3Roots San Diego Project
Environmental Impact Report

SCH No. 2018041065; Project No. 587128

Appendix G

Biological Technical Report

June 2019

HELIX Environmental Planning

3Roots San Diego Project

Biological Technical Report

June 6, 2019 | CAH-02.01

Prepared for:

Mesa Canyon Community Partners
16465 Via Esprillo, Suite 150
San Diego, CA 92127

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

3Roots San Diego Project

Biological Technical Report

Prepared for:

Mesa Canyon Community Partners
16465 Via Esprillo, Suite 150
San Diego, CA 92127

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

June 6, 2019 | CAH-02.01

This page intentionally left blank

TABLE OF CONTENTS

Section **Page**

TABLE OF CONTENTS (cont.)

TABLE OF CONTENTS (cont.)

LIST OF APPENDICES

TABLE OF CONTENTS (cont.)

LIST OF FIGURES

TABLE OF CONTENTS (cont.)

LIST OF TABLES

This page intentionally left blank

LIST OF ACRONYMS

3Roots	3Roots San Diego Project
AMSL	Above mean sea level
ASLA	American Society of Landscape Architects
ASMD	Area Specific Management Directives
BLA	Boundary Line Adjustment
BSO	Biologically Superior Option
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
City	City of San Diego
COE	Covenant of Easement
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CUP	Conditional Use Permit
EIR	Environmental Impact Report
ESA	Endangered Species Act
ESL	Environmentally Sensitive Lands
HELIX	HELIX Environmental Planning, Inc.
HOA	Homeowners Association
IOD	Irrevocable Offer of Dedication
ITP	Incidental Take Permit
LED	Light-emitting diode
LUAG	Land Use Adjacency Guidelines
MBTA	Migratory Bird Treaty Act
MHPA	Multi-habitat Planning Area
MMRP	Mitigation Monitoring and Reporting Program
MSCP	Multiple Species Conservation Program
OHWM	Ordinary high water mark
PAR	Property Analysis Record
RWQCB	Regional Water Quality Control Board

LIST OF ACRONYMS (cont.)

sf	square feet
SSC	Species of Special Concern
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
WL	Watch List
WUS	Waters of the U.S.

1.0 INTRODUCTION

1.1 PROJECT LOCATION

The 3Roots San Diego Project (3Roots or Project) is located in the south-central portion of the Mira Mesa Community Plan area, in the City of San Diego (City), California, and owned by Lennar Communities ("Lennar"; Figure 1). Specifically, the Project site is located north of Trade Street and Miramar Road, south of Flanders Drive and Mira Mesa Boulevard, east of Camino Santa Fe, and west of Parkdale Avenue. The Project site is located in Section 35 of Township 14 South, Range 3 West; and Sections 1, 2, 3, and 11 of Township 15 South, Range 3 West on the Del Mar U.S. Geological Survey 7.5-minute quadrangle map (Figure 2). The Project site occupies San Diego County Assessor Parcel Numbers (APNs) 341-050-380, 341-050-400, 341-050-410, 341-050-420, 341-051-170, 341-051-180, and 341-060-820. Off-site areas within the Project boundary include APNs 341-040-400, 341-050-430, 341-470-100, 341-470-110, 341-480-050, 341-480-060, and 343-052-050. An aerial of the Project boundary is shown in Figure 3 and a detailed area of the Project boundary is shown in Figure 4.

1.2 PROJECT DESCRIPTION

1.2.1 Background Information

The Project site primarily incorporates an approximate 413-acre property that was formerly operated by Hanson Aggregates Pacific Southwest as a quarry for sand and gravel mining and the site is currently undergoing reclamation efforts to return the site to its intended/planned use (i.e., development and open space). The proposed 3Roots Project is one element of a multi-phased plan in the community to convert reclaimed quarry land to a planned mixed-use development. The mining and reclamation are discussed below. The implementation of site reclamation is discussed further in Section 5.0.

History

Initial mining operations on the site occurred between 1958 and 1975 under County of San Diego Conditional Use Permit (CUP) P57-22. The mine was inactive for three years, but mining was re-activated in 1979 under CUP 571-PC and associated EIR EQD No. 78-12-34 seeking to modify the allowed uses. In 1987, the Carroll Canyon Specific Plan and associated Mira Mesa Community Plan (MMCP) Community Plan Amendment (CPA) to re-designate the site from extractive to industrial uses were proposed in association with CUP 87-0163. Impacts were analyzed in EIR No. 87-1063/State Clearinghouse (SCH) No. 85121814. Only the CPA was approved, with the Specific Plan and CUP withdrawn by the applicant.

The most recent mining operations were authorized under CUP 89-0585 and analyzed in Supplemental EIR (DEP No. 89-0585/SCH No. 85121814) approved by the City on September 13, 1990 (Figure 5a). In conjunction with the approval of CUP 89-0585, the City adopted a corresponding Reclamation Plan for the site. Upland and wetland impacts associated with site mining activities and reclamation were authorized under CUP 89-0585 and the 1990 SEIR. Mitigation for impacts to uplands and wetlands was to be accomplished through on-site conservation and rehabilitation requirements established in those documents.

In 1994, the Carroll Canyon Master Plan (CCMP) and CPA to the MMCP were prepared. The CCMP established a framework for suitable land uses, design guidelines, development standards, and an

implementation program for the development of 554 acres, including the Project site and adjacent lands, upon completion of mining operations. An EIR (DEP No. 91-0738; SCH No. 92121061) was prepared for the CCMP and MMCP CPA. The 1994 CCMP anticipated that implementation would occur in phases by individual development permits and vesting tentative maps.

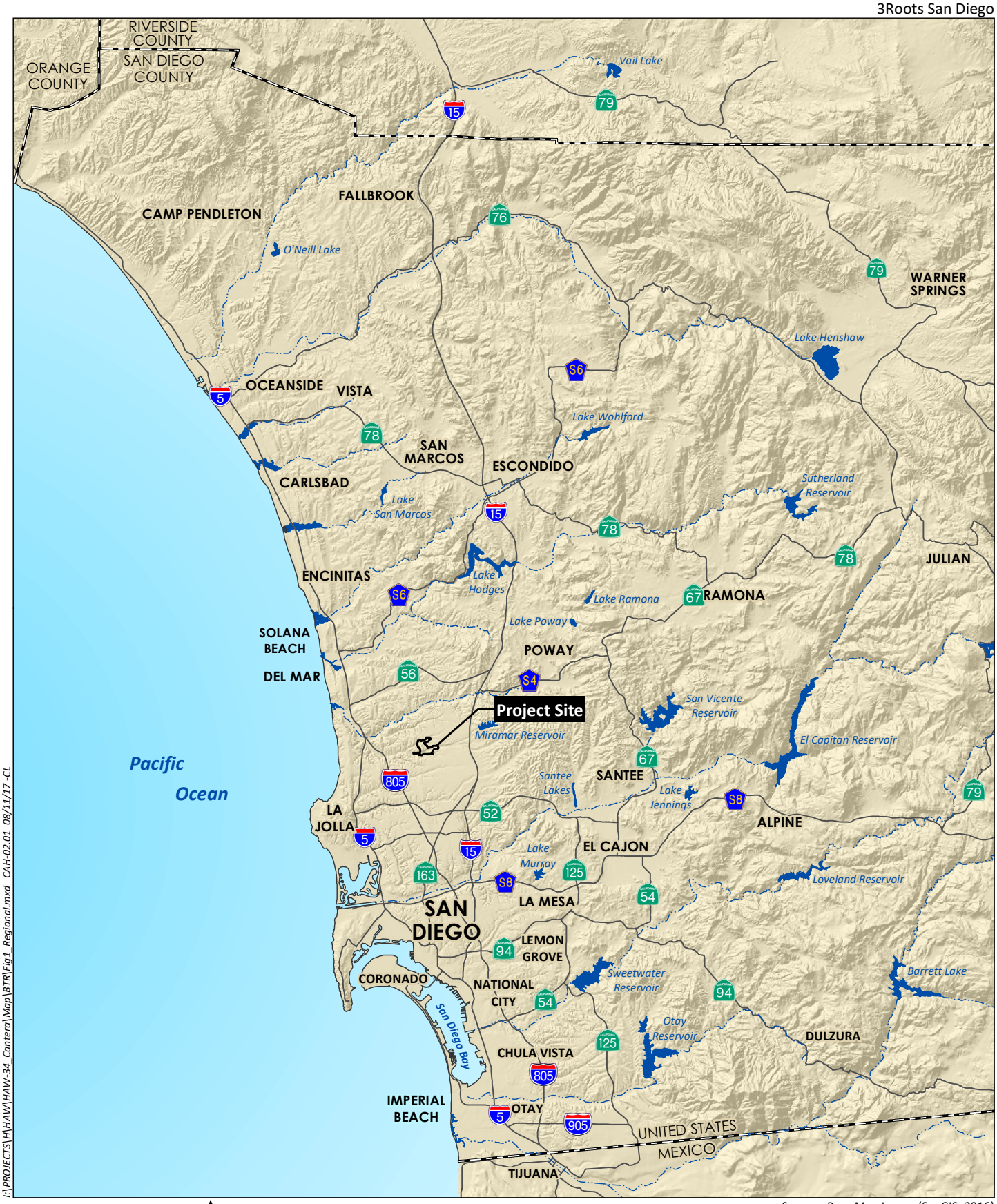
Phase I identified in the CCMP is the Fenton-Carroll Canyon Technology Center, which included the development of office/industrial uses on 130.9 acres west of Camino Santa Fe. The Fenton Technology Park land development is complete and currently occupied.

The Project site encompasses the approximately 413 acres that remain in the CCMP. The CCMP envisioned that this remaining 413-acre area would be developed with 52 acres of industrial park; up to 1,800 medium and medium-high density residential units; a mixed-use transit-oriented district area; 20 acres of neighborhood park; and a comprehensive open space system including Carroll Canyon Creek, Rattlesnake Canyon, vegetated slopes, and landscaped areas.

In 2016, the mining operation ceased but reclamation authorized by the CUP has continued. Site reclamation is an on-going activity and involves the rehabilitation of the site by excavating, removing undocumented fill areas, and backfilling and re-contouring mined areas to create a suitable condition for the intended/planned development and open space. Reclamation may include but is not limited to: grading and compacting building pads; grading and compacting planned development areas and roadways; grading and restoring/revegetating open space preservation areas; grading, re-aligning, and restoring Carroll Canyon Creek, and installing a culvert across Carroll Canyon Creek for the planned future alignment of Carroll Canyon Road. As a result, slopes of 2:1 (length : height) are located throughout the site per the approved CUP/Reclamation Plan implementation (CUP 89-0585). These Surface Mining and Reclamation Act (SMARA)-required modifications provide the baseline for Project implementation. The 2:1 slopes are located in open space lots abutting the vernal pool preserve and along the edges of the recontoured and re-established Carroll Canyon Creek alignment, where the post-reclamation condition was intended to stabilize slopes altered by mining activities (CUP 89-0585 Supplemental EIR, Section C). Therefore, 2:1 slopes are the "existing baseline condition" and not part of the development, and are thus allowed in the MHPA (see also discussion under Section 7.9 of this report).

Implementation of the CUP/Reclamation Plan also results in the re-alignment and re-establishment of Carroll Canyon Creek on site, which was designed to reflect the visions of the CCMP and MMCP by creating a riparian corridor for wildlife and pedestrian passage (MMCP pgs 101-102; CCMP EIR, Sections C and E). For example, the design consists of a relatively wide creek channel with a mosaic of riparian vegetation, sloping channel banks, and riprap (i.e., drop structures as allowed in MMCP [page 102]) positioned along the channel bed and banks to reduce flow velocity, spread meandering flows across the channel, and allow for the recruitment and growth of riparian vegetation. Additionally, upland habitat buffers adjacent to the riparian habitat are also included in the reclamation design of Carroll Canyon Creek. Thus, the re-alignment and re-establishment of Carroll Canyon Creek is considered part of the baseline condition for Project implementation.

The CUP includes site reclamation measures consistent with the Supplemental EIR that are required to mitigate impacts to biological resources associated with the mining operation. Each measure is summarized below followed by a description of activities that would satisfy the CUP obligation. These tasks would be completed either prior to or during the construction of the 3Roots Project, but would be considered to be the implementation of the reclamation and not part of the Project.



I:\PROJECTS\H\HAW\HAW-34_Cantera\Map\BTR\Fig1_Regional.mxd CAH-02.01 08/11/17 -CL

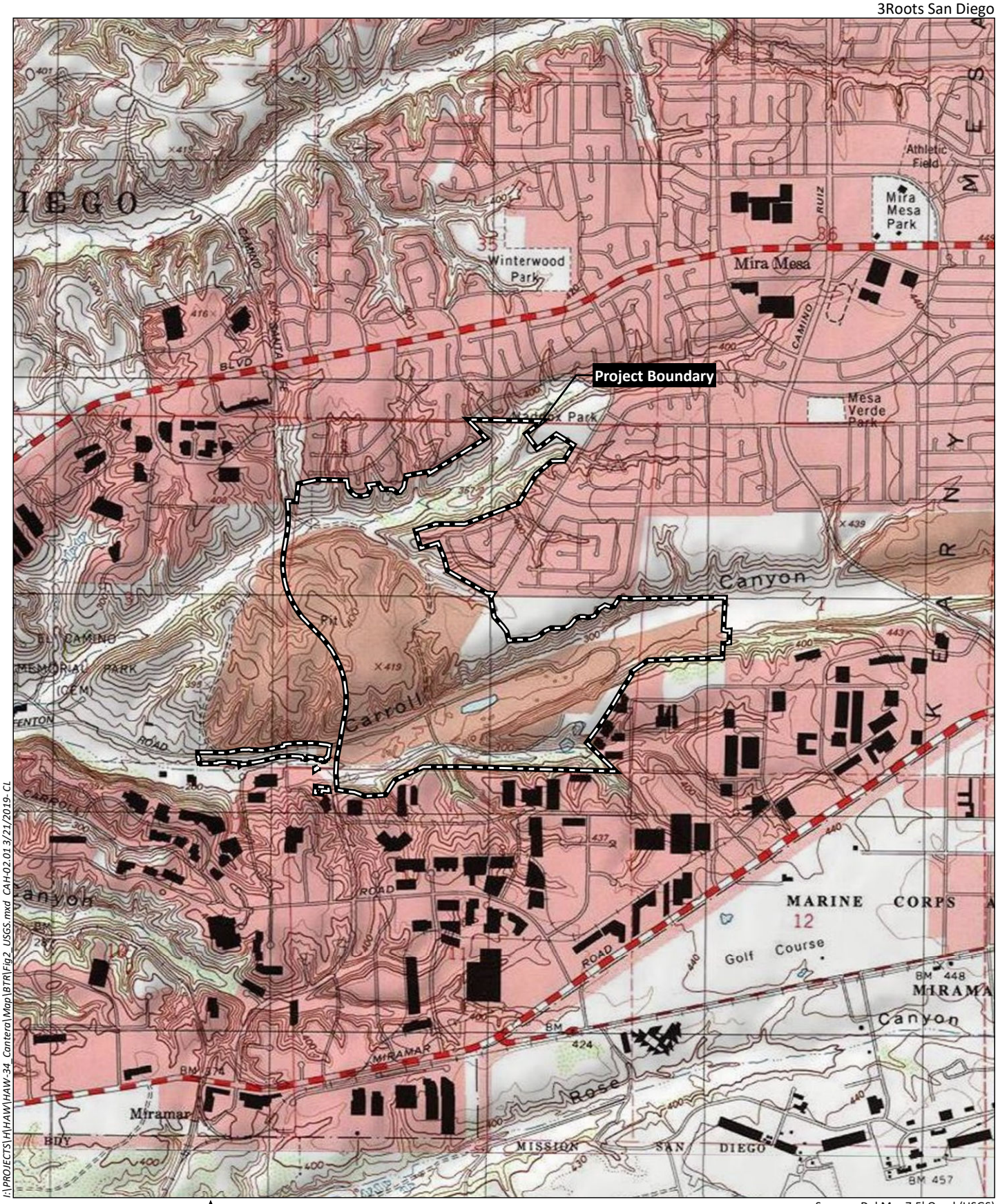
0 8 Miles

Source: Base Map Layers (SanGIS, 2016)

HELIX Environmental Planning

Regional Location

Figure 1



I:\PROJECTS\H\HAW\HAW-34 Cantera\Map\BTR\Fig2_USGS.mxd CAH-02.01 3/21/2019- CL

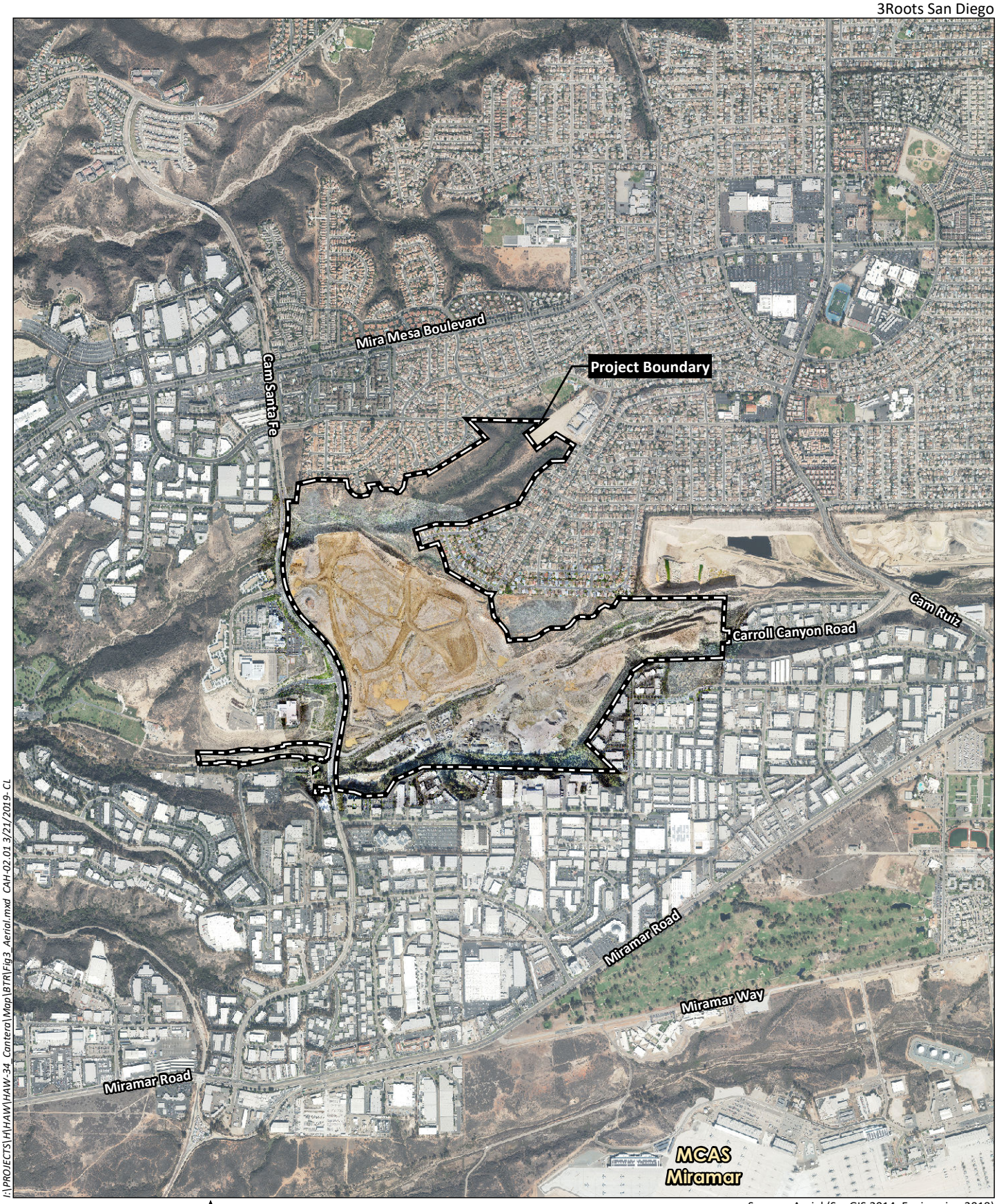
0 2,000 Feet

Source: Del Mar 7.5' Quad (USGS)

HELIX Environmental Planning

USGS Topography

Figure 2



I:\PROJECTS\H\HAW\HAW-34 Cantera\Map\BTR\Fig3_Aerial.mxd CAH-02.01 3/21/2019- CL

0 2,000 Feet

Source: Aerial (SanGIS 2014, Enviromine 2018)

HELIX Environmental Planning

Aerial Vicinity

Figure 3

I:\PROJECTS\H\HAW\HAW-34 Cantera\Map\BTR\Fig4 Aerial.mxd CAH-02.01 3/21/2019- CL

0 1,100 Feet

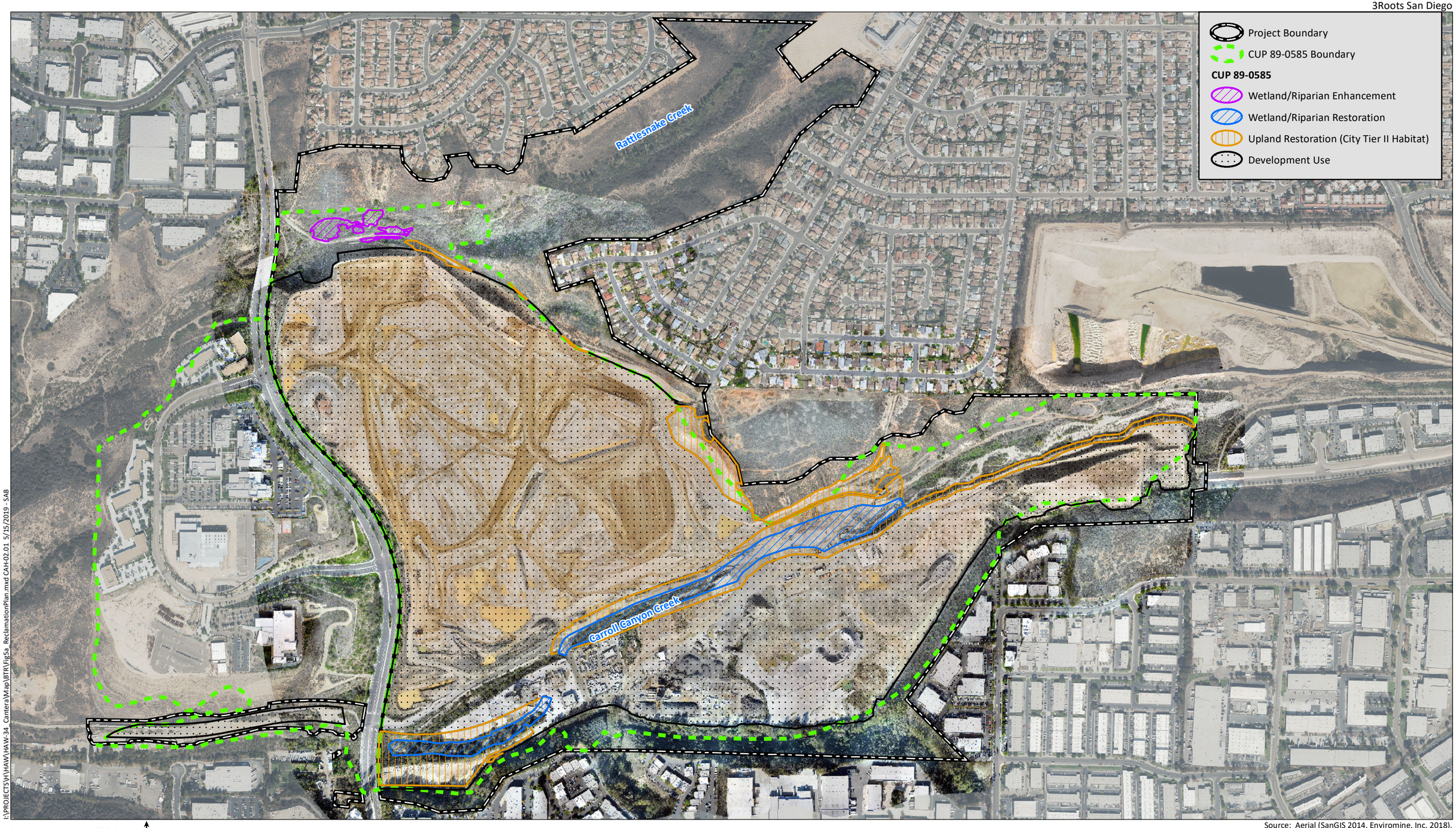
Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018).

HELIX Environmental Planning

Aerial Photograph

Figure 4

3Roots San Diego



I:\PROJECTS\H\HAW\HAW-34_Cantera\Map\BTR\Fig5a_ReclamationPlan.mxd CAH-02.01 5/15/2019 - SAB

0 650 Feet

Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018).

HELIX Environmental Planning

CUP 89-0585 Boundary and Reclamation

Figure 5a

1. Designation of approximately 182 acres of permanent open space within the CUP, including: areas to be revegetated as natural habitat such as coastal sage scrub on the south-facing slopes, mixed chaparral on the north and east-facing slopes, and native grassland on the flatten areas.

   The allocation of 182 acres of open space included lands within both the Fenton-Carroll Canyon Technology Center site (immediately west of Camino Santa Fe) as well as the 3Roots site. The CUP does not identify specific types of open space.

   The Fenton-Carroll Canyon Technology Center dedicated approximately 31.45 acres as open space to the City via VTM 14555. Upon completion of the 3Roots project, an additional 181 acres will be dedicated, for a grand total of approximately 212.45 acres permanent open space; thus, exceeding the required 182 acres by 31.45 acres. Note, of this excess acreage approximately 6.86 acres (*i.e., 6.32 acres upland and 0.54-acre wetland*) *would serve as mitigation to offset impacts from the 3Roots Project. This is described in greater detail in Section 10.1.*

2. Retention of four acres of naturally vegetated slopes adjacent to riparian vegetation along the western portion of Rattlesnake Canyon and two acres of riparian vegetation along the eastern portion of Rattlesnake Canyon.

   The entirety of the impacts to Rattlesnake Canyon Creek anticipated under the existing CUP and Supplemental EIR were not implemented. Portions of the western end of Rattlesnake Canyon were impacted but have largely recovered as riparian and upland habitats. The avoidance of Rattlesnake Creek, including the vegetated slopes in the western portion of Rattlesnake Canyon and the riparian vegetation in the eastern portion of Rattlesnake Canyon, would be achieved.

3. Enhancement and revegetation with arroyo willows of all mined areas including the disturbed section of Rattlesnake Canyon Creek satisfactory to the Planning Director and in accordance with requirements to mitigate wetlands habitat impacts. The efforts shall be monitored by a qualified biologist and annual reports shall be submitted to the City. Final elevations shall be such that a natural stream gradient is reestablished to serve as an open space/wildlife corridor.

   As described above, Rattlesnake Canyon Creek has sustained only a portion of the impacts anticipated under the existing CUP and Supplemental EIR. Although, a majority of the areas that were previously mined have recovered naturally with native vegetation, areas where natural recovery did not occur would be enhanced through the removal of non-native species and supplemental planting with native riparian species. Areas that were originally contemplated to be disturbed under the CUP, but left untouched would not be revegetated or enhanced.

4. Contour grading and revegetation and re-landscaping of mined areas with monitoring to ensure that the selected hydroseed plant material will mature within one year and all selected container stock will mature within two years.

   The site would be graded and planted in accordance with the CUP. Proposed planting palettes were selected to include species that can mature within one year (annual species) and container stock that can become mature within two years post-planting. Success criteria for the revegetation incorporates these one- and two-year growth requirements. Revegetation for reclamation purposes would occur prior to and during construction of the 3Roots Project and would be monitored upon installation and concurrently with restoration installed for 3Roots mitigation. Areas slated for future development use would not be monitored. Overall, monitoring

and reporting would occur for a five-year period as proposed in the Habitat Reclamation and Mitigation Plan attached to this report and the proposed Landscape Plans prepared for the project (SWA 2018).

5. Hydroseeding of the transmission pedestals located along the future Camino Santa Fe alignment with implementation of the reclamation plan.

   Upon completion of the reclamation grading, these transmission pedestals would be revegetated with the plant palette discussed in Item 4 above. Implementation of transmission pedestal revegetation would occur prior to and during construction of the 3Roots Project.

6. The applicant shall retain a qualified landscape architect to oversee the reclamation and revegetation, and submit a letter to the City on the condition of the remedial actions to ensure long-term viability. The letter shall be submitted annually after each extraction Phase. Oversight of the reclamation effort by a qualified landscape architect at one- and two-year intervals after each completed extraction phase.

   Reclamation revegetation would occur prior to and during construction associated with the Project. Such areas would be overseen by a qualified landscape architect in accordance with the proposed Habitat Reclamation and Mitigation Plan and proposed Project Landscape Plan to ensure successful revegetation. See Item 4 above.

7. Enhancement and revegetation with riparian species along the length of Carroll Canyon Creek within the CUP in accordance with the requirement for wetland habitat impacts. Oversight and monitoring of the effort shall be conducted by a qualified biologist. Monitoring reports shall be submitted to the City annually. The initial efforts must be completed upon the final extraction phase and prior to issuance of a subsequent permit by the City.

   Revegetation, restoration, and enhancement with riparian species along the length of Carroll Canyon Creek would be accomplished through site reclamation in accordance with the proposed Habitat Reclamation and Mitigation Plan. Such efforts would be overseen by a qualified biologist. Monitoring and reporting would follow the schedule in the proposed Habitat Reclamation and Mitigation Plan. The revegetation efforts of Carrol Canyon Creek are subject to the Resource Agency approval of the proposed plan.

8. The applicant shall retain a qualified biologist to monitor the continued viability of the vernal pool reserve and prepare annual monitoring report for submittal to the City. The annual reports shall be submitted until the owner transfers ownership of the preserve.

   No vernal pools are located on site. Two known vernal pool complexes are fenced and located beyond the Project boundary; one is located southeast of the Project (Arjons) and the other is located to the north. The fencing is located away from the vernal pools to provide protection for both the pools and their watersheds. Neither complex was impacted by the quarry operation or site reclamation efforts.

   The vernal pool preserve identified in the CUP and Supplemental EIR is located north of the site, southeast of the terminus of Parkdale Ave.

This vernal pool preserve located north and outside of the existing CUP boundary was transferred to the City of San Diego several years ago and is currently monitored/managed by the City as part of Multiple Species Conservation Program (MSCP) MHPA. Thus, revegetation and viability monitoring of these preserves are not proposed and are no longer applicable. The Arjons vernal pool preserve located south of the site is not affiliated with the CUP or Supplemental EIR and is unrelated to this 3Roots Project.

Reports documenting the results of monitoring associated with reclamation restoration and revegetation of upland areas adjacent to the vernal pool preserves would be prepared by a qualified landscape architect and submitted to the City (see Item 4).

9. Revegetation of manufactured slopes east and southeast of the vernal pool preserve.

   As described in Items 4 and 6, reclamation revegetation on-site would occur prior to and during construction associated with the Project. The reclamation revegetation includes the upland slopes adjacent to the vernal pool preserve (see Item 8).

10. Any corrective measures identified during monitoring in the vernal pool preserve will be implemented by the applicant.

    Corrective measures would be implemented during site reclamation by the applicant where necessary on site. As stated above, the southern off-site venal pool preserve (Arjons) is not affiliated with the CUP or Supplemental EIR and the northern off-site vernal pool preserve lands have been dedicated to the City and are monitored/managed by the City , not the applicant. Neither the reclamation obligations or the 3Roots Project would be responsible for corrective measures pertaining to vernal pools.

11. A performance bond, in the amount of 110 percent of the total reclamation and revegetation costs for each extraction phase, will be posted by the applicant prior to the completion of each extraction phase to make certain that all enhancements and revegetation are performed, and the plantings are thriving, that the vernal pool preserve is assured of continued existence, and any corrective measures are funded.

    A current bond exists and is in place to cover the reclamation and revegetation phases of the CUP. Regarding the vernal pools see numbers 4-9 above. The off-site vernal pool complexes have been avoided by the quarry operation and would be avoided by reclamation activities.

    The proposed reclamation revegetation and enhancement of native habitats on site would be monitored, managed, and funding secured through bonding by the applicant. For further details on the long-term resource protection on-site and management and associated funding, see Sections 10.2 and 10.3 in this report.

12. Mitigation of all wetland impacts in accordance with the requirements of the affected resource agencies.

    Wetland impacts associated with the quarry operation and reclamation would be mitigated through restoration of 4.14 acres of jurisdictional habitat as described Sections 5.0 and 10.1.4 of this report and as presented in the proposed Habitat Reclamation and Mitigation Plan. Such efforts would be conducted in accordance with the requirements of the affected resource

agencies; refer to Section 5.0 herein for details. Mitigation for wetland impacts associated with the 3Roots Project are discussed separately in Section 8.0.

Table 1
SUMMARY OF EXISTING CUP 89-0585 RECLAMATION REQUIREMENTS AND COMPLIANCE

Existing CUP Requirements		Compliance with Existing CUP Requirements
1	Permanently conserve approximately 182 acres of open space and revegetate with native habitats	Approximately 212.45 acres of open space would be dedicated to permanent conservation (i.e., 31.45 acres set aside by Fenton and 181 acres set aside by 3Roots), exceeding the required 182 acres by approximately 31.45 acres. Of this excess, 6.86 acres (i.e., 6.32 acres upland and 0.54-acre wetland) is used as mitigation for the proposed 3Roots Project (see section 10.1).
2	Retention of portions of Rattlesnake Creek and Rattlesnake Canyon.	Avoidance and permanent conservation of Rattlesnake Creek and Rattlesnake Canyon.
3	Revegetation and enhancement in Rattlesnake Creek of mined areas, including disturbed areas, with arroyo willows.	Lower Rattlesnake Creek on site: removal of non-natives and planting wetland riparian habitat.
4	Contour grading, revegetation, and landscaping of mined areas. One- to two-year success requirements for plant maturity.	Grading (including stabilized 2:1 Slopes), revegetation, and landscaping of mined areas would occur as implementation of reclamation. Reclamation proposes five-year plant monitoring.
5	Hydroseeding of San Diego Gas and Electric (SDG&E) pedestals near Camino Santa Fe.	SDG&E pedestals would be hydroseeded per the approved Landscape Plan for the Project (SWA 2019).
6	Qualified biologist, landscape architect, reporting and monitoring requirements: one- to two-year requirements for plant maturity.	Biologist and landscape architect would oversee the site restoration: five-year monitoring and reporting.
7	Enhancement and revegetation with riparian species along Carroll Canyon Creek within CUP boundary.	Restoration and revegetation along Carroll Canyon Creek within CUP boundary. Installation of riparian and upland species according to the Habitat Reclamation and Restoration Plan (HELIX Environmental Planning, Inc. [HELIX] 2019).
8	Monitoring and reporting on the viability of the vernal pool preserve.	The vernal pool preserve lot has been transferred to the City of San Diego and monitored by the City. This monitoring requirement is not applicable to the 3Roots Project.
9	Revegetation of manufactured slopes east and south east of the vernal pool preserve.	Grading, restoration, and revegetation of manufactured slopes adjacent to the vernal pool preserve would be completed as part of the site reclamation.
10	Applicant shall implement corrective measures identified by monitoring the vernal pool preserve.	Refer to #8 above. The monitoring and associated corrective measures requirement are not applicable to the 3Roots project.

Table 1 (cont.)
SUMMARY OF EXISTING CUP 89-0585 RECLAMATION REQUIREMENTS AND COMPLIANCE

Existing CUP Requirements		Compliance with Existing CUP Requirements
11	110 percent performance bond posted by the applicant to ensure funding of the site reclamation and revegetation.	The applicant would continue to maintain/secure bonding of the reclamation revegetation, monitoring, and management.
12	Impacts to wetlands shall adhere to resource agency requirements.	Wetlands permits would be obtained for site reclamation and for Project impacts to wetlands. Mitigation would be performed on site and according to the permit requirements.

1.2.2 Proposed Project

The proposed 3Roots Project is a mixed-use design incorporating a "Community Collective," which includes multi-family residential and commercial/retail uses; single-family residential; and associated on-site and off-site roads and parkways (Figures 5b-c). The Project will designate approximately 258 acres of open space, comprising approximately 181 acres of natural open space (i.e., 174.14 acres set aside by the CUP reclamation and 6.86 acres proposed by 3Roots), approximately 39 acres of parks, and approximately 38 acres of vegetated slopes, brush management zones, enhanced landscape areas, and water quality/retention basins. The natural open space areas would be comprised of Rattlesnake Canyon, Rattlesnake Creek, Carroll Canyon Creek, and CUP reclaimed and revegetated upland slopes.

The Project includes the construction of Carroll Canyon Road through the site (approximately 6,225 linear feet), which extends off site beyond the property to the east and west. The road would be extended approximately 90 feet off site to the east to tie in with the existing cul-de-sac that is the current terminus of Carroll Canyon Road at this location. The road would be extended to the west approximately 2,000 feet to the western terminus of the larger CUP boundary.

The Project also includes constructing upgrades to existing San Diego Gas and Electric (SDG&E) utility lines both east and west of Camino Santa Fe, a portion of which would occur off-site beyond the 413-acre property. Upgrades include removal/relocation of existing above ground poles and transitioning existing above ground pole utilities to below ground.

Because outstanding CUP reclamation requirements exist, the 3Roots Project design incorporates the tasks required to ensure that reclamation obligations are satisfied. The 3Roots Project also proposes an amendment to the CUP/Reclamation Plan. This CUP/Reclamation Plan amendment proposes an adjustment to the boundary for the following reasons: to incorporate areas of the site that were impacted by the quarry beyond the CUP boundary, to adjust the existing CUP 89-0585 reclamation grading elevations to align with the elevations needed for the proposed Project, to remove areas of the CUP that were not impacted by the quarry and some of which are now being included in the MHPA, and to provide accurate documentation of the site reclamation in order to formally close the mine per procedures of the SMARA. As indicated in Section 1.2.1 and summarized in Table 1, completion of outstanding CUP reclamation obligations is assured either prior to or concurrently with 3Roots Project construction. Implementation phasing is subject to availability of resource agency permits as required by the CUP.

Lastly, the Project proposes an MHPA Boundary Line Adjustment (BLA; see Section 6.0) to include the relatively high biological value areas on site (e.g., Carroll Canyon Creek, Rattlesnake Canyon, Rattlesnake Creek, etc.) within the City's MHPA. The 3Roots Project design is presented in Figures 5b and 5c.

Generally, the Project design maximizes the distance between development and natural areas. The Project design provides a minimum distance of approximately 37 feet between Rattlesnake Creek and the western end of the Project development at one location adjacent to Camino Santa Fe where Rattlesnake Creek flows beneath an existing road bridge. Other than this one location (which is approximately 29-feet long), the distance between the Project development and this lower stretch of Rattlesnake Creek is much wider (ranging between 200-380 feet) and is a minimum of 65 feet wide. A buffer width of approximately 667 feet is provided between Project development and the eastern upper portions of Rattlesnake Creek.

Additionally, the following Project design features ensure avoidance and maximize the distance between development and sensitive biological resources: the Project design eliminated the "Parkdale Park" proposed by the CCMP in order to provide a habitat corridor between Rattlesnake Canyon and Carroll Canyon and to separate the Project from the off-site vernal pool preserve north of the Project. This open space corridor would serve as a buffer consisting of native and restored upland sage scrub and chaparral species between the vernal pool preserve and 3Roots development. The proposed Project design would also provide an additional buffer (approximately 194 feet to 360 feet wide) to the east, west, and south from the existing the preserve fencing. That fencing includes an existing buffer from the pools and their watersheds. Buffers associated with the Project are discussed further throughout this report (see Sections 4.5, 6.2.7, 7.9, 7.10, 8.1.5, and 8.2.3).

The Project design also maximizes the distance between grading and another vernal pool complex that exists to the south of the southeastern corner of the site. Project-related grading would occur between approximately 20 feet and 219 feet from the property boundary at this location. All Project grading occurs below the elevation of the vernal pool watersheds and thus avoids impacts to the off-site pools and their watersheds.

The Project also proposes incorporation of fire safety brush management zones (BMZs) between development and natural areas. An informal brush management zone currently exists behind the residential area abutting Rattlesnake Canyon. The Project proposes formalizing this existing brush management area as an approximate 65-foot-wide BMZ 2 to extend along the entire residential development along Rattlesnake Canyon. This proposed Rattlesnake Canyon BMZ 2 would be deeded to the 3Roots Project Homeowners Association (HOA) and a separate Covenant of Easement (COE) would be placed over it to ensure perpetual management. BMZs proposed by the 3Roots Project are discussed further throughout this report (see Sections 6.1, 6.2, 7.9, and 7.10).

1.2.3 Purpose of the Report

This report documents the existing site conditions and the biological resources that exist within the approximate 413-acre Project site and the on-site and off-site areas associated with the Project components (i.e., Carroll Canyon Road and SDG&E utility upgrades); which together are defined as the Project boundary, as discussed in Section 1.2.2. Further, this report describes the proposed Project, evaluates the proposed BLA to the City's MHPA, and provides an analysis of Project impacts to biological resources. Mitigation measures to reduce Project impacts to a level below significant also have been

BMZ

EXISTING BMZ
Adjacent to offsite homes.
HOA maintained and owned. In MHPA.

PROPOSED BMZ 2
Adjacent to new proposed homes.
HOA maintained and owned. Outside MHPA.

PROPOSED BMZ 1
HOA maintained and owned. Outside MHPA.

LEGEND

- PROJECT BOUNDARY
- LIMITS OF GRADING
- MHPA BOUNDARY
- BRT EASEMENT
- AFFORDABLE HOUSING (SDMC §143.1310)
- SDG&E EASEMENT: EXISTING TO REMAIN
- SDG&E EASEMENT: EXISTING TO BE REMOVED/QUITCLAIMED
- SDG&E EASEMENT: PROPOSED

ZONING

- RX-1-2
- RM-2-6
- RM-3-9
- CC-2-4
- OP-1-1
- OR-1-1
- OC-1-1
- OC-1-1 (MHPA - City Owned)
- OC-1-1 (MHPA - HOA Owned - Type 1)
- OC-1-1 (MHPA - HOA Owned - Type 2)
- OC-1-1 (MHPA - HOA Owned - w/BMZ Zone 2)
- OC-1-1 (Open Space - City Owned)
- OC-1-1 (Open Space - HOA Owned)

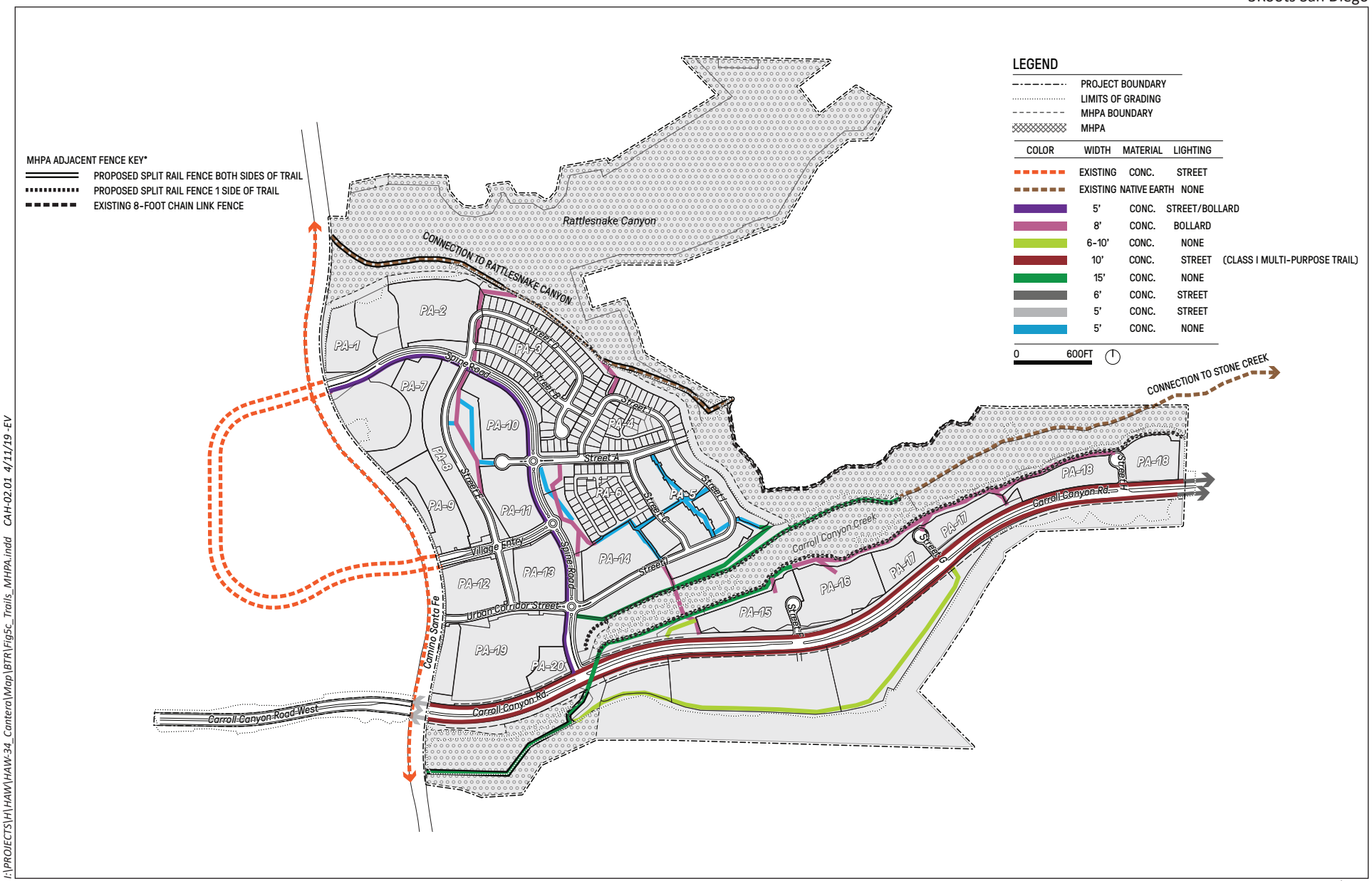
0 600FT

Source: Placeworks 4/19

HELIX Environmental Planning

Proposed Site Plan

Figure 5b



I:\PROJECTS\H\HAW\HAW-34_Contera\Map\BTR\Fig5c_Trails_MHPA.indd CAH-02.01 4/11/19 -EV

Source: Placeworks 4/2019

HELIX Environmental Planning

Trails, Fencing, and Site Plan

Figure 5c

identified. A discussion of findings for a deviation from the City's Environmentally Sensitive Lands (ESL) regulations to impact City wetlands are also provided in this report.

In order to distinguish between activities necessary to satisfy the CUP/Reclamation requirements and impacts associated with the 3Roots Project, Project impacts were assessed relative to the future baseline condition of the site which has been defined as those conditions following reclamation as described in Section 5.0 Implementation of Reclamation. The authorized CUP impact boundary and the corresponding areas of required reclamation are presented in Figure 6a. The areas impacted by the mining under the CUP and the existing site conditions prior to reclamation are presented on Figure 6b. Figure 6c integrates existing site conditions and required reclamation efforts and represents the future baseline condition.

Project impacts, applicable regulations, and proposed mitigation measures are discussed in accordance with the California Environmental Quality Act (CEQA), Migratory Bird Treaty Act (MBTA), Clean Water Act (CWA), California Fish and Game Code (CFG Code), the City Final MSCP Subarea Plan (City Subarea Plan; City 1997a), and the City Municipal Code Land Development Code Biology Guidelines (Biology Guidelines) (City 2012).

1.3 PROJECT SCHEDULE

The Project would be constructed in two phases. Phase I infrastructure. is anticipated to begin in December 2019 at the northern portion of the site and would include construction of residential development eastward from Camino Santa Fe. Phase II is anticipated to begin in December 2020 (and is subject to resource agency permit approval: 404,401, 1602) and would include construction of residential development through the center and southeastern portion of the site; the commercial development in the Community Collective, including the completion of residential development to the proposed extension of Carroll Canyon Road; the SDG&E relocation; and the commencement of the 25-acre community park. Grading and installation of infrastructure would occur as-needed throughout the construction schedule.

As stated previously, reclamation is currently on-going and will continue during the construction of the proposed 3Roots Project. For example, the grading, realignment, and restoration of Carroll Canyon Creek would be completed following issuance of wetlands permits by the Resource Agencies; thus, these reclamation efforts are expected to occur concurrently with Phase II of the Project construction.

2.0 SURVEY METHODS

2.1 LITERATURE REVIEW

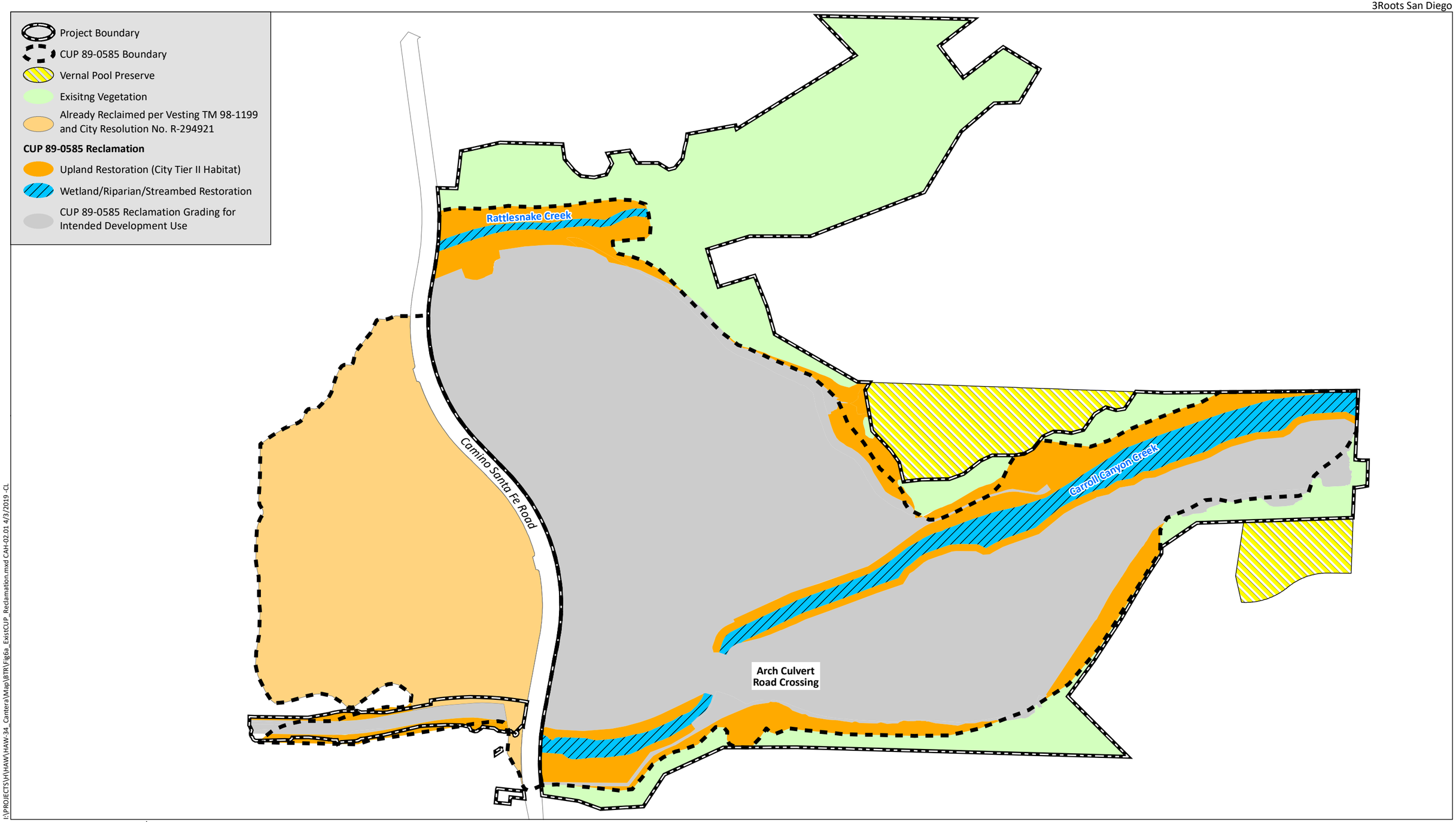
Prior to conducting field investigations, HELIX Environmental Planning, Inc. (HELIX) performed a review of existing literature, including a search of the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB; CDFW 2018b) for information regarding sensitive species reported within two miles of the project site. Additional sources include the U.S. Fish and Wildlife Service (USFWS; 2017) and MSCP (City 1997a). Soils data were obtained from the U.S. Department of Agriculture Web Soil Service (USDA; 2016).

2.2 GENERAL BIOLOGICAL SURVEY

HELIX principal biologist W. Larry Sward conducted vegetation mapping and a general biological survey of the 3Roots Project site on May 2 and 3, 2016 (Table 2). Additional vegetation mapping of the off-site areas associated with the Project were mapped between June and December of 2018. Vegetation communities on the Project site were mapped on an aerial photograph (1" = 100' scale) with overlaid topography. A list of plant and animal species observed or detected within the Project boundary was prepared. Plant species were identified in the field or later in the laboratory with the aid of botanical keys. Animals were identified in the field by direct visual observation with the aid of binoculars or indirectly by detection of calls, tracks, burrows, or scat.

Table 2
HELIX SURVEY INFORMATION

Survey Date	Personnel	Purpose	Survey Times	Weather Conditions
04/19/2016	W. Larry Sward	Wetland Delineation	1200-1700	Sunny
04/20/2016	W. Larry Sward	Wetland Delineation	0800-1700	Sunny
04/21/2017	Amy Matson	Least Bell's Vireo	0745-1100	Sunny
04/21/2017	Amy Matson	Rare Plant Survey	1100-1600	Sunny
05/01/2017	Amy Matson	Least Bell's Vireo	0730-0945	Sunny
05/02/2017	W. Larry Sward	Vegetation Mapping	0800-1730	Sunny
05/03/2017	W. Larry Sward	Vegetation Mapping	1130-1430	Sunny
05/11/2017	Amy Matson	Least Bell's Vireo	0715-1040	Partly Cloudy
05/22/2017	Summer Schlageter	Least Bell's Vireo	0635-1026	Cloudy to Sunny
06/02/2017	Amy Matson	Least Bell's Vireo	0700-1036	Cloudy to Partly Cloudy
06/13/2017	Amy Matson	Least Bell's Vireo	0728-1055	Sunny
06/19/2017	W. Larry Sward	Wetland Delineation	Not Recorded (NR)	Sunny
06/23/2017	Amy Matson	Least Bell's Vireo	0710-1100	Cloudy
06/23/2017	Amy Matson	Rare Plant Survey	1100-1400	Sunny
06/23/2017	W. Larry Sward	Wetland Delineation	NR	Cloudy
07/06/2017	Amy Matson	Least Bell's Vireo	0740-1100	Sunny
06/05/2018	W. Larry Sward	Vegetation Mapping and Wetland Delineation	NR	Sunny
06/28/2018	Stacy Nigro	Vegetation Mapping and Wetland Delineation	NR	Sunny
11/07/2018	Thomas Liddicoat	Vegetation Mapping	NR	Sunny
12/04/2018	W. Larry Sward	Vegetation Mapping and Wetland Delineation	NR	Sunny
04/09/2019	Angelia Bottiani	Focused Rare Plant Survey for SDG&E Study Area	NR	Sunny



I:\PROJECTS\H\HAW\HAW-34_Cantera\Map\BTR\Fig6a_ExistCUP_Reclamation.mxd CAH-02.01 4/3/2019 -CL

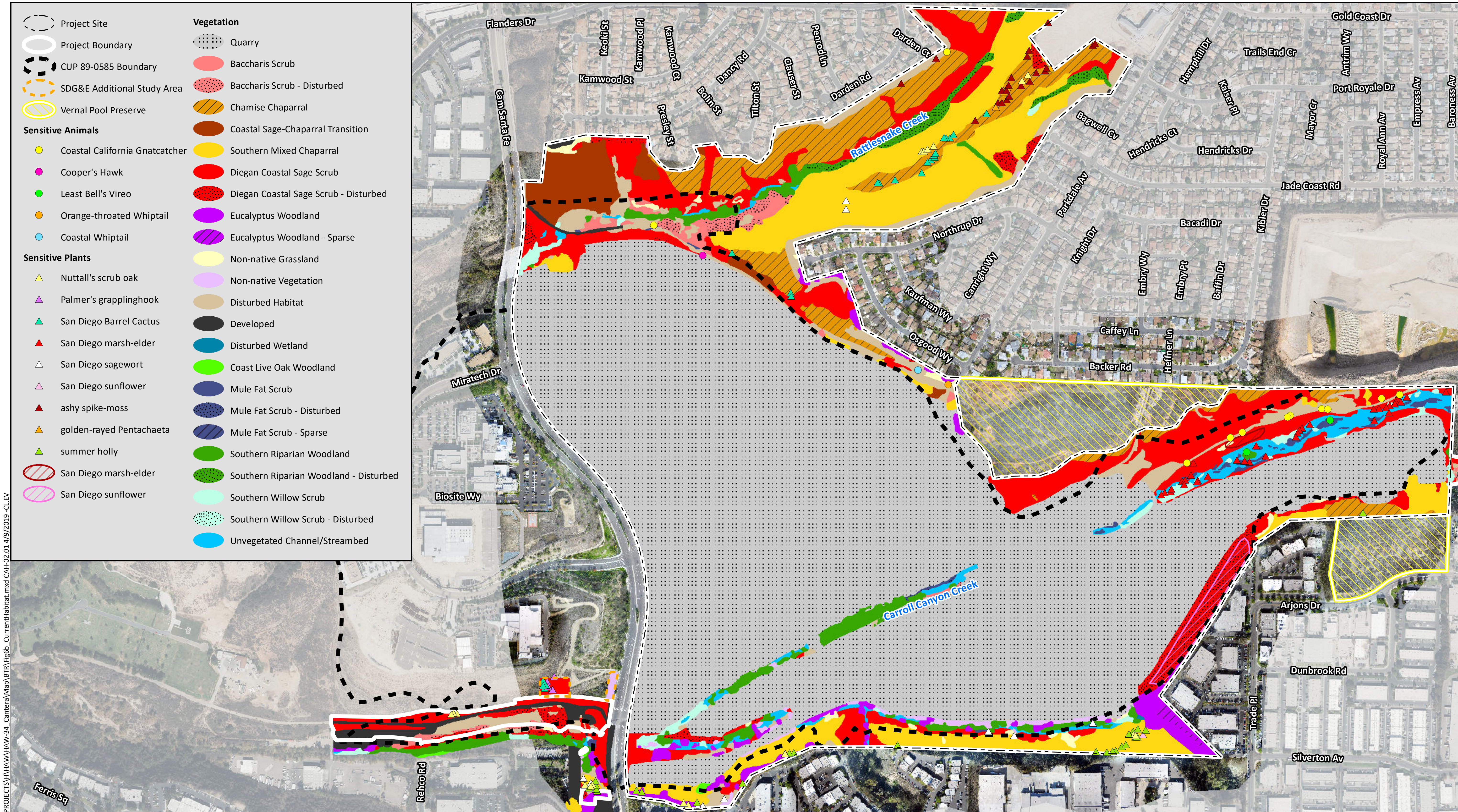
0 650 Feet

N

HELIX Environmental Planning

Potential Site Condition Post CUP 89-0585 Implementation and Reclamation

Figure 6a


Project Site
Project Boundary
CUP 89-0585 Boundary
SDG&E Additional Study Area
Vernal Pool Preserve
Sensitive Animals
Coastal California Gnatcatcher
Cooper's Hawk
Least Bell's Vireo
Orange-throated Whiptail
Coastal Whiptail
Sensitive Plants
Nuttall's scrub oak
Palmer's grapplinghook
San Diego Barrel Cactus
San Diego marsh-elder
San Diego sagewort
San Diego sunflower
ashy spike-moss
golden-rayed Pentachaeta
summer holly
San Diego marsh-elder
San Diego sunflower
Vegetation
Quarry
Baccharis Scrub
Baccharis Scrub - Disturbed
Chamise Chaparral
Coastal Sage-Chaparral Transition
Southern Mixed Chaparral
Diegan Coastal Sage Scrub
Diegan Coastal Sage Scrub - Disturbed
Eucalyptus Woodland
Eucalyptus Woodland - Sparse
Non-native Grassland
Non-native Vegetation
Disturbed Habitat
Developed
Disturbed Wetland
Coast Live Oak Woodland
Mule Fat Scrub
Mule Fat Scrub - Disturbed
Mule Fat Scrub - Sparse
Southern Riparian Woodland
Southern Riparian Woodland - Disturbed
Southern Willow Scrub
Southern Willow Scrub - Disturbed
Unvegetated Channel/Streambed
Flanders Dr
Kamwood St
Cam Santa Fe
Rattlesnake Creek
Northrup Dr
Miratech Dr
Biosite Wy
Carroll Canyon Creek
Backer Rd
Caffey Ln
Arjons Dr
Dunbrook Rd
Silverton Av
Trade Pl
Rehco Rd
Ferris Sq
Gold Coast Dr
Trails End Cr
Port Royale Dr
Hendricks Dr
Jade Coast Rd
Bacadi Dr
Darden Rd
Darden Ct
Bagwell Cv
Hendricks Ct
Kaufman Wy
Osgood Wy
Parkdale Av
Knight Dr
Embry Wy
Embry Pt
Baffin Dr
Kibler Dr
Heffner Ln

I:\PROJECTS\H\HAW\HAW-34_Cantera\Map\BTR\Fig6b_CurrentHabitat.mxd CAH-02.01 4/9/2019 -CL,EV

0 650 Feet

Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018); MHPA (SanGIS 2015); Limits of Grading (PDC 2018).

HELIX Environmental Planning

Existing Vegetation and Land Cover Types Prior to CUP 89-0585 Reclamation

Figure 6b

- Project Site
- Project Boundary
- CUP 89-0585 Boundary
- SDG&E Additional Study Area
- Vernal Pool Preserve

Sensitive Animals

- Coastal California Gnatcatcher
- Cooper's Hawk
- Least Bell's Vireo
- Orange-throated Whiptail
- Coastal Whiptail

Sensitive Plants

- Nuttall's scrub oak
- Palmer's grapplinghook
- San Diego Barrel Cactus
- San Diego marsh-elder
- San Diego sagewort
- San Diego sunflower
- ashy spike-moss
- golden-rayed Pentachaeta
- summer holly
- San Diego marsh-elder
- San Diego sunflower

CUP 89-0585

- *Wetland/Riparian Enhancement*
- *Wetland/Riparian/Streambed Restoration*
- *CUP 89-0585 Reclamation Grading for Intended Development Use*
- *Upland Restoration (City Tier II Habitat)*

Vegetation

- *Baccharis Scrub*
- *Baccharis Scrub - Disturbed*
- *Chamise Chaparral*
- *Coastal Sage-Chaparral Transition*
- *Southern Mixed Chaparral*
- *Diegan Coastal Sage Scrub*
- *Diegan Coastal Sage Scrub - Disturbed*
- *Eucalyptus Woodland*
- *Eucalyptus Woodland - Sparse*
- *Non-native Grassland*
- *Non-native Vegetation*
- *Disturbed Habitat*
- *Developed*
- *Disturbed Wetland*
- *Coast Live Oak Woodland*
- *Mule Fat Scrub*
- *Mule Fat Scrub - Sparse*
- *Southern Riparian Woodland*
- *Southern Riparian Woodland - Disturbed*
- *Southern Willow Scrub*
- *Southern Willow Scrub - Disturbed*
- *Unvegetated Channel/Streambed*

I:\PROJECTS\H\HAW\H4W-34_CanteraMap\BTR\Fig6c_Habitat.mxd CAH-02.01 4/23/2019 - SAB

0 650 Feet

Source: Aerial (SanGIS 2014, Enviromine, Inc. 2017); Limits of Grading (PDC 2018).

HELIX Environmental Planning

Baseline Condition Post CUP 89-0585 Reclamation on Aerial with Mapping of Vegetation

Figure 6c

2.3 JURISDICTIONAL DELINEATION

Mr. Sward conducted a formal jurisdictional delineation of the 3Roots Project site on April 19 and 20, 2016 (Table 2). On June 19 and 23, 2017, Mr. Sward further delineated CDFW jurisdictional areas along the channels. Additionally, the eastern and western extensions of Carroll Canyon Road were delineated by Mr. Sward and Mrs. Nigro on June 5, June 28 and December 4, 2018. Results of the delineation (HELIX 2018a) for the Project, including off-site areas, are included in this report and discussed in Section 4.4.

United States Army Corps of Engineers

The U.S. Army Corps of Engineers (USACE) wetland boundaries were determined using the three criteria (vegetation, hydrology, and soils) established for wetland delineations, as described in the Wetlands Delineation Manual (Environmental Laboratory 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Arid West Supplement; U.S. Army Corps of Engineers 2008).

The jurisdictional limits of USACE jurisdictional areas were confirmed during an on-site meeting on February 19, 2019, with USACE Project Manager Christopher Allen.

Areas were determined to be non-wetland Waters of the U.S. (WUS) if there was evidence of regular surface flow (e.g., bed and bank) but the vegetation and/or soils criterion was not met. Jurisdictional limits for these areas were defined by the Ordinary High Water Mark (OHWM), which is defined in 33 Code of Federal Regulations Section 329.11 as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of the soil; destruction of terrestrial vegetation; the presence of litter or debris; or other appropriate means that consider the characteristics of the surrounding areas." The USACE has issued further guidance on the OHWM (Riley 2005; Lichvar and McColley 2008), which was also used for the delineation.

California Regional Water Quality Control Board

Areas regulated by the State Regional Water Quality Control Board (RWQCB) are generally coincident with the USACE but can also include isolated features that have evidence of surface water inundation pursuant to the state Porter Cologne Act. Although the RWQCB does not have specific parameters to define their limits of jurisdiction, these areas generally support at least one of the three USACE wetlands indicators but are considered isolated through the lack of surface water hydrology/connectivity downstream.

The jurisdictional limits of RWQCB jurisdictional areas were confirmed during an on-site meeting on September 21, 2017, with RWQCB Environmental Scientist Alan Monji attending this meeting.

California Department of Fish and Wildlife Jurisdiction

In accordance with Section 1600 et seq. of the CFG Code, the CDFW jurisdictional areas were determined based on the presence of riparian vegetation or regular surface flow. Unvegetated channels within CDFW jurisdiction were delineated based on the presence of a bed, channel, or bank These definitions for CDFW jurisdictional habitat allows for a wide variety of habitat types to be jurisdictional, including some that do not include wetland species (e.g., oak woodland and alluvial fan sage scrub).

Jurisdictional limits for CDFW streambed were identified to the tops of channel banks. Vegetated CDFW habitats were mapped at the limits of riparian vegetation (canopy edge).

Section 1600 et seq. does not extend to isolated wetlands and waters such as small ponds not associated with a water course, meadows, vernal pools, or marine waters or waters influenced by tidal ebb and flow.

The jurisdictional limits of CDFW jurisdictional areas were confirmed during an on-site meeting on September 21, 2017, with CDFW Environmental Scientist Kelly Fisher.

City Jurisdiction

The City's Land Development Code (§113.0101) defines wetlands as areas that are characterized by any of the following conditions:

1. All areas persistently or periodically containing naturally occurring wetland vegetation communities characteristically dominated by hydrophytic vegetation, including but not limited to, salt marsh, brackish marsh, freshwater marsh, riparian forest, oak riparian forest, riparian woodlands, riparian scrub, and vernal pools;

2. Areas that have hydric soils or wetland hydrology and lack naturally occurring wetland vegetation communities because human activities have removed the historic wetland vegetation, or catastrophic or recurring natural events or processes have acted to preclude the establishment of wetland vegetation, as in the case of salt pannes and mudflats;

3. Areas lacking wetland vegetation communities, hydric soils, and wetland hydrology due to non-permitted filling of previously existing wetlands;

4. Areas mapped as wetlands on Map No. C-713 as shown in Chapter 13, Article 2, Division 6 (Sensitive Coastal Overlay Zone).

It is intended for this definition to differentiate, for the purposes of delineating wetlands, naturally occurring wetlands and wetlands intentionally created by human actions, from areas with wetlands characteristics unintentionally resulting from human activities in historically non-wetland areas. With the exception of wetlands created for the purpose of providing wetland habitat or resulting from human actions to create open waters or from the alteration of natural stream courses, areas demonstrating wetland characteristics, which are artificially created, are not considered wetlands by this definition. Considering regional precipitation cycles, all adopted scientific, regulatory, and technological information available from the state and federal wildlife agencies shall be used for guidance on the identification of hydrophytic vegetation, hydric soils, and wetland hydrology.

2.4 RARE PLANT SURVEY

Spring and summer rare plant surveys were conducted on April 21 and June 23, 2017, by HELIX biologist Amy Mattson. Further, a survey for rare plants was conducted on April 9, 2019 for areas within the Project boundary and the SDG&E study area, west of Camino Santa Fe. Rare plants were also searched for during the jurisdictional delineations discussed above and the least Bell's vireo (*Vireo bellii pusillus*) surveys noted below.

2.5 LEAST BELL'S VIREO SURVEYS

Protocol surveys for least Bell's vireo consisted of eight surveys, seven to 10 days apart, and were finished on July 6, 2017 (HELIX 2017). The survey results are included in this report and the formal survey report is attached to this report as Appendix A.

2.6 SURVEY LIMITATIONS

Extensive surveys throughout the flowering period for annual plant species and during the breeding season for sensitive animal species were not conducted. Absence of Narrow Endemic plant species in most of the Project is based on the highly disturbed nature of the Project area and the rare plant survey. The presence of a sensitive riparian bird species in the Project is based on protocol least Bell's vireo surveys conducted for the project. The jurisdictional delineation was conducted in the summer during a drought year. Nocturnal survey efforts were not conducted.

2.7 NOMENCLATURE

Nomenclature used in this report follows the conventions used in the City's Biology Guidelines (City 2012) and the MSCP (City 1997). Vegetation community classifications follow Holland (1986) and as-revised by Oberbauer (2008); plant names follow the "Jepson Manual" (Baldwin et al. 2012) or Rebman and Simpson (2014). Animal nomenclature is taken from American Ornithologists' Union (2016) for birds, Baker et al. (2003) for mammals, and Collins and Taggart (2002) for reptiles. Sensitive plant species status follows the California Native Plant Society (CNPS; 2017) and sensitive animal species status follows the CDFW (2018a).

3.0 REGULATORY FRAMEWORK

The site is governed by several federal, state, and local policies and regulations and such regulatory act(s) and plan(s) that apply to the 3Roots project include: the federal and state Endangered Species Acts (ESAs), MBTA, CWA, CEQA, CFG Code 3503.5, City MSCP, City Land Development Code, City Environmentally Sensitive Lands (ESL) Ordinance, and the 1994 CCMP, as amended (T&B Planning Consultants, Inc. and Fenton Western Properties [T&B] 1994). The Project is required to comply with all applicable federal and state statues, including local policies, pertaining biological resources as described in this Section.

Required Project approvals include EIR Certification, Master Plan Amendment, Specific Plan Approval, Re-zone, Site Development Permit, Vesting Tentative Tract Map, MHPA BLA, Facilities Benefits Assessments, Amendment to the Public Facilities Financing Plan, a CUP Boundary Amendment acting as a Reclamation Plan Amendment. The MHPA BLA analysis is included herein Section 6.0. Below are summaries of the biological regulations applicable to the proposed 3Roots Project.

3.1 FEDERAL

3.1.1 Endangered Species Act

Administered by the USFWS, the Federal Endangered Species Act (FESA) provides the legal framework for the listing and protection of species (and their habitats) that are identified as being endangered or

threatened with extinction. Actions that impact endangered or threatened species and the habitats upon which they rely are considered a "take" under the FESA. Section 9(a) of the FESA defines take as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." "Harm" and "harass" are further defined in federal regulations and case law to include actions that adversely impair or disrupt a listed species' behavioral patterns.

The USFWS designates critical habitat for endangered and threatened species. Critical habitat is defined as areas of land that are considered necessary for endangered or threatened species to recover. The ultimate goal is to restore healthy populations of listed species within their native habitats so they can be removed from the list of threatened or endangered species. Once an area is designated as critical habitat pursuant to the FESA, federal agencies must consult with the USFWS to ensure that any action they authorize, fund, or carry out is not likely to result in destruction or adverse modification of the critical habitat.

Sections 7 and 10(a) of the FESA regulate actions that could impact endangered or threatened species. Section 7 generally describes a process of federal interagency consultation and issuance of a biological opinion and incidental take statement when federal actions may adversely affect listed species. Section 10(a) generally describes a process for preparation of a Habitat Conservation Plan and issuance of an Incidental Take Permit (ITP). Pursuant to Section 10(a), the City was issued a take permit for their adopted MSCP Subarea Plan and VPHCP. Actions consistent with the adopted Subarea Plan and VPHCP have authorized take authority for covered species.

3.1.2 Migratory Bird Treaty Act

All migratory bird species that are native to the United States or its territories are protected under the federal MBTA, as amended under the Migratory Bird Treaty Reform Act of 2004 (H.R. 4114). The MBTA is generally protective of migratory birds but does not actually stipulate the type of protection required. In common practice, the MBTA is now used to place restrictions on disturbance of active bird nests during the nesting season. In addition, the USFWS commonly places restrictions on disturbances allowed near active raptor nests.

3.1.3 Clean Water Act

The Federal CWA is legislation (33 U.S.C. §1251 et seq.) that regulates water quality standards and impacts (fills and discharges) to surface waters, including wetlands. The CWA is administered by USACE and RWQCB under the 404 and 401 programs, respectively. Impacts to areas regulated by the CWA require a USACE 404 permit and a 401 Certification from the RWQCB.

3.2 STATE OF CALIFORNIA

3.2.1 Environmental Quality Act

Primary environmental legislation in California is found in CEQA and its implementing guidelines (State CEQA Guidelines), which require that projects with potential adverse effects (or impacts) on the environment undergo environmental review. Adverse environmental impacts are typically mitigated as a result of the environmental review process in accordance with existing laws and regulations.

3.2.2 Endangered Species Act

The California Endangered Species Act (CESA) established that it is State policy to conserve, protect, restore, and enhance State endangered species and their habitats. Under State law, plant and animal species may be formally designated rare, threatened, or endangered by official listing by the California Fish and Game Commission. The CESA authorizes that private entities may "take" plant or wildlife species listed as endangered or threatened under the FESA and CESA, pursuant to a federal Incidental Take Permit if the CDFW certifies that the incidental take is consistent with CESA (CFG Code Section 2080.1[a]). For State-only listed species, Section 2081 of CFG Code authorizes the CDFW to issue an Incidental Take Permit for State listed threatened and endangered species if specific criteria are met. The City was issued a take permit for their adopted MSCP Subarea Plan pursuant to Section 2081. Actions consistent with the adopted Subarea Plan and VPHCP have authorized take authority for covered species.

3.2.3 Fish and Game Code

The CFG Code provides specific protection and listing for several types of biological resources. Pursuant to CFG Code Section 3503, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Raptors and owls and their active nests are protected by CFG Code Section 3503.5, which states that it is unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird unless authorized by the CDFW. Section 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the MBTA. These regulations could require that construction activities (particularly vegetation removal or construction near nests) be reduced or eliminated during critical phases of the nesting cycle unless surveys by a qualified biologist demonstrate that nests, eggs, or nesting birds would not be disturbed, subject to approval by CDFW and/or USFWS.

3.3 CITY OF SAN DIEGO

3.3.1 Environmentally Sensitive Lands

Environmentally Sensitive Lands (ESL) include sensitive biological resources, steep hillsides, coastal beaches, sensitive coastal bluffs and 100-year floodplains. Mitigation requirements for sensitive biological resources follow the requirements of the City's Biology Guidelines (2012) as outlined in the City's Municipal Code ESL Regulations (Chapter 14, Article 3, Division 1). Impacts to biological resources within and outside the MHPA must comply with the ESL Regulations, which also serve as standards for the determination of biological impacts and mitigation under the CEQA in the City.

The purpose of the ESL Regulations is to, "protect, preserve and, where damaged, restore the ESL of San Diego and the viability of the species supported by those lands." The regulations applicable to the Project and discussed in this report require that development avoid impacts to certain sensitive biological resources as much as possible including but not limited to MHPA lands; wetlands and vernal pools in naturally occurring complexes; federal and State listed, non-MSCP Covered Species; and MSCP Narrow Endemic species. Furthermore, the ESL Regulations state that wetlands impacts should be avoided, and unavoidable impacts should be minimized to the maximum extent practicable. Where impacts are unavoidable, deviation findings must be made in accordance with Section 143.0150 of the City Municipal Code. In addition to protecting wetlands, the ESL Regulations require that a buffer be maintained around wetlands, as appropriate, to protect wetland-associated functions and values. While

a 100-foot buffer width is generally preferred by the City and Resource Agencies, this width may be increased or decreased on a case-by-case basis in consultation with the CDFW, USACE, and USFWS (City 2012).

3.3.2 Multiple Species Conservation Program

The MSCP is a long-term regional conservation plan established to protect sensitive species and habitats within San Diego County. The MSCP is separated into local Subarea Plans that are implemented independently from each other. The entire 3Roots site is within the City of San Diego Subarea Plan. The City's MSCP Subarea Plan (1997a) was prepared pursuant to the outline developed by USFWS and CDFW to meet the requirements of the State Natural Communities Conservation Planning Act of 1992. Adopted by the City in March 1997, the Subarea Plan forms the basis for the MSCP Implementing Agreement, which is the contract between the City, USFWS, and CDFW (City 1997b). The Implementing Agreement ensures implementation of the Subarea Plan and thereby allows the City to issue "take" permits under the federal and State ESAs to address impacts at the local level. Under the FESA, an ITP is required when non-federal activities would result in "take" of a threatened or endangered species. A habitat conservation plan, such as the City's MSCP Subarea Plan, must accompany an application for a federal ITP. In July 1997, USFWS, CDFW, and City entered into the 50-year MSCP Implementing Agreement, wherein the City received its FESA Section 10(a) ITP (City 1997b).

The City's MSCP Subarea Plan covers the entire 206,124 acres in the City of San Diego. The Subarea Plan identifies lands designated as MHPA, which is a "hard-line" preserve developed by the City in cooperation with the wildlife agencies, developers, property owners, and various environmental groups. Within the MHPA, biological core resource areas and corridors targeted for conservation are identified and discussed, in which development restrictions may occur (City 1997a).

Pursuant to the MSCP permit issued pursuant to Section 10(a), the City has incidental "take" authority over 85 rare, threatened, and endangered species including regionally sensitive species that it aims to conserve (i.e., "MSCP Covered Species). "MSCP Covered" refers to species that are covered by the City's federal and state ITPs and considered to be adequately protected within the City's Preserve, the MHPA. Special "Conditions of Coverage" apply to MSCP Covered Species that would be potentially impacted by projects including modifying project design to avoid impacts to Covered Species in the MHPA where feasible. Additionally, projects must adhere to MSCP Subarea Plan requirements including those for BLAs (MSCP Section 1.1.1); Compatible Land Uses, General Planning Policies/Design Guidelines, and MHPA Land Use Adjacency Guidelines (LUAGs; MSCP Sections 1.4.1-1.4.3), as well as general and specific management policies where applicable). Additional State and federal policy, regulations, and permits may also be required for wetlands and species not covered or fully covered under the MSCP.

The 3Roots Project lies within the "Urban Area" of the City MSCP Subarea Plan and areas of the project site are designated as MHPA. Section 1.2 of the MSCP does not identify any specific MHPA guidelines for the Project site. Section 1.4.1 of the MSCP Subarea Plan provides guidelines for compatible uses within the MHPA, and Section 1.4.2 provides general planning policies and design guidelines. Section 1.5.2 of the Subarea Plan provides general management directives including mitigation, restoration, public access, trails and recreation, litter/trash storage, adjacency management issues, exotics control, and flood control guidance. There are no specific MSCP policies and directives for the Urban Areas in the Subarea Plan. Project consistency with the MSCP guidelines and policies is summarized in Section 7.0 of this report.

3.3.3 Multi-Habitat Planning Area

The MHPA is the area within which the permanent MSCP preserve would be assembled and managed for its biological resources. Input from responsible agencies and other interested participants resulted in adoption of the City's MHPA in 1997. The City's MHPA areas are defined by "hard-line" limits, "with limited development permitted based on the development area allowance of the OR-1-2 zone [open space residential zone]" (City 1997a) and MSCP Subarea Plan requirements.

The MHPA consists of public and private lands, much of which has been conserved. Conserved lands include lands that have been set aside for mitigation or purchased for conservation. These lands may be owned by the City (i.e., dedicated lands) or other agencies, may have conservation easements, or may have other restrictions (per the City's ESL regulations) that protect the overall quality of the resources and prohibit development.

In general, a maximum 25 percent encroachment into the MHPA is allowed for development. If 25 percent of the site is outside the MHPA, development could be restricted to this area. In addition, development is required to be located in the least sensitive area feasible. Should more than 25 percent encroachment be desired, an MHPA BLA may be proposed. The City's MSCP Subarea Plan states that adjustments to the MHPA boundary line are permitted without the need to amend the City's Subarea Plan, provided the boundary adjustment results in an area of equivalent or higher biological value. To meet this standard, the area(s) proposed for addition to the MHPA must meet the six functional equivalency criteria set forth in Section 5.4.2 of the Final MSCP Plan (County of San Diego [County] 1998). All MHPA BLAs require approval by the Wildlife Agencies and approval from a City discretionary hearing body.

For parcels located outside the MHPA, "there is no limit on the encroachment into sensitive biological resources, with the exception of wetlands, and listed non-covered species' habitat (which are regulated by state and federal agencies) and narrow endemic species." However, "impacts to sensitive biological resources must be assessed and mitigation, where necessary, must be provided in conformance" with the City's ESL Ordinance as implemented through compliance with the City's Biology Guidelines (City 2012).

The MSCP includes management priorities to be undertaken by the City as part of its MSCP implementation requirements. Those actions, identified as Priority 1, are required to be implemented by the City as a condition of the MSCP ITP to ensure that MSCP Covered Species are adequately protected. The actions identified as Priority 2 may be undertaken by the City as resources permit.

3.3.3.1 MHPA Land Use Adjacency Guidelines

To address the integrity of the MHPA and avoid/minimize indirect impacts to the MHPA, guidelines were developed to manage land uses adjacent to the MHPA during construction and implementation of a project. These guidelines address the issues of drainage, toxics, lighting, noise, barriers, invasive species, brush management, and grading/land development. The MHPA LUAGs would be made a condition of the Project approval.

4.0 SURVEY RESULTS

4.1 SITE DESCRIPTION

This section describes the physical characteristics of the Project area, including but not limited to: topography, soils, and water resources, land uses, baseline conditions, sensitive habitats, and/or potentially jurisdictional resources present. Specifically, the Project boundary discussed and analyzed in this report includes the subject 413-acre Project site and the immediate off-site areas associated with Carroll Canyon Road extension and the SDG&E utility work, totaling approximately 421.9 acres.

4.1.1 Topography, Soils, and Water Resources

Topographic complexity within the Project boundary is the result of a natural canyon, watercourses, and man-made features as a result of the quarry. Rattlesnake Canyon originates at an elevation of approximately 340 and 365 feet above mean sea level (AMSL) on the east side of the site, and down to approximately 270 feet AMSL on the west side of the site. Carroll Canyon is approximately 297 feet AMSL on the east side of the site and approximately 214 feet AMSL to the west. Most of the land between these Canyons is a quarry (undergoing reclamation), characterized by variable, temporally changing topography, and a relatively flat industrial area. The southern portion of the site and the edges along the quarry are very steep. Overall, the Project area slopes down to the west.

The 3Roots Project is mapped as supporting ten soil types (USDA 2016): Altamont clay, 15 to 30 percent slopes; Gravel pits; Olivenhain cobbly loam, 2 to 9 percent slopes; Olivenhain cobbly loam, 9 to 30 percent slopes; Olivenhain cobbly loam, 30 to 50 percent slopes; Redding cobbly loam, dissected, 15 to 50 percent slopes; Redding cobbly loam, 9 to 30 percent slopes; Redding gravelly loam, 2 to 9 percent slopes; Riverwash; and Terrace escarpments. Riverwash occurs along the southern drainage, flanked by Terrace escarpments to the east and Olivenhain cobbly loam (2 to 9 percent slopes) and Redding cobbly loam, dissected (15 to 50 percent slopes) to the west. Redding gravelly loam, 2 to 9 percent slopes, covers the majority of the quarry and a portion of the southeast corner of the Project. Redding cobbly loam (9 to 30 percent slopes and 30 to 50 percent slopes) occupies most of the northern side of the Project. Altamont clay, 15 to 30 percent slopes, occurs northwest of the quarry. Because the site has been actively quarried for decades, these soil types only remain where quarrying has not occurred.

Biological resources within the Project boundary include stream channels, associated floodplains, riparian habitats, the surrounding upland areas. Rattlesnake Creek is located at the bottom of a canyon that meanders across the northern portion of the site. Two unnamed tributaries feed into Rattlesnake Creek from the southeast. Rattlesnake Creek is disturbed in character as non-native species comprise a significant proportion of vegetation in the area.

Carroll Canyon Creek meanders through the southern portion of the site and merges with an unnamed blue-line stream at the southwest corner of the site. Upper Carroll Canyon Creek has relatively high quality habitat, as determined by the presence of fewer non-native species. The middle and lower sections of Carroll Canyon Creek and the southern tributary are substantially disturbed by the mining activities and support several non-native species. The unnamed blue-line stream spanning along the south and southwest portions of the site, although not substantially disturbed by the mining activities, also supports several non-native species.

4.1.2 Land Uses

Most of the Project site is part of the quarry, site reclamation areas, or associated with other industrial operations related to the quarry. Portions along the southern boundary slope appear to have been landscaped, as evidenced by irrigation lines in those areas. The northern portion of the Project area is undeveloped. A review of historical aerial photos on Historicaerials.com revealed that the Project site has been subject to ongoing human disturbance since at least 1964.

Currently, the Project site experiences heavy disturbance from human activities including ongoing reclamation operations, industrial activities from active tenants, traffic noise from Camino Santa Fe, and night lighting from surrounding existing development.

Land uses surrounding the Project include residential development to the north, and industrial and commercial development to the south, west, and east. Another aggregate materials site (i.e., quarry) occurs further to the east. Some undeveloped land occurs west and east of the Project area, within the canyons extending away from the site. Camino Santa Fe bounds the property to the west.

Two vernal pool complexes are located off site and near (i.e., within 500 feet) the Project boundary. One complex is an established vernal pool preserve and is located adjacent to the northeastern portion of the Project; the other vernal pool complex is located off-site and southeast of the Project and is not a formal vernal pool preserve but is considered conserved under the VPHCP (Figure 4). The northern off-site preserve was enclosed with fencing and set aside as mitigation for the previously approved CCMP and would remain a preserve. The southern off-site complex is not a formal preserve, but is fenced to preclude public access, similar to the northern preserve, this southern complex would also not be impacted by the Project.

4.2 BIOLOGICAL RESOURCES

This section describes the existing biological resources of the Project boundary including: vegetation communities, general flora and fauna, and rare, threatened, endangered, endemic, sensitive, MSCP-covered species, and jurisdictional resources. A list of all plant and animal species observed or detected is provided in Appendix B; the potential for MSCP Narrow Endemic and sensitive species to occur in the Project boundary is analyzed in Appendix C; sensitive species occurring or with high potential to occur in the Project boundary are discussed in detail within this report.

4.2.1 Botanical Resources

Vegetation Communities

A total of 17 vegetation communities (including land cover types) were recorded within the Project boundary, incorporating approximately 421.9 acres (Table 3; Figure 6b): mule fat scrub (including disturbed and sparse phases), southern riparian woodland (including a disturbed phase), southern willow scrub (including a disturbed phase), unvegetated channel, disturbed wetland, coast live oak woodland, Diegan coastal sage scrub (including a disturbed phase), coastal sage – chaparral transition, southern mixed chaparral (including a disturbed phase), baccharis scrub (including a disturbed phase), chamise chaparral, non-native grassland, eucalyptus woodland (including a sparse phase), disturbed habitat, non-native vegetation, quarry, and developed. These vegetation communities and land covers

are discussed in detail below, their spatial distribution is presented on Figure 6b, and the corresponding acreages are provided in Table 3.

Table 3*
EXISTING VEGETATION COMMUNITIES AND LAND COVER TYPES WITHIN THE PROJECT AREA BEFORE ON-SITE RECLAMATION UNDER CUP 89-0585 (acres)

Vegetation Community or Land Cover Type[1]	Tier	Area
Mule fat scrub (63310) – including disturbed and sparse phases	Wetland	1.43
Southern riparian woodland (62500) – including disturbed phase	Wetland	9.57
Southern willow scrub (63320) – including disturbed phase	Wetland	2.88
Disturbed Wetland (11200)	Wetland	0.07
Unvegetated channel "streambed" (64200)	--	6.20
Coast live oak woodland (71160)	I	0.12
Diegan coastal sage scrub (32500) – including disturbed phase	II	47.06
Baccharis scrub (32530) – including disturbed phase	II	3.71
Coastal sage – chaparral transition	II	7.29
Chamise chaparral (37200)	IIIA	22.11
Southern mixed chaparral (37120)	III	38.29
Non-native grassland (42200)	IIIB	1.47
Eucalyptus woodland (79100) – including sparse phase	IV	6.8
Disturbed habitat (11300)	IV	16.8
Non-native vegetation (11000)	--	1.7
Quarry (12000)	--	253
Developed (12000)	--	3.4
	TOTAL	**421.9**

* Totals reflect rounding (0.1 for uplands and 0.01 for sensitive uplands and wetlands/riparian).
[1] Vegetation community codes are from Oberbauer (2008).

Mule Fat Scrub (including disturbed and sparse phases)

Mule fat scrub is a depauperate, shrubby riparian scrub community dominated by mule fat (*Baccharis salicifolia*) and interspersed with small willows (*Salix* spp.). This vegetation community occurs along intermittent stream channels with a fairly coarse substrate and moderate depth to the water table. This early seral community is maintained by frequent flooding, the absence of which would lead to a cottonwood (*Populus* sp.) or sycamore (*Platanus* sp.) dominated riparian woodland or forest (Holland 1986), provided the requisite hydrology is present to support the greater water needs of those habitats. Most of the mule fat scrub within the Project boundary occurs in patches within the eastern portion of Carroll Canyon Creek and is relatively undisturbed by quarrying activities.

Southern Riparian Woodland (including disturbed phase)

Southern riparian woodland is moderate-density riparian woodland dominated by small trees and shrubs, with scattered taller trees, including mature willows, western sycamore (*Platanus racemosa*), and western cottonwood (*Populus fremontii*). It typically occurs along river systems and major tributaries where flood scour occurs. Within the Project boundary, southern riparian woodland occurs along most of the Rattlesnake Creek, the central and southwestern portions of Carroll Canyon Creek, the unnamed tributary to Carrol Canyon Creek along the southern portion of the site, and in a patch within an unnamed tributary located in the eastern portion of the Project boundary. Virtually all the southern riparian woodland on site has been degraded to some degree, with the western portion of Carroll

Canyon Creek being most severely degraded. The western section (east of Camino Santa Fe) has significant amounts of concrete on the channel bottom and side slopes and also has a significant component of pampas grass (*Cortaderia selloana*). The central section is less disturbed than the western section but does have some concrete on the channel bottom and side slopes and also has patches of pampas grass.

Southern Willow Scrub (including disturbed phase)

Southern willow scrub consists of dense, broad-leaved, winter-deciduous stands of trees dominated by mostly by arroyo willow (*Salix lasiolepis*) in association with mule fat, and with scattered emergent western cottonwood. This vegetation community appears as a single layer; it lacks separate shrub and tree layers and generally appears as a mass of short trees or large shrubs. It occurs on loose, sandy or fine gravelly alluvium deposited near stream channels during flood flows. Frequent flooding maintains this early seral community, preventing succession to a riparian woodland or forest (Holland 1986). In the absence of periodic flooding, this early seral type would be succeeded by southern cottonwood or western sycamore riparian forest, provided the requisite hydrology is present to support the greater water needs of those habitats. Patches of southern willow scrub occur in the drainages within the Project boundary, mostly in the central drainage (Carroll Canyon Creek). Virtually all of the southern willow scrub on site has been degraded to some degree, with the western portion of Carroll Canyon Creek being most severely degraded.

Disturbed Wetland

This vegetation community is dominated by exotic wetland species that invade areas that have been previously disturbed or undergone periodic disturbances. These non-natives become established more readily following natural or human-induced habitat disturbance than the native wetland flora. Characteristic species of disturbed wetlands include annual beard grass (*Polypogon monspeliensis*), bristly ox tongue (*Helminthotheca echioides*), cocklebur (*Xanthium strumarium*), and curly dock (*Rumex crispus*). Within the Project boundary, disturbed wetland is mapped in the upper portion of the unnamed tributary to Carroll Canyon Creek located in the south-east portion of the site. Species present included annual beard grass, grass poly (*Lythrum hyssopifolia*), Bermuda grass (*Cynodon dactylon*), and Italian ryegrass (*Festuca perennis*).

Unvegetated Channel

Unvegetated channel is the unvegetated portion of large drainage features on site. Within the Project boundary, the smaller tributaries to Rattlesnake Creek are almost entirely unvegetated channel beneath existing vegetation, whereas the easternmost portion of Carroll Canyon Creek and western side of Rattlesnake Creek are mostly unvegetated open channel dotted with patches of riparian scrub and riparian woodland vegetation. These smaller tributaries are presented in the vegetation mapping as the overlying vegetation type and the larger open channels are presented as unvegetated channel in the vegetation map.

Coast Live Oak Woodland

Coast live oak woodland is dominated by coast live oak (*Quercus agrifolia*), an evergreen oak that reaches 10-25 meters in height. The shrub layer is poorly developed but may include western poison-oak (*Toxicodendron diversilobum*), toyon (*Heteromeles arbutifolia*), currant (*Ribes* spp.,) and blue elderberry (*Sambucus nigra* ssp. *caerulea*). The herb component is continuous and dominated by ripgut

grass (*Bromus diandrus*) and several other introduced taxa (e.g., Italian thistle [*Carduus pycnocephalus*]). Coast live oak woodland is located in a patch in the southwest corner of the Project site.

Diegan Coastal Sage Scrub (including disturbed phase)

Coastal sage scrub is one of the two major shrub types that occur in southern California, occupying xeric sites characterized by shallow soils (the other is chaparral). Four distinct coastal sage scrub geographical associations (northern, central, Venturan, and Diegan) are recognized along the California coast. Diegan coastal sage scrub may be dominated by a variety of species depending upon soil type, slope, and aspect. Typical species found within Diegan coastal sage scrub include California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum* ssp. *fasciculatum*), laurel sumac (*Malosma laurina*), lemonadeberry (*Rhus integrifolia*), and black sage (*Salvia mellifera*). Within the Project boundary, Diegan coastal sage scrub occurs on the northern, southern, and eastern slopes flanking the drainages, on slopes around the quarry. Within the Project boundary, this vegetation community is dominated by California buckwheat, broom baccharis (*Baccharis sarothroides*), and fascicled tarplant (*Deinandra fasciculata*). On the southeast slope of the Project site, it is dominated by San Diego sunflower (*Bahiopsis laciniata*).

Baccharis Scrub (including disturbed phase)

Baccharis scrub is similar to Diegan coastal sage scrub but dominated by baccharis species (broom baccharis and coyote brush [*B. pilularis*]). It often occurs within Diegan coastal sage scrub on disturbed sites and areas with nutrient-poor soils, and on upper terraces of streams and in detention basins, where it includes goldenbush (*Isocoma menziesii*). Baccharis scrub in the Project boundary is confined to the southern hillsides of the downstream portion of Rattlesnake Creek and previously disturbed and revegetating areas along Carroll Canyon Road west of Camino Santa Fe.

Coastal Sage – Chaparral Transition

This vegetation community is an intermediate vegetation type between coastal sage scrub and chaparral and contains a mix of species characteristic of each community. Within the Project boundary, coastal sage-chaparral transition occurs in the northwest corner and in a small patch along the northern edge of the quarry and CUP boundary.

Southern Mixed Chaparral (including disturbed phase)

Southern mixed chaparral consists of broad-leaved sclerophyll shrubs, 1.5-3 meters tall. Occasionally, it occurs within patches of bare soil or forming a mosaic with Venturan Coastal Sage Scrub (32300) or Riversidean Sage Scrub (32700). It is divisible into Granitic (37121) and Mafic (37122) subtypes based on substrate, but floristic distinctions between these two subtypes remain unknown. In San Diego County, southern mixed chaparral is dominated by blue-colored lilacs, especially Ramona lilac (*Ceanothus tomentosus* var. *olivaceous*) as well as chaparral whitethorn (*C. leucodermis*), and Orcutt ceanothus (*C. oliganthus*). Other characteristic species commonly present in southern mixed chaparral include: chamise (*Adenostoma fasciculatum*), Eastwood manzanita (*Arctostaphylos glandulosa*), Ceanothus species (*Ceanothus* spp.), toyon, Nuttall's scrub oak (*Quercus dumosa*), laurel sumac, lemonade berry, spiny redberry (*Rhamnus crocea*), and yucca species (*Yucca* spp.)

Southern mixed chaparral occurs within gravelly/cobbly loams and terrace escarpment soils located along the eastern ridge and along the southern and southeastern edges of the Project boundary.

Southern mixed chaparral on site is diverse in species composition, with dominant species including toyon, lemonadeberry, and chamise.

This community was determined to be southern mixed chaparral rather than southern maritime chaparral due to the presence of alluvium derived soils on site, lack of marine sandstone soils, the site's proximity to the coast (i.e., greater than 5.5 miles east of the Pacific Ocean coastline and outside of the fog belt), and lack of typical maritime dominant plant species.

The City's Biology Guidelines state that identifying areas as southern maritime chaparral should meet the following criteria: occurrence on sandstone soils, occurrence within the fog belt; and certain species listed below. Oberbauer (2008) states that southern maritime chaparral is a low, fairly open chaparral type dominated by wart-stemmed ceanothus (*Ceanothus verrucosus*) and Del Mar Manzanita (*Arctostaphylos glandulosa* ssp. *crassifolia),* neither of which were detected on site. Further, Oberbauer states that in San Diego County this vegetation is restricted to coastal areas such as Torrey Pines State Reserve, along the San Dieguito River Valley, and in a few other scatter locations.

David Hogan's journal article of "Southern Maritime Chaparral" published in Fremontia (by the CNPS), states that southern maritime chaparral vegetation within San Diego County is represented by a distinct species composition and distribution. Signature species include: Del Mar manzanita, chamise, ceanothus (noted as coast white ceanothus in the journal article), Torrey pine (*Pinus torreyana*), Indian pink (*Silene laciniate*), Rein orchid (*Piperia unalascensis*), short-leaved dudleya (*Dudleya brevifolia (blochmaniae* ssp*. brevifolia*)), Encinitas baccharis (*Baccharis vanessae*), Nuttall's scrub oak (*Quercus dumosa*), Orcutt's spineflower (*Chorizanthe orcuttiana*), lemonade berry, summer holly (*Comarostaphylis diversifolia* ssp. *diversifolia*), Mojave yucca (*Yucca schidigera*), and/or redberry (*Rhamnus crocea*) (Hogan 1996).

Hogan's article also states there are two forms of southern maritime chaparral in San Diego; one form is found on coastal/ocean bluffs and the second form is found inland within four miles from the Pacific coast but may be located up to five miles inland. Inland areas beyond five miles from the coastline support other kinds of chaparral vegetation that replace southern maritime chaparral (Hogan 1996).

Because the site is greater than five miles from the coastline, does not support weathered sandstone soils, is located outside of the coastal fog belt, and the species composition on site is largely not comprised of the species noted above, but rather consists of common mixed chaparral species that are found in other vegetation classifications not restricted to the coast, the vegetation on site is considered southern mixed chaparral not southern maritime chaparral. Lastly, previous biological studies and vegetation mapping of the site (e.g., Supplemental EIR for the Carroll Canyon CUP Amendment [CUP 89-0585], Final EIR for the Carroll Canyon [SCH 92121061], etc.) also identified the site as mixed chaparral rather than maritime chaparral. According to the Carroll Canyon CPA EIR, chamise chaparral and mixed chaparral were mapped on site with "chamise chaparral identified as the most extensive habitat on site."

Chamise Chaparral

Chamise chaparral is a one- to three-meter tall chaparral overwhelmingly dominated by chamise. Associated species include bushrue (*Cneoridium dumosum*) and felt-leaf yerba santa (*Eriodictyon crassifolium* var. *crassifolium*), although they contribute little to cover. This community is adapted to repeated fires by stump sprouting. Mature stands are densely interwoven with very little herbaceous understory or litter. Within the Project boundary, chamise chaparral occurs on cobble strewn xeric mesas and south-facing slopes. Chamise is the predominant species in this habitat within the Project

boundary; however, a few other native shrub species were scattered within the chamise chaparral including: black sage, mission manzanita, laurel sumac, and felt-leaf yerba santa. This community was not classified as southern mixed chaparral or southern maritime chaparral due to the lack of species composition (i.e., diversity) and species cover typical of southern mixed chaparral or southern maritime chaparral. Although a few other native species were observed within the chamise community, their presence alone did not justify inclusion within other chaparral vegetation mapping due to the overwhelming dominance of chamise.

Non-native Grassland

Non-native grassland is a dense to sparse cover of annual grasses, often associated with numerous species of showy-flowered native annual forbs. This association occurs on gradual slopes with deep, fine-textured, usually clay soils. Characteristic species include oats (*Avena* spp.), foxtail chess (*Bromus madritensis* ssp. *rubens*), ripgut grass (*B. diandrus*), ryegrass (*Festuca* sp.), and mustard (*Brassica* sp.). Most of the annual introduced species that make up the majority of species and biomass within the non-native grassland originated from the Mediterranean region, an area with a long history of agriculture and a climate similar to California. These two factors, in addition to intensive grazing and agricultural practices in conjunction with severe droughts, contributed to the successful invasion and establishment of these species and the replacement of native grasslands with an annual-dominated non-native grassland (Jackson 1985). Non-native grassland within the Project boundary occurs in small patches along the edges of the site, and includes foxtail chess, ripgut grass, soft chess (*Bromus hordeaceus*), and oats.

Eucalyptus Woodland

Eucalyptus woodland is dominated by eucalyptus (*Eucalyptus* sp.), an introduced genus that has often been planted purposely for wind blocking, ornamental, and hardwood production purposes. Most groves are monotypic, with the most common species being either the blue gum (*Eucalyptus globulus*) or river red gum (*E. camaldulensis*). The understory within well-established groves is usually very sparse due to the closed canopy and allelopathic nature of the abundant leaf and bark litter. If sufficient moisture is available, this species becomes naturalized and can reproduce and expand its range. Eucalyptus woodland within the Project area mostly occurs along the southern side of the site, but a few stands of this vegetation type are also present along the north central boundary.

Disturbed Habitat

Disturbed habitat includes land cleared of vegetation (e.g., dirt roads), land containing a preponderance of non-native plant species such as ornamentals or ruderal exotic species that take advantage of disturbance (previously cleared or abandoned landscaping), or land showing signs of past or present animal usage that removes any capability of providing viable habitat. Within the Project area, this vegetation community consists of brush management areas along existing residential homes of Rattlesnake Creek, the area along a dirt trail in the northwest portion of the site, in the southwestern-most portion of the Project boundary, and within small patches between other habitats.

Non-native Vegetation

Non-native vegetation is a category describing stands of naturalized trees and shrubs (e.g., acacia [*Acacia* spp.], peppertree [*Schinus* spp.]), many of which are also used in landscaping. Within the Project site, non-native vegetation is present along the southern edge of the quarry and along developed areas.

Species within these areas include Peruvian peppertree (*Schinus molle*), acacia, and myoporum (*Myoporum* sp.).

Quarry

This land cover type comprises the work zone for the quarry and other operations within the Project area. This land cover occupies the majority of the property (approximately 59 percent), located mostly in the central portion of the site, exclusive of drainages and their immediate slopes.

Developed

Developed land is where permanent structures and/or pavement occurs, which prevents the growth of vegetation, or where landscaping is clearly tended and maintained. Developed within the Project area includes pavement or hardscape associated with roadways and structures. Note that hardscape and/or structures within the quarry were mapped as quarry.

Plant Species Observed

A total of 204 plant species were observed during biological surveys of the Project area. Of these, eight species are sensitive and 92 species are non-native (Appendix B).

4.2.2 Zoological Resources – Fauna

Animal species within the Project boundary were detected by direct observation, calls, scat, tracks, and sign. A total of 73 animal species were detected during biological surveys (Appendix B). Animals detected during the biological surveys are mostly common urban wildlife associated with developed and disturbed places. Most species were observed in the northern and perimeter portions of the site, outside of the quarry areas in the central portion of the site. One active raptor (red-tailed hawk [*Buteo jamaicensis*]) nest was observed during the biological surveys, in a utility tower along the eastern portion of Carroll Canyon Creek.

4.3 SENSITIVE BIOLOGICAL RESOURCES

According to City Municipal Code (Chapter 11, Article 3, Division 1) and the City's Biology Guidelines (City 2012), sensitive biological resources refers to upland and/or wetland areas that meet any one of the following criteria:

(a) Lands that have been included in the City's MSCP Preserve, are conserved with Open Space easement and/or are designated as MHPA;

(b) Wetlands;

(c) Lands containing Tier I, Tier II, Tier IIIA, or Tier IIIB habitats;

(d) Lands supporting species or subspecies listed as rare, endangered, or threatened under Section 670.2 or 670.5, Title 14, California Code of Regulations, or the federal Endangered Species Act, Title 50, Code of Federal Regulations, Section 17.11 or 17.12, or candidate species under the California Code of Regulations;

(e) Lands containing habitats with MSCP Narrow Endemic species as listed in the City's Biology Guidelines (City 2012); or

(f) Lands containing habitats of MSCP Covered Species as listed in the City's Biology Guidelines (City 2012).

A search of CNDDB, USFWS, and MSCP databases returned records of 53 sensitive species reported within two miles of the 3Roots site. These 53 species, along with the 15 Narrow Endemic species designated in the MSCP, were reviewed, organized into a matrix, and individually analyzed for potential to occur on the site based on the presence of suitable habitat (e.g., vegetation communities, soils, elevation, and geographic range, life form/blooming period, etc.) (Appendix C).

4.3.1 Sensitive Plant Species

Sensitive plant species are those that are considered federal, State, or CNPS rare, threatened, or endangered; MSCP Covered Species; or MSCP Narrow Endemic species (Appendix C). More specifically, if a species is designated with any of the following statuses (a-c below), it is considered sensitive per City Municipal Code (Chapter 11, Article 3, Division 1):

(a) A species or subspecies is listed as rare, endangered, or threatened under Section 670.2 or 670.5, Title 14, California Code of Regulations, or the federal Endangered Species Act, Title 50, Code of Federal Regulations, Section 17.11 or 17.12, or candidate species under the California Code of Regulations;

(b) A species is a Narrow Endemic as listed in the Biology Guidelines in the Land Development Manual (City 2012); and/or

(c) A species is an MSCP Covered Species as listed in the Biology Guidelines in the Land Development Manual (City 2012).

A plant species is also be considered sensitive if it is included in the CNPS Inventory of Rare and Endangered Plants with an assigned California Rare Plant Rank (CRPR) of 2 or lower (CNPS 2018).

Sensitive plant status is often based on one or more of three distributional attributes: geographic range, habitat specificity, and/or population size. A species that exhibits a small or restricted geographic range (such as those endemic to the region) is geographically rare. A species may be more or less abundant but occur only in very specific habitats. Lastly, a species may be widespread but exists naturally in small populations.

Eight sensitive plant species were observed on the site during biological surveys conducted for this report (Figure 6c). These include San Diego sagewort (*Artemisia palmeri*), San Diego sunflower, summer holly, San Diego barrel cactus (*Ferocactus viridescens*), San Diego marsh-elder (*Iva hayesiana*), golden-rayed Pentachaeta (*Pentachaeta aurea*), Nuttall's scrub oak, and ashy spike-moss (*Selaginella cinerascens*). Two species were observed in the SDG&E study area: barrel cactus and Palmer's grapplinghook (*Harpagonella palmeri*). A summary of each is provided below.

Results of the database searches concluded that an additional 18 sensitive plant species have been reported within two miles of the 3Roots Project site (Appendix C). Except for those eight species

observed during the rare plant survey and other field surveys listed above, the additional 18 species are not expected on site and were determined to have a low potential to occur as presented in Appendix C.

Nuttall's Scrub Oak (CRPR 1B.1)

Nuttall's scrub oak is a plant that occurs in San Diego, Orange, and Santa Barbara counties and Baja California, Mexico. It occurs in chaparral and coastal sage scrub near the coast. This species was observed on the southern slopes of the site, the northeastern ridge, and along the northwestern corner of the quarry during surveys. A total of 36 Nuttall's scrub oak were observed on site.

Summer Holly (CRPR 1B.2)

Summer holly is a plant that occurs in Orange, Riverside, and San Diego counties south into Baja California, Mexico. It occurs in coastal chaparral. This species was observed on site during surveys, within southern mixed chaparral on the southern slope. A total of 205 summer holly were observed on site.

San Diego Barrel Cactus (CRPR 2B.1; MCSP Covered)

San Diego barrel cactus is a plant that occurs in San Diego County and Baja California, Mexico. It occurs in coastal sage scrub, chaparral, and valley grasslands. This species was observed on site during surveys. It was present on the ridges flanking Rattlesnake Creek and its tributary. A total of 198 San Diego barrel cacti were observed on site. Fourteen individuals were observed in the SDG&E study area.

San Diego Marsh-Elder (CRPR 2B.2)

San Diego marsh-elder is a plant that occurs in San Diego County and Baja California, Mexico. This low-growing, conspicuous shrub's preferred habitat is intermittent and ephemeral creek streambeds. Typically, the riparian canopy is open, allowing substantial sunlight to reach this marsh-elder. Sandy alluvial embankments with cobbles are frequently utilized. This species was observed on site during surveys. It was present primarily within Carroll Canyon Creek, but also on the southern slope and near Rattlesnake Creek. A total of 2,887 San Diego marsh-elders were observed on site.

Ashy Spike-Moss (CRPR 4.1)

Ashy spike-moss is a plant that occurs in Orange and San Diego counties and northwestern Baja California, Mexico. It occurs on flat mesas in coastal sage scrub and chaparral. A good indicator of site degradation, this species rarely inhabits disturbed soils. This species was observed on site during surveys. It was present along the northern slope, the northeastern ridgeline, the northwestern corner of the quarry, and the southern slope. A total of 21 ashy spike-moss locations were observed on site.

Golden-Rayed Pentachaeta (CRPR 4.2)

Golden-rayed pentachaeta is a plant that occurs in Riverside, San Bernardino, Orange, Los Angeles, and San Diego counties and Baja California, Mexico. It occurs in mesic montane grasslands and sage scrub. This species was observed on site, along the northeastern ridge, during surveys. A total of 381 golden-rayed pentachaeta were observed on site.

San Diego Sagewort (CRPR 4.2)

San Diego sagewort is a plant that occurs in coastal San Diego County and in Baja California, Mexico. It occurs along stream courses, often within coastal sage scrub and southern mixed chaparral. This species was observed on site during surveys. It was present within Carroll Canyon Creek and its tributary, and Rattlesnake Creek. A total of 97 San Diego sagewort were observed on site.

Palmer's Grapplinghook (CRPR 4.2)

Palmer's grapplinghook occurs below approximately 3,300 feet in elevation throughout Los Angeles, Orange, Riverside, and San Diego counties; Baja California and Sonora, Mexico; San Clemente Island; Arizona. It occurs in heavier soils supporting grassland, coastal sage scrub, and chaparral. Approximately 75 individuals were observed in the SDG&E study area west of Camino Santa Fe.

San Diego Sunflower (CRPR 4.3)

San Diego sunflower is a plant that occurs in San Diego and Orange County and Baja California, Mexico. It occurs in Diegan coastal sage scrub on a variety of soil types. Generally, where this species occurs, shrub cover is more open than at mesic, coastal locales. This species was observed on site during surveys, on the southeastern revegetation slope. A total of 451 San Diego sunflower were observed on site.

4.3.1.1 Narrow Endemic Plant Species Multiple Species Conservation Program Narrow Endemic Species Potential to Occur

None of the 15 species designated as Narrow Endemics in the MSCP have moderate or high potential to occur within the 3Roots Project boundary. Eleven of these species are known from the Project vicinity and are included in Appendix C. Of these species, five are vernal pool specialists, two are clay or metavolcanics rocky soil specialists that have no potential to occur in the Riverwash, Terrace escarpments, Gravel pit, Olivenhain cobbly loam, Redding cobbly loam, and Redding gravelly loam soils on site; two species are restricted to geographic ranges that do not include the Project boundary; two species are restricted to sandy dunes and bluffs at the coast; one is restricted to coastal bluffs; and three are conspicuous perennial stem or leaf succulents that would have been observed if present on site. No Narrow Endemic species were observed during the rare plant survey and other field surveys and none are expected to occur within the Project boundary.

4.3.2 Sensitive Wildlife Species

Sensitive wildlife species are those that are considered federal or State threatened or endangered; MSCP Covered Species; or MSCP Narrow Endemic species (Appendix C). More specifically, if a species is designated with any of the following statuses (a-c below), it is considered sensitive per City Municipal Code (Chapter 11, Article 3, Division 1):

(a) A species or subspecies is listed as endangered or threatened under Section 670.2 or 670.5, Title 14, California Code of Regulations, or the federal Endangered Species Act, Title 50, Code of Federal Regulations, Section 17.11 or 17.12, or candidate species under the California Code of Regulations;

(b) A species is a Narrow Endemic as listed in the Biology Guidelines in the Land Development Manual (City 2012); and/or

(c) A species is a MSCP Covered Species as listed in the Biology Guidelines in the Land Development Manual (City 2012).

A species is also be considered sensitive if it is included on the CDFW's Special Animals List (CDFW 2018b) as a candidate for federal or State listing, State Species of Special Concern, State Watch List species, State Fully Protected species, or federal Bird of Conservation Concern (Appendix C). Generally, the principal reason an individual taxon (species or subspecies) is considered sensitive is the documented or perceived decline or limitations of its population size or geographical extent and/or distribution, resulting in most cases from habitat loss.

Avian nesting is protected by the federal MBTA and California Fish and Game Code. Note, that the Project is required to adhere to the MBTA and California Fish and Game Code statues regarding protection of avian nesting.

A total of 23 sensitive wildlife species have been detected or reported within two miles of the 3Roots Project and were evaluated for the potential to occur; seven species were found to occur during the biological surveys for the Project and are discussed individually below (Figure 6c). Nine additional species were determined to have at least a moderate potential to occur and are listed below. The remaining seven species analyzed were determined have either low potential to occur or are not expected to occur due to lack of suitable habitat in the Project boundary (Appendix C).

- Southern California legless lizard (*Anniella stebbinsi*)
- Red-diamond rattlesnake (*Crotalus ruber*)
- Coast horned lizard (*Phrynosoma blainvillii*)
- Western spadefoot toad (*Spea hammondii*)
- Two-striped gartersnake (*Thamnophis hammondii*)
- Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)
- Western mastiff bat (*Aimophila ruficeps canescens*)
- Western red bat (*Lasiurus blossevillii*)
- Yellow warbler (*Setophaga petechia*)

One active raptor (red-tailed hawk) nest was observed during the biological surveys, in a utility tower along the eastern portion of Carroll Canyon Creek. The red-tailed hawk is a protected species under CDFW Code of Regulation and the Federal MBTA.

Coastal California Gnatcatcher (Federal Threatened, State Species of Special Concern [SSC], MSCP Covered)

The coastal California gnatcatcher (*Polioptila californica californica*) is a songbird that favors coastal sage scrub habitat. This species was observed along coastal sage scrub in the north and eastern portions of the Project during HELIX biological surveys for least Bell's vireo. A protocol survey for this species was not conducted nor required. Due to the presence and number of coastal California gnatcatcher individuals detected on site during the coastal California gnatcatcher breeding season (March 1 to August 15 annually, as defined by the City's Biology Guidelines), coastal California gnatcatcher nesting is presumed. It is assumed that multiple pairs utilize the site.

Least Bell's Vireo (Federal Endangered, State Endangered, MSCP Covered)

The least Bell's vireo is a songbird that occurs in dense riparian thickets along major rivers in San Diego County. During HELIX biological protocol surveys for this species in April through July 2017, two least Bell's vireo individuals were observed on June 2 at two separate locations within the Project (HELIX 2017). These least Bell's vireos were heard singing approximately 900 and 1,500 feet downstream of the eastern edge of property, within riparian habitat of Carroll Canyon Creek, during the June 2 survey (i.e., survey number five of eight required surveys). Because least Bell's vireo was not detected during the subsequent three protocol survey visits, the sex and breeding status of these least Bell's vireos was not definitive. Overall, no least Bell's vireo nesting behavior was observed within the property during any of the surveys; thus, it was determined that the two least Bell's vireo individuals detected on June 2 were likely transient individuals moving through the region. Because the species was observed during protocol surveys, the site is considered occupied by least Bell's vireo and used for foraging/movement during migration to suitable breeding habitat off site. Although the 3Roots Project area does support suboptimal and marginal suitable habitat that could provide for least Bell's vireo, results of the focused survey and species evaluation concluded that least Bell's vireo does not breed/nest in the Project area.

Cooper's Hawk (State Watch List [WL], MSCP Covered)

The Cooper's hawk (*Accipiter cooperii*) is a medium-sized hawk occur in various types of mixed deciduous forests and open woodlands, and forage in a variety of habitats. A single individual of this species was observed in the northern portion of the Project in Rattlesnake Canyon during HELIX biological surveys. No Cooper's hawk nests or nesting behaviors (e.g., paired birds, carrying nesting material, carrying food, mating or territorial displays, etc.) were observed during the field surveys.

Orange-throated Whiptail (State WL, MSCP Covered)

The orange-throated whiptail (*Aspidoscelis hyperythra*) is a small lizard that inhabits in sage scrub, chaparral, the edges of riparian woodlands, and washes throughout San Diego. It may also be found in weedy, disturbed areas adjacent to these habitats. This species' requirements include open, sunny areas, shaded areas, and an abundant insect prey base, particularly termites (*Reticulitermes* sp.). This species was observed along the eastern edge of the Project by Parkdale Avenue during biological surveys.

Coastal Whiptail (State SSC)

The coastal whiptail (*Aspidoscelis tigris stejnegeri*) is a small lizard that inhabits open coastal sage scrub, chaparral, and woodlands. It is frequently found along the edges of dirt roads traversing its habitats.

Important habitat components of its habitat include open, sunny areas, shrub cover with accumulated leaf litter, and an abundance of insects, spiders, or scorpions. This species was observed along the eastern edge of the Project by Parkdale Avenue during the biological surveys.

San Diego Desert Woodrat (State SSC)

The San Diego desert woodrat (*Neotoma lepida intermedia*) occurs in open chaparral and coastal sage scrub, often building large, stick nests in rock outcrops or around clumps of cactus or yucca. Suitable chaparral and coastal sage scrub habitats were present on site, and woodrat nests were observed during the biological surveys.

Mule Deer (MSCP Covered)

The mule deer (*Odocoileus hemionus*) is a large mammal that inhabits coastal sage scrub, riparian and montane forests, chaparral, grasslands, croplands, and open areas if there is at least some scrub cover present. Crepuscular activity and movements are along routes that provide the greatest amount of protective cover. This species was observed along Carroll Canyon Creek and the southern edge of the Project, and scat was observed throughout undeveloped areas during the biological surveys.

4.4 JURISDICTIONAL RESOURCES

This section describes jurisdictional resources that exist on the 3Roots Project site. Wetland delineations were conducted as described in Section 2.3 to determine the extent of these resources as defined by the USACE, RWQCB, and CDFW. Vegetation communities included in federal and state jurisdictional areas include: southern riparian woodland, southern willow scrub, mule fat scrub, disturbed wetland, and unvegetated channel/streambed. These are depicted on Figure 6b.

Note that a difference exists between acreage values for the unvegetated channel category in Table 3 when compared with unvegetated channel acreages provided in this discussion of jurisdictional resources. This difference exists because for vegetation mapping some segments of unvegetated channel were mapped as the overlying vegetation community. In contrast, for the jurisdictional resource assessment, the areas attributed to those same unvegetated channels were quantified and those values are included in Tables 4 through 7. For example, the tributaries to Rattlesnake Creek are mapped as native upland vegetation on the vegetation mapping (Figures 6b and 6c), but mapped as streambed in the USACE, RWQCB, and CDFW for jurisdictional delineation mapping (Figures 7 through 9).

Overall, the extent of USACE jurisdiction on site tends to be smaller than the extent of RWQCB jurisdiction, CDFW jurisdiction, or City jurisdiction because of the more restrictive parameters for qualifying as WUS by USACE. RWQCB jurisdiction includes WUS regulated by USACE and extends beyond WUS to include the streambed/banks. Although areas subject to USACE, RWQCB and CDFW jurisdiction overlap, the area regulated by each agency is presented independently below, instead of as a series of cumulative totals.

Because City wetland regulations did not exist at the time of CUP 89-0585, City wetlands were not recognized in those corresponding documents (i.e., CUP 89-0585 and Supplemental EIR; CCMP CPA EIR) and were not addressed in the associated Reclamation Plan. Thus, the existing conditions within the Project boundary represented in Figure 6b or Table 3 do not reflect City jurisdictional wetlands. City wetlands are discussed in this section but would be reflected in Figure 6c and Table 7, which illustrate

future baseline site conditions following reclamation described in Section 5.0 Implementation of Reclamation Plan.

4.4.1 Federal Jurisdiction

United States Army Corps of Engineers

Federal jurisdictional areas existing within the Project boundary includes both wetland and non-wetland WUS comprising 5.82 acres of wetland and 7.35 acres of non-wetland WUS (Figure 7; Table 4).

Table 4*
USACE JURISDICTION

Jurisdictional Areas	Area[1] (Ac.)
Wetland	
Southern riparian woodland–including disturbed phase	3.78
Southern willow scrub-including disturbed phase	0.91
Disturbed wetland	0.05
Mule fat scrub–including disturbed and sparse phases	1.08
Wetland Subtotal	**5.82**
Non-wetland Waters of the U.S.	
Unvegetated channel	7.35
Non-wetland Subtotal	**7.35**
TOTAL	**13.17**

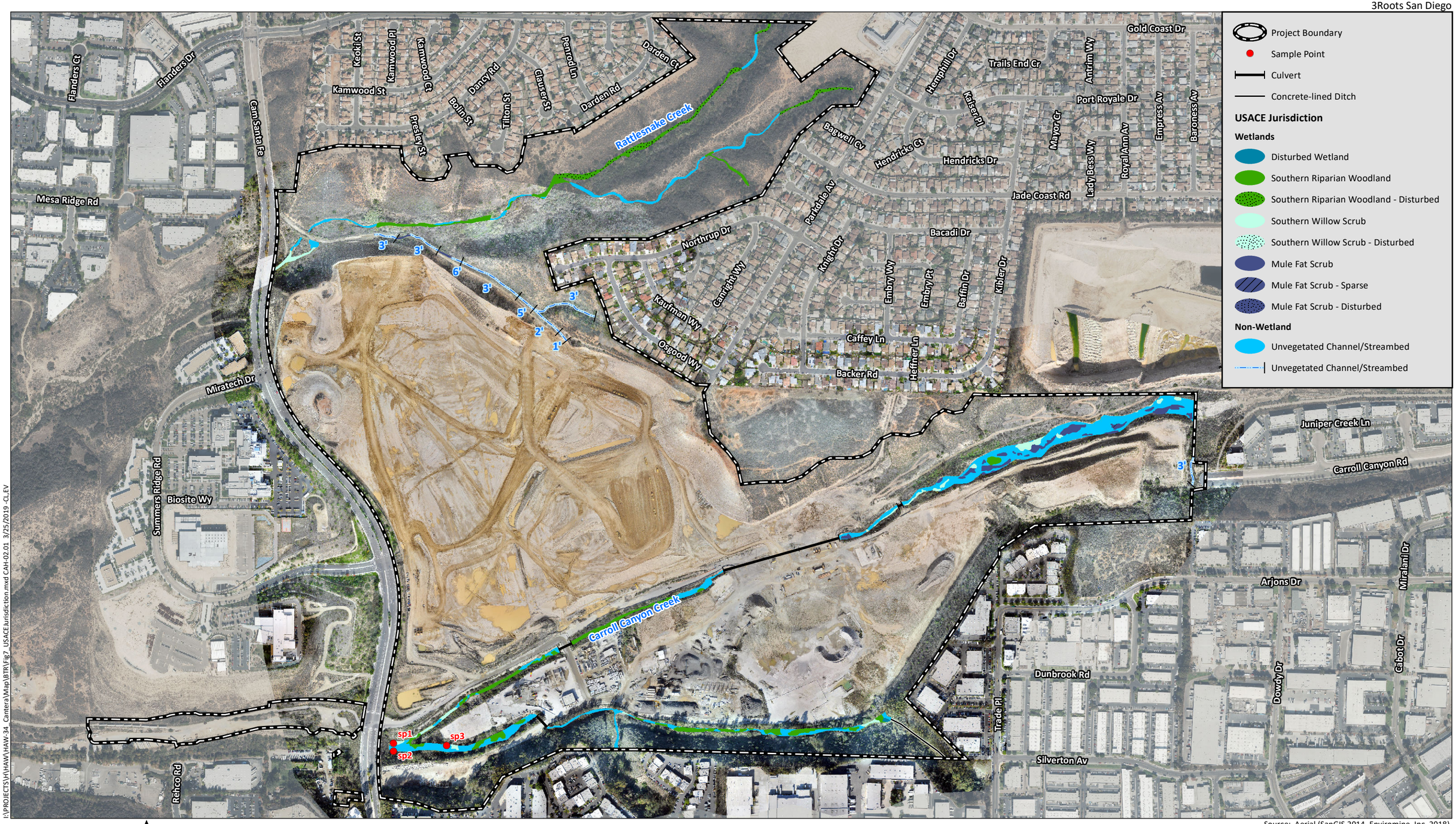
*Includes existing resources as presented in Figure 6b that were mapped prior to CUP 89-0585 reclamation/restoration.
[1]Rounded to nearest 0.01.

4.4.2 State Jurisdiction

4.4.2.1 California Regional Water Quality Control Board

The existing RWQCB jurisdictional areas within the Project boundary are consistent with the USACE areas presented in Table 4 above, but also incorporate areas beyond the limits of WUS, which include some or all of the areas considered CDFW jurisdictional in Section 4.4.2.2, below. The RWQCB jurisdiction includes those portions of CDFW jurisdiction that extend to the streambank but would not include areas were the vegetative canopy extends beyond the streambed. Total areas under jurisdiction of RWQCB are provided in Table 5 below and presented on Figure 8.

3Roots San Diego



I:\PROJECTS\H\HAW\HAW-34_Cantera\Map\BTR\Fig7_USACEJurisdiction.mxd CAH-02.01 3/25/2019 -CL,EV

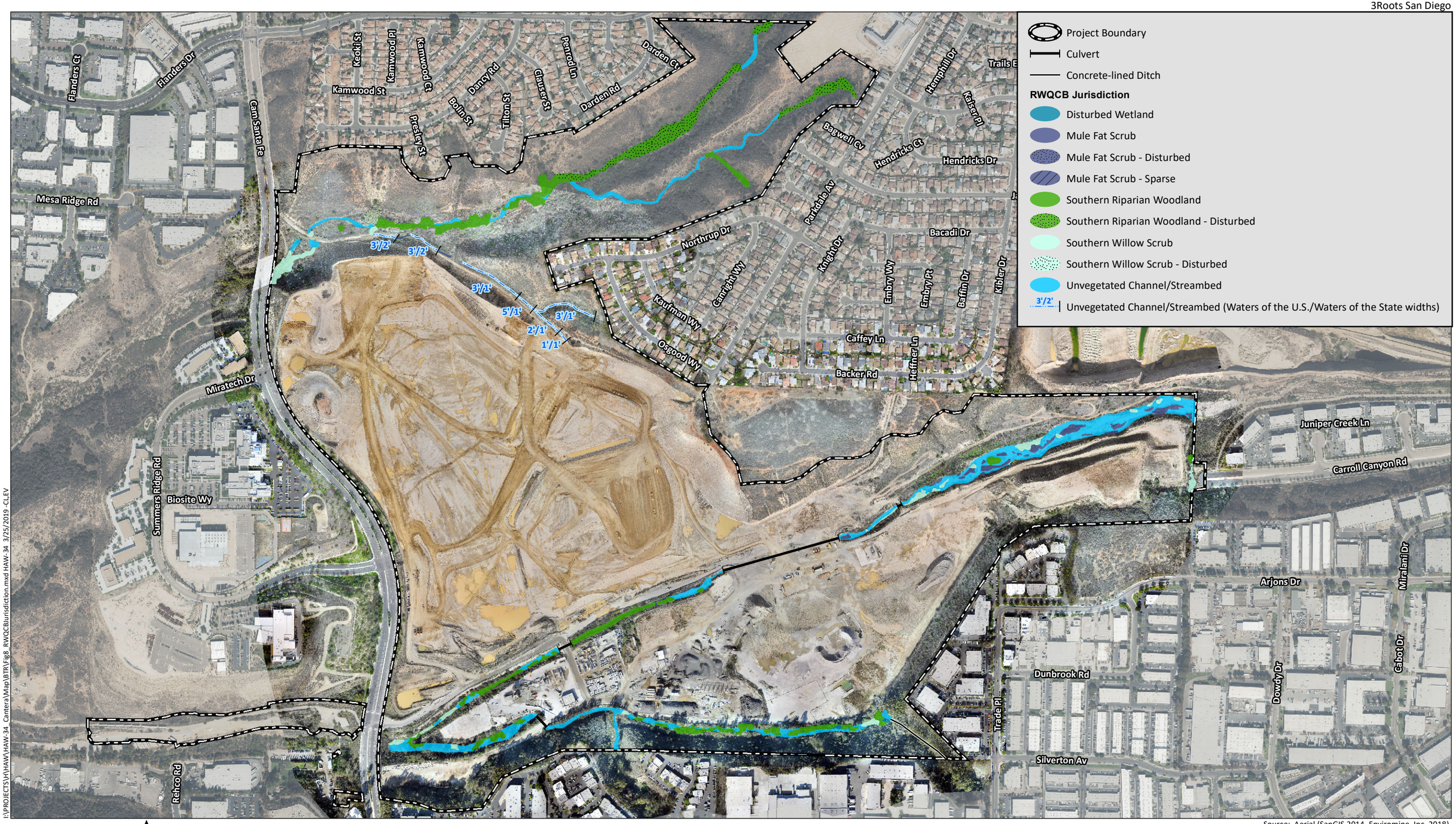
0 650 Feet

Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018).

HELIX Environmental Planning

USACE Jurisdictional Limits

Figure 7



I:\PROJECTS\H\HAW\HAW-34_Cantera\Map\BTR\Fig8_RWQCBJurisdiction.mxd HAW-34 3/25/2019 -CLEV

0 650 Feet

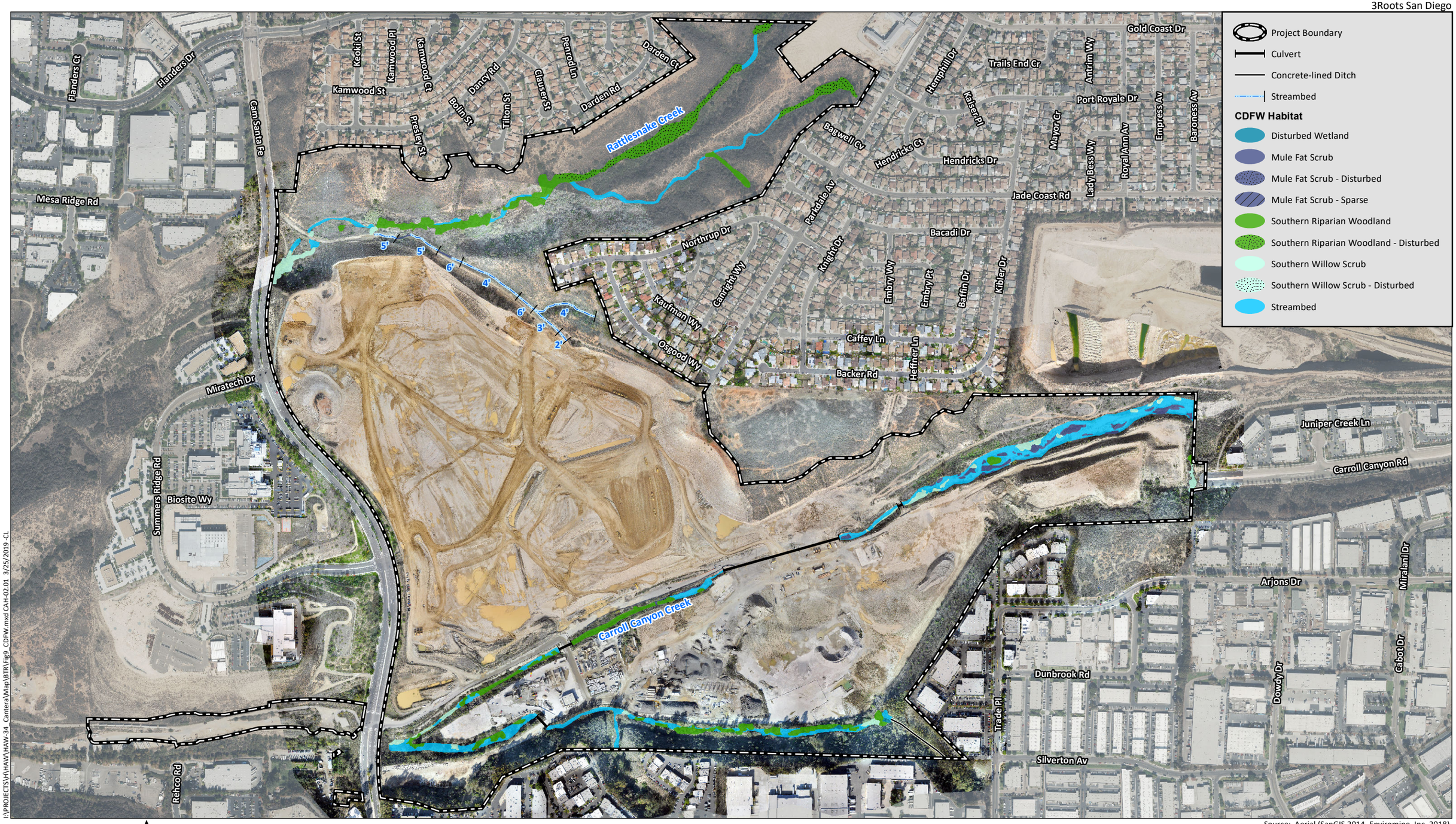
Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018).

HELIX Environmental Planning

RWQCB Jurisdictional Limits

Figure 8

3Roots San Diego



I:\PROJECTS\H\HAW\HAW-34_Cantera\Map\BTR\Fig9_CDFW.mxd CAH-02.01 3/25/2019 -CL

0 650 Feet

Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018).

HELIX Environmental Planning

CDFW Jurisdictional Habitats

Figure 9

Table 5
RWQCB JURISDICTION*

Jurisdictional Areas	Area[1] (Ac.)
Habitat	
Disturbed wetland	0.07
Mule fat scrub–including disturbed and sparse phases	1.15
Southern willow scrub–includes disturbed phase	1.72
Southern riparian woodland–including disturbed phase	7.94
Unvegetated channel	8.89
TOTAL	**19.77**

*Includes existing resources as presented in Figure 6b that were mapped prior to CUP 89-0585 reclamation/restoration.
[1]Rounded to nearest 0.01.

4.4.2.2 California Department of Fish and Wildlife

The existing CDFW jurisdictional areas within the Project boundary include 10.88 acres of wetland and riparian habitats and 9.03 acres of unvegetated channels (Figure 9; Table 6). Areas of jurisdictional CDFW streambed and riparian habitats on site extended beyond areas mapped as WUS under USACE because CDFW generally takes jurisdiction over the streambed, bank, and areas where the vegetative canopy extends beyond the bed and bank. Note that during the on-site meeting with CDFW staff, some areas of riparian vegetation presented in the existing conditions and baseline mapping for the Project (Figures 6b and 6c, respectively) were deemed non-jurisdictional due to their artificial creation as a result of quarry activities (i.e., located adjacent to Carroll Canyon Creek and fed by artificial or manipulated hydrology).

Table 6
CDFW JURISDICTION*

Jurisdictional Areas	Area[1] (Ac.)
Riparian	
Southern riparian woodland–including disturbed phase	7.94
Southern willow scrub–including disturbed phase	1.72
Mule fat scrub–including disturbed and sparse phases	1.15
Disturbed wetland	0.07
Riparian Subtotal	**10.88**
Unvegetated	
Unvegetated channel	9.03
TOTAL	**19.91**

*Includes existing resources as presented in Figure 6b that were mapped prior to CUP 89-0585 reclamation/restoration.
[1]Rounded to nearest 0.01.

4.4.3 City Jurisdiction

As stated above, wetlands that exist within the Project boundary following the completion of reclamation would be subject to current City wetland regulations. The future baseline condition supports a total of 27.47 acres of City jurisdictional wetlands (Figure 10; Table 7). In addition, areas of unvegetated channel bounded both upstream and downstream by City jurisdictional wetland vegetation were determined to be City wetlands. In contrast, unvegetated channel without City jurisdictional

wetland on either side would be considered "seasonal drainage" as defined by the City's Biology guidelines and would not satisfy the City's wetland parameters. These unvegetated channels would, however, be considered ephemeral drainage under the jurisdiction of USACE, RWQCB and CDFW.

Table 7
CITY WETLANDS*

Jurisdictional Areas	Area[1] (Ac.)
Habitat	
Southern Riparian Woodland–including disturbed phase	6.57
Southern Willow Scrub–including disturbed phase	1.4
Mule Fat Scrub–including disturbed and sparse phases	1.04
Disturbed Wetland	0.07
CUP Reclamation Wetland/Riparian/Streambed Restoration[2]	10.31
CUP Reclamation Wetland/Riparian Enhancement	1.24
Unvegetated channel	6.84
TOTAL	**27.47**

*Includes baseline resources mapping post CUP 89-0585 reclamation/restoration as presented on Figure 6c
[1]Rounded to nearest 0.01.
[2] Comprised of 6.4 acres riparian scrub re-establishment, 0.89-acre riparian habitat restoration, 1.29 acre of riprap/gabions, and 1.73 acres of habitat preservation

4.5 WILDLIFE CORRIDORS AND LINKAGES AND RELATIONSHIPS TO SURROUNDING HABITATS

Wildlife corridors and linkages are linear spaces of undeveloped native habitats that connect both large and small natural open space and provide opportunities for wildlife movement in the region and local areas. Wildlife corridors contribute to species' sustainability by providing access to adjacent habitat areas for dispersal, foraging, and mating. Linkages between wildlife corridors connect isolated blocks of habitat and allow movement or dispersal species over a large scale and the consequent mixing of genes between populations (i.e., gene pool diversity). Wildlife movement corridors and linkages are considered sensitive by the City, resource agencies, and conservation groups.

Lands surrounding the 3Roots Project and outside the Carroll Canyon corridor to the north and south are mostly developed, except for a few vacant lots on slopes. In similarity to many areas within the City, large surface streets and extensive developments (i.e., residential and commercial) constrict and fragment upland habitats. The entire 3Roots Project area is exposed to constant noise from quarry activities and the surrounding existing development in Mira Mesa, as are surrounding habitat fragments.

The aquatic, riparian, and upland habitats within the Project area are contiguous with similar or better habitats to the west (i.e., downstream), and similar or lower quality habitats east (upstream). Downstream habitats to the west of the Project associated with Rattlesnake Creek are adjoined to the site via a free-span bridge at Camino Santa Fe. Contiguity of habitats for the reach of Carroll Canyon Creek on site is provided upstream to the east within a natural streambed and floodplain and downstream to the west through concrete box culverts under Camino Santa Fe. Due to this connectivity, the biological resources on site have the potential provide for part of an east-west local wildlife corridor through this portion of the City, although a habitat connection along Carroll Canyon Creek is currently disrupted and disjointed by the existing quarry.

3Roots San Diego

Project Boundary

CUP 89-0585

- Wetland/Riparian Enhancement
- Wetland/Riparian Restoration

City Wetlands

- Disturbed Wetland
- Mule Fat Scrub
- Mule Fat Scrub - Disturbed
- Mule Fat Scrub - Sparse
- Southern Riparian Woodland
- Southern Riparian Woodland - Disturbed
- Southern Willow Scrub
- Southern Willow Scrub - Disturbed
- Unvegetated Channel/Streambed

Flanders Dr
Cam Santa Fe
Mesa Ridge Rd
Miratech Dr
Summers Ridge Rd
Biosite Wy
Rehco Rd
Kamwood St
Kecki St
Kamwood Pl
Kamwood Ct
Dancy Rd
Bolin St
Presley St
Tilton St
Clauser St
Penrod Ln
Darden Rd
Darden Ct
Rattlesnake Creek
Carroll Canyon Creek
Bagwell Cv
Hendricks Ct
Hendricks Dr
Hemphill Dr
Trails End Cr
Gold Coast Dr
Kaiser Pl
Port Royale Dr
Antrim Wy
Mayor Cr
Lady Bess Wy
Royal Ann Av
Empress Av
Baroness Av
Jade Coast Rd
Parkdale Av
Northrup Dr
Bacadi Dr
Knight Dr
Canright Wy
Kaufman Wy
Osgood Wy
Embry Wy
Embry Pt
Baffin Dr
Kibler Dr
Caffey Ln
Heffner Ln
Backer Rd
Juniper Creek Ln
Aspen Creek Ct
Carroll Canyon Rd
Arjons Dr
Mirelani Dr
Cabot Dr
Dowdy Dr
Dunbrook Rd
Trade Pl
Silverton Av

0 650 Feet

N

Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018).

I:\PROJECTS\H\HAW\HAW-34_Canters\Map\BTR\Fig10_CityWetlands.mxd CAH-02.01 4/24/2019 - SAB

HELIX Environmental Planning

City Wetlands

Figure 10

Although the majority of resources in the Project boundary are disturbed in character and support non-native species, they do provide moderate-quality foraging and breeding habitat for several native species. The Project area supports small terrestrial wildlife species (i.e., birds, mammals, reptiles and amphibians, etc.) and is/may be used by at least three medium and larger sized mammals (coyote [*Canis latrans*], bobcat [*Lynx rufus*], and mule deer [*Odocoileus hemionus*]). No specific regional movement corridors have been identified for the Project area, but the presence of mule deer (due to their daily movement and range behavior) and the identification of transient least Bell's vireo on site (observed during USFWS protocol surveys) suggests the site, although constricted beyond the eastern boundaries of the property, is currently utilized for local wildlife movement. Further, wildlife presence (i.e., mule deer, coyote, etc.) and wildlife use of existing trails within the Project boundary was observed (i.e., animals on trails, wildlife prints along trails, and wildlife scat on trails) during the biological surveys for the Project. Rattlesnake and Carroll Canyons feed from the east into a consolidated Carroll Canyon Creek corridor to the west of the Project boundary (Figure 11).

5.0 IMPLEMENTATION OF RECLAMATION PLAN

As described in Section 1.2 Project Description, existing conditions of the site reflect SMARA required reclamation to recontour the post mine conditions, which is currently on-going. As a result, slopes of 2:1 (length : height) are located throughout the site per the approved CUP/Reclamation Plan implementation (CUP 89-0585 Supp. EIR Section C). These 2:1 slopes are located in open space lots abutting the vernal pool preserve and along the edges of the recontoured/improved Carroll Canyon Creek alignment, where the post-reclamation condition was intended to stabilize slopes altered by mining activities. Because the 3Roots Project impacts would be evaluated against the on-site conditions following reclamation, this section describes the transition from the existing to anticipated "future baseline" conditions on site. Therefore, 2:1 slopes are the "existing baseline condition" and not part of the development and thus allowed in the MHPA.

Reclamation to Jurisdictional Habitats

At the time of issuance of CUP 89-0585 for the quarry operations, the corresponding Supplemental EIR (DEP No. 89-0585/SCH No. 85121814) established that wetland permits and necessary mitigation should be addressed at the time of reclamation. Because requirements of the CUP 89-0585 reclamation were established in 1990, ongoing reclamation activities involving wetlands are not subject to current City wetland regulations, as these were not established at the time of CUP issuance. Therefore, this discussion quantifies reclamation impacts to only federal and state jurisdictional resources described in Section 4.4. Mitigation would be accomplished at a ratio suitable to support state and federal permitting necessary to complete reclamation activities. At minimum, the mitigation the ratios would include 1:1 re-establishment to result in no-net-loss of jurisdictional habitat.

Table 8
RECLAMATION IMPACTS AND MITIGATION TO FEDERAL AND STATE JURISDICTIONAL RESOURCES

Habitat[1]	Agency					
	U.S. Army Corps of Engineers		Regional Water Quality Control Board[2]		California Department of Fish and Wildlife	
	Impacts (acres)	Mitigation[3] (acres)	Impacts (acres)	Mitigation[3] (acres)	Impacts (acres)	Mitigation[3] (acres)
Permanent Impacts						
Southern riparian woodland	0.61	1.83	0.79	2.37	0.79	2.37
Southern willow scrub[3]	0.13	0.39	0.15	0.45	0.15	0.45
Mule fat Scrub	--	--	<0.001	0.003	<0.001	0.003
Streambed	0.67	0.67	0.87	0.87	0.87	0.87
Subtotal	**1.41**	**2.89**	**1.81**	**3.69**	**1.81**	**3.69**
Temporary Impacts						
Southern riparian woodland	0.01	0.03	0.03	0.09	0.03	0.09
Southern willow scrub	0.05	0.15	0.07	0.21	0.07	0.21
Streambed	0.13	0.13	0.15	0.15	0.15	0.15
Subtotal	**0.19**	**0.31**	**0.25**	**0.45**	**0.25**	**0.45**
TOTAL	**1.60**	**3.20**	**2.06**	**4.14**	**2.06**	**4.14**

[1] Wetland habitats include southern riparian woodland, southern willow scrub, and mule fat scrub. Streambed is a non-wetland habitat.
[2] Analysis for habitat areas regulated under the Porter-Cologne Act.
[3] Includes disturbed and undisturbed forms.

As presented in Table 8, above, implementation of reclamation would result in impacts to the following:

- 1.60 acres of impacts to USACE jurisdictional area. This includes 0.80 acre of wetlands (southern riparian woodland and willow scrub), and 0.80 acre of non-wetland waters (streambed).
- 2.06 acres of impacts to RWQCB jurisdictional area. This includes 0.82 acre of southern riparian woodland, 0.22 acre of southern willow scrub, <0.001 acre of mule fat scrub, and 1.02 acre of streambed.
- 2.06 acres of impacts to CDFW jurisdictional habitat. This includes 0.82 acre of southern riparian woodland, 0.22 acre of southern willow scrub, <0.001 acre of mule fat scrub, and 1.02 acre of streambed.

Accordingly, and as presented in Table 8 above, mitigation for impacts to federal jurisdictional areas is proposed at a 3:1 ratio for vegetated areas, and 1:1 for unvegetated streambeds. No-net loss of wetlands would be achieved through 1:1 re-establishment to compensate for all impacts. This would be accomplished through re-establishment of 1.60 acre of jurisdictional habitat (0.80 acre of southern riparian woodland and southern willow scrub, and 0.80 acre of streambed). An additional 1.60 acres of jurisdictional habitat would be restored and enhanced to achieve a total of 3.20 acres of mitigation.

Mitigation for impacts to state jurisdictional areas is similarly proposed at a 3:1 ratio for vegetated areas and a 1:1 ratio for unvegetated streambed, with 1:1 re-establishment provided to offset all impacts. This would be accomplished through the re-establishment of 2.06 acres of state jurisdictional habitat (1.04 acres of southern riparian woodland and southern willow scrub, and 1.02 acres of unvegetated

3Roots San Diego

Project Boundary
Potential Wildlife Movements
MHPA (SanGIS 2/26/2018)
Biological Core Areas (SanGIS 6/6/1996)
Existing Box Culverts
Existing Undercrossing (Free Span Bridge)
Arch Culvert Crossing

Mira Mesa Boulevard
Rattlesnake Creek
Black Mountain Road
15
Carroll Canyon Road
Camino Ruiz
Carroll Canyon Creek
805
Carroll Canyon Road
Camino Santa Fe
Miramar Road
Miramar Way
Kearny Villa Road
Eastgate Mall

I:\PROJECTS\H\HAW\HAW-34_Cantera\Map\BTR\Fig11_WildlifeMovementCorridors.mxd CAH-02.01 3/25/2019 -CL

0 2,000 Feet

Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018).

HELIX Environmental Planning

Wildlife Movement Corridors

Figure 11

streambed). An additional 2.08 acres of jurisdictional habitat would be restored and enhanced to achieve a total of 4.14 acres of mitigation to satisfy agency permit requirements. Habitat re-establishment, restoration, and enhancement is described in detail in the Habitat Reclamation and Mitigation Plan that is attached as Appendix D.

Reclamation is on-going and may continue prior to or concurrently with Project construction. Project impacts to biological resources including federal, state, and City jurisdictional resources are presented in Section 8.0 using the reclaimed site as the baseline condition.

Reclamation to Sensitive Upland Habitats

As described in 1.2, upland and wetland vegetation impacts from the quarry operations and reclamation were most recently assessed in Supplemental EIR (DEP No. 89-0585/SCH No. 85121814) for CUP 89-0585 and were authorized by the City in 1990. Mitigation for those impacts was to be accomplished through on-site preservation and upland revegetation. However, required acreage for preservation or revegetation was not specified. Thus, all reclamation activities that involve revegetation of uplands and wetlands would be considered mitigation to satisfy the CUP-0585 requirement. As shown in Table 9 below, approximately 21.94 acres of upland habitat would be revegetated upon completion of reclamation. This would be comprised of Diegan coastal sage scrub, southern mixed chaparral and coastal sage-chaparral transition vegetation.

Table 9
BASELINE VEGETATION COMMUNITIES AND LAND COVER TYPES
WITHIN THE PROJECT BOUNDARY AFTER SITE RECLAMATION (acres)*

Vegetation Community or Land Cover Type[1]	Tier	Area
Mule fat scrub (63310) – including disturbed and sparse phases	Wetland	1.13
Southern riparian woodland (62500) – including disturbed phase	Wetland	6.63
Southern willow scrub (63320) – including disturbed phase	Wetland	1.57
Disturbed wetland (11200)	Wetland	0.07
CUP Reclamation Wetland/Riparian/Streambed Restoration	Wetland	10.31[2]
CUP Reclamation Wetland/Riparian Enhancement	Wetland	1.33
Unvegetated channel "streambed" (64200)	--	4.64
Coast live oak woodland (71160)	I	0.07
Diegan coastal sage scrub (32500) – including disturbed phase	II	41.96
Baccharis scrub (32530) – including disturbed phase	II	3.53
Coastal sage – chaparral transition	II	7.22
CUP Reclamation Upland Restoration	II	21.94[3]
Chamise chaparral (37200)	IIIA	22.09
Southern mixed chaparral (37120)	III	38.16
Non-native grassland (42200)	IIIB	1.45
Eucalyptus woodland (79100) – including sparse phase	IV	6.0
Disturbed habitat (11300)	IV	12.5
Non-native vegetation (11000)	--	0.8
Developed (12000)	--	2.0
CUP Reclamation Grading for Intended Development Use	--	238.5
	TOTAL	**421.9**

* Totals reflect rounding (0.1 for uplands and 0.01 sensitive uplands and wetlands/riparian).
[1] Vegetation community codes are from Oberbauer (2008).
[2] Comprised of 6.4 acres riparian scrub re-establishment, 0.89-acre riparian habitat restoration, 1.29 acre of riprap/gabions, and 1.73 acres of habitat preservation
[3] This restoration would be made up of City Tier II Diegan coastal sage scrub and southern mixed chaparral vegetation. Acreage includes riprap/gabions.

Upon completion of reclamation, the total Project boundary remains 421.9, but changes from the existing conditions summarized in Table 3 (Section 4.2.1) result from reclamation and the associated re-establishment/restoration of native habitats and area reflected in Table 9 above. For example, the "quarry" category in Table 3 is not included in Table 9, as the intent of reclamation is to return the quarry to a state such that the area may be used for its intended purpose.

The acreage decrease to streambed (1.56 acres) and quarry (253 acres) corresponds to site reclamation which results in overall increases of: 7.09 acres wetland/riparian/streambed vegetation, 8.97 acres uplands, and 238.5 acres of reclamation grading intended for development use. Specifically, the acreage of wetlands/streambed within the Project boundary after reclamation is 25.68 acres (including 4.64 acres streambed), which is an increase of 5.53 acres wetlands/streambed acres compared to the pre-reclamation site condition. The acreage of uplands (excluding areas reclaimed for "Intended Development Use") within the Project boundary after reclamation is 157.72 acres, which is an increase of 8.97 acres compared to the pre-reclamation site condition. Note, that the term "wetland" in this section refers to a vegetation type and does not necessary insinuate USACE wetlands.

It should be noted that the 10.31 acres of wetland/riparian/streambed re-establishment and restoration implemented for the reclamation comprises a 50/50 mosaic of City wetland/riparian vegetation and streambed. Further, the 10.31 acres of wetland/riparian/streambed reclamation efforts includes the

4.14 acres of anticipated jurisdictional mitigation required to offset wetland impacts associated with reclamation activities. Lastly, note that no jurisdictional impacts from the reclamation or reclamation-related mitigation occurs in previously designated mitigation land.

The future baseline site condition established by the completion of reclamation is summarized in Table 9 above. The additional vegetation and land cover types (i.e., wetland/riparian restoration, wetland/riparian enhancement, upland restoration, and development use) as a result of reclamation completion are described below.

CUP Reclamation Wetland/Riparian/Streambed Restoration

This category consists of areas restored to native wetlands/riparian/streambed habitat per CUP 89-0585 requirements. Such wetland/riparian/streambed restoration areas consist of unvegetated streambed with a relatively open mosaic (approximately 50 percent vegetation and 50 percent unvegetated streambed) of riparian scrub and riparian woodland vegetation consistent with existing Carroll Canyon Creek habitats and ecotone structure found upstream and downstream from the proposed Project.

Specifically, the vegetation communities in these CUP wetlands/riparian/streambed restoration areas include mule fat scrub, southern willow scrub, southern riparian woodland and streambed located within Carroll Canyon Creek in the upstream (eastern), central, and downstream (western) sections within the Project boundary (Figure 6c). The area mapped as CUP wetland/riparian/streambed restoration includes linear “drop structures” within the central and downstream portions of Carroll Canyon Creek on site that reduce creek flow velocity/erosion/sediment.

CUP Reclamation Wetland/Riparian Enhancement

This category consists of areas that would be restored to native wetlands/riparian habitat per CUP 89-0585 requirements. Such enhancement areas consist of disturbed upland habitat within and immediately adjacent to the lower section of Rattlesnake Creek within the CUP boundary. Habitat enhancement will consist of weed removal and control coupled with new planting. The entirety of the enhancement areas will be planted with native riparian species (Figure 6c).

CUP Reclamation Upland Restoration

This category consists of areas on site reclaimed and restored to native uplands (i.e., Diegan coastal sage scrub, southern mixed chaparral and coastal sage-chaparral transition) habitat per CUP 89-0585 requirements. Such areas are in the central portion of the site, located southwest and southeast of the northern off-site vernal pool preserve; and in the southeast portion of the site, north of the southern off-site vernal pool complex. Further, native uplands reclaimed/restored by CUP 89-0585 includes areas north and/or south of Carroll Canyon Creek within the site (Figure 6c).

CUP Reclamation Grading for Intended Development Use

This category is the largest cover type on site and reflects the site reclamation grading under CUP 89-0585 that is rough-graded and compacted for future development use, as indented and described for the site by the approved Community Planning documents. Areas mapped under this land cover type are nearly devoid of vegetation and are located throughout the Project site (Figure 6c).

6.0 MULTI-HABITAT PLANNING AREA BOUNDARY LINE ADJUSTMENT

A BLA is being proposed to remove from the MHPA portions of the Project boundary that have been legally developed, to add in areas that have remained undisturbed and/or would be restored/revegetated, and to maximize conservation along Carroll Canyon Creek and Rattlesnake Creek.

The MHPA currently exists primarily on the northern and northeastern portion of the Project boundary, with a funnel-shaped strip of MHPA extending from the north-central portion to the southwest corner of the Project boundary (Figures 12 through 14). The west and east sides of the Project are largely outside of the MHPA.

The BLA would delete mostly disturbed areas from the MHPA and add areas along Rattlesnake Creek and Carroll Canyon Creek, and the southwestern edge of the Project site. Additionally, areas to be added to the MHPA include quarry areas that would be reclaimed and restored to native vegetation. The details of the proposed BLA are discussed below.

6.1 BOUNDARY LINE ADJUSTMENT ADDITION/DELETION

Acreages discussed below comprise the 421.9-acre Project boundary as mapped/presented on Figures 6c, 12, 13, and 14. As stated in Section 1.2 Project Description, the Project boundary includes off-site areas associated with Carrol Canyon Road and SDG&E utilities. The BMZ 2 proposed along the existing residences of Rattlesnake Canyon is included in the BLA acreages. Note that the newly proposed BMZ 2 for 3Roots development would either be excluded from the MHPA (i.e., not currently within MHPA and not proposed for MHPA) or deleted from the MHPA, which would result in this BMZ 2 as entirely outside the MHPA. However, virtually all the BMZ 2 along the existing homes abutting Rattlesnake Canyon is currently in the MHPA and would remain in the MHPA. Ultimately, no new areas of BMZ 2 would be in the MHPA as a result of the proposed BLA discussed below.

The proposed BLA would increase the MHPA within the Project boundary from approximately 139.76 acres to approximately 146.44 acres (i.e., 6.68-acre net increase). This would be accomplished through the deletion of approximately 29.43 acres of existing MHPA that is made up almost entirely (approximately 96 percent) of non-sensitive habitats and landforms. The addition of approximately 36.11 acres contains a variety of native habitats and non-sensitive upland areas that would be restored to native habitats. A summary of the proposed BLA areas to add and the proposed areas to delete are provided in Table 10 below and presented on Figures 12 through 14. The proposed MHPA boundary and vegetation acreages inside and outside of the MHPA following approval of the BLA are presented in Figure 14 and provided in Table 11.

- Project Boundary
- Post MHPA Boundary Line Adjustment
- CUP 89-0585 Boundary
- Current MHPA
- SDG&E Additional Study Area
- Vernal Pool Preserve

Sensitive Animals

- Coastal California Gnatcatcher
- Cooper's Hawk
- Least Bell's Vireo
- Orange-throated Whiptail
- Coastal Whiptail

Sensitive Plants

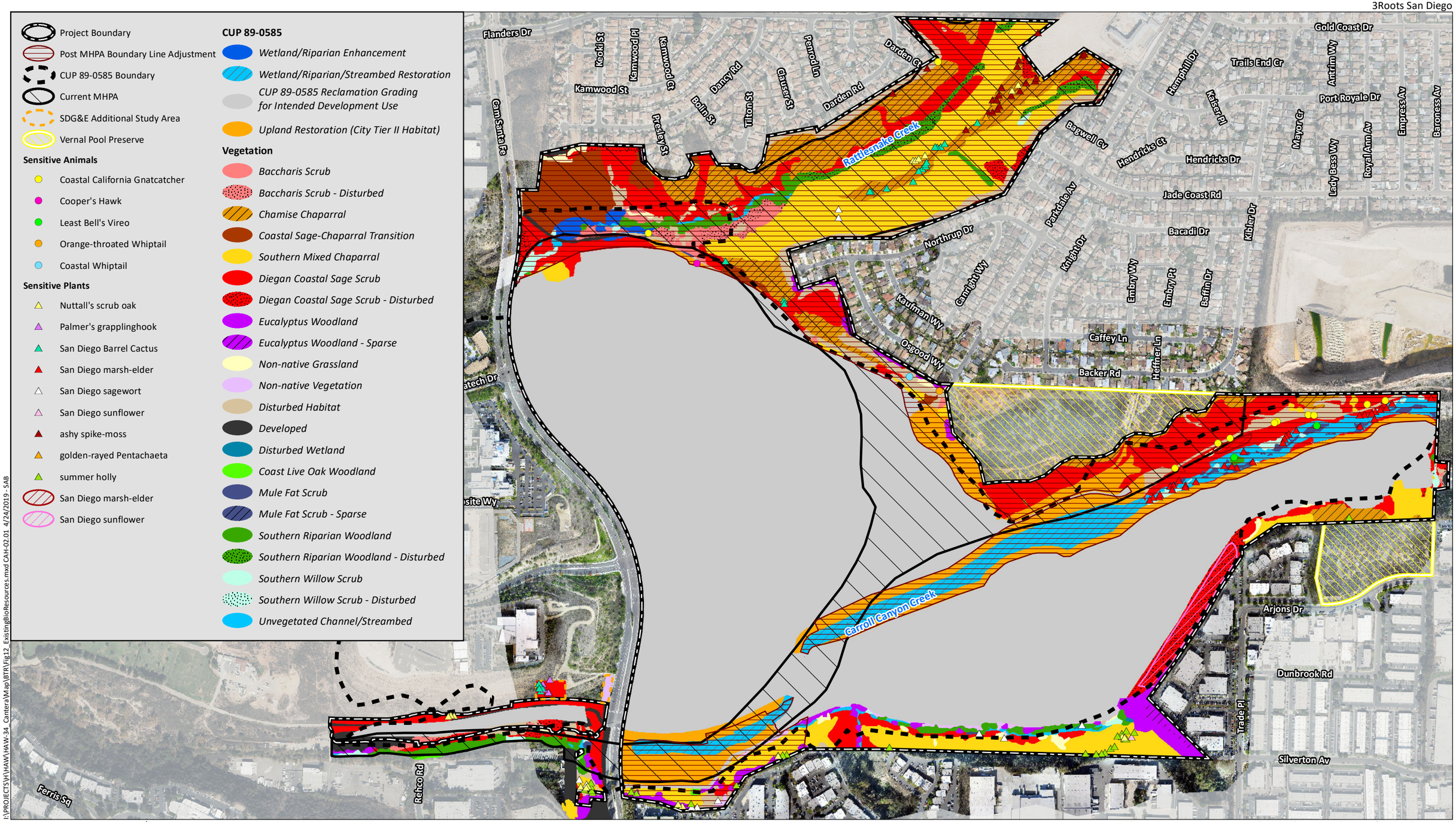
- Nuttall's scrub oak
- Palmer's grapplinghook
- San Diego Barrel Cactus
- San Diego marsh-elder
- San Diego sagewort
- San Diego sunflower
- ashy spike-moss
- golden-rayed Pentachaeta
- summer holly
- San Diego marsh-elder
- San Diego sunflower

CUP 89-0585

- *Wetland/Riparian Enhancement*
- *Wetland/Riparian/Streambed Restoration*
- *CUP 89-0585 Reclamation Grading for Intended Development Use*
- *Upland Restoration (City Tier II Habitat)*

Vegetation

- *Baccharis Scrub*
- *Baccharis Scrub - Disturbed*
- *Chamise Chaparral*
- *Coastal Sage-Chaparral Transition*
- *Southern Mixed Chaparral*
- *Diegan Coastal Sage Scrub*
- *Diegan Coastal Sage Scrub - Disturbed*
- *Eucalyptus Woodland*
- *Eucalyptus Woodland - Sparse*
- *Non-native Grassland*
- *Non-native Vegetation*
- *Disturbed Habitat*
- *Developed*
- *Disturbed Wetland*
- *Coast Live Oak Woodland*
- *Mule Fat Scrub*
- *Mule Fat Scrub - Sparse*
- *Southern Riparian Woodland*
- *Southern Riparian Woodland - Disturbed*
- *Southern Willow Scrub*
- *Southern Willow Scrub - Disturbed*
- *Unvegetated Channel/Streambed*



I:\PROJECTS\H\HAW\HAW-34_Cantera\Map\BTR\Fig12_ExistingBioResources.mxd CAH-02.01 4/24/2019 - SAB

0 650 Feet

Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018); MHPA (SanGIS 2015); Limits of Grading (PDC 2018).

HELIX Environmental Planning

Existing Biological Resources

Figure 12

3Roots San Diego

Project Boundary
CUP 89-0585 Boundary
MHPA Deletion
MHPA Addition
MHPA Extension
Current MHPA
Vernal Pool Preserve

Rattlesnake Creek
Carroll Canyon Creek
Mesa Ridge Rd
Kamwood St
Kaoki St
Kamwood Pl
Kamwood Ct
Dancy Rd
Bolin St
Tilton St
Clausen St
Pearod Ln
Darden Ct
Darden Rd
Presley St
Cam Santa Fe
Bagwell Cv
Hendricks Ct
Hendricks Dr
Hamphill Dr
Trails End Cr
Gold Coast Dr
Antrim Wy
Port Royale Dr
Kaiser Rd
Mayor Cr
Lady Bess Wy
Royal Ann Av
Empress Av
Baroness Av
Tisha St
Embassy Wy
Ambassador Av
Cam Ruiz
Jade Coast Rd
Jade Coast Dr
Parkdale Av
Northrup Dr
Bacadi Dr
Knight Dr
Kibler Dr
Baffin Dr
Emby Pt
Emby Wy
Genright Wy
Kaufman Wy
Osgood Wy
Caffey Ln
Heffner Ln
Backer Rd
Miratech Dr
Juniper Creek Ln
Carroll Canyon Rd
Summers Ridge Rd
Biosite Wy
Rehco Rd
Arjons Dr
Miralani Dr
Cabot Dr
Dunbrook Rd
Dowdy Dr
Trade Pl
Silverton Av

I:\PROJECTS\H\HAW\HAW-34_CanteraWap\BTR\Fig13_MSCPBoundaryAdjust.mxd CAH-02.01 4/24/2019 -CL,-EV, SAB

0 650 Feet

Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018); MHPA (SanGIS 2015); Limits of Grading (PDC 2018).

HELIX Environmental Planning

MHPA Boundary Line Adjustment

Figure 13

- Project Boundary
- CUP 89-0585 Boundary
- Post MHPA Boundary Line Adjustment
- SDG&E Additional Study Area
- Vernal Pool Preserve

Sensitive Animals

- Coastal California Gnatcatcher
- Cooper's Hawk
- Least Bell's Vireo
- Orange-throated Whiptail
- Coastal Whiptail

Sensitive Plants

- Nuttall's scrub oak
- Palmer's grapplinghook
- San Diego Barrel Cactus
- San Diego marsh-elder
- San Diego sagewort
- San Diego sunflower
- ashy spike-moss
- golden-rayed Pentachaeta
- summer holly
- San Diego marsh-elder
- San Diego sunflower

CUP 89-0585

- *Wetland/Riparian Enhancement*
- *Wetland/Riparian/Streambed Restoration*
- *CUP 89-0585 Reclamation Grading for Intended Development Use*
- *Upland Restoration (City Tier II Habitat)*

Vegetation

- *Baccharis Scrub*
- *Baccharis Scrub - Disturbed*
- *Chamise Chaparral*
- *Coastal Sage-Chaparral Transition*
- *Southern Mixed Chaparral*
- *Diegan Coastal Sage Scrub*
- *Diegan Coastal Sage Scrub - Disturbed*
- *Eucalyptus Woodland*
- *Eucalyptus Woodland - Sparse*
- *Non-native Grassland*
- *Non-native Vegetation*
- *Disturbed Habitat*
- *Developed*
- *Disturbed Wetland*
- *Coast Live Oak Woodland*
- *Mule Fat Scrub*
- *Mule Fat Scrub - Sparse*
- *Southern Riparian Woodland*
- *Southern Riparian Woodland - Disturbed*
- *Southern Willow Scrub*
- *Southern Willow Scrub - Disturbed*
- *Unvegetated Channel/Streambed*

0 650 Feet

Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018); MHPA (SanGIS 2015); Limits of Grading (PDC 2018).

I:\PROJECTS\H\HAW\HAW-34 Cantera\Map\BTR\Fig14_BioResources_PostBLA.mxd CAH-02.01 5/21/2019 - SAB

HELIX Environmental Planning

Biological Resources
Post MHPA Boundary Line Adjustment

Figure 14

Table 10
PROPOSED DELETIONS AND ADDITIONS TO THE MHPA
(acres)[1]

Baseline Habitat	Tier	Deletion	Addition	Net Gain/(Loss)
Mule fat scrub	Wetland	--	1.08	+1.08
Southern willow scrub	Wetland	--	1.04	+1.04
Southern riparian woodland	Wetland	--	0.13	+0.13
CUP Reclamation Wetland/Riparian/Streambed Restoration[2]	Wetland	0.16	6.63	+6.47
CUP Reclamation Wetland/Riparian Enhancement	Wetland	--	0.16	+0.16
Wetland Subtotal		*0.16*	*9.04*	*+8.88*
Coast live oak woodland	I	--	0.07	+0.07
Baccharis scrub	II	0.21	0.23	+0.02
Coastal sage -chaparral transition	II	0.01	0.06	+0.05
Diegan coastal sage scrub	II	0.34	7.08	+6.74
CUP Reclamation Upland Restoration[3]	II	0.9	7.57	+6.67
Southern mixed chaparral	IIIA	--	2.85	+2.85
Chamise chaparral	IIIA	--	1.06	+1.06
Non-native grassland	IIIB	0.11	0.03	(-0.08)
Sensitive Upland Subtotal		*1.57*	*18.95*	*+17.38*
Non-native vegetation	IV	--	0.2	+0.2
Eucalyptus woodland	IV	--	1.3	+1.3
Disturbed habitat	IV	0.1	2.2	+ 2.1
CUP Reclamation Grading for Intended Development Use	--	27.2	0.5[4]	(-26.7)
Developed	--	0.4	0.3	(-0.1)
Non-sensitive Upland Subtotal		*27.7*	*4.5*	*(-23.2)*
Unvegetated channel	--	--	3.72	+3.72
TOTAL		**29.43**	**36.11[5]**	**+6.68[5]**

[1] Totals reflect rounding (0.1 for uplands and 0.01 for sensitive uplands and wetlands/riparian); if less, shown as 0.0 (--).
[2] Acreage includes non-wetland unvegetated channel/streambed and riprap/gabions
[3] This restoration would be made up of City Tier II Diegan coastal sage scrub and southern mixed chaparral vegetation. Acreage includes riprap/gabions.
[4] Includes 0.25 acre of paved access road/trail.
[5] Total was adjusted (i.e., reduced by 0.1 acre) to reflect correct sum of 6.68-acre net increase to MHPA.

6.2 BOUNDARY LINE ADJUSTMENT EQUIVALENCY FINDINGS

In order for a BLA to be approved, six findings must be made in accordance with Section 5.4.2 of the MSCP and Section 1.1.1 of the MSCP Subarea Plan (County 1998 and City 1997a, respectively). These six findings are addressed below.

1. *Effects on significantly and sufficiently conserved habitats (i.e., the exchange maintains or improves the conservation, configuration, or status of significantly and sufficiently conserved habitats, as defined in Section 3.4.2 [of the MSCP Plan]).*

The proposed MHPA BLA would result in a net gain of 6.68 acres to the overall MHPA area and a net gain in native habitats (including 8.88 acres of wetland habitats and 3.72 acres of unvegetated channel) relative to the current MHPA boundary. Habitat function and viability would be achieved as a result of on-site monitoring and perpetual management. The primary MHPA configuration change as a result of the BLA would be to remove existing MHPA in the central portion of the site (currently reclaimed for development under CUP 89-0585) and reallocated and increase the MHPA to include the wetlands corridor of Carroll Canyon Creek (including adjacent native uplands) and the downstream section of Rattlesnake Creek on the property. Specifically, the BLA would extend the MHPA to incorporate the entire reach of Carroll Canyon Creek corridor on site (except for the arch culvert undercrossing at Carroll Canyon Road), would add a downstream portion of Rattlesnake Creek, would add a portion of the unnamed tributary to Carroll Canyon Creek and adjacent north-facing slopes, and would include the remaining undeveloped areas within Rattlesnake Canyon on site that are not currently MHPA (Figures 12 through 14).

It is important to note that for years, the site was an operating aggregate quarry that underwent significant grading to extract natural materials. Post mining, SMARA requires that all mining sites undergo “reclamation” activities to recontour the post mine conditions. As a result, slopes of 2:1 (length : height) are located throughout the site per the approved CUP/Reclamation Plan implementation (CUP 89-0585 Supp. EIR Section C). These ongoing reclamation modifications required by SMARA, act as the baseline for Project implementation. These 2:1 slopes are located in open space lots abutting the vernal pool preserve and along the edges of the recontoured/improved Carroll Canyon Creek alignment, where the post-reclamation condition was intended to stabilize slopes altered by mining activities. Therefore, 2:1 slopes are the "existing baseline condition" and not part of the development and are thus allowed in the MHPA (see also discussion in Section 7.9, below.

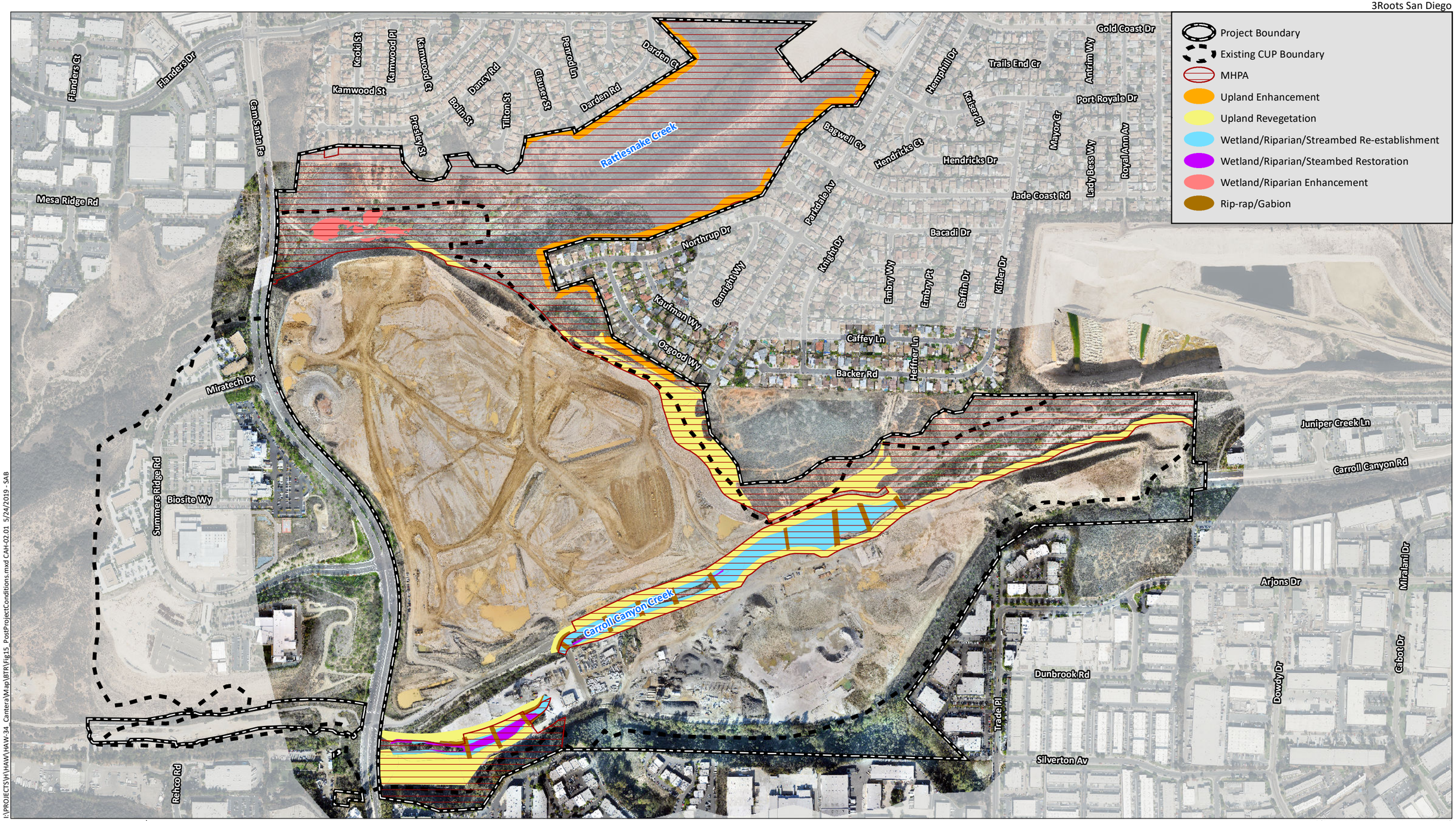
Implementation of the BLA to MHPA would result in the following:

- addition of 9.04 acres of wetland habitats and 3.72 acres of unvegetated channel/streambed (12.76 acres total) located within the upstream and downstream reaches of Carroll Canyon Creek and its unnamed tributary, and the downstream area of Rattlesnake Creek (Figures 12 through 14),

- specifically of this 12.76-acre wetlands/streambed addition total, 0.16 acre consists of wetland/riparian enhancement within Rattlesnake Creek, 6.63 acres are re-establishment wetlands/riparian/streambed habitat on site along the central and lower sections of Carroll Canyon Creek (Figures 12 through 15), and 5.97 acres of addition are wetland/riparian/streambed habitat (including 3.72 acres of unvegetated channel/streambed) on site in the central and lower sections of Carroll Canyon Creek and downstream section of Rattlesnake Creek (Figures 12 through 15),

- addition of 23.45 acres of uplands (18.95 acres are sensitive uplands) on site within Rattlesnake Canyon and in the northeast/southwest portions of Carroll Canyon (Figures 12 through 14),

3Roots San Diego



I:\PROJECTS\H\HAW\HAW-34_Cantera\Map\BTR\Fig15_PostProjectConditions.mxd CAH-02.01 5/24/2019 - SAB

0 650 Feet

Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018)

HELIX Environmental Planning

MHPA Onsite Post MHPA Boundary Line Adjustment

Figure 15

- of this 23.45-acre addition total above, 7.57 acres are restored native upland habitat along the entire stretch of Carroll Canyon Creek and slopes of restored native habitat located southwest and southeast of the off-site northern vernal pool preserve (Figures 12 through 15),

- deletion of 27.7 acres of non-sensitive uplands existing in the central portion of the site (CUP 89-0585 reclamation grading for development [27.2 acres], developed land [0.4 acre], and disturbed habitat [0.1 acre]) (Figures 12 through 14), and

- deletion of 1.57 acres of sensitive uplands primarily associated with the off-site western segment of Carroll Canyon Road extension. Of the 1.57 acres to be deleted, 0.9-acre is associated with CUP Reclamation restoration and is located in the central portion of the site (Figures 12 through 14).

2. *Effects on covered species (i.e., the exchange maintains or increases the conservation of covered species).*

   The BLA would result in an increase of native habitats in the MHPA for covered species, particularly least Bell's vireo, coastal California gnatcatcher, and mule deer. No covered species are expected to occur in the areas proposed for deletion based on the disturbed/developed nature of these areas as well as results of Project surveys. However, the habitat proposed for addition supports at least one individual coastal California gnatcatcher, provides suitable habitat for mule deer, and has potential to support least Bell's vireo. The habitat proposed for deletion consists primarily of disturbed lands and a few isolated patches of uplands that are not expected to support covered species.

   Incorporation of the restoration (i.e., re-establishment of former wetlands) of riparian and upland habitat within and along Carroll Canyon Creek into the MHPA would also benefit covered species on site such as: least Bell's vireo, California gnatcatcher, and mule deer. Additionally, the allocated uses (e.g., non-biological open space, residential, commercial) of the 3Roots development were arranged such that open space corridors of habitat (minimum 65-foot native habitat BMZ and two biofiltration basins) are provided between conserved habitat of the BLA and 3Roots development. Proposed development adjacent to conserved habitat of the BLA would include low and medium density residential and two biofiltration basins and would be buffered by a 65-foot native habitat BMZ that is outside the MHPA. The proposed residential interface with conserved habitat of the BLA consists of backyard and lot fencing, which provides a physical barrier to conserved habitats; thus, the residential development is not expected to result in adverse effects to habitats conserved in the BLA (Figure 5b). Conserved habitat areas as a result of the BLA would be managed in perpetuity to ensure long-term value and viability for covered species. See Sections 10.2 and 10.3 herein for details on conserved habitat protection and management.

3. *Effects on habitat linkages and function of preserve areas (i.e., the exchange maintains or improves any habitat linkages or wildlife corridors).*

   The proposed BLA would not significantly affect the value of the MHPA as a linkage and wildlife corridor. In contrast, the BLA would preserve the upper, central, and additional lower portions of Carroll Canyon Creek (including Carroll Canyon Creek reclamation and restoration areas [i.e.,

re-establishment of former wetlands] in the central portion of the site), would enhance the use of the MHPA as a potential wildlife corridor. The Project proposes creating adjoining trails to existing trails along and within the MHPA, which would continue facilitating wildlife movement within the MHPA on site. During the biological surveys for the Project, wildlife presence (i.e., mule deer, coyote, etc.) and wildlife use of existing trails was observed (i.e., animals on trails, wildlife prints along trails, and wildlife scat on trails).

The proposed trail use on site would be limited to passive activities (e.g., hiking, nature viewing, etc.) and would have environmental awareness signage to inform the public during trail use. Trails and signs are discussed in more detail herein throughout this report and are presented on Figures 5b and 5c. The area proposed for MHPA deletion in the central portion of the site currently provides limited wildlife connectivity between Carroll Canyon and Rattlesnake Canyon to the north. In contrast, the area proposed for addition to the MHPA would allow for increased east-west habitat corridor along Rattlesnake Canyon and a larger east-west corridor along Carroll Canyon Creek.

The existing vernal pool preserve, owned and managed by the City, is located entirely off site adjacent to the Project site. This preserve is currently fenced in and the fencing was installed along the perimeter to fully incorporate the vernal pool watersheds and a surrounding buffer. Additionally, this vernal pool preserve would be further protected by biological (i.e., native habitat) buffers to the south and west and by the elimination of Parkdale Park in the CCMP that was proposed to abut the northern boundary of the preserve. These buffer zones provided between the vernal pool preserve fencing and the Project development range from approximately 194 linear feet to 360 linear feet. This removal of the Park originally contemplated in the CCMP would facilitate and promote wildlife movement along the eastern boundary between Rattlesnake Canyon and Carroll Canyon Creek.

Additionally, the proposed allocated uses (e.g., residential, commercial, open space) of the 3Roots development were arranged such that open space corridors of habitat (minimum 65-foot native habitat) are provided between conserved habitat of the BLA and 3Roots development (Figure 5b). The removal of Parkdale Park from the Project retains the area as MHPA and maintains the habitat linkage and corridor potential between Rattlesnake Canyon and Carroll Canyon Creek. Development immediately adjacent to the MHPA would include low and medium density residential, two biofiltration basins, and would be buffered by a 65-foot native habitat BMZ. The residential interface would consist of backyard lot fencing which provides a physical barrier to conserved habitats; thus, such development is not expected to result in adverse effects to habitats. MHPA on site would be managed in perpetuity by the City to ensure long-term value and viability for covered species such as: coastal California gnatcatcher, least Bell's vireo, and mule deer.

The proposed BLA would result in an increase in native habitat within the MHPA of the Project boundary and would be contiguous to similar habitats off site (Figures 12 through 14). This continuity would improve current wildlife movement along the Carroll Canyon Creek corridor over the baseline condition post reclamation through:

- Conservation of the entirety of Carroll Canyon Creek corridor on site,

- Providing for and conserving generally minimum 50-foot biological buffers along Carroll Canyon Creek (i.e., revegetated Diegan coastal sage scrub along the creek reclamation/restoration areas), plus providing an additional 65-foot BMZ buffer adjacent to proposed development,

- Removal of the proposed "Parkdale Park" from the Project design to maintain north-south movement between Rattlesnake Canyon and Carroll Canyon Creek and providing a biological buffer adjacent to the off-site vernal pool preserve. This area would also be conserved with implementation of the BLA.

Each of the items above would increase native habitat to be conserved within the MHPA. The increase of habitat would provide additional movement opportunity for wildlife species known to occur on site or considered to have potential (i.e., at least moderate) to occur. Such species include birds, amphibians, reptiles, and mammals, as follows: coastal California gnatcatcher, Cooper's hawk, least Bell's vireo, southern California rufous-crowned sparrow, and yellow warbler [*Dendroica petechia*]); western spadefoot toad; two-striped gartersnake; and mule deer.

Although the undercrossing is associated with the CUP 89-0585 reclamation efforts, the placement and design of the undercrossing was determined by the location of the existing habitat, the proposed BLA, and hydraulic engineering studies conducted by Wayne Chang (Chang Consultants 2019). A straighter design (without an angle) was evaluated in various dimensions; however, in order to function hydraulically, a significantly longer undercrossing would be needed. This longer design would be less effective in moving large wildlife (i.e., mule deer) under Carroll Canyon Road due to the lack of openness (i.e., visibility of habitats through the culvert crossing). Though there are no specific MSCP requirements on the openness ratios required to promote wildlife accessibility, there are numerous literature resources on openness ratios. According to Reed et al. (1975) and other studies on ungulate movements, undercrossing structures less than approximately 23 feet wide and approximately 8 feet tall, or with an openness ratio (height x width/length) of less than 0.6 have been found to discourage wildlife use, including mule deer. Cavallaro et al. (2005) and Caltrans (2009) recommend an openness ratio of at least 0.75. Furthermore, undercrossings that lack a natural soft-bottom substrate also are less likely to be used by mule deer (Reed et al. 1975). The proposed undercrossing is 66 feet wide, 19 feet 10.5 inches high at its maximum height, and 330 feet long, which is substantially larger in dimension than the 23-foot-wide by eight-foot-tall dimensions referenced by Reed (1975), and has an openness ratio of 4.0, which is much greater than the 0.75 recommended by Cavallaro et al. (2005) and Caltrans (2009), and includes a soft-bottom. Figure 11 presents the undercrossings in which wildlife can utilize to navigate within the MHPA and along the Carroll Canyon Creek and Rattlesnake Creek corridors.

A fenced, pedestrian bridge over Carroll Canyon Creek is proposed between the trails on the south and north sides of the creek, north of Carroll Canyon Road and west of Street C. This would allow for north-south movement through the site, as opposed to the east-west trails along the creek. It also would allow for easier ADA use, as it would not require descent into/out of creek bottom for those using project trails, and would provide trail access that would not be subject to intermittent flooding (as the undercrossing would be). The overpass would be

approximately 190 feet in length, with footings in upland areas abutting the trails and wholly outside the creek. Very minor footprint impacts may occur at the outer edge of the MHPA boundary for placement of footings. During final design, the project will work with the engineer to place them wholly outside the MHPA on the south side of the creek. To the north, movement is not possible due to SDG&E right-of-way. This minor encroachment of approximately 200 square feet would not affect MHPA functionality.

Presence of a fenced pedestrian bridge over the creek to serve those moving between neighborhoods and link access to park areas has been specifically planned in the Carroll Canyon Master Plan (CCMP; an amendment to the Mira Mesa Community Plan) since 1994. The CCMP references this connective link in text and on Figures 11 and 14, and specifically shows it as separated from the creek crossing by Carroll Canyon Road. This provides functional differentiation of travel patterns throughout the site. As noted elsewhere in this BTR, fenced trails are approved uses within the MHPA. The project has designed this link to be 8 feet wide between trusses, 12 feet wide overall, and to be sited approximately 26 feet above the channel bottom. Night lighting on the bridge would consist of downlights within the bridge structure. They would be the minimum necessary for safety, wholly shielded, pointed at the path within the bridge, and would not spill beyond bridge edges by design. Use of the bridge could occur throughout the day/night, but would be expected to be intermittent at best during nighttime hours, with heaviest use being during the day, when community residents would wish to access the adjacent Community Park. Human use of the bridge is not expected to significantly impact wildlife use of the creek bottom because it would eliminate direct contact between animals and humans (being elevated above the creek). It also would minimize potential for individuals wishing to move north-south across the creek to attempt to climb or damage fencing in attempts to directly cross the creek, as it would provide a signed and convenient option. The 12-foot width of this structure would allow for sunlight to reach under the bridge for all but a very limited portion of the day, and shading effects would therefore not be expected to substantially affect habitat growth. It is also noted that the project proposes installation of bat boxes under the bridge, which would be expected to support roosting of native bat species known to occur in the area. Taking all of this into account, the bridge is found consistent with uses allowed within the MHPA and would not have adverse effects on habitat linkages or function of preserve areas.

4. *Effects on preserve configuration and management (i.e., the exchange results in similar or improved management efficiency and/or protection of biological resources).*

As described in Item 1 above, the proposed BLA would change the preserve configuration to include additional sensitive biological resources, primarily wetlands, not currently within the MHPA (i.e., downstream section of Rattlesnake Creek, central and upper sections of Carroll Canyon Creek, and the downstream section of Carroll Canyon Creek and its unnamed tributary).

Although the MHPA would increase, the proposed MHPA BLA is not anticipated to have a negative effect on the management or protection of resources in the preserve because it would be managed and protected in the same manner or better as the existing MHPA on site. Intensification of management could occur due to the increase and sensitivity of habitats on site along Carroll Canyon Creek. These areas will be managed at the same or higher levels as those required under the MSCP by a land management entity funded through a non-wasting endowment provided by the project proponent. This will provide management of this portion of the MHPA without placing any management responsibilities for management on City resources.

The Project design adheres to the City's Land Use Adjacency Guidelines for development next to the MHPA (See Section 7.9), and further, the 65-foot-wide BMZ 2 proposed between the MHPA and Project development would minimize potential anthropogenic disturbances to MHPA. Thus, preserve management is expected to be similar to efforts currently performed by the City for similar resources in the remainder of the MHPA.

5. *Effects on ecotones or other conditions affecting species diversity (i.e., the exchange maintains topographic and structural diversity and habitat interfaces of the preserve).*

   The area proposed for deletion from the MHPA currently consists almost entirely of areas disturbed by quarry operations that were reclaimed for intended development use per the CUP. These areas support no ecotonal or species diversity value. The areas proposed for addition to the MHPA would consist of native riparian and upland habitats contiguous with MHPA habitats in the eastern, western, and northern portions of the site. The BLA proposed would not result in negative effects on structural diversity or ecotones in the MHPA, and in contrast, the inclusion of the native habitats associated with Carroll Canyon Creek, including adjacent native restored uplands would improve these factors affecting species diversity relative to current MHPA boundaries. Restoration and proposed conservation of such areas along Carroll Canyon Creek would promote habitats and ecotones for several native species protected within the MHPA, including but not limited to: least Bell's vireo, costal California gnatcatcher, Cooper's hawk, orange-throated whiptail, and mule deer.

6. *Effects on species of concern not on the covered species list (i.e., the exchange does not significantly increase the likelihood that an uncovered species would meet the criteria for listing under either the federal or state Endangered Species Acts).*

   The proposed BLA would not increase the likelihood that a species not on the covered species list would be significantly impacted and meet the criteria for listing under federal or state ESAs. A total of five sensitive species not covered under the MSCP Subarea Plan would be directly impacted by the Project, including San Diego sagewort, San Diego marsh elder, summer holly, and Nuttall's scrub oak. Each of these species would be impacted by the Project; however, larger extant populations of these species exist on site within areas proposed for addition into the MHPA.

   As stated above under number 5, the areas proposed for MHPA deletion consist primarily of substantially disturbed habitats and areas reclaimed for development under the CUP that do not contribute to the conservation of any species of concern. Further, results of the surveys conducted for the Project did not detect any sensitive species within the MHPA areas proposed for deletion.

   Ultimately, the proposed Project would increase the City's MHPA preserve areas through approval of the proposed BLA discussed above. Figure 14 presents the site baseline conditions of the site and the proposed MHPA boundary following approval of the BLA; corresponding acreages are provided in Table 11. Additionally, areas of disturbed habitats proposed for addition into the MHPA (except for existing trails and SDG&E access roads) would be revegetated to native habitats as part of the BLA and 3Roots Project. Such areas would adhere to the Project Landscape Plan and the Habitat Reclamation and Restoration Plan (SWA 2019; HELIX 2019a). Figure 14 presents the MHPA areas and acreages following adoption of the BLA

and the Project. Subsequent to adoption of the BLA, the Project development areas (including newly proposed BMZ 2 associated with 3Roots development) would be located outside and directly adjacent to the MHPA. Therefore, the Project is subject LUAGs consistent with Section 1.4.3 of the MSCP Subarea Plan, discussed below.

Table 11
VEGETATION COMMUNITIES AND LAND COVER TYPES OF THE MHPA
WITHIN THE PROJECT BOUNDARY POST MHPA BOUNDARY LINE ADJUSTMENT
(acres)[1]

Vegetation Community or Land Cover Type	Tier	Area
Wetland[2]		
Mule fat scrub (63310) – including disturbed and sparse phases	Wetland	1.10
Southern riparian woodland (62500) – including disturbed phase	Wetland	5.37
Southern willow scrub (63320) – including disturbed phase	Wetland	1.3
CUP Reclamation Wetland/Riparian Enhancement	Wetland	1.33
CUP Reclamation Wetland/Riparian Restoration[3]	Wetland	10.05
Non-Wetland		
Unvegetated channel (64200)	--	4.03
Upland		
Coast live oak woodland (71160)	I	0.07
Diegan coastal sage scrub (32500) – including disturbed phase	II	30.59
Baccharis scrub (32530) – including disturbed phase	II	3.18
Coastal sage – chaparral transition	II	7.20
CUP Reclamation Upland Restoration[4]	II	19.9
Chamise chaparral (37200)	IIIA	19.81
Southern mixed chaparral (37120)	III	28.02
Non-native grassland (42200)	IIIB	0.69
Eucalyptus woodland (79100) – including sparse phase	IV	2.0
Disturbed habitat (11300)	IV	9.5
Non-native vegetation (11000)	--	0.3
CUP Reclamation Grading for Intended Development Use[5]	--	1.3
Developed (12000)	--	0.7
	TOTAL	**146.44**

[1] Totals reflect rounding (0.1 for uplands and 0.01 sensitive uplands and wetlands/riparian).
[2] Wetland here does not imply/define U.S. Army Corps of Engineers "wetlands or WUS."
[3] Comprised riparian scrub re-establishment, riparian habitat restoration, riprap/gabions, and habitat preservation. Also includes non-wetland unvegetated channel/streambed.
[4] Restoration would be made up of City Tier II Diegan coastal sage scrub and southern mixed chaparral vegetation. Acreage includes riprap/gabions.
[5] Includes 0.6 acre of paved maintenance road/trail

Following acceptance of the proposed MHPA BLA discussed above, the remaining 3.66 acres of land located between portions of the MHPA and the property boundary for existing residences along Rattlesnake Canyon will be extended/incorporated into the MHPA. This MHPA extension would result in the MHPA boundary being coterminous to the existing properties that abut Rattlesnake Canyon (Figures 12-14). Thus, total MHPA within the Project boundary would be approximately 150.1 acres.

7.0 CITY OF SAN DIEGO MULTIPLE SPECIES CONSERVATION PROGRAM SUBAREA PLAN COMPLIANCE

Projects in the City are reviewed for compliance with the MSCP Subarea Plan guidelines and policies. The Subarea Plan regulations applicable to the proposed project are described below. Where project features are required for compliance, these features would be made conditions of project approval and be included in the Site Development Permit to run with the title of the land and to be included as "Environmental Requirements" on subsequent construction plan sheets along with any CEQA required mitigation measures.

7.1 COMPATIBLE LAND USES – MSCP SUBAREA PLAN SECTION 1.4.1

Land uses deemed compatible with the goal and objectives of the MSCP are allowed within the MHPA. Such uses include: passive recreation, utility lines and roads, limited water facilities and other essential public facilities, limited low density housing, BMZ 2, and limited agriculture. Although the proposed 3Roots development was configured to be located outside and adjacent to the MHPA, the design does incorporate post-Project uses in the MHPA, including rock gabion drop structures, existing utility lines, BMZ 2 along the existing homes abutting Rattlesnake Canyon, and limited passive recreational trails and paved access roads.

Twelve rock gabion drop structures are included in the MHPA within Carroll Canyon Creek. These rock gabion grade control structures are needed to stabilize the creek for restoration purposes and to support the "riffling" and intermittent pooling effect that occurs in natural streambed with minimal elevation change. Absent these gabions, because of the steepness of the grade, the channel would consist of a narrow, incised channel that would have limited vegetation and would not provide the functions and services of the proposed widened channel. Gabions are allowed uses in the MHPA pursuant to the MSCP guidelines, and are consistent with guidelines for Carroll Creek design in the Mira Mesa Community Plan (Latitude 33 2011), which specifically states that drop structures may be used.

An SDG&E overhead utility line currently exists within the MHPA and spans east-west across the Project area. Sections of this utility line would be relocated above ground and sections would be undergrounded to accommodate the Project utility needs outside the MHPA; however, some of the existing overhead lines, existing utility poles, and existing associated maintenance access roads would still be located in the MHPA.

Trails currently existing on site and are mostly related to accessing the existing SDG&E facilities and would remain on site as a result of the Project. Additionally, an existing dirt trail in the northern portion of the site (Parkdale-Rattlesnake trail) will remain in the MHPA, although re-graded and repaired as part of the CUP reclamation and proposed Project. The access road/trail in the southwest corner of the site will be paved and currently consists of an access road and existing commercial development. The Project proposes connectivity of these existing trails to the development, to allow passive recreational uses within the MHPA (Figure 5c).

Therefore, the land uses for proposed Project are compatible and consistent with the City Subarea Plan.

7.2 GENERAL PLANNING POLICIES AND DESIGN GUIDELINES – MSCP SUBAREA PLAN SECTION 1.4.2

Each of the specific MSCP Subarea Plan Planning Policies and Design Guidelines are numbered and presented in italics below; followed by the proposed Project consistency with those guidelines.

7.2.1 Roads and Utilities – Construction and Maintenance Policies

1) *All proposed utility lines (e.g., sewer, water, etc.) should be designed to avoid or minimize intrusion into the MHPA. These facilities should be routed through developed or developing areas rather than the MHPA, where possible. If no other routing is feasible, then the lines should follow previously existing roads, easements, rights-of-way and disturbed areas, minimizing habitat fragmentation.*

The proposed utility lines (i.e., sewer, water, etc.) for the Project are located entirely outside of the MHPA and would avoid the MHPA. A single SDG&E overhead utility line currently exists within the MHPA. Although above-ground sections of this line would be relocated underground outside of MHPA, some of the existing overhead lines, existing utility poles, and existing associated maintenance access roads would remain located in the MHPA. At one location west of Camino Santa Fe and south of Carroll Canyon Creek, one existing pole would be removed from the MHPA. Note that the relocation alignment was designed and selected to avoid/minimize environmental impacts, including the MHPA and MSCP covered species, to follow Project roads/easements, and to avoid habitat fragmentation. Impacts associated with SDG&E utility work is incorporated into this biological report in Section 8.0.

2) *All new development for utilities and facilities within or crossing the MHPA shall be planned, designed, located and constructed to minimize environmental impacts. All such activities must avoid disturbing the habitat of MSCP covered species, and wetlands. If avoidance is infeasible, mitigation will be required.*

See Project consistency discussion for number 1 above. The proposed extension of Carroll Canyon Road, located off-site and east of the property, would impact wetlands. Such impacts are included in this biological report and a detailed discussion of avoidance is provided in Section 8.4 Deviation from City Wetlands Regulations.

3) *Temporary construction areas and roads, staging areas, or permanent access roads must not disturb existing habitat unless determined to be unavoidable. All such activities must occur on existing agricultural lands or in other disturbed areas rather than in habitat. If temporary habitat disturbance is unavoidable, then restoration of, and/or mitigation for, the disturbed area after project completion will be required.*

The Project does not include temporary construction areas, temporary road, staging areas or permanent access roads that would impact existing habitat. One permanent paved access road/trail will be in the MHPA in the current location of an access road and commercial development located in the southwest portion of the site, which would remain in the MHPA for City access. No habitat impacts are associated with this access road. This access road is required for maintenance access by the City to the undercrossing and by the party who will be maintaining creek. Unavoidable impacts to habitat as a result of the Carroll Canyon Road expansion off-site and east of the property are discussed in this

biological report and a detailed discussion of avoidance is provided in Section 8.4 Deviation from City Wetlands Regulations.

4) *Construction and maintenance activities in wildlife corridors must avoid significant disruption of corridor usage. Environmental documents and mitigation monitoring and reporting programs covering such development must clearly specify how this will be achieved, and construction plans must contain all the pertinent information and be readily available to crews in the field. Training of construction crews and field workers must be conducted to ensure that all conditions are met. A responsible party must be specified.*

The Project does not include construction or maintenance efforts in wildlife corridors. Although a few Project impacts would occur in the MHPA, such areas are affiliated with the CUP/Reclamation Plan Amendment and would be restored and revegetated to native upland habitat upon Project completion. The Project development footprint would be located entirely outside of the MHPA. Maintenance of areas in the MHPA, if needed, would be performed as determined by the City or land manager funded by the project proponent and under City direction/supervision as discussed in Section 10.3 of this report.

5) *Roads in the MHPA will be limited to those identified in Community Plan Circulation Elements, collector streets essential for area circulation, and necessary maintenance/emergency access roads. Local streets should not cross the MHPA except where needed to access isolated development areas.*

Most all permanent roads associated with the Project were designed such that they are located outside of the MHPA. However, one maintenance road/trail located in existing development areas will be included in the MHPA in the southwest portion of the site for City access. No local streets for the Project would cross the MHPA. The expansion of Carroll Canyon Road on site, where it crosses Carroll Canyon Creek, does not overlap the MHPA. Areas both upstream and downstream of the crossing would be MHPA.

6) *Development of roads in canyon bottoms should be avoided whenever feasible. If an alternative location outside the MHPA is not feasible, then the road must be designed to cross the shortest length possible of the MHPA in order to minimize impacts and fragmentation of sensitive species and habitat. If roads cross the MHPA, they should provide for fully-functional wildlife movement capability. Bridges are the preferred method of providing for movement, although culverts in selected locations may be acceptable. Fencing, grading and plant cover should be provided where needed to protect and shield animals, and guide them away from roads to appropriate crossings.*

The Project does not propose development of roads in a canyon bottom. All roads constructed for the Project would be located outside of the MHPA. As mentioned above, one existing maintenance road located in the MHPA will be retained in the southwest portion of the site for City access. The expansion of Carroll Canyon Road on site where it crosses Carroll Canyon Creek would also be outside of the MHPA; however, MHPA would exist both immediately upstream and downstream of the crossing. The extension of Carroll Canyon Road was thoroughly analyzed and selected to incorporate the shortest span possible across the property to achieve required road engineering parameters, to incorporate a wildlife undercrossing beneath Carroll Canyon Road, and to avoid/minimize impact to sensitive species and their habitats. An arched culvert at this crossing would be installed as part of the CUP Reclamation

efforts and was designed to facilitate wildlife movement. The design incorporates a soft-bottom (i.e., earthen), 19 feet 10.5 inches tall, 66-foot-wide, and 330-foot-long arch culvert that significantly exceeds the minimum 23-foot-wide by eight-foot-tall recommendation by Reed (1975), and that would provide an openness ratios ratio of 4.0. which is significantly larger than the 0.75 openness ratio typically targeted for mammal (e.g., deer, coyote, bobcat) movement (Cavallaro et al. 2005, Caltrans 2009). Although the undercrossing is not entirely perpendicular to the road, the larger openness ratio design would allow a visual connection of habitats from both ends of the culvert. This undercrossing design is substantially larger than the existing undercrossing beneath Camino Santa Fe, which currently provides an openness ratio smaller than what is typically targeted for deer movement. Note that the culvert design has been thoroughly discussed with City staff and Wildlife Agencies to ensure protection of biological resources and to provide continued wildlife movement. See Section 6.2 and Figure 16 of this report for additional details on this culvert.

7) *Where possible, roads within the MHPA should be narrowed from existing design standards to minimize habitat fragmentation and disruption of wildlife movement and breeding areas. Roads must be located in lower quality habitat or disturbed areas to the extent possible.*

See Project consistency discussions for numbers 1 through 6 above. The Project does not propose new roads to be located within the MHPA.

8) *For the most part, existing roads and utility lines are considered a compatible use within the MHPA and therefore will be maintained. Exceptions may occur where underutilized or duplicative road systems are determined not to be necessary as identified in the Framework Management Section 1.5.*

See Project consistency discussion for numbers 1 through 6 above.

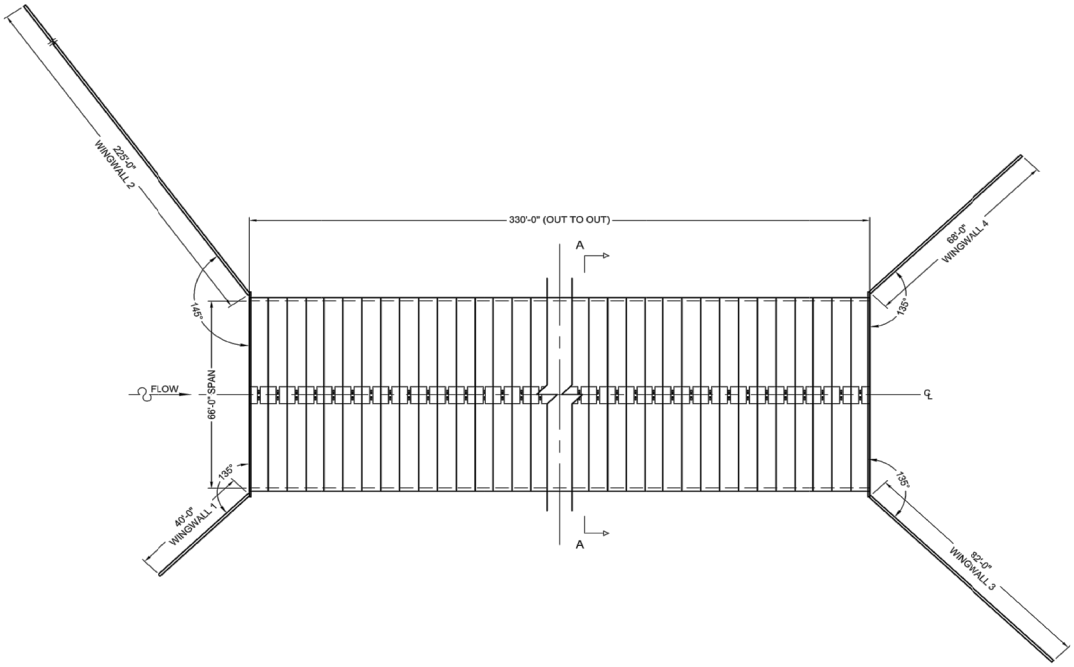
Overall, the proposed Project is consistent with the City's policies and guidelines for roads and utilities within or adjacent to the MHPA.

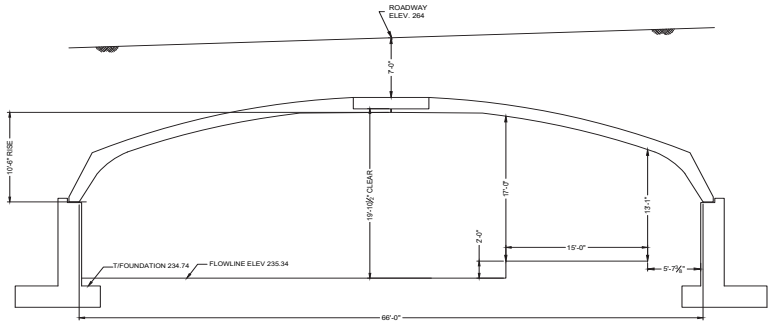
7.2.2 Fencing, Lighting, and Signage

1) *Fencing or other barriers will be used where it is determined to be the best method to achieve conservation goals and adjacent to land uses incompatible with the MHPA. For example, use chain link or cattle wire to direct wildlife to appropriate corridor crossings, natural rocks/boulders or split rail fencing to direct public access to appropriate locations, and chain link to provide added protection of certain sensitive species or habitats (e.g., vernal pools).*

Fencing is incorporated into the Project design and related standard requirements would be included in the Site Development Permit. Fencing is one of the barriers included in the Project design to direct public access and protect sensitive species and their habitats. Fencing where 1) adjacent to the MHPA and 2) on MHPA lands owned by the HOA would be managed and maintained by the Project HOA, whereas fencing within the MHPA on lands owned by the City would be managed and maintained by the City.

2) *Lighting shall be designed to avoid intrusion into the MHPA and effects on wildlife. Lighting in areas of wildlife crossings should be of low sodium or similar lighting. Signage will be limited to access and litter control and educational purposes.*





CROSS SECTION A-A

I:\PROJECTS\H\HAW\HAW-34_Contera\Map\BTR\Fig16_CrossSection_CulvertUndercrossing_2019.indd CAH-02.01 4/24/2019 - SAB

Source: Contech Engineering Solutions LLC 4/2019

HELIX
Environmental Planning

Cross Section of Culvert Undercrossing

Figure 16

Proposed lighting where adjacent to the MHPA would be limited, directed away from the MHPA, and shielded to protect the MHPA from artificial night lighting. No artificial lighting is proposed within the MHPA. Environmental awareness signage would be provided throughout the Project area as presented on Figure 5c. Project lighting and public signage requirements would be included in the Site Development Permit for the Project.

The proposed Project is consistent with the City's policies and guidelines for fencing, lighting, and signage for projects within or adjacent to the MHPA. Additional discussion is provided in Section 7.9 of this report, MHPA Land Use Adjacency Guidelines.

7.2.3 Materials Storage

1) *Prohibit storage of materials (e.g., hazardous or toxic, chemicals, equipment, etc.) within the MHPA and ensure appropriate storage per applicable regulations in any areas that may impact the MHPA, especially due to potential leakage.*

The proposed Project does not include land uses within the MHPA that require storage of hazardous or toxic chemicals, materials, or substances. The Project design was configured to be located outside of the MHPA and land uses adjacent to the MHPA were selected to be consistent with those prescribed in Section 1.4.1 of the Subarea Plan. Furthermore, Project areas adjacent to the MHPA would comply with the City's MHPA LUAGs (Section 7.9 below). Thus, 3Roots would comply with the City's policies and guidelines on material storage.

7.2.4 Mining, Extraction, and Processing Facilities

1) *Mining operations include mineral extraction, processing and other related mining activities (e.g., asphaltic processing). Currently permitted mining operations that have approved restoration plans may continue operating in the MHPA. New or expanded mining operations on lands conserved as part of the MHPA are incompatible with MSCP preserve goals for covered species and their habitats unless otherwise agreed to by the wildlife agencies at the time the parcel is conserved. New operations are permitted in the MHPA if: 1) impacts have been assessed and conditions incorporated to mitigate biological impacts and restore mined areas; 2) adverse impacts to covered species in the MHPA have been mitigated consistent with the Subarea Plan; and 3) requirements of other City land use policies and regulations (e.g., Adjacency Guidelines, Conditional Use Permit) have been satisfied. Existing and any newly permitted operations adjacent to or within the MHPA shall meet noise, air quality and water quality regulation requirements, as identified in the conditions of any existing or new permit, in order to adequately protect adjacent preserved areas and covered species. Such facilities shall also be appropriately restored upon cessation of mining activities.*

Although the Project would assist in the implementation of the site reclamation, mining operations (e.g., extraction, processing, manufacturing, etc.) are not a component of the proposed 3Roots Project. As discussed previously in Section 1.2.1, the Project site has been historically mined (including areas of MHPA) and is currently undergoing reclamation (See Section 5.0) in accordance with the approved CUP, associated Reclamation Plan, and SMARA. No new mining operations are proposed as part of the Project.

2) *All mining and other related activities must be consistent with the objectives, guidelines, and recommendations in the MSCP plan, the City of San Diego's Environmentally Sensitive Lands Ordinance, all relevant long-range plans, as well as with the State Surface Mining and Reclamation Act (SMARA) of 1975.*

See Project consistency discussion for number 1 above.

3) *Any sand removal activities should be monitored for noise impacts to surrounding sensitive habitats, and all new sediment removal or mining operations proposed in proximity to the MHPA, or changes in existing operations, must include noise reduction methods that take into consideration the breeding and nesting seasons of sensitive bird species.*

See Project consistency discussion for number 1 above.

4) *All existing and future mined lands adjacent to or within the MHPA shall be reclaimed pursuant to SMARA. Ponds are considered compatible uses where they provide native wildlife and wetland habitats and do not conflict with conservation goals of the MSCP and Subarea Plan.*

See Project consistency discussion for number 1 above.

5) *Any permitted mining activity including reclamation of sand must consider changes and impacts to water quality, water table level, fluvial hydrology, flooding, and wetlands and habitats upstream and downstream, and provide adequate mitigation.*

See Project consistency discussion for number 1 above.

Overall, the Project is consistent with policies on mining operations.

7.2.5 Flood Control

1) *Flood control should generally be limited to existing agreements with resource agencies unless demonstrated to be needed based on a cost benefit analysis and pursuant to a restoration plan. Floodplains within the MHPA, and upstream from the MHPA if feasible, should remain in a natural condition and configuration in order to allow for the ecological, geological, hydrological, and other natural processes to remain or be restored.*

The CUP Reclamation requires the restoration of Carroll Canyon Creek; these areas would be in the MHPA following the approval of the BLA discussed previously in Section 6.0 of this report. The Carroll Canyon Creek reclamation and restoration efforts include grading of hydrologic contours and installation of rock gabion grade control features (i.e., drop structures) to achieve appropriate hydrological conditions of the creek. The need for such structures is a result of the hydraulic engineering studies conducted by Wayne Chang (Chang Consultants 2019). These structures would reduce flow velocity, spread flows across the widened channel bottom, improve channel sinuosity, reduce bank erosion, and enhance the potential for wetland/riparian habitat growth. HELIX and Chang Consulting have implemented similar designs on other projects with excellent results. Restoration functions and services with the Carroll Canyon Creek channel are anticipated to be improved with the use of the rock gabion structures.

2) *No berming, channelization, or man-made constraints or barriers to creek, tributary, or river flows should be allowed in any floodplain within the MHPA unless reviewed by all appropriate agencies, and adequately mitigated. Review must include impacts to upstream and downstream habitats, flood flow volumes, velocities and configurations, water availability, and changes to the water table level.*

See Project consistency discussion for Flood Control number 1 above. The drop structures would not constrain or create barriers in the creek, but rather improve floodplain processes. The drop structures proposed as part of the CUP reclamation and restoration would be reviewed and approved by the Resource Agencies and the City. Impacts associated with these structures are included in this in this report and the corresponding mitigation is also adequately provided (See Sections 8.0 and 10.0).

3) *No riprap, concrete, or other unnatural material shall be used to stabilize river, creek, tributary, and channel banks within the MHPA. River, stream, and channel banks shall be natural, and stabilized where necessary with willows and other appropriate native plantings. Rock gabions may be used where necessary to dissipate flows and should incorporate design features to ensure wildlife movement.*

See Project consistency discussion for Flood Control numbers 1 and 2 above. Riprap is not proposed for the Project, but is included within the CUP Reclamation efforts of Carroll Canyon Creek channel for bank stabilization. Such riprap used for bank stabilization would not be located in the MHPA. Rock gabions are proposed for the grade control ("drop") structures to be installed within Carroll Canyon Creek as part of the CUP Reclamation and are consistent with guidelines for Carroll Creek design in the Mira Mesa Community Plan (Latitude 33 2011), which specifically states that drop structures may be used. The need for such structures is a result of the hydraulic engineering studies conducted by Wayne Chang (Chang Consultants 2019). These drop structures are necessary to be constructed in order support the project site's surface hydrology and creek flow dissipation post implementation of the CUP Reclamation efforts. The drop structures may allow for improved floodplain processes and recruitment and establishment of willows and other riparian/wetland plant species These rock gabions drop structures would be located inside of the MHPA.As noted above, HELIX and Chang Consulting have implemented similar designs on other projects with excellent results and restoration functions and services with the Carroll Canyon Creek channel are anticipated to be improved with the use of the rock gabion structures. These grade control structures allow for larger flatter areas more conducive to wetland growth and allow for flatter wildlife migration corridors.

The CUP Reclamation and the proposed Project design includes the results of consultation and coordination with the City, resource agencies and wildlife agencies. Agency permitting would be required for the CUP Reclamation of Carrol Canyon Creek and the proposed Project. Overall, the Project would comply with the City policies and guidelines regarding flood control within the MHPA.

7.3 LAND USE ADJACENCY GUIDELINES – MSCP SUBAREA PLAN SECTION 1.4.3

The Project design features incorporate MHPA LUAGs, which are discussed thoroughly in Section 7.9 of this report. Project features would comply with the City's LUAGs for projects adjacent to the MHPA and be required as conditions of project approval (i.e., City Site Development Permit [SDP]); thus, the Project is consistent with this City requirement.

7.4 GENERAL MANAGEMENT DIRECTIVES – MSCP SUBAREA PLAN SECTION 1.5.2

The proposed Project has considered the general MSCP management directives in the overall design, and as such, have incorporated components as applicable which are discussed below. Thus, the Project is consistent with the general management directives of the MSCP, as summarized below.

7.5 MITIGATION

Proposed biological mitigation for 3Roots was developed in consultation with the resource agencies, wildlife agencies, and City planning staff and would be made conditions of the CEQA Mitigation Monitoring and Reporting Program (MMRP) as applicable. Mitigation was developed in compliance with the City ESL and Biology Guidelines. The Habitat Reclamation and Mitigation Plan (i.e., a restoration plan which makes up a component of the Projects overall biological mitigation) is attached to this report as Appendix D.

7.6 PUBLIC ACCESS, TRAILS, AND RECREATION

As stated above, the Project design incorporates trails to direct public access away from the MHPA and protect sensitive species and their habitats. New trails, access, or recreation into the MHPA are not a component of the Project. A free-span pedestrian bridge is proposed by the Project to provide mobility and direct the public over and across the MHPA (bridge is approximately 26 feet above creek channel), linking to other trails of the Project located outside of the MHPA (Figure 5c).

The Project would retain the existing trail in the MHPA that leads into the canyon of Rattlesnake Creek, located in the north central portion of the Project boundary at the southern end of Parkdale Avenue. Additionally, a trail/road in the southwest corner of the site will be a paved access road/trail in a location that currently consists of an access road and commercial development and will remain located in the MHPA. The Project recreational uses in the MHPA are anticipated to be passive; such as: wildlife viewing, photography, and hiking.

7.7 LITTER/TRASH AND MATERIALS STORAGE

The Project is not anticipated to produce litter, trash, or store hazardous materials in the MHPA. The Project was designed to incorporate and adhere to the City LUAGs (see Section 7.9 of this report). Additionally, areas of the MHPA on site are anticipated to be ultimately monitored and managed by the City (upon dedication acceptance from Park and Recreation, and after project applicant restoration efforts are deemed complete by the City of San Diego through their issuance of a Notice of Completion), except for BMZs which would be under ownership and management responsibility of an HOA or similar entity (see Sections 10.2 and 10.3 below) and certain areas within the creek which will be managed by management entity in accordance with the requirements of the MSCP (see Figure 27).

Proposed signage for the Project located along and within areas of the MHPA would have environmental information along with information on the penalties for littering, dumping, and vandalism per City municipal code statutes.

7.8 ADJACENCY MANAGEMENT ISSUES

Although some related issues are addressed above, overall, the project would address MHPA adjacency issues through implementation of the LUAGs (see Section 7.9 of this report).

7.8.1 Invasive Exotics Control and Removal

Introduction of non-native species into the MHPA is not expected to occur as a result of the Project. As discussed in Section 7.9 of this report (i.e. LUAGs), no invasive plants are proposed as part of the CUP Reclamation or proposed Project. Furthermore, 43 invasive species listed from California Invasive Plant Council (Cal-IPC) would be targeted for removal from the Project site, including restoration/ enhancement areas, and areas of BMZ 2 (along the existing homes abutting Rattlesnake Canyon and the newly proposed BMZ 2 associated with 3Roots development). The Habitat Reclamation and Mitigation Plan also describes invasive species removal and controls (Appendix D). Lastly, the majority of MHPA would be monitored and managed by the City, and as such it is expected that management issues of invasive exotic species control and removal identified would be remediated by the City (after any 5-year, restoration/revegetation requirements are signed off by the City and provision of a Property Analysis Record (PAR) or other appropriate endowment where applicable for wetland areas). Where MHPA is under management of a long-term habitat manager funded by the project proponent, invasive species control and removal would occur through implementation of brush management activities.

7.8.2 Flood Control

Other than the efforts prescribed in the Habitat Reclamation and Mitigation Plan, the proposed Project does not incorporate potential long-term maintenance (e.g., clearing, dredging, debris removal, etc.) of the channels on site. A Long-Term Habitat Management Plan is provided for the mitigation areas (i.e., restoration, revegetation, re-establishment) proposed within Carroll Canyon Creek, but neither anticipates nor proposes routine clearing/dredging/debris removal efforts for flood control. The majority of the MHPA (including Rattlesnake Creek and upper Carroll Canyon Creek channels) would be monitored and managed by the City, and as such it is expected that management issues requiring maintenance or other activities would be identified by the City and remediated upon City authorization, unrelated to 3Roots. The central and lower portions of Carroll Canyon Creek will be maintained by a land manager funded by the project proponent, and should any management and maintenance issues related to flood control arise, the HOA, land manager, and City would coordinate on the appropriate solution.

7.9 LAND USE ADJACENCY GUIDELINES

The City MSCP Section 1.4.3 requires implementation of LUAGs to projects located within or adjacent to the MHPA to address drainage, toxics, lighting, noise, barriers, invasive species, brush management, and grading. Because portions of the 3Roots Project are located within or immediately adjacent to the MHPA, implementation and compliance with the LUAGs is required. Below provides an analysis of 3Roots consistency with each of the City's LUAGs. Note that conformance with the MHPA LUAGs (in italics below) is a standard requirement as part of conditions of approval in the City and required to be included as "Environmental Requirements" on future construction plans.

Drainage: *All new and proposed parking lots and developed areas in and adjacent to the preserve must not drain directly into the MHPA. All developed and paved areas must prevent the release of toxins,*

chemicals, petroleum products, exotic plant materials and other elements that might degrade or harm the natural environment or ecosystem processes within the MHPA.

Impervious surfaces and developed areas associated with the Project would not drain directly into the MHPA due to the topography (natural or constructed) or because flows are directed into a water treatment facility. The Project design incorporates multiple water treatment facilities to intercept flows (i.e., storm water and urban drainage) prior to connection with the MHPA. These facilities primarily include bio retention basins and roadside landscape swales, but also include an on-site storm drain system. Further, this project-specific drainage system would collect and transfer storm flows from the site for biological treatment through roadside basins and on-lot landscape swales and would ultimately be captured in one of the eight biofiltration basins proposed for the Project, which are presented on the Storm Water Quality Management Plan (SWQMP) (Project Design Consultants 2018).

Toxics: *Land uses, such as recreation and agriculture, that use chemicals or generate by-products such as manure, that are potentially toxic or impactive to wildlife, sensitive species, habitat, or water quality need to incorporate measures to reduce impacts caused by the application and/or drainage of such materials into the MHPA.*

A community sports park and other community pocket-parks are included in the Project design; however, the parks were arranged and located so as not to drain into the MHPA. As stated above, developed areas associated with the Project would not drain directly into the MHPA due to the topography (natural or constructed) or because they would first drain into a water treatment facility. Water treatment facilities for 3Roots would be constructed to intercept flows (i.e., storm water and urban drainage) prior to connection with the MHPA. These facilities primarily include bio retention basins and roadside landscape swales, but also include an on-site storm drain system. Further, this project-specific drainage system would collect and transfer storm flows from the site for biological treatment through roadside basins and on-lot landscape swales and would ultimately be captured in one of the eight biofiltration basins proposed for the Project, which are presented on the SWQMP (Project Design Consultants 2018). The bio retention/filtration basins would be constructed and planted with appropriate native and non-invasive species per the project landscape plan (SWA 2018).

Lighting: *Lighting of all developed areas adjacent to the MHPA should be directed away from the MHPA.*

The Project lighting where adjacent to the MHPA would be limited and directed away from the MHPA. In particular, proposed lighting adjacent to Carroll Canyon Creek would be shielded to protect the MHPA from artificial night lighting.

Noise: *Uses in or adjacent to the MHPA should be designed to minimize noise impacts. Berms or walls should be constructed adjacent to commercial areas, recreational areas, and any other use that may introduce noises that could impact or interfere with wildlife utilization of the MHPA.*

A noise study was completed for the Project and land uses adjacent to the MHPA were evaluated (HELIX 2018b). Various features such as land use placement, constructed topography, walls, and berms were applied into the project design where necessary to achieve compliance with the City noise ordinances and to ensure that noise from the Project would not interfere with the MHPA.

Construction generated noise from the Project could cause a significant impact to nearby habitat that supports coastal California gnatcatcher and least Bell's vireo during the breeding seasons. The Acoustical Analysis Study for this Project (HELIX 2018b) determined that noise levels generated on site would be

highest during the remedial grading and mass excavation activities for each of the two project construction Phases. Grading and excavation would involve the use of heavy machinery equipment including: dozers, loaders, water trucks, graders, vibratory rollers, scrapers, and pavers. Pile drivers would also be used for the undercrossing work, scheduled for Phase 2 of the project construction. For all of these planned activities, equipment work would generate noise levels as high as 72 dBA LEQ near (i.e., within 150 feet) the MHPA habitat.

To comply with the City's LUAGs and avoid potential indirect impacts to coastal California gnatcatcher or the least Bell's vireo in the MHPA, construction would be implemented outside of the breeding season for the coastal California gnatcatcher, which is defined by the City as March 1 to August 15 annually for coastal California gnatcatcher and March 15 through September 15 for the least Bell's vireo. This seasonal timing shall also be required for implementation of BMZ2 efforts associated with the Project.

If activities are unable to avoid the breeding season for California gnatcatcher and/or least Bell's vireo, USFWS protocol surveys would be conducted prior to the implementation to determine species presence/absence. If protocol surveys are not conducted, presence of the species would be assumed, and the implementation of noise attenuation and biological monitoring would be required.

This restriction applies to the Project construction , the post Project BMZ2 implementation, as well as to potential indirect impact area associated with traffic mitigation at the Camino Santa Fe and Flanders Drive intersection. In this area, although the footprint impact area would be within disturbed habitat, there is adjacent Diegan coastal sage scrub habitat, and MHPA is located within 500 feet. As a result, the LUAG restrictions also would apply and be implemented.

Barriers: *New development adjacent to the MHPA may be required to provide barriers (e.g., non-invasive vegetation, rocks/boulders, fences, walls, and/or signage) along the MHPA boundaries to direct public access to appropriate locations and reduce domestic animal predation.*

A variety of barriers would be provided by the Project to discourage and preclude domestic animal intrusion and predation of animals or habitat in the MHPA. For example, the Project would avoid impacts to the existing steep (greater than 50 percent steepness) topography in the northern portion of the site adjacent to the MHPA of Rattlesnake Creek. This area supports native upland habitat and would remain untouched by 3Roots. Such avoidance and presence of native habitat in this area of the Project would provide a natural barrier that discourages both humans and domestic pet predation in this area of the MHPA.

The proposed network of trails for the Project are located adjacent and within the MHPA and would connect to existing trails on site. In areas where Project grading encroaches over the existing trails, such trails would be enhanced (re-graded and compacted) by the Project to provide safe public use. Areas immediately adjacent to such trails within the MHPA would be revegetated with native plant species. This trail network would direct and convey the public (including domestic pets) to appropriate locations on site. Environmental awareness signage would be installed at the trail heads and trail connections to further guide the public through the trail network. Additional signage would be installed by the Project at various locations on site along the MHPA boundary to inform the public of its sensitivity and protection.

The Project also proposes a 65-foot BMZ 2, which would serve as a buffer from the MHPA where adjacent to Project development throughout the site. Portions of this buffer that do not support native vegetation would be planted with native vegetation and native cultivar. This buffer of native habitat

would discourage domestic animal predation and public intrusion in the MHPA. Also, Project landscape areas would be planted with such native vegetation.

The 3Roots land use allocation proposes low and medium density residential lots that would be fenced along the property line adjacent to the 65-foot BMZ 2 stated above. No public access into the BMZ or MHPA would be provided along this residential lot fencing. Additional fencing placed throughout the Project would further preclude direct public access and domestic pets into the MHPA. Barriers proposed by the Project are presented on Figure 5c.

Invasives: *No invasive non-native plant species shall be introduced into areas adjacent to the MHPA.*

Project planting within the MHPA, where adjacent to the MHPA, and within the BMZ 2 areas would not include invasive species.

Chapter 14, Article 2, Division 4 of the San Diego Municipal Code covers landscape regulations. Section 142.0403 b (1) and (2), respectively states:

> "Planting of invasive plant species, as described in the Landscape Standards of the Land Development Manual is not permitted."
>
> "All existing, invasive plant species, including vegetative parts and root systems, shall be completely removed from the *premises* when the combination of species type, location, and surrounding environmental conditions provides a means for the species to invade other areas of native plant material that are on or off of the *premises*."

Additionally, implementation of BMPs during construction would include measures to avoid introduction of invasive plants into the construction site and dispersal of invasive plants from the construction site by equipment.

Invasive species that occur on the American Society of Landscape Architects Most Invasive Species Guide (ASLA 2014), or on the Cal-IPC California Invasive Plant Inventory Database (2017) are considered invasive. These lists include 43 species that were observed within the Project boundary. The Project boundary is within and adjacent to the MHPA, and, therefore, has potential to serve as a source of propagules (i.e., a vegetative structure that can become detached from a plant and give rise to a new plant, such as a bud, sucker, or spore) for invasive plant species to colonize the MHPA. The restoration of Carroll Canyon Creek, upland restoration areas, and the BMZ 2 areas (both Rattlesnake Canyon BMZ 2 and new BMZ 2 associated with 3Roots development) would remove invasive species in these areas and eliminate potential seed sources to the MHPA following the implementation.

The following 43 invasive species, which occur on the Cal-IPC's California Invasive Plant Inventory Database (2017), were observed on site and would also be removed within the restoration areas:

- Giant reed
- Australian saltbush (*Atriplex semibaccata*)
- Slender oat (*Avena barbata*)
- False brome (*Brachypodium distachyon*)
- Ripgut brome (*Bromus diandrus*)
- Soft brome (*Bromus hordeaceus*)
- Red brome (*Bromus madritensis* ssp. *Rubens*)
- Italian thistle (*Carduus pycnocephalus*)
- Highway iceplant (*Carpobrotus edulis*)
- Tecolote (*Centaurea melitensis*)
- Pampas grass (*Cortaderia selloana*)
- Common brassbuttons (*Cotula coronopifolia*)
- Artichoke thistle (*Cynara cardunculus*)
- Bermuda grass (*Cynodon dactylon*)
- Scotch broom (*Cytisus scoparius*)
- Stinkwort (*Dittrichia graveolens*)
- Redstem filaree (*Erodium cicutarium*)
- Red gum (*Eucalyptus camaldulensis*)
- Rat-tail fescue (*Festuca myuros*)
- Italian ryegrass (*Festuca perennis*)
- Sweet fennel (*Foeniculum vulgare*)
- Geranium (*Geranium dissectum*)
- Crown daisy (*Glebionis coronaria*)
- Black mustard (*Brassica nigra*)
- English plantain (*Plantago lanceolate*)
- Rabbitsfoot grass (*Polypogon monspeliensis*)
- Wild radish (*Raphanus sativus*)
- Castor bean (*Ricinus communis*)
- Curly dock (*Rumex crispus*)
- Russian thistle (*Salsola tragus*)
- Bristly ox-tongue (*Helminthotheca echioides*)
- Horehound (*Marrubium vulgare*)
- California burclover (*Medicago polymorpha*)
- Ngaio tree (*Myoporum laetum*)
- Bermuda buttercup (*Oxalis pes-caprae*)
- Fountain grass (*Pennisetum setaceum*)
- Harding grass (*Phalaris aquatic*)
- Canary Island date palm (*Phoenix canariensis*) Mediterranean grass (*Schismus barbatus*)
- Milk thistle (*Silybum marianum*)
- Smilo grass (*Stipa miliacea* var. *miliacea*)
- Tamarisk (*Tamarix ramosissima*)
- Mexican fan palm (*Washingtonia robusta*)

The list above includes all invasive non-native species that have been observed on site; however, additional species may be added to this list, at the discretion of the restoration specialist.

Furthermore, the following nine San Diego invasive plant species (listed on the ASLA most invasive list [ASLA 2014]) would be removed by hand or treated with an appropriate, wetland-approved herbicide within the wetland restoration area:

- Golden wattle (*Acacia longifolia*)
- Weeping bottlebrush (*Callistemon viminalis*)
- African umbrella plant (*Cyperus involucratus*)
- Peruvian pepper tree (*Schinus molle*)
- Jade plant (*Crassula ovata*)
- Treasure flower (*Gazania linearis*)
- Cape Honeysuckle (*Tecoma capensis*)
- Iceplant (*Mesembryanthemum* spp.)
- African Daisy (*Osteospermum fruticosum*)

Please refer to the Habitat Reclamation and Mitigation Plan (HELIX 2019a) that details the removal of exotic species in both upland and wetland habitats on site. The landscape plans for the proposed Project shall include no species listed as invasive by ASLA (2014) or Cal-IPC (2017).

Brush Management: *New residential development located adjacent to and topographically above the MHPA (e.g., along canyon edges) must be set back from slope edges to incorporate Zone 1 brush*

management areas on the development pad and outside of the MHPA. Zones 2 and 3 will be combined into one zone (Zone 2) and may be located in the MHPA upon granting of an easement to the City (or other acceptable agency) except where narrow wildlife corridors require it to be located outside of the MHPA.

The Project development incorporates buffers from the MHPA such that the BMZ 1 and BMZ 2 areas proposed adjacent to the 3Roots development are within the development footprint and located entirely outside of the MHPA. Proposed BMZ 1 and BMZ 2 meet the City's current Brush Management Requirements and have been incorporated into the Project, where applicable. Zone 2 throughout the Project (except for the native habitat within the brush management along existing homes along Rattlesnake Canyon described below) would be replanted with native species and native cultivars as presented in Figure 15.

Existing residences surrounding Rattlesnake Canyon abut the MHPA and vegetative clearing for brush management purposes has been ongoing along this edge condition. The Project proposes a 65-foot BMZ 2 along this residential edge, which would be included in the MPHA via a separate COE and would be maintained by the 3Roots Project HOA. Currently, these areas are largely devoid of vegetation or support disturbed habitat; such areas would be seeded with upland native plant species and allowed to grow/recover to the extent consistent with thinning requirements for BMZ 2.

Grading/Land Development: *Manufactured slopes associated with site development shall be included within the development footprint for projects within or adjacent to the MHPA.*

Relative to manufactured slopes, it is noted that MSCP guidance indicates that such slopes should not be included in the MHPA. The Project condition varies from routine consideration of this issue, however, due to the fact that the site was a former mining operation. The 1994 CCMP clearly indicates extremely steep slopes associated with the (then active) mine that constitutes the project location. CCMP Figure 5 identifies on-site slopes following reclamation efforts, and calls out manufactured slopes exceeding 25 percent slope lining the edges of the contemplated re-alignment of Carroll Canyon Creek as well as other on-site locations. This figure depicts areas of steep slopes and identifies them as "manufactured slopes created by extraction." These slopes included areas with steepness of 2:1 (and greater than 2:1) ratio, which are consistent with natural landforms of like steepness in Rattlesnake Canyon. In 1997, after the Carroll Canyon Master Plan was approved, the City and Resource Agencies worked to define MHPA corridors in the area. It was Figure 5, the future post-reclamation condition of the site, that MSCP staff used to create the MHPA boundaries crossing the site.

That said, the delta between the adopted Reclamation Plan and current on-site conditions has changed. Specifically, two existing points of connection to Carroll Canyon Road have been established as built conditions. This, coupled with a tributary run off to Carroll Canyon Creek along the southern edge of the property, required the adopted Reclamation Plan's proposed alignment of Carroll Canyon Road on site, the on-site re-alignment of Carroll Canyon Creek, and therefore the proposed slopes created by reclamation, which are informed by these features, to change. Though the landforms affiliated with reclamation have been slightly changed, 2:1 slopes as part of the reclamation efforts remain albeit in slightly modified locations (still sited along eastern slopes, the creek, etc.). As described throughout this report, the post reclamation condition acts as the Project baseline.

As a result of the requirement for reclamation efforts to conform to existing real-world conditions, the on-site BLA has been redrawn to accommodate these changes. The MHPA BLA proposed eliminates

proposed development areas, and adds in restored areas associated with Carroll Canyon Creek. Inclusion of some elements of manufactured slopes within the improved area is wholly consistent with prior City/Wildlife Agency planning for the MHPA. As a result, modified and revegetated slopes are consistent with MHPA vision for this area.

7.10 AREA SPECIFIC MANAGEMENT DIRECTIVES

This Section presents the conditions of coverage for the seven MSCP-covered species detected (D) or with high to moderate potential (H or M, respectively) to occur on 3Roots. Each of these species are listed below along with a summary of the MSCP Area Specific Management Directives (ASMDs) (i.e., conditions of coverage) and the Project consistency for each species. The ASMDs are presented in italics, which would be made conditions of the SDP and are required to be placed on construction plans as part of the Environmental Requirements along with CEQA MMRPs.

Coastal California gnatcatcher (D): *Area specific management directives must include measures to reduce edge effects and minimize disturbance during the nesting period, fire protection measures to reduce the potential for habitat degradation due to unplanned fire, and management measures to maintain or improve habitat quality including vegetation structure. Additionally, no cleaning of occupied habitat within the City MHPA or County's Biological Core Resource Areas between March 1 and August 15.*

The Project incorporates measures during construction and post construction to address potential edge effects and minimize disturbance during the nesting season for coastal California gnatcatcher. Specifically, Project construction would be implemented on a controlled grading schedule to occur outside of the coastal California gnatcatcher breeding season; Project development buffers (i.e., minimum 65 feet in the form of newly proposed BMZ 2 for 3Roots) away from suitable habitat would be provided; and the final development land uses of the Project would adhere to the City's LUAGs. Fencing and public educational signage would be installed throughout the Project adjacent to the interface with suitable habitat, as presented on Figure 5c. Additionally, proposed fire protection measures for the Project (e.g., BMZs and a fire management plan) and upland coastal sage scrub vegetation restoration activities would also minimize habitat degradation and improve the overall habitat structure for gnatcatcher.

Least Bell's Vireo (D): *Jurisdictions will require surveys (using appropriate protocols) during the CEQA review process in suitable habitat proposed to be impacted and incorporate mitigation measures consistent with the 404(b)1 guidelines into the project. Participating jurisdictions' guidelines and ordinances, and state and federal wetland regulations will provide additional habitat protection resulting in no net loss of wetlands. Jurisdictions must require new developments adjacent to preserve areas that create conditions attractive to brown-headed cowbirds to monitor and control cowbirds. Area specific management directives must include measures to provide appropriate successional habitat, upland buffers for all known populations, cowbird control, and specific measures to protect against detrimental edge effects to this species. Additionally, clearing of occupied habitat must occur between September 15 and March 15 (i.e., outside of the nesting period).*

Focused surveys for least Bell's vireo were conducted for 3Roots in accordance with the USFWS protocol. The survey identified transient individuals within the upper section of Carroll Canyon Creek in the Project area during a single survey visit. Based on the results of the focused survey and species evaluation it was concluded that the least Bell's vireo does not breed on site. However, because the

species was observed during protocol surveys, the site is considered "occupied" by least Bell's vireo and used for foraging/movement during migration to suitable breeding habitat off-site.

The Project would impact a relatively small portion (0.18 acre) of isolated riparian habitat in the eastern portion of the Project area associated with an unnamed drainage; however, proposed mitigation for the Project includes wetlands and riparian habitat; thus, the Project would result in no net loss of wetlands or riparian habitat. The Project is not anticipated to produce conditions that would attract cowbirds. Lastly, the Project would incorporate specific measures (e.g., development buffers from habitat, allocated land uses adjacent to habitat, fencing/signage, controlled grading schedule outside of the breeding season) to avoid potential detrimental edge effects should the least Bell's vireo occupy habitat on site in the future.

Cooper's Hawk (D): *Area specific management directives must include 300-foot impact avoidance areas around the active nests, and minimization of disturbance in oak woodlands and oak riparian forests.*

A single (non-paired) Cooper's hawk was observed foraging over the site during biological surveys for 3Roots. No active nests or nesting behavior (e.g., carrying nest building material, mating displays, territorial displays, feeding young, etc.) was observed. Because there are no Cooper's hawk nesting sites, implementation of a 300-foot avoidance buffer is not required in the Project design.

The Project would incorporate measures during construction to detect and ensure nesting Cooper's Hawk are avoided, if found to be present. Such measures include compliance with the MBTA and CFG Code (i.e., pre-construction nesting bird surveys on site and up to 300 feet surrounding the site for raptors); routine biological monitoring during construction; authorization of the monitoring biologist to halt work on site; and creation of an avoidance buffer if Cooper's hawk are found nesting.

In terms of nesting habitat (i.e., woodlands) for Cooper's hawk, the Project would impact a relatively small portion (0.07 acre) of southern riparian woodland in the eastern portion of the Project area. However, proposed mitigation for 3Roots includes southern riparian woodland; thus, Project impacts would not result in a net loss to woodlands habitat.

Orange-throated whiptail (D): *Area specific management directives must address potential edge effects.*

The Project design incorporates measures during construction and post construction to address potential detrimental edge effects to orange-throated whiptail. Specifically, work-limits perimeter fencing would be installed, and its accuracy would be verified prior to construction impacts. Biological monitoring would be conducted throughout Project construction.

The Project would setback development a minimum of 65 feet away from suitable habitat and the final development land uses of the Project would adhere to the City LUAGs. 3Roots proposes installing fencing and public educational signage throughout the Project adjacent to the interface with suitable habitat, as presented on Figure 5c. The coastal sage scrub vegetation restoration and enhancement activities on site would minimize habitat degradation (non-native and invasive species removal) and the planting of native species and native cultivars would improve the overall habitat structure for orange-throated whiptail. Additionally, the fire protection measures (e.g., BMZs and a fire management plan) proposed for the Project would also maintain habitat structure and density (i.e., openness) that would benefit orange-throated whiptail.

Mule Deer (D): *There are no area specific management directives for mule deer; however, specific design criteria for linkages, road crossings/undercrossings shall be included in the Subarea Plans.*

The Project incorporates avoidance of two existing road undercrossings that provide movement for mule deer through the site and both are associated with the Camino Santa Fe construction in 2003, which provided for undercrossings at Rattlesnake Creek and Carroll Canyon Creek. The current undercrossing at Rattlesnake Creek is a road bridge (at least 30 feet above the creek) whereas the current undercrossing at Carroll Canyon Creek consists of four concrete box-culverts (approximately 12 feet wide by 14 feet tall). The CUP Reclamation efforts would construct an additional road undercrossing for Carroll Canyon Creek approximately 0.3 mile upstream from the existing undercrossing beneath Camino Santa Fe to support the future development of Carroll Canyon Road. This proposed undercrossing was designed to accommodate mule deer and other wildlife, and function for stream bed/bank stabilization. The design incorporates a 19 feet 10.5 inch tall, 66-foot-wide, and 330-foot-long arch culvert that would provide an openness ratio of 4.0, which is significantly larger than what is targeted for deer movement (Reed et al. 1975, Cavallaro et al. 2005, Caltrans 2009, and Krawchuk et al. 2005). Although the proposed undercrossing is not entirely perpendicular to the road, the larger openness design would allow a visual connection of habitats from both ends of the culvert. This proposed undercrossing design is substantially larger than the existing undercrossing beneath Camino Santa Fe, which currently provides openness smaller than what is typically targeted for deer movement.

The habitats extending immediately upstream and downstream of the proposed culvert are included in the Habitat Reclamation and Mitigation Plan. Habitat restoration, enhancement and re-establishment of these areas would provide cover and food resources, which ultimately add value to mule deer movement potential through the site. Further, the arch culvert on site utilizes a soft-earthen bottom, which has also been documented to be more suitable for deer movement through undercrossings. The location of the arch culvert undercrossing is presented on Figure 11 and a cross-section of the culvert is provided on Figure 16.

Coast horned lizard (H): *Area specific management directives must include specific measures to maintain native ant species, discourage the Argentine ant, and protect against detrimental edge effects to this species.*

The Project design incorporates measures during construction and post construction to address potential detrimental edge effects to coast horned lizard.

Prior to construction, work-limits perimeter fencing would be installed, and its accuracy would be verified prior to impacts to ensure inadvertent impacts to off-site habitat would not occur and biological monitoring would be conducted throughout Project construction. Additionally, all container plants and plant materials would be inspected prior to arrival on-site/removal from delivery truck and immediately prior to on-site installation by the landscape specialist/biologist for the presence of Argentine ants (Linepithema humile), diseases, weeds and other pests. Plants or planting materials detected of pests, weeds, or diseases will be rejected from use on 3Roots.

The Project proposes incorporation of development buffers (i.e., generally a minimum 50-foot biological buffer and/or 65 BMZ using natives and native cultivars) from suitable habitat and the final development land uses of the Project would adhere to the City LUAGs. 3Roots proposes installing fencing and public educational signage throughout the Project adjacent to the urban interface with native habitat, as presented on Figure 5c. The coastal sage scrub vegetation enhancement activities

proposed for 3Roots would minimize habitat degradation (non-native and invasive species removal) and the planting of native species and native cultivars would improve the overall habitat structure for coast horned lizard. Additionally, the fire protection measures (e.g., BMZs and a fire management plan) for the Project would also maintain habitat structure and density (i.e., openness) that would benefit coast horned lizard.

Southern California Rufous-crowned Sparrow (H): *Area specific management directives must include maintenance of dynamic processes, such as fire, to perpetuate some open phases of coastal sage scrub with herbaceous components.*

The Project design incorporates measures post construction to manage fuel reduction/ modification zones, including implementation of BMZs and the restoration of native upland habitats on site. Brush Management Zones (BMZs) 1 and 2 would be incorporated throughout the Project design, along with perpetual maintenance and management responsibilities (See Section 10.3 of this Report). Wetland buffers (generally minimum 50 feet) consisting of planted coastal sage scrub species, would be provided along Carroll Canyon Creek and other peripheral areas of the site would also be planted with coastal sage scrub such that would provide for open and dense phases of coastal scrub habitat (Figures 17a-c). Additionally, the fire protection measures (e.g., BMZs and a fire management plan) proposed by the Project would also maintain habitat structure and density (i.e., openness) that would benefit southern California rufous-crowned sparrow.

8.0 PROJECT IMPACT ANALYSIS

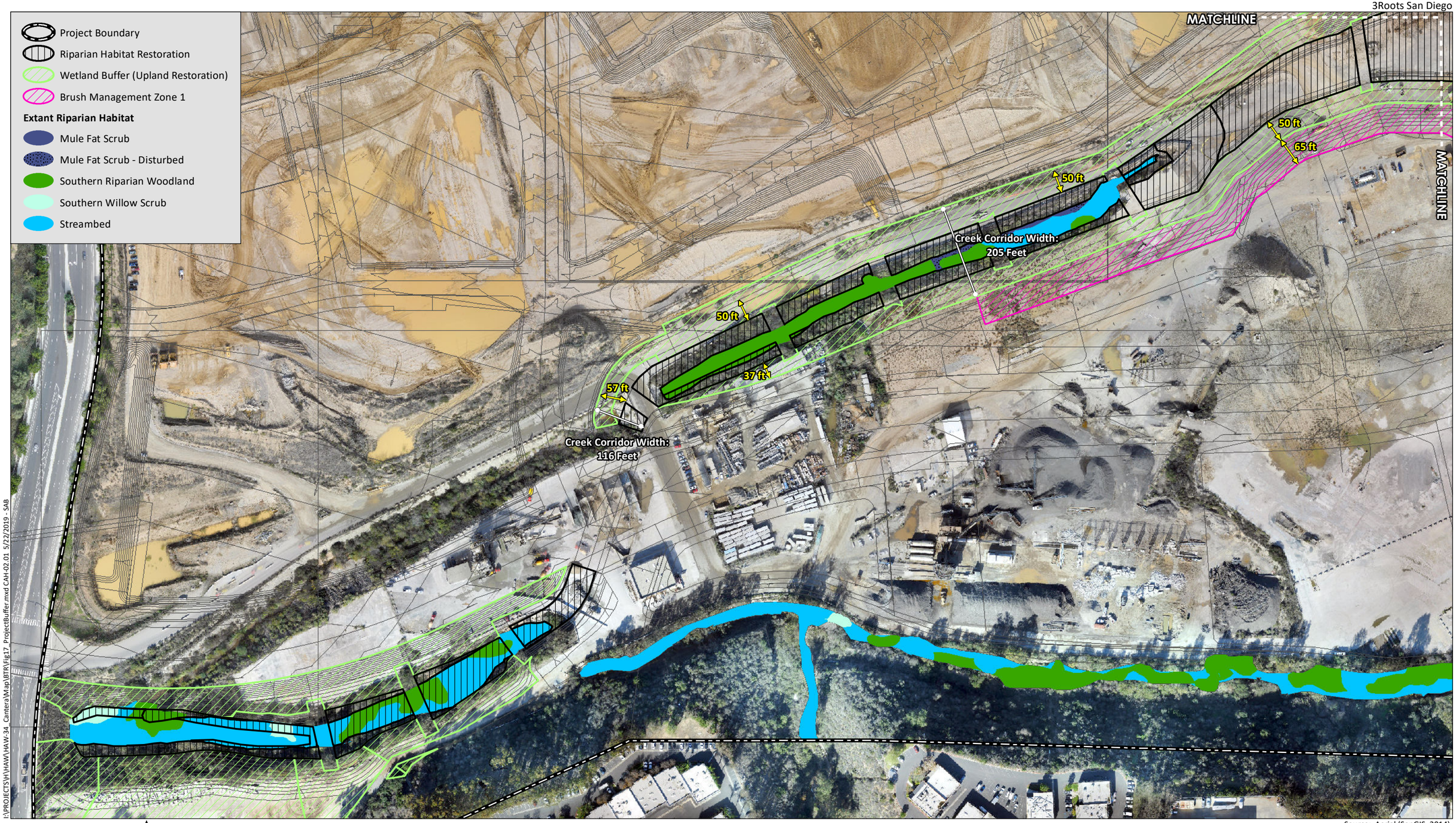
This section presents an analysis of anticipated impacts to vegetation communities, sensitive species, and jurisdictional resources associated with the 3Roots Project. Overall, cumulative impacts are also addressed. The impacts analysis below also includes a determination of significance of impacts in accordance with City criteria.

This section includes a discussion of the City's wetland deviation requirements and associated findings for the Project.

8.1 DIRECT IMPACTS

Direct impacts were analyzed and quantified by overlaying the entire limits of grading associated with the Project onto the baseline biological map. Of the 421.9 acres within the Project boundary presented on the baseline map Figure 6c, approximately 261.57 acres would be directly impacted by the Project. This is made up of 191.13 acres associated with 3Roots development, 13.5 acres associated with the BMZ 2 along existing residences of Rattlesnake Canyon, 51.62 acres associated with the extension of Carroll Canyon Road, 4.85 acres associated with the proposed CUP/Reclamation Plan amendment, and 0.47 acre associated with the SDG&E utilities.

The Project proposes a permanent 65-foot BMZ 2 along existing residences adjacent to Rattlesnake Canyon. The BMZ 2 would continue existing clearing practices but would establish the area as a separate lot and be placed under a COE to be maintained by the 3Roots HOA or similar group. Currently, these areas are largely devoid of vegetation or support disturbed habitat, which would be seeded with native plant species and allowed to re-grow/recover to comply with thinning requirements for BMZ 2. Impacts associated with this Rattlesnake Canyon brush management occupy approximately 13.5 acres and are included in the Project impact analysis; however, such impacts are considered impact neutral.



I:\PROJECTS\H\HAW\HAW-34_Cantera\Map\BTR\Fig17_ProjectBuffer.mxd CAH 02.01 5/22/2019 - SAB

Source: Aerial (SanGIS, 2014).

HELIX Environmental Planning

Project Buffers

Figure 17a

I:\PROJECTS\V1\HAW\HAW-34_Canters\Map\BTR\Fig17_ProjectBuffer.mxd CAH-02.01 5/23/2019 - SAB

0 200 Feet

Source: Aerial (SanGIS, 2014).

HELIX Environmental Planning

Project Buffers

Figure 17b

Project Boundary
Wetland/Riparian Enhancement
Brush Management Zone 1
Brush Management Zone 2

Extant Riparian Habitat

Mule Fat Scrub
Southern Riparian Woodland
Southern Riparian Woodland - Disturbed
Southern Willow Scrub
Streambed

207 ft
667 ft
65 ft
35 ft
65 ft
35 ft
65 ft
65 ft
37 ft
35 ft
65 ft
35 ft

0 200 Feet

Source: Aerial (SanGIS, 2014).

I:\PROJECTS\HAW\HAW-34_Cantera\Map\BTR\Fig17_ProjectBuffer.mxd CAH-02.01 5/22/2019 - SAB

HELIX Environmental Planning

Project Buffers

Figure 17c

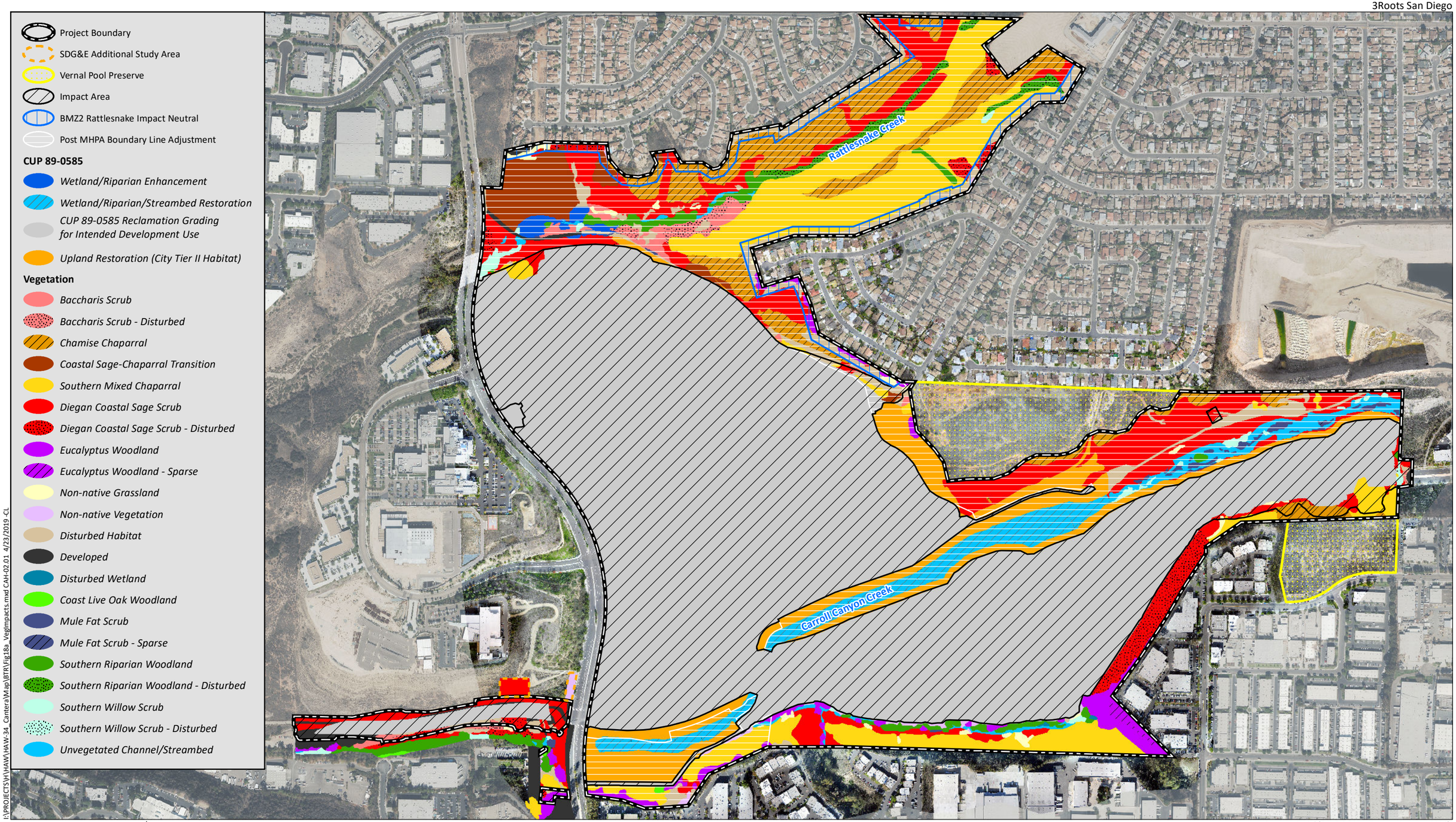
8.1.1 Vegetation Communities

The proposed Project (including all Project components: 3Roots development, Carroll Canyon Road, SDG&E utilities, CUP/Reclamation Plan Amendment) would result in direct impacts to approximately 261.58 acres of vegetation communities or land cover types presented on the biological baseline map (Table 12; Figures 18a-d). These impacts include 0.21 acre of wetland vegetation (i.e., riparian woodland, riparian scrub, and disturbed wetland), all of which are City wetlands. Additionally, the Project impacts include 13.57 acres of sensitive uplands (i.e., Tier II, Tier IIIA, and Tier IIIB vegetation) and 247.8 acres of non-sensitive uplands. Of these, impacts to 0.03 acre of wetland, 6.07 acres of sensitive upland, and 7.4 acres of non-sensitive upland are associated with the Rattlesnake Canyon BMZ 2 and would be considered impact neutral. Note that impacts to 0.03 acre of wetland (i.e., disturbed southern riparian woodland) stated above, consist of branch trimming/thinning only and does not include plant removal or ground disturbances that could damage root systems. No net loss of City wetlands is expected as a result of BMZ 2 thinning.

Potential impacts to additional area Diegan coastal sage scrub also may occur in an area north of future Carroll Canyon Road West (see Figure 18c), where there is currently an undefined but potential transmission pole relocation. Although this area of impact is uncertain, and an actual pole location has not been determined, the potential is being conservatively disclosed.

Mitigation for impacts to 0.18 acre of wetlands and 7.50 acres of sensitive upland is presented in Section 10.1.1.

This page intentionally left blank



I:\PROJECTS\H\HAW\HAW-34 Cantera\Map\BTR\Fig18a_VegImpacts.mxd CAH-02.01 4/23/2019 -CL

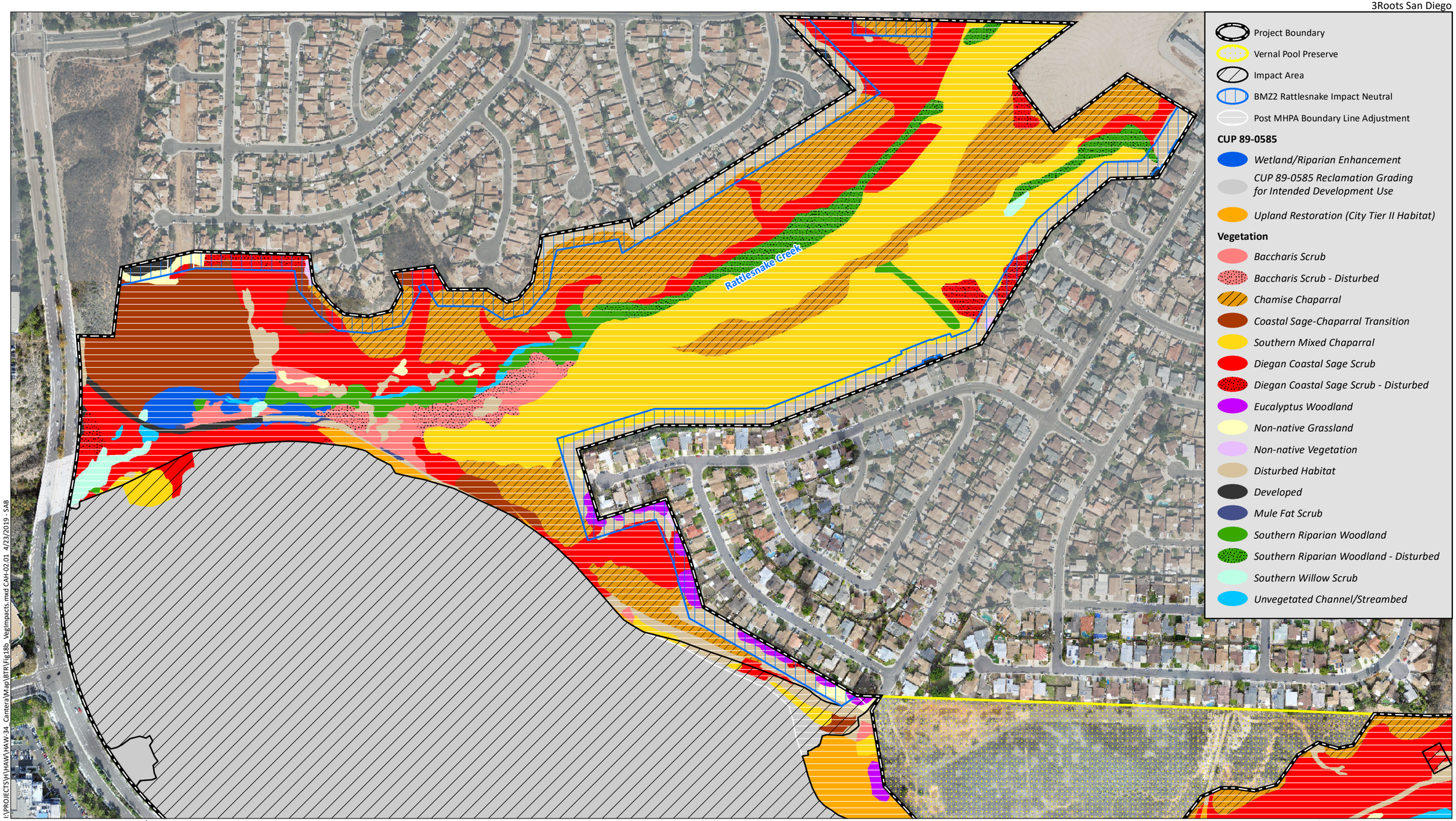
Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018).

HELIX Environmental Planning

Project Impacts to Vegetation and Land Cover Types

Figure 18a

3Roots San Diego



Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018).

HELIX Environmental Planning

Project Impacts to Vegetation and Land Cover Types

Figure 18b

3Roots San Diego

- Project Boundary
- SDG&E Additional Study Area
- Vernal Pool Preserve
- Impact Area
- Post MHPA Boundary Line Adjustment

CUP 89-0585

- *Wetland/Riparian/Streambed Restoration*
- *CUP 89-0585 Reclamation Grading for Intended Development Use*
- *Upland Restoration (City Tier II Habitat)*

Vegetation

- *Baccharis Scrub*
- *Baccharis Scrub - Disturbed*
- *Chamise Chaparral*
- *Coastal Sage-Chaparral Transition*
- *Southern Mixed Chaparral*
- *Diegan Coastal Sage Scrub*
- *Diegan Coastal Sage Scrub - Disturbed*
- *Eucalyptus Woodland*
- *Non-native Grassland*
- *Non-native Vegetation*
- *Disturbed Habitat*
- *Developed*
- *Coast Live Oak Woodland*
- *Mule Fat Scrub*
- *Southern Riparian Woodland*
- *Southern Willow Scrub*
- *Unvegetated Channel/Streambed*

Carroll Canyon Creek

I:\PROJECTS\H\HAW\HAW-34_Cantera\Map\BTR\Fig18c_VegImpacts.mxd CAH-02.01 4/23/2019 - SAB

0 350 Feet

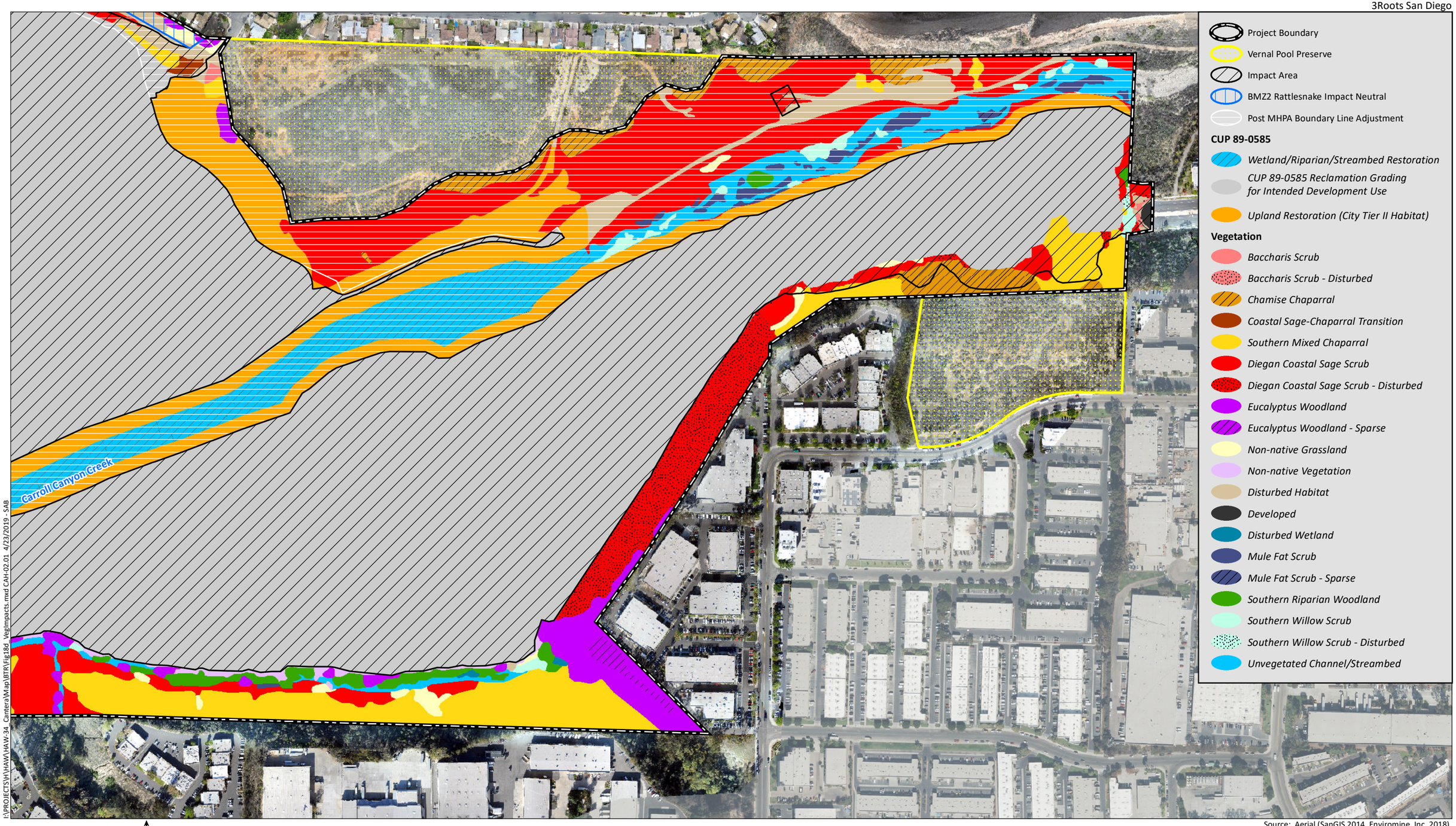
N

Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018).

HELIX Environmental Planning

Project Impacts to Vegetation and Land Cover Types

Figure 18c



Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018).

HELIX Environmental Planning

Project Impacts to Vegetation and Land Cover Types

Figure 18d

Table 12
PROJECT IMPACTS TO VEGETATION AND LAND COVERS (acres)[1]

Vegetation Community or Land Cover Type	Tier	Baseline Acreage[2]	Project Components					Total Project Impacts	Project Impacts Requiring Mitigation
			3Roots Development	Carroll Canyon Road	SDG&E Utilities	Rattlesnake Canyon Brush Management Zone (BMZ)[3]	CUP/Reclamation Plan Amendment		
Wetland[4]									
Mule fat scrub (63310) – including disturbed form	Wetland	1.13	--	--	--	--	--	--	--
Southern riparian woodland (62500)	Wetland	6.63	--	0.04	--	0.03	--	0.07	0.04
Southern willow scrub (63320) – including disturbed form	Wetland	1.57	--	0.14	--	--	--	0.14	0.14
Disturbed wetland (11200)	Wetland	0.07	--	--	--	--	--	--	--
Unvegetated channel (64200)	Wetland	4.64	--	--	--	--	--	--	--
CUP Reclamation Wetland/Riparian/Streambed Restoration	Wetland	10.31	--	--	--	--	--	--	--
CUP Reclamation Wetland/Riparian Enhancement	Wetland	1.33							
Wetland Subtotal		*25.68*	--	*0.18*	--	*0.03*	--	*0.21*	*0.18*
Sensitive Upland									
Coast live oak woodland (71160)	I	0.07	--	--	--	--	--	--	--
Diegan coastal sage scrub (32500) – including disturbed[5]	II	41.96	0.24	3.01	0.16	1.81	0.90	6.12	4.31
Baccharis scrub (32530) – including disturbed	II	3.53	--	0.35	--	--	--	0.35	0.35
Coastal sage – chaparral transition	II	7.22	--	--	--	0.39	0.14	0.53	0.14
CUP Reclamation Upland Restoration	II	21.94	0.04	--	--	--	--	0.04	0.04
Chamise chaparral (37200)	IIIA	22.09	--	--	--	2.52	0.76	3.28	0.76
Southern Mixed Chaparral (37120)	IIIA	38.16	0.45	0.18	0.01	0.95	1.14	2.73	1.78
Non-native grassland (42200)	IIIB	1.45	--	--	--	0.40	0.12	0.52	0.12
Sensitive Upland Subtotal		*136.42*	*0.73*	*3.54*	*0.17*	*6.07*	*3.06*	*13.57*	*7.50*
Non-Sensitive Upland									
Eucalyptus woodland (79100)	IV	6.0	--	--	0.2	0.8	0.1	1.1	--
Disturbed habitat (11300)	IV	12.5	--	0.5	0.1	6.2	0.5	7.3	--
Non-native vegetation (11000)	IV	0.8	--	--	--	0.1	--	0.1	--
Developed (12000)	--	2.0	--	1.2	--	0.3	--	1.5	--
Reclamation Grading for Intended Development Use	--	238.5	190.4	46.2	--	--	1.2	237.8	--
Non-Sensitive Upland Subtotal		*259.8*	*190.4*	*47.9*	*0.3*	7.4	*1.8*	*247.8*	--
TOTAL		**421.9**	**191.13**	**51.62**	**0.47**	**13.5**	**4.86**	**261.58**	**7.68**

1 Totals reflect rounding (0.1 for uplands and 0.01 sensitive uplands and wetlands/riparian); if less, shown as (--).
2 Baseline includes areas reclaimed and restored per CUP 89-0585 as presented on Figure 6c.
3 Rattlesnake BMZ (BMZ 2) is impact neutral and does not require mitigation
4 Wetland does not imply/define U.S. Army Corps of Engineers "wetlands or WUS."
5 A review study area for potential SDG&E action is shown north of Carroll Canyon Road West on Project Figures 18a and 18c. The precise impact footprint has not been defined; thus, this area is not included in acreages in this table.

This page intentionally left blank

8.1.2 Sensitive Plants

The proposed Project would result in direct impacts to two sensitive plant species: summer holly (CRPR 1B.2) and Nuttall's scrub oak (CRPR 1B.2) (Figures 19a-d). Direct impacts to a total of seven summer holly plants would occur: one plant in the southeastern end of the Project as a result of the CUP/Reclamation Plan Amendment and construction of Carroll Canyon Road and six plants in the southwest off-site area associated with SDG&E utility work activities. Four Nuttall's scrub oak would be directly impacted by the extension of Carroll Canyon Road west of Camino Santa Fe. The Carroll Canyon Road alignment is fixed by the existing terminus of Carroll Canyon Road at the eastern property boundary and the SDG&E utility work area is fixed by an existing access road and existing utility pole/line; thus, these impacts to sensitive plants cannot be avoided.

There is also the potential for impacts to some or all seventy-five Palmer's grapplinghook (CRPR 4.2) and some of the fourteen San Diego barrel cactus (CRPR 2.1) in the SDG&E Study Area (Figures 19a and 19c). The barrel cacti are primarily located along the western and northern edge of the pole relocation study area. Based on the peripheral location of the barrel cacti and pole relocation efforts, it is anticipated that all or a majority of the barrel cacti would be avoided during final design and implementation of the pole relocation, which may include a pole footing and an access road. Palmer's grappinghook individuals are also located along the periphery of the SDG&E pole relocation study area, but several individuals occur throughout the relocation study area and may not be unavoidable; thus, impacts to some Palmer's grapplinghook plants are anticipated. However, because the actual pole relocation has not been determined at this time, impacts cannot be confirmed. No other sensitive plants would be directly impacted.

8.1.3 Sensitive Wildlife

The Project would directly impact habitat known to contain sensitive species identified on site during Project surveys or prior recordings. Those impacts to habitat could also potentially impact individuals of orange-throated whiptail, coastal whiptail, and San Diego woodrat individuals due to their reduced mobility and their inability to avoid construction equipment, which distinguishes them from birds and larger mammals that are able to away from construction equipment into adjacent habitat. Therefore, direct impacts to individuals of coastal California gnatcatcher, least Bell's vireo, Cooper's hawk, and mule deer are not anticipated (Figures 19a-d).

Direct impacts to habitat would also occur to the following nine sensitive species determined to have a moderate or high potential to occur on site: Southern California legless lizard, coast horned lizard, western spadefoot toad, two-striped garter snake, Southern California rufous-crowned sparrow, red-diamond rattlesnake, western red bat, western mastiff bat, and yellow warbler. Due to reduced mobility, individuals of Southern California legless lizard, coast horned lizard, western spadefoot toad, two-striped garter snake, and red-diamond rattlesnake could be directly impacted during construction. Southern California rufous-crowned sparrow, western red bat, western mastiff bat, and yellow warbler have the ability to move into adjacent habitat and can avoid being directly impacted by construction. Thus, direct impacts to individuals of these four species would not occur.

Direct impacts would be a result of vegetation removal associated with clearing, grubbing, and grading for the Project.

Species and/or their habitat directly impacted by the Project that are "covered" under the City's MSCP Subarea Plan include: coastal California gnatcatcher, Cooper's hawk, orange-throated whiptail, coast horned lizard, Southern California rufous-crowned sparrow, and mule deer.

Except for within habitat areas under USACE jurisdiction, least Bell's vireo is covered under the City's MSCP. Because the Project would impact habitat for least Bell's vireo, mitigation is provided in Section 10 of this report. Anticipated impacts to habitat areas under the USACE jurisdiction require a Section 7 consultation between the USACE and USFWS to ensure compliance with the FESA. Additionally, Project impacts to least Bell's vireo require a Consistency Determination by CDFW per the CESA and Section 2080.1 of the CFG Code.

Lastly, as discussed previously in this report, the Project is required to comply with the City's LUAGs (see Section 7.9) and the MSCP ASMDs (see Section 7.10) for Covered Species. The Project is also required to comply with state and federal regulations regarding impacts to sensitive species (i.e., ESA, CESA, MBTA, and CFG Code).

8.1.4 Jurisdictional Resources

Direct impacts to jurisdictional resources (i.e., wetlands, non-wetland waters, and riparian habitat), regulated by federal (USACE), state (RWQCB, CDFW), and/or local (City) agencies would occur as a result of the CUP Reclamation (See Section 5.0) and the proposed Project. Appendix E of this report provides the cumulative impacts to jurisdictional resources as a result of CUP Reclamation and the proposed Project. The discussion below pertains to jurisdictional impacts proposed by the Project.

Direct impacts to USACE and RWQCB jurisdictional areas as a result of the Project are provided below in Tables 13 and 14, respectively. The corresponding the spatial distribution of such impacts are presented in Figures 20 and 21, respectively.

Table 13
IMPACTS TO USACE JURISDICTION[1]

Habitat	Permanent Impacts	Temporary Impacts	Total
Non-wetland Waters of the U.S.			
Unvegetated channel	0.01	--	**--**
TOTAL	**0.01**	**--**	**0.01**

[1] All data is in acres rounded to the 0.01 acre; if less, then shown as --.

Table 14
IMPACTS TO RWQCB JURISDICTION[1]

Habitat	Permanent Impacts	Temporary Impacts	Total
Vegetated Habitat			
Mule fat scrub	--	--	--
Southern riparian woodland	0.04	--	0.04
Southern Willow Scrub	0.14	--	0.14
TOTAL	**0.18**	**--**	**0.18**

[1] All data is in acres rounded to the 0.01 acre; if less, then shown as --.

3Roots San Diego

- Project Boundary
- SDG&E Additional Study Area
- Impact Area
- BMZ2 Rattlesnake Impact Neutral
- Post MHPA Boundary Line Adjustment
- Vernal Pool Preserve

Sensitive Animals

- Coastal California Gnatcatcher
- Cooper's Hawk
- Least Bell's Vireo
- Orange-throated Whiptail
- Coastal Whiptail

Sensitive Plants

- Nuttall's scrub oak
- Palmer's grapplinghook
- San Diego Barrel Cactus
- San Diego marsh-elder
- San Diego sagewort
- San Diego sunflower
- ashy spike-moss
- golden-rayed Pentachaeta
- summer holly
- San Diego marsh-elder
- San Diego sunflower

*Observed on multiple dates during multiple surveys

Flanders Dr
Kamwood St
Keoki St
Kamwood Pl
Kamwood Ct
Dancy Rd
Bolin St
Tilton St
Glauser St
Penrod Ln
Darden Ct
Darden Rd
Presley St
Cam Santa Fe
Rattlesnake Creek
Bagwell Cv
Hendricks Ct
Hendricks Dr
Kemphill Dr
Trails End Cr
Kaiser Pl
Antrim Wy
Gold Coast Dr
Port Royale Dr
Mayor Cr
Lady Bess Wy
Royal Ann Av
Empress Av
Baroness Av
Tisha St
Embassy Wy
Ambassador Av
Jade Coast Rd
Parkdale Av
Northrup Dr
Bacadi Dr
Knight Dr
Centright Wy
Kaufman Wy
Embry Wy
Embry Pt
Baffin Dr
Kibler Dr
Osgood Wy
Caffey Ln
Heimer Ln
Backer Rd
Miratech Dr
Summers Ridge Rd
Biosite Wy
Carroll Canyon Rd
Carroll Canyon Creek
Arjons Dr
Dunbrook Rd
Trade Pl
Silverton Av
Dowdy Dr
Rehco Rd

I:\PROJECTS\VI\HAW\HAW-34_Centers\Map\BTR\Fig19a_SensitiveResourcesImpacts.mxd CAH-02.01 4/23/2019 CL

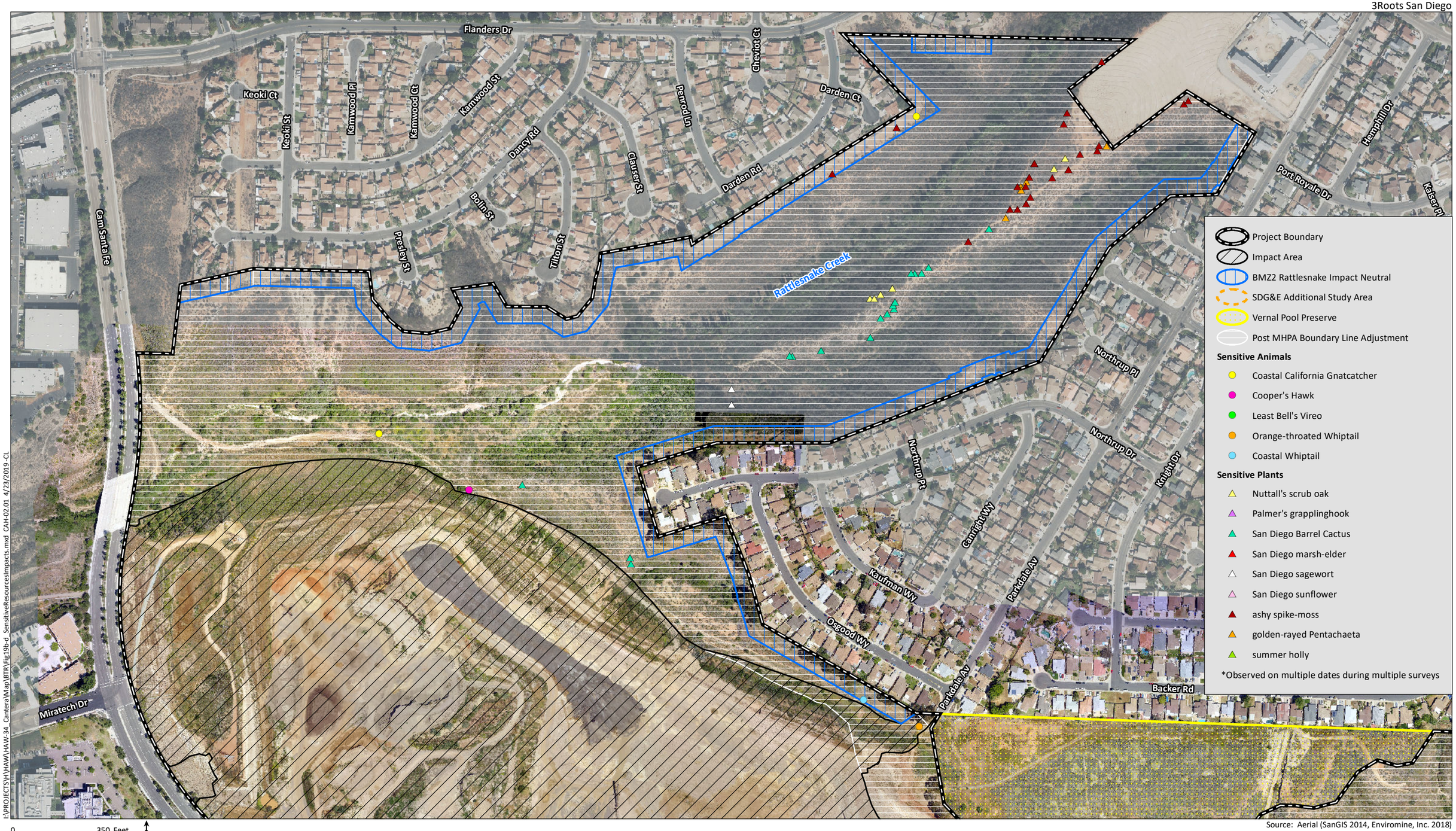
0 650 Feet

Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018)

HELIX Environmental Planning

Project Impacts to Sensitive Biological Resources

Figure 19a



i:\PROJECTS\H\HAW\HAW-3A_Cantera\Map\BTR\Fig19b-d_SensitiveResourcesImpacts.mxd CAH-02.01 4/23/2019 CL

0 350 Feet

Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018)

HELIX Environmental Planning

Project Impacts to Sensitive Biological Resources

Figure 19b

- Project Boundary
- Impact Area
- BMZ2 Rattlesnake Impact Neutral
- SDG&E Additional Study Area
- Vernal Pool Preserve
- Post MHPA Boundary Line Adjustment

Sensitive Animals

- Coastal California Gnatcatcher
- Cooper's Hawk
- Least Bell's Vireo
- Orange-throated Whiptail
- Coastal Whiptail

Sensitive Plants

- Nuttall's scrub oak
- Palmer's grapplinghook
- San Diego Barrel Cactus
- San Diego marsh-elder
- San Diego sagewort
- San Diego sunflower
- ashy spike-moss
- golden-rayed Pentachaeta
- summer holly

*Observed on multiple dates during multiple surveys

I:\PROJECTS\SH\HAW\HAW-34_Cantera\Map\BTR\Fig19b-d_SensitiveResourcesImpacts.mxd CAH-02.01 4/23/2019 -CL

0 350 Feet

Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018)

HELIX Environmental Planning

Project Impacts to Sensitive Biological Resources

Figure 19c

I:\PROJECTS\H\HAW\HAW-34_Cantera\Map\BTR\Fig19b-d_SensitiveResourcesImpacts.mxd CAH-02.01 4/23/2019 -CL

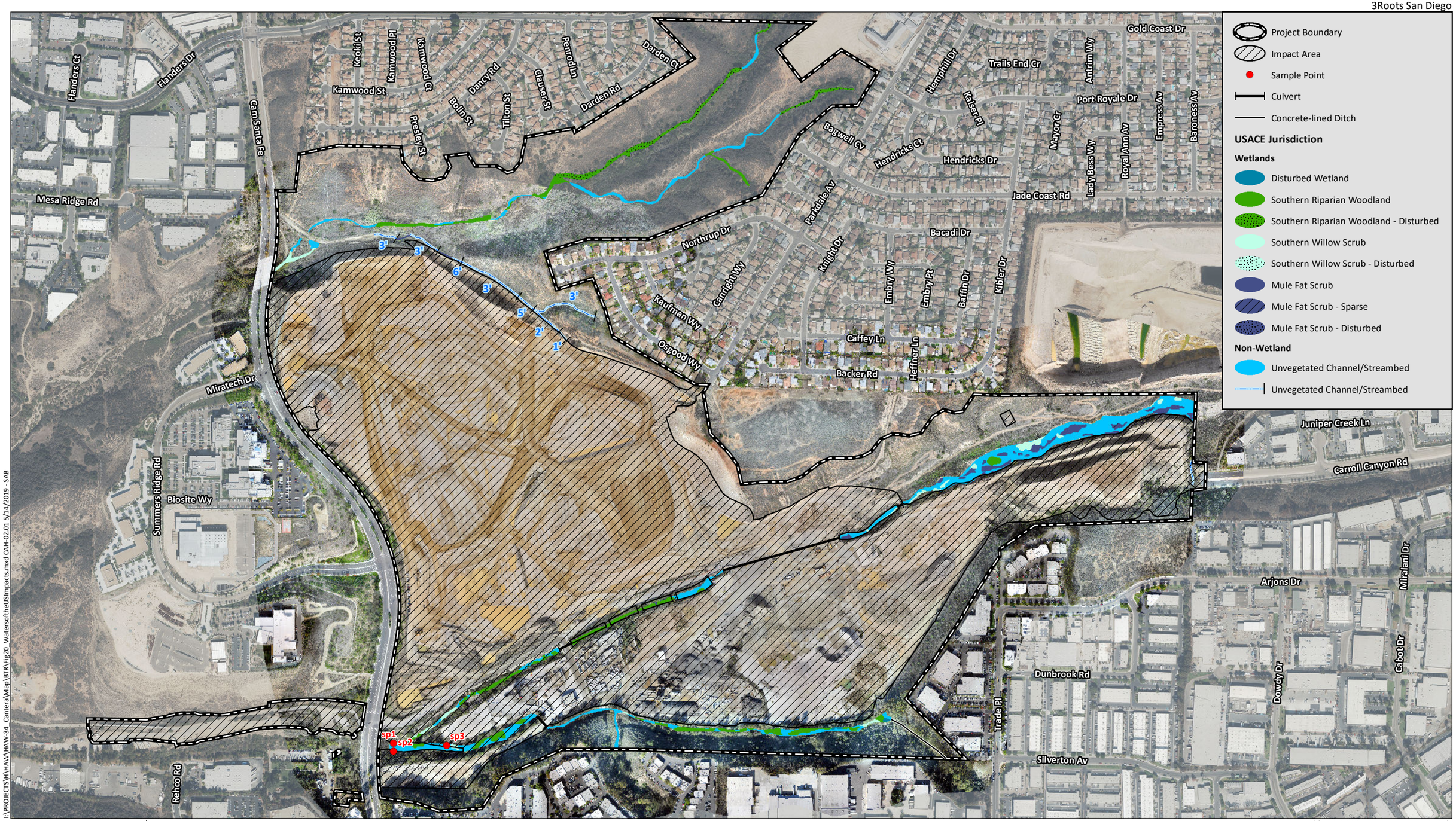
0 350 Feet

Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018)

HELIX Environmental Planning

Project Impacts to Sensitive Biological Resources

Figure 19d



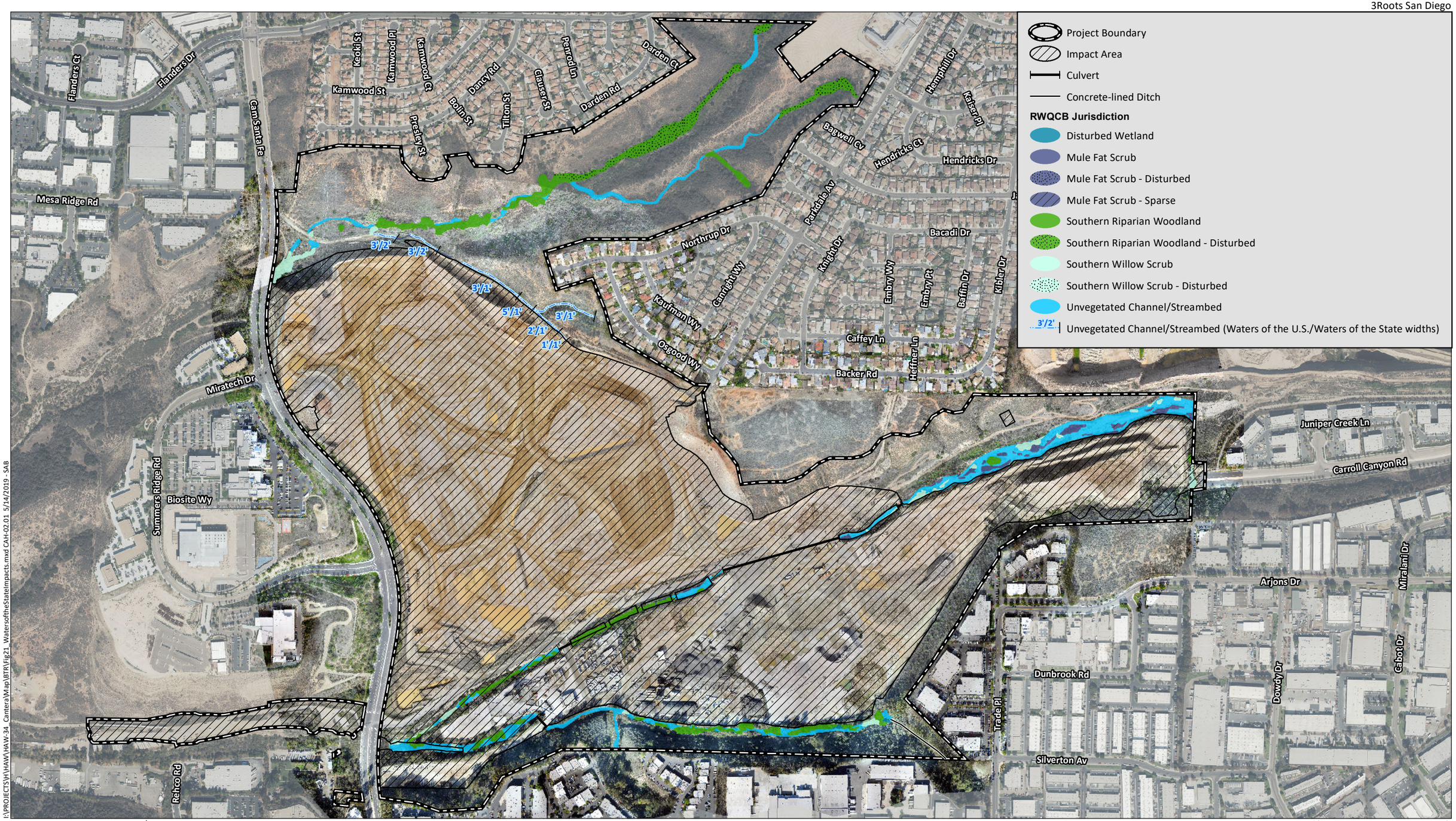
I:\PROJECTS\H\HAW\HAW-34_Canters\Map\BTR\Fig20_WatersoftheUSImpacts.mxd CAH-02.01 5/14/2019 - SAB

HELIX Environmental Planning

USACE Jurisdictional Impacts

Figure 20

3Roots San Diego



I:\PROJECTS\H\HAW\HAW-34_Canters\Map\BTR\Fig21_WatersoftheStateImpacts.mxd CAH-02.01 5/14/2019 - SAB

0 650 Feet

N

Source: Aerial (SanGIS 2014, Enviromine, Inc. 2017).

HELIX Environmental Planning

RWQCB Jurisdictional Impacts

Figure 21

Acreages of direct impacts to CDFW jurisdictional areas as a result of the Project are provided below in Table 15 and the spatial distribution of such impacts are presented in Figure 22.

Table 15
IMPACTS TO CDFW JURISDICTION[1]

Habitat	Permanent Impacts	Temporary Impacts	Total
Vegetated Habitat			
Mule fat scrub	--	--	--
Southern riparian woodland	0.04	--	0.04
Southern Willow Scrub	0.14	--	0.14
TOTAL	**0.18**	**--**	**0.18**

[1]All data is in acres rounded to the 0.01 acre; if less, then shown as --.

Acreages of direct impacts to City wetlands as a result of the Project are provided below in Table 16 and the spatial distribution of such impacts are presented in Figure 23. Project impacts in Table 16 below are separated by Project component to demonstrate that the impacts are related to Carroll Canyon Road.

Table 16
IMPACTS TO CITY WETLANDS[1]

Habitat	Project Components					Total
	3Roots Development	Carroll Canyon Road	SDG&E	Rattlesnake BMZ[2]	CUP Amendment	
Southern riparian woodland	--	0.04	--	0.03	--	0.04
Southern willow scrub – including disturbed phase	--	0.14	--	--	--	0.14
TOTAL	**--**	**0.18**	**--**	**0.03[2]**	**--**	**0.18**

[1]All data is in acres rounded to the 0.01 acre; if less, then shown as --.
[3] Impact neutral. Not included in 0.18-acre total.

8.1.4.1 Vernal Pools

No direct impacts would occur to the off-site vernal pool complexes, including their associated watersheds, due to their location both outside of the CUP 89-0585 boundary and outside of the proposed Project footprint. Further, all grading on site (CUP 89-0585 reclamation/restoration and the Project) occur below the elevation of the vernal pool complex watersheds. Additionally, Parkdale Park was removed from the Project in order to eliminate this potential source of indirect impacts to the vernal pool preserve north of the Project. As presented on Figure 24, a COE is proposed as part of the Project and would incorporate buffer areas adjacent to the northern vernal pool preserve and its associated watershed. This COE would provide a perpetual buffer (between approximately 140 feet and 265 feet wide) between the vernal pool preserve fencing and the proposed Zone 2 Brush Management associated with the Project development footprint. Incorporating this BMZ 2 area at this location would increase this buffer, providing for a minimum 194-foot buffer and a maximum 360-foot buffer from the northern vernal pool preserve fencing.

The off-site southern vernal pool complex is assumed conserved under the VPHCP and grading is located well outside of the vernal pool complex watersheds. The property boundary is a minimum of 150 feet from the closest vernal pool and on-site grading would be offset between 19 feet and 124 feet from the property boundary edge. Graded slope areas would be revegetated with native species.

Section 5.2.1 of the VPHCP identifies avoidance and minimization measures to address potential indirect impacts to vernal pools preserved under the VPHCP. As noted previously no direct impacts to off-site vernal pools would occur. Specific minimization measures in Section 5.2.1 of the VPHCP and the Project's compliance are listed below:

- Development adjacent to the MHPA shall slope away from avoided pools.

Project compliance: All grading is located below the elevation of vernal pool watersheds.

- Temporary fencing with silt fencing shall be required.

Project compliance: Construction limits would be demarcated with construction and silt fencing.

- Impacts from fugitive dust would be avoided and minimized through watering and other appropriate measures.

Project compliance: routine dust control via watering truck would be implemented throughout ground disturbance activities.

- A qualified biologist shall be on site during Project construction activities to insure compliance with all mitigation requirements.

Project compliance: biological monitoring from a qualified biologist would be implemented throughout Project construction.

- Employees shall limit activities to the fenced project footprint, and the site shall be kept free of debris and food-related trash items.

Project compliance: a qualified biologist would be on site to monitor construction, including verification that construction activities do not exceed the authorized work limits and that good housekeeping is performed during construction.

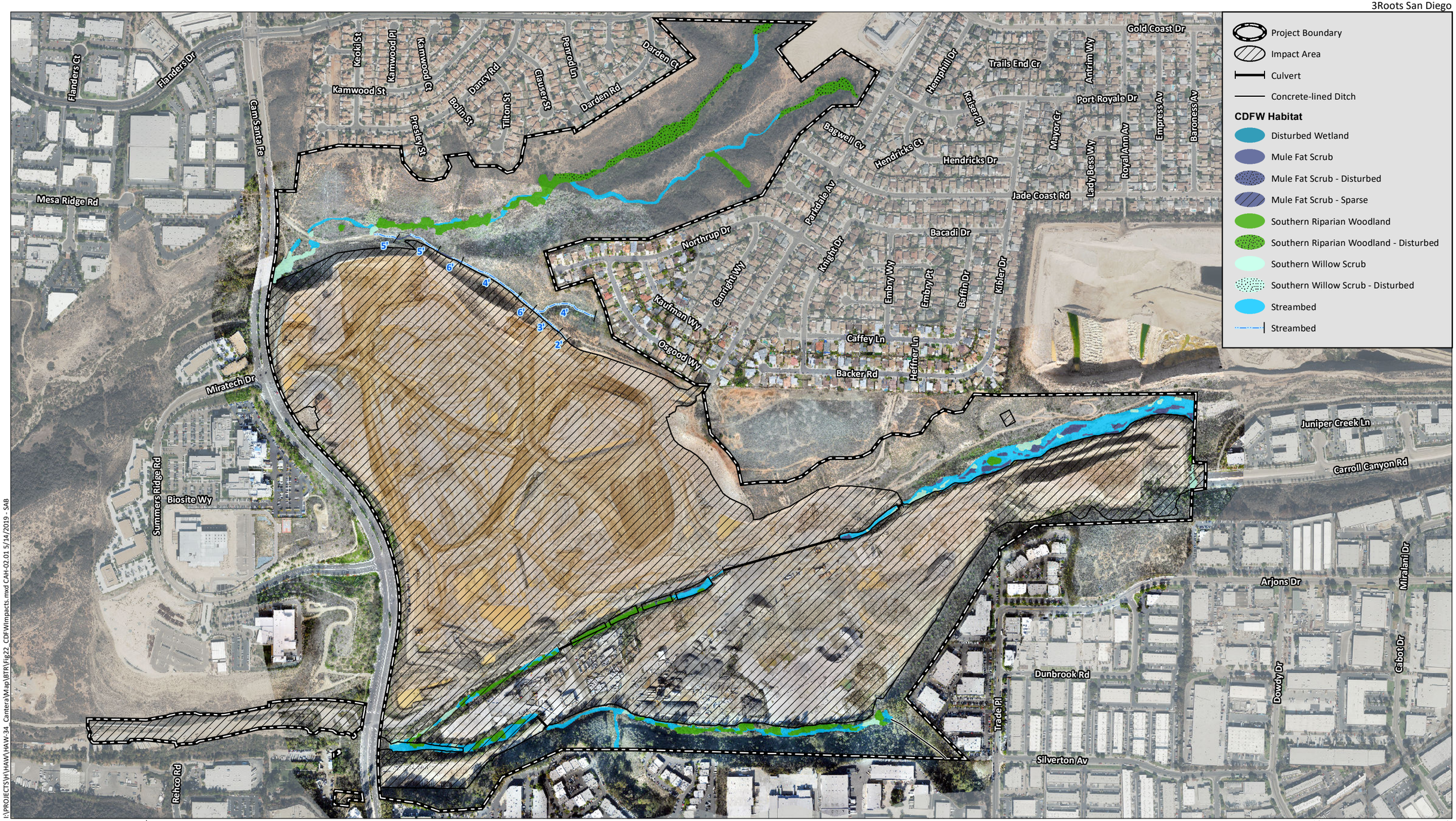
- Equipment maintenance, staging, and disposal of fuel, oil coolant shall occur within designated areas within the fenced project impact limits.

Project compliance: designated equipment staging/maintenance/fueling/ etc. shall be demarcated on the final construction plans. Additionally, a qualified biologist would be on site to monitor project compliance regarding equipment.

- Permanent fencing along the interface with development areas and/or other use other measures approved by the City to deter human and pet access.

Project compliance: The off-site northern vernal pool preserve is already fenced. The southern vernal pool complex is fenced on the west, south and eastern sides and access from the Project along the

3Roots San Diego



I:\PROJECTS\H\HAW\HAW-34_Cantera\Map\BTR\Fig22_CDFWImpacts.mxd CAH-02.01 5/14/2019 - SAB

0 650 Feet

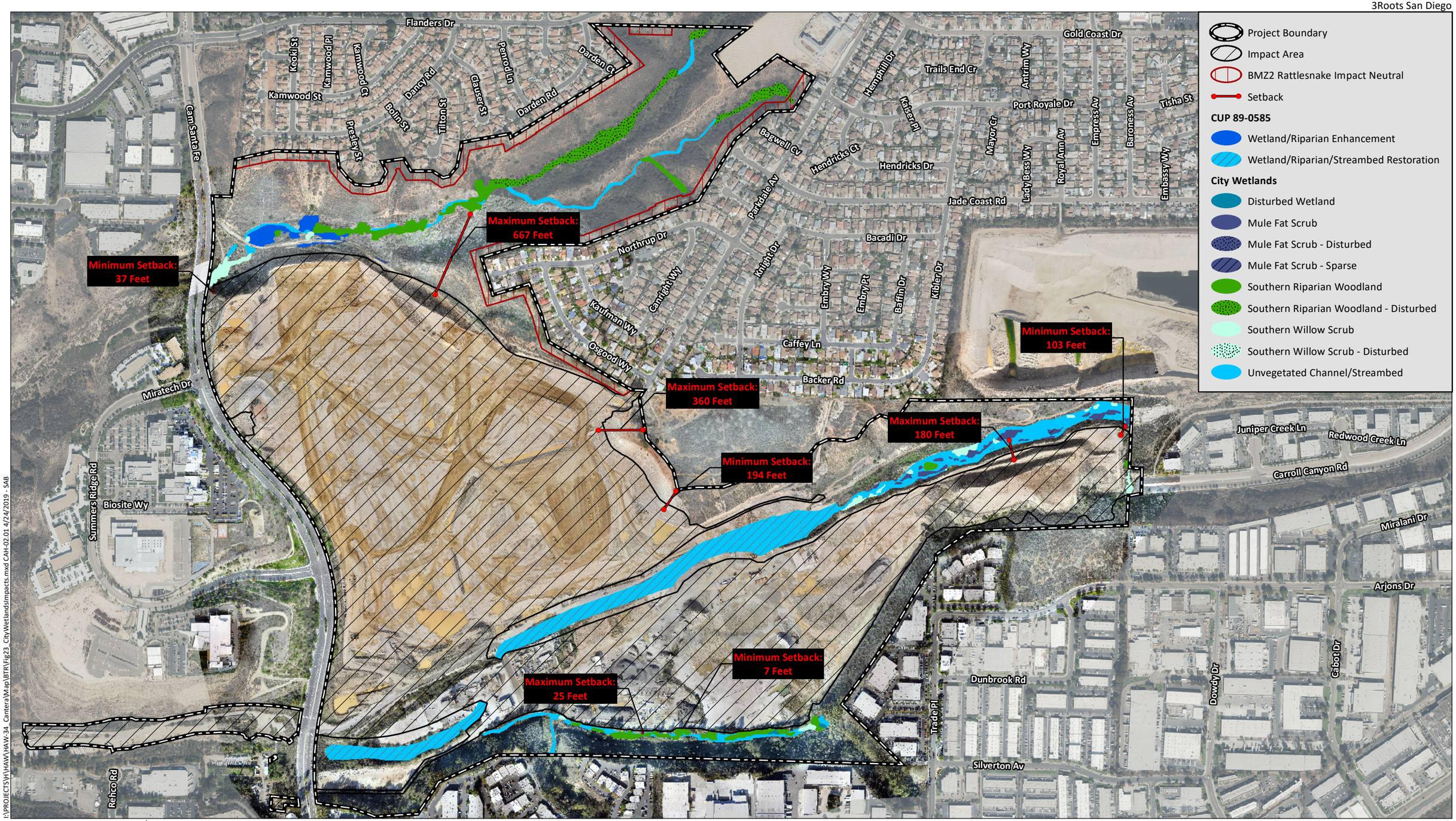
N

Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018).

HELIX Environmental Planning

CDFW Jurisdictional Impacts

Figure 22



0 650 Feet

Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018).

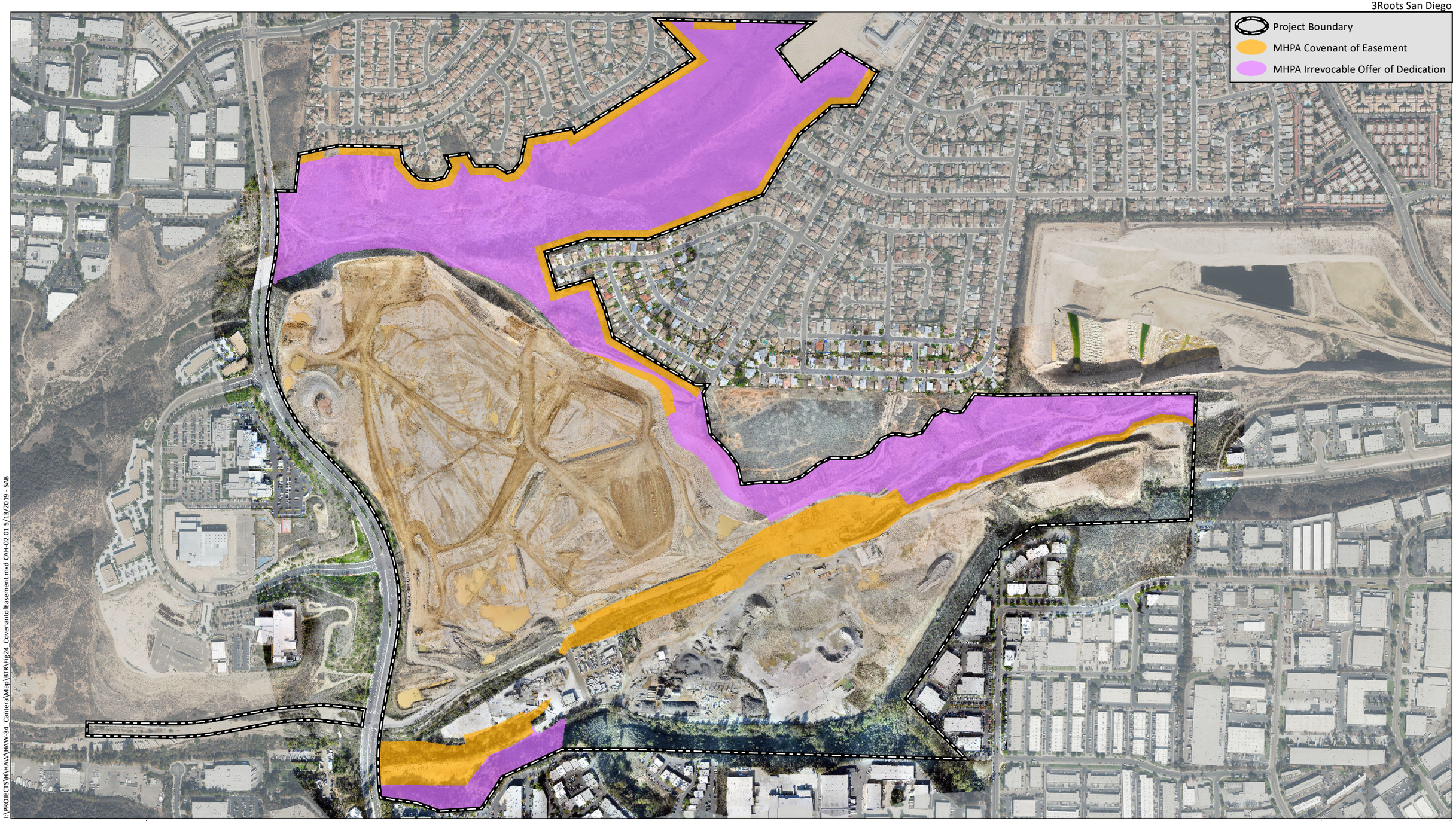
i:\PROJECTS\H\HAW\HAW-34_Cantera\Map\BTR\Fig23_CityWetlandsImpacts.mxd CAH-02.01 4/24/2019 - SAB

HELIX Environmental Planning

City Wetland Impacts

Figure 23

3Roots San Diego



I:\PROJECTS\H\HAW\HAW-34_Cantera\Map\BTR\Fig24_CovenantofEasement.mxd CAH-02.01 5/13/2019 - SAB

Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018)

HELIX Environmental Planning

MHPA Conserved Lands

Figure 24

northern edge would require traversing steep slope areas and additional protection at the northern complex boundary/southern property boundary.

With these measures the Project is consistent with the VPHCP.

8.1.5 Wildlife Corridors

As discussed previously, there are no regionally identified wildlife corridors or habitat linkages on the 3Roots site; however, the Rattlesnake Creek and Carroll Canyon Creek corridors on site do provide wildlife the ability for local east-west movement through the site to open space west of Camino Santa Fe, and open space along Carroll Canyon Creek east of the project.

Current baseline conditions for wildlife movement on site are substantially altered by the historic quarry activities. The CUP Reclamation required re-grading, revegetating, and enhancement of the property, as well as preservation of portions of the property as described in Section 1.2 previously. Further as previously discussed in Section 5.0 of this report, the 3Roots Project proposes to adhere to these general CUP reclamation requirements and would assist in the implementation of such reclamation requirements pertaining to habitat restoration (i.e., re-establishment of former wetlands of Carroll Canyon Creek) that would provide contiguous vegetative cover and native habitat for wildlife movement. Representative cross sections of the Carroll Canyon Creek reclamation restoration are presented in Figures 25a-d.

3Roots also incorporates additional features to maintain and enhance wildlife movement within the property; such as: the removal of previously proposed Parkdale Park which would maintain an existing corridor width (approximately 194 feet to 360 feet wide) at this location, and habitat buffers and barriers along Carroll Canyon Creek and adjacent to 3Roots development areas that would provide vegetative cover and buffers from human activity that could affect wildlife movement. Thus, the Project would not directly adversely impact regional wildlife corridors or habitats linkages, nor would it preclude existing movements through the site.

8.2 INDIRECT IMPACTS

Indirect impacts can be short-term or long-term and include areas and activities adjacent to the project (i.e., edge effects). Examples of short-term indirect impacts include construction-related noises, dust, increased human presence, and hydrology modifications. Long-term indirect impacts primarily result from anthropogenic disturbances by humans post-project such as but not limited to: noise, lighting, domesticated animals, spread of non-native ornamental and weedy plant species, and urban run-off (including potentially toxic or hazardous chemicals).

8.2.1 Vegetation Communities and Sensitive Plants

Indirect impacts to vegetation communities, including sensitive plants, are generally short-term and associated with edge effects of project construction. Common adverse edge effects during construction include fugitive dust, erosion, and sedimentation. The 3Roots project would comply with current construction best management practices (BMPs) that address these common edge effects as discussed below; therefore, short-term indirect impacts to vegetation communities and sensitive plant are not expected. Furthermore, the Project is required to prepare a SWQMP which would be approved by the City and implemented as part of the Project.

During construction, specific BMPs for the Project would be implemented, such as but not limited to: erosion control (e.g., preservation of existing vegetation, mulching, hydroseeding, soil binding, and drainage swales) and velocity dissipation and sediment control devices (e.g., silt fencing, sediment basins and traps, fiber rolls, gravel bag berms, sweeping, sandbag barriers, storm drain inlet protection, stabilized construction entrance/exit, and stabilized construction roadways).

Other construction BMPs would address wind erosion, water conservation, paving and grinding operations, vehicle and equipment cleaning, as well as BMPs for waste management. Water quality BMPs would be implemented throughout the Project to capture and treat contaminants.

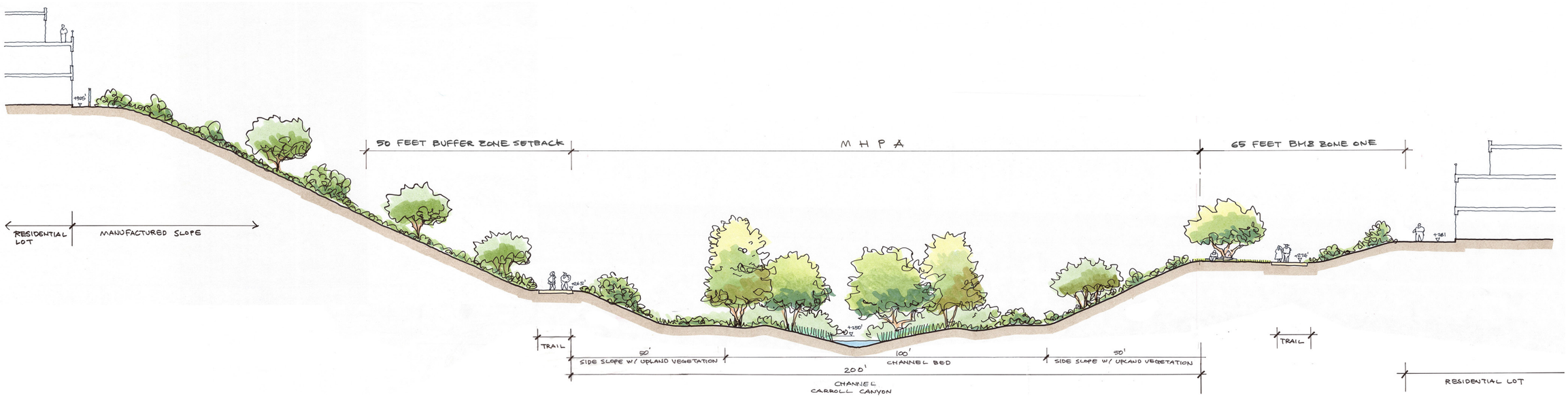
Biofiltration basins are incorporated in the project design to treat runoff from the mass graded pads and the proposed basins are shown on the SWQMP Site Plan (Project Design Consultants 2018b). Construction BMPs for this Project would be incorporated in accordance with the State Construction General Permit requirements and shall be implemented through the Storm Water Pollution Prevention Plan (SWPPP) for the Project, which would be prepared to ensure Project impacts are avoided and minimized during construction.

Long-term indirect impacts to vegetation can occur due to shading when bridges or other structures are constructed over vegetation and result in a substantial decrease in light to the area, such that vegetation is adversely affected (i.e., reduced growth or no growth). The Project would construct a 12-foot wide pedestrian bridge spanning above streambed, riparian, and upland habitat of Carroll Canyon Creek and associated uplands. The bridge would span over the vegetation at a height of approximately 26 ft above the creek bottom and would allow for sunlight to reach under the bridge for all but a very limited portion of the day. Given the combination of the narrow width of the bridge and height of the bridge, sunlight would continue to reach vegetation below the bridge; thus, impacts to vegetation from shading casted by the bridge are not anticipated.

Compliance with the City MSCP LUAGs is a requirement of the Project approvals by the City (i.e., SDP issuance) which would result in avoiding potential long-term indirect impacts to vegetation communities and sensitive plant species. These include urban pollutant run-off (e.g., oils, pesticides, herbicides, chemical fertilizers, etc.), presence of exotic plants and animals, and off-trail hiking which could crush plants. Project compliance with the City MSCP would avoid potential long-term indirect impacts to vegetation communities and sensitive plants; therefore, no long-term indirect impacts are expected as a result of the Project.

8.2.2 Sensitive Wildlife

Indirect impacts to vegetation communities and sensitive plants discussed above can also adversely affect sensitive wildlife that rely on those habitats and plants for shelter and sustenance; both in the short-term and long-term. Short-term impacts to MSCP-covered coastal California gnatcatcher, Cooper's hawk, least Bell's vireo, orange-throated whiptail, coastal whiptail, mule deer, and San Diego desert woodrat would be largely addressed through compliance with the City MSCP-related MHPA LUAGs addressed in detail in Section 7.9, as well as ASMDs discussed in Section 7.10. Implementation of BMPs discussed in Section 8.2.1 and routine biological monitoring during construction, combined with compliance with LUAG and ASMDs, would also avoid and minimize potential indirect impacts from habitat disturbance to coast horned lizard, red-diamond rattlesnake, Southern California legless lizard, Southern California rufous-crowned sparrow, two-striped garter snake, western mastiff bat, western red bat, and western spadefoot toad.



CARROLL CANYON CREEK @ B-B SWA / REVISED 10/22/2018

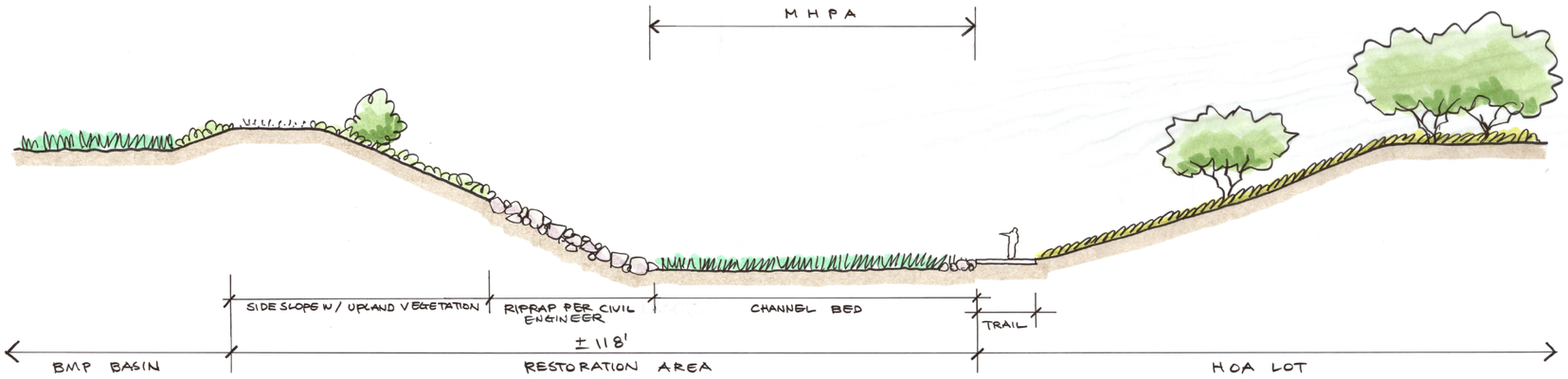
I:\PROJECTS\H\HAW\HAW-34_Contera\Map\BTR\Fig25a_CrossSection.indd CAH-02-01 10/02/18 CL

Source: SWA 10/2018

HELIX Environmental Planning

Cross Section (Average)

Figure 25a



CARROLL CANYON CREEK @ A-A

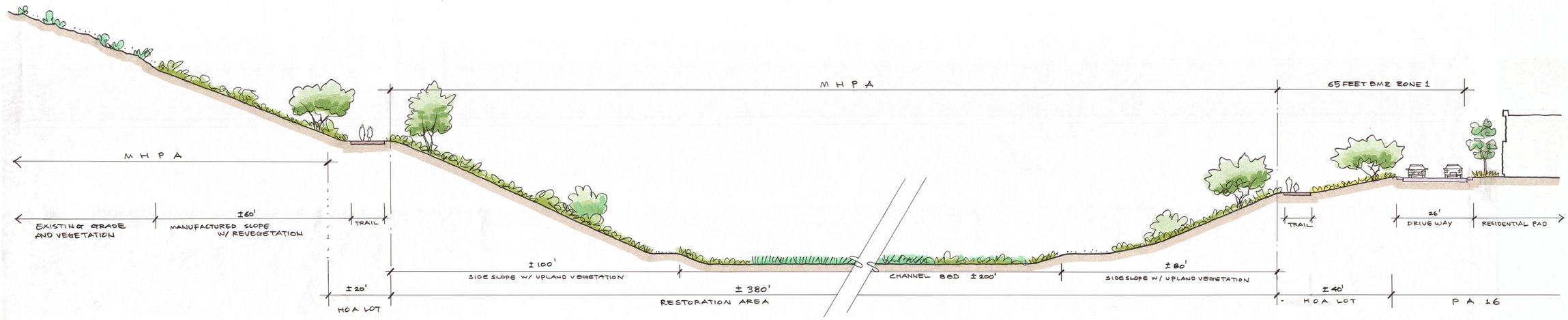
10/1/2018 SWA / REVISED 10/22/2018 **Revised by SWA 4/10/2019**

Source: SWA 4/2019

HELIX Environmental Planning

Cross Section (Narrow)

Figure 25b



CARROLL CANYON CREEK @ C-C

9/28/2018/SWA
10/1/2018/REVISED./ 10/22/2018/REVISED. Revised 10/26/2018

I:\PROJECTS\H\HAW\HAW-34_Cantera\Map\BTR\Fig25c_CrossSection.indd CAH02-01 10/02/18 -CL

Source: SWA 10/2018

HELIX Environmental Planning

Cross Section (Wide)

Figure 25c

I:\PROJECTS\H\HAW\HAW-34_Contera\Map\BTR\Fig25d_CreekReclamationOverheadView.indd CAH-02-01 2/07/19 CL

Source: SWA 2/2019

HELIX Environmental Planning

Creek Reclamation Overhead View

Figure 25d

Potential indirect impacts to nesting coastal California gnatcatcher, Southern California rufous-crowned sparrow, and Cooper's hawk would be avoided by implementing construction outside of the breeding season to the extent feasible. Nesting bird surveys, biological monitoring, and noise shielding measures would be implemented if the breeding season is unavoidable to avoid and minimize indirect impacts to these potentially nesting species.

Similarly, potential indirect impacts to nesting least Bell's vireo, should it occur on site, would be avoided by restricting construction to dates outside the breeding season, to the extent feasible. If construction must occur during the breeding season, noise attenuation measures to reduce noise levels to below 60dBA hourly average would be implemented. Biological monitoring and noise monitoring would ensure that avoidance measures are adequately implemented.

Long-term indirect impacts to sensitive wildlife post construction, could include anthropogenic disturbances such as human presence, noise, and lighting. These long-term indirect impacts are not expected as 3Roots would comply with City MSCP LUAG requirements as described in Section 7.9.

8.2.3 Jurisdictional Resources

Indirect impacts to jurisdictional resources would be avoided through the enhancement of wetland buffers along Carroll Canyon Creek and the establishment of BMZs from the 3Roots development. As described previously in Section 1.2.2 and Section 5.0 of this report, implementation of the CUP Reclamation required involves restoration, enhancement, and re-establishment of native upland and riparian habitats along Carroll Canyon Creek. These areas of native upland habitat would range between 35 and 88 feet in width from the edge of the creek channel corridor (Figure 17a-b). In addition to these enhancement areas, a 96-foot BMZ 2 is proposed between the north side of Carroll Canyon Creek and the 3Roots development (Figure 17a).

Similarly, proposed upland habitat enhancement and BMZs would ensure the avoidance of indirect impacts to Rattlesnake Creek from the 3Roots development. Specifically, enhancements are proposed for disturbed portions within the proposed 65-foot Rattlesnake Canyon BMZ and a minimum 37-foot (generally 65-foot) BMZ 2 is proposed between the south side of Rattlesnake Creek and the 3Roots development (Figure 17c).

The removal of Parkdale Park, originally proposed to the northeast of the 3Roots development, also allows additional open space to buffer Rattlesnake Creek and the vernal pool preserve to the east from proposed residential uses.

During construction, specific BMPs for the Project would be implemented, such as but not limited to: installation of work limits fencing, erosion control (e.g., preservation of existing vegetation, mulching, hydroseeding, soil binding, and drainage swales) and velocity dissipation and sediment control devices (e.g., silt fencing, sediment basins and traps, fiber rolls, gravel bag berms, sweeping, sandbag barriers, storm drain inlet protection, stabilized construction entrance/exit, and stabilized construction roadways). Additionally, routine biological monitoring would be conducted throughout Project construction to ensure indirect impacts to jurisdictional resources are avoided.

In similarity to long-term shading impacts to vegetation discussed in Section 8.2.1, long-term indirect impacts to wetlands can also occur due to shading casted by bridges or other structures. Given the combination of the narrow width of the bridge and height of the bridge, sunlight would continue to

reach wetlands below the bridge; thus, indirect impacts to wetlands from shading casted by the bridge are not anticipated.

8.2.3.1 Vernal Pools

Potential indirect impacts similar to those listed above for vegetation and sensitive species could occur to the vernal pool complex located north and off-site of the 3Roots site. However, this vernal pool complex and its fenced-in buffer zone is located at a higher elevation than the 3Roots development area such that any drainage/flow accumulated on the project site would not affect the vernal pool complex.

Additional protection for the vernal pool complex would be provided through the installation of appropriate signage to educate the public of this sensitive biological resource and discourage unauthorized entry into the preserve. As stated in Section 8.2.3., Parkdale Park was originally proposed to be located adjacent to the vernal pool complex but was removed from the Project design to minimize potential for indirect impacts to the vernal pool complex and to maintain the existing buffer zone between the 3Roots development and the preserve.

Implementation of construction BMPs and incorporation of jurisdictional resource buffers discussed above would avoid potential indirect impacts to the off-site vernal pool complex. Additionally, the Project would comply with the avoidance and minimization measures prescribed in the City's VPHCP (see Section 8.1.4).

Thus, no indirect impacts to vernal pools, including the off-site vernal pool preserve are expected.

8.2.4 Wildlife Corridors

No indirect impacts to wildlife corridors or habitat linkages are expected. As stated earlier in Sections 4.5 and 8.1.5, the 3Roots site is not identified as a regional wildlife corridor or habitat linkage but may provide local wildlife movement along Rattlesnake Creek and Carroll Canyon Creek. The proposed Project buffers, proposed Project BMZs, and Project compliance with the City MSCP LUAG requirements would avoid indirect impacts to existing wildlife movement.

8.3 CUMULATIVE IMPACTS

Adverse cumulative impacts are not expected. The Project is a planned development project for this portion of the City as described earlier in Section 1.2. Consequently, the impacts associated with the 3Roots project have been anticipated and addressed in the certification of the Final EIR for the Carroll Canyon Master Plan. Proposed impacts for 3Roots would adhere to the concepts of the Final EIR. Additionally, the overarching City MSCP Subarea Plan was developed to mitigate cumulative impacts and loss of sensitive biological resources throughout the City. Projects which adhere to the MSCP Subarea Plan are not expected to have significant cumulative impacts to resources covered by the MSCP Subarea Plan.

8.4 DEVIATION FROM CITY ESL WETLAND REGULATIONS

The City Biology Guidelines (City 2012) state that impacts to wetlands are acceptable but require a deviation from ESL Regulations. Outside the Coastal Overlay Zone, requests to deviate from the ESL wetland regulations may be considered only if the proposed development falls within one of the three

options as defined by City of San Diego Land Development Code (LDC) Section 143.0510 (d): (1) Essential Public Projects Option, (2) Economic Viability Option, or (3) Biologically Superior Option.

It is not feasible for the proposed Project to completely avoid impacts to City wetlands (approximately 0.18 acre of wetland impacts by the Project); thus, the Project would require a deviation from ESL Regulations pertaining wetlands. The proposed Project falls within the Essential Public Facilities Projects (EPP) deviation option; specifically, Project impacts to wetlands would result from construction of the Carroll Canyon Road component (approximately 0.18 acre), as discussed below. No other Project components would impact City wetlands (Tables 12 and 16).

8.4.1 Essential Public Project Option

Appropriate deviation from ESL regulations on wetlands impacts under the EPP option must include a Project design "where no feasible alternative exists that would avoid impacts to wetlands." Further, Project classification as an EPP shall include one of the following four criteria: (1) be "identified in an adopted land use plan or implementing document and identified on the EPP List adopted by Resolution No. [X]_as Appendix III to the City Biology Guidelines," or (2) be "linear infrastructure, including but not limited to major roads and land use plan circulation element roads and facilities," or (3) be "maintenance of existing public infrastructure," or (4) be a State or Federally mandated project.

The proposed expansion of Carroll Canyon Road is identified in the following adopted land use plans: the 1987 Carroll Canyon Specific Plan EIR (No. 87-0163), the 1994 Carroll Canyon CPA (SCH No. 92121 061), and the 1994 CCMP an Amendment to the MMCP (City Council Resolution No. 285096 and 285097). Thus, the proposed expansion of Carroll Canyon Road is considered an EPP.

No Project/No Road Development /Approved CUP 89-0585 Implementation Alternative

Under the No Project/No Road Development/Approved CUP 89-0585 Implementation Alternative, the existing CUP 89-0585 obligations to reclaim (regrade and restore) habitats on site would be completed (see Section 1.2.2 and Section 5.0). Additionally, the proposed CUP/Reclamation Plan Amendment (See Section 1.2.2) by the Project would also be completed.

However, under this alternative, the 0.18 acre of southern riparian woodland and southern willow scrub to be impacted by the Project as a result of Carroll Canyon Road expansion as currently designed would not occur. Furthermore, the proposed residential and commercial development and the corresponding SDG&E infrastructure upgrades would not be completed. As a result, Carroll Canyon Road would lack connectivity between other arterial roads and freeways and the goals of land use plans pertaining to this area would not be achieved.

The planned expansion of Carroll Canyon Road provides various traffic and transportation services needed to accommodate population and development growth in the community and region. Without this proposed arterial roadway expansion, the traffic circulation needs of the community would be underserved, and the necessary infrastructure adopted by the approved land use plans would not be met. Thus, a No Project/No Road Development Alternative is not feasible.

Wetlands Avoidance/Approved CUP 89-0585 Implementation Alternative

Under a Wetlands Avoidance/Approved CUP 89-0585 Alternative, the existing CUP/ Reclamation obligations to regrade and restore would be completed, the CUP/Reclamation Amendment would be

implemented, the 3Roots development component of the Project would be constructed, and the SDG&E infrastructure upgrades would be completed. However, avoidance of impacts to 0.18 acre of southern riparian woodland and southern willow scrub would preclude the construction of Carroll Canyon Road. Because the proposed road expansion would connect fixed termini of Carroll Canyon Road located east and west of the Project site, few possible alignments exist to accommodate the road while meeting current road design standards of the City.

To avoid wetlands, the extension of Carroll Canyon Road would require construction of a bridge that would extend east of the site to span an unnamed tributary of Carroll Canyon Creek and connect with an existing terminus of Carroll Canyon Road. Construction of this bridge would be cost prohibitive and not practicable. Therefore, the wetlands avoidance alternative was determined to be infeasible.

Proposed 3Roots Project /Approved CUP 89-0585 Implementation Alternative

Under this alternative, the existing CUP/Reclamation obligations to regrade and restore would be completed, the CUP/Reclamation Amendment would be implemented, and the entirety of the proposed Project (i.e., 3Roots development, expansion of Carroll Canyon Road, and SDG&E utility upgrades) would be constructed.

Given that impacts to 0.18 acre of wetland are unavoidable, minimization of impacts to wetlands is not feasible.

9.0 DETERMINATION OF SIGNIFICANCE

In accordance with City's Significance Determination Guidelines (City 2012), a project would result in a significant or potentially significant biological resource impact if it would result in:

1. A substantial adverse impact, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in the MSCP or other local or regional plans, policies or regulations, or by the CDFW or USFWS.

2. A substantial adverse impact on any Tier I, Tier II, Tier IIIA, or Tier IIIB Habitats as identified in the City's Biology Guidelines of the Land Development manual or other sensitive natural community identified in local or regional plans, policies, regulations, or considered sensitive by CDFW or USFWS.

3. A substantial adverse impact on wetlands (including, but not limited to, marsh, vernal pool, riparian, etc.) through direct removal, filling, hydrological interruption, or other means.

4. Interfering substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, including linkages identified in the MSCP Plan, or impede the use of native wildlife nursery sites.

5. A conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan, either within the MSCP plan area or in the surrounding region.

6. Introducing land use within an area adjacent to the MHPA that would result in adverse edge effects.

7. A conflict with any local policies or ordinances protecting biological resources.

8. An introduction of invasive species of plants into a natural open space area.

Proposed impacts as a result of 3Roots implementation are evaluated in terms of significance and the corresponding determinations are provided below.

9.1 VEGETATION COMMUNITIES

The proposed Project would result in direct impacts to Tier II, Tier IIIA, Tier IIIB, and City wetland habitats (Table 12). In accordance with the City's Biology Guidelines, these impacts would be considered significant and would require mitigation at ratios prescribed by the City's Biology Guidelines. It should be noted that the Project would not impact mitigation land associated with CUP/Reclamation mitigation. Thus, mitigation provided at the ratios in Tables 3a and 3b of the Biology Guidelines would be adequate to offset proposed Project impacts.

9.2 SENSITIVE PLANTS

The proposed Project would result in direct impacts to two sensitive plant species, summer holly (CRPR 1B.2) and Nuttall's scrub oak (CRPR 1B.2). Additionally, direct impact to San Diego Barrel cactus (CRPR 2.1) and Palmer's grapplinghook (CRPR 4.2) may occur as a result of SDG&E potential pole relocation. Generally, impacts to plant species with a CNPS CRPR of 2 or lower are considered potentially significant. Further, CRPR 3 and 4 species are relatively widespread and impacts to such species would not substantially reduce their populations in the region and are typically not considered significant.

Although CRPR 1B.2 species, summer holly and Nuttall's scrub oak are widely distributed within the City, with the majority of records clustered in the Los Peñasquitos Canyon Preserve located north of 3Roots (Calflora 2018). Proposed impacts to seven summer holly individuals and four Nuttall's scrub oak are considered less than significant because such impacts would not jeopardize the status of the species in the region, would not directly contribute to future elevated listing of the species, and the on-site avoidance of approximately 99 percent of summer holly and 89 percent of the Nuttall's scrub oak within the project boundary would be conserved as a result of land dedication into the City MHPA. Furthermore, the required CUP/Reclamation revegetation of the site would include summer holly and Nuttall's scrub oak in the MHPA revegetation planting palette. Therefore, impacts to seven summer holly and four Nuttall's scrub oak shrubs are not significant.

Similar to summer holly and Nuttall's scrub oak, San Diego barrel cactus is also documented as widely distributed throughout the City and region. Potential impacts to the fourteen San Diego barrel cactus individuals are considered less than significant because such impacts would not jeopardize the status of the species in the region, would not directly contribute to future elevated listing of the species, and the native habitat revegetation areas of the site include San Diego barrel cactus in the planting palette. Therefore, impacts to San Diego barrel cactus, should they occur, are not significant. Because Palmer's grapplinghook is a CRPR list 4.2 species, potential impacts Palmer's grapplinghook are considered not significant.

9.3 SENSITIVE WILDLIFE

Because direct impacts to sensitive wildlife from the Project would occur outside of the MHPA, impacts to these species would not be significant due to the adequate species coverage and suitable habitats protected under the MSCP within the MHPA. Additionally, direct impacts to species not covered by the MSCP would be less than significant due to the few number of individuals potentially affected, the relatively small amount of habitat impacted, and the remaining suitable habitat available immediately adjacent to the Project area.

Nesting least Bell's vireo is not anticipated; however, impacts to LBVI habitat are significant.

Conditions of coverage for MSCP-covered species that would be impacted by the project are provided in Section 7.10. Given that the Project would conform to the Area Specific Management Directives identified for each of these species, Project impacts to these species would be less than significant. Lastly, because the Project is required comply with the regulations of the ESA, CESA, MBTA, and the CDFW Fish and Game Code, impacts to nesting birds are not anticipated.

9.4 JURISDICTIONAL RESOURCES

Direct impacts to jurisdictional resources (i.e., wetlands, waters, and riparian vegetation) as a result of the Project would be significant.

10.0 MITIGATION AND MONITORING REQUIREMENTS

10.1 MITIGATION ELEMENT

The following Mitigation Measures shall be implemented in order to reduce potential impacts from the 3Roots Project to below the level of significance. In addition to the mitigation measures provided in the Section below, note that Project construction monitoring (including applicable pre-construction surveys for sensitive species) by a qualified biologist is required as part of the Project approval and permit issuance by the City.

10.1.1 Vegetation Communities

Project impacts require a total of 6.86 acres mitigation; comprising 6.32 acres of uplands and 0.54-acre wetlands as presented in Table 17 and as described herein. Project Impacts to 4.84 acres of Tier II habitat (i.e., Diegan coastal sage scrub, baccharis scrub, coastal sage scrub–chaparral transition, and upland restoration; Table 17), and 2.66 acres of Tier III habitat (i.e., chamise chaparral, southern mixed chaparral, and non-native grassland; Table 17) shall be mitigated in accordance with ratios provided in Table 3 of the City's Biology Guidelines. Tier II and Tier III mitigation shall be accomplished through on-site preservation comprising a minimum of 6.32 acres of upland habitats (i.e., Tier II and Tier III) within the MHPA. This will be accomplished in Rattlesnake Canyon as part of the larger 212.45 acres of open space dedication (described in Section 1, Table 1). Because areas of habitat preservation for the purposes of mitigation will be accomplished within the Rattlesnake Canyon open space area, they have

not been delineated separately. Rather, they are included in the depiction of Rattlesnake Canyon as an " Other Conserved Open Space" (Figure 3b, Habitat Reclamation and Mitigation Plan).

As presented in Section 8.1.1 Table 12, impacts related to the existing BMZ along Rattlesnake Canyon do not require mitigation; thus, these are not included in Table 17 below.

Project impacts to 0.18 acre of City wetland habitat (i.e., southern riparian woodland and southern willow scrub; Table 17) shall be mitigated at a 3:1 ratio, totaling 0.54 acre; as prescribed by ratios in Table 2A of the City's Biology Guidelines. City wetland mitigation shall be accomplished on site within the MHPA (i.e., Carroll Canyon Creek) through in-kind wetland habitat restoration and shall incorporate a minimum of 0.18 acre of wetland habitat re-establishment for a no-net loss of City wetland habitat. This City wetland mitigation shall be implemented in accordance with the Habitat Reclamation and Mitigation Plan (HELIX 2019a; Figures 26a-d).

Table 17
PROJECT MITIGATION FOR SIGNIFICANT IMPACTS TO SENSITIVE HABITATS (acres)[1]

Habitat	Tier	Project Impact OUT / IN[2]	Mitigation Ratio[3]	Total Mitigation Required[3]
City Wetlands Habitat				
Southern riparian woodland	N/A	0.04 / --	3:1	0.12
Southern willow scrub	N/A	0.14 / --	3:1	0.42
City Wetlands Subtotal		*0.18 / --*	--	*0.54*
Sensitive Uplands Habitat				
Diegan coastal sage scrub	II	4.09 / 0.22	1:1	4.31
Baccharis scrub – including disturbed phase	II	0.35 / --	1:1	0.35
Coastal sage – chaparral transiti	II	--/ 0.14	1:1	0.14
CUP Reclamation Upland Restoration	II	0.04 / --	1:1	0.04
Tier II Subtotal		*4.48 / 0.36*	--	*4.84*
Chamise chaparral	IIIA	0.76 / --	0.5:1	0.38
Southern mixed chaparral	IIIA	1.53 / 0.25	0.5:1 / 1:1 [4]	1.02
Non-native grassland	IIIB	0.09 / 0.03	0.5:1 / 1:1 [4]	0.08
Tier III Subtotal		*2.38 / 0.28*	--	*1.48*
TOTAL		**7.04 / 0.64**	**--**	**6.86**

[1] All data is in acres rounded (0.1 for uplands and 0.01 sensitive uplands and wetlands/riparian); if less, then shown as --.
[2] Reflects all Project components (except impact neutral Rattlesnake BMZ 2) and includes both temporary and permanent impacts. "OUT" reflects outside the MHPA; "IN" reflects inside the MHPA.
[3] Mitigation ratios per City Biology Guidelines and all mitigation is inside the MHPA.
[4] 0.5:1 ratio reflects impacts outside the MHPA and 1:1 ratio reflects impacts inside the MHPA; both ratios reflect mitigation inside the MHPA.

10.1.2 Sensitive Wildlife

Impacts to sensitive wildlife shall be compensated through on-site habitat preservation, restoration, and re-establishment as presented in Table 17. For example, impacts to 0.18 acre of potential least Bell's vireo habitat will be mitigated on site within the MHPA through in-kind habitat restoration and shall incorporate a minimum of 0.18 acre of riparian habitat re-establishment. Mitigation shall be implemented in accordance with the Habitat Reclamation and Mitigation Plan (HELIX 2019a; Figures 26a-d). Additional habitat-based mitigation or other mitigation measures prescribed by the

resource agency permits obtained for the Project (see Section 10.1.4 below) shall also be required. Project compliance with the City's biological resource protection requirements and other biological requirements prescribed by the MMRP issued to the Project by the City shall also be required.

To avoid and minimize impacts to least Bell's vireo, mitigation would include the restriction of project construction activities outside of the breeding season for that species. No clearing, grubbing, grading, or other construction activities shall occur from March 15 through September 15 for least Bell's vireo.

If clearing, grubbing, grading, or other construction activities are unavoidable between March 15 and September 15, pre-construction nesting bird surveys shall be completed by a qualified biologist. If it is determined that the least Bell's vireo is present, an analysis shall be prepared by a qualified acoustician to confirm that noise generated by construction activities will not exceed 60 dB hourly average, or noise attenuation measures (e.g., berms, walls) shall be implemented to ensure that noise levels resulting from construction activities will not exceed 60 dB hourly average at the edge of least Bell's vireo occupied habitat. The biological monitor for the Project shall ensure that impacts to potential least Bell's vireo habitat do not exceed those identified for the Project and that noise construction requirements are met for the species.

If take authorization is required to impact least Bell's vireo habitat, including jurisdictional habitats identified in Section 5.0, authorization and corresponding mitigation requirements shall be obtained by consultation with USFWS through the ESA Section 7 process. Mitigation measures prescribed by USFWS shall be required by the Project.

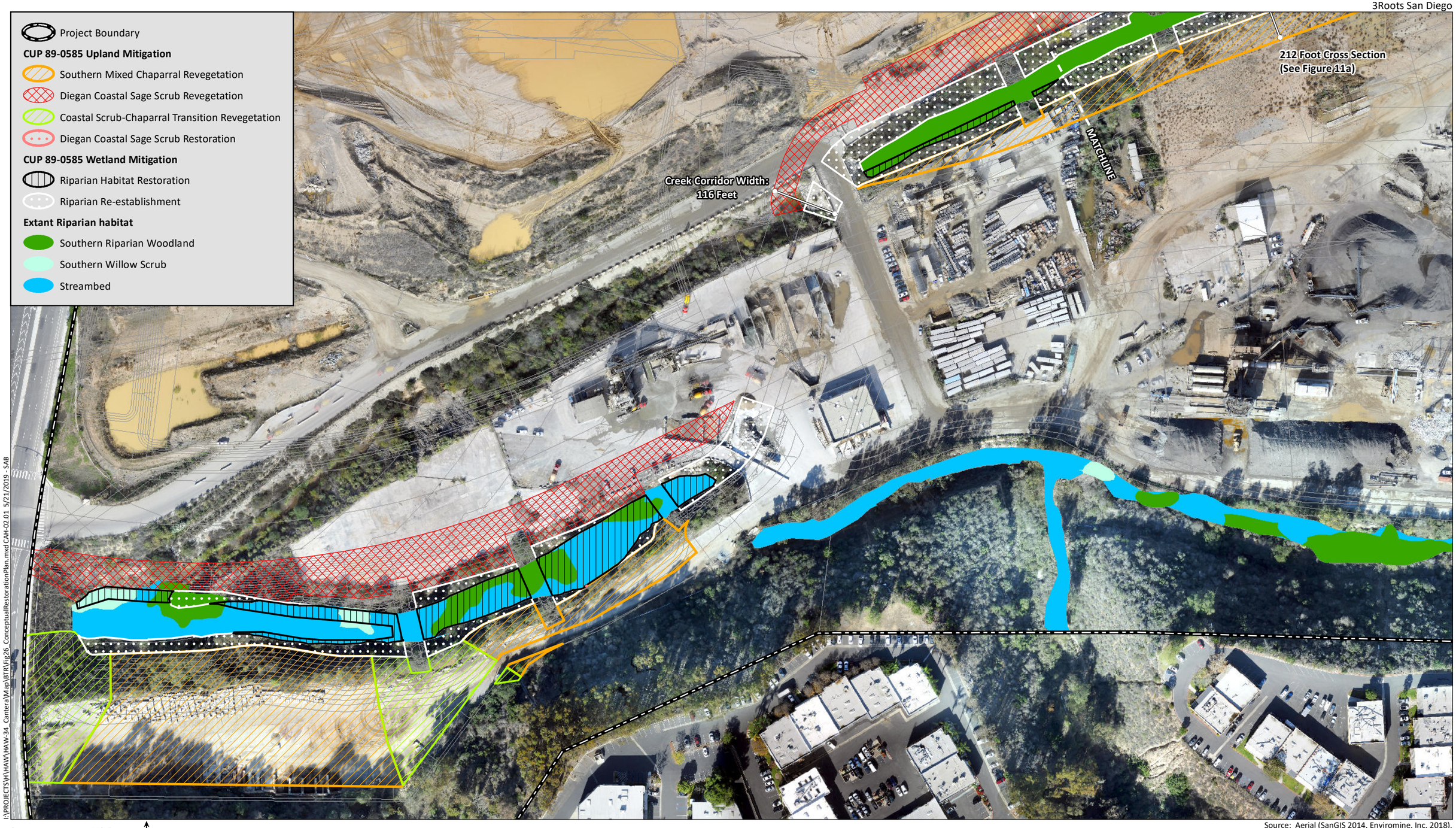
10.1.3 Jurisdictional Resources

Project impacts to 0.01 acre of USACE jurisdictional habitat (i.e., unvegetated channel; Table 18) shall be mitigated at a 3:1 ratio, totaling 0.03 acre. Project impacts to 0.18 acre of CDFW jurisdictional habitat (i.e., southern riparian woodland and southern willow scrub; Table 18) shall be mitigated at a 3:1 ratio, totaling 0.54 acre. Prior to commencement of proposed impacts over areas within state or federal jurisdiction (i.e., during Phase 2 of the Project), the Project applicant shall provide evidence to the City that the required state and federal wetland permits (i.e., State Section 1600 of the Fish and Game Code and Federal 401/404 Sections of the Clean Water Act) have been obtained and complied with for areas within state and/or federal jurisdiction. Such permits shall require mitigation at a minimum 1:1 ratio, as determined by the resource agencies, and implementation shall be required by the Project applicant. Where these state/federal areas overlap with City areas, the resource agency mitigation would supersede, and would not be in addition to, City standard mitigation requirements. Impacts and potential mitigation for CUP, CUP/Reclamation Plan Amendment and Project are provided in Appendix E.

10.2 PROTECTION ELEMENT

MHPA Preserve lands associated with the proposed Project would be legally protected in title and in perpetuity in one of three ways as follows:

1. All portions of the Project area inside the adjusted MHPA boundary would have an Irrevocable Offer of Dedication (IOD) provided to the City for MHPA lands that will be owned by the City per Figure 24, and a COE recorded for MHPA lands to be owned/managed by the HOA following acceptance of the proposed MHPA BLA and prior to issuance of the first construction permit to



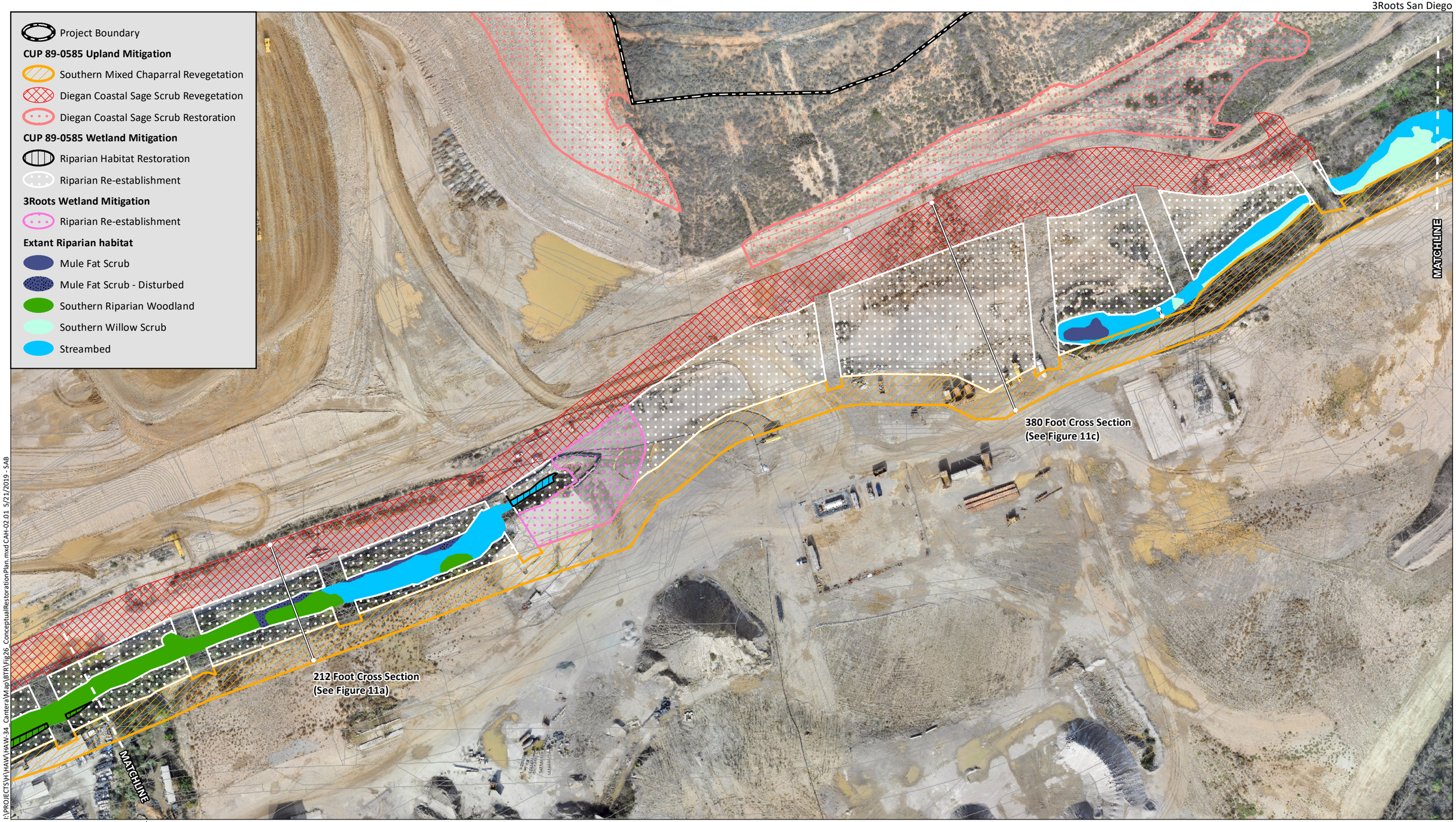
I:\PROJECTS\H\HAW\HAW-34_Cantera\Map\BTR\Fig26_ConceptualRestorationPlan.mxd CAH-02.01 5/21/2019 - SAB

Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018).

HELIX Environmental Planning

Conceptual Habitat Mitigation Plan

Figure 26a



I:\PROJECTS\H\HAW\HAW-34_Cantera\Map\BTR\Fig26_ConceptualRestorationPlan.mxd CAH-02.01 5/21/2019 - SAB

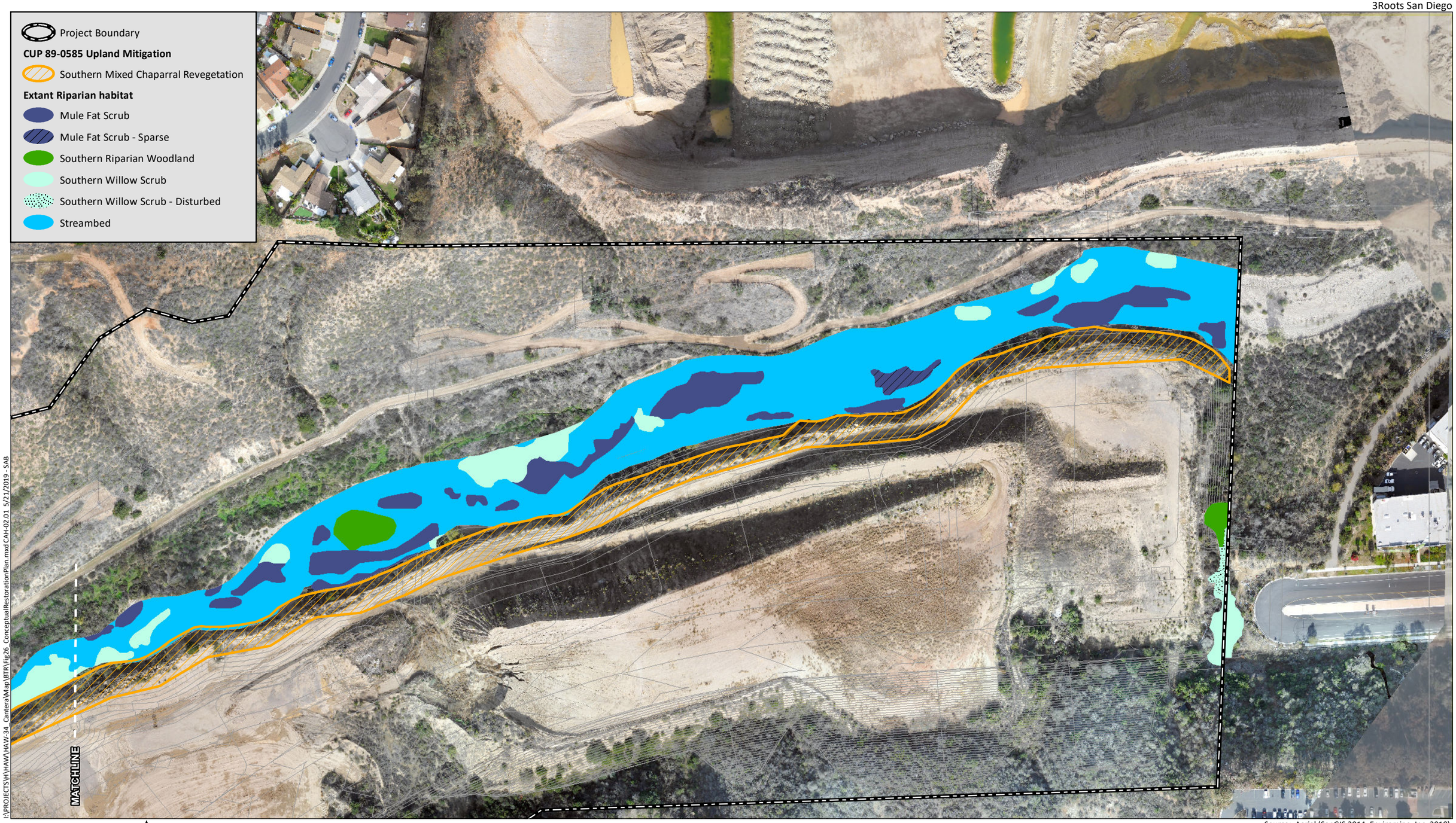
0 140 Feet

Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018).

HELIX Environmental Planning

Conceptual Habitat Mitigation Plan

Figure 26b



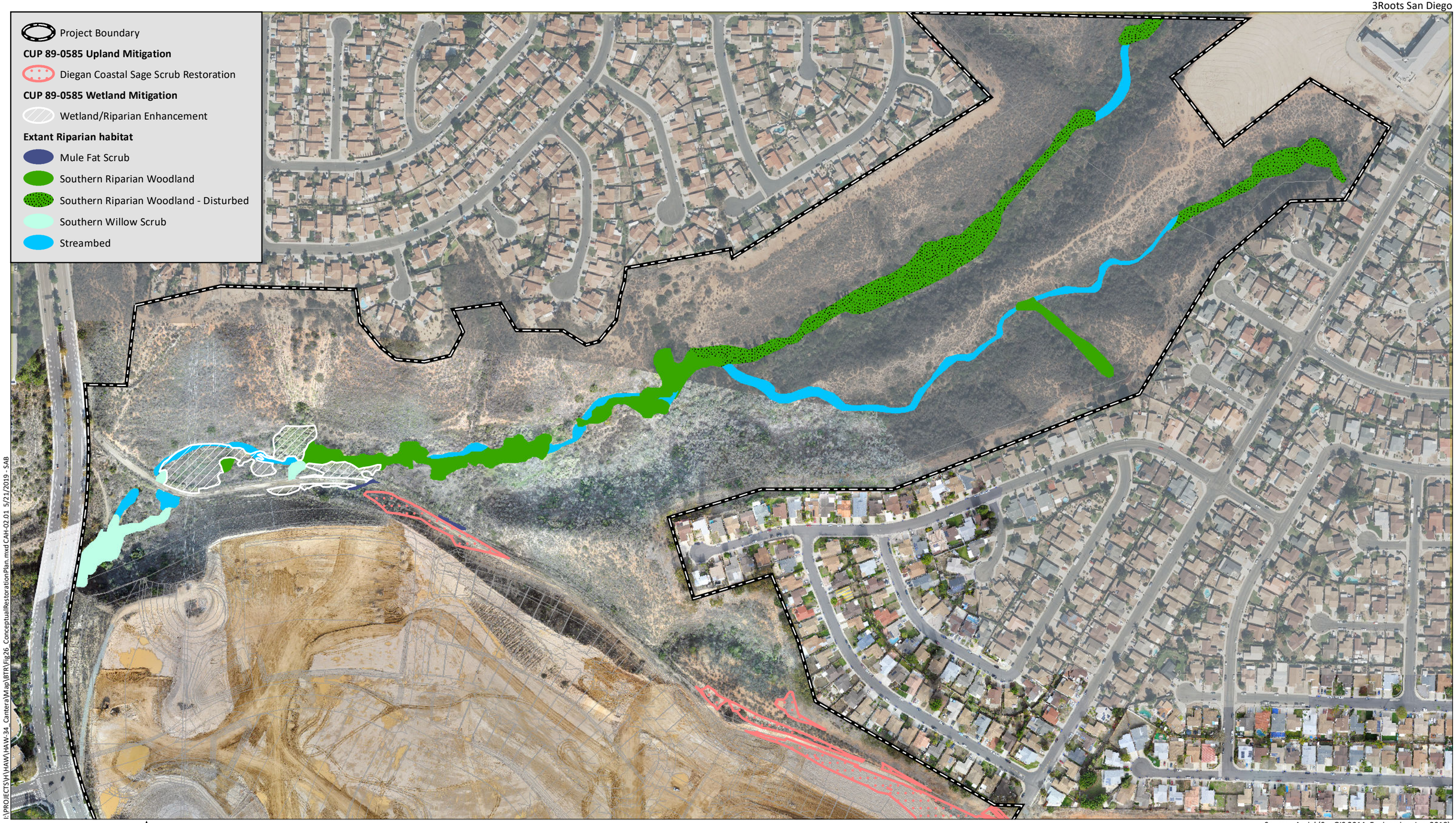
I:\PROJECTS\H\HAW\HAW-34 Cantera\Map\BTR\Fig26 ConceptualRestorationPlan.mxd CAH-02.01 5/21/2019 - SAB

Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018).

HELIX Environmental Planning

Conceptual Habitat Mitigation Plan

Figure 26c



I:\PROJECTS\HAW\HAW-34_Cantera\Map\BTR\Fig26_ConceptualRestorationPlan.mxd CAH-02.01 5/21/2019 - SAB

0 300 Feet

Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018).

HELIX Environmental Planning

Conceptual Habitat Mitigation Plan

Figure 26d

ensure long term protection of the MHPA (Figure 24). Specifically, prior to issuance of the grading permit a Temporary COE and IOD would be recorded over lands to be dedicated to City or HOA in fee. However, because the City does not manage private MHPA land, the majority of lands within the MHPA (except for the central and lower portions of Carroll Canyon Creek and the BMZ 2 adjacent the existing homes along Rattlesnake Canyon) would be dedicated to the City in the deed/title to provide the City with long-term management capability of the new MHPA. The central and lower portions of Carroll Canyon Creek would be owned in fee by the HOA, and a management entity that would be responsible for long-term management of these lands for conservation purposes would be funded by the project proponent through a non-wasting endowment. The lands associated with the BMZ 2 of Rattlesnake Canyon would be lotted out separately, owned by 3Roots, and managed by 3Roots HOA or similar group (Figure 27). As part of this dedication, the City Parks and Recreation and Open Space staff shall review and approve all proposed lands prior to dedication in fee title; the City does not accept areas maintained by a HOA. Details of the preserve lands owned by the HOA and managed by an approved management entity are provided in 3Roots Project Long-Term Habitat Management Plan (HELIX 2019b).

2. It is anticipated that most of the MHPA (including IOD areas) would later be dedicated to the City in the deed/title excluding existing HOA and private easements and subject to City Parks and Recreation and Open Space review and approval. Approval of the MHPA IOD areas would be dedicated to the City upon completion and establishment success of the MHPA revegetation/restoration.

3. As noted above, the central and lower portions of Carroll Canyon Creek would be owned in fee by the HOA, and a land management entity funded through a non-wasting endowment would be responsible for long-term management of these lands for conservation purposes.

4. Existing residences surrounding Rattlesnake Canyon abut the MHPA and vegetative clearing for brush management purposes has been ongoing along this edge located within the MHPA. A 65-foot BMZ 2 would be included in this area, established as a distinct separate lot (i.e., lotted out) and placed under a separate COE, and would be maintained by an HOA or similar group.

5. Remaining natural open space habitat located within the property, outside of the MHPA, (along the southern portions of the property) would be either protected in non-MHPA ESL conservation easement and or dedicated to the City in the deed/title.

Note that all easements and methods of protection for the Project have yet to be confirmed and would be coordinated and finalized during the tentative and/or final map approval processes.

10.3 MANAGEMENT ELEMENT

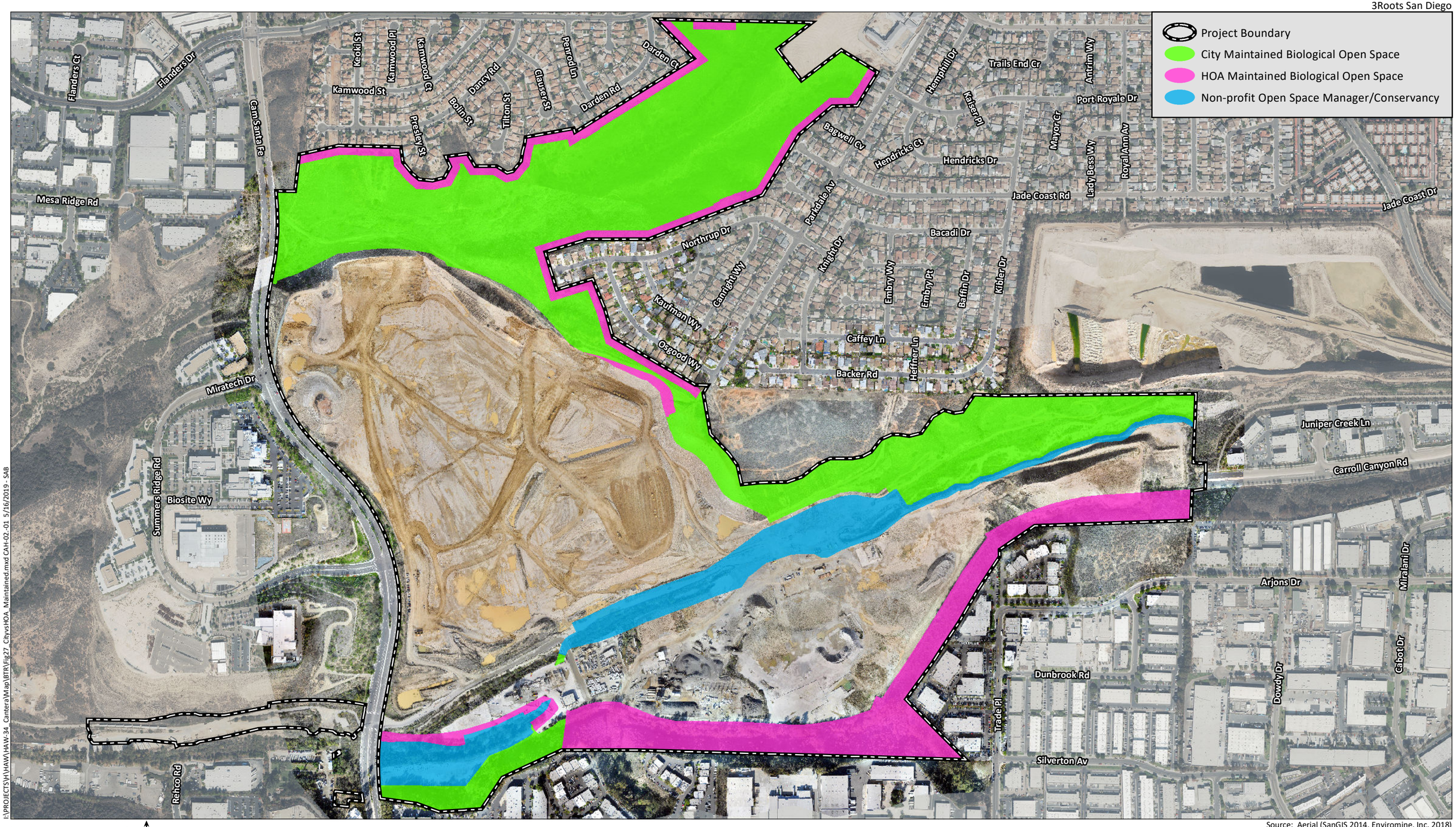
Restoration/revegetation/mitigation management for uplands (including BMZ 2) and wetlands habitat shall be provided in the short-term by the Project applicant during the required applicable two-year to five-year mitigation and monitoring efforts outlined in the Habitat Reclamation and Mitigation Plan and Project Landscape Plan (HELIX 2019a and SWA 2019). Once the City has issued a Notice of Completion for these efforts this land would dedicated in fee title for long-term management as outlined above in Section 10.2.

For lands dedicated in fee title to the City, long-term management of the MHPA areas on site is typically provided by the City through its habitat management program which utilizes volunteers, staff, and contractors.

For wetland areas along the central and lower portions of Carroll Canyon Creek, the Project applicant would be required to provide a non-wasting endowment for the wetland mitigation components. The funding amount shall be calculated through a Property Analysis Report (PAR) or other similar method.

Areas proposed for dedication to the City and areas under HOA ownership are presented in Figure 27. Note that all Easements and IODs for the Project have yet to be confirmed and would be coordinated (with the Resource Agencies and the City) and finalized during the Project approval process by the City.

3Roots San Diego



I:\PROJECTS\1\HAW\HAW-34_Cantera\Map\BTR\Fig27_CityvsHOA_Maintained.mxd CAH-02-01 5/16/2019 - SAB

0 650 Feet

Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018)

HELIX Environmental Planning

Open Space Maintenance

Figure 27

11.0 ACKNOWLEDGEMENTS

The following people contributed to the preparation of this report:

Barry Jones[1]	B.S. Biology, Point Loma College, 1982.
Thomas Liddicoat[4]	B.S., Biology, with an emphasis in Ecology, San Diego State University, 2005
Camille Lill[3]	M.S., Spatial Information Science, University of Adelaide, 2003 B.A., Geography with an Emphasis in Techniques, University of Oregon, 2000.
Amy Mattson[1,2]	M.S., Marine Biology, Scripps Institution of Oceanography, 1999 B.S., Biology, Marine Biology Concentration, University of California Los Angeles, 1994
W. Larry Sward[2]	M.S., Biology, with an emphasis in Botany, San Diego State University, 1979 B.S., Biology, with an emphasis in Ecology, San Diego State University, 1975

[1]Contributing Author; [2]Biologist; [3]GIS Specialist; [4]Primary Author

12.0 REFERENCES

American Ornithologists' Union. 2016. Fifty-seventh Supplement to the American Ornithologists' Union *Check-List of North American Birds*. Retrieved from: http://www.americanornithology.org/content/checklist-north-and-middle-american-birds. July 6.

American Society of Landscape Architects. 2005. San Diego County Invasive Ornamental Plant Guide. October.

Baker, R.J., L.C. Bradley, R.D. Bradley, J.W. Dragoo, M.D. Engstrom, R.S. Hoffmann, C.A. Jones, F. Reid, D.W. Rice, and C. Jones. 2003. Revised checklist of North American mammals north of Mexico. Occasional Papers of the Museum, Texas Tech University 223.

Baldwin, B. G., D. H. Goldman, D. J. Keil, R. Patterson, T. J. Rosatti, and D. H. Wilken (eds.). 2012. The Jepson manual: vascular plants of California, second edition. Berkeley, CA: University of California Press.

California Department of Fish and Wildlife. 2018a. State and Federally Listed Endangered & Threatened Animals of California. Retrieved from: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals. July.

2018b. California Natural Diversity Data Base. RareFind 5.

Calflora. 2018. Taxon Report 6991 Observation Hotline. Retrieved from: http://www.calflora.org/entry/observ.html#srch=t&lpcli=t&taxon=Quercus+dumosa&chk=t&cch=t&inat=r&cc=SDG. May 2018.

California Department of Transportation. 2009. Wildlife Crossings Guidance Manual. Prepared by Robert Meese, Frasier Shilling and James Quinn, Center for the Environment, UC Davis. March.

California Invasive Plant Council. 2017. California Invasive Plant Inventory Database. Retrieved from: http://www.cal-ipc.org/paf/

California Native Plant Society. 2017. Inventory of Rare and Endangered Plants (online edition, v8-03 0.39). Retrieved from: http://www.rareplants.cnps.org. August.

Chang Consultants. 2019. Hydraulic Analyses for the 3Roots San Diego Project. March.

Cavallaro, L, K. Sanden, J. Schellhase, and M. Tanaka. 2005. Designing Road Crossings for Safe Wildlife Passage: Ventura County Guidelines. MS Thesis, U.C. Santa Barbara.

Collins, Joseph T. and Travis W. Taggart. 2002. Standard Common and Current Scientific Names for North American Amphibians, Turtles, Reptiles, and Crocodilians, 5th Edition. Publication of The Center for North American Herpetology, Lawrence, Kansas. iv + 44 pp.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi. 100 pp. with Appendices.

HELIX Environmental Planning, Inc. 2019a. 3Roots San Diego Project Habitat Reclamation and Mitigation Plan. Prepared for Mesa Canyon Community Partners. April.

2019b. 3Roots Project Long-Term Habitat Management Plan. Prepared for Mesa Canyon Community Partners. April 24.

2018a. 3Roots Project San Diego Jurisdictional Delineation . Prepared for Mesa Canyon Community Partners. October.

2018b. Acoustical Analysis Study for the 3Roots Project. Prepared for Hanson Aggregates. August 24.

2017. Least Bell's Vireo (Vireo bellii pusillus) Survey Report for the 3Roots San Diego Property. August.

Hogan, C. David, et al. Southern Maritime Chaparral. Fremontia Volume 24, No. 4 (1996). 1-7.

Holland, R.F. 1986. Preliminary descriptions of the terrestrial natural communities of California. State of California, The Resources Agency, 156 pp.

Jackson, L. 1985. Ecological origins of California's Mediterranean grasses. Journal of Biogeography 12: 349-361.

Krawchuk, A., K.W. Larsen, R.D. Weir, H. Davis. 2005. Passage Through a Small Drainage Culvert by Mule Deer *Odocoilus hemionus*, and Other Mammals. Canadian Field-Naturalist 119(2): 296-298.

Latitude 33. 2011. Mira Mesa Community Plan. Prep. for City of San Diego. April.

Lichvar, R.W. and S.M. McColley. 2008. A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States. ERDC/CRREL TR-08-12. Hanover, NH. U.S. Army Engineer Research and Development Center. August.

Oberbauer, T. 2008. Terrestrial Vegetation Communities in San Diego County Based on Holland's Descriptions. Revised from 1996 and 2005. July.

Project Design Consultants. 2018. Priority Development Project Storm Water Quality Management Plan. March

Rebman, J.P. and M.G. Simpson. 2014. Checklist of the Vascular Plants of San Diego County. 5th Edition. San Diego Natural History Museum, San Diego, California. 132 pp.

Reed, D. F., T. N. Woodward, and T. M. Pojar. 1975. Behavioral response of Mule deer to a highway underpass. Journal of Wildlife Management 39: 361-367.

Riley, D.T. 2005. Ordinary High Water Mark Identification. RGL No. 05-05. December 5. 4 pp.

San Diego, City of. 2017. Final Vernal Pool Habitat Conservation Plan. Prepared by City of San Diego. October.

2012. City of San Diego Municipal Code, Land Development Code, Biology Guidelines. Amended. April 23.

1997a. Multiple Species Conservation Program. City of San Diego MSCP Subarea Plan. March.

1997b. Implementing Agreement by and between USFWS, CDFW, and City of San Diego. To Establish a Multiple Species Conservation Program "MSCP" for the Conservation of Threatened, Endangered, and other Species in the Vicinity of San Diego, California. July.

San Diego, County of. 1998. Final Multiple Species Conservation Program. MSCP Plan August.

San Diego Geographic Information Source. 2017. Conserved Lands. Retrieved from: http://www.sangis.org/download/available.html. January 2018.

SWA. 2019. Landscape Plans for the 3Roots Project.

T&B Planning Consultants, Inc. and Fenton Western Properties. 1994. Fenton Properties Carroll Canyon Master Plan, An Amendment to the Mira Mesa Community Plan. December 6.

U.S. Army Corps of Engineers. 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). Eds. J.S. Wakely, R.W. Lichvar, and C.V. NRNT-01oble. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

U.S. Department of Agriculture. 2016. Web Soil Survey. Natural Resources Conservation Service. Retrieved from: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm.

U.S. Fish and Wildlife Service. 2017. Occurrence Information for Multiple Species within Jurisdiction of the Carlsbad Fish and Wildlife Office. Carlsbad Fish and Wildlife Office. Retrieved from: http://www.fws.gov/carlsbad/gis/cfwogis.html. June 29.

Appendix A

Least Bell's Vireo Focused Survey Report

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
Suite 200
La Mesa, CA 91942
619.462.1515 **tel**
619.462.0552 **fax**
www.**helixepi**.com

August 7, 2017 HAW-34

Ms. Stacey Love
U.S. Fish and Wildlife Service
2177 Salk Ave., Suite 250
Carlsbad, CA 92008

Subject: 2017 Least Bell's Vireo (*Vireo bellii pusillis*) Survey Report for the 3Roots San Diego Property

Dear Ms. Love:

This letter presents the results of a U.S. Fish and Wildlife Service (USFWS) protocol presence/absence survey for the least Bell's vireo (*Vireo bellii pusillus*; LBVI) conducted by HELIX Environmental Planning, Inc. (HELIX) for the 3Roots San Diego Property (property). This letter describes the survey methods and results and is being submitted to the USFWS in accordance with protocol survey guidelines.

PROJECT LOCATION

The approximately 412.9-acre property is located north of Trade Street and Miramar Road, south of Flanders Drive and Mira Mesa Boulevard, east of Camino Santa Fe, and west of Parkdale Avenue, in the City of San Diego, California ("Property"), owned by Hanson Aggregates Pacific Southwest, Inc ("HAPS"; Figure 1). The property is located in Section 35 of Township 14 South, Range 3 West; and Sections 1, 2, 3, and 11 of Township 15 South, Range 3 West on the Del Mar U.S. Geological Survey 7.5-minute quadrangle map (Figure 2). An aerial of the property is shown in Figure 3.

METHODS

The survey consisted of eight site visits conducted by qualified HELIX biologists Amy Mattson and Summer Schlageter between April 21 and July 6, 2017 (Table 1), in accordance with the current USFWS survey protocol (2001). The surveys were conducted by walking along the edges of, as well as within, potential LBVI habitat in the survey area while listening for LBVI and viewing birds with the aid of binoculars. The survey route was arranged to ensure complete

survey coverage of habitat with potential for occupancy by LBVI. The survey area consisted of approximately 12.7 acres of suitable LBVI habitat within the property, consisting of southern riparian woodland (including disturbed) and southern willow scrub (including disturbed; Figure 4). Suitable habitat for LBVI is present within two forked drainages located on the property.

Table 1
SURVEY INFORMATION

Site Visit	Survey Date	Biologist(s)	Start/Stop Time	Approx. Acres Surveyed/Acres per Hour	Stop/Stop Weather Conditions	Survey Results	
						Least Bell's Vireo	Brown-headed cowbird*
1	4/21/17	Amy Mattson	0745/1100	12.7 ac/ 3.9 ac per hr	67ºF, wind 0-1 mph, 0% clouds 79ºF, wind 0-3 mph, 0% clouds	No LBVI detected	0
2	5/1/17	Amy Mattson	0730/0945	12.7 ac/ 5.6 ac per hr	61ºF, wind 0 mph, 0% clouds 78ºF, wind 0-1 mph, 0% clouds	No LBVI detected	0
3	5/11/17	Amy Mattson	0715/1040	12.7 ac/ 3.5 ac per hr	61°F, wind 0-1 mph, 65% clouds 67°F, wind 0-2 mph, 35% clouds	No LBVI detected	0
4	5/22/17	Summer Schlageter	0635/1026	12.7 ac/ 3.3 ac per hr	63°F, wind 1-2 mph, 100% clouds 69°F, wind 0-1 mph, 0% clouds	No LBVI detected	0
5	6/2/17	Amy Mattson	0700/1036	12.7 ac/ 3.5 ac per hr	64°F, wind 0 mph, 100% clouds 70°F, wind 0-1 mph, 5% clouds	• Two single LBVI heard singing approximately 900 and 1,500 feet downstream of the eastern edge of property; sex and breeding status unknown.	0
6	6/13/17	Amy Mattson	0728/1055	12.7 ac/ 3.7 ac per hr	64°F, wind 0-1 mph, 0% clouds 73°F, wind 0-2mph, 0% clouds	No LBVI detected	0
7	6/23/17	Amy Mattson	0710/1100	12.7 ac/ 3.3 ac per hr	67°F, wind 0-1 mph, 100% clouds 72°F, wind 0-1 mph, 95% clouds	No LBVI detected	0
8	7/6/17	Amy Mattson	0740/1100	12.7 ac/ 3.8 ac per hr	68°F, wind 0 mph, 2% clouds 82°F, wind 0-2 mph, 0% clouds	No LBVI detected	0

*Number of brown-headed cowbird (*Molothrus ater*) detected during survey

SURVEY RESULTS

Two LBVI individuals were observed or detected at two separate locations within the property during the 2017 surveys (Figure 4). These LBVI were heard singing approximately 900 and 1,500 feet downstream of the eastern edge of property. The sex and breeding status of the vireo was not determined. The LBVI was not detected during any other surveys. No LBVI nesting behavior was observed within the property during any of the surveys, and the individuals were likely transient individuals. The brown-headed cowbird (*Molothrus ater*), a nest parasite of the LBVI, was not detected during the surveys.

CERTIFICATION

I certify that the information in this survey report and attached exhibits fully and accurately represent my work. Please contact me at (619) 462-1515 should you have any questions.

Sincerely,

Amy Mattson
Biologist

Enclosures:
Figure 1 Regional Location
Figure 2 Project Location (USGS Topography)
Figure 3 Project Location (Aerial Photograph)
Figure 4 2017 Least Bell's Vireo Survey Results

REFERENCES

U.S. Fish and Wildlife Service (USFWS). 2001. Least Bell's Vireo Survey Guidelines. January 19.

I:\PROJECTS\H\HAW\HAW-34_Cantera\Map\LBV\Fig1_Regional.mxd HAW-34 05/05/17-CL

Regional Location

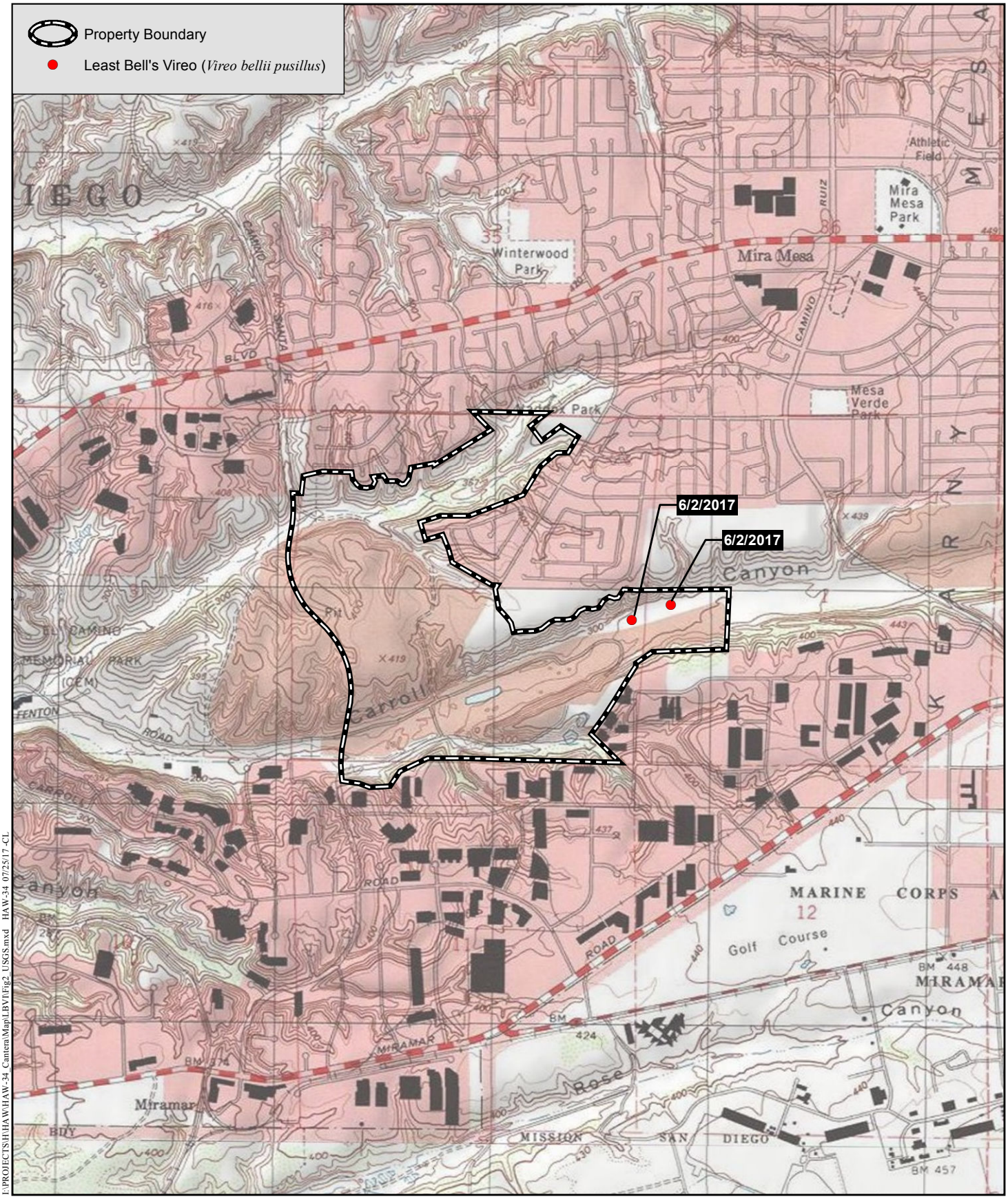
3ROOTS SAN DIEGO

HELIX Environmental Planning

N

0 8 Miles

Figure 1



L:\PROJECTS\H\HAW\HAW-34_Cantera\Map\LBVI\Fig2_USGS.mxd HAW-34 07/25/17 -CL

Project Location (USGS Topography)

3ROOTS SAN DIEGO

HELIX Environmental Planning

N 0 2,000 Feet

Figure 2

I:\PROJECTS\H\HAW\HAW-34_Cantera\Map\LBV\Fig3_Aerial.mxd HAW-34 07/25/17 CL

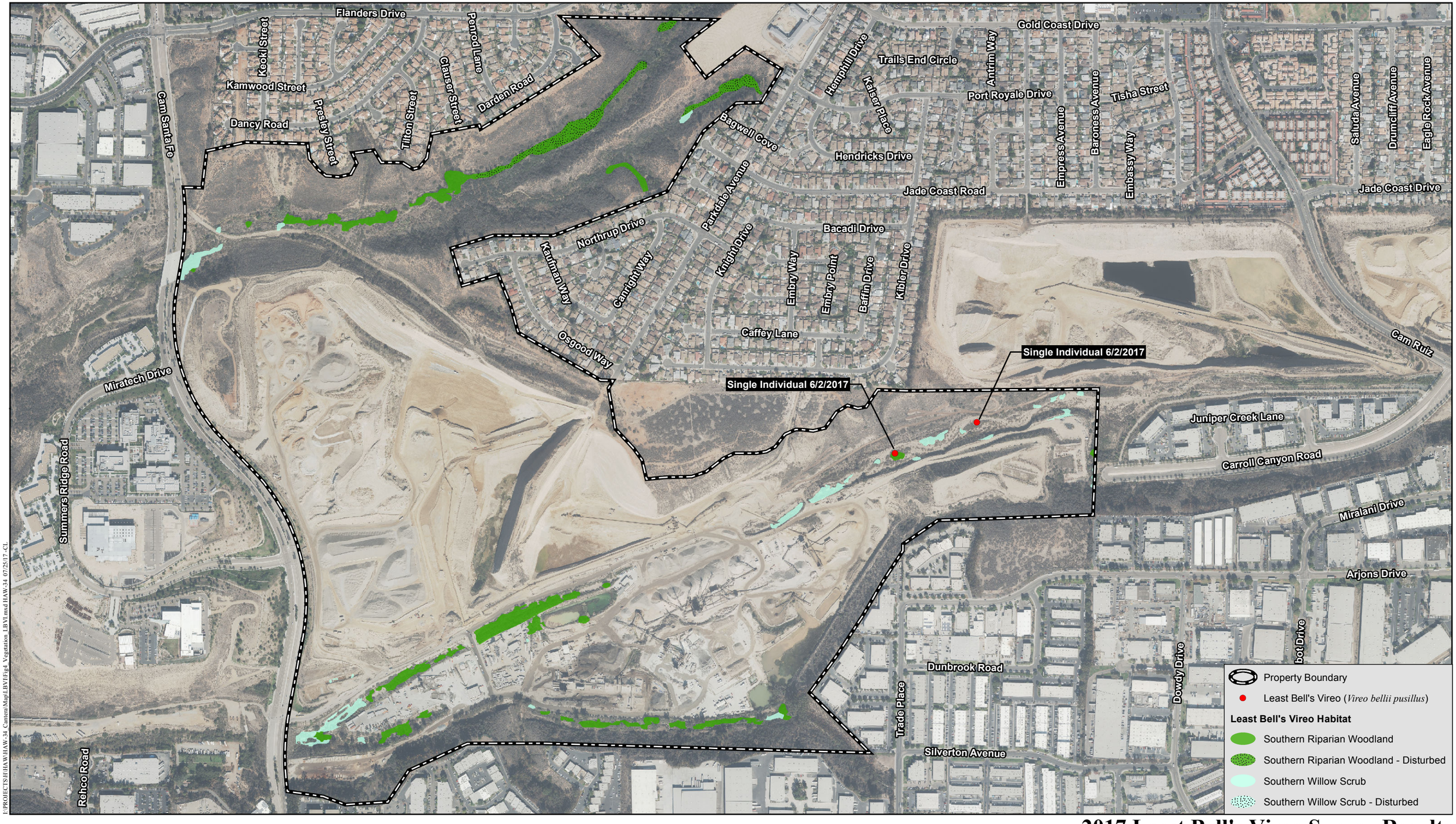
Project Location (Aerial Photograph)

3ROOTS SAN DIEGO

HELIX Environmental Planning

N 0 2,000 Feet

Figure 3



I:\PROJECTS\H\HAW\HAW-34 Canter\Map\.BVI\Fig4_Vegetation_LBVI.mxd HAW-34 07/25/17 -CL

2017 Least Bell's Vireo Survey Results

3ROOTS SAN DIEGO

HELIX Environmental Planning

0 650 Feet

Figure 4

Appendix B

Species Observed

Appendix B
Species Observed

Family	Scientific Name	Common Name	Habitat[1]
Plants–Lycophytes			
Selaginellaceae	*Selaginella cinerascens*†	ashy spike-moss	DCSS, CC, DH
Plants–Leptosporangiate Ferns			
Pteridaceae	*Pentagramma triangularis*	silverback fern	CLOW, SMC
Plants–Dicots			
Aizoaceae	*Carpobrotus edulis**	hottentot-fig	SRW, DCSS, DH
	*Mesembryanthemum crystallinum**	crystalline iceplant	DH
	*Mesembryanthemum nodiflorum**	slender-leaved iceplant	DH
Anacardiaceae	*Malosma laurina*	laurel sumac	SMC, CC
	Rhus integrifolia	lemonadeberry	DCSS, SMC, CC, NNV
	*Schinus molle**	Peruvian pepper tree	DCSS, EW
	Toxicodendron diversilobum	poison oak	SRW, SWS, MFS, DCSS, SMC, EW
Apiaceae	*Daucus pusillus*	rattlesnake weed	SRW, DCSS, SMC
	*Foeniculum vulgare**	fennel	SRW, SWS, DCSS, EW, DH
	Sanicula arguta	sharp-tooth sanicle	SMC
Apocynaceae	*Nerium oleander**	oleander	DCSS, SMC
Asteraceae	*Acourtia microcephala*	sacapellote	SMC
	Ambrosia psilostachya	western ragweed	SRW, DH
	Artemisia californica	California sagebrush	DCSS, SMC
	Artemisia palmeri†	San Diego sagewort	MFS, DCSS, SMC, NNG, DH
	Baccharis pilularis	coyote brush	SWS, SMC
	Baccharis salicifolia	mule fat	SRW, SWS, MFS, DCSS, BS, EW
	Baccharis sarothroides	broom baccharis	SRW, SWS, MFS, DCSS, BS, DH
	Bahiopsis laciniata†	San Diego sunflower	DCSS, SMC
	Brickellia californica	brickelbrush	DCSS, MFS
	*Carduus pycnocephalus**	Italian thistle	SRW, SWS, DCSS, EW, NNV
	*Centaurea melitensis**	tocalote	DCSS, DH
	Chaenactis artemisiifolia	artemisia pincushion	CC
	Chaenactis glabriuscula var. *glabriuscula*	yellow pinchusion	DCSS, CC
	Corethrogyne filaginifolia	sand aster	DCSS
	*Cotula coronopifolia**	common brass buttons	SRW, DCSS
	*Cynara cardunculus**	artichoke thistle	SRW, DH
	Deinandra fasciculata	fascicled tarplant	DCSS, CC, DH
	*Dittrichia graveolens**	stinkwort	SRW, DCSS, DH
	Encelia californica	California encelia	DCSS

Appendix B (cont.)
Species Observed

Family	Scientific Name	Common Name	Habitat[1]
Plants–Dicots (cont.)			
Asteraceae (cont.)	*Erigeron canadensis*	horseweed	SRW, EW
	Eriophyllum confertiflorum	golden-yarrow	DCSS, SMC, CC
	*Gazania linearis**	treasure flower	DCSS, EW, DH
	*Glebionis coronaria**	garland daisy	BS, DH
	Hazardia squarrosa var. *grindelioides*	saw-toothed goldenbush	DCSS, SMC
	*Hedypnois cretica**	Crete hedypnois	DCSS, DH
	*Helminthotheca echioides**	bristly ox-tongue	SRW, MFS, DH
	Heterotheca grandiflora	telegraph weed	DH
	*Hypochaeris glabra**	smooth cat's ear	DCSS, SMC, EW, DH
	Isocoma menziesii	goldenbush	SWS, DCSS
	Iva hayesiana†	San Diego marsh-elder	SRW, DCSS, MFS, SWS, Streambed
	*Lactuca serriola**	wild lettuce	DH, SMC
	Layia platyglossa	tidy-tips	DCSS
	*Logfia gallica**	narrow-leaf filago	DCSS, DH
	*Matricaria matricarioides**	common pineapple-weed	SRW
	*Osteospermum fruticosum**	African daisy	SRW
	Pentachaeta aurea†	golden daisy	SMC
	Pseudognaphalium biolettii	bicolor cudweed	SRW, DCSS
	Pseudognaphalium luteoalbum*	weedy cudweed	MFS, SMC, DCSS
	*Senecio vulgaris**	common groundsel	SRW
	*Silybum marianum**	milk thistle	DH
	*Sonchus asper**	prickly sow thistle	SRW, DH
	*Sonchus oleraceus**	common sow thistle	SRW, MFS, DCSS, SMC, EW, DH
	Stephanomeria virgata	virgate wreath-plant	DCSS, CC, EW
	Stylocline gnaphaloides	everlasting nest straw	DCSS
	Uropappus lindleyi	silver puffs	DCSS
	Xanthium strumarium	cocklebur	DH
Betulaceae	*Alnus rhombifolia*	white alder	SWS
Bignoniaceae	*Tecoma capensis**	Cape honeysuckle	DCSS, NNV
Boraginaceae	*Amsinckia intermedia*	rancher's fiddleneck	MFS, DCSS, DH
	Cryptantha sp.	cryptantha	DCSS, CC
	Emmenanthe penduliflora	whispering bells	DCSS
	Eriodictyon crassifolium	felt-leaf yerba santa	DCSS, CC
	Eucrypta chrysanthemifolia var. *chrysanthemifolia*	common eucrypta	SMC
	Pectocarya sp.	pectocarya	DCSS
	Phacelia sp.	phacelia	MFS, DCSS
	Pholistoma racemosum	San Diego fiesta flower	SMC

Appendix B (cont.)
Species Observed

Family	Scientific Name	Common Name	Habitat[1]
Plants–Dicots (cont.)			
Brassicaceae	*Brassica nigra**	black mustard	SRW, MFS, DCSS, DH
	*Hirscfeldia incana**	short-pod mustard	DH
	*Lepidium didymum**	wart cress, spine cress	SRW, DCSS
	Lepidium sp.	pepper-grass	DCSS, CC
	*Raphanus sativus**	wild radish	SRW
Cactaceae	*Ferocactus viridescens*†	San Diego barrel cactus	DCSS, SMC, CC, CSCT
	Opuntia littoralis	coastal prickly pear	DCSS, CC
Caprifoliaceae	*Lonicera subspicata*	honeysuckle	SMC
Caryophyllaceae	*Herniaria hirsuta**	Hairy rupturewort	DH
	*Polycarpon tetraphyllum**	four-leaved allseed	DCSS
	*Silene gallica**	common catchfly	SMC, DH
	Spergularia sp.*	sand-spurrey	SRW
Chenopodiaceae	*Atriplex semibaccata**	Australian saltbush	DCSS
	*Chenopodium album**	pigweed	MFS
	*Chenopodium murale**	nettle-leaf goosefoot	MFS
	*Salsola tragus**	Russian thistle	DH
Cistaceae	*Cistus incanus**	hairy rock rose	SMC
	*Cistus monspeliensis**	resinous rockrose	SMC, DH
Convolvulaceae	*Calystegia macrostegia*	morning-glory	DCSS, SMC
	Cuscuta sp.	dodder	MFS
Crassulaceae	*Crassula connata*	pygmy-weed	DCSS, CC
	*Crassula ovata**	jade plant	DCSS, NNV
	Crassula sp.	pygmy-weed	DW
	Dudleya pulverulenta	chalk-lettuce	DCSS, EW
Cucurbitaceae	*Marah macrocarpa*	wild cucumber	SWS, DCSS, SMC, EW
Ericaceae	*Comarostaphylis diversifolia* ssp. *diversifolia*†	summer holly	SMC
	Xylococcus bicolor	mission manzanita	SMC, CC
Euphorbiaceae	*Euphorbia peplus**	petty spurge	SRW, SWS, MFS, DCSS, SMC, EW, DH
	*Ricinus communis**	castor bean	SRW, DCSS, DH
Fabaceae	*Acacia* sp. *	acacia	SRW, SWS, DCSS, NNV, EW
	Acmispon americanus	Spanish-clover	DCSS
	Acmispon glaber	deerweed	SRW, DCSS, CC, EW
	Acmispon micranthus	grab lotus	DCSS
	*Cytisus scoparius**	Scotch broom	SMC
	Lupinus sp.	lupine	DCSS
	*Medicago polymorpha**	burclover	DCSS, DH

Appendix B (cont.)
Species Observed

Family	Scientific Name	Common Name	Habitat[1]
Plants–Dicots (cont.)			
Fabaceae (cont.)	*Melilotus albus**	white sweet clover	MFS
	*Melilotus indicus**	Indian sweet clover	MFS, DCSS, SMC, NNV, DH
	Melilotus sp. *	sweetclover	SRW
Fagaceae	*Quercus agrifolia* var. *agrifolia*	coast live oak	SMC, CLOW
	Quercus dumosa†	Nuttall's scrub oak	SMC
Gentianaceae	*Zeltnera venusta*	canchalagua	DCSS, CC
Geraniaceae	*Erodium botrys**	long-beak filaree	DCSS, DH
	*Erodium cicutarium**	red-stem filaree	DCSS
	*Geranium dissectum**	cut-leaf geranium	EW, DH
Grossulariaceae	*Ribes indecorum*	white flowering currant	SMC
	Ribes speciosum	fuchsia-flowered gooseberry	DCSS, SMC
Lamiaceae	*Marrubium vulgare**	horehound	DCSS
	*Rosmarinus officinalis**	rosemary	NNV
	Salvia apiana	white sage	SMC, EW
	Salvia mellifera	black sage	DCSS, SMC, CC
Lythraceae	*Lythrum hyssopifolia**	grass poly	DW, DCSS
Malvaceae	*Malacothamnus fasciculatus*	chaparral mallow	DCSS
Myrsinaceae	*Anagallis arvensis**	scarlet pimpernel	SRW, DCSS
Myrtaceae	*Callistemon viminalis**	weeping bottlebrush	DCSS
	Eucalyptus sp.*	eucalyptus	SWS, DCSS, SMC, NNV, EW
	Melaleuca sp. *	paperbark	SRW, NNV, EW
Nyctaginaceae	*Mirabilis laevis* ssp. *crassifolia*	wishbone bush	DCSS
Onagraceae	*Camissoniopsis* sp.	sun cup	DCSS
Oxalidaceae	*Oxalis pes-caprae**	Bermuda buttercup	DCSS
Papaveraceae	*Eschscholzia californica*	California poppy	DCSS
Phrymaceae	*Mimulus aurantiacus*	monkey-flower	DCSS, SMC, EW, DH
	Mimulus guttatus	common monkey-flower	DCSS
Plantaginaceae	*Antirrhinum nuttallianum*	Nuttall snapdragon	DCSS, CC, EW
	Plantago erecta	dwarf plantain	DCSS
	*Plantago lanceolata**	English plantain	DCSS
Platanaceae	*Platanus racemosa*	western sycamore	SWS, EW
Polemoniaceae	*Eriastrum sapphirinum*	wool-star	DCSS
	Navarretia hamata	skunkweed	CC
Polygonaceae	*Chorizanthe fimbriata*	fringed spineflower	CC
	Eriogonum fasciculatum	buckwheat	MFS, DCSS, DH
	Lastarriaea coriacea	leather spineflower	CSCT
	Persicaria lapathifolia	willow weed	SRW
	Polygonum aviculare ssp. *depressum**	common knotweed	DW, DCSS

Appendix B (cont.)
Species Observed

Family	Scientific Name	Common Name	Habitat[1]
Plants–Dicots (cont.)			
Polygonaceae (cont.)	*Rumex crispus**	curly dock	MFS
	Rumex sp. *	dock	DCSS
Portulacaceae	*Claytonia perfoliata* ssp. *perfoliata*	miner's lettuce	SMC
	Portulaca sp. *	ornamental purslane	SRW, DCSS
Ranunculaceae	*Clematis pauciflora*	ropevine	SMC
	Thalictrum fendleri var. *polycarpum*	meadow rue	SMC
Rhamnaceae	*Rhamnus crocea*	spiny redberry	SMC
Rosaceae	*Adenostoma fasciculatum*	chamise	SMC, CC
	Cercocarpus betuloides	mountain mahogany	SMC
	Heteromeles arbutifolia	toyon	DCSS, SMC, EW
	Prunus ilicifolia ssp. *ilicifolia*	holly-leafed cherry	SMC
Rubiaceae	*Galium aparine*	goose grass	SMC
	Galium nuttallii ssp. *nuttallii*	San Diego bedstraw	SMC, CC
Rutaceae	*Cneoridium dumosum*	bushrue	DCSS, SMC, CC
Salicaceae	*Salix gooddingii*	Goodding's black willow	SRW, SWS
	Salix lasiolepis	arroyo willow	SRW, SWS, EW
Scrophulariaceae	*Myoporum* laetum*	mousehole tree	NNV
	Scrophularia californica	California bee plant	SMC
Solanaceae	*Datura wrightii*	jimson weed	MFS, DCSS
	*Nicotiana glauca**	tree tobacco	SWS, MFS, DCSS, EW, DH
	Solanum sp.	nightshade	DCSS
Tamaricaceae	*Tamarix ramosissima**	saltcedar	SRW, SWS, DCSS
Tropaeolaceae	*Tropaeolum majus**	nasturtium	SRW
Verbenaceae	*Lantana camara**	lantana	NNV
Plants–Monocots			
Agavaceae	*Chlorogalum parviflorum*	small-flower soap-plant	CC
	*Yucca aloifolia**	aloe yucca	SMC
Arecaceae	*Phoenix canariensis**	Canary Island date palm	DCSS
	*Washingtonia robusta**	Mexican fan palm	SRW, SWS, DCSS, EW
Cyperaceae	*Cyperus eragrostis*	tall flatsedge	SRW
	*Cyperus involucratus**	umbrella plant	EW
	Cyperus sp.	flatsedge	DW, DCSS, EW
	Eleocharis sp.	spike-rush	DW, DCSS
Juncaceae	*Juncus bufonius*	toad rush	DCSS
	Juncus mexicanus	Mexican rush	MFS
Liliaceae	*Calochortus splendens*	lilac mariposa lily	CC

Appendix B (cont.)
Species Observed

Family	Scientific Name	Common Name	Habitat[1]
Plants–Monocots (cont.)			
Poaceae	*Arundo donax**	giant reed	DCSS
	Avena sp. *	oats	MFS, DCSS, SMC, DH
	Bothriochloa barbinodis	cane beardgrass	DCSS
	*Brachypodium distachyon**	purple false brome	SRW, MFS, DCSS
	*Bromus diandrus**	common ripgut grass	SRW, MFS, DCSS, SMC, EW, DH
	*Bromus hordeaceus**	soft brome	DCSS
	*Bromus madritensis**	foxtail chess	MFS, DCSS, CC, EW, DH
	*Cortaderia selloana**	white Pampas grass	SRW, SWS, DCSS, BS, EW, NNV
	*Cynodon dactylon**	Bermuda grass	DW, DCSS
	*Festuca myuros**	fescue	DCSS, SMC, EW, DH
	*Festuca perennis**	Italian ryegrass	SRW, DW, MFS, DCSS, SMC
	*Lamarckia aurea**	goldentop	DCSS, CC, EW
	*Melinis repens**	Natal grass	MFS, DCSS, CC
	*Paspalum dilatatum**	dallis grass	SRW
	*Pennisetum setaceum**	purple fountain grass	SRW, DCSS, NNV
	Phalaris sp.*	canary grass	MFS
	Poa sp.	blue grass	EW
	*Polypogon monspeliensis**	annual beardgrass	MFS, DW, DCSS
	*Schismus barbatus**	Mediterranean schismus	DCSS, EW
	*Stipa miliacea**	smilo grass	SWS, DCSS, NNV, EW, DH
	Stipa pulchra	purple needlegrass	DCSS, CC
Themidaceae	*Bloomeria crocea* var. *crocea*	golden star	DCSS, SMC
	Dichelostemma capitatum	blue dicks	DCSS

[1]Habitats: AQ=active quarry; BS=baccharis scrub (includes disturbed phase); CC=chamise chaparral; CLOW=coast live oak woodland; CSCT=coastal sage-chaparral transition; DEV=developed; DCSS-Diegan coastal sage scrub (includes disturbed phase); DH=disturbed habitat; DW=disturbed wetland; EW=Eucalyptus woodland (including sparse phase); IP=industrial pond; MFS=mule fat scrub (including disturbed and sparse phases); NNG=non-native grassland; NNV=non-native vegetation; SMC=southern mixed chaparral; SRW=southern riparian woodland (including disturbed phase); SWS=southern willow scrub (including disturbed phase); Streambed.

*Non-native species

† Sensitive species

Appendix B (cont.)
Species Observed

Order	Family	Species Name	Common Name
ANIMALS–INVERTEBRATES			
Coleoptera	Tenebrionidae	unidentified	darkling beetle
Diptera	Tipulidae	--	crane fly
Hemiptera	--	--	unidentified cicada
Hymenoptera	Apidae	*Apis mellifera*	honeybee
		Bombus sp.	bumblebee
Lepidoptera	Hesperiidae	*Erynnis funeralis*	funereal duskywing
	Nymphalidae	*Junonia coenia*	common buckeye
		Limenitis lorquini	Lorquin's admiral
		Nymphalis antiopa	mourning cloak
		Vanessa cardui	painted lady
	Papilionidae	*Papilio rutulus*	western tiger swallowtail
		Papilio zelicaon	anise swallowtail
	Pieridae	*Anthocharis sara*	Sara orangetip
		--	unidentified sulphur
		Nathalis iole	dainty sulphur
		Pontia protodice	checkered white
	Riodinidae	*Apodemia mormo virgulti*	Behr's metalmark
	Sphingidae	--	sphinx moth
	--	--	unidentified blue butterfly
Metastigmata [Ixodida]	--	--	unidentified tick
Odonata	--	--	unidentified damselfly
ANIMALS–VERTEBRATES			
Fish			
--	--	--	unidentified fish
Reptiles			
Squamata	Crotalidae	*Crotalus oreganus*	western rattlesnake (molt)
		Crotalus oreganus	western rattlesnake (molt)
	Phrynosomatidae	*Sceloporus occidentalis*	western fence lizard
	Phrynosomatidae	*Sceloporus orcutti*	granite spiny lizard
	Teiidae	*Aspidoscelis hyperythra*†	orange-throated whiptail
		Aspidoscelis sp.	unidentified whiptail
Birds			
Accipitriformes	Accipitridae	*Accipiter cooperii*†	Cooper's hawk
		Buteo jamaicensis	red-tailed hawk
		Buteo lineatus	red-shouldered hawk
Apodiformes	Trochilidae	*Calypte anna*	Anna's hummingbird
Charadriiformes	Charadriidae	*Charadrius vociferus*	killdeer
	Laridae	--	unidentified gull
Columbiformes	Columbidae	*Zenaida macroura*	mourning dove
Falconiformes	Falconidae	*Falco sparverius*	American kestrel
Galliformes	Odontophoridae	*Callipepla californica*	California quail

Appendix B (cont.)
Species Observed

Order	Family	Species Name	Common Name
ANIMALS–VERTEBRATES (cont.)			
Birds (cont.)			
Passeriformes	Aegithalidae	*Psaltriparus minimus*	bushtit
	Corvidae	*Aphelocoma californica*	California scrub-jay (formerly western scrub-jay, coastal)
		Corvus brachyrhynchos	American crow
		Corvus corax	common raven
	Emberizidae	--	unidentified sparrow
	Fringillidae	*Spinus psaltria*	lesser goldfinch
		Haemorhous mexicanus	house finch
	Hirundinidae	--	unidentified swallow
	Icteridae	*Icterus cucullatus*	hooded oriole
		Molothrus ater	brown-headed cowbird
	Mimidae	*Toxostoma redivivum*	California thrasher
	Parulidae	*Geothlypis trichas*	common yellowthroat
		Oreothlypis celata	orange-crowned warbler
	Passerellidae	*Melospiza melodia*	song sparrow
	Passerellidae	*Melozone crissalis*	California towhee
		Pipilo maculatus	spotted towhee
	Polioptilidae	*Polioptila californica californica*†	coastal California gnatcatcher
	Sturnidae	*Sturnus vulgaris*	European starling
	Sylviidae	*Chamaea fasciata*	wrentit
	Troglodytidae	*Thryomanes bewickii*	Bewick's wren
	Tyrannidae	*Myiarchus cinerascens*	ash-throated flycatcher
		Sayornis nigricans	black phoebe
		Sayornis saya	Say's phoebe
		Tyrannus sp.	kingbird
		Tyrannus vociferans	Cassin's kingbird
	Vireonidae	*Vireo bellii pusillus*†	least Bell's vireo
Pelecaniformes	Ardeidae	*Ardea herodias*†	great blue heron
Piciformes	Picidae	*Picoides nuttallii*	Nuttall's woodpecker
Podicipediformes	Podicipedidae	*Podilymbus podiceps*	pied-billed grebe
Mammals			
Artiodactyla	Caervidae	*Odocoileus hemionus*	mule deer
Carnivora	Canidae	*Canis latrans*	coyote
	Procyonidae	*Procyon lotor*	raccoon (tracks)
Lagomorpha	Leporidae	*Sylvilagus audubonii*	desert cottontail
Rodentia	Cricetidae	*Neotoma lepida*	desert woodrat (nest)
	Sciuridae	*Spermophilus beecheyi*	California ground squirrel

† Sensitive species

Appendix C

Sensitive Species with Potential to Occur

Appendix C
Sensitive Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habit, Ecology and Life History	Potential to Occur[3]
PLANTS				
Acanthomintha ilicifolia	San Diego thorn-mint	FT/SE CRPR 1B.1 MSCP Covered Narrow Endemic	Small herb. Occurs on clay soils near vernal pools and in grassy openings in coastal sage scrub and chaparral. Flowering period Apr – Jun.	**Low.** Suitable habitat does not occur on the site. The small patch of clay soil on site occurs within the active quarry. Species would have been detected during surveys if present. Nearest recorded occurrences approximately 1.8 miles to the north.
Agave shawii	Shaw's agave	--/-- CRPR 2B.1 MSCP Covered Narrow Endemic	Conspicuous leaf succulent. Occurs in coastal bluff scrub and coastal sage scrub. Flowering period Sep – May.	**Low.** Would have been observed during surveys if present. Nearest accessioned collections is over 4.5 miles to the northwest.
Ambrosia pumila	San Diego ambrosia	FE/-- CRPR 1B.1 MSCP Covered Narrow Endemic	Small herb. Occurs on sandy loan and clay soils. Found in chaparral, coastal scrub, vernal pools, grasslands, valley bottoms and dry drainages, also can occur on slopes and in disturbed places. Flowering period Apr – Oct.	**Low.** Suitable habitat is present on the site. This perennial herb would have been detected during surveys if present. Nearest recorded occurrences approximately 1.8 miles to the north.
Aphanisma blitoides	aphanisma	--/-- CRPR 1B.2 MSCP Covered Narrow Endemic	Small herb. Occurs in coastal bluff scrub, coastal dunes, and sandy coastal scrub. Flowering period Mar – Jun.	**None.** The project site is not at the coast and does not include suitable sandy coastal habitat.
Astragalus tener var. *titi*	coastal dunes milk-vetch	FE/SE CRPR 1B.1 MSCP Covered Narrow Endemic	Medium herb. Occurs in coastal dunes and sandy places along the coast. Flowering period Mar – May.	**None.** The project site is not at the coast and does not include suitable sandy coastal habitat.

Appendix C (cont.)
Sensitive Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habit, Ecology and Life History	Potential to Occur[3]
PLANTS (cont.)				
Baccharis vanessae	Encinitas baccharis	FT/SE CRPR 1B.1 MSCP Covered Narrow Endemic	Large shrub. Occurs in post-fire and mature but relatively low-growing chaparral. Also found in southern maritime and southern mixed chaparrals. Flowering period Aug – Nov.	**None.** Perennial shrub species and would have been observed during surveys if present. Nearest recorded occurrences approximately 2.4 miles to the northeast.
Cylindropuntia californica var. *californica*	snake cholla	--/-- CRPR 1B.1 MSCP Covered	Conspicuous stem succulent. Occurs in chaparral and Diegan coastal sage scrub. Flowering period Apr – Jul.	**Very Low.** Would have been observed during surveys if present. Nearest recorded observation approximately 3.4 miles to the west.
Deinandra conjugens	Otay tarplant	FT/SE CRPR 1B.1 MSCP Covered	Small herb. Occurs in coastal sage scrub and grassland habitats south of the Sweetwater River. Flowering period May – Jun.	**None.** Project site is outside the species' range.
Dudleya brevifolia	short-leaved dudleya	--/SE CRPR 1B.1 MSCP Covered	Small perennial herb. Occurs in open areas and sandstone bluffs in chamise chaparral or Torrey pine forest. Flowering period Apr – May.	**None.** Outside species' range; species known only from Del Mar and La Jolla areas. Nearest recorded occurrences are over 2 miles to the west.
Dudleya variegata	variegated dudleya	--/-- CRPR 1B.2 MSCP Covered Narrow Endemic	Perennial herb. Occurs on clay soils near vernal pools, and on metavolcanic rocky soils in open coastal sage scrub, chaparral, and grasslands. Elevation range 0-3,500 ft. Flowering period Apr – Jun.	**None.** Metavolcanic rocky soils do not occur on the site. The small patch of clay soil on site occurs within the active quarry. Nearest recorded occurrences approximately 3 miles to the northeast and to the south.

Appendix C (cont.)
Sensitive Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habit, Ecology and Life History	Potential to Occur[3]
PLANTS (cont.)				
Eryngium aristulatum var. *parishii*	San Diego button-celery	FE/SE CRPR 1B.1 MSCP Covered Narrow Endemic	Annual or perennial herb. Vernal pools or mima mound areas with vernally moist conditions are preferred habitat. Flowering period Apr – Jun.	**Very Low.** Would have been observed during surveys if present. One basin on manmade stockpile is potential habitat, but given stockpiles origins it is unlikely to be present. Nearest recorded occurrence is directly north of the site within the vernal pool preserve.
Navarretia fossalis	prostrate spreading navarretia	FT/-- CRPR 1B.1 MSCP Covered Narrow Endemic	Small herb. Occurs in vernal pools. Elevation range 200-3,000 ft. Flowering period Apr – Jun.	**Low.** One basin on manmade stockpile is potential habitat, but given stockpiles origins it is unlikely to be present. Species would have been detected during surveys if present. Nearest recorded occurrence is directly north of the site within the vernal pool preserve.
Orcuttia californica	California Orcutt grass	FE/SE CRPR 1B.1 MSCP Covered Narrow Endemic	Small herb. Uncommon plant that occurs within vernal pools. Known from fewer than 20 occurrences. Flowering period Apr – Aug.	**Low.** One basin on manmade stockpile is potential habitat, but given stockpiles origins it is unlikely to be present. Species would have been detected during surveys if present. Nearest recorded occurrence is approximately 1.4 miles to the south in MCAS Miramar.

Appendix C (cont.)
Sensitive Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habit, Ecology and Life History	Potential to Occur[3]
PLANTS (cont.)				
Pogogyne abramsii	San Diego mesa mint	FE/SE CRPR 1B.1 MSCP Covered Narrow Endemic	Small herb. Occurs within vernal pools. Flowering period Mar – Jul.	**Very Low.** Historical recorded occurrence within the Project from 1979, presumed extirpated; however, most of suitable habitat area has been subject to ongoing disturbance in active quarry. One basin on manmade stockpile is potential habitat, but given stockpiles origins it is unlikely to be present. This species would have been observed during surveys if present.
Pogogyne nudiuscula	Otay mesa mint	FE/SE CRPR 1B.1 MSCP Covered	Small herb. Occurs within vernal pools. Flowering period May – Jul.	**None.** Known occurrences occur south of State Route 52 and nearest recorded occurrence is approximately 8.5 miles to the southeast.
Adolphia californica	California adolphia	--/-- CRPR 2B.1	Shrub. Occurs primarily in sage scrub, occasionally in peripheral chaparral habitats. Usually associated with xeric locales where shrub canopy reaches 4 or 5 feet. Flowering period Dec – Apr.	**Very Low.** Conspicuous perennial shrub would have been observed during surveys if present.
Arctostaphylos glandulosa ssp. *crassifolia*	Del Mar manzanita	FE/-- CRPR 1B.1 MSCP Covered	Large shrub. Occurs primarily in relatively open, coastal chaparral. At occasional inland sites, it occurs in denser mixed chaparral vegetation. Flowering period Dec – Feb.	**Very Low.** Conspicuous perennial shrub would have been observed during surveys if present. Nearest recorded occurrence is 1.6 miles to the north.

Appendix C (cont.)
Sensitive Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habit, Ecology and Life History	Potential to Occur[3]
PLANTS (cont.)				
Artemisia palmeri	San Diego sagewort	--/-- CRPR 4.2	Biennial/perennial herb. Occurs along stream courses, often within coastal sage scrub and southern mixed chaparral. Flowering period Jun – Oct.	**Present.** Observed on site during surveys.
Bahiopsis laciniata	San Diego sunflower	--/-- CRPR 4.3	Shrub. Occurs on a variety of soil types in Diegan coastal sage scrub. Generally, shrub cover is more open than at mesic, coastal locales supporting sage scrub. Flowering period Feb – Aug.	**Present.** Observed on site during surveys.
Bloomeria clevelandii	San Diego goldenstar	--/-- CRPR 1B.1 MSCP Covered	Small herb. Occurs on clay soils in grasslands and coastal sage scrub. Elevation range 0-2,000 ft. Flowering period Apr – May.	**Low.** Suitable clay soil area on site is a relatively small and occurs within the active quarry. Species would have been detected during surveys if present.
Brodiaea orcuttii	Orcutt brodiaea	--/-- CRPR 1B.1 MSCP Covered	Small herb. Occurs only on clay soils in vernally moist environments, usually near vernal pools but occasionally near streams. Elevation range 0-5,000 ft. Flowering period May – Jul.	**Low.** Suitable clay soil area on site is relatively small and occurs within the active quarry. Species would have been detected during surveys if present.
Ceanothus verrucosus	wart-stemmed ceanothus	--/-- CRPR 2B.2 MSCP Covered	Large shrub. Occurs in chaparral. Elevation range 0-2,000 ft. Flowering period Jan – Apr.	**Very Low.** Conspicuous shrub would have been observed during surveys if present. Nearest recorded occurrence within a mile to the west.

Appendix C (cont.)
Sensitive Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habit, Ecology and Life History	Potential to Occur[3]
PLANTS (cont.)				
Chorizanthe polygonoides var. *longispina*	long-spined spineflower	--/-- CRPR 1B.2	Small annual. Often on clay lenses largely devoid of shrubs. Occurs in chaparral, coastal scrub, and occasionally seen on vernal pools and montane meadows peripheries near vernal seeps. Flowering period Apr – Jun.	**Low.** Suitable clay soil area on site is relatively small and occurs within the active quarry. Nearest recorded occurrence of this species is directly northeast of the site, which was graded for Salk Elementary. Species would have been detected during surveys if present.
Comarostaphylis diversifolia ssp. *diversifolia*	summer holly	--/-- CRPR 1B.2	Large shrub. Occurs in coastal chaparral. Elevation range 100-2,700 ft. Flowering period Apr – Jun.	**Present.** Observed on site during surveys.
Corethrogyne filaginifolia var. *linifolia*	Del Mar Mesa sand aster	--/-- CRPR 1B.1	Perennial herb. Occurs in sandy and disturbed areas within coastal bluff scrub, coastal scrub, and southern maritime chaparral. Flowering period Jul – Nov.	**None**. No suitable habitat present. Species would have been observed during survey if present. Nearest accessioned collection is nearly 6 miles to the northwest.
Ferocactus viridescens	San Diego barrel cactus	--/-- CRPR 2B.1 MSCP Covered	Conspicuous stem succulent. Occurs in coastal sage scrub, chaparral, and valley grasslands. Elevation range 0-1300 ft. Flowering period May – Jun.	**Present.** Observed on site and within SDGE study area west of Camino Santa Fe during biological surveys.
Geothallus tuberosus	Campbell's liverwort	--/-- CRPR 1B.1	Bryophyte. Occurs in moist coastal scrub habitat and vernal pools.	**Low.** Suitably moist coastal microhabitat present in coastal sage scrub on site. No vernal pools on site. The species would have been observed during surveys if present.

Appendix C (cont.)
Sensitive Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habit, Ecology and Life History	Potential to Occur[3]
PLANTS (cont.)				
Harpagonella palmeri	Palmer's grapplinghook	--/-- CNPS 4.2	Occurs in heavier soils in open grassy areas and open chaparral and sage scrub	**Present**. Observed in the SDGE study area west of Camino Santa Fe.
Isocoma menziesii var. *decumbens*	decumbent goldenbush	--/-- CRPR 1B.2	Low-growing conspicuous shrub. Occurs in disturbed areas of coastal sage scrub and riparian areas. Elevation range 0-1,500 ft. Flowering period Apr – Nov.	**Low.** Suitable habitat on site; however, this perennial shrub would have been observed during surveys if present. Nearest recorded occurrence is approximately 1.6 miles to the southeast, in MCAS Miramar.
Iva hayesiana	San Diego marsh-elder	--/-- CRPR 2B.2	Low-growing, conspicuous shrub. Occurs preferentially in creeks of intermittent streambeds. Typically, the riparian canopy is open, allowing substantial sunlight to reach this marsh-elder. Sandy alluvial embankments with cobbles are frequently utilized. Flowering period Mar – Sept.	**Present.** Observed on site during surveys.
Juncus acutus ssp. *leopoldii*	southwestern spiny rush	--/-- CRPR 4.2	Perennial grasslike herb. Occurs in moist, saline, or alkaline soils in coastal salt marshes and riparian marshes. Flowering period Jun – Aug.	**Low.** Marginal suitable habitat on site; however, this perennial species would have been detected during biological survey if present.

Appendix C (cont.)
Sensitive Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habit, Ecology and Life History	Potential to Occur[3]
PLANTS (cont.)				
Lepidium virginicum var. *robinsonii*	Robinson's pepper-grass	--/-- CRPR 4.3	Annual herb. Occurs in openings in chaparral and sage scrub at the coastal and foothill elevations. Typically observed in relatively dry, exposed locales rather than beneath a shrub canopy or along creeks. Flowering period Jan – Jul.	**Low.** Recorded occurrence from 2008 from a 1/5 mile area overlapping Rattlesnake Canyon in the Project**.** Suitable habitat on site; however, this species would have been detected during the surveys if present.
Leptosyne maritima	sea dahlia	--/-- CRPR 2B.2	Occurs on sandstone cliffs and coastal bluffs. Flowering period Mar – May.	**Present.** Observed on site during surveys along southern edge of the site near patches of non-native vegetation.
Monardella viminea	willowy monardella	FE/SE CRPR 1B.1 MSCP Covered	Perennial herb. Occurs in riparian scrub, usually at sandy locales in seasonally dry washes. Generally, occurs where no canopy cover, and river cobbles may lie in close proximity. Flowering period Jun – Aug.	**High.** Recorded observations from 1987 in Rattlesnake Creek in the Project, possibly extirpated. Suitable habitat on site; however, this species would have been detected during the surveys if present. Species observed off site to the east.
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	--/-- CRPR 1B.1	Annual herb. Occurs in coastal salt marsh, the upper end of tidal inundation areas, and vernal pools. Flowering period Apr – May.	**None.** Species would have been detected during surveys if present.
Pentachaeta aurea	golden-rayed pentachaeta	--/-- CRPR 4.2	Annual herb. Occurs in mesic montane grasslands and sage scrub. Mar – July.	**Present.** Observed on the northeastern portion of the site during surveys.

Appendix C (cont.)
Sensitive Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habit, Ecology and Life History	Potential to Occur[3]
PLANTS (cont.)				
Quercus dumosa	Nuttall's scrub oak	--/-- CRPR 1B.1	Small tree. Occurs in chaparral and coastal sage scrub near the coast. Elevation range 50-6,800 ft. Flowering period Feb – Mar.	**Present.** Observed on site during surveys.
Romneya coulteri	Coulter's matilija poppy	--/-- CRPR 4.2	Large perennial herb. Occurs in dry washes and canyons in chaparral and coastal sage scrub communities, often areas that have been burned. Open or mildly disturbed terrain is sometimes favored, and mature chaparral or sage scrub limits the expansion of this showy member of the poppy family. Flowering period Mar – Jul.	**Present.** A single individual was observed on site during the surveys, on a soil pile within the active quarry.
Selaginella cinerascens	ashy spike-moss	--/-- CRPR 4.1	Pteridophyte. Occurs on flat mesas in coastal sage scrub and chaparral. This species is a good indicator of site degradation, as it rarely inhabits disturbed soils.	**Present.** Observed on site during surveys.
Senecio aphanactis	chaparral ragwort	--/-- CRPR 2B.2	Annual herb. Occurs in foothill woodland, northern coastal scrub, and coastal sage scrub. Flowering period Jan – Apr.	**Low.** Suitable habitat on site; however, the species would have been detected during surveys if present. Nearest recorded occurrence approximately 2 miles to the southeast within MCAS Miramar.

Appendix C (cont.)
Sensitive Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habit, Ecology and Life History	Potential to Occur[3]
PLANTS (cont.)				
Sphaerocarpos drewei	bottle liverwort	--/-- CRPR 1B.1	Bryophyte. Occurs in shady spots in coastal sage scrub, and associated with the rare endemic liverwort, *Geothallus tuberosus*.	**Low.** Suitable habitat on site; however, the species would have been detected during surveys if present. Nearest recorded occurrence approximately 1.6 miles to the southwest.
Stemodia durantifolia	purple stemodia	--/-- CRPR 2B.1	Small herb. Occurs in wet sand along small creeks and seasonal streams. Elevation range 165-5800 ft. Flowering period Jan – Dec.	**Low.** Suitable habitat on site; however, the species would have been detected during surveys if present. Nearest recorded occurrence approximately 2 miles to the southeast within MCAS Miramar.
Texosporium sancti-jacobi	woven-spored lichen	--/-- CRPR 3	Lichen. Occurs on soil, small mammal pellets, dead twigs, and on *Selaginella* spp., in openings in chaparral	**Low.** Suitable habitat on site; however, the species would have been detected during surveys if present. Nearest recorded occurrence approximately 1.7 miles to the west.
ANIMALS				
Invertebrates				
Branchinecta sandiegonensis	San Diego fairy shrimp	FE/-- MSCP Covered	Restricted to vernal pools and seasonal ponds that hold water for several weeks during and after the rainy season.	**None.** No vernal pools or seasonal ponds suitable for this species occur onsite.

Appendix C (cont.)
Sensitive Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habit, Ecology and Life History	Potential to Occur[3]
ANIMALS (cont.)				
Invertebrates (cont.)				
Euphydryas editha quino	Quino checkerspot butterfly	FE/--	Occurs in open stands of sage scrub and chaparral, adjacent open meadows, old foot trails and dirt roads, where low-growing and sparse vegetation. Requires larval host plants - dwarf plaintain (*Plantago erecta*) at lower elevations, woolly plantain (*P. patagonica*) and white snapdragon (*Antirrhinum coulterianum*) at higher elevations. Owl's clover (*Castilleja exserta*) is considered a secondary host plant if primary host plants have senesced.	**Low**. Suitable habitat is present and the known host plants for this species are present on site. However, the Project lies outside of the USFWS recommended survey area and in San Diego county, all recorded occurrences are south of State Route 52, except for several locations near Santee one location near Riverside County.
Amphibians and Reptiles				
Anniella stebbinsi	southern California legless lizard	--/-- SSC	Occurs in moist warm loose soil with plant cover. May be found in coastal sand dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks.	**High.** Suitable habitat is present and Project is within the species' known range of occurrence.
Aspidoscelis hyperthyra	orange-throat whiptail	--/-- WL MSCP Covered	Common in sage scrub and grassland areas in San Diego.	**Present.** Observed on site during surveys.
Aspidoscelis tigris stejnegeri	coastal whiptail	--/-- SSC	Occurs in open coastal sage scrub, chaparral, and woodlands. Frequently found along the edges of dirt roads traversing its habitats. Important habitat components include open, sunny areas, shrub cover with accumulated leaf litter, and an abundance of insects, spiders, or scorpions.	**Present.** Observed on site during surveys.

Appendix C (cont.)
Sensitive Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habit, Ecology and Life History	Potential to Occur[3]
ANIMALS (cont.)				
Amphibians and Reptiles (cont.)				
Crotalus ruber	red-diamond rattlesnake	--/-- SSC	Found in chaparral, coastal sage scrub, along creek banks, particularly among rock outcrops or piles of debris with a supply of burrowing rodents for prey.	**High.** Suitable habitat is present and Project is within the species' known range of occurrence.
Phrynosoma blainvillii	coast horned lizard	--/-- SSC MSCP Covered	Coastal sage scrub and open areas in chaparral, oak woodlands, and coniferous forests with sufficient basking sites, adequate scrub cover, and areas of loose soil; require native ants, especially harvester ants (*Pogonomyrmex* sp.), and are generally excluded from areas invaded by Argentine ants (*Linepithema humile*).	**High.** Suitable habitat is present and Project within the species' known range of occurrence.
Spea hammondii	western spadefoot	--/-- SSC	Occurs in open coastal sage scrub, chaparral, and grassland, along sandy or gravelly washes, floodplains, alluvial fans, or playas; require temporary pools for breeding and friable soils for burrowing; generally excluded from areas with bullfrogs (*Rana catesbiana*) or crayfish (*Procambarus* sp.).	**Moderate.** Suitable habitat is present and Project within the species' known range of occurrence. Nearest recorded occurrences are approximately 1 mile to the south and also to the southeast within MCAS Miramar.
Thamnophis hammondii	two-striped gartersnake	--/-- SSC	Occurs along permanent and intermittent streams bordered by dense riparian vegetation, but occasionally associated with vernal pools or stock ponds.	**High.** Suitable habitat is present and Project within the species' known range of occurrence.

Appendix C (cont.)
Sensitive Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habit, Ecology and Life History	Potential to Occur[3]
ANIMALS (cont.)				
Birds (cont.)				
Accipiter cooperii	Cooper's hawk	--/-- WL MSCP Covered (nesting)	Occurs in oak groves, mature riparian woodlands, and eucalyptus stands or other mature forests.	**Present.** Observed in the northern portion of the site during surveys. No nests or nesting observed.
Agelaius tricolor	tricolored blackbird	--/Candidate E BCC, SSC MSCP Covered (nesting colony)	Occurs in marsh habitat near grasslands, pastures, and agricultural fields.	**None**. No suitable habitat on site.
Aimophila ruficeps canescens	southern California rufous-crowned sparrow	--/-- WL MSCP Covered	Occurs in coastal sage scrub and open chaparral as well as shrubby grasslands.	**High.** Suitable habitat is present and Project within the species' known range of occurrence.
Ammodramus savannarum	grasshopper sparrow	--/-- SSC (nesting)	Occurs in grassland.	**Low.** Limited areas of non-native grassland is present on site.
Campylorhynchus brunneicapillus sandiegensis	coastal cactus wren	--/SSC MSCP Covered	Exclusively found in cactus thickets within coastal sage scrub, grasslands, or chaparral vegetation.	**Low.** Suitable vegetation on site; however, there are no cactus thickets to support this species.
Circus cyaneus	northern harrier	--/-- SSC MSCP Covered (nesting)	Occurs in open grassland and marsh.	**Low.** Limited grasslands and open habitats on site. No suitable nesting habitat on site. Nearest recorded occurrence approximately 24.5 miles to the south.
Elanus leucurus	white-tailed kite	--/-- FP (nesting)	Occurs in riparian woodlands and oak or sycamore groves adjacent to grassland.	**Low.** Suitable riparian areas on site; however, grasslands are limited to small patches. Nesting on site is unlikely, due to the lack of adjacent foraging habitat.

Appendix C (cont.)
Sensitive Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habit, Ecology and Life History	Potential to Occur[3]
ANIMALS (cont.)				
Birds (cont.)				
Polioptila californica californica	coastal California gnatcatcher	FT/-- SSC MSCP Covered	Occurs in coastal sage scrub.	**Present.** Observed in the northern and eastern portions of the site during surveys.
Vireo bellii pusillus	least Bell's vireo	FE/SE MSCP Covered (nesting)	Occurs in riparian thickets, usually willow and cottonwood.	**Present.** Observed on site during focused surveys within suitable habitat of Carroll Canyon Creek. Although nesting was not detected, suitable nesting habitat is present on site.
Setophaga petechia	yellow warbler	--/-- SSC	Occurs in shrubby thickets and woods, particularly along watercourses and in wetlands. Common trees include willows, alders, and cottonwoods across North America and up to about 9,000 feet in the West.	**Moderate.** Suitable riparian habitat present, but limited in size within the project site. Suitable nesting habitat is present on site.
Mammals				
Eumops perotis californicus	western mastiff bat	--/-- SSC	Occurs in chaparral and where coast live oaks are found, also in arid, rocky areas, cliffs, and canyons.	**Moderate.** Suitable chaparral and coast live oak woodland present on site could provide foraging habitat; however, there are no cliffs, canyons, or rock outcrops on site that would provide suitable roosting habitat.

Appendix C (cont.)
Sensitive Species Potential to Occur[1]

Species Name	Common Name	Status[2]	Habit, Ecology and Life History	Potential to Occur[3]
ANIMALS (cont.)				
Mammals (cont.)				
Lasiurus blossevillii	western red bat	--/-- SSC	Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas. Possible association with intact riparian habitat (particularly willows, cottonwoods, oaks, walnuts, and sycamores).	**Moderate.** Suitable habitat present on site associated with Rattlesnake Creek and Carroll Canyon Creek.
Neotoma lepida intermedia	San Diego desert woodrat	--/-- SSC	Occurs in open chaparral and coastal sage scrub, often building large, stick nests in rock outcrops or around clumps of cactus or yucca.	**Present.** Suitable habitat present on site, and woodrat nests were observed during surveys.
Odocoileus hemionus	mule deer	--/-- MSCP Covered	Occurs in coastal sage scrub, riparian and montane forests, chaparral, grasslands, croplands, and open areas if there is at least some scrub cover present. Crepuscular activity and movements are along routes that provide the greatest amount of protective cover.	**Present.** Observed during surveys.

[1]Sensitive species reported within two miles of the project site, except Narrow Endemics which are County-wide.

[2]Listing is as follows: F = Federal; S = State of California; E = Endangered; T = Threatened; R = Rare; BCC = Federal Birds of Conservation Concern; FP = State Fully Protected; SSC = State Species of Special Concern. CRPR = California Rare Plant Rank: 1A – presumed extinct; 1B – rare, threatened, or endangered in California and elsewhere; 2A – presumed extirpated in California but more common elsewhere;
2B – rare, threatened, or endangered in California but more common elsewhere; 3 – more information needed; 4 – watch list for species of limited distribution. Extension codes: .1 – seriously endangered; .
2 – moderately endangered; .3 – not very endangered.

[3]Potential to Occur is assessed as follows. **None**: Species is either sessile (i.e., plants) or so limited to a particular habitat that it cannot disperse on its own, and habitat suitable for its establishment and survival does not occur on the project site; **Not Expected**: Species moves freely and might disperse through or across the project site, but suitable habitat for residence or breeding does not occur on the project site; **Low**: Suitable habitat is present on the project site but of low quality and no sign of the species was observed during surveys, however the species cannot be excluded with certainty; **Presumed Absent:** Habitat suitable for residence and breeding occurs on the project site, however protocol-level focused surveys conducted for the current project were negative; **High**: Suitable habitat occurs on the project site and the species has been recorded recently on or near the project site, but was not observed during surveys for the current project; **Presumed Present**: The species was observed during biological surveys for the current project and is assumed to occupy the project site.

This Page Intentionally Left Blank

Appendix D

Habitat Reclamation and Mitigation Plan

3Roots San Diego Project

Habitat Reclamation and Mitigation Plan

May 2019 | CAH-02.01

Prepared for:

Mesa Canyon Community Partners
16465 Via Esprillo, Suite 150
San Diego, CA 92127

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

3Roots San Diego Project

Habitat Reclamation and Mitigation Plan

Prepared for:

Mesa Canyon Community Partners
16465 Via Esprillo, Suite 150
San Diego, CA 92127

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

May 2019 | CAH-02.01

TABLE OF CONTENTS

Section **Page**

TABLE OF CONTENTS (cont.)

Section **Page**

TABLE OF CONTENTS (cont.)

Section **Page**

TABLE OF CONTENTS (cont.)

LIST OF FIGURES

LIST OF TABLES

ACRONYMS AND ABBREVIATIONS

AA	Assessment Area
BMP	Best Management Practice
Cal-IPC	California Invasive Plant Council
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFGC	California Fish and Game Code
City	City of San Diego
CRAM	California Rapid Assessment Method
CUP	Conditional Use Permit
CWA	Clean Water Act
CWMW	California Wetlands Monitoring Workgroup
ESL	Environmentally Sensitive Lands
Hanson	Hanson Aggregates Pacific Southwest, Inc.
lbs	pounds
MHPA	Multi-habitat Planning Area
MSCP	Multiple Species Conservation Program
NRCS	Natural Resource Conservation Service
P&R	Parks and Recreation
Plan	3Roots Wetland Mitigation Plan
Project	3Roots Project
responsible agencies	CDFW, City, RWQCB, and USACE
RWQCB	Regional Water Quality Control Board
SCH	State Clearing House
SDG&E	San Diego Gas and Electric
U.S.	United States
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
WS	Waters of the State
WUS	Waters of the U.S.

This page intentionally left blank

1.0 INTRODUCTION

The Project site primarily incorporates an approximate 413-acre property that was formerly operated by Hanson Aggregates Pacific Southwest as a quarry for sand and gravel mining and the site is currently undergoing reclamation efforts to return the site to its intended/planned use (i.e., development and open space). The proposed 3Roots Project is one element of a multi-phased plan to convert reclaimed quarry land to a planned mixed-use development in the Mira Mesa neighborhood of San Diego, California. The Project is further described below in Section 2.0.

This Habitat Reclamation and Mitigation Plan (Plan) provides the framework for site Reclamation requirements per the adopted Conditional Use Permit (CUP) 89-0585 Reclamation Plan and the proposed mitigation for the 3Roots Project (3Roots or Project). Such efforts described herein are solely located within the approximate 421.9-acre Project boundary (i.e., 413-acre site plus 8.9-acre off-site areas) and incorporate both upland and wetland habitats.

This Plan is required as part of anticipated requirements for impacts (as a result of CUP site reclamation and the proposed Project) to areas under the jurisdiction of the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), California Department of Fish and Wildlife (CDFW), and City of San Diego (City). The efforts proposed in this Plan are anticipated to fulfill mitigation requirements associated with site reclamation required by CUP 89-0585 and fulfill the proposed Project's obligation of mitigation under the California Environmental Quality Act (CEQA). The mitigation efforts in this Plan consist of both wetland and upland habitats.

This Plan is intended to be used as a guide to create detailed construction plans and specifications (construction documents) for the CUP Reclamation and Project mitigation. The CUP reclamation and Project mitigation proposed are consistent with the requirements of the CUP and goals and objectives of the City's Multiple Species Conservation Program (MSCP) Subarea Plan (City 1997) and is in accordance with the City's Land Development Code, City's Environmentally Sensitive Lands Ordinance, and the 1994 Carroll Canyon Master Plan, as amended (T&B Planning Consultants, Inc. and Fenton Western Properties [T&B] 1994).

In addition to on-site preservation of extant native upland and wetland habitats, CUP Reclamation and Project mitigation at the site will be achieved through the re-establishment, restoration and enhancement of both upland habitat and wetland habitat in places of disturbed habitat, and in areas that were disturbed by the quarry activity. Upland habitat restoration will occur along the periphery of the proposed Project development footprint and the periphery of Carroll Canyon Creek. The wetland habitat re-establishment and restoration will occur in the central and western portions of the site associated with Carroll Canyon Creek. Wetland enhancement will occur in a downstream section of Rattlesnake Creek within upland areas immediately alongside the creek identified supporting a high concentration of non-native species. Implementation of the plan will thus satisfy the measures established by the CUP Reclamation for the purpose of mitigating quarry impacts. Though mitigation requirements were not quantified by environmental documents associated with CUP 89-0585, all areas pf proposed upland revegetation and wetland re-establishment or enhancement have been quantified in this plan for the purposes of documentation and future maintenance, monitoring, and management.

Furthermore, this plan will guide the implementation of proposed mitigation required for CUP Reclamation and 3Roots Project impacts to USACE, RWQCB, CDFW jurisdictional areas. These mitigation areas exist adjacent to, but are not included in the acreage of wetland mitigation described above. City

wetlands were not defined at the time of CUP 89-0585, therefore impacts and associated mitigation for City jurisdictional resources have been quantified only for the 3Roots Project.

It is anticipated that the ecological value of the wetland habitat provided by the CUP Reclamation and Project mitigation will be buffered by the installation of the upland habitat restoration proposed (i.e., generally minimum 50-foot-wide wetland buffer) along the periphery of Carroll Canyon Creek, which would be revegetated with native upland vegetation. The proposed CUP Reclamation and Project mitigation habitats are expected to approach the function and services of early successional habitat within five years following installation.

1.1 PROJECT LOCATION

The Project is located in the south-central portion of the Mira Mesa Community Plan area, in the City of San Diego, California (Figure 1). Specifically, the Project site is located north of Trade Street and Miramar Road, south of Flanders Drive and Mira Mesa Boulevard, east of Camino Santa Fe, and west of Parkdale Avenue. The Project is located in Section 35 of Township 14 South, Range 3 West; and Sections 1, 2, 3, and 11 of Township 15 South, Range 3 West on the Del Mar U.S. Geological Survey 7.5-minute quadrangle map (Figure 2). The Project site occupies San Diego County Assessor Parcel Numbers (APNs) 341-050-380, 341-050-400, 341-050-410, 341-050-420, 341-051-170, 341-051-180, and 341-060-820. Off-site areas within the Project boundary include APNs 341-040-400, 341-050-430, 341-470-100, 341-470-110, 341-480-050, 341-480-060, and 343-052-050. An aerial of the Project boundary is shown in Figure 3a.

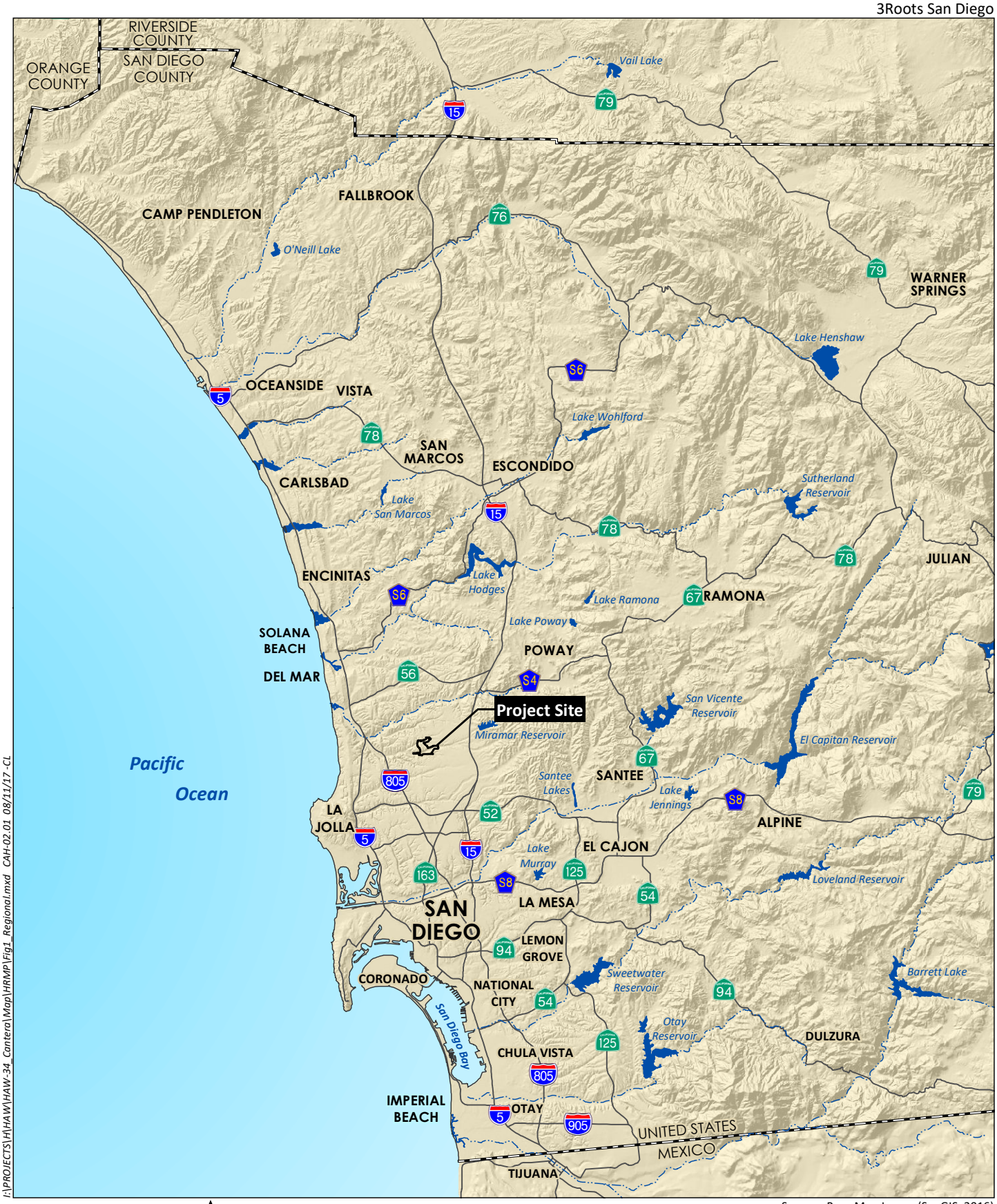
1.2 SITE HISTORY

Initial mining operations on the site occurred in 1958 and under County of San Diego CUP P57-22. The most recent mining operations were authorized by the City under CUP 89-0585 approved on September 13, 1990. In conjunction with CUP approval, the City adopted a Reclamation Plan for the site and certified a Supplemental Environmental Impact Report (DEP No. 89-0585/SCH No. 85121814), which included mitigation measures and reclamation requirements for upland and wetlands for the authorized mining operations. In 2016, the mining operation ceased but reclamation authorized by the CUP has continued and is currently on-going.

2.0 DESCRIPTION OF CUP RECLAMATION AND PROPOSED PROJECT

Site reclamation in accordance with CUP 89-0585 requires permanent designation of approximately 182 acres of open space, site re-grading for future development use, and site re-grading for native habitat revegetation and re-establishment, including Carroll Canyon Creek. All work within Carroll Canyon Creek is required to obtain wetland permits from USACE, CDFW, and RWQCB prior to initiating impacts or mitigation measures.

Site reclamation is currently an on-going activity and involves the rehabilitation of the site by excavating, removing undocumented fill areas, and backfilling and re-contouring mined areas to create a suitable condition for the intended/planned development and open space. Reclamation may include but is not limited to: grading and compacting building pads; grading and compacting planned development areas



I:\PROJECTS\H\HAW\HAW-34_Cantera\Map\HRMP\Fig1_Regional.mxd CAH-02.01 08/11/17 -CL

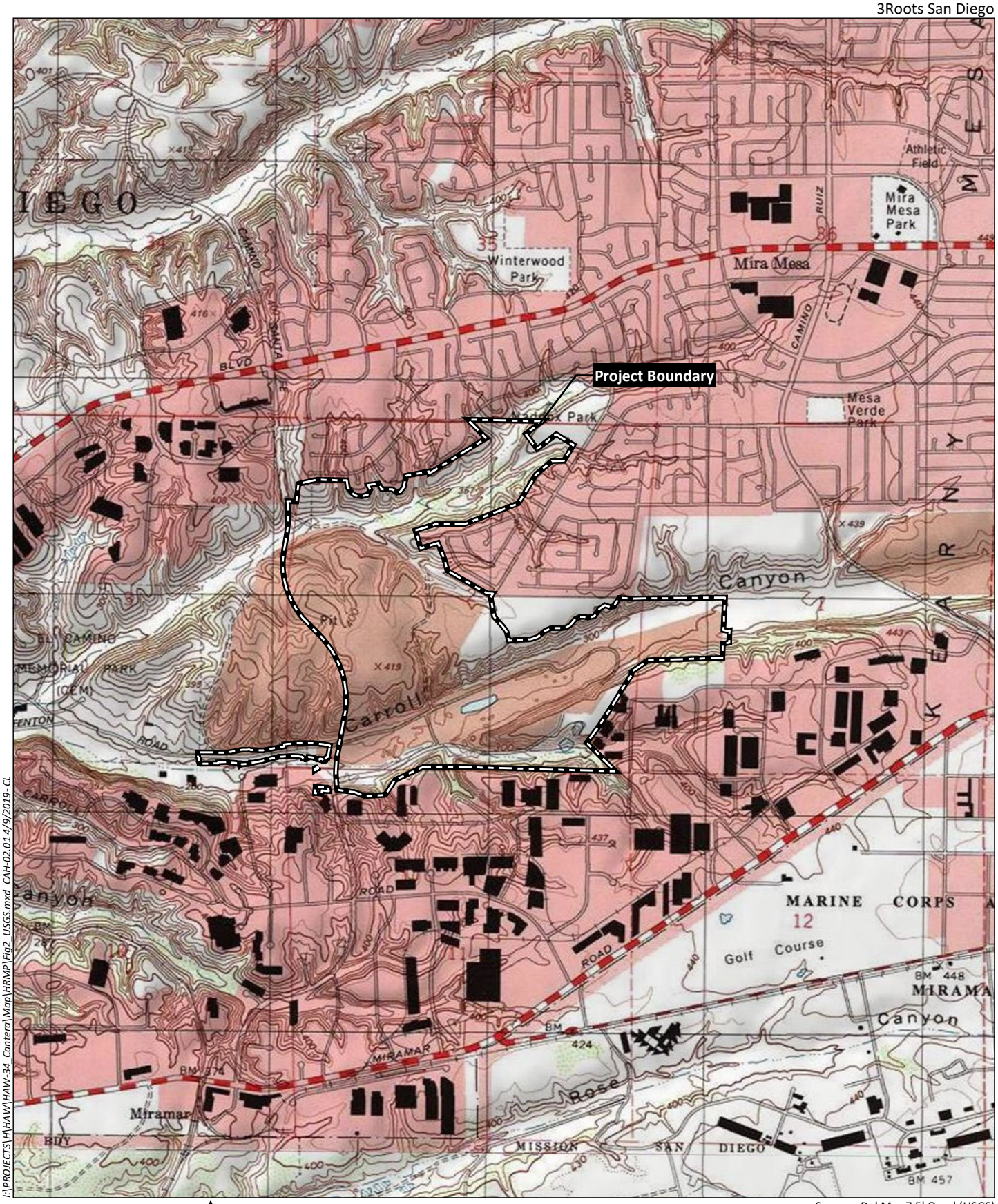
0 8 Miles

Source: Base Map Layers (SanGIS, 2016)

HELIX Environmental Planning

Regional Location

Figure 1



I:\PROJECTS\H\HAW\HAW-34 Cantera\Map\HRMP\Fig2_USGS.mxd CAH-02.01 4/9/2019 - CL

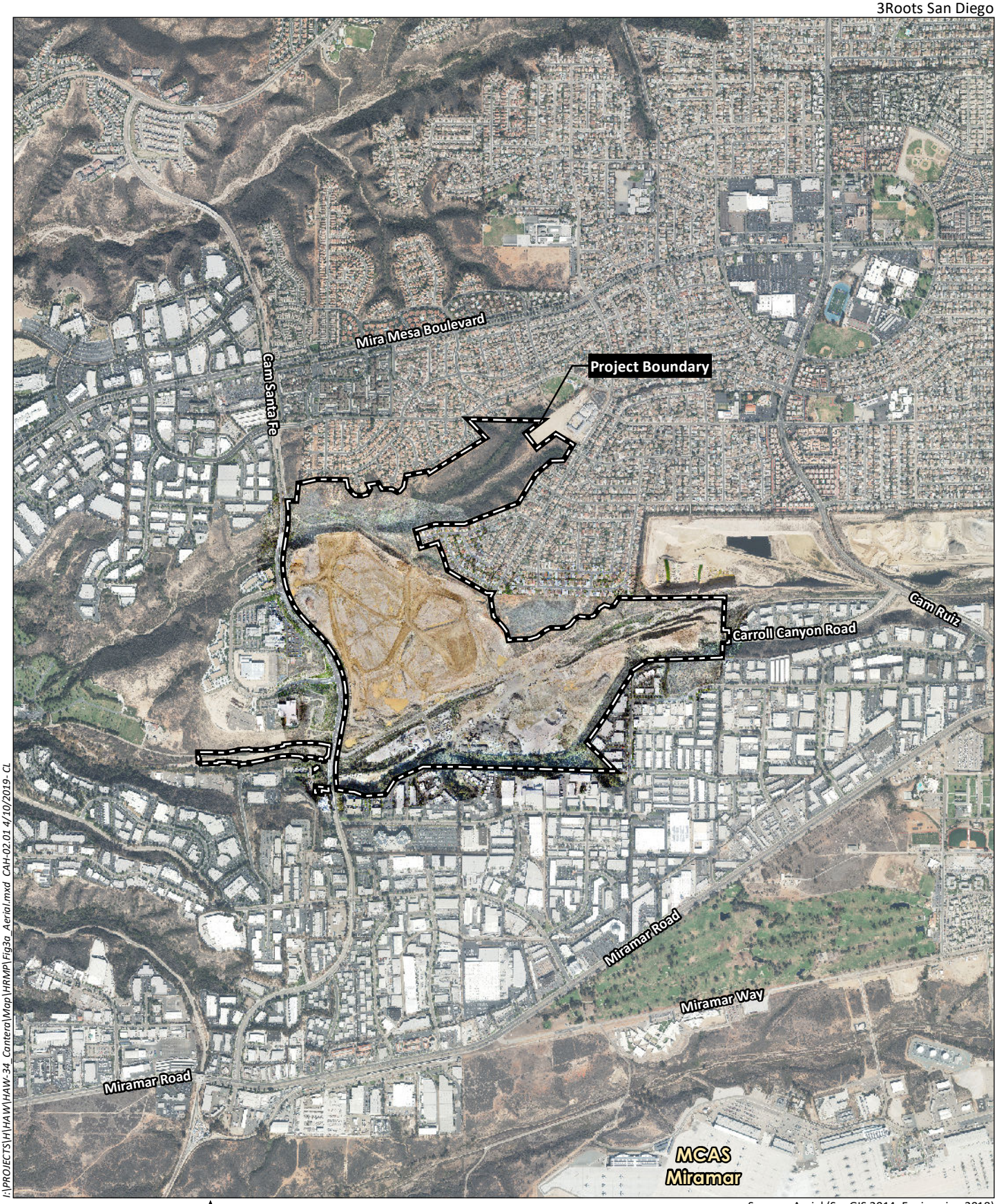
0 2,000 Feet

Source: Del Mar 7.5' Quad (USGS)

HELIX Environmental Planning

USGS Topography

Figure 2



I:\PROJECTS\H\HAW\HAW-34 Cantera\Map\HRMP\Fig3a Aerial.mxd CAH-02.01 4/10/2019 CL

0 2,000 Feet

Source: Aerial (SanGIS 2014, Enviromine 2018)

HELIX Environmental Planning

Aerial Vicinity

Figure 3a

and roadways; grading and restoring/revegetating open space preservation areas; grading, re-aligning, and restoring Carroll Canyon Creek (subject to wetland permits noted above), and installing a culvert across Carroll Canyon Creek for the planned future alignment of Carroll Canyon Road (also subject to wetland permits noted above). Additional details of the CUP requirements are outlined in Section 1.2.1 of the Project Biological Technical Report (HELIX 2019a).

The proposed 3Roots Project is a mixed-use design incorporating a "Community Collective," which includes multi-family residential and commercial/retail uses; single-family residential; and associated on-site roads and parkways. The Project proposes to designate approximately 258 acres of open space, which comprises approximately 181 acres of natural open space, approximately 39 acres of parks and trails, and approximately 38 acres of vegetated slopes, brush management zones, enhanced landscape areas, and water quality/retention basins. The natural open space areas would be comprised of Rattlesnake Canyon, Rattlesnake Creek, Carroll Canyon Creek, and CUP reclaimed and revegetated upland slopes.

The Project includes the construction of Carroll Canyon Road through the site (approximately 6,225 linear feet), which extends off site beyond the property to the east and west. The road would be extended approximately 90 feet off site to the east to tie in with the existing cul-de-sac that is the current terminus of Carroll Canyon Road at this location. The road would be extended to the west approximately 2,000 feet to the western terminus of the existing CUP boundary. Additionally, the Project includes constructing upgrades to existing San Diego Gas and Electric (SDG&E) utility lines both east and west of Camino Santa Fe. Lastly, the Project includes an amendment to the CUP boundary. Overall, on site and off site areas of the Project comprise an approximate 421.9-acre Project boundary.

Cumulative mitigation as a result of the CUP 89-0585 Reclamation and 3Roots Project is presented in Figure 3b and described further in this Plan.

3.0 EXISTING CONDITIONS AND SURROUNDING LAND USES

The Project boundary is topographically complex including natural canyons, watercourses, and man-made features as a result of the quarry. The area consists of quarry land, developed land, and both native and non-native habitats. Most of the Project boundary is part of the quarry and associated site reclamation areas. Portions along the southern boundary slope appear to have been landscaped, as evidenced by irrigation lines in those areas. The northern portion of the Project boundary is undeveloped.

Ten soil types are mapped within the Project boundary (USDA 2016): Altamont clay, 15 to 30 percent slopes; Gravel pits; Olivenhain cobbly loam, 2 to 9 percent slopes; Olivenhain cobbly loam, 9 to 30 percent slopes; Olivenhain cobbly loam, 30 to 50 percent slopes; Redding cobbly loam, dissected, 15 to 50 percent slopes; Redding cobbly loam, 9 to 30 percent slopes; Redding gravelly loam, 2 to 9 percent slopes; Riverwash; and Terrace escarpments. Riverwash occurs along the southern drainage, flanked by Terrace escarpments to the east and Olivenhain cobbly loam (2 to 9 percent slopes) and Redding cobbly loam, dissected (15 to 50 percent slopes) to the west. Redding gravelly loam, 2 to 9 percent slopes, covers the majority of the quarry and a portion of the southeast corner of the Project. Redding cobbly loam (9 to 30 percent slopes and 30 to 50 percent slopes) occupies most of the northern side of the Project. Altamont clay, 15 to 30 percent slopes, occurs northwest of the quarry. Because the

site has been actively quarried for decades, these soil types only remain where quarrying has not occurred.

Biological resources within the Project boundary include stream channels, associated floodplains, riparian habitats, and the surrounding upland areas. Rattlesnake Creek is a blue-line stream located at the bottom of a canyon that meanders across the northern portion of the site. Two unnamed tributaries feed into Rattlesnake Creek from the southeast. Carroll Canyon Creek is a blue-line stream that meanders through the southern portion of the property and merges with an unnamed blue-line stream at the southwest corner of the site. Rattlesnake Creek and Carroll Canyon Creek converge approximately 0.6 miles west of the Project boundary into Peñasquitos Creek, as tributary to Peñasquitos Lagoon and ultimately the Pacific Ocean, which is approximately six miles downstream from the Project boundary. Hydrology for the CUP mitigation and 3Roots mitigation is from runoff from the surrounding urban uses, including mining, commercial, and residential; seasonal input from the Los Peñasquitos watershed; and direct precipitation.

A total of 17 vegetation communities (including land cover types) were recorded within the 421.9-acre Project boundary: mule fat scrub (including disturbed and sparse phases), southern riparian woodland (including a disturbed phase), southern willow scrub (including a disturbed phase), unvegetated channel, disturbed wetland, coast live oak woodland, Diegan coastal sage scrub (including a disturbed phase), coastal sage – chaparral transition, southern mixed chaparral (including a disturbed phase), baccharis scrub (including a disturbed phase), chamise chaparral, non-native grassland, eucalyptus woodland (including a sparse phase), disturbed habitat, non-native vegetation, quarry, and developed land (Figure 4).

Dominant native plant species observed include arroyo willow (*Salix lasiolepis*), red willow (*Salix laevigata*), and mule fat (*Baccharis salicifolia*). Dominant non-native species observed include Red River gum (*Eucalyptus camaldulensis*), pampas grass (*Cortaderia selloana*), and saltcedar (*Tamarix ramosissima*). Eight sensitive plant species occur including: San Diego sagewort (*Artemisia palmeri*), San Diego sunflower (*Bahiopsis laciniata*), summer holly (*Comarostaphylis diversifolia* ssp. *diversifolia*), San Diego barrel cactus (*Ferocactus viridescens*), San Diego marsh-elder (*Iva hayesiana*), golden-rayed Pentachaeta (*Pentachaeta aurea*), Nuttall's scrub oak (*Quercus dumosa*), and ashy spike-moss (*Selaginella cinerascens*). Sensitive species will be incorporated into the plan where possible, although their incorporation is not part of a formal mitigation requirement.

Wetland communities within the Project boundary include disturbed wetland, mule fat scrub (including undisturbed, sparse, and disturbed phases), southern riparian woodland (including undisturbed and disturbed phases), and southern willow scrub (including undisturbed and disturbed phases)Non-wetland habitat also occurs as unvegetated channel (i.e., streambed). Land uses surrounding the Project include residential development to the north, and industrial and commercial development to the south, west, and east. Another aggregate materials site occurs to the east. Some undeveloped land occurs west and east of the Project boundary, in the canyons extending from the Project. Camino Santa Fe bounds the Project site on the west. Two vernal pool preserves exists adjacent and outside of the Project boundary; one along the northeastern boundary, above Carroll Canyon and the other is along the southeastern boundary, south of Carroll Canyon.

- Project Site
- Project Boundary
- CUP 89-0585 Boundary
- Other Conserved Open Space

CUP 89-0585 Upland Mitigation

- Southern Mixed Chaparral Revegetation
- Diegan Coastal Sage Scrub Revegetation
- Coastal Scrub-Chaparral Transition Revegetation
- Diegan Coastal Sage Scrub Restoration

CUP 89-0585 Wetland Mitigation

- Wetland/Riparian Enhancement
- Riparian Habitat Restoration
- Riparian Re-establishment

3Roots Wetland Mitigation

- Riparian Re-establishment

Flanders Dr
Kecki St
Kamwood Pl
Kamwood Ct
Kamwood St
Dancy Rd
Bolin St
Tilton St
Grauser St
Penrod Ln
Darden Ct
Darden Rd
Presley St
Gen Santa Fe
Rattlesnake Creek
Gold Coast Dr
Hemphill Dr
Trails End Cr
Antrim Wy
Port Royale Dr
Empress Av
Baroness Av
Royal Ann Av
Mayor Cr
Kaiser Pl
Bagwell Cv
Hendricks Ct
Hendricks Dr
Jade Coast Rd
Parkdale Av
Kibler Dr
Bacadi Dr
Northrup Dr
Knight Dr
Cannight Wy
Kaufman Wy
Osgood Wy
Embry Wy
Embry Pt
Baffin Dr
Caffey Ln
Hefner Ln
Backer Rd
Miratech Dr
Summers Ridge Rd
Biosite Wy
Carroll Canyon Creek
Arjons Dr
Dunbrook Rd
Trade Pl
Silverton Av
Rehco Rd

0 650 Feet

N

Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018); MHPA (SanGIS 2015); Limits of Grading (PDC 2018).

I:\PROJECTS\H\HAW\HAW-34_Cantera\Map\HRMP\Fig3b_Mitigation_All.mxd C4H-02.01 5/21/2019 - SAB

HELIX Environmental Planning

Mitigation for CUP 89-0585 Reclamation and 3Roots Project

Figure 3b

- Project Site
- Project Boundary
- CUP 89-0585 Boundary
- Vernal Pool Preserve

Sensitive Animals

- Coastal California Gnatcatcher
- Cooper's Hawk
- Least Bell's Vireo
- Orange-throated Whiptail
- Coastal Whiptail

Sensitive Plants

- Nuttall's scrub oak
- San Diego Barrel Cactus
- San Diego marsh-elder
- San Diego sagewort
- San Diego sunflower
- ashy spike-moss
- golden-rayed Pentachaeta
- summer holly
- San Diego marsh-elder
- San Diego sunflower

Vegetation

- Quarry
- Baccharis Scrub
- Baccharis Scrub - Disturbed
- Chamise Chaparral
- Coastal Sage-Chaparral Transition
- Southern Mixed Chaparral
- Diegan Coastal Sage Scrub
- Diegan Coastal Sage Scrub - Disturbed
- Eucalyptus Woodland
- Eucalyptus Woodland - Sparse
- Non-native Grassland
- Non-native Vegetation
- Disturbed Habitat
- Developed
- Disturbed Wetland
- Coast Live Oak Woodland
- Mule Fat Scrub
- Mule Fat Scrub - Disturbed
- Mule Fat Scrub - Sparse
- Southern Riparian Woodland
- Southern Riparian Woodland - Disturbed
- Southern Willow Scrub
- Southern Willow Scrub - Disturbed
- Unvegetated Channel/Streambed

Flanders Dr
Kecki St
Kamwood Pl
Kamwood Ct
Kamwood St
Dancy Rd
Glueser St
Penrod Ln
Darden Ct
Darden Rd
Bolm St
Tilton St
Presley St
Cam Santa Fe
Rattlesnake Creek
Gold Coast Dr
Trails End Cr
Antrim Wy
Port Royale Dr
Empress Av
Baroness Av
Royal Ann Av
Mayor Cr
Kaiser Pl
Hemphill Dr
Bagwell Cv
Hendricks Ct
Hendricks Dr
Jade Coast Rd
Parkdale Av
Kibler Dr
Bacadi Dr
Northrup Dr
Knight Dr
Genright Wy
Kaufman Wy
Osgood Wy
Embry Wy
Embry Pt
Baffin Dr
Caffey Ln
Heffner Ln
Backer Rd
Miratech Dr
Biosite Wy
Carroll Canyon Creek
Arjons Dr
Dunbrook Rd
Trade Pl
Silverton Av
Rehco Rd
Ferris Sq

I:\PROJECTS\H\HAW\HAW-34_Cantera\Map\HRMP\Fig4_CurrentHabitat.mxd CAH-02.01 4/9/2019 -CLEV

0 650 Feet

N

Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018); MHPA (SanGIS 2015); Limits of Grading (PDC 2018).

HELIX Environmental Planning

Existing Vegetation and Land Cover Types Prior to CUP 89-0585 Reclamation

Figure 4

3.1 JURISDICTIONAL RESOURCES AND PROPOSED IMPACTS

Jurisdictional resources within the Project boundary include wetlands and waters of the U.S. (WUS) subject to the regulatory jurisdiction of the USACE pursuant to Section 404 of the Clean Water Act (CWA), waters subject to regulation by the RWQCB pursuant to Section 401 of the CWA and waters of the state (WS) pursuant to the Porter-Cologne Act, streambed and associated riparian habitats subject to the regulatory jurisdiction of the CDFW pursuant to Section 1600 of the California Fish and Game Code (CFGC), and wetlands pursuant to the City's Environmentally Sensitive Lands (ESL) regulations (Figures 5 through 8).

The extent of jurisdiction within the Project boundary varies by agency. USACE-jurisdictional wetlands and non-wetland WUS occur within portions of Carroll Canyon Creek and Rattlesnake Creek, and their main tributaries; wetlands are mapped where hydrophytic vegetation, hydric soils, and wetland hydrology occur concurrently, whereas areas of non-wetland under USACE jurisdiction reflect areas that lack hydrophytic vegetation but display evidence of hydrology (i.e., unvegetated channel/streambed). The majority of these wetland and non-wetland areas would also be considered jurisdictional by CDFW and/or the City. CDFW and City jurisdictional areas extend beyond that of the USACE due to their more expansive definition of jurisdictional habitat. In addition, areas of unvegetated channel (i.e., streambed) bounded both upstream and downstream by City jurisdictional wetland vegetation were determined to be City wetlands. However, unvegetated channel without City jurisdictional wetland on either side would be considered a "seasonal drainage" as defined by the City's Biology guidelines and would not satisfy the City's wetland parameters. WS regulated by the RWQCB under the Porter-Cologne Act consist of the area between the upper limits of the wetland WUS and upper limits of the CDFW jurisdictional habitat.

Jurisdictional resource impacts requiring mitigation are associated with the CUP Reclamation requirements and the proposed 3Roots Project. Specifically, the impacts as a result of CUP Reclamation include: 1.60 acres of impacts to USACE wetland and non-wetland WUS, 2.06 acres of impacts to RWQCB WS, 2.06 acres of impacts to CDFW jurisdictional habitat. Impacts to jurisdictional resources as a result of the proposed Project include: 0.01 acre of impacts to USACE wetland and non-wetland WUS, 0.18 acre impacts to RWQCB WS, 0.18 acre of impacts to CDFW habitat, and 0.18 acre of impact to City wetlands. Total jurisdictional resource impacts as a result of CUP Reclamation and the Project for agency jurisdictional resources include: 1.61 acres of impacts to USACE wetland and non-wetland WUS, 2.24 acres of impacts to RWQCB WS, 2.24 acres of impacts to CDFW habitat. Although areas subject to USACE, RWQCB, CDFW, and City jurisdiction overlap, the acreage regulated by each agency is listed independently above. These acreages are not cumulative as the largest extent of jurisdictional impacts is 2.24 acres. Section 4.1 of this Plan provides further detail on the mitigation requirements for the CUP Reclamation and the proposed Project.

3.2 EXISTING FUNCTIONS AND SERVICES

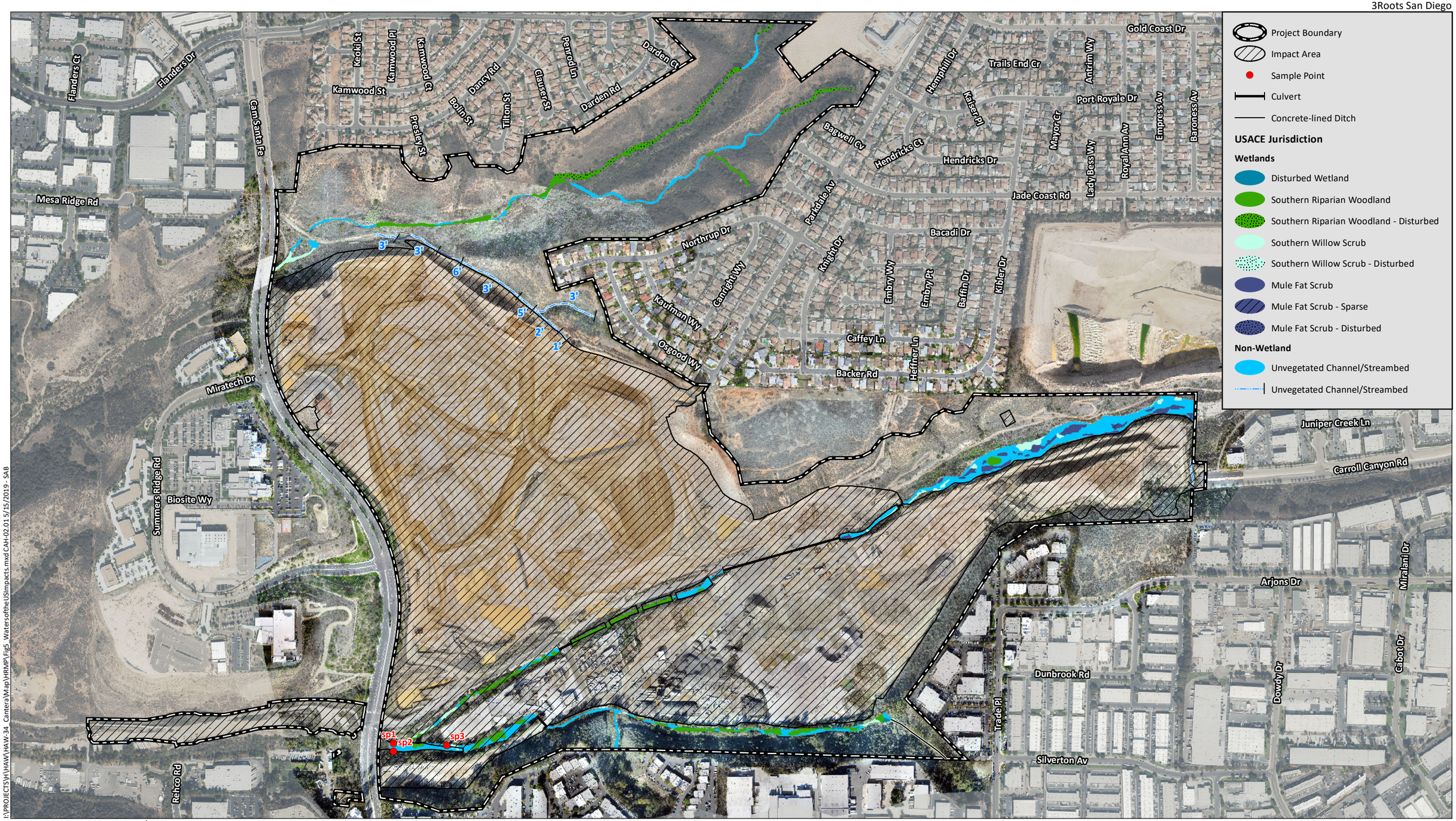
As discussed previously in Section 2.3, there are multiple aquatic features within the Project boundary, which include three named blue-line streams (Rattlesnake Creek, Carroll Canyon Creek, and one is unnamed) and their unnamed tributaries. The headwaters of Rattlesnake Creek and two unnamed tributaries to Rattlesnake Creek are in the northern portion of the Project boundary. A reach of Carroll Canyon Creek spans through the middle portion of the site, and an unnamed blue-line tributary to Carroll Canyon Creek is located along the southern portion of the Project boundary. Additionally, another unnamed tributary to Carroll Canyon Creek is located in the eastern portion of the Project

boundary. Both Rattlesnake Creek and the upper portion of Carroll Canyon Creek are meandering linear features. Although CUP mining authorizations were not conducted, Rattlesnake Creek is relatively disturbed in character as non-native species comprise a significant proportion of vegetation. The upper Carroll Canyon Creek has relatively high quality habitat, as determined by the presence of fewer non-native species; whereas the middle and lower sections of Carroll Canyon Creek and the southern tributary are substantially disturbed by channelization, the mining activities, and support several non-native species., Approximately 1,000 linear feet of Carroll Canyon Creek on site are currently underground and confined to a pipe. Lastly, the unnamed blue-line stream spanning along the south and southwest portions of the site, although not substantially disturbed by the mining activities, also supports several non-native species.

The existing functions and services of the CUP reclamation and Project mitigation area (i.e., Lower Rattlesnake Creek and Carroll Canyon Creek and adjacent uplands) is limited by invasive species (e.g., eucalyptus, pampas grass, tamarisk, etc.), concrete lining, confined/channelized floodplain, and adjacent quarry facilities. The upper portion of Carroll Canyon Creek and all of Rattlesnake Creek both retain groundwater recharge at relatively normal levels. Groundwater recharge is reduced or absent in the middle and lower sections of Carroll Canyon Creek because of narrower channel widths that result in higher velocities and shorter retention times for stream flows. Flood control and wildlife use of Carroll Canyon Creek is higher in the upper sections of the creek where the channel has an unrestricted floodplain and largely native vegetative cover. Flood control and wildlife use is lower in the middle and lower sections due to the prevalence of non-native species, restricted width, and disjunct connectivity because of the existing 1,100-foot-long underground culvert. Because the watershed surrounding Rattlesnake is relatively intact, flood control functions are assumed to be relatively high. Wildlife use of Rattlesnake Creek is anticipated to be lower due to the prevalence of non-native species, restricted width, and lack of connectivity to upstream habitat. Furthermore, the presence of non-native invasive vegetation provides a weed seed source for the downstream habitats along Rattlesnake Creek and Carroll Canyon Creek.

The re-establishment, restoration, and enhancement of the CUP reclamation and Project mitigation sites will increase the quantity and value of the area to native flora and fauna, including least Bell's vireo, which are known to occur within the Project boundary. The functions and services of the CUP reclamation and Project mitigation site will be improved by the removal of invasive and non-native species and the planting of native riparian species within a downstream portion of Rattlesnake Creek and the re-establishment of floodplain and riparian habitat in disturbed central and lower sections of Carroll Canyon Creek The CUP reclamation also includes restoration of native uplands along channel banks immediately adjacent to the Carroll Canyon Creek floodplain and riparian habitat which will facilitate restored habitat functions and services.

Upon overall inspection of the habitats along Rattlesnake Creek and Carroll Canyon Creek, it appears that the quarry operations increased the proportion of wetland compared to non-wetland habitats of Carroll Canyon Creek, whereas stated earlier, mining authorizations for the lower section of Rattlesnake Creek were not conducted. The vegetation along Carroll Canyon Creek, upstream of the quarry operations is less influenced by imported/artificial water, is much patchier in distribution (i.e., open mosaic), and overall provides less cover than the channelized sections in the central and downstream portions within the quarry. The upstream area of Carroll Canyon Creek characterized by native, open mosaic vegetation and controlled, natural flows and is the model proposed for the habitat reclamation and mitigation design for Carroll Canyon Creek.



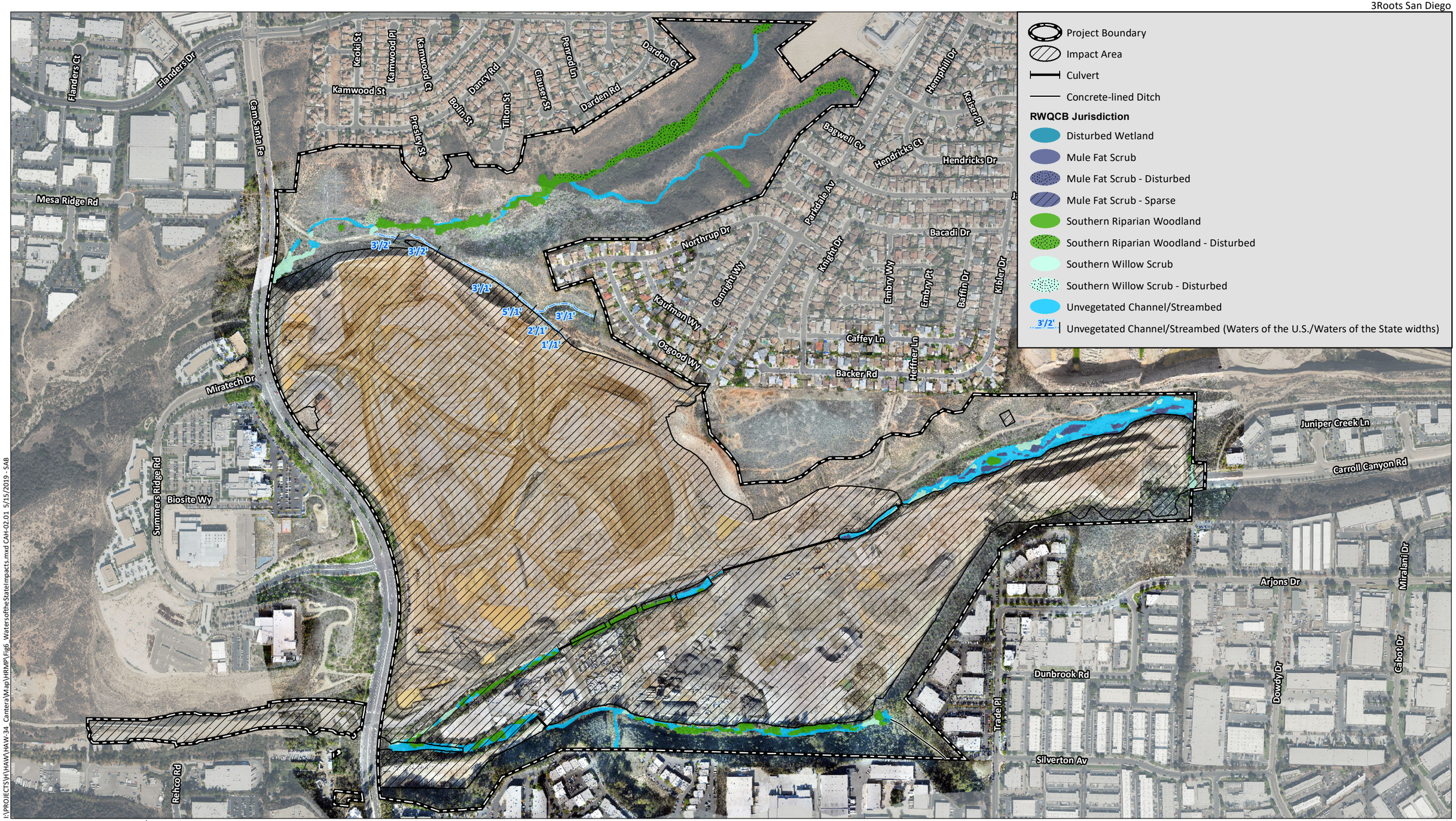
I:\PROJECTS\H\HAW\HAW-34 Cantera\Map\HRMP\Fig5 WatersoftheUSImpacts.mxd CAH-02.01 5/15/2019 SAB

HELIX Environmental Planning

USACE Jurisdictional Impacts

Figure 5

3Roots San Diego



I:\PROJECTS\H\HAW\HAW-34 Canter\Map\HRMP\Fig6 WatersoftheStateImpacts.mxd CAH-02.01 5/15/2019 - SAB

0 650 Feet

N

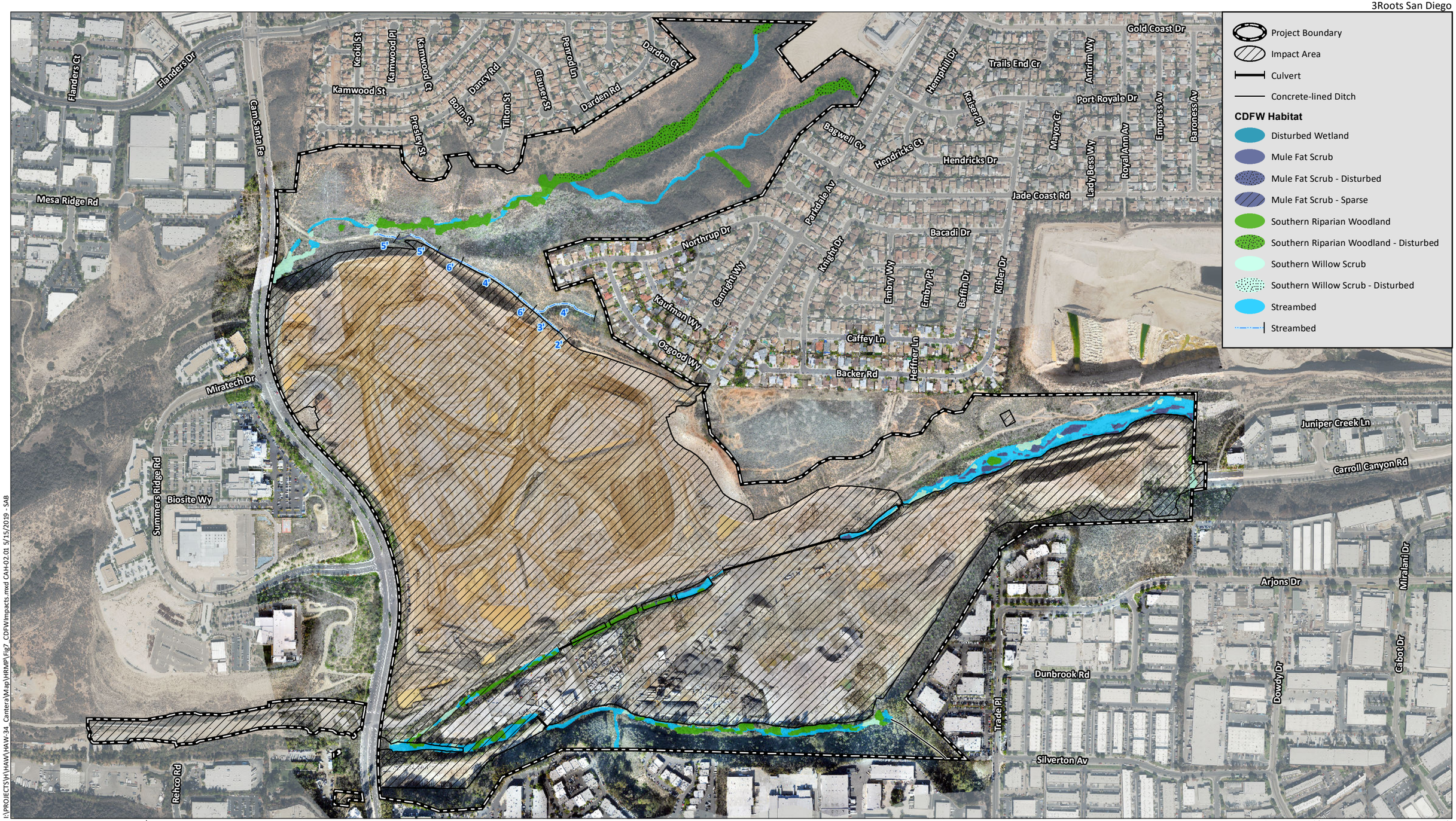
Source: Aerial (SanGIS 2014, Enviromine, Inc. 2017).

HELIX Environmental Planning

RWQCB Jurisdictional Impacts

Figure 6

3Roots San Diego



I:\PROJECTS\H\HAW\HAW-34 Canter\Map\HRMP\Fig7_CDFWImpacts.mxd CAH-02.01 5/15/2019 - SAB

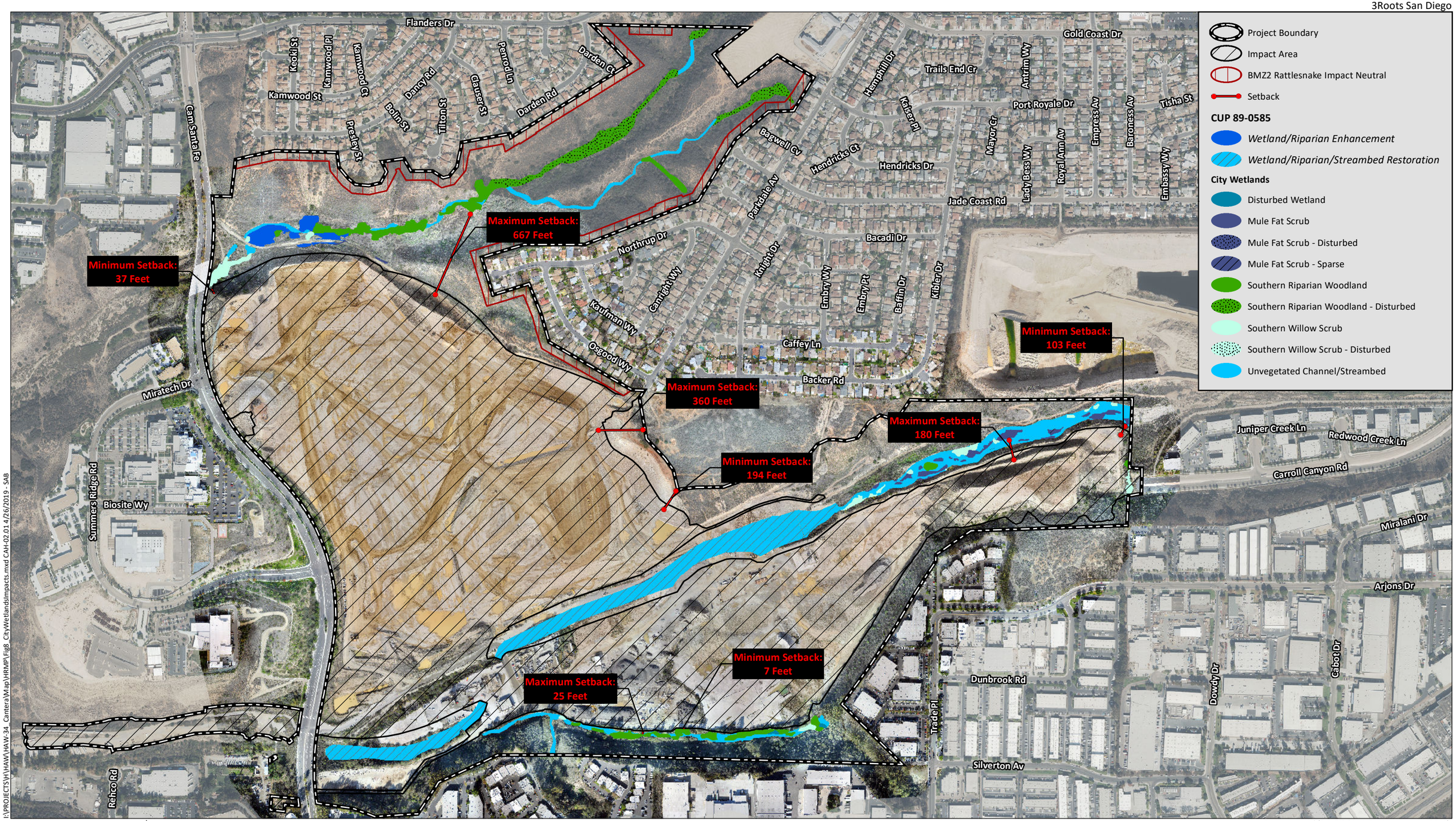
0 650 Feet

Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018).

HELIX Environmental Planning

CDFW Jurisdictional Impacts

Figure 7



I:\PROJECTS\H\HAW\HAW-3A_Cantera\Map\HRMP\Fig8_CityWetlandsImpacts.mxd CAH-02.01 4/26/2019 - SAB

0 650 Feet

Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018).

HELIX Environmental Planning

City Wetland Impacts

Figure 8

3.3 FUNCTIONS AND SERVICES OF IMPACTED AREAS

Biological resources associated with the CUP Reclamation and Project impact areas are generally constrained by existing urban development; however, extant similar habitats occur within the Project boundary outside of the CUP 89-0585 boundary and also occur downstream to the west of the Project boundary. Rattlesnake Creek is restricted upstream by existing development; however, does continue westward under a free-span bridge at Camino Santa Fe. Carroll Canyon Creek extends upstream to the east of the Project boundary within a natural streambed and floodplain, and downstream to the west through multiple (4) concrete box culverts under Camino Santa Fe.

Although the wetland, non-wetland waters, and adjacent upland habitats on site have been affected by historic mining operations, anthropogenic edge effects, and non-native species, they provide moderate-quality foraging and breeding habitat for several native animal species (including riparian birds), and the variety of habitats supports many native plant species. Furthermore, the primary drainage features (i.e., Rattlesnake Creek and Carroll Canyon Creek) within the Project boundary provide an east-west habitat corridor through this portion of the City, although native habitat along Carroll Canyon Creek is interrupted on site by a long culvert. There is a continuous, although constrained, corridor along Rattlesnake Creek. To the west of Camino Santa Fe or downstream of the Project boundary, this Rattlesnake Creek ties into a larger block of riparian and upland habitat and ultimately converges with Carroll Canyon Creek west of the Project boundary as discussed earlier in Section 2.3.

4.0 COMPENSATORY MITIGATION DEFINITIONS

Each permitting agency has its own lexicon for wetland mitigation and how credits are counted. These agency definitions are provided below.

U.S. Army Corps of Engineers

The USACE and U.S. Environmental Protection Agency (USEPA) jointly provided mitigation definitions for the mitigation of losses to aquatic habitat (USACE and USEPA 2008). Each mitigation type has a unique, acknowledged compensatory value for temporary and permanent impacts.

Establishment (creation)–the manipulation of the physical, chemical, or biological characteristics present to develop a wetland that did not previously exist at an upland site. Establishment results in a gain in wetland area and functions.

Restoration–the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded wetland. For tracking net gains in wetland area, restoration is divided into two categories: re-establishment and rehabilitation.

> Re-establishment–the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/ historic functions to a former wetland. Re-establishment results in rebuilding a former wetland and results in a gain in wetland area and functions.
>
> Rehabilitation–the manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/ historic functions to a degraded wetland. Rehabilitation results in a gain in wetland function but does not result in a gain in wetland area.

Enhancement–the manipulation of the physical, chemical, or biological characteristics of a wetland to heighten, intensify, or improve a specific wetland function(s). Enhancement results in the gain of selected wetland function(s) but may also lead to a decline in other wetland function(s). Enhancement does not result in a gain in wetland area.

Regional Water Quality Control Board

The RWQCB uses wetland mitigation definitions that are consistent with those provided by the USACE and USEPA (USACE and USEPA 2008).

The USACE and RWQCB definitions explicitly distinguish rehabilitation from enhancement in two ways: rehabilitation is the removal of a heavy infestation or monoculture of exotic plant species from jurisdictional areas followed by establishment of native species; enhancement is the removal of small patches of exotic plant species from an area containing predominantly natural plant species.

California Department of Fish and Wildlife

The CDFW does not have official definitions of wetland mitigation but has typically followed traditional definitions like those in the City's Biology Guidelines (City 2012). The CDFW has discretion in evaluating the appropriateness of mitigation proposals considering the project impacts and available mitigation options.

City of San Diego

The following list provides the City operational definitions of the four types of activities that constitute wetland mitigation under "Environmentally Sensitive Lands" in the *Land Development Manual–Biology Guidelines* (City 2012):

Wetland creation–an activity that results in the formation of new wetlands in an upland area. An example is excavation of uplands adjacent to existing wetlands and the establishment of native wetland vegetation.

Wetland restoration–an activity that re-establishes the habitat functions of a former wetland. An example is the excavation of agricultural fill from historic wetlands and the re-establishment of native wetland vegetation.

Wetland enhancement–an activity that improves the self-sustaining habitat functions of an existing wetland. An example is removal of exotic species from existing riparian habitat.

Wetland acquisition–may be considered in combination with any of the three mitigation activities above, but must be after the 1:1 creation/restoration component.

The Biology Guidelines further state that:

> *Wetland enhancement and wetland acquisition focus on the preservation or the improvement of existing wetland habitat and function, and do not result in an increase in wetland area; therefore, a net loss of wetland may result. As such, acquisition and/or enhancement of existing wetlands may be considered as partial mitigation only, for any balance of the remaining*

> *mitigation requirement after restoration or creation if wetland acreage is provided at a minimum of a 1:1 ratio.*

However, the Biology Guidelines acknowledge that:

> *Wetland mitigation required as part of any federal (404) or state (1601/1603) wetland permit will supersede and will not be in addition to any mitigation identified in the California Environmental Quality Act (CEQA) document for those wetland areas covered under any federal or state wetland permit.*

This Plan uses the USACE's terminology for re-establishment and enhancement. In this Plan USACE's re-establishment is the equivalent of City restoration. Enhancement is used in this plan for areas where exotic species (e.g., eucalyptus trees, Arundo stands, or other non-native species) will be removed from preserved areas of Rattlesnake Canyon and Rattlesnake Creek. There are several places where the CUP Reclamation impacts extant wetland and non-wetland habitat that will subsequently be re-established with native habitat as prescribed by this Plan. This re-establishment of native habitat is referred to as restoration (or revegetation) in this Plan. This Plan also provides for the re-establishment of upland habitat on slopes above/adjacent to the Carroll Canyon Creek riparian corridor. This is referred to herein as revegetation.

4.1 MITIGATION REQUIREMENTS

Proposed mitigation for impacts to USACE, RWQCB, CDFW from the CUP Reclamation and the 3Roots project are discussed below and summarized in Table 1. As stated previously, because City of San Diego wetland regulations did not exist at the time of CUP89-0585, City wetland impacts and associated mitigation have been quantified only for the 3Roots project. Upland mitigation requirements are summarized in Table 2.

As described in the BTR and Section 1.0, CUP Reclamation also includes measures required to mitigate impacts associated with the quarry operation. This includes requires revegetation of slopes within 182 acres of designated open space; enhancement and revegetation of Rattlesnake Creek; and revegetation of upland slopes. A required acreage of enhancement and revegetation was not specified in the environmental documentation. These areas are discussed in this plan in order to provide a complete account of mitigation areas. Also, for the purposes of future maintenance and monitoring, all areas of enhancement and re-establishment have been delineated and quantified below.

4.1.1 Proposed Mitigation for CUP 89-0585 Reclamation

Jurisdictional Resources and Associated Upland Buffers

Mitigation provided for CUP Reclamation impacts to jurisdictional resources and adjacent upland buffers would consist of onsite re-establishment and revegetation of Carroll Canyon Creek. This would be accomplished at a 3:1 ratio for impacts to vegetated riparian habitat and at a 1:1 ratio for impacts to non-vegetated streambed. Mitigation would include re-establishment of jurisdictional resources at a 1:1 ratio, with the remainder accomplished through revegetation. Ratios presented in Table 1 are proposed.

Final mitigation requirements for USACE, RWQCB, and CDFW will be determined during the permitting process.

Mitigation for CUP Reclamation impacts to upland buffers would be accomplished through the restoration of approximately 15.18 acres of native habitat. Additional details on specific target habitats are provided in Section 8.6 Planting Specifications.

Additional Reclamation Mitigation Requirements

Revegetation within the 182 acres of open space to satisfy CUP reclamation requirements would be accomplished through upland revegetation of slopes along the northern periphery of the proposed 3Roots development and adjacent to the trail located north of the 3Roots development. These areas comprise approximately 7.80 acres.

The CUP Reclamation requirements also include enhancement of Rattlesnake Creek though no jurisdictional resources were impacted in this area. The enhancement requirement would be satisfied with the planting of approximately 1.33 acres of riparian scrub (Figure 3b).

4.1.2 Proposed Mitigation for 3Roots Project

Jurisdictional Resources

Mitigation provided for the 3Roots Project impacts to jurisdictional resources would consist of on-site re-establishment of similar jurisdictional resources within Carroll Canyon Creek and the Project boundary. This would be accomplished at a 3:1 ratio for impacts to riparian vegetation and 1:1 ratio for impacts to non-vegetated streambed. Mitigation would include a minimum of 1:1 re-establishment and the remainder would be comprised of revegetation. 3Roots Project impacts to USACE, RWQCB, and CDFW, and City jurisdictional areas and corresponding mitigation are proposed in Table 1 below. Final mitigation requirements for USACE, RWQCB, and CDFW will be determined during the permitting process.

Upland Mitigation

Upland mitigation associated with proposed 3Roots Project consists of preservation of Tier II and III habitat within the Project boundary. This will be provided at a 1:1 or 0.5:1 ratio depending on the location of the impact, inside or outside of the MHPA. All habitat preservation would occur within the MHPA. Table 2 summarizes proposed upland mitigation. Project Impacts to 4.84 acres of Tier II habitat (i.e., Diegan coastal sage scrub, baccharis scrub, coastal sage scrub–chaparral transition, and upland restoration), and 2.66 acres of Tier III habitat (i.e., chamise chaparral, southern mixed chaparral, and non-native grassland) shall be mitigated in accordance with ratios provided in Table 3 of the City's Biology Guidelines. The MHPA will contain 60.87 acres of Tier II habitats and 48.52 acres of Tier III habitats which are more than adequate to meet mitigation obligations onsite. Though upland mitigation will be accomplished through preservation and will not require restoration of habitat, it has been included in this plan to provide a complete account of project mitigation.

4.1.3 Resource Agencies (USACE, RWQCB, CDFW) and City

U.S. Army Corps of Engineers

The total mitigation requirement for 1.61 acres of impacts of WUS (Figure 5) is 3.21 acres (Table 1). Specifically, of these 1.61 acres of impacts to WUS, 1.60 acres is a result of the CUP Reclamation and 0.01 acre is a result of the proposed Project (Table 1). Of the 3.21 acres of mitigation required, 3.20 acres will be provided by the CUP Reclamation and 0.01 acre will be provided by the 3Roots Project. Mitigation for impacts to WUS must include a minimum of 1:1 replacement; totaling a minimum of 1.61 acres of re-establishment. The remaining mitigation obligation of 1.6 acres will be met by either re-establishment or enhancement.

Regional Water Quality Control Board and California Department of Fish and Wildlife

The total mitigation requirement for 2.24 acres of WS and CDFW jurisdictional habitat impacts is same for the RWQCB and CDFW (Figures 6 and 7), which is 4.68 acres (Table 1). Specifically, of these 2.24 acres of impacts to WS and CDFW habitat, 2.06 acres is a result of the CUP Reclamation and 0.18 acre is a result of the proposed Project. Of the 4.68 acres of mitigation required, 4.41 acres will be provided by the CUP Reclamation and 0.54 acre will be provided by the 3Roots Project. Mitigation for impacts to WS and CDFW habitat must include a minimum of 1:1 replacement; totaling a minimum of 2.24 acres of re-establishment. The remaining mitigation obligation of 2.44 acres will be met by either re-establishment or enhancement.

City of San Diego

The total mitigation requirement for 0.18-acre impact to City wetland (Figure 8) is 0.54 acres (Table 1). Impacts to City's wetlands are a result of the proposed Project, comprised of 0.04 acre of southern riparian woodland and 0.14 acre of southern willow scrub (including disturbed). Mitigation for impacts to City jurisdictional areas must include a minimum of 1:1 replacement; totaling a minimum of 0.18 acre of re-establishment. The remaining mitigation obligation of 0.36 acre will be met by re-establishment. City Biology Guidelines (City 2012) stated preference for impacts to be mitigated in-kind or with better habitat. Out-of-kind may be considered where it would clearly benefit sensitive species and result in a biologically superior alternative.

Mitigation associated with the CUP Reclamation and the proposed Project's impacts to sensitive upland habitats areas are proposed in Table 2 below. The analysis presented in Table 2 is in accordance with the adopted mitigation ratios prescribed by the City's Biology Guidelines. Specifically, project Impacts to 4.84 acres of Tier II habitat (i.e., Diegan coastal sage scrub, baccharis scrub, coastal sage scrub–chaparral transition, and upland restoration), and 2.66 acres of Tier III habitat (i.e., chamise chaparral, southern mixed chaparral, and non-native grassland) shall be mitigated in accordance with ratios provided in Table 3 of the City's Biology Guidelines. Tier II and Tier III mitigation shall be accomplished through on site preservation comprising a minimum of 6.86 acres of upland habitats (i.e., Tier II and Tier III) within the MHPA of Rattlesnake Canyon.

Table 1
IMPACTS TO JURISDICTIONAL RESOURCES AND MITIGATION REQUIREMENTS

Habitat[1]	Agency							
	U.S. Army Corps of Engineers		Regional Water Quality Control Board[2]		California Department of Fish and Wildlife		City of San Diego	
	Impacts (acres)	Mitigation[3] (acres)	Impacts (acres)	Mitigation[3] (acres)	Impacts (acres)	Mitigation[3] (acres)	Impacts (acres)	Mitigation[3] (acres)
CUP 89-0585 Reclamation								
Permanent Impacts								
Southern riparian woodland	0.61	1.83	0.79	2.37	0.79	2.37	--	--
Southern willow scrub[4]	0.13	0.39	0.15	0.45	0.15	0.45	--	--
Mule fat Scrub	--	--	<0.001	0.003	<0.001	0.003	--	--
Unvegetated Channel/Streambed	0.67	0.67	0.87	0.87	0.87	0.87	--	--
Subtotal	*1.41*	*2.89*	*1.81*	*3.69*	*1.81*	*3.69*	--	--
Temporary Impacts								
Southern riparian woodland	0.01	0.03	0.03	0.09	0.03	0.09	--	--
Southern willow scrub	0.05	0.15	0.07	0.21	0.07	0.21	--	--
Unvegetated Channel/Streambed	0.13	0.13	0.15	0.15	0.15	0.15	--	--
Subtotal	*0.19*	*0.31*	*0.25*	*0.45*	*0.25*	*0.45*	--	--
CUP 89-585 Reclamation TOTAL	**1.60**	**3.20**	**2.06**	**4.14**	**2.06**	**4.14**	**--**	**--**
3Roots Project								
Permanent Impacts								
Southern riparian woodland	--	--	0.04	0.12	0.04	0.12	0.04	0.12
Southern willow scrub[4]	--	--	0.14	0.42	0.14	0.42	0.14	0.42
Mule fat Scrub	--	--	--	--	--	--	--	--
Unvegetated Channel/Streambed	0.01	0.01	--	--	--	--	--	--
3Roots Project TOTAL	**0.01**	**0.01**	**0.18**	**0.54**	**0.18**	**0.54**	**0.18**	**0.54**
GRAND TOTAL	**1.61**	**3.21**	**2.24**	**4.68**	**2.24**	**4.68**	**0.18**	**0.54**

[1] Wetland habitats include southern riparian woodland, southern willow scrub, and mule fat scrub. Streambed is a non-wetland habitat.

[2] Analysis for habitat areas regulated under the Porter-Cologne Act.

[3] The mitigation ratio for vegetated impacts is 3:1 and the mitigation ratio for streambed (non-vegetated) impacts is 1:1. Both vegetated and non-vegetated must include at least 1:1 replacement area.

[4] Includes disturbed and undisturbed habitat.

Table 2
IMPACTS TO SENSITIVE UPLAND HABITATS AND MITIGATION REQUIREMENTS (acres)

Habitat	Tier	Impact (Out / In)[1]	Mitigation Ratio[3]	Required Mitigation
CUP 89-0585 Reclamation				
N/A	II	N/A	N/A	182 acres open space dedication
3Roots Project				
Diegan coastal sage scrub	II	4.09 / 0.22	1:1	4.31
Baccharis scrub – including disturbed phase	II	0.35 / --	1:1	0.35
Coastal sage - chaparral transition	II	--/ 0.14	1:1	0.14
CUP Reclamation Upland Restoration	II	0.04/--	1:1	0.04
Tier II Subtotal		*4.48 / 0.36*	--	*4.84*
Chamise chaparral	IIIA	0.76 / --	0.5:1	0.38
Southern mixed chaparral	IIIA	1.53 / 0.25	0.5:1 / 1:1	1.02
Non-native grassland	IIIB	0.09 / 0.03	0.5:1 / 1:1	0.08
Tier III Subtotal		*2.38 / 0.28*	--	*1.48*
TOTAL		**7.04 / 0.64**	**--**	**6.86**

[1] Reflects all Project components (except impact neutral Rattlesnake BMZ 2) and includes both temporary and permanent impacts. "OUT" reflects outside the MHPA; "IN" reflects inside the MHPA.
[3] Mitigation ratios per City Biology Guidelines and all mitigation is inside the MHPA.

5.0 MITIGATION SITE DESCRIPTION

5.1 MITIGATION LOCATION

CUP 89-0585 Reclamation – Jurisdictional Resources Including Upland Buffers

All mitigation associated with CUP Reclamation will be located within the Project boundary described in Section 2.0. Specifically, jurisdictional resources (wetlands and non-wetland waters) mitigation prescribed by this Plan will occur on site within the Carroll Canyon Creek corridor (Figures 9a-d). Further, re-establishment of the Carroll Canyon Creek corridor on site includes the re-establishment of uplands immediately adjacent and along both sides of the Carroll Canyon Creek channel banks. Both the re-establishment and revegetation of Carroll Canyon Creek and the re-establishment of upland habitat alongside Carroll Canyon Creek will occur within areas previously altered by quarry activities, including: developed land, eucalyptus woodland, disturbed habitat, and non-native vegetation.

3Roots Project Jurisdictional Resources and Uplands

All mitigation associated with 3Roots will be located within the Project boundary described in Section 2.0. Specifically, jurisdictional resources (wetlands and non-wetland waters) mitigation prescribed by this Plan for 3Roots will occur on site within the downstream section of the Carroll Canyon Creek corridor on site (Figures 9a-d).

Sensitive uplands mitigation for 3Roots specified by this Plan will occur through preservation of habitats located within the eastern portions of Carroll Canyon and Rattlesnake Canyon.

CUP 89-0585 Reclamation – Enhancement and Revegetation

Additional enhancement proposed by this Plan will occur on site alongside a downstream section of Rattlesnake Creek (Figure 9d). Also, additional CUP reclamation includes revegetation of upland slopes along the periphery of the proposed 3Roots development, which are generally located along the northern portions of the development footprint (Figures 9b-d). These additional CUP mitigation areas are all located on site within the Project boundary mitigation area selection

The primary factor in the mitigation site selection for both the CUP Reclamation and the 3Roots Project, (including both upland and wetland habitats), is the CUP Reclamation requirement to restore Carroll Canyon Creek in a manner that provides for appropriate hydraulics to avoid the creation of steep, narrow channel, spread flows across the channel bottom to maximize potential for riparian re-establishment, and to preserve native habitats on site. Once the conceptual creek alignment design was established, suitable areas for the expansion of the creek's flood plain were added. The suitability of the expansion areas was primarily based on the absence of native habitat, the presence disturbance from quarry operations, the future alignment of Carroll Canyon Road, existing energy and water utilities, and compatibility with the proposed 3Roots development. Wetland re-establishment in these expansion areas will be achieved by excavating the areas to be near the existing creek bed elevations, providing gabion drop structures to reduce flows and avoid creation of narrow channel because of the steep channel gradient, and spread flows across the expanded channel areas. This will expand the area capable of supporting wetland hydrology and vegetation. Wetland re-establishment is proposed for areas of existing wetlands impacted, but will be replaced. Wetland enhancement is proposed in areas currently supporting dense stands of non-native species immediately adjacent to existing wetlands/waters.

5.2 MITIGATION SITE SUITABILITY

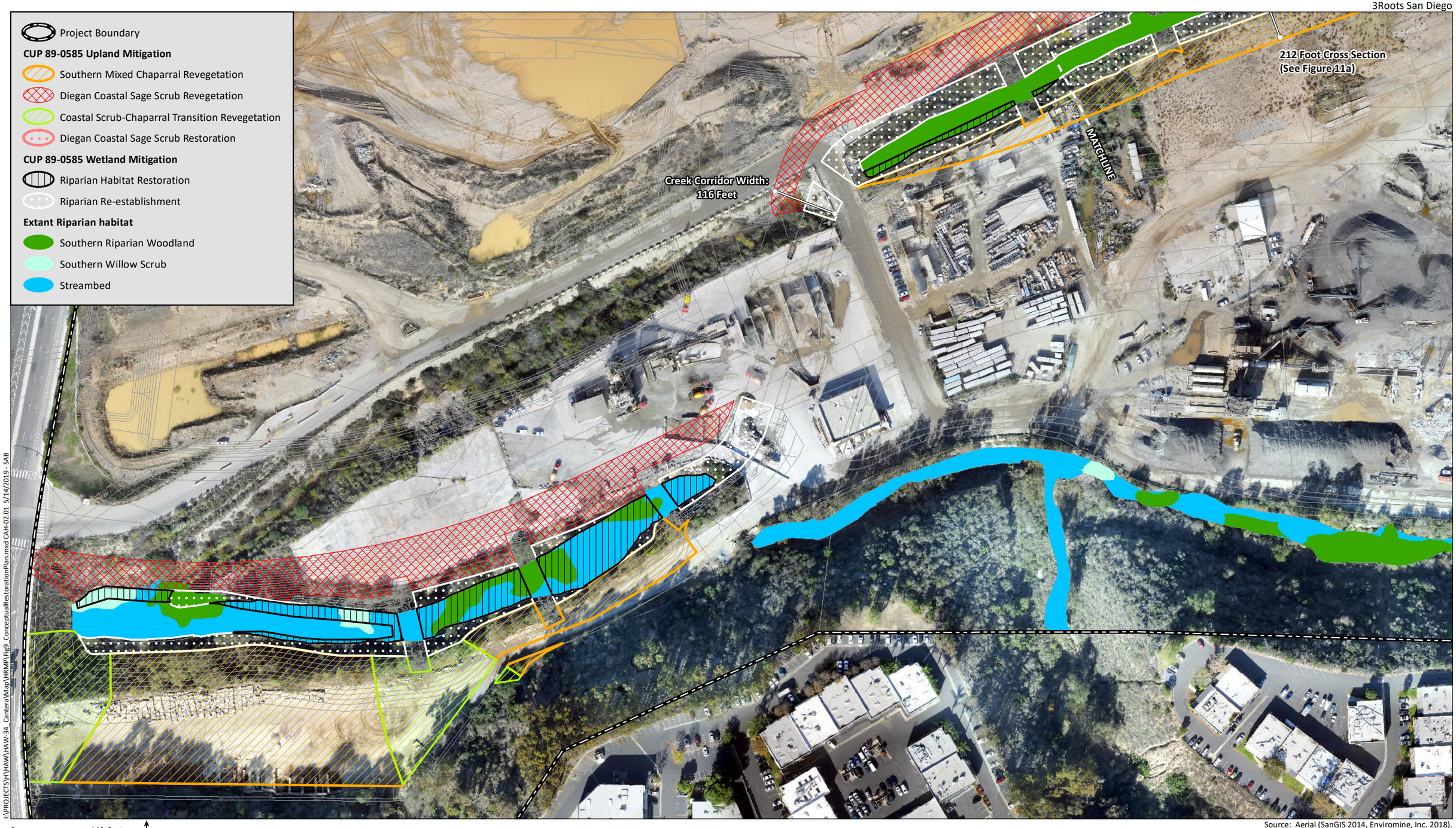
The area proposed for CUP Reclamation and Project mitigation is considered suitable for wetland habitat re-establishment and enhancement due to the location of the site along an existing riparian corridor and the presence of existing riparian habitat both within the Project boundary as well as upstream and downstream. Suitable wetland mitigation areas were selected by examining extant areas to remain and proposed locations with vertical and horizontal proximity to existing wetland habitat.

A jurisdictional wetland delineation was conducted to document pre-mitigation wetland status of the area (HELIX 2018) and to aid in identifying suitable wetland/riparian/streambed mitigation areas. The existing riparian corridors (i.e., Rattlesnake Creek and Carroll Canyon Creek) were confirmed to be under the jurisdiction of both the CDFW and RWQCB, and included disturbed wetland, mule fat scrub, southern riparian woodland, southern willow scrub, and streambed. Areas on site under the jurisdiction of the USACE were similar, albeit slightly narrower than the CDFW jurisdictional areas.

6.0 MITIGATION CONCEPT AND GOALS

6.1 MITIGATION CONCEPT

This Plan includes re-establishment and enhancement of wetland/riparian/streambed habitats and the establishment of hydraulic conditions necessary for re-establishment efforts, and revegetation of uplands habitats at the mitigation site to fulfill CUP Reclamation and Project mitigation requirements



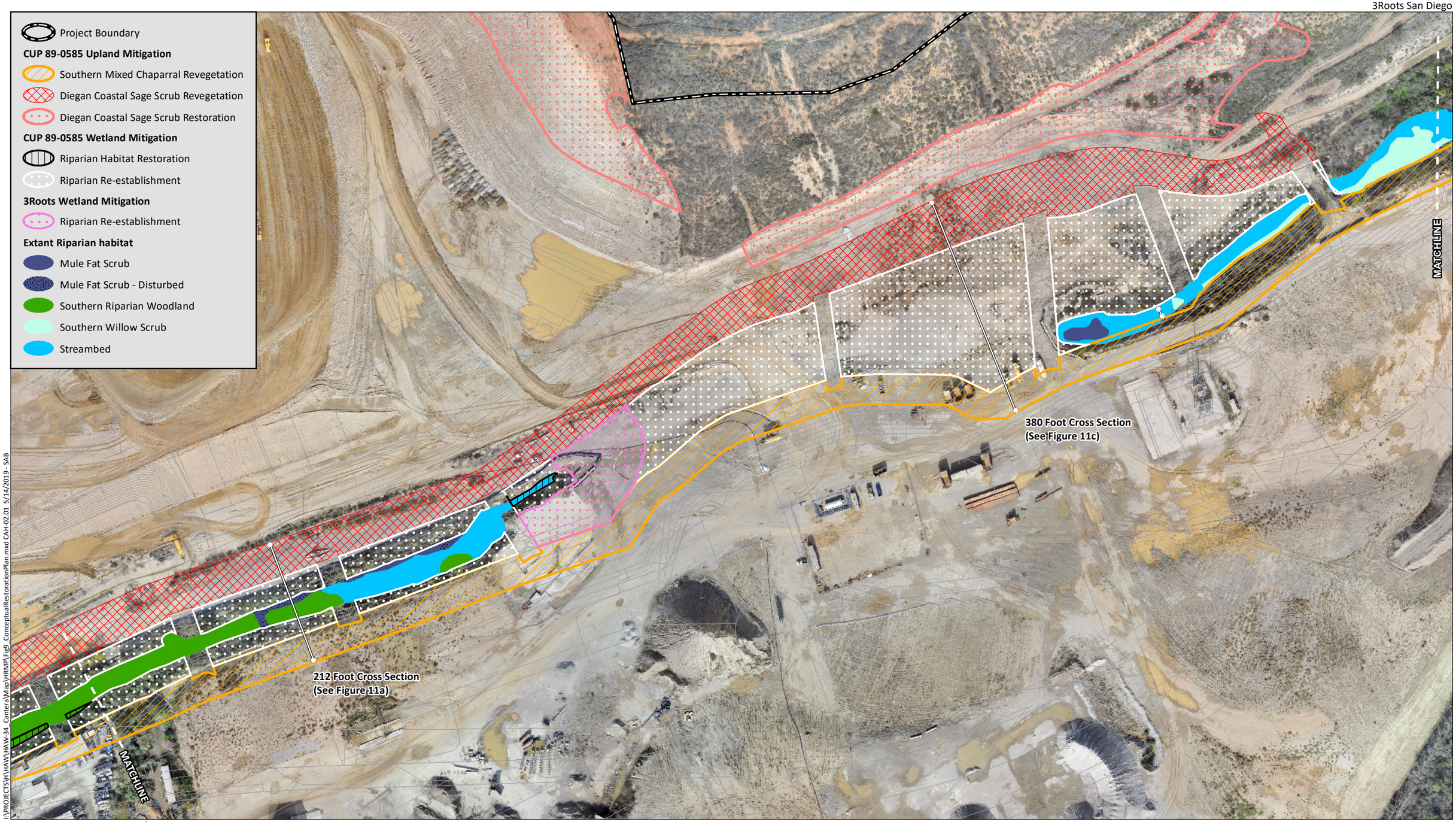
I:\PROJECTS\H\HAV\HAW-34_Cantera\Map\HRMP\Fig9_ConceptualRestorationPlan.mxd CAH-02.01 5/14/2019 - SAB

Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018).

HELIX Environmental Planning

Conceptual Habitat Mitigation Plan

Figure 9a



I:\PROJECTS\H\HAW\HAW-34_Cantera\Map\HRMP\Fig9_ConceptualRestorationPlan.mxd CAH-02.01 5/14/2019 - SAB

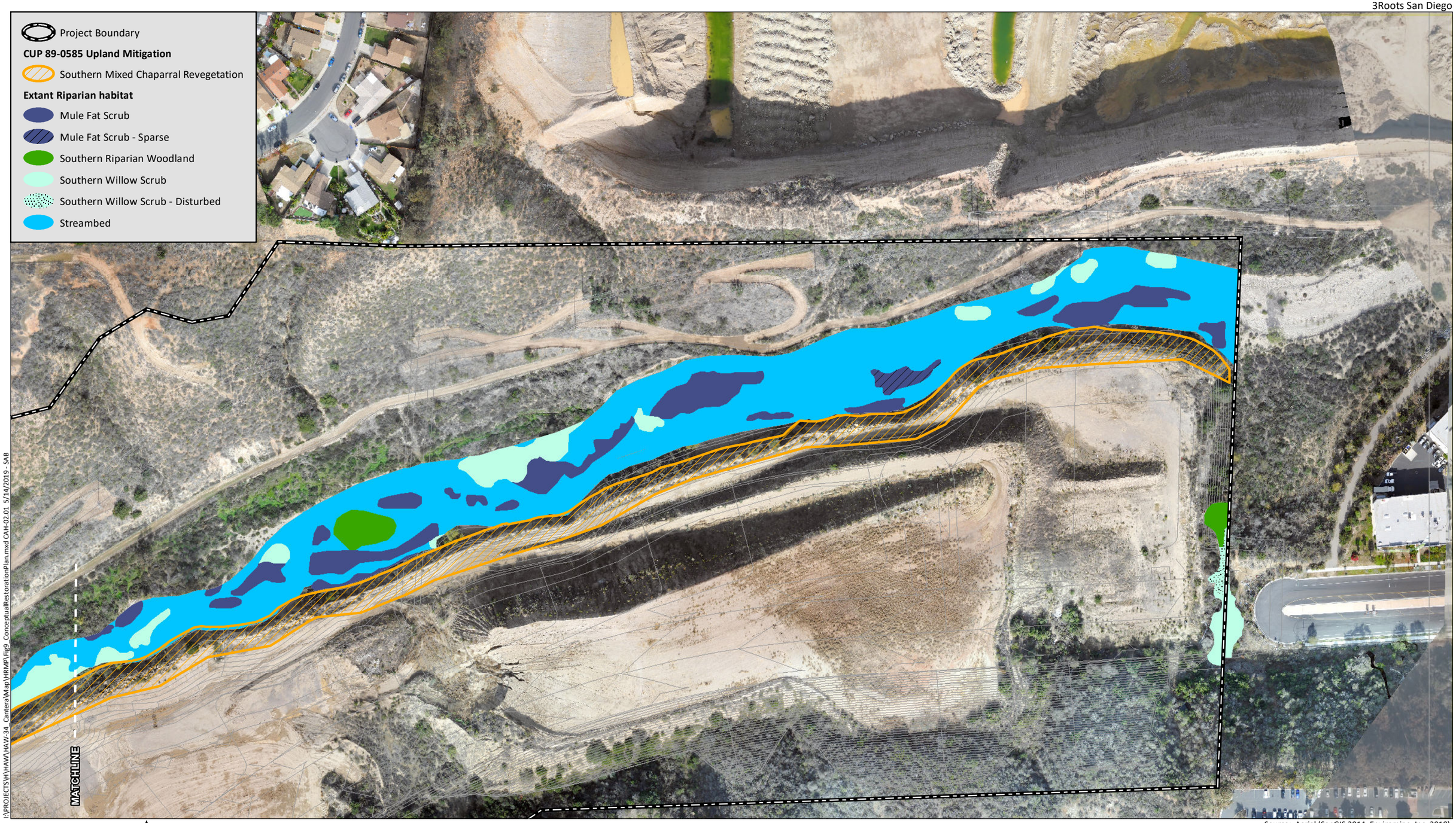
0 140 Feet

Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018).

HELIX Environmental Planning

Conceptual Habitat Mitigation Plan

Figure 9b



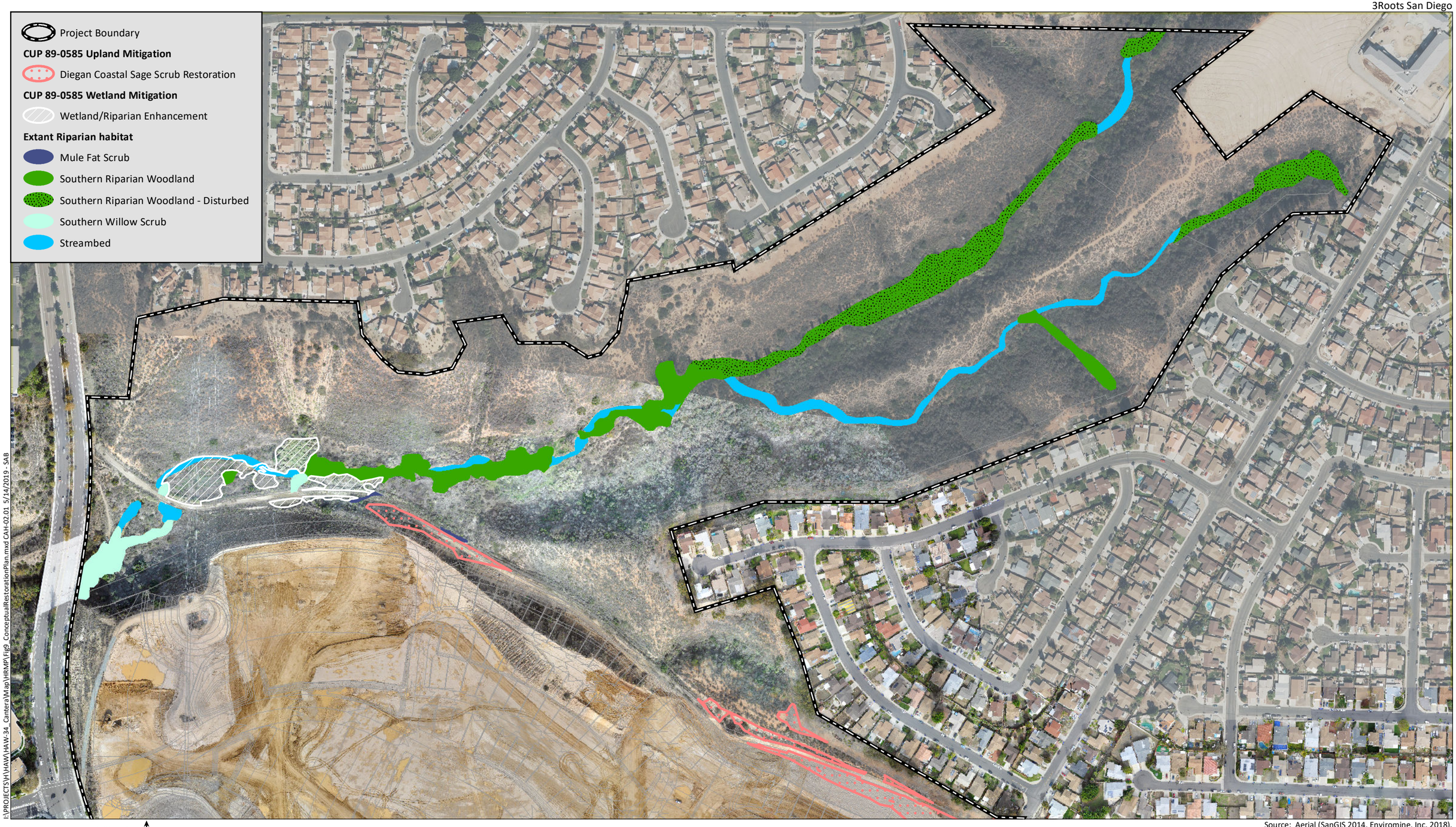
I:\PROJECTS\H\HAW\HAW-34 Cantera\Map\HRMP\Fig9_ConceptualRestorationPlan.mxd CAH-02.01 5/14/2019 - SAB

Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018).

HELIX Environmental Planning

Conceptual Habitat Mitigation Plan

Figure 9c



Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018).

HELIX Environmental Planning

Conceptual Habitat Mitigation Plan

Figure 9d

(Figures 9a-d). The approach to re-establishment and enhancement will be the same for (1) areas mitigated in accordance with CUP Reclamation measures, (2) mitigation for CUP impacts to jurisdictional areas, or 3) mitigation for the 3Roots project. Thus, the following discussion of mitigation concept and goals, and subsequent sections of this plan will not differentiate between the three.

The proposed re-establishment of wetland/riparian/streambed, will occur in areas that are currently in an upland setting, adjacent to the banks of Carroll Canyon Creek. Such areas will be created as a result of converting current disturbed uplands into wetland and non-wetland WUS by lowering the elevation to grades subject to regular flooding, and by planting with native riparian species. Appropriate channel hydraulics/hydrology will be created by providing gabion drop structures to reduce flows and avoid creation of narrow channel because of the steep channel gradient and spread flows across the expanded channel areas. Wetland/riparian/streambed re-establishment will occur along Carroll Canyon Creek in areas of extant wetland/riparian/streambed habitat that will be temporarily impacted during site reclamation but left in the proper landscape position to retain and support jurisdictional habitat. The mitigation site will be planted in the re-established streambed and on the adjacent slopes 2 vertical feet above the channel bottom.

The re-establishment of the Carroll Canyon Creek corridor on site also includes the re-establishment and revegetation of uplands habitat (i.e., coastal sage scrub, southern mixed chaparral, and coastal sage-chaparral transition) immediately adjacent and along both sides of the Carroll Canyon Creek channel banks. Specifically, uplands will be re-established on the slopes above the wetland re-establishment areas. Both the re-establishment and revegetation within Carroll Canyon Creek and the upland habitat revegetation alongside Carroll Canyon Creek will occur within areas previously altered by quarry activities, including developed land, eucalyptus woodland, disturbed habitat, and non-native vegetation.

The model for the habitat re-establishment is Carroll Canyon Creek above/upstream of the quarry (Figure 4). This section is unaffected by the unintentional seepage of imported water into the creek by the quarry operations. The vegetation in this reach occurs in patches (i.e., mosaic) in a boulder-strewn streambed. The size and distribution of patches created by this plan will be based on the what currently exists in this part of the creek. Riparian scrub patches will be established in 50 percent of the re-establishment areas of Carroll Canyon Creek. The remainder of the creek will be unvegetated.

Additional enhancement areas along the downstream section of Rattlesnake Creek were selected due to predominantly supporting non-native species. This habitat enhancement will consist of weed removal and control coupled with planting of native riparian scrub species.

The total amount of wetland/riparian/streambed and upland habitat mitigation provided by the CUP Reclamation and 3Roots Project (excluding extant habitat preservation) is approximately 31.60 acres, which comprises approximately 8.62 acres of wetland/riparian/streambed habitat and approximately 22.98 acres of coastal sage and mixed chaparral habitats (Table 3). As described previously in Section 4.0, habitat mitigation for the CUP Reclamation and proposed Project will occur entirely on site and coincide (i.e., no overlap) with each other (Figures 3b and 9a-d).

Table 3
PROPOSED HABITAT MITIGATION (acres)

Habitat Type	CUP 89-0585 Reclamation	Additional CUP 89-0585 Reclamation	3Roots	Total
Wetland/Riparian/Streambed				
Re-establishment	5.86	--	0.54	6.40
Rehabilitation	0.89	--	--	0.89
Enhancement	--	1.33	--	1.33
Wetland/Riparian/Streambed Subtotal	**6.75**	**1.33**	**0.54**	**8.62**
Upland				
Diegan Coastal Sage Scrub	5.82	7.80	--	13.62
Southern Mixed Chaparral	8.15	--	--	8.15
Coastal Sage-Chaparral Transition	1.21	--	--	1.21
Upland Subtotal	**15.18**	**7.80**	**--**	**22.98**
Total	**21.93**	**9.13**	**0.54**	**31.60**

[1] Does not include extant habitat preservation areas

6.2 AGENCY AND CITY REQUIREMENTS

As presented previously in Table 1, the resource agency permit requirements for CUP Reclamation and Project mitigation total: 3.21 acres of WUS mitigation, 4.68 acres of WS and CDFW mitigation, and 0.54 acre of City wetland mitigation (Figures 9a-d; Table 4). The vegetated jurisdictional habitats will be mitigated for with riparian vegetation and the non-vegetated jurisdictional habitat will be streambed. The breakdown of these by agency is provided below.

Table 4
JURISDICTIONAL RESOURCE MITIGATION REQUIREMENTS

Mitigation Type	Resource Agency			
	U.S. Army Corps of Engineers	Regional Water Quality Control Board	California Department of Fish and Wildlife	City of San Diego
	Mitigation Required (acres)			
Re-establishment	1.61	2.24	2.24	0.18
Restoration	1.60	2.44	2.44	0.36
TOTAL	**3.21**	**4.68**	**4.68**	**0.54**

U.S. Army Corps of Engineers

This Plan will provide wetland/riparian/streambed habitat re-establishment and restoration as mitigation to satisfy the expected USACE mitigation requirements for the CUP Reclamation and proposed Project. The total USACE mitigation requirement is 3.21 acres, consisting of 2.40 acres of wetland WUS (i.e., riparian scrub) and 0.81 acre of non-wetland WUS (i.e., unvegetated channel/ streambed; Tables 4 and 5).

Table 5
JURISDICTIONAL RESOURCE MITIGATION SUMMARY

Habitat	Resource Agency			
	U.S. Army Corps of Engineers	Regional Water Quality Control Board	California Department of Fish and Wildlife	City of San Diego
	Mitigation Required (acres)			
Riparian Scrub	2.40	3.66	3.66	0.54
Unvegetated Channel/Streambed	0.81	1.02	1.02	0
TOTAL	**3.21**	**4.68**	**4.68**	**0.54**

Regional Water Quality Control Board

This Plan will provide wetland/riparian/streambed habitat re-establishment and restoration as mitigation to satisfy the expected RWQCB mitigation requirements for the CUP Reclamation and the proposed Project. The total RWQCB mitigation requirement is 4.68 acres, consisting of 3.66 acres of wetland (i.e., riparian scrub) and 1.02 acre of non-wetland (i.e., streambed; Tables 4 and 5).

California Department of Fish and Wildlife

This Plan will provide wetland/riparian/streambed habitat re-establishment and restoration as mitigation to satisfy the expected CDFW mitigation requirements for the CUP Reclamation and the proposed Project. The total CDFW mitigation requirement is 4.68 acres, consisting of 3.66 acres of vegetated habitat (i.e., riparian scrub) and 1.02 acre of unvegetated streambed (Tables 4 and 5).

City of San Diego

This Plan will provide habitat wetland/riparian/streambed habitat re-establishment and enhancement as mitigation to satisfy the expected City mitigation requirements for the CUP Reclamation and the proposed Project. The City mitigation requirement for the Project is 0.54 acres of vegetated habitat (i.e., riparian scrub; Table 4).

Note, the City Biology Guidelines (City 2012) preference is for in-kind mitigation, or higher valued habitat. Out-of-kind could be considered where it would clearly benefit sensitive species and result in a biologically superior alternative. This Plan provides out-of-kind mitigation (riparian scrub) for riparian woodland. Riparian scrub is planned because it is better adapted to the anticipated hydrological conditions and it is what grew in the Carroll Canyon Creek prior to the quarry. The amount of imported water that finds its way into the creek is expected to decrease following the quarry closing. The riparian woodland exists on site adjacent to and immediately downstream of quarry activities that add significant amount of nuisance flows into the creek. The reaches of the creek above the quarry and near Camino Santa Fe are significantly more xeric than the area adjacent to the quarry operations that rely heavily on the use of imported water. Furthermore, riparian scrub is the appropriate habitat for riparian re-establishment and restoration because it is the vegetation of the natural condition of Carroll Canyon Creek. The evidence for this is comparing the vegetation in Carroll Canyon Creek above and within the quarry and a review of historical aerial photos.

Other habitats that will not be replaced in kind are Eucalyptus woodland and disturbed habitat. Replacing these with riparian scrub is consistent with City policy. The out-of-kind re-established habitat (riparian scrub) will be an improvement over the existing eucalyptus woodland and disturbed habitat as this will increase the area's value to native wildlife.

Least Bell's vireo is known to occur on and adjacent to the proposed mitigation site. The mitigation will increase the total area of habitat available for this federally endangered species as well as increase the value of the disturbed habitat currently on the site, by replacing the non-native invasive species.

The impacted location is generally isolated on a landscape scale and surrounded by development, whereas are the proposed mitigation will involve incorporating the mitigation in the City's MHPA. The mitigation site will be more valuable as part of a large swath of habitat than as isolated pockets of wetland that were mapped in the impact area.

Additionally, as stated previously in Section 2.0, this Plan will also provide enhancement along Rattlesnake Creek to fulfill a requirement of the CUP. Additional reclamation requirements will occur in disturbed uplands (i.e., non-jurisdictional) and are not associated with the jurisdictional resource mitigation presented in Tables 4 and 5 but are included in the plant and seed requirements in Tables 8 through 10.

6.3 TARGET FUNCTIONS AND SERVICES

This Section describes the wetland/riparian/streambed mitigation areas and adjacent wetland buffers only. The goal of wetland mitigation within the mitigation site is to re-establish, restore, and enhance habitat with better functions and services (flood control, water filtration, wildlife habitat, etc.) than those that occur in the impact area. Once established, the mitigation will improve the functions and services of the existing habitat in part by creating a wider riparian corridor and larger, contiguous block of wetland/riparian habitat. The target hydrologic regime of the mitigation site is a partially vegetated riverine wetland, with seasonal streams and corresponding inundated or saturated soils, and habitat fed by groundwater and stream flow. At the end of 5 years of maintenance and monitoring, the constructed habitats are expected to be on a trajectory for the development of mature, self-sustaining riparian habitat. The establishment of the mitigation specified in the Plan will provide increased hydrologic, biogeochemical, and habitat functions.

The means to achieve these goals include restoring Carroll Canyon Creek to its pre-quarry condition, to include riparian wetland/scrub and streambed habitats; provide for an expanded floodplain, which will contribute to increased hydrologic and water quality functions; and ongoing maintenance to keep the creek free of invasive exotic species and allow native plant communities to thrive, providing additional habitat for wildlife and listed species, such as least Bell's vireo, which is known to occur in the area.

As stated earlier, the Plan also provides for enhancement along the downstream portion of Rattlesnake Creek as part of the CUP-additional requirements. This enhancement will convert disturbed upland habitat to riparian habitat by removing non-native species coupled with installing seed and cuttings of native riparian scrub species.

6.4 MULTIPLE SPECIES CONSERVATION PROGRAM LAND USE CONSISTENCY ANALYSIS

The mitigation site is almost entirely located within the MHPA. Two areas of the mitigation are located outside of the MHPA, as required by City MSCP staff. Such areas are located north of Carroll Canyon Creek, within the wetland/riparian buffer (i.e., upland revegetation area) immediately upstream and downstream of the Carroll Canyon Road crossing of Carroll Canyon Creek. The impacts associated with the CUP Reclamation and Project are located partially in and partially outside of the MHPA as well. Special development guidelines apply to lands in the MHPA to maximize its value as habitat for covered species. The City's MSCP includes Land Use Adjacency Guidelines designed to minimize indirect impacts to sensitive resources contained in the MHPA and thus maintain the value of the preserve. These adjacency guidelines govern impacts within and adjacent to the MHPA. The land use adjacency and compatible land use guidelines were implemented to minimize impacts and maintain the function of the MHPA. Land use adjacency guidelines pertain to drainage, toxins, lighting, noise, barriers to incursion, invasive species, brush management, and grading/land development. Compatible land use guidelines consist of roads and utilities, fencing and lighting, materials storage, mining, extraction, processing facilities, and flood control. Activities in this Plan that align with MSCP compatible land use requirements include: storing materials within designated areas and using appropriate containment, using approved erosion and sediment controls during and after maintenance, and restoring unavoidable temporary impacts to native habitat.

Consistency with the land use adjacency guidelines is detailed below. The mitigation will not adversely affect current drainage patterns. No toxins will be introduced as the mitigation will only use herbicides appropriate for aquatic environments. The creek corridor will be buffered from Project development, limiting the effects of night lighting in the mitigation area. To comply with the noise guideline, construction activities will be conducted outside the bird breeding season and/or noise resulting from construction activities will be kept below the level of significance by utilizing sound attenuation measures, as needed. No barriers will be constructed. Invasive plants will be removed from Carroll Canyon Creek and will not be included in the plant palettes. Brush management zones are incorporated into the Project design. And finally, the Project is consistent with the land use adjacency guideline concerning grading/land development as all graded slopes associated with 3Roots development are within the Project impact footprint. Note, graded slopes of 2:1 (length : height) are located throughout the site as a result of implementing the reclamation requirements per CUP/Reclamation Plan (CUP 89-0585). The 2:1 slopes are located in open space lots abutting the vernal pool preserve and along the edges of the recontoured and re-established Carroll Canyon Creek alignment, where the post-reclamation condition was intended to stabilize slopes altered by mining activities (CUP 89-0585 Supplemental EIR, Section C). These 2:1 slopes are the "existing baseline condition" and not part of the Project development; thus, are allowed in the MHPA (further details see Sections 1.2.1, 5.0, and 7.9 of the 3Roots Biological Technical Report HELIX 2019).

The mitigation proposed specifically conforms to the MSCP because the disturbed and low-quality status of the site will be restored to native habitat, increasing, and improving existing functions and services. Specifically, invasive species will be removed and replaced with native vegetation, re-establishing habitat for native flora and fauna. The proposed wetland mitigation and subsequent maintenance and monitoring will be consistent with the San Diego MSCP.

The Project area is partially within the MHPA, which is the preserve area assembled under the MSCP. An MHPA Boundary Line Adjustment is proposed as a component of the Project such that the nearly the

entire mitigation site (except for the two areas north of Carroll Canyon Creek mentioned above) would be included within the MHPA (Figure 10). Additionally, the MHPA Boundary Line Adjustment will add areas of native habitat re-established, restored, or enhanced by the CUP reclamation and Project mitigation that are currently outside the MHPA. The proposed additional areas are contiguous with existing similar habitat within the MHPA. If approved by the City and resource agencies, the proposed MHPA Boundary Line Adjustment would result in a net gain in habitat value to the MHPA and in project consistency with the MSCP. Adjustments to the MHPA boundary may be made without amending the City's MSCP Subarea Plan or the MSCP Plan in cases where the new MHPA boundary preserves an area of equivalent or greater biological value. For a boundary line adjustment to be approved, six findings must be made in accordance with Section 5.4.3 of the City's MSCP Subarea Plan (City 1997). The final determination regarding the biological value of the proposed boundary change will be made in accordance with the MSCP Plan and with concurrence of the City, U.S. Fish and Wildlife Service (USFWS), and CDFW.

7.0 PROJECT RESPONSIBILITY

7.1 FINANCIAL RESPONSIBILITY

Mesa Canyon Community Partners will be financially responsible for the planning and implementation of this Plan, as well as for its maintenance and monitoring.

7.2 PROJECT TEAM

7.2.1 Project Proponent

Mesa Canyon Community Partners will be responsible for retaining a qualified restoration specialist with over five years of experience monitoring wetland mitigation and habitat restoration to oversee the entire installation and monitoring of the mitigation program. Mesa Canyon Community Partners will also be responsible for retaining qualified installation and maintenance contractors with documented successful experience installing and maintaining wetland and upland habitat restoration projects. Contact information for the project proponent is:

Mr. Ryan Green
Mesa Canyon Community Partners
16465 Via Esprillo, Suite 150
San Diego, CA 92127
Phone: (858) 618-4933

7.2.2 Responsible Agencies

The USACE, RWQCB, CDFW, and City's Development Services Department will be responsible for issuing any necessary permits, reviewing, and approving this Plan, and overseeing the re-establishment and growth of planted habitat within the mitigation areas. The primary avenue for their participation is through the permitting process; reviewing and commenting on this Plan, the construction documents, and subsequent annual reports; and through inspection and comment on significant milestones involved in the implementation of this Plan.

3Roots San Diego

Project Boundary
CUP 89-0585 Boundary
MHPA Deletion
MHPA Addition
MHPA Extension
Current MHPA
Vernal Pool Preserve

Gold Coast Dr
Trails End Cr
Antrim Wy
Port Royale Dr
Empress Av
Baroness Av
Tisha St
Ambassador Av
Cam Ruiz
Jade Coast Dr
Jade Coast Rd
Hamphill Dr
Kaiser Rd
Mayor Cr
Lady Bess Wy
Royal Ann Av
Embassy Wy
Hendricks Dr
Hendricks Ct
Bagwell Cv
Dardan Ct
Dardan Rd
Pearod Ln
Clauser St
Tilton St
Bolin St
Dancy Rd
Kamwood Ct
Kamwood Pl
Kaoki St
Kamwood St
Presley St
Cam Santa Fe
Mesa Ridge Rd
Rattlesnake Creek
Parkdale Av
Northrup Dr
Bacadi Dr
Knight Dr
Kibler Dr
Baffin Dr
Emby Pt
Emby Wy
Genright Wy
Kaufman Wy
Osgood Wy
Caffey Ln
Heffner Ln
Backer Rd
Miratech Dr
Juniper Creek Ln
Carroll Canyon Rd
Summers Ridge Rd
Biosite Wy
Carroll Canyon Creek
Arjons Dr
Miralani Dr
Cabot Dr
Dowdy Dr
Dunbrook Rd
Trade Pl
Silverton Av
Rehco Rd

I:\PROJECTS\H\HAW\HAW-34_CanteraMap\HRMP\Fig10_MSCPBoundaryAdjust.mxd CAH-02.01 4/24/2019 -CL,EV, SAB

0 650 Feet

Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018); MHPA (SanGIS 2015); Limits of Grading (PDC 2018).

HELIX Environmental Planning

MHPA Boundary Line Adjustment

Figure 10

7.2.3 Restoration Specialist

Overall supervision of the installation, maintenance, and monitoring of this project will be the responsibility of a restoration specialist hired by the Mesa Canyon Community Partners and experienced with wetland and upland habitat mitigation. The restoration specialist will oversee the efforts of the installation and maintenance contractor(s) for the life of the project. Specific tasks of the restoration specialist include educating all participants about mitigation goals and requirements; directly overseeing planting, seeding, weeding, and other maintenance activities; and conducting annual assessments of the creation and enhancement effort. The restoration specialist will oversee the preparation of the final construction documents by the landscape architect and explain to the contractor(s) how to avoid impacts to existing sensitive habitat and sensitive species. This Plan requires extensive grading, and final grades within the mitigation area are subject to approval by the restoration specialist. The restoration specialist will also be responsible for preparing site observation reports, interim reports, and annual reports.

7.2.4 Civil Engineer

A licensed civil engineer will provide final grading plans for the habitat mitigation areas. The proposed final elevations of the re-establishment areas will be shown on construction grading plans.

7.2.5 Landscape Architect

Although conceptual level plans are provided in this document, a licensed landscape architect will prepare the final construction documents, including irrigation and planting plans.

The plans prepared by the landscape architect will use the grading plans as a base. The plans will be submitted to the regulatory agencies for review and approval prior to initiating impacts.

7.2.6 Installation/Maintenance Contractor(s)

The installation and maintenance contractor(s) will have experience in wetland and upland habitat mitigation and hold a C27 California State Contractor's License. The Contractor(s) will be directed by the restoration specialist, as necessary, to ensure the installation and maintenance provides the best chances for achieving the goals of this plan.

The installation contractor will be responsible for removal of targeted invasive plants within mitigation areas, installation of the irrigation (excluding the Rattlesnake enhancement area), container plants and seed, and maintenance of all re-establishment, restored, and enhancement areas during the 120-day installation period. The restoration specialist must recommend sign off, and the site must meet all criteria to end the installation period.

The Project proponent will hire the maintenance contractor(s) for the five-year maintenance period, and the maintenance contractor and the installation contractor may be the same entity. Using the same contractor for installation and maintenance, or changing maintenance contractors is at the discretion of the Project proponent.

The maintenance contractor should be knowledgeable about maintenance of native plant habitat and the difference between native and non-native plant species. The maintenance contractor will maintain the entire mitigation site as specified in this Plan and directed by the restoration specialist. Maintenance

will include, but not be limited to: weed control, trash removal, watering, dead plant replacement, maintaining a weed free buffer, and re-seeding. All activities conducted will be seasonally appropriate and approved by the restoration specialist. The maintenance contractor will meet the restoration specialist at the site when requested and will perform all punch list items in a timely manner, as directed.

7.2.7 Nursery (Seed/Plant Procurement)

Native plant nurseries are generally capable of collecting seed and contract growing services for the required plant material. All plant nurseries providing seed/plant materials will possess a valid California Nursery License. Seed shall have been tested for purity and germination not more than one year prior to application of seed.

All plant and seed deliveries will be subject to approval by the restoration specialist. Plants shall have appropriate root development for their container and be free of Argentine ants, shot hole borer, and other pests. Seed shall be delivered with tags indicating the species name and origin.

7.3 PRE-CONSTRUCTION MEETING

Implementation of this Plan will begin with project approval. The implementation schedule is provided in Section 5.2 of this mitigation plan. Prior to the initiation of jurisdictional resource mitigation activities, an on-site meeting will be held with the Project proponent, installation contractor, grading contractor, and restoration specialist. Topics that will be addressed at this meeting include but are not limited to: (1) timing constraints for non-native plant removal/clearing; (2) identification of sensitive areas and a strategy for avoidance; (3) defining site access routes and restrictions; (4) locating staging areas; and (5) the overall Project goals.

A summary of all major tasks related to the Project, starting with the pre-construction phase and ending with the end of the minimum five-year maintenance and monitoring period, is provided in Table 6.

Table 6
MITIGATION PLAN TASKS

Construction Phase	Task	Applicable Parties					
		Project Proponent[1]	Landscape Architect	Installation Contractor	Maintenance Contractor	Restoration Specialist	Resource Agencies[2]
Pre-Construction	Order container plantings and seed[3]			X		X*	
	Soil boring	X					
	Prepare landscape plans		X			X	X*
	Attend pre-construction meeting	X		X		X	
	10-day notification to resource agencies	X				X	
	Install perimeter fencing			X		X*	
	Install erosion control to protect existing habitat			X		X*	
	Document pre-installation site conditions	X*				X	
Site Preparation	Grading			X		X*	
	Grading inspection/potential modifications			X		X*	
	Non-native plant removal			X		X*	
Installation	Install irrigation		X	X[4]		X	
	Install container plantings, cuttings, and seed			X		X*	
	Submit as-built mark-ups			X			
	Document as-built conditions					X	
	Prepare/submit as-built report	X*				X	
120-Day Establishment Period	Maintain site for 120 days, or until sign off by restoration specialist	X*		X		X*	X*
	Replace dead container plantings			X		X*	
Five-Year Maintenance & Monitoring Period	Maintain site five years or until signed off by resource agencies	X*			X	X*	X*

[1] Mesa Canyon Community Partners.
[2] USACE, RWQCB, CDFW, and City's Development Services Department.
[3] Must provide all source locations and receive authorization of final seed and plant lists prior to ordering.
[4] May be a grading contractor who is not affiliated with the installation contractor.
* Inspection of work related to this task.

8.0 IMPLEMENTATION PLAN

8.1 RATIONALE FOR EXPECTING IMPLEMENTATION SUCCESS

Jurisdictional habitat re-establishment, restoration, and enhancement areas are anticipated to be successful due to the site locations, within and directly adjacent to the existing floodplain of Carroll Canyon Creek and in the historical path of the creek. Further increasing the potential for success is the installation of native species observed growing in less-disturbed habitat on and adjacent to the site. The areas designated for jurisdictional habitat re-establishment are currently an active quarry or developed habitat. Such upland areas selected for creek re-establishment will involve soil removal and grading to bring the elevation of the habitat down to the elevation of existing wetland habitat of Carroll Canyon Creek. Appropriate channel hydraulics/hydrology will be created by providing gabion drop structures to reduce flows and avoid creation of narrow channel because of the steep channel gradient and spread flows across the expanded channel areas. The re-establishment areas will be subject to soil and depth to ground water testing to verify and adjust which locations can support wetland habitat.

The removal of non-native and invasive species within the mitigation areas is expected to provide an overall benefit to the Carroll Canyon Creek watershed by decreasing the dispersal of non-natives to areas downstream beyond the mitigation areas. The upper reach of Carroll Canyon Creek was part of the mitigation obligation for another phase of the Hanson quarry. This entailed enhancement of the creek by removing non-native species. This section of the creek remains relatively weed free and no additional actions are proposed by this Plan for this upstream area

The CUP Additional Enhancement areas selected within Rattlesnake Creek (defined as CUP Additional Enhancement Areas) currently support non-native species and disturbed habitat immediately adjacent to the creek and extant riparian habitat. The enhancement will include removing invasive species, trash and debris, and installing native riparian scrub seeds and cuttings, thereby improving the overall quality of the habitat. The removal of non-native and invasive species within the mitigation areas is expected to provide an overall benefit to the Rattlesnake Creek watershed by decreasing the dispersal of non-natives to areas downstream beyond the mitigation areas.

8.2 IMPLEMENTATION SCHEDULE

Implementation of this Plan will begin with project approval. Grading and initial removal or clearing non-native vegetation, should occur between September 16 and January 14 to avoid impact to avian species protected by the Migratory Bird Treaty Act. If grading or vegetation removal is proposed during the nesting bird and raptor breeding season (January 15 through September 15), a pre-construction survey shall be conducted by a qualified biologist within 500 feet of the work limits to look for active nests. If no active nest is found, grading and/or vegetation removal can commence. If an active nest is found, no work can occur within 100 feet of an active bird nest (500 feet for raptors) until it has been determined by the qualified biologist that the nestlings have fledged.

Grading and initial vegetation removal should avoid the least Bell's vireo breeding season (March 15 through September 15) to avoid indirect impacts on nesting individuals. If grading or initial vegetation removal is proposed during the least Bell's vireo breeding season due to weather delays or other unforeseen circumstances, the USFWS and City will be notified in writing before March 8 and either of the following measures shall be implemented:

- A qualified biologist familiar with least Bell's vireo should be present on site at least three hours per day, three times per week, to determine if vireos have begun arriving to the area. Once vireos have been determined to be present for the season in the area, the grading contractor shall complete grading work within two days. Mesa Canyon Community Partners will provide the qualified biologist's daily monitoring report for the three days per week monitoring; or

- The grading contractor will install noise attenuation materials within the work area to reduce the grading noise levels to below 60 dB(A) L_{EQ}. The type of material and location of installation will need to be determined prior to March 15 in coordination with a qualified biologist knowledgeable with least Bell's vireo and in coordination with a qualified acoustician. All noise attenuation materials would need to be installed prior to March 15 and noise monitoring will be implemented to help ensure grading noise is below 60 dB(A) L_{EQ} at the edge of suitable least Bell's vireo habitat. Prior to March 15, Mesa Canyon Community Partners will provide the qualified acoustician's written report that confirms that noise attenuation is installed and adequately reducing noise levels at the edge of vireo habitat. Noise monitoring will continue into the vireo breeding season until grading is completed.

All other activities, such as planting, can begin at any time and completion of five-year maintenance would not be precluded during the avian breeding season. Ideally, planting, seeding, and cutting installation should occur in October or November to ensure that these activities are completed prior to the rainy season.

Maintenance (Section 7) and monitoring (Section 8) will begin following installation and continue for up to five and one-half years or until all success criteria have been met.

8.3 SITE PREPARATION

8.3.1 Soils

Soils mapped for the mitigation site include Gravel pits, Riverwash, terrace escarpments, and Olivenhain cobbly loam, 2 to 9 percent slopes (NRCS 2017). Due to the use of the site as a quarry many of these soil types may no longer be present, especially in areas that were actively mined. Prior to the start of work, soil testing will be conducted in the creation portion of the mitigation area. Soil borings will be collected to a depth of two-to-three feet below the post-grading soil surface. Confirmation of the presence of suitable wetland soils will be required, to help ensure a successful wetland mitigation project. Suitable soils are those that allow the downstream and lateral movement of ground water. If suitable wetland soils are not present, as determined by soil testing, over excavation of the existing re-establishment area and installation of appropriate soils may be needed at the site to increase the chances of a successful mitigation project.

Riverwash is the native soil type in Carroll Canyon Creek. This soil type occurs in intermittent stream channels. The typically profile has two horizons: 0 to 6 inches: gravelly coarse sand; and 6 to 60 inches: stratified extremely gravelly coarse sand to gravelly sand (Bowman 1973). Riverwash soils, cobbles, and boulder spoils from the quarry operations and unearthed during channel and other construction grading will be collected, stockpiled, and spread over the surface of the new reaches of the mitigation site in the non-vegetated parts of the reconfigured channel. The design is to place one-to-two feet of cobbles and boulders overlain with course sand over approximately 50 percent of the channel bottom, provided

enough suitable material is available on site. This may not be possible if these no longer exist on site. If that is the case, the project will salvage and use what is available.

8.3.2 Site Access

Equipment access (e.g., crane, excavator, front end loader, bulldozer, dump truck, and backhoe) will be required for soil removal within the re-establishment areas. The type of equipment used for site preparation and installation will be at the discretion of the contractor. Staging for the grading and invasive removal will be on disturbed land within the Project boundary. All vehicles and construction equipment will be restricted to the staging area(s) when not required for mitigation activities. Temporary impacts to native habitats from construction equipment access will be restored. The contractor will be responsible for determining the location of any buried utilities prior to any earth disturbance. Access to the mitigation areas will occur along existing dirt paths, roads, and disturbed land to the maximum extent possible.

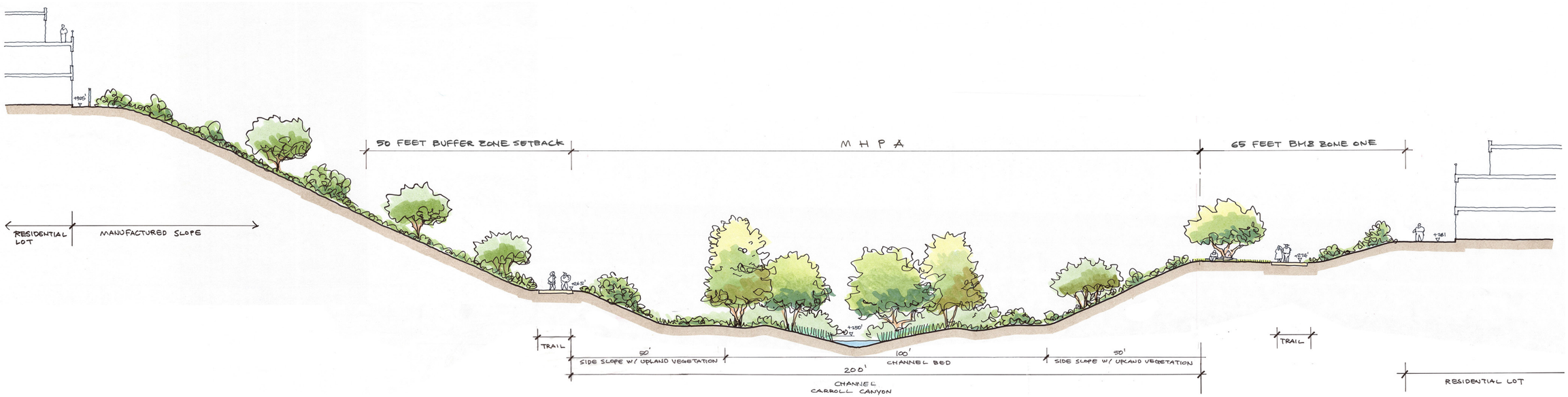
Access within the mitigation site will be approved by the restoration specialist prior to equipment being mobilized. Where access is only possible over native habitat, a route will be chosen to minimize impacts to native habitat and will be flagged to ensure impacts to native habitats are restricted to what is minimally necessary. Mitigation for habitat used for access may include decompaction, seeding, and subsequent maintenance. Minimal temporary impacts may be allowed in some areas (consisting of vegetation trimming) to allow construction vehicle access mitigation areas, at the direction of the restoration specialist. Any vegetation removal conducted for access will be documented by the restoration specialist, and all temporarily impacted areas will be monitored and maintained for the full five-year maintenance and monitoring period to ensure that native vegetation successfully reestablishes.

8.3.3 Delineating Limits of Work

Prior to any mitigation activities, each work area will be staked, roped off, or otherwise demarcated to conspicuously mark the limits. This is to avoid unauthorized impacts to native habitat and sensitive plant species. Project boundaries will be marked by the restoration specialist, and staking/fencing will be installed by the installation contractor.

8.3.4 Grading

Grading will result in lowering the existing topography to increase frequency and duration of surface inundation, and bring the ground surface closer to the water table. Grading for Carroll Canyon Creek re-establishment will result in two cross-section types. In the narrowest, central reach of the creek (between approximately 1,300 feet and 2,270 feet east of Camino Santa Fe Road; Figure 9a), secondary channels will be created on the north and south of the existing channel (Figure 11a). The low-flow channels will be graded with approximately 2.5:1. side slopes. Gabion drop structures will be placed at intervals to reduce flows and avoid creation of narrow channel because of the steep channel gradient and will spread flows across the expanded channel areas. The rational for the design of these secondary channels is to minimize impacts to extant riparian habitat and still create wetland surface hydrology in a wider creek cross-sectional area. One of the narrowest reaches of the planned channel is where the channel will be redirected southwest (approximately 1,220 feet east of Camino Santa Fe Road; Figures 9a and 11b). The outside curve of the channel at this location is lined with riprap to prevent erosion. The areas of riprap will not be included in the mitigation calculations provided in this Plan. The



CARROLL CANYON CREEK @ B-B SWA / REVISED 10/22/2018

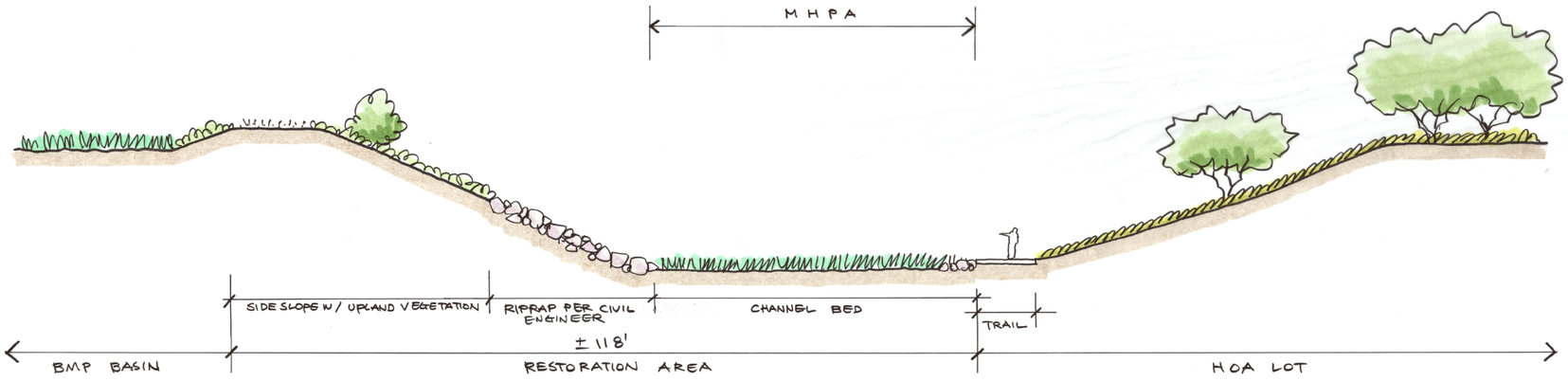
I:\PROJECTS\H\HAW\HAW-34_Contera\Map\MitigationPlan\Fig11a_CrossSection.indd CAH-02-01 10/02/18 -CL

Source: SWA 10/2018

HELIX Environmental Planning

Cross Section (Average)

Figure 11a



CARROLL CANYON CREEK @ A-A

10/1/2018 SWA / REVISED 10/22/2018 **Revised by SWA 4/10/2019**

Source: SWA 4/2019

HELIX Environmental Planning

Cross Section (Narrow)

Figure 11b

channel configuration at the widest point is a broad floodplain with a low terrace (Figures 9b, 11c, and 11d). In the temporary impact acres, finish grades must match the pre-impact grades.

All grading should be completed in fall (September 16 through December 1), which is outside the riparian bird breeding season, and a time with a low probability of flooding. This is necessary to avoid impacts to nesting bird species (see Section 6.2) and, by not grading when precipitation is most likely, to minimize erosion. Proper best management practices (BMPs) will be installed to protect the river from unnatural levels of sedimentation. If grading is necessary during the breeding season, additional survey and monitoring requirements will be required, as described in Section 5.2.

The contractor doing the grading will be under the direct supervision of the restoration specialist. Grading may be done concurrently with or after non-native plant removal (see Section 6.4, below).

The subsurface hydrology must be suitable for riparian habitat. To that end, the borings specified in Section 8.1.3 must be evaluated to determine the water table depth and the wetland mitigation area soils to be exposed by grading. The target zone for this analysis is the proposed root zone: i.e., two to five below the ultimate surface elevation. As part of the installation, piezometers will be installed, and groundwater depth will be monitored as part of the on-going monitoring. These should be installed to a depth of 10 feet in the mitigation areas and in extant habitat to allow a comparison between mitigation and extant habitat.

No grading is proposed in the CUP Additional Enhancement areas of Rattlesnake Creek.

8.3.5 Erosion Control

Straw wattles, compost socks, silt fencing, or similar materials will be installed on the slopes of the mitigation area, as needed, to minimize erosion and prevent sedimentation of the streambed. Erosion control will be removed after sufficient vegetation has established to prevent erosion.

8.4 NON-NATIVE PLANT REMOVAL

Wetland/riparian/streambed re-establishment, restoration, and enhancement will include removing non-native species within USACE, RWQCB, CDFW, and City jurisdictional areas. Removal of non-native species will occur within the entire Carroll Canyon Creek mitigation area. The initial removal of non-native plants may begin at any time (e.g., prior to or during grading), but must be done prior to planting (i.e., installation of container stock and seed). All non-native vegetation must be removed within the entire mitigation areas and immediately adjacent uplands (to limit potential re-invasion by these species) prior to planting. Appropriate herbicide (e.g., wetland-approved herbicides) may be used during non-native plant control, if necessary. Perennial species that re-sprout from the below-ground portion of the plant should be cut and herbicide should be applied to stems and re-sprouts. Most large woody exotics will be cut to ground level with all above-ground portions removed from the site. All non-native plant material, as well as any trash and other debris removed from the mitigation areas, will be disposed of in a licensed landfill.

Non-native species removal will be included in the CUP Additional Enhancement areas of Rattlesnake Creek.

8.4.1 Non-native Tree Removal/Treatment

Eucalyptus (*Eucalyptus* sp.) and other non-native trees growing within the mitigation areas will be cut down and hauled off site to an approved landfill. Once debris is removed from around the trunk, a fresh cut will be made before applying approved herbicide (i.e., Triclopyr/surfactant mix) at 20 to 25 percent solution to the cut surface. All non-native tree trunks within the proposed grading footprint will be removed via an excavator and disposed of offsite. Some native trees within the mitigation areas may be trimmed if necessary for the non-native tree removal. At the approval of the restoration specialist, and the responsible agencies, any large non-native trees, whose removal creates an unacceptable level of impact to native vegetation, will be left on site as a snag or downed tree.

8.5 PLANT AND SEED SPECIFICATIONS

The plant species selected (i.e., seeds, cuttings, container stock) for installation within the mitigation areas occur on site, are common in the region, and are known from the Los Peñasquitos watershed. All container plants and plant materials would be inspected prior to arrival on-site/removal from delivery truck and immediately prior to on-site installation by the landscape specialist/biologist for the presence of Argentine ants (*Linepithema humile*), diseases, weeds and other pests. Plants or planting materials detected of Argentine ants, pests, weeds, or diseases will be rejected from use at the mitigation site. Acceptance of the container stock is contingent upon the proper amount of root development, the absence of any pathogens or pests (e.g., Argentine ants). Acceptance of the container stock is the responsibility of the restoration specialist.

Application of seed and installation of container stock material will include inoculation of beneficial bacteria and fungi (e.g., bacillus and mycorrhizae species, respectively).

8.5.1 Plant/Seed Orders

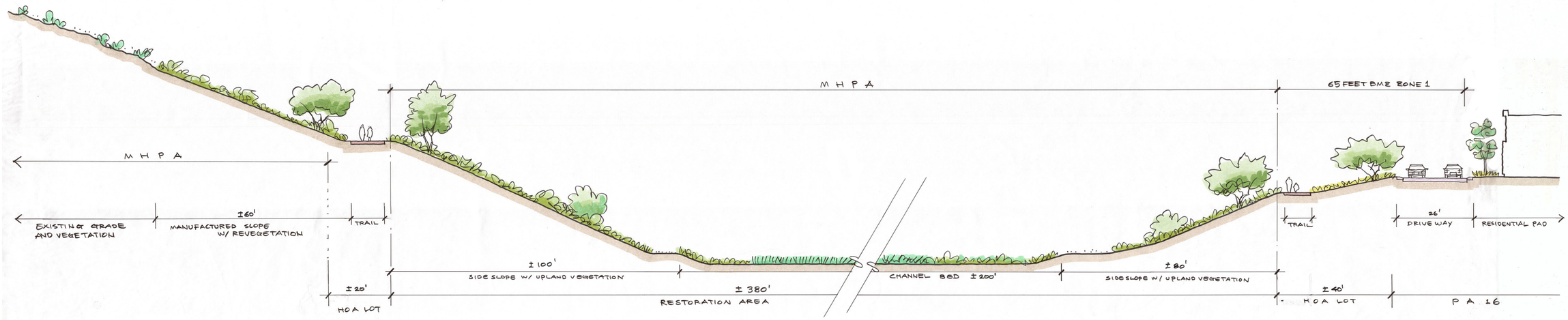
Seed and plant material for this Project will be collected or propagated from local plant populations occurring in coastal San Diego County within 25 miles of the site. The restoration specialist must approve all seed and container stock orders, including specific species and source locations, prior to finalizing. Substitutions, other donor sites, or use of commercial material may be allowed if materials are unavailable, at the discretion of the restoration specialist. The restoration specialist will review and approve the seed mix before it is ordered. The restoration specialist will have the discretion to make changes to the seed mix before it is ordered.

8.5.2 Container Stock and Cuttings

Live plants will be installed as one-gallon container stock or as cuttings. All plantings should be installed in a way that mimics natural plant distribution (i.e., groupings and patches; not in rows).

8.5.3 Container Stock

Container stock should be installed in holes that are just large enough to accommodate the root ball of the plant. Holes may be dug with mechanical augers or by hand, at the discretion of the installation contractor. Each hole shall be filled with water twice and allowed to drain before installing the plant. If soil saturation is present, then no pre-watering will be necessary. A well will be constructed around each plant with a minimum inner diameter of two feet and a minimum ponding depth of three inches. This



CARROLL CANYON CREEK @ C-C

9/28/2018/SWA
10/1/2018/REVISED./ 10/22/2018/REVISED. Revised 10/26/2018

I:\PROJECTS\H\HAW\HAW-34_Cantera\Map\MitigationPlan\Fig11c_CrossSection.indd CAH-02-01 10/02/18 -CL

Source: SWA 10/2018

HELIX Environmental Planning

Cross Section (Wide)

Figure 11c

I:\PROJECTS\H\HAW\HAW-34_Cantera\Map\MitigationPlan\Fig11d_CreekReclamationOverheadView.indd CAH-02-01 2/07/19-CL

Source: SWA 2/2019

HELIX Environmental Planning

Creek Reclamation Overhead View

Figure 11d

well will be filled with water and allowed to drain three times in the three days following installation. Ideally, planting will occur during the fall (or spring depending on the timing of project implementation) to maximize survival of container stock. Slow release fertilizer may be added to each planting if the planting area is sterile, exposed subsoil or fill.

Plant protectors may be used to minimize herbivory, as needed, at the restoration specialist's direction. Fencing may also be used to protect specific areas or patches of installed container stock, at the discretion of the installation contractor and approval by the Restoration Specialist.

8.5.4 Cuttings

Willow and mule fat will also be installed as cuttings. One of the main advantages of is they can be sourced from existing plant material on site. Source material will be mature shrubs and trees found on or adjacent to the Project site. Specific cutting procedures would include taking straight or nearly straight cuttings that are at least 20 inches long and 0.5 to one inch in diameter. However, cuttings placed in or near the groundwater table should be sufficiently long enough to reach the water table. To help ensure genetic diversity within the mitigation area and limit damage to existing vegetation, no more than 10 cuttings will be collected per individual tree or shrub. The stems will be cut so that the bottom end is at an angle, to identify which end to install in the ground. All cuttings will be stripped of leaves to allow roots to develop prior to above-ground vegetation and keep the cutting from drying out, while tops will be cut flat to distinguish the top from the bottom end. Cuttings will be installed so that 50 to 60 percent of their total length is below grade. The ground should be saturated prior to installation, and cuttings should be installed immediately or stored properly to avoid desiccation.

8.5.5 Seeding

Habitat specific seed mixes (including hydroseed) will be installed after container stock has been installed. The areas to be hydroseeded should be irrigated for two weeks prior to hydroseeding, after the container plants are installed.

8.6 PLANTING SPECIFICATIONS

Once grading and non-native plant removal have been completed, a mixture of container plantings, cuttings, and seed will be installed in the mitigation areas. This section provides the planting pallets for the Project. Plant species characteristic of riparian scrub will be installed within re-establishment, restoration, and enhancement areas. The target habitat for the upland slopes adjacent to the streambed varies by slope orientation: south, southwest, and southeast facing slopes will be coastal sage scrub; north facing slopes will be southern mixed chaparral; and northwest and northeast will be coastal sage-chaparral transition.

8.6.1 Riparian Scrub

The target habitat for the creek re-establishment, restoration and enhancement is riparian scrub (Figures 9a-d). Riparian scrub is a varied habitat type encompassing both mule fat scrub and southern willow scrub. This plan provides for establishment in 50 percent of the wetland/riparian/streambed re-establishment area (6.40 acres) and in 100 percent of the enhancement and re-establishment areas (2.22 acres). Riparian vegetation establishment in 50 percent of creek re-establishment areas is intended

to mimic the patchy mosaic distribution of vegetation present in the more natural parts of the creek upstream and downstream of the mitigation areas.

Plant establishment will occur by seed, container stock, and cuttings (Table 7). The species specified here include perennial herbs, shrubs, and trees that are known to occur on site or nearby.

Table 7
RIPARIAN SCRUB PLANT PALETTE

Seed Mixture				
Scientific Name	**Common Name**	**% Purity / Germination**	**Application Rate (lbs./acre)**	**Amount to be Ordered (lbs.)[1]**
Ambrosia psilostachya	western ragweed	45/45	4.2	22.8
Artemisia douglasiana	Douglas' mugwort	15/50	3.0	16.3
Datura wrightii	jimson weed	90/75	2.8	15.2
Isocoma menziesii	goldenbush	18/40	3.9	21.1
Juncus mexicana	Mexican rush	95/80	2.1	11.4
Muhlenbergia rigens	Deergrass	75/40	1.0	5.4
Rumex salicifolius	willow leaved dock	80/60	1.1	6.0
		TOTAL	**18.1**	**98.2**

Container Stock and Cuttings						
Scientific Name	**Common Name**	**Type**	**Spacing on Center[2]**	**Grouping Size**	**Number per Acre**	**Total Number[1]**
Artemisia palmeri	Palmer's sagebrush	1-gallon	4	13	130	705
Baccharis salicifolia	mule fat	1-gallon cuttings	5 5	36 20	360 200	1,951 1,084
Baccharis sarothroides	broom baccharis	1-gallon	5	10	100	542
Iva hayesiana	San Diego marsh-elder	1-gallon	4	13	130	705
Platanus racemosa	California sycamore	1-gallon	15	2	12	65
Populus fremontii	Fremont cottonwood	1-gallon	15	4	40	217
Salix exigua	slender willow	1-gallon	6	7	70	379
Salix gooddingii	black willow	1-gallon	15	2	4	22
Salix lasiolepis	arroyo willow	1-gallon cuttings	10 10	4 3	16 12	87 64
	TOTAL	1-gallon cuttings	--	--	**862** **212**	**4,4,673** **1,148**

[1] Based on 50 percent cover over 6.40 acres, plus 100% cover over 2.22 acres, or 5.42 acres.
[2] In feet.

8.6.2 Coastal Sage Scrub

Coastal sage scrub will be established by seed and container stock (Figures 9a-c). The dominant species will be mix of California sagebrush (*Artemisia californica*) and California buckwheat (*Eriogonum fasciculatum*; Table 8).

Table 8
COASTAL SAGE SCRUB PLANT PALETTE

Seed Mixture				
Scientific Name	**Common Name**	**% Purity / Germination**	**Application Rate (lbs./acre)**	**Amount to be Ordered (lbs.)[1]**
Acmispon glaber	deerweed	95/80	3	40.9
Artemisia californica	California sagebrush	30/60	2	27.2
Chaenactis glabriuscula	yellow pincushion	15/55	2.6	35.4
Deinandra fasciculata	fascicled tarplant	25/65	3	40.9
Eriogonum fasciculatum	buckwheat	55/20	5.6	76.3
Eriophyllum confertiflorum	golden yarrow	60/60	2.1	28.6
Eschscholzia californica	California poppy	98/80	3	40.9
Layia platyglossa	tidy tips	70/82	2	27.2
Muhlenbergia microsperma	little-seed muhly	80/60	1.2	16.3
Stephanomeria virgata	virgate wreath plant	80/18	2	27.2
Stipa pulchra	purple needle grass	90/71	5.2	70.8
		TOTAL	**31.7**	**431.8**

Container Plantings[2]					
Scientific Name	**Common Name**	**Spacing on Center[3]**	**Grouping Size**	**Number Per Acre**	**Quantity Required[1]**
Artemisia californica	California sagebrush	5	26	260	3,541
Cneoridium dumosum	bushrue	5	5	50	681
Encelia californica	California encelia	4	9	90	1,226
Eriogonum fasciculatum	California buckwheat	5	26	260	3,541
Ferocactus viridescens	coast barrel cactus	3	10	100	1,362
Malosma laurina	laurel sumac	6	6	60	817
Rhus integrifolia	lemonade berry	6	6	60	817
Salvia mellifera	black sage	5	17	170	2,315
			TOTAL	**1,050**	**14,300**

[1] Based on 13.62 acres.
[2] All container stock is one-gallon size.
[3] In feet.

8.6.3 Southern Mixed Chaparral

Southern mixed chaparral habitat will be established by seed and container stock (Table 9). The dominant species will be chamise (*Adenostoma fasciculata*) and toyon (*Heteromeles arbutifolia*).

Table 9
SOUTHERN MIXED CHAPARRAL PLANT PALETTE

Seed Mixture				
Scientific Name	**Common Name**	**% Purity / Germination**	**Application Rate (lbs./acre)**	**Amount to be Ordered (lbs.)[1]**
Acmispon glaber	deerweed	95/80	3.0	24.4
Chaenactis glabriuscula	yellow pincushion	15/55	2.6	21.2
Deinandra fasciculata	fascicled tarplant	25/65	3.0	24.4
Eriogonum fasciculatum	buckwheat	55/20	5.6	45.6
Eriophyllum confertiflorum	golden yarrow	60/60	2.1	17.1
Hazardia squarrosus	saw-toothed goldenbush	10/20	2.8	22.8
Salvia apiana	white sage	88/30	2.6	21.2
Stephanomeria virgata	virgate wreath plant	80/18	2.0	16.3
Stipa pulchra	purple needle grass	90/71	5.2	42.3
		TOTAL	**28.9**	**235.3**

Container Plantings[2]					
Scientific Name	**Common Name**	**Spacing on Center[3]**	**Grouping Size**	**Number Per Acre**	**Quantity Required[1]**
Adenostoma fasciculata	chamise	6	24	240	1,954
Cercocarpus betuloides	mountain mahogany	8	5	30	244
Comarostaphylis diversifolia	summer holly	8	5	30	244
Eriodictyon crassifolium	felt-leaf yerba santa	5	17	140	1,140
Heteromeles arbutifolia	toyon	8	14	140	1,140
Malacothamnus fasciculatus	chaparral mallow	6	17	90	733
Malosma laurina	laurel sumac	6	12	110	895
Prunus ilicifolia	holly-leafed cherry	6	6	60	488
Quercus dumosa	Nuttall's scrub oak	6	6	18	147
Quercus agrifolia	coast live oak	10	2	10	81
Rhus integrifolia	lemonade berry	6	6	15	122
Ribes indecorum	white flowering currant	5	5	36	293
Xylococcus bicolor	mission manzanita	6	12	110	895
			TOTAL	**1,029**	**8,376**

[1] Based on 8.14 acres. This includes the riparian scrub and streambed portions of the mitigation habitats.
[2] All container stock is one-gallon size, except for *Quercus agrifolia* and *Quercus dumosa*, which are D40 deep liners.
[3] In feet.

8.6.4 Coastal Sage-chaparral Transition

Coastal sage-chaparral transition will be established by seed and container stock (Table 10). The dominant species will be chamise and California sagebrush.

Table 10
COASTAL SAGE–CHAPARRAL TRANSITION PLANT PALETTE

Seed Mixture				
Scientific Name	**Common Name**	**% Purity / Germination**	**Application Rate (lbs./acre)**	**Amount to be Ordered (lbs.)[1]**
Acmispon glaber	deerweed	95/80	3.0	3.6
Adenostoma fasciculata	chamise	85/20	4.0	4.8
Artemisia californica	California sagebrush	30/60	2.0	2.4
Chaenactis glabriuscula	yellow pincushion	15/55	2.6	3.1
Deinandra fasciculata	fascicled tarplant	25/65	3.0	3.6
Eriogonum fasciculatum	buckwheat	55/20	4.2	5.1
Eriophyllum confertiflorum	golden yarrow	60/60	2.1	2.5
Eschscholzia californica	California poppy	98/80	2.0	2.4
Hazardia squarrosus	saw-toothed goldenbush	10/20	2.8	3.4
Salvia apiana	white sage	88/30	2.6	3.1
Salvia mellifera	black sage	85/50	3.0	3.6
Stephanomeria virgata	virgate wreath plant	80/18	2.0	2.4
Stipa pulchra	purple needle grass	90/71	5.2	6.3
		TOTAL	**38.5**	**46.3**

Container Plantings[2]					
Scientific Name	**Common Name**	**Spacing on Center[3]**	**Grouping Size**	**Number Per Acre**	**Quantity Required[1]**
Adenostoma fasciculata	chamise	6	24	220	266
Artemisia californica	California sagebrush	5	35	330	399
Encelia californica	California encelia	4	15	120	145
Eriodictyon crassifolium	Felt-leaf yerba santa	5	9	90	109
Eriogonum fasciculatum	California buckwheat	5	17	150	182
Heteromeles arbutifolia	toyon	8	6	36	44
Malacothamnus fasciculatus	Chaparral mallow	5	6	60	73
Malosma laurina	laurel sumac	6	6	60	73
Rhus integrifolia	lemonade berry	6	6	60	73
			TOTAL	**1,126**	**1,364**

1 Based on 1.21 acres.
2 All container stock is one-gallon size.
3 In feet.

8.7 IRRIGATION

The proposed approach for irrigation is a temporary aboveground sprinkler system to be installed prior to planting of the re-establishment, restoration and restoration areas. During the 120-day establishment period, water will be applied liberally to encourage root growth and germination. Following the 120-day establishment period, water will be applied only as needed to help ensure the viability of plants and seedlings (Section 9.2.4). The irrigation system will be designed and operated to accommodate the periodic flows of Carroll Canyon Creek.

No irrigation is proposed for the CUP Additional Enhancement areas of Rattlesnake Creek. Irrigation is proposed for the CUP-Additional upland restoration areas.

8.8 120-DAY ESTABLISHMENT PERIOD

The 120-day establishment period will start following complete installation within the re-establishment, restoration and restoration areas. The 120-day establishment period is undertaken to ensure that there is adequate seed germination and the container stock and cuttings are past any transplantation shock. The restoration specialist will conduct monthly monitoring visits during this period and develop a list of action items to be immediately addressed, if necessary. Action items may include maintenance for weed control, erosion, irrigation, vandalism, replacement of container stock, removal of trash or debris, pest management, site protection or signage, and horticultural treatments (pruning, mulching, disease control). The installation contractor is responsible for performing remedial measures to fix any observed problems identified by the restoration specialist. Success at the end of the 120-day establishment period will be met if all targeted non-native species located within the mitigation areas have been eradicated (by removing to ground level and killing any remaining stumps to prevent re-sprouting), there is 90 percent survivorship of container stock within planting areas, and there are no erosion-related issues. The site should be free of trash and debris. The successful establishment of the plantings is essential for the ultimate success of this Plan.

8.9 AS-BUILT CONDITIONS

The restoration specialist shall submit a brief as-built letter report to the resource agencies within 30 days of the completion of installation activities and the 120-day establishment period. This letter will describe site preparation, installation methods, activities conducted during the 120-day establishment period, and the as-built status of the overall mitigation Project. To document baseline site conditions and implementation of this Plan, the letter will include an as built graphic on an aerial photo base, as well as photos taken from the designated photo stations, before and after installation.

9.0 MAINTENANCE PROGRAM

9.1 MAINTENANCE SCHEDULE

Maintenance will be performed for five years, as necessary, to minimize competition and establishment of weeds, and promote the development of the native habitats. Maintenance activities will be driven by site conditions; the schedule outlined here serves only as a guideline (Table 11). The installation/ maintenance contractor(s) will complete maintenance requests from the restoration specialist within 14 days of any written request or monitoring memo. At a minimum, the installation contractor will conduct monthly maintenance during the 120-day establishment period. To complete the 120-day establishment period, container plantings must have 90 percent survivorship, all non-native species must be removed from the mitigation area, and no erosion issues. Any replacement plantings added to attain the survivorship criterion must be installed for at least 30 days prior to acknowledgement of the successful completion of the 120-day establishment period.

Table 11
MAINTENANCE SCHEDULE
FOR THE FIVE-YEAR HABITAT MITIGATION [1]

Project Stage	Schedule
Installation Contractor	
120-day Establishment Period	Monthly
Maintenance Contractor	
Year 1 through Year 3	8 visits per year
January – June	Monthly
July – December	Two visits
Years 4 and 5	Quarterly

[1] This schedule is only a guideline; maintenance will be performed as necessary as directed by the restoration specialist.

The maintenance contractor will be responsible for all maintenance activities during the five-year maintenance and monitoring period. During years 1 through 3, maintenance will be conducted once per month from January through June (during the peak growing period for most non-native species) and include two additional visits during the remainder of the year (Table 11). Maintenance visits will be reduced to quarterly visits in years 4 and 5.

9.2 MAINTENANCE ACTIVITIES

These maintenance guidelines are specifically tailored for native plant establishment. The maintenance program will include weed control, watering, erosion control, removal of trash, and any remedial measures deemed necessary for the success of the mitigation (e.g., re-seeding and re planting). Maintenance activities will be directed by the restoration specialist. Damage to plants and other facilities occurring because of unusual weather or vandalism will be repaired as directed by the restoration specialist and the cost of such repairs will be paid for as extra work.

9.2.1 Non-native Plant Control

For the duration of the maintenance period, there will be a very low tolerance for non-native species, and removal will be conducted as necessary to minimize competition that could prevent the establishment of native habitats. Within the mitigation areas, woody non-native species will be removed to ground level, and any resprouts treated with herbicide until the plants are dead. As non-native species become evident, they should be removed by hand or controlled with appropriate herbicides (e.g., only wetland-approved herbicides should be used in the wetland mitigation areas). The restoration specialist will oversee non-native plant removal by the maintenance contractor; however, maintenance personnel must be able to distinguish non-native species from desirable native vegetation. In addition, a weed-free buffer of 25 feet should be maintained around the mitigation areas.

9.2.2 Invasive Plant Control

Within the mitigation areas, invasive plant species make up a subset of non-native species. This includes species that are rated as either High or Moderate by the California Invasive Plant Council (Cal-IPC; 2017). These species are highly invasive pest plants that have been documented as aggressive invaders, capable of displacing natives and disrupting natural habitats. These species will be removed from the entire wetland mitigation area as well as the upland buffer immediately adjacent to the riparian

corridor. Examples of invasive plants that occur on site include, but are not limited to, pampas grass (*Cortaderia selloana*), Mexican fan palm (*Washingtonia robusta*), saltcedar (*Tamarix ramosissima*), and hottentot fig (*Carpobrotus edulis*). These species are targeted for eradication. Several other species, which have a lower rating by Cal-IPC, but are locally very prevalent, will also be targeted for complete eradication. These species include eucalyptus and castor-bean.

9.2.3 Herbicides

Any herbicide used to control non-native plants as part of the mitigation effort must be on a City list of approved herbicides. In addition, only herbicides approved for aquatic use can be used in aquatic habitats. Lastly, herbicides must be applied by an individual with a valid applicator's license, and only individuals with an F Category on their license may use herbicides in aquatic habitats.

9.2.4 Irrigation

The goal of the initial irrigation (i.e., during the 120-day establishment period) will be to obtain plant establishment and seed germination and growth with the least amount of irrigation. In the wetland/ riparian re-establishment and restoration areas, subsequent irrigation should be scheduled to encourage deep root growth. This is done by scheduling several irrigation cycles per day, with one or two days between irrigation days. In the upland areas, following the initial irrigation regime water will be applied infrequently, only as needed to prevent plant and seedling mortality. Native plantings that are infrequently irrigated may grow slower initially but will ultimately be better adapted to site conditions and, therefore, more successful in the long term. Irrigation of the mitigation areas will be conducted by a temporary above-ground system that is installed prior to planting and seeding. Irrigation will occur on a schedule determined by the restoration specialist, until it is decided watering is no longer required. All irrigation will cease by the end of year 3.

9.2.5 Trash Removal

All trash will be removed from the wetland mitigation areas by the maintenance contractor during each visit throughout the maintenance period. Trash removal activities will minimize or avoid impacts to plants in the mitigation site. All trash and weed debris will be removed from the project site and disposed of at an off-site, licensed waste disposal facility.

9.2.6 Pests

Insects, vertebrate pests, and diseases will be monitored. Generally, pests will be tolerated unless they pose a significant threat to project success. If deemed necessary, a licensed pest control adviser will make pest control recommendations. All applicable federal and state laws and regulations will be closely followed. The restoration specialist will be consulted on any pest control matters.

9.2.7 Horticultural Treatments

No pruning, mulching, fertilizer application, or disease control is necessary unless otherwise directed by the restoration specialist.

9.2.8 Erosion Control

Erosion control measures will be maintained, or additional BMPs will be installed as needed or as identified by the restoration specialist. Any installed erosion control materials will be removed from the site by the maintenance contractor once the restoration specialist determines sufficient native plant cover has established.

9.2.9 Replacement Planting and Seeding

If success criteria outlined in Section 11.0 are not being met, additional measures, such as installation of replacement cuttings or seeding, may be implemented.

9.2.10 Vandalism

Damage to facilities occurring because of vandalism will be repaired, as directed by the restoration specialist. The cost of such repairs will be paid for as extra work. The contractor will be responsible for damage caused by inadequate maintenance or operation of facilities, as determined by the restoration specialist.

9.2.11 Sensitive Species Issues

As a general maintenance principle, maintenance should be done that avoids impacting native species. This is particularly important for sensitive species. Maintenance personnel will be trained to identify sensitive plant species and instructed to conduct maintenance activities in a manner that avoids impacting them.

10.0 MONITORING PROGRAM

10.1 MONITORING AND REPORTING SCHEDULES

Monitoring and annual assessments of the mitigation areas will be carried out under the direction of the restoration specialist. This monitoring program will begin with site preparation and mitigation installation and continue for a minimum of five years following the end of the 120-day establishment period (Table 12). Monitoring will be conducted daily during site preparation and installation, and monthly during the 120-day establishment period. Maintenance monitoring will be conducted eight times per year in years 1 through 3. Monitoring will be conducted monthly from January through June (to cover the peak establishment period of both spring and summer germinating species) and twice during the remainder of the year. During years 4 and 5, monitoring will be conducted four times per year. This monitoring schedule is the minimum; more frequent inspections may be necessary if there are problems with contractor performance or habitat development. Annual monitoring will be conducted in August or September of each year to coincide with the peak of the growing season for wetland plants. The first year will be done following the first growing season. That is, if the project is deemed installed in March of a given year, the first annual monitoring event will occur in the same calendar year. The exact timing of the visits will depend on site and weather conditions.

Table 12
MONITORING SCHEDULE FOR THE FIVE-YEAR HABITAT MITIGATION *

Project Stage	Schedule
Installation	
Site preparation and installation	Daily
120-day Establishment Period	Monthly
Maintenance Monitoring	
Years 1 through 3 January to June July to December	8 visits per year Monthly (6 visits per year) 2 visits per year
Years 4 and 5	Quarterly (4 visits per year)
Annual Monitoring	
Years 1 through 5	August or September (1 visit per year)

* This schedule is only a guideline; maintenance will be performed as necessary as directed by the restoration specialist.

A post-installation and as-built report will be prepared following the successful completion of the 120-day establishment period. Maintenance monitoring memos will be forwarded to the Mesa Canyon Community Partners and the maintenance contractor within one day of the monitoring inspection. An annual report will be prepared following each annual assessment and will be submitted to Mesa Canyon Community Partners for review by the end of calendar year. Mesa Canyon Community Partners or HELIX will forward the annual report to the City and resource agencies. A separate annual report for the CUP-Additional mitigation areas will be prepared and provided to the City.

10.2 INSTALLATION MONITORING

The restoration specialist will be on site daily to direct the installation, including plant placement, spacing, weed removal, irrigation coverage, cutting harvesting, and seeding. The installation period also includes the 120-day establishment period, during which time the restoration specialist will monitor maintenance activities. Monitoring memos noting any issues with plant establishment, watering, sediment control, etc. will be provided to Mesa Canyon Community Partners, the maintenance contractor, and the City. These maintenance monitoring memos will also be included as an appendix to first annual report.

10.3 FIVE-YEAR MAINTENANCE MONITORING

The five-year maintenance monitoring period begins after the 120-day establishment period (Table 11). Monitoring memos noting any issues with plant establishment, watering, sediment control, etc., will be provided to Mesa Canyon Community Partners, the maintenance contractor, and the City. These maintenance monitoring memos will be included as an appendix to each annual report.

10.4 ANNUAL MONITORING

In addition to maintenance monitoring visits, the restoration specialist will conduct an annual technical monitoring visit in August or September (Table 12) each year of the five-year monitoring period. Annual monitoring will involve the evaluation of native and non-native vegetative cover, wildlife observations, and photo documentation. In addition, annual monitoring in Year 5 will include a California Rapid Assessment Method (CRAM) and jurisdictional delineation. Methods of each component of the annual

monitoring are described below. The annual reports will be provided to Mesa Canyon Community Partners and submitted to the City and resource agencies.

A separate annual report for the CUP-Additional mitigation areas will be prepared and provided to the City since this is a City only obligation. A CRAM and jurisdictional delineation will not be performed for the CUP Additional Enhancement area of Rattlesnake Creek.

10.4.1 Vegetation Analysis

The quality of vegetation communities within the wetland and upland creation areas and wetland enhancement areas will be assessed by estimating native and non-native vegetation cover using the relevé method (California Native Plant Society [CNPS] 2007). Each contiguous creation and enhancement vegetation community within the wetland and upland mitigation area will serve as a sampling plot to determine and assign cover classes (1: <1%, 2: 1-5%, 3a: >5-15%, 3b: >15-25%, 4: >25-50%, 5: >50-75%, 6: >75%) to native and non-native vegetation, as well as list dominant species present, and the presence/absence of invasive weed species. Average height of tree and shrub species, and general observations of plant health, will also be documented for each plot during each of the five years of annual monitoring. Visual estimates of container planting survivorship for the entire mitigation area will be made in Years 1 and 2 only.

10.4.2 Wildlife Observations

Observations of wildlife within the mitigation areas will be documented and included in each annual report. Incidental sightings made during maintenance monitoring visits will also be included.

10.4.3 Photo Documentation

Photos will be taken from photo locations established prior to the start of the mitigation effort. Photos will be taken from these locations as part of all five annual monitoring events and will be included in the respective year's annual report. Photo locations will be permanently marked in the field and mapped on an aerial photograph in the baseline monitoring report (as-built report following the 120-day establishment period) and all subsequent annual reports. To visually demonstrate the progress of the mitigation effort, photos taken immediately before and after installation will be included in each report for comparison with the respective year's annual assessment photos. An aerial photo taken in the calendar year of each annual report will also be included in the annual report.

10.4.4 California Rapid Assessment Method

A CRAM assessment will be conducted within the 3Roots mitigation site at the end of Year 5 (California Wetlands Monitoring Workgroup [CWMW] 2013). CRAM is necessary only at the end of the five-year period, as CRAM evaluates the overall function of an area and does not detect slight changes in physical and biotic structures (i.e., plant cover) or other habitat features. The AA or AAs will be the same as was sampled during the pre-installation CRAM assessment. To determine whether the project has developed target functions and services, the CRAM score obtained during the Year 5 annual assessment will be compared with the score from the pre-installation CRAM assessment. Results from the Year 5 CRAM assessment will be included in the Year 5 annual report.

A CRAM will not be conducted for the CUP Additional Enhancement area of Rattlesnake Creek.

10.4.5 Jurisdictional Delineation

A jurisdictional delineation will be conducted in the wetland re-establishment areas in Years 3 and 5 to determine the presence of hydrophytic vegetation, hydrology, and hydric soils. Analysis will be based on standard wetland delineation methods in accordance with the 2008 Regional Supplement to the USACE Wetland Delineation Manual: Arid West Manual (Arid West Manual); however, it should be noted that hydric soil indicators may take more than five years to develop. Hydrology indicators that may be documented during annual assessments include observations of water flow, drift lines, saturation, and sediment deposits.

A jurisdictional delineation will not be conducted for the CUP Additional Enhancement area of Rattlesnake Creek.

10.4.6 Annual Reports

Annual reports will use qualitative data to evaluate the success of the mitigation effort relative to the success criteria and include recommendations necessary to ensure ultimate success of the mitigation project. Each report will evaluate the success of the mitigation effort to date, along with any recommendations for future work that may be necessary. The annual monitoring reports will cover all monitoring and maintenance events since the previous report. In the case of the first-year report, all monitoring and maintenance events since the 120-day report will be included.

11.0 PERFORMANCE STANDARDS

The following sections provide performance standards to determine the successful completion of the mitigation effort as well as measurement methods for success criteria. Attainment of these standards indicates in the sufficient habitat development has occurred in the requisite acreages (Table 3) and the site is progressing toward the habitat functions and services targeted by this plan. The performance standards are for wetland/riparian re-establishment and restoration areas and adjacent wetland buffers (upland restoration); there are no performance standards for the CUP-Additional mitigation enhancement areas.

11.1 120-DAY ESTABLISHMENT PERIOD

Success at the end of the 120-day establishment period will be met if all invasive non-native species located within the mitigation areas have been eradicated (by removing to ground level and killing any remaining stumps to prevent re-sprouting), there is 100 percent survivorship of container stock within planting areas and there are no erosion-related issues.

11.2 FIVE-YEAR MAINTENANCE PERIOD

Annual performance goals have been set to track the progress of the mitigation effort. These success criteria are summarized in Table 13. The success criteria will be applied to the wetland/riparian re-establishment and restoration areas as well as the adjacent wetland buffers (upland restoration). Further, the success criteria will also apply to the CUP-Additional mitigation areas.

11.2.1 Container Plant Survival

Container plantings should have at least 80 percent survival after two years. At the first and second anniversary of plant installation, container plantings should be added to the creation area if mortality exceeds 20 percent of the original plantings, unless the function of these plants has been replaced by native recruitment (as determined by the restoration specialist). If plant mortality continues to be a problem, additional planting and seeding should be considered.

Table 13
SUCCESS CRITERIA FOR THE HABITAT MITIGATION

Criteria	Year 1	Year 2	Year 3	Year 4	Year 5
Container plant survival (minimum %)	80	80	--	--	--
Species richness (minimum)[1]	--	--	5	6	8
Native vegetation cover (minimum %)[2]	15 (cover class 3a)	25 (cover class 3b)	35 (cover class 4)	50 (cover class 4)	75 (cover class 5)
Non-native vegetation cover (maximum %)	15 (cover class 3a)	10 (cover class 3a)	10 (cover class 3a)	5 (cover class 2)	5 (cover class 2)
Target invasive species (maximum %)	<1 (cover class 1)	<1 (cover class 1)	<1 (cover class 1)	<1 (cover class 1)	<1 (cover class 1)
Jurisdictional delineation	--	--	--	--	X*

1 Number of native species.

2 Cover class will be assessed according to the California Native Plant Society Relevé Protocol (California Native Plant Society 2007).

3 A jurisdictional delineation will be done for all four permitting agencies: USACE, RWQCB, CDFW, and City. Each agency has their own methods for determining jurisdiction and the same methods that were used to assess impacts will be used to assess the amount of created jurisdiction.

11.2.2 Species Richness

Species richness and recruitment are closely linked. Species richness is the number of species present in an area: the higher the number of species, the greater the richness. Recruitment is the successful, natural reproduction, and/or establishment of plants. When recruitment is achieved by many species, richness and overall diversity will increase. However, recruitment may not necessarily increase species richness if, for example, only one species is successfully reproducing. Only through the successful introduction and establishment of varied species does richness increase. While no species richness success criteria have been established for Years 1 or 2, there should be an indication that sufficient species are present to meet the Year 3 through 5 goals. Success criteria for the wetland/riparian re-establishment and restoration areas, as well as the adjacent wetland buffers (upland restoration), and the CUP-Additional mitigation areas require that species richness is at least five native species by Year 3, at least six species by Year 4, and eight by Year 5. If the species richness goal for a given year is not met, corrective measures (e.g., re-seeding, planting, etc.) will be taken to ensure the Year 5 goal is achieved.

11.2.3 Native Vegetation Cover

Success criteria for native cover is based on observations of native cover within adjacent, undisturbed habitat, as well as the fact riparian habitat takes time to develop before it will look like mature, neighboring habitat. Although Year 1 and Year 2 are early in the development of the wetland/riparian re-establishment and restoration areas, as well as the adjacent wetland buffers (upland restoration),

and the CUP-Additional mitigation areas, success criteria include attainment of at least 15 and 25 percent native cover, respectively, to help evaluate if the vegetation is on target to meet Year 3 goals and determine if corrective measures (e.g., re-planting, re seeding, adding cuttings, irrigation schedule adjustment, and/or increased removal of non-native species) should be implemented. By Year 3, the wetland/riparian re-establishment and restoration areas, as well as the adjacent wetland buffers (upland restoration), and the CUP-Additional mitigation areas should attain at least 35 percent native cover (or a cover class of 4: between 25 and 50 percent). Also, at Year 3, it should be apparent if the site is on a trajectory to succeed, and this should be part of the Year 3 annual report. If it is not, Mesa Canyon Community Partners, the City, and resource agencies shall convene to determine how the Project proponent can meet the mitigation obligations. At the end of the five-year monitoring period, native cover will be at least 75 percent (or a cover class of 5: between 50 and 75 percent; CNPS 2007). If annual goals for vegetative cover are not met, remedial measures may be implemented to ensure final success.

11.2.4 Non-native Vegetation Cover

Competition from non-native species is typically a problem in habitat mitigation projects, particularly at their outset. The areas designated for habitat re-establishment, restoration and restoration will be disturbed by grading, which favors the establishment of non-native species that are quick to establish in the absence of competition. As the mitigation effort takes hold, non-native cover should decrease due to diligent removal of these species and expanding cover by native vegetation. Cover by non-native species, exclusive of invasive species, shall account for no more than 10 percent in Years 1 through 3, and no more than five percent in Years 4 and 5 (or a cover class of 3a: between five and 15 percent).

11.2.5 Target Invasive Species

Target invasive cover will include High- or Moderate-rated species as rated by the Cal-IPC and any species that are problematic regionally, as identified in Section 6.6.2, above. The acceptable cover value for invasive weed species will be less than one percent (cover class of 1) for each year of the five-year maintenance and monitoring period (Table 12). Any other noxious species, in addition to the ones identified as invasive in this Plan, that colonize the project site must also be eradicated.

11.2.6 California Rapid Assessment Method

A CRAM evaluation of the mitigation area (excluding the CUP Additional Enhancement area of Rattlesnake Creek) will be included as part of the Year 5 annual assessment and report. The Year 5 CRAM score will help determine if the mitigation area meets hydrologic, physical, and biogeochemical standards described in this Plan. The CRAM score is expected to show improvement over the baseline conditions of the site.

11.2.7 Jurisdictional Delineation

At the end of the five-year maintenance and monitoring period, jurisdictional delineation will be done (excluding the CUP Additional Enhancement area of Rattlesnake Creek) to determine if the mitigation meets area requirements of the various permitting agencies. The same methods used to delineate the limits of jurisdiction for permitting this Project (HELIX 2018) will be used delineate the limits of jurisdiction at Year 5. This jurisdictional delineation of the mitigation area (excluding the CUP Additional Enhancement area of Rattlesnake Creek) will be included as part of the Year 5 monitoring report.

12.0 REMEDIATION MEASURES

12.1 INITIATING PROCEDURES

If the mitigation effort is not on track to meet the success standards for the Project, the Project proponent shall notify the responsible agencies and propose corrective measures. If any of the agencies determine, upon receipt of any of the annual monitoring reports, that the mitigation effort is not meeting success standards, the agencies shall notify the project proponent in writing that the mitigation effort may require augmentation for successful completion. The Project proponent shall then have 30 days to respond to the correspondence, confirming that contingency measures will be required. The project proponent shall be responsible for all costs associated with contingency monitoring and remedial measures.

12.2 ALTERNATIVE LOCATIONS FOR CONTINGENCY MITIGATION

No alternative locations have been identified for this mitigation. The mitigation areas considered an ideal location due to its proximity to the impact site. If necessary, the Project proponent will work with responsible agencies to identify a mutually acceptable alternative location for the mitigation if this location were to fail.

13.0 COMPLETION OF MITIGATION

13.1 NOTIFICATION OF COMPLETION

The Project proponent will notify and coordinate with the appropriate resource agencies to seek concurrence that the final performance criteria have been met through the submittal of the final monitoring report and a letter requesting a Notification of Completion. The final report will include analysis of quantitative sampling data that will illustrate the final success criteria have been met. All temporary structures/fences/irrigation and similar temporary items must be removed from the site prior to filing the notification of completion. The mitigation areas (excluding the CUP Additional Enhancement area of Rattlesnake Creek) may qualify for early approval if final success criteria has been met prior to Year 5 and the site is accepted as complete by the USACE, RWQCB, CDFW, and the City; however, the site must be off supplemental irrigation for at least two growing seasons prior to final approval.

13.2 LONG-TERM MAINTENANCE

Mesa Canyon Community Partners is the owner of the property used as mitigation. The mitigation areas are within the MSCP MHPA which has development restrictions. Once the site has met the year 5 success criteria and has been signed off by the City and regulatory agencies, wetland/riparian re-establishment and restoration and adjacent upland buffers along Carrol Canyon Creek will be managed by a private non-profit open space manager or conservancy group approved by the resource agencies and City. The City P&R Department will manage the CUP-Additional mitigation areas once they are accepted by the City.

Specific management activities for the mitigation areas include providing long-term maintenance and monitoring, trash removal, non-native vegetation control, and wildlife habitat monitoring, as described below.

Mesa Canyon Community Partners will provide long-term protection of the mitigation areas through a conservation easement, restrictive covenant, or other long-term protection mechanism, as approved by the resource agencies. A private non-profit open space manager or conservancy group will manage the wetland/riparian re-establishment and restoration and adjacent upland buffers along Carroll Canyon Creek consistent with the MSCP and resource agency requirements. A Long-Term Habitat Management Plan (LTHMP) for this area has been prepared and will be the basis for management of this area (HELIX 2019b). Mesa Canyon Community Partners will fund long-term management through funding of a non-wasting endowment based on a Property Analysis Report (PAR) or similar method as noted in Section 13.2.7 below. The City is obligated to protect and manage the remainder of the site for purposes of habitat and species conservation in accordance with the MSCP Implementing Agreement (City 1997). Section 10.2 of the Implementing Agreement requires the City to preserve lands within the MHPA. Sections 10.3, 10.4, and 10.5 require the implementation of preserve guidelines, land use adjacency guidelines, planning policies, and design guidelines. These policies have been incorporated into the City's Land Development Code and serve to protect lands within the MHPA from direct and indirect habitat degradation. Section 10.6 of the Implementing Agreement defines the City's responsibilities for Preserve Management and refers to the MSCP Framework Management Plan, which is Section 1.5 of the City's Subarea Plan (City 1997). Section 21.3 of the Implementing Agreement states that "notwithstanding the stated term as herein set forth, the Parties agree and recognize that once Take of a Covered Species has occurred and/or their habitat modified within the Subarea, such Take and habitat modification will be permanent. The Parties, therefore, agree that the preservation and maintenance of the habitat provided for under this Agreement shall likewise be permanent and extend beyond the term of this Agreement." Therefore, although the Term of the MSCP is 50 years (1997 – 2047), the preservation of lands within the MHPA, especially in areas where preserved lands are specifically required due to a permanent impact/take, is explicitly permanent.

The City has established protections for lands within the MHPA, in conformance with the Implementing Agreement, through Section 143.0101 of the City's Land Development Code (Environmentally Sensitive Lands Regulations). This section of the Land Development Code incorporates Sections 1.4.1 and 1.4.2 of the MSCP Subarea Plan that restricts uses within the MHPA in a similar fashion as a conservation easement or deed restriction. The Land Development Code also incorporates Section 1.4.3 of the MSCP Subarea Plan that restricts land uses adjacent to the MHPA, including potential adverse drainage conditions, toxic chemical uses, lighting, noise, and invasive species. These restrictions provide greater site protection and ensure more long-term sustainability than typical conservation easements and/or deed restrictions.

13.2.1 Site Access

City biologists, park rangers, open space managers, and designated maintenance staff shall have access to the mitigation areas for maintenance and monitoring related activities, or as otherwise authorized.

13.2.2 Maintenance and Monitoring Parameters

The long-term manager will be responsible for directing and/or conducting all long-term monitoring efforts and remedial measures. The long-term manager and designated maintenance staff will ensure any remedial and management actions are consistent with MSCP and MHPA guidelines and regulations.

13.2.3 Trash

Anthropogenic trash, as well as non-native plant species biomass shall be removed from the site and disposed of in a legal and appropriate manner. Biomass originating from native plant species shall remain on site for carbon cycling and is not considered "trash."

13.2.4 Non-Native Vegetation Control

Non-native plant species, particularly perennial species that have historically shown to be highly invasive, shall be controlled. Control may involve hand pulling prior to seed-set (for species where the entire root mass must be removed to prevent resprouting), herbicide application, cutting, mechanical removal, or any combination thereof. Herbicide use shall follow the manufactures recommendations, and applied in a manner compatible with applicable federal, state, and local regulations, and consistent with MSCP management guidelines. Biomass of non-native vegetation shall be removed from the site and disposed of in a legal and appropriate manner. Care should be taken to avoid spreading root, shoot, or seed material around the site or in the river, which would provide opportunity for dissemination or additional colonization. No non-native plant material shall be stored on site or within the floodplain where it is in danger of being washed downstream.

Treatment and/or removal of non-native vegetation with significant structure capable of providing habitat for special status wildlife should be evaluated for species absence/presence prior to treatment/control, particularly during the raptor/nesting bird season (generally January 15 through September 15). All federal, state, and local work restrictions for native wildlife habitat shall be followed.

13.2.5 Potential Environmental Stressors

Stressors that have the potential to negatively affect the habitat quality of the site include, but are not limited to: fire, flood, excessive erosion or aggradation, significant streambed migration, or effects from adjacent or upstream land uses.

Should affects from environmental stressors or events be observed, the long-term manager shall perform an analysis to identify the effects of the stressor(s) and formulate remedial action(s) intended to support formation of a dynamic native habitat and wildlife use of the site. Depending on the nature of the stressor, consultation with additional regulatory agencies and/or specialists may be warranted. Any adaptive management, remedial action, or regular management activity performed shall be implemented in accordance with applicable regulatory guidelines.

13.2.6 Wildlife Habitat Monitoring

Ongoing and collaborative biological monitoring between City staff, CDFW, and USFWS may or may not include specific species monitoring on this site, but may include monitoring of species, as part of the MSCP.

13.2.7 Funding

Based on Section 3B.3 of the City's Biology Guidelines, mitigation lands within the MHPA deemed acceptable for dedication to the City will be managed by the City in accordance with the MSCP Framework Management Plan as modified by the adopted Areas Specific Management Directives (ASMDs).

Based on Section 3B.3 of the City's Biology Guidelines, the Project applicant will be required to provide long-term funding for the in-perpetuity management and monitoring of the wetland mitigation component of the Project. Funding shall be provided by Mesa Canyon Community Partners through the establishment of an non-wasting endowment. The funding amount shall be calculated through a PAR or other similar method and will be based on the LTHMP (HELIX 2019b) prepared for the wetland/riparian re-establishment and restoration and adjacent upland buffer areas along Carroll Canyon Creek.

14.0 LIST OF PREPARERS

The following individuals contributed to the fieldwork and/or preparation of this report:

Barry Jones	B.A., Biology, Point Loma College, 1982
Thomas Liddicoat*	B.S., Biology, with an emphasis in Ecology, San Diego State University, 2005
Camille Lill	M.S., Spatial Information Science, University of Adelaide, Australia, 2003 B.A., Geography, Emphasis in Techniques, University of Oregon, 2000
Laura Moreton	M.S., Biodiversity Survey, University of Sussex, 2007 B.S., Biology, San Diego State University, 2006 A.S., Biology, Southwestern Community College, 2004
Aleksandra Richards	M.A., International Relations, University of San Diego, 2010 B.A., Communications, Emphasis in Print Journalism, California State University Fullerton, 2008
W. Larry Sward*	M.S., Biology, emphasis in Ecology, San Diego State University, 1979 B.S., Biology, concentration in Botany, San Diego State University, 1975 Certified Ecological Restoration Practitioner, Society for Ecological Restoration, 2018

* Primary author

15.0 REFERENCES

Baldwin, B.G., Goldman, D. H., Keil D. J., Patterson R., Rosatti, T.J. and Wilken, D.H. (eds.). 2012. The Jepson Manual: Vascular Plants of California. Second edition. University of California Press, Berkeley, CA. 1568 pp.

Bowman, R. 1973. Soil Survey of the San Diego Area, California.

California Invasive Plant Council. 2017. California Invasive Plant Inventory. May. Retrieved from: http://www.cal-ipc.org/ip/inventory/index.php.

California Native Plant Society (CNPS). 2007. CNPS Relevé Protocol. Vegetative Committee. August 23. Retrieved from: https://www.cnps.org/cnps/vegetation/pdf/cnps_releve_protocol_20070823.pdf.

California Wetlands Monitoring Workgroup. 2013. California Rapid Assessment Method for Wetlands. Riverine Wetlands Field Book. Version 6.1. January.

HELIX Environmental Planning, Inc. 2019a. 3Roots Project Biological Technical Report. Prep. For Mesa Canyon Community Partners. April.

2019b. Long-Term Habitat Management Plan for the 3Roots Project. Prep. For Mesa Canyon Community Partners. April.

2018. 3Roots San Diego, Jurisdictional Delineation. 12 pp, plus appendices.

Natural Resources Conservation Service. 2017. Web Soil Survey. Retrieved from: http://websoilsurvey.nrcs.usda.gov.

Oberbauer, T. 2008. Terrestrial Vegetation Communities in San Diego County Based on Holland's Descriptions. Revised from 1996 and 2005. July.

T&B Planning Consultants, Inc. and Fenton Western Properties. 1994. Fenton Properties Carroll Canyon Master Plan, An Amendment to the Mira Mesa Community Plan. December 6.

San Diego, City of. 2012. Land Development Manual-Biology Guidelines. June.

1997. Multiple Species Conservation Program. City of San Diego MSCP Subarea Plan. 108 pp.

SWA. 2018. Landscape Plans for the 3Roots Project.

U.S. Army Corps of Engineers & Environmental Protection Agency. 2008. Compensatory Mitigation for Losses of Aquatic Resources: Final Rule. April 10.

Appendix E

Cumulative Impacts to Jurisdictional Resources by CUP Reclamation and 3Roots Project

Appendix E
Cumulative Impacts to Jurisdictional Resources by CUP Reclamation and 3Roots Project

Table 1
IMPACTS TO U.S. ARMY CORPS OF ENGINEERS JURISDICTION[1]

Habitat	Permanent Impacts	Temporary Impacts	Total
Wetland Waters of the U.S.			
Southern riparian woodland	0.61	0.01	**0.62**
Southern willow scrub	0.13	0.05	**0.18**
Subtotal	**0.74**	**0.06**	**0.80**
Non-wetland Waters of the U.S.			
Unvegetated channel	0.68	0.13	**0.81**
Subtotal	**0.68**	**0.13**	**0.81**
TOT	**1.42**	**0.19**	**1.61[2]**

[1] All data is in acres rounded to the 0.01 acre; if less, then shown as --.
[2] Made up of 1.43 acres of CUP Reclamation impacts and 0.18 acre of Project impacts.

Table 2
IMPACTS TO REGIONAL WATER QUALITY CONTROL BOARD JURISDICTION[1]

Habitat	Permanent Impacts	Temporary Impacts	Total
Vegetated Habitat			
Mule fat scrub	--	--	--
Southern riparian woodland	0.83	0.03	0.86
Southern Willow Scrub	0.29	0.07	0.36
Subtotal	**1.12**	**0.10**	**1.22**
Unvegetated Habitat			
Unvegetated channel	0.87	0.15	1.02
Unvegetated Subtotal	**0.87**	**0.15**	**1.02**
TOTAL	**1.99**	**0.25**	**2.24[2]**

[1] All data is in acres rounded to the 0.01 acre; if less, then shown as --.
[2] Made up of 2.06 acres of CUP Reclamation impacts and 0.18 acre of Project impacts.

Appendix E (cont.)
Cumulative Impacts to Jurisdictional Resources by CUP Reclamation and 3Roots Project

Table 3
IMPACTS TO CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE JURISDICTION[1]

Habitat	Permanent Impacts	Temporary Impacts	Total
Vegetated Habitat			
Mule fat scrub	--	--	--
Southern riparian woodland	0.83	0.03	0.86
Southern Willow Scrub	0.29	0.07	0.36
Subtotal	**1.12**	**0.10**	**1.22**
Unvegetated Habitat			
Unvegetated channel	0.87	0.15	1.02
Unvegetated Subtotal	**0.87**	**0.15**	**1.02**
TOTAL	**1.99**	**0.25**	**2.24[2]**

[1] All data is in acres rounded to the 0.01 acre; if less, then shown as --.
[2] Made up of 2.06 acres of CUP Reclamation impacts and 0.18 acre of Project impacts.

Table 4
IMPACTS TO CITY WETLANDS[1]

Habitat	Project Components					Total
	3Roots Development	Carroll Canyon Road	SDGE	Rattlesnake BMZ[2]	CUP Amendment	
Southern riparian woodland	--	0.04	--	0.03	--	0.04
Southern willow scrub – including disturbed phase	--	0.14	--	--	--	0.14
TOTAL	**--**	**0.18**	**--**	**0.03[2]**	**--**	**0.18**

[1] All data is in acres rounded to the 0.01 acre; if less, then shown as --.
[2] Impact neutral. No actual impacts to native vegetation would occur to this area. Thus, not included in Total.

Appendix E (cont.)
Cumulative Impacts to Jurisdictional Resources by CUP Reclamation and 3Roots Project

Table 5
IMPACTS TO JURISDICTIONAL RESOURCES AND MITIGATION REQUIREMENTS

Habitat[1]	Agency							
	U.S. Army Corps of Engineers		Regional Water Quality Control Board[2]		California Department of Fish and Wildlife		City of San Diego	
	Impacts (acres)	Mitigation[3] (acres)	Impacts (acres)	Mitigation[3] (acres)	Impacts (acres)	Mitigation[3] (acres)	Impacts (acres)	Mitigation[3] (acres)
CUP 89-0585 Reclamation								
Permanent Impacts								
Southern riparian woodland	0.61	1.83	0.79	2.37	0.79	2.37	--	--
Southern willow scrub[4]	0.13	0.39	0.15	0.45	0.15	0.45	--	--
Mule fat Scrub	--	--	<0.001	0.003	<0.001	0.003	--	--
Unvegetated Channel/Streambed	0.67	0.67	0.87	0.87	0.87	0.87	--	--
Subtotal	*1.41*	*2.89*	*1.81*	*3.69*	*1.81*	*3.69*	--	--
Temporary Impacts								
Southern riparian woodland	0.01	0.03	0.03	0.09	0.03	0.09	--	--
Southern willow scrub	0.05	0.15	0.07	0.21	0.07	0.21	--	--
Unvegetated Channel/Streambed	0.13	0.13	0.15	0.15	0.15	0.15	--	--
Subtotal	*0.19*	*0.31*	*0.25*	*0.45*	*0.25*	*0.45*	--	--
CUP 89-585 Reclamation TOTAL	**1.60**	**3.20**	**2.06**	**4.14**	**2.06**	**4.14**	**--**	**--**
3Roots Project								
Permanent Impacts								
Southern riparian woodland	--	--	0.04	0.12	0.04	0.12	0.04	0.12
Southern willow scrub[4]	--	--	0.14	0.42	0.14	0.42	0.14	0.42
Mule fat Scrub	--	--	--	--	--	--	--	--
Unvegetated Channel/Streambed	0.01	0.01	--	--	--	--	--	--
3Roots Project TOTAL	**0.01**	**0.01**	**0.18**	**0.54**	**0.18**	**0.54**	**0.18**	**0.54**
GRAND TOTAL	**1.61**	**3.21**	**2.24**	**4.68**	**2.24**	**4.68**	**0.18**	**0.54**

[1] Wetland habitats include southern riparian woodland, southern willow scrub, and mule fat scrub. Streambed is a non-wetland habitat.

[2] Analysis for habitat areas regulated under the Porter-Cologne Act.

[3] The mitigation ratio for vegetated impacts is 3:1 and the mitigation ratio for streambed (non-vegetated) impacts is 1:1. Both vegetated and non-vegetated must include at least 1:1 replacement area.

[4] Includes disturbed and undisturbed habitat.

THIS PAGE INTENTIONALLY LEFT BLANK