No LBVI or CAGN detected	Overcast-clear, 83 °F
7/1/2006	Bloom Biological	LBVI and CAGN surveys, general biological surveys	0530	1100	Entire BSA	No LBVI or CAGN detected	Clear, 82 °F
7/13/2006	Bloom Biological	LBVI and CAGN surveys, general biological surveys	0530	1100	Entire BSA	No LBVI or CAGN detected	Clear, 80 °F
7/25/2006	Bloom Biological	LBVI and CAGN surveys, general biological surveys	0600	1200	Entire BSA	No LBVI or CAGN detected	Clear, 80 °F

TABLE 3. 2010 AND 2011 SURVEY DATES AND ACTIVITIES

Date	Personnel	Purpose of Survey	Start Time	End Time	Area Surveyed	Observations[1]	Environmental Conditions
4/28/2010	M. Tucker, M. Jenkins	General biology, habitat mapping, rare plants	0600	1700	Riparian corridor, adjacent terraces	General wildlife and plant list compiled; no LBVI detected,	Cloudy with drizzle, 55 °F, wind 5-10 mph
4/29/2010	M. Tucker, M. Jenkins	General biology, vegetation mapping	0600	1430	Entire BSA	General wildlife and plant list compiled	Partly sunny, 60 °F, wind 0-2 mph
5/6/2010	M. Tucker, M. Jenkins	Wildlife, rare plants, tree survey	0600	1330	Eastern portion of BSA	*Artemisia palmeri* detected	Partly cloudy, 51 °F, wind 0-2 mph
5/7/2010	M. Tucker, M. Jenkins	Wildlife, tree survey	0700	1430	Central portion of BSA	None of note[2]	Mostly sunny, 53 °F, wind 3-5 mph
5/10/2010	M. Tucker, M. Jenkins	Wildlife, rare plants, tree survey	0700	1630	Western portion of BSA	None of note[2]	Partly cloudy, 63 °F, wind 3-5 mph
5/11/2010	M. Tucker, M. Jenkins	Rare plants, LBVI survey	0630	1330	Riparian habitat; terraces	LBVI detected	Suitable survey conditions
5/28/2010	M. Tucker	LBVI survey	0730	1100	Riparian habitat	LBVI detected off-site at Hanson Pond	Partly cloudy, 61 °F, wind 0-2 mph
6/11/2010	M. Jenkins	LBVI survey	0630	1030	Riparian habitat	1 LBVI detected	Overcast, 63 °F, wind 0-2 mph
6/21/2010	M. Tucker	LBVI survey	0600	1100	Riparian habitat	3 LBVI detected	Overcast, 62 °F, wind 0-2 mph
7/1/2010	M. Jenkins	Rare plants, LBVI survey	0700	1400	Riparian habitat; potential *Ambrosia pumila* habitat	1 LBVI detected; no rare plants detected	Sunny, 65 °F, wind 3-5 mph
7/11/2010	M. Tucker, M. Jenkins	LBVI survey	0700	1100	Riparian habitat	no LBVI detected	Sunny, 68 °F, wind 2-5 mph
7/21/2010	M. Jenkins	LBVI survey	0700	1100	Riparian habitat	no LBVI observed	Sunny, 67 °F, wind 0-2 mph
7/31/2010	M. Jenkins	LBVI survey	0700	1100	Riparian habitat	no LBVI observed	Sunny, 71 °F, wind 3-5 mph
11/18/2010	M. Tucker, D. Burton	Habitat mapping, wetland delineation	0700	1600	Entire BSA	Wetlands delineated and mapped	Sunny clear; 70 °F; wind 0-2 mph
1/26/2011	G. Ainsworth	Tree assessment	0800	1400	Areas containing oak trees	Oak tree inventory, mapping, and assessment	Clear skies; 62 °F

[1] CAGN = coastal California gnatcatcher; CSS = coastal sage scrub habitat; LBVI = least Bell's vireo; mph = miles per hour [2] Details of survey conditions unknown.

TABLE 4. 2015-2017 SURVEY DATES AND ACTIVITIES

Date	Personnel	Purpose of Survey	Start Time	End Time	Area Surveyed	Observations[1]	Environmental Conditions[1]
5/8/2015	R. Humphrey, A. Bennett	LBVI and general biological survey	0750	1100	Riparian habitat	No LBVI detected	Cloudy and drizzly, 48 °F, wind 0-2 mph
5/22/2015	R. Humphrey, A. Bennett	LBVI and general biological survey	0640	1100	Riparian habitat	No LBVI detected	Cloudy and drizzly, 57 °F, wind 0-5 mph
6/2/2015	R. Humphrey, A. Bennett	LBVI and general biological survey	0650	1100	Riparian habitat	No LBVI detected	Sunny, 68 °F, wind 1-3 mph
6/12/2015	R. Humphrey, A. Bennett	LBVI and general biological survey	0650	1100	Riparian habitat	LBVI detected	Cloudy, 69 °F, wind 1-3 mph
6/23/2015	T. Molioo, A. Bennett	LBVI and general biological survey	0715	1100	Riparian habitat	No LBVI detected	Sunny, 80 °F, wind 0-1 mph
7/6/2015	R. Humphrey, A. Bennett	LBVI and general biological survey	0650	1100	Riparian habitat	LBVI detected	Cloudy and humid, 71 °F, wind 1-2 mph
7/10/2015	R. Humphrey, A. Bennett	CAGN and general biological survey	0650	1200	CSS habitat	No CAGN detected	Cloudy 69 °F, wind 0-2 mph
7/16/2015	R. Humphrey, A. Bennett	LBVI and general biological survey	0700	1100	Riparian habitat	LBVI detected	Cloudy, 70 °F, wind 2-4 mph
7/24/2015	R. Humphrey, A. Bennett	CAGN and general biological survey	0715	1200	CSS habitat	CAGN pair detected	Sunny, 70 °F, wind 0-5 mph
7/28/2015	R. Humphrey, A. Bennett	LBVI and general biological survey	0715	1100	Riparian habitat	No LBVI detected	Sunny, 69 °F, wind 0-5 mph
8/7/2015	R. Humphrey, A. Bennett	CAGN and general biological survey	0657	1200	CSS habitat	No CAGN detected	Sunny, 72 °F, wind 0-2 mph
8/21/2015	R. Humphrey, A. Bennett	CAGN and general biological survey	0650	1200	CSS habitat	No CAGN detected	Partly cloudy, 71 °F, wind 1-3 mph
9/4/2015	R. Humphrey	CAGN and general biological survey	0700	1200	CSS habitat	No CAGN detected	Partly cloudy, 72 °F, wind 0-2 mph
9/18/2015	R. Humphrey, A. Bennett	CAGN and general biological survey	0640	1200	CSS habitat	CAGN pair detected	Sunny, 71°F, wind 0 mph

Date	Personnel	Purpose of Survey	Start Time	End Time	Area Surveyed	Observations[1]	Environmental Conditions[1]
10/2/2015	R. Humphrey, A. Bennett	CAGN and general biological survey	0700	1200	CSS habitat	CAGN detected	Sunny, 66°F, wind 0-4 mph
10/5/2015	R. Humphrey, A. Bennett	Tree survey	0730	1430	Areas with willow, sycamore, oak, and/or cottonwood trees within impact area	Areas defined as Mature Riparian Woodland were mapped	Rainy, 62 °F, wind 3-6 mph
10/7/2015	A. Bennett, C. Casey	Tree survey	0700	1400	Areas with willow, sycamore, oak, and/or cottonwood trees within impact area	Areas defined as Mature Riparian Woodland were mapped	Sunny, 85 °F, wind 0-2 mph
10/8/2015	A. Bennett, C. Casey	Tree survey	0700	1400	Areas with willow, sycamore, oak, and/or cottonwood trees within impact area	Areas defined as Mature Riparian Woodland were mapped	Sunny, 86 °F, wind 0-3 mph
10/22/2015	R. Humphrey, A. Bennett	CAGN and general biological survey	0800	1200	CSS habitat	CAGN family group detected (3 individuals)	Sunny, 66 °F, wind 0-1 mph
11/5/2015	R. Humphrey, A. Bennett	CAGN and general biological survey	0700	1200	CSS habitat	CAGN pair detected	Sunny, 53 °F, wind 0-3 mph
1/21/2016	T. Molioo, A. Bennett	Jurisdictional Delineation	0800	1600	Riparian and wetland habitat	Wetlands delineated and mapped	Sunny, 70°F, wind 0-3 mph
4/28/16	J. Prine, A. Bennett	Rare plant survey	0800	1500	Riparian and upland habitat	Floristic inventory and rare plants mapped	Sunny, 65 °F, wind 0-5 mph
5/13/16	J. Prine	Rare plant survey	0800	1500	Riparian and upland habitat	Floristic inventory and rare plants mapped	Sunny, 70 °F, wind 0-5 mph
6/29/16	J. Prine	Rare plant survey	0800	1500	Riparian and upland habitat	Floristic inventory and rare plants mapped	Sunny, 77 °F, wind 0-5 mph
9/22/16	R. Humphrey	Upland Vegetation Mapping	0900	1400	Upland areas	Upland areas mapped	Sunny, 72°F, wind 0-2 mph
4/16/2017	B. Calantas, D. Koutnik	Quino habitat assessment	Not recorded		Upland areas	Appropriate habitat not detected	Not recorded

[1] CAGN = coastal California gnatcatcher; CSS = coastal sage scrub habitat; LBVI = least Bell's vireo; mph = miles per hour

In October 2015, ESA biologists Rosanne Humphrey, Alanna Bennett, and Courtney Casey performed tree surveys within the limits of mining activities (Table 4). The purpose of these surveys was to quantify the area of Mature Riparian Woodland. Mature riparian woodland, as defined in the County of San Diego's RPO, is "a grouping of sycamores, cottonwoods, willows and/or oak trees having substantial biological value, where at least ten of the trees have a diameter of six inches or greater" (County of San Diego 2007a). All qualifying tree species with a diameter at breast height of six inches or greater within the limits of mining activities were recorded with a Trimble GeoExplorer 6000 series. These data points were then mapped and analyzed. A polygon was drawn around areas with 10 or more trees within 100 feet from the next closest tree to distinguish the areas considered as Mature Riparian Woodland. In addition, with the aid of aerial maps, a wetland buffer of 50 feet from the tree canopy was added to the mapped areas. This buffer fulfills the wetland buffer requirement for areas subject to the RPO by protecting the functions and values of the existing wetland for the following reasons: The Mature Riparian Woodland consists of low to moderate-quality wetlands with low physical and chemical functions; vegetation is not dominated by hydrophytes, soils are not highly erosive, and slopes do not exceed 25 percent. In addition, the buffer is consistent with the 50-foot oak root protection zone requirement (County of San Diego 2010a).

On January 21, 2016, ESA biologists Tommy Molioo and Alanna Bennett conducted a jurisdictional delineation to update the delineation that was conducted by ESA in 2010. Prior to the 2016 field survey, ESA conducted a review of available background information pertaining to the project geography and topography prior to conducting the jurisdictional delineation, including a review of the 2010 survey data and GIS files, USFWS Wetlands Mapper, aerial photography, and topographic maps for the USGS 7.5-minute El Cajon, El Cajon Mountain, and San Vicente Reservoir, California topographic quadrangles. During the site visit, the potentially jurisdictional features were recorded in the field using aerial maps and a hand-held Trimble Geo-XH GPS unit, and representative photographs of the jurisdictional features were taken. The delineation methods were consistent with the 1987 USACE Manual and 2008 Arid West Supplement. The National List of Plant Species That Occur in Wetlands: California (Region 0) and the National Wetland Plant List (Lichvar 2014) were used to determine the wetland indicator status of plants observed within the project area. The general methodology detailed in the 1987 USACE Manual was used as the basis to delineate wetland waters of the United States. The 2008 Arid West Supplement was used as the basis for determining and recording indicators for hydrophytic vegetation, hydric soils, and wetland hydrology. Both the USACE Manual and Arid West Supplement were consulted for the determination and evaluation of any normal circumstances, atypical situations, and problem area wetlands.

On April 28, May 13, and June 29, 2016, ESA biologists Jim Prine and Alanna Bennett conducted a rare plant survey throughout the BSA. Prior to conducting rare plant surveys, ESA conducted a review of the sensitive species databases

for known occurrences of special-status plant species and soil types within a 5-mile radius of the project. The County's Comprehensive List of Sensitive Species was also reviewed. Sensitive plant species were then evaluated for their potential to occur within the BSA based on species' habitat requirements, habitat conditions onsite, and recorded observations. Rare plant surveys were performed from spring to summer to encompass peak blooming season for species with a moderate to high potential to occur within the BSA. The entire BSA was surveyed on foot; however, special attention was given to native habitat, which generally has a higher chance for rare plant species to occur. All plant species observed while performing rare plant surveys were documented with a hand held global positioning system (GPS) unit.

On September 22, 2016 ESA biologist Rosanne Humphrey conducted a higher resolution vegetation mapping within upland areas than that performed in 2015, which consisted of spot checking previous mapping and aerial map evaluation. The purpose of the 2016 mapping was to refine the boundaries of non-native grassland and disturbed habitat, as these habitat types can be quite similar to one another. Prior to the field visit, the County's *Report Format and Content Requirements for Biological Resources* guidelines and *Draft Vegetation Communities of San Diego County* (Oberbauer et al. 2008) were reviewed for definitions of these upland communities. Upland areas east of Hanson Pond on both sides of the river channel were surveyed on foot. Photo-points were established at 25 locations. At each location, approximately four photos were taken, one in each direction, and detailed notes were recorded describing the dominant plant species. The points were located within homogenous patches of vegetation to characterize each area. In addition, photographs and notes were taken of small patches of coastal sage scrub habitat that had not been previously mapped. Based on the information collected in the field and an evaluation of current and historical aerial maps, the upland vegetation communities mapping was updated and incorporated into the Geographic Information System (GIS) vegetation layer.

On April 12, 2017, senior ESA biologists Barbra Calantas and Daryl Koutnik performed a focused habitat assessment for the Quino checkerspot butterfly. The habitat assessment was conducted in accordance with the USFWS *Quino checkerspot Butterfly Survey Guidelines* (December 15, 2014) for the entirety of the project area and the 500-foot buffer, outside of areas mapped as developed, or riparian. Areas within the 500-foot buffer were assessed visually and at a distance using 8x32 binoculars, since these areas consisted of private property were foot access was not possible. The project area was walked by ESA biologists with a focus on areas that would be considered excluded according to the USFWS protocol. All other areas were assessed for features of suitable Quino habitat, including the presence of larval host plants (dot-seed plantain [*Plantago erecta*], woolly plantain [*Plantago patagonica*], Coulter's snapdragon [*Antirrhinum coulterianum*], rigid bird's beak [*Cordylanthus rigidus*], owl's clover [*Castiella exserta*], and purple Chinese houses [*Collinsia heterophylla*]), clay soils, nectar sources, cryptogrammic crusts, and rocky outcroppings.

The timing of field surveys for the project was considered suitable for the identification of potentially occurring special-status plant species. There were no significant limitations to the rest of the surveys performed, such as timing, season, or inability to access or observe portions of the project area or observe adjacent properties.

1.4 Environmental Setting (Existing Conditions)

Existing conditions relevant to the project area are provided in this section, including site history, topography, geology and soils, climate, historic and existing land uses and zoning, followed by existing conditions related to biological resources within the project area.

Site history – Information on the history of the project site is based on personal knowledge from the project applicant.

In the 1940s, Helix Water District (Helix) acquired the approximately 500-acre El Monte valley property. Prior to their acquisition, the City of San Diego opened the El Capitan reservoir and its dam, permanently shutting off all water flow to the lower San Diego River valley. The property had been farmed prior to the Helix acquisition, and was used as grazing land for local dairy cattle. Prior to dairy farming, water of the San Diego River flowed continuously to the sea from headwaters above the valley. The valley was a frequent gathering and seasonal camping area for local Native American tribes. Shortly after the land acquisition, Helix began tapping into the groundwater for its water customers in the East County.

In the early 1950s, with sand deposited in the valley by river flow and the river no longer flowing to the sea, the site was initially mined by local aggregate suppliers who left the river valley neither reclaimed nor restored. Additional mining efforts occurred in the 1970s and early 2000s. The Hanson (Sloan) mining effort from the middle 1970s until the early 1990s occurred at the west end of the valley, left a 60-acre pond, following an 85-foot deep excavation and the sale and export of 5 million metric yards of aggregates. Through this period of approximately 20 years until the early 1990s, truck traffic routinely picked up sand at the site and transported it throughout the County. A reclamation plan for the Hanson site was submitted to the California State Mining Bureau under the new SMARA required rules for reclamation plans. Actual reclamation and restoration on the site however, did not begin until 2015.

In the 1980s and early 1990s, the valley was flooded on two separate occasions as a result of overtopping events at the dam. Extensive flooding of the basin occurred and caused the river channel to move in a westerly fashion along the east end of the site. The channel varied in width from 200 feet to 600 feet or more until 1995.

Throughout the history of the El Monte valley, there have been various sources of contamination into the river channel including, a toxic waste recycling facility, orchards, various farmers, a dairy, cattle grazers, and a horse boarding facility. These have all contributed to fertilizer, irrigation runoff, animal waste, and other toxic substances being dumped into the river channel.

In 2003, golf course construction began and continued until 2005, when all grading was stalled. At this point it had become clear that the irrigation demands of the intended turf to be planted would overdraft the aquifer within a few years, and would therefore make the golf course unprofitable and untenable.

Over the last twenty years, since El Monte Partners, LLC has been responsible for security and property cleanup, the company has experienced local residents dumping personal waste throughout the property. At gate entrances, people would routinely park their vehicles, empty their trailer or trunk, and leave waste behind.

Topography – The topography in the project vicinity is characterized by steep mountains north and south of an alluvial river valley. Elevations range from approximately 3,600 feet above mean sea level (AMSL) in the local mountains to 420 feet at the alluvial plain. The thickness of alluvium varies from 30 feet (at the west end of the Santee-El Monte Basin) to 190 feet (just west of the city of Lakeside). The average alluvial thickness along the centerline of the basin most likely ranges from 75 to100 feet.

The topography of the project area is naturally flat; however, site alterations that occurred between 2003 through 2005 due to grading activities associated with the former golf course project have created rugged sandy “dunes” in portions of the upland areas. Elevations range from approximately 540 feet AMSL at the eastern portion of the study site to approximately 420 feet AMSL at the western end of the site. The river basin extends in an east-west direction and consists of a low-flow channel and associated floodplain.

Sand and mining operations that occurred onsite approximately 30 years ago created a clearly defined river channel that varies in width from 250 feet to nearly 400 feet. The channel is typically 10 to 20 feet lower than the elevations of the surrounding lands.

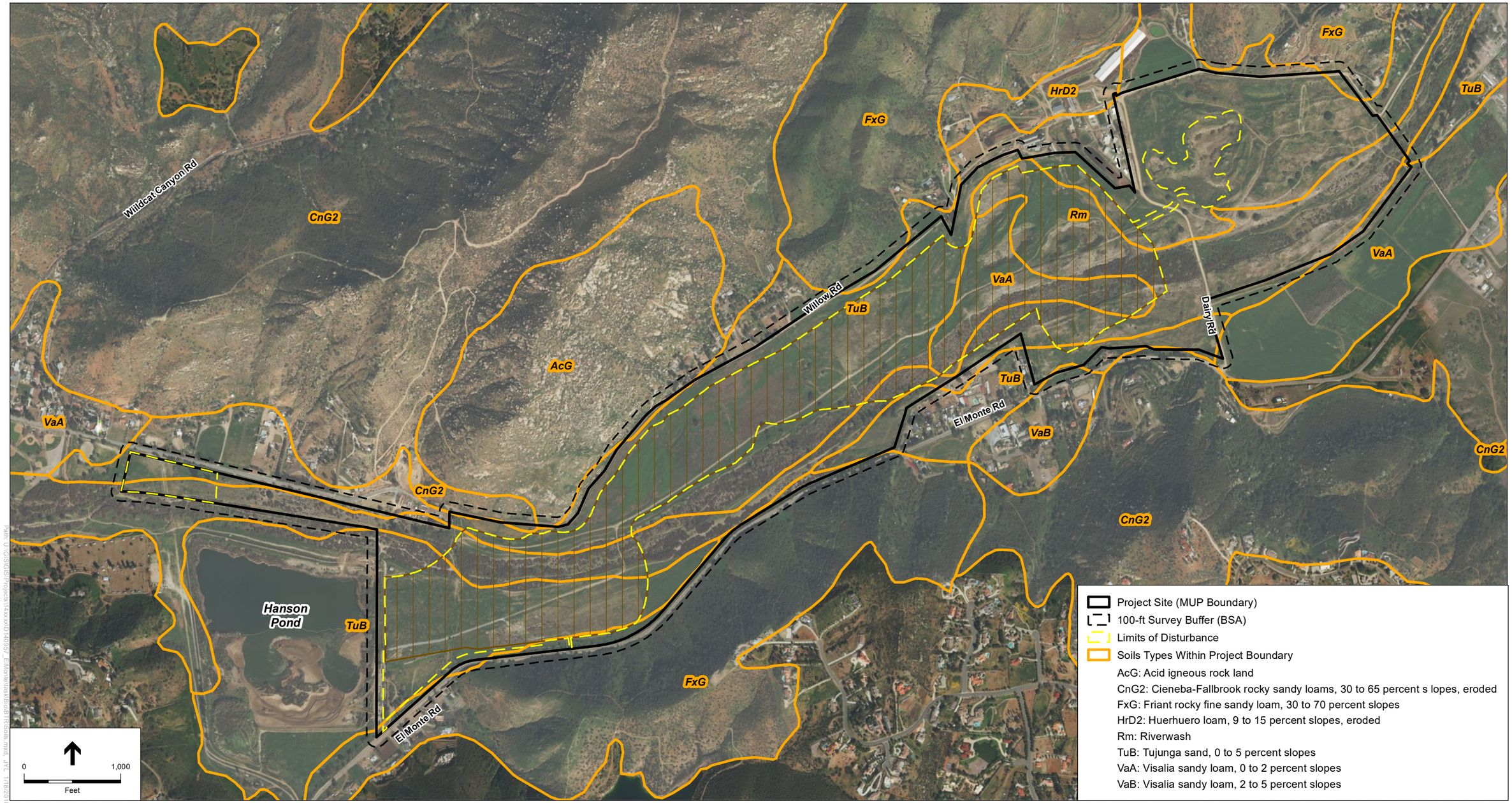
Geology and Soils – The project area lies within the Foothills Physiographic Province of San Diego County. This is a transition area between the mountainous areas to the east and the coastal plain to the west. The geologic setting is dominated by the granitic rocks of the Southern California Batholithic. This formation is characterized by rock outcroppings and low hills that become more prominent in the east. The San Diego River cuts through the foothills in this area. The channel gradient has been reduced in this stretch of river resulting in sand deposition and the creations of a broad, nearly alluvial plain above.

As shown in **Figure 8**, the USDA Soil Conservation Series Maps identify the soils along the San Diego River floodway within the project area as Riverwash. Riverwash occurs in intermittent stream channels and is typically sandy, gravelly, or cobbly. Tujunga sand and Visalia sandy loam occur along either side of the river channel. Tujunga sand is derived from granitic alluvium found on alluvial fans and floodplains with slopes less than 5 percent. Visalia sandy loam consists of moderately well-drained, very deep sand loams derived from granitic alluvium. These soils are found on alluvial fans and floodplains and have slopes of 0 to 5 percent.

Hydrology – The proposed project area is located within an east-west trending, alluvium-filled valley, which contains the San Diego River channel. The eastern edge of the site is confined by the El Capitan Reservoir and western portion of the site opens into the Santee groundwater basin. A number of ephemeral drainage channels cross the project area to join with the San Diego River channel. Currently, water flows in the river during periods of extended precipitation only. The highly permeable nature of the endemic soils and human-made controls has reduced historic flows in the river to minor levels. Operation of the El Capitan Reservoir and previous sand mining activities has resulted in changes to the river channel over time.

Groundwater in the project vicinity is located within two main sources. The largest groundwater supply in the project vicinity is associated with the alluvial fill materials within the San Diego River Valley area ranging from 5 to 125 feet below ground surface (bgs), depending on precipitation and recharge from the El Capitan Reservoir. Aquifer capacity is estimated to be 19,254 acre-feet. The other source of groundwater is located within the underlying granitic rocks which are prominent in the areas north and south of the project area. Granitic aquifers generally have limited storage potential. Currently, water supplies for the residential and agricultural land uses in the area are provided by a combination of private groundwater wells and water agency suppliers.

Climate – Cismontane portions of San Diego County and Southern California largely have a Mediterranean climate. This is characterized by mild winters with modest precipitation and arid, warm to hot summers. The climate in the project vicinity is characterized by a warm, dry period generally between April and October and a wet season from November through March. The average annual temperature is 58 degrees Fahrenheit (F). Winter temperatures are generally mild, and summer temperatures typically range between 80 to 90 degrees F. Average annual precipitation is approximately 16 inches in a normal year. Precipitation in minimal amounts can occasionally occur in summer from tropical weather systems, but the majority comes from winter storms originating in the middle to high latitudes of the North Pacific Ocean.



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SOURCE: ESRI; EnviroMine; The Altum Group; Chang Consultants; SSURGO

El Monte Sand Mining Project . 140957

Figure 8

Soils

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