# 3Roots San Diego Project
# Environmental Impact Report

SCH No. 2018041065; Project No. 587128

## Appendix H

## Long-term Habitat Management Plan

June 2019

# 3Roots San Diego Project

## Long-Term Habitat Management Plan

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

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# 1.0 INTRODUCTION

This Long-term Habitat Management Plan (LTHMP) has been prepared for the 26.03-acre open space habitat area (Preserve Area), of which 24.45 acres is part of the larger 150.1-acre Multi-Habitat Planning Area (MHPA) that will be conserved via a Covenant of Easement, a dedication in fee title, and an Irrevocable Offer of Dedication (IOD) as part of the 3Roots Project (Project). The remaining 1.58 acres of the Preserve Area consists of native upland habitat not in the MHPA, but protected by a deed/title restriction for conservation. The 3Roots Project site is located on an approximate 413-acre property in the central portion of the Mira Mesa Community Plan (MMCP) area of the City of San Diego (City). Specifically, it is located east of Camino Santa Fe, approximately halfway between Mira Mesa Boulevard and Miramar Road. The project site was formerly operated as a sand and gravel mining site, and the Project is an element of a multi-phased plan to convert reclaimed quarry land to planned mixed-use development.

The Preserve Area is specifically located on the southwest and south-central portions of Project site, along the Carroll Canyon Creek corridor (Figure 1, *Regional Location* and Figure 2, *Aerial Vicinity*) and as noted above is coincident with the limits of portions of the City MHPA within the Project site.

Within the 26.03-acre Preserve Area, the Project will preserve, re-establish, restore, and enhance approximately 7.29 acres of native riparian habitat and 15.18 acres of native upland habitat. The remaining 3.56 acres within the Preserve Area are associated with the riprap/gabions (1.69 acres) and extant habitat to be preserved (1.87 acres). For clarity throughout this LTHMP, the re-establishment, restoration, and enhancement efforts are termed “mitigation” herein. The Project also includes an additional 125.65 acres of MHPA open space habitat beyond but immediately adjacent to the limits of the Preserve Area that connect the Preserve Area with upper Carroll Canyon Creek to the east and Rattlesnake Canyon to the north. While these additional acres are not part of the Preserve Area because they are part of the MHPA, they will be managed and monitored consistent with requirements of the MSCP by the City. The Covenant of Easement on the Preserve Area will be recorded prior to initiation of restoration and enhancement efforts.

Long-term management of the Preserve Area will be the responsibility of the Project Owner and implemented through a land management entity (i.e., Habitat Manager). The Habitat Manager will coordinate with the following City departments, as appropriate, during implementation of this LTHMP: Planning Department, Multiple Species Conservation Program (MSCP); Parks and Recreation Department; Open Space Division; and Mitigation and Monitoring Coordination (MMC). Unless otherwise specified, reference to "the City" with respect to approvals and reporting required by this LTHMP will involve these departments. In some instances, other City departments will also be engaged on an as-needed basis. These other departments are referenced as necessary herein.

# 2.0 PLAN OBJECTIVE

This LTHMP has been prepared in accordance with the conditions identified in the Project's Site Development Permit (No. 1499942). This LTHMP will guide the management of the Preserve to ensure that the conditions achieved at the end of the 5-year mitigation and monitoring program are sustained in perpetuity. This LTHMP provides assurances that the Preserve Area will be adequately managed and monitored in a manner consistent with Section 1.5, Framework Management Plan, of the City's MSCP Subarea Plan (City of San Diego [City] 1997). This LTHMP also defines the methods and schedules to

sustain habitat function and value, determines the parties responsible for management, and identifies the responsible entity and funding source for the long-term maintenance, management, and monitoring.

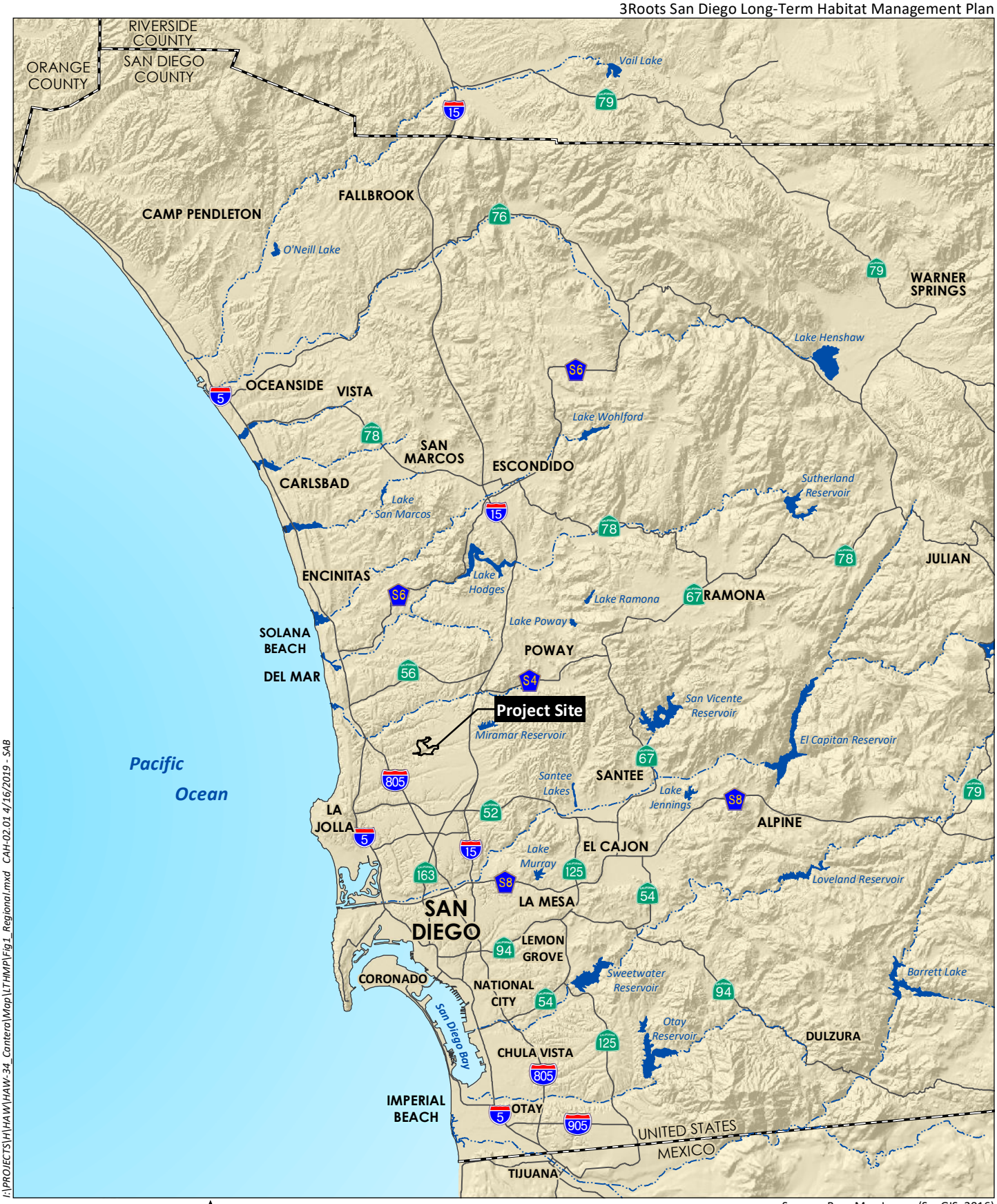
The management program prescribed by this LTHMP will be funded and implemented in perpetuity and will be initiated immediately following completion of the Project's five-year restoration maintenance and monitoring program.

# 3.0 EXISTING CONDITIONS

## 3.1 VEGETATION COMMUNITIES

Vegetation communities within the Preserve Area were mapped in May 2016 prior to implementation of mitigation. Pre-mitigation vegetation communities are described in the Project's Biological Technical Report (HELIX Environmental Planning, Inc. [HELIX] 2019a) and included 17 vegetation communities (including land cover types) for the larger Project site.

The anticipated post-mitigation conditions for the Preserve Area are provided in Table 1, *Post-mitigation Vegetation Communities and Land Cover Types within the Preserve Area* and depicted on Figures 3a through 3c, *Vegetation Communities Post Mitigation Condition*. Upon completion of the five-year mitigation monitoring and maintenance program, the Preserve Area is anticipated to consist of 24.34 acres of native habitats, including riparian scrub, Diegan coastal sage scrub, coastal sage-chaparral transition, southern mixed chaparral, and streambed. The native upland habitats (Diegan coastal sage scrub, coastal sage-chaparral transition, and southern mixed chaparral) that will be established during Project implementation provide a wetland buffer as required by the City's Biology Guidelines, Section ll(A)(1)(b) (City 2012). This LTHMP prescribes recurring vegetation mapping within the Preserve Area (see Section 6.1).

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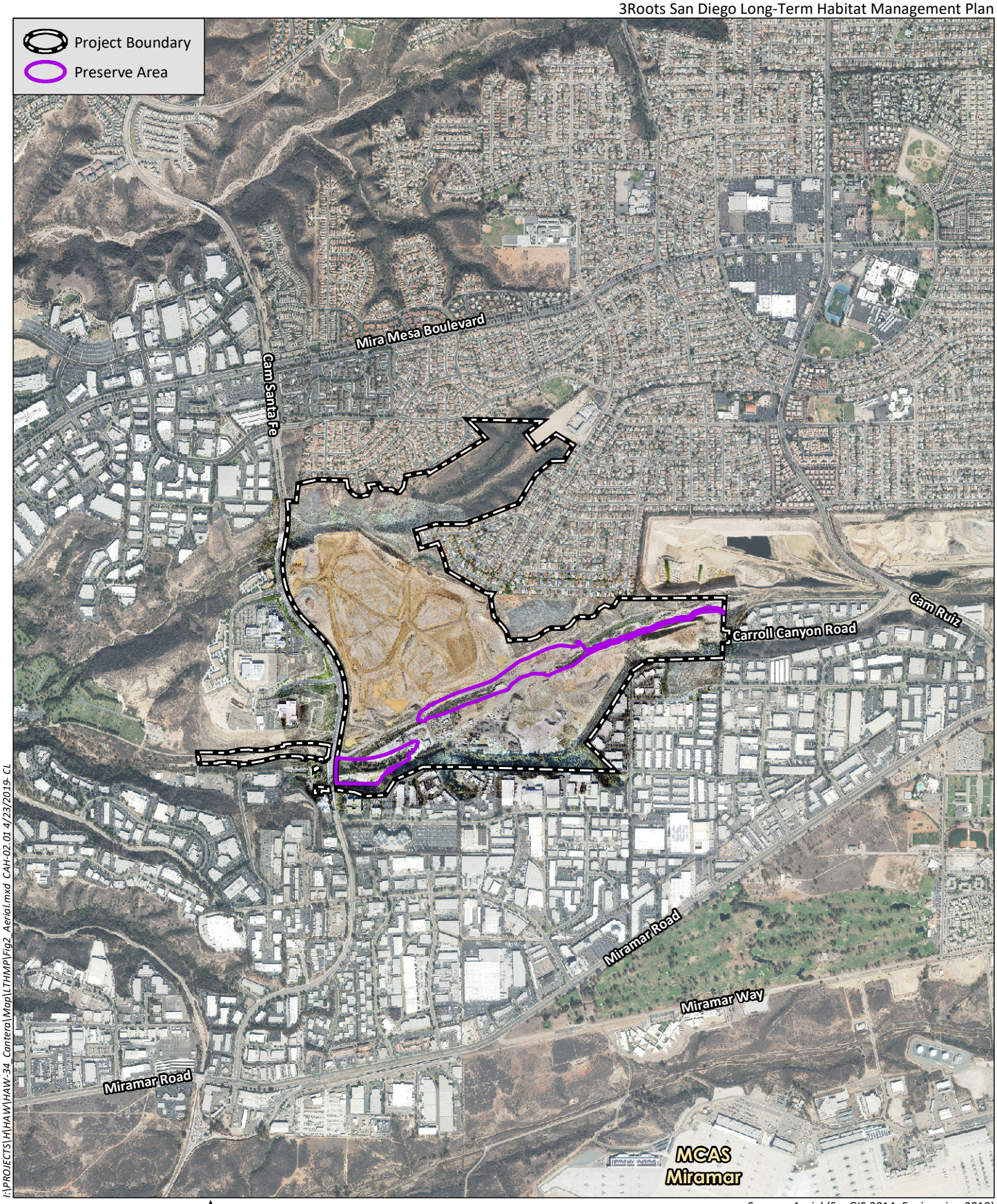
Source: Base Map Layers (SanGIS, 2016)

HELIX Environmental Planning

# Regional Location

Figure 1

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Source: Aerial (SanGIS 2014, Enviromine 2018)

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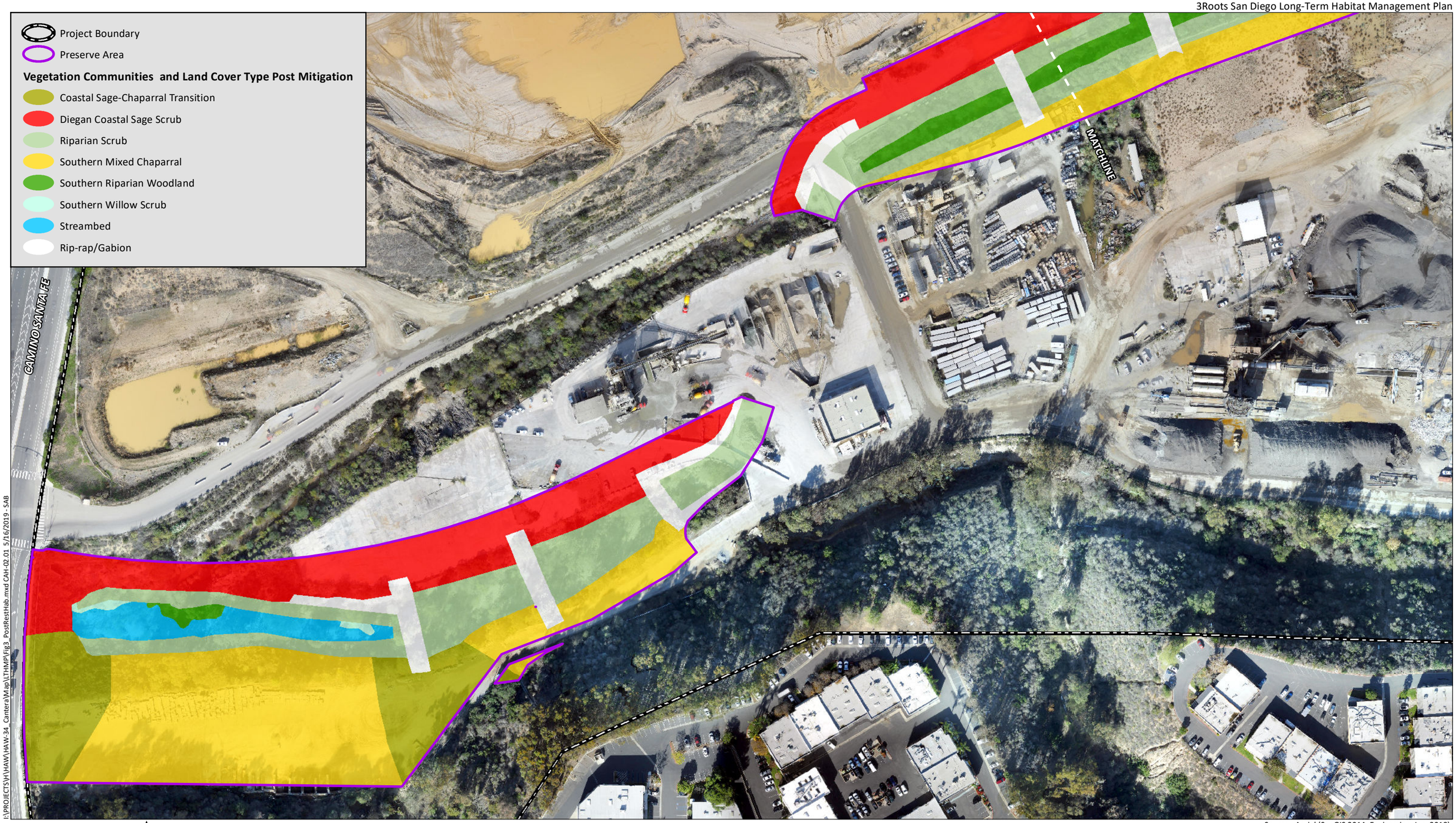
# Aerial Vicinity

Figure 2

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

HELIX Environmental Planning

# Vegetation Communities Post Mitigation Condition

Figure 3a

Project Boundary
Preserve Area

**Vegetation Communities and Land Cover Type Post Mitigation**

- Diegan Coastal Sage Scrub
- Mule Fat Scrub
- Mule Fat Scrub - Disturbed
- Riparian Scrub
- Southern Mixed Chaparral
- Southern Riparian Woodland
- Southern Willow Scrub
- Streambed
- Rip-rap/Gabion

MATCHLINE

MATCHLINE

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

HELIX Environmental Planning

# Vegetation Communities Post Mitigation Condition

Figure 3b

Project Boundary

Preserve Area

**Vegetation Communities and Land Cover Type Post Mitigation**

Southern Mixed Chaparral

MATCHLINE

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

HELIX Environmental Planning

# Vegetation Communities Post Mitigation Condition

Figure 3c

**Table 1**
**POST-MITIGATION VEGETATION COMMUNITIES AND LAND COVER TYPES WITHIN THE PRESERVE AREA**

| Vegetation Community/ Land Cover Type | Multiple Species Conservation Program Wetland/ Upland Tier Category | Total Acreage within Preserve Area |
|---|---|---|
| **Riparian and Wetlands** | | |
| Mule fat scrub (including disturbed) | Wetland | 0.07 |
| Southern Riparian Woodland | Wetland | 0.66 |
| Southern Willow Scrub | Wetland | 0.09 |
| Riparian Scrub | Wetland | 7.29 |
| Streambed | -- | 0.92 |
| **Uplands** | | |
| Diegan Coastal Sage Scrub | Tier II | 5.95 |
| Coastal Sage-Chaparral Transition | Tier II | 1.21 |
| Southern Mixed Chaparral | Tier III | 8.15 |
| **Other** | | |
| Riprap/Gabion | -- | 1.69 |
| | **TOTAL** | **26.03** |

## 3.2 COMMON FLORA AND FAUNA

### 3.2.1 Flora

A total of 204 plant species were observed in the larger Project site during pre-Project biological surveys conducted between 2016 and 2019. Of these, 92 species are non-native. A complete list of plants documented during pre-Project biological surveys is included as Appendix B to the Biological Technical Report (HELIX 2019a).

Upon completion of the five-year mitigation monitoring and maintenance program, the vegetation communities outlined in Table 1 above are anticipated to support a diversity of native species. The anticipated floristic composition of each vegetation community post-mitigation is provided in the Project's Habitat Reclamation and Mitigation Plan (HRMP) (HELIX 2019b). An updated list of plant species occurring within the Preserve Area will be maintained via recurring vegetation mapping prescribed by this LTHMP (see Section 6.1.2).

### 3.2.2 Fauna

A total of 73 wildlife species were observed in the Project site during pre-Project biological surveys conducted in 2017 and 2018.

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 property, 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. A complete list of wildlife documented during pre-Project biological surveys is included as Appendix C to the Biological Technical Report (HELIX 2019a). Wildlife species occurring in the Preserve Area following the five-year monitoring and maintenance program are expected to be similar to those previously documented between 2016 and 2019. An updated list of wildlife species occurring within the Preserve Area will be maintained via recurring habitat monitoring and sensitive species monitoring (see Sections 6.1 and 6.2).

## 3.3 SENSITIVE SPECIES

Eight sensitive plant species were observed on the site during the pre-Project biological surveys. These include San Diego sagewort, San Diego sunflower, summer holly, San Diego barrel cactus (*Ferocactus viridescens*), San Diego marsh-elder, golden-rayed Pentachaeta (*Pentachaeta aurea*), Nuttall's scrub oak, and ashy spike-moss (*Selaginella cinerascens*).

Three sensitive plant species were determined to have moderate potential to occur and, therefore, may be present within the Preserve Area following completion of the five-year monitoring and maintenance program: San Diego sagewort *(Artemisia palmen),* San Diego marsh-elder *(Iva hayesiana),* and southwestern spiny rush *(Juncus acutus* ssp. *leopoldii).* The Project's HRMP includes both San Diego sagewort and San Diego marsh-elder in the planting mix for riparian scrub (HELIX 2019b). Additionally, the Project's Revegetation Plan includes the following sensitive plant species in the upland revegetation planting mix: Nuttall's scrub oak, San Diego barrel cactus, and summer holly.

The sensitive plant species identified above may be present within the Preserve Area following completion of the five-year monitoring and maintenance program. This LTHMP prescribes recurring sensitive species monitoring given the potential for such species to occur (see Section 6.2).

Seven sensitive wildlife species were found to occur during the pre-Project biological surveys, including: coastal California gnatcatcher (*Polioptila californica californica*) (Federal Threatened, State Species of Special Concern [SSC], MSCP Covered); least Bell's vireo (*Vireo bellii pusillus*) (Federal Endangered, State Endangered, MSCP Covered); Cooper's hawk (*Accipiter cooperii*) (State Watch List [WL], MSCP Covered); orange-throated whiptail (*Aspidoscelis hyperythra*) (State WL, MSCP Covered); coastal whiptail (*Aspidoscelis tigris stejnegeri*) (State SSC); San Diego desert woodrat (*Neotoma lepida intermedia*) (State SSC); and mule deer (*Odocoileus hemionus*) (MSCP Covered). 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.

Nine additional sensitive wildlife species were not observed, but were determined to have at least a moderate potential to occur, including: 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*); and yellow warbler (*Setophaga petechia*).

These sensitive wildlife species may be present within the Preserve Area following completion of the five-year monitoring and maintenance program. This LTHMP prescribes recurring sensitive species monitoring given the potential for such species to occur (see Section 6.2).

Species protected by federal or state regulations, covered by the City's MSCP, or that otherwise receive consideration during California Environmental Quality Act review (e.g., plants ranked by California Native Plant Society [CNPS]) that were considered for their potential to occur within the Project site are outlined in Appendix E to the Biological Technical Report (HELIX 2019a).

# 4.0 RESPONSIBLE PARTIES

## 4.1 PROJECT OWNER

The owner of the 3Roots Project (Project Owner), currently Mesa Canyon Community Partners, is 100 percent responsible for funding implementation of this LTHMP. The Project includes development of residential properties that will include establishment of a Homeowners Association (HOA), and the HOA will assume ownership of the Preserve Area prior to implementation of the this LTHMP. The Project Owner will be responsible for the ongoing maintenance of the Preserve Area through the hiring and ongoing funding of a Habitat Manager, currently identified as the San Diego Habitat Conservancy (SDHC).

In addition to funding LTHMP implementation, the Project Owner shall complete the following:

- Record a Covenant of Easement on the MHPA/Preserve Area prior to initiation of restoration and enhancement.

- Record a Deed Restriction for conservation on the non-MHPA Preserve Area prior to commencement of restoration for approval by the City, U.S. Fish and Wildlife Service (USFWS), and California Department of Fish and Wildlife (CDFW).

- Develop a cost estimate for long-term management based on this LTHMP for review and approval by the City, USFWS, and CDFW.

- Hire a Habitat Manager approved by the City, USFWS, CDFW, and U.S. Army Corps of Engineers (USACE).

- Supply the Habitat Manager with digital and hard copies of this LTHMP, the Project's Biological Technical Report (HELIX 2019a), and the final approved construction drawings and specifications for the restoration work.

## 4.2 HABITAT MANAGER

The San Diego Habitat Conservancy shall be contracted to be the serve as “Habitat Manager” for implementation of this LTHMP. The Habitat Manager will be contracted concurrent with completion of the five-year monitoring and maintenance program. Because the entity to be hired is an organization, the actual person(s) actively managing the open space must satisfy criteria for a Habitat Manager (as described below), and a specific Project Manager must be designated. The Habitat Manager shall possess the following qualifications:

- A Bachelor of Science or Bachelor of Arts degree is wildlife management, natural resources, ecology, zoology, botany, biology, or similar degree.

- A minimum of two years' experience in field biology in southern California (preferably San Diego County).
- Demonstrated experience in similar projects, or in projects requiring similar skills.
- Experience in working with community groups.

The Habitat Manager will be responsible for implementation of this LTHMP. The Habitat Manager's primary responsibility shall maintain the integrity of the Preserve Area by:

- Being an advocate of the Preserve Area and its protection.
- Being familiar with background biological studies (as summarized in the Project's Biological Technical Report [HELIX 2019a]), the restoration/enhancement plan, the success criteria and results of the five-year maintenance and monitoring program, and requirements of this LTHMP.
- Using professional judgement to properly implement this LTHMP.
- Maintaining all restoration and enhancement documents relevant to the Preserve Area transferred by the Project Owner and being knowledgeable about the resources addressed in these reports. In particular, the Habitat Manager will be familiar with the existing and potentially occurring resources on site and the goals and success criteria established by the five-year monitoring and maintenance program in the restoration/enhancement plan.
- Responding to any community concerns or problems regarding the Preserve Area.
- Performing and documenting all field visits and notifying the City in a timely manner of all concerns, problems, and proposed remedial measures and associated outcomes.
- Reporting on the status of the Preserve Area and forwarding all applicable monitoring and management data to the Planning Department, MSCP Section for incorporation into the MSCP database (see Section 6.14).
- Coordinating with the manager(s) of adjacent preserves within the MHPA on management practices and tasks related to preservation and maintenance of the subregional open space system and applying pertinent adaptive management recommendations received from the regional monitoring sources. Specifically, coordinated activities will include the removal of exotic and pest species, and ensuring compatibility with the overall open space management plan proposed as part of the MSCP Subarea Plan.

# 5.0 FUNDING MECHANISM

The Project Owner will transfer fee title of the Preserve Area to the HOA, and funding for fund implementation of this LTHMP in perpetuity shall be provided by the Property Owner in the form of a non-wasting endowment.

# 6.0 MANAGEMENT SPECIFICATIONS

The long-term management program described herein will be initiated by the Habitat Manager immediately following the completion and sign-off of the Project's initial five-year restoration maintenance and monitoring program, which is currently anticipated in approximately 2024. Prior to sign-off on the mitigation efforts, the following shall occur: 1) Formal adoption of a Habitat Manger; 2) a "PAR" (or similar funding calculation) shall be developed based on this LTHMP and acceptable to the Habitat Manager; 3) the City, CDFW, and USFWS shall approve of the designated Habitat Manger and PAR; and 4) record of deposit for non-wasting endowment. A preliminary estimate of funding by a non-wasting endowment is attached to this LTHMP; see Appendix B.

This LTHMP's management program will be implemented in perpetuity and will include a variety of monitoring and maintenance activities intended to preserve the integrity of the restoration and enhancement areas. These tasks are summarized in Table 2, *Long-term Management Tasks and Schedule* and described in the subsections below. The Habitat Manager will be responsible for conducting these tasks or ensuring that they are done at the appropriate times, in keeping with this LTHMP, and to the Habitat Manager's and City's satisfaction in light of the adaptive management program described further in Section 7. Where appropriate, based on timing requirements, the monitoring described below may be performed concurrently (e.g., habitat monitoring may occur concurrently with sensitive species monitoring).

**Table 2**
**LONG-TERM MANAGEMENT TASKS AND SCHEDULE[1]**

| Task Description | Approximate Timing and Frequency |
|---|---|
| Habitat monitoring | Four times annually; once in late winter/early spring [approximately January or February], once in early to mid-spring [approximately March through May], once mid-summer [July or August], and once in fall [approximately October through November] |
| Vegetation mapping | Every 5 years; April through June |
| Sensitive species monitoring | Annually; three surveys between April 10 and July 31 (generally coincident with the least Bell's vireo breeding window) |
| Exotic species control | Annually at a minimum, and more frequently if needed; timing will be dependent on the species being controlled |
| Annual reporting | Annually; report to be submitted within 45 days following the end of monitoring year |

[1] Management tasks described in this Long-term Habitat Management Plan but excluded from this table will be performed on an as-needed basis.

## 6.1 HABITAT MONITORING

### 6.1.1 General Monitoring

Mitigation management for upland (including BMZ 2) and wetland habitats 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 HRMP and Project Landscape Plan (HELIX 2019b and SWA 2019).

Once the City has issued a Notice of Completion for these efforts this land would be managed by the Habitat Manager per the COE and accepted as land dedicated in fee title for long-term management.

For wetland and upland habitat areas within the Preserve Area, the Project applicant would be required to provide long-term funding for the mitigation components prior to any Habitat Manager acceptance. Funding can be provided by a variety of means including, but not limited to, the establishment of an endowment or a Community Facilities District. The funding amount shall be calculated through a Property Analysis Report or other similar method.

Long-term management will include regular qualitative monitoring of the Preserve Area to track changes in site conditions that may threaten the viability of the native habitat established during the five-year maintenance and monitoring period and to inform management activities. Habitat monitoring will be conducted by the Habitat Manager four times annually (once in late winter/early spring [approximately January or February], once in early to mid-spring [approximately March through May], once mid-summer [July or August], and once in fall [approximately October through November]) to allow for management activities to be conducted in a timely fashion and during the appropriate season. Particular issues that arise on site may require more frequent monitoring visits until they have been resolved to the satisfaction of the Habitat Manager. These potential issues and resolution of these issues would be documented for inclusion in the annual report (Section 6.14 herein).

During monitoring visits, the Habitat Manager will walk accessible portions of the Preserve Area to qualitatively assess current site conditions. The presence of any noxious invasive species or other non-native species requiring treatment will be identified. A list of wildlife species incidentally observed will be maintained. In addition, signs of unauthorized access into the Preserve Area, such as homeless encampments or unofficial trails, the presence of any trash or debris requiring removal, any damages to fences, signage, or other site features, and any other site conditions of note or that require management activities will be documented. General monitoring visits will also include photo documentation at the permanent photo-points that were established during the initial five-year restoration maintenance and monitoring program.

The results of habitat monitoring will be used by the Habitat Manager to determine appropriate management actions such as 1) the need for supplemental planting/seeding; 2) non-native species treatment or removal; 3) repairs of fencing/signage or installation of other open space barriers; or 4) coordination with local law enforcement regarding the removal of homeless encampments.

### 6.1.2 Vegetation Mapping

The Habitat Manager will map the vegetation communities present within the Preserve Area every five years in perpetuity as a method of tracking overall site changes and potential vegetation type conversions. Vegetation mapping will be conducted in the late spring/early summer, at the height of the growing season (approximately April through June). Vegetation mapping will be conducted using a current aerial photograph of the site, and vegetation communities will be mapped using the nomenclature system adopted by the City at that time. A list of all plant species observed during vegetation mapping will be compiled and included with the mapping. Incidental observation of wildlife species will also be recorded.

The updated vegetation map will be compared to the original habitat restoration and enhancement plan and the acreages of each vegetation community planned for restoration and enhancement. If it appears

that large changes have taken place between the intended vegetation communities and the actual vegetation communities, such as the type-conversion of intended wetland habitats to upland habitats or of native habitats to disturbed habitats, then management activities would be undertaken to avoid further conversion and address the situation. Any management activities beyond supplemental planting/seeding will be reported to the City, USFWS, and CDFW for review and approval prior to these actions being taken. Type conversion of habitats would be documented and reported (Section 6.14 herein) as well as the management activities, including those implemented beyond supplemental planting/seeding.

## 6.2 SENSITIVE SPECIES MONITORING

Three sensitive plant species were observed or have the potential to occur and seven sensitive wildlife species were found to occur during the pre-Project biological surveys, and additional sensitive wildlife species were not observed, but were determined to have at least a moderate potential to occur. The Project will include re-establishment of successional habitat and upland buffers that are currently not present. The provision of successional habitat and upland buffers is consistent with Area Specific Management Directives for least Bell's vireo.

Species monitoring along with habitat monitoring discussed above will assist in the evaluation of potential occurrence of sensitive wildlife species such as: coastal California gnatcatcher, coastal whiptail, Cooper's hawk, least Bell's vireo, orange-throated whiptail, mule deer, red-diamond rattlesnake, San Diego desert woodrat, Southern California legless lizard, Southern California rufous-crowned sparrow, western spadefoot toad, two-striped gartersnake, yellow warbler, and sensitive plant species. In addition to the monitoring scheme described below, the Habitat Manager will also cooperate with any regional least Bell's vireo monitoring programs that are undertaken by providing access and sharing site-specific data.

Sensitive species monitoring will take place annually and will consist of three separate non-protocol survey visits between April 10 and July 10 to coincide with the least Bell's vireo breeding window. These surveys will be conducted by a qualified biologist and will focus on assessing the presence/absence of least Bell's vireo in the Preserve Area. Surveys will occur at least two weeks apart. Ideally one survey should take place in April and July, with the third survey occurring in either May or June to spread out the visits over the entire breeding season. Surveys will occur between dawn and 11:00 a.m. and will not be conducted during inclement weather. If least Bell's vireo (or any sensitive species) are detected, their locations and behaviors will be noted to determine if they are migrating through or potentially breeding on site. Data on cowbirds (including number of pairs present and approximate territories) will also be recorded during sensitive species monitoring. All wildlife species (regardless of sensitivity) will be recorded during sensitive species monitoring.

## 6.3 CONTROL OF EXOTIC SPECIES

One of the primary tasks of the long-term management program will be the control of exotic plant and animal species that may threaten the health and integrity of the native habitats and species in the Preserve Area. Exotic plant and animal control are discussed in turn below.

### 6.3.1 Exotic Plant Control

There are numerous exotic plant species present within Carroll Canyon Creek and the unnamed tributary that feeds the Preserve Area that may invade the Preserve Area. The species that are of highest priority for treatment and removal include aggressive non-native perennials (such as giant reed [*Arundo donax*], pampas grass [*Cortaderia* spp.], salt cedar [*Tamarix* sp.], Eucalyptus [*Eucalyptus* sp.] trees, and non-native palms), any species listed as "High" on the California Invasive Plant Council Inventory, and any species determined to be a threat by the Habitat Manager. Large patches or mature specimens of these species will be removed during the initial five-year restoration maintenance and monitoring program, but long-term management will likely require treatment and removal of seedlings or re-sprouts that occur within the Preserve Area. Annual weeds will likely be less prevalent on site once the restored and enhanced habitats have met success criteria but will be treated as needed if they appear to be out-competing native species or increasing in cover/abundance.

Exotic species will be removed by hand, mechanical weed cutters, or herbicide applications by maintenance workers familiar with and trained to distinguish weeds from native species. Any herbicides used on site will be safe for use in aquatic habitats and will be approved by the City. Herbicide application will be overseen by a licensed Pest Control Advisor and applied by a Certified Pest Control Applicator.

Weeds will be killed or removed before seed sets. For most species, weed treatment or removal is best conducted in the spring, before plants grow too large or set seed. However, giant reed is best treated in the fall, immediately before it enters its winter dormancy period. Therefore, several weed control visits may be required each year, depending on the species that need treatment. The need for, timing of, and methods used for weed control will be determined by the Habitat Manager based on the results of habitat monitoring.

If exotic plant control requires the removal of large trees, shrubs, or patches of vegetation, it will be conducted outside of the avian nesting season (defined as March 15 through September 15), if feasible. If this is not feasible, any removal activities will be immediately preceded by a nesting bird survey to ensure that the vegetation being removed is not occupied by any active bird nests. This survey will be conducted by a qualified wildlife biologist who may be the Habitat Manager, if appropriate.

While the Project is not required to contribute funding to invasive species control outside the Preserve Area, the Habitat Manager will collaborate with other entities that may fund large-scale invasive species control programs in the Project vicinity. The Habitat Manager will share data with and allow access to those entities.

### 6.3.2 Exotic Animal Control

The brown-headed cowbird, a known brood parasite of a variety of small song-birds including the least Bell's vireo, has been documented on site as recently as 2016 and poses a threat to sensitive riparian bird species that may occupy the Preserve Area. The presence of this species is likely the result of existing development and surrounding urbanization. As stated in the Project's Biological Technical Report (HELIX 2019a), cowbird presence is part of the existing conditions on site, and the Project is not responsible for cowbird monitoring and control, funding cowbird control operations, or performing monitoring beyond what is described in this LTHMP.

However, given Area Specific Management Directives for the least Bell's vireo require monitoring and control of brown-headed cowbirds, the Habitat Manager will track the presence of cowbirds during sensitive species monitoring. The Habitat Manager will also provide reasonable cooperation and support of potential large-scale cowbird control operations undertaken in Los Penasquitos watershed. Reasonable cooperation and support could include collaboration with other entities that may fund control programs, allowing access to the Preserve Area, sharing data on cowbird presence within the Preserve Area, and assisting in post-trapping monitoring within the Preserve Area, which could be performed concurrent with the sensitive species monitoring described herein. Domestic animals associated with adjoining residential development or homeless encampments may also occur within the restoration and enhancement areas. Specific domestic animals that are frequently reported within the restoration and enhancement areas may be reported to the City's Animal Services department and/or contractor. Domestic animals associated with homeless encampments within or near the restoration and enhancement areas will likely be removed as part of the removal of the encampments themselves by local law enforcement.

## 6.4 OPEN SPACE BARRIERS/FENCING

To prevent intrusion into sensitive habitats, split-rail (or similar) fencing will be installed and maintained along the boundaries of the Preserve Area where interfacing with development (including fencing alongside trails and access roads) as part of the Project. Fencing will not be installed where adjacent to native habitat outside of the Preserve Area. Signs will be attached to the fence that describe the area as a habitat restoration site, state that trespassers will be liable for any damage caused, and list the Project contact. Habitat monitoring will include inspection of the fencing and signage. In the event that any of these features are damaged or removed, the Habitat Manager will notify the HOA for repair/ replacement. The HOA will be responsible for the installation and repair/replacement of fencing around the Preserve Area. If appropriate, the Habitat Manager will also inform the Code Enforcement and/or City Police Department of the damage.

If it appears that more substantial barriers may be needed to prevent unauthorized access to the Preserve Area, this need will be discussed with the HOA and the City. Any additional open space barriers to be installed will be consistent with the City's MSCP Subarea Plan.

## 6.5 PUBLIC AWARENESS

The Project will include installation of signage to inform the public of the MHPA and the sensitive resources that exist therein. As noted above, habitat monitoring will include inspection of the signs. In the event that any of these features are damaged or removed, the Habitat Manager will notify the HOA for repair/replacement.

When appropriate, the Habitat Manager will inform adjacent residents (or other applicable individuals) that any damage to the fencing, signage, or other open space barriers will violate Municipal Code and be subject to possible action, fine, and/or criminal charges.

If additional public outreach is deemed necessary by the Habitat Manager, such as the distribution of educational brochures to local residents, the installation of additional educational signage, and/or coordination with local community groups, the Habitat Manager will discuss these measures with the HOA and determine a course of action.

## 6.6 HOMELESS ENCAMPMENTS

Homeless encampments are a pervasive problem in riparian drainages near developed areas in San Diego County. The Habitat Manager will conduct regular (at least monthly) site visits to monitor homeless activity and these visits can coincide with the monthly monitoring visits noted in Section 6.1.1. If homeless activity is documented, the Habitat Manager will notify the Project Owner and local law enforcement of the issue within 24 hours.

## 6.7 TRASH REMOVAL

The Habitat Manager will be responsible for removal of trash from the Preserve Area. Trash removal will occur on an as-needed basis and will be part of regularly scheduled site maintenance visits. In the case of excessive trash disposal or debris deposition (e.g., via flooding) within the restoration and enhancement areas, the Habitat Manager will coordinate with the HOA and local community groups for assistance with removal.

## 6.8 LIGHTING

Project lighting would be installed in outdoor areas to illuminate common areas, streets, paths, entryways, landscaping, vehicle and bicycle parking areas, transit stops, public art, sports parks, and architectural elements; the Project is designed to incorporate several measures to avoid indirect impacts from lighting to the Preserve Area. Project lighting would be in compliance with the City's Outdoor Lighting Regulations pursuant to SDMC Section 142.0740. For example, lighting would be consistent with City requirements for safety and would include spill control features to direct lighting to on-site areas such that light would not trespass into protected open space. Although maintenance of landscaping is not a responsibility of the Habitat Manager, the Habitat Manager will notify the HOA of damage to landscaping or any other site conditions that are allowing excessive lighting to impact the Preserve Area. It will be the responsibility of the HOA to correct these issues in a manner that does not compromise public safety.

## 6.9 POACHING/COLLECTION

Removal of any animals, plants, rocks, minerals, or other natural resources from the Preserve Area will be prohibited. If anyone is seen removing any natural resources, they will be notified that such practices are prohibited and illegal. If a situation escalates or if people are continuing to remove natural resources after being warned, the Habitat Manager will notify the City and applicable law enforcement agencies. The Habitat Manager will keep a log of all illegal collecting/poaching incidents that occur within the Preserve Area.

Collection of plants by a qualified restoration ecologist may be allowed at the discretion of the Habitat Manager. The collector must present copies of valid state and/or federal scientific collecting permits where applicable and disclose the specific purpose of the collection, including the location where the collected materials will be planted; the Habitat Manager must record this information and include it in the annual report. If allowed, seed and/or plant collection will take place under the direct supervision of the Habitat Manager. The Habitat Manager will ensure the collection of cuttings and seed will be limited to prevent harm to resources in the Preserve Area. The Habitat Manager will notify the City.

## 6.10 FIRE MANAGEMENT

Fuel management zones for the Project and other adjacent development are located outside of the Preserve Area. Therefore, brush management is not anticipated within the Preserve Area. In the case of a fire within the Preserve Area or adjacent areas, fire fighters will have any needed access to these areas to extinguish the fire. If possible, the Habitat Manager will coordinate with fire fighters to discuss the best access locations to the Preserve Area and measures for protecting sensitive biological resources in the event of a fire. The Habitat Manager will notify the City if such a situation occurs.

## 6.11 FLOOD CONTROL

There are no existing flood control channels located within the Preserve Area that will require regular maintenance. The Habitat Manager will cooperate with the HOA and/or City should they need to perform maintenance on the portion of Carroll Canyon Creek within the Preserve Area to address flooding issues.

Flood events may damage plants, cause erosion, or deposit trash and invasive species within the Preserve Area. The Habitat Manager will visit the site after flood events to assess maintenance needs. Most necessary actions are likely to be minor and incidental to other regular management actions; however, major events could potentially cause damage that exceeds available funding. The Habitat Manager will notify the HOA if such a situation occurs, and the HOA will notify the City; however, the HOA is not obligated to expend funds beyond those collected for maintenance of gabion drop structures.

The 12 gabion drop structures in the Preserve Area will be monitored by the Habitat Manager annually to ensure they are functioning properly and are not being undermined, buried, or dilapidated. If they are not functioning properly and need maintenance the Habitat Manager will coordinate with the HOA and notify the City of the need for maintenance within 30 days of discovering the maintenance need. Repair or replacement of a gabion drop structure, should it fail, would be the responsibility of the owner (i.e., HOA). As a further safeguard, additional funding of $50,000 has been included in the endowment for the Project, with these funds to be held in a separate account by the Habitat Manager which may only be used for repair and/or replacement of the gabion drop structures (including coordination with City and Agency staff). The Habitat Manager shall not be responsible for repair or replacement of the gabion drop structure but shall have the ability to access and disperse these funds should it be necessary to ensure that the gabion drop structure is repaired or replaced.

The Habitat Manager will be available to coordinate with the HOA on any necessary maintenance, modification, or replacement of the any of the gabion drop structures such that access to the site is controlled and impacts to adjacent wetlands and riparian areas within the Preserve Area are limited and properly managed and restored immediately following activities. Repair of the gabion drop structure(s) may necessitate the need for a Section 404 permit under the Clean Water Act and other local approvals.

## 6.12 URBAN RUNOFF/WATER QUALITY

The Preserve Area is located in a heavily urbanized environment that experiences substantial runoff and water quality issues. The Project SWQMP identifies measures to address potential long-term pollutant generation from implementation of the Project, based on procedures identified in the City storm water standards and related NPDES Municipal Permit.

As identified in the Project SWQMP, these measures include eight lined biofiltration basins, distributed throughout the site, to be maintained in perpetuity by the HOA; funding for basin maintenance would be provided through HOA fees separate from funding of this LTHMP.

The Habitat Manager will visually assess water conditions within the Preserve Area for evidence of water quality issues (such as algae growth) and note any off-site factors that may be contributing to water quality issues. Potential off-site factors contributing to water quality issues within the Preserve Area will be summarized during regular reporting.

The Habitat Manager will inform the HOA of any repairs or maintenance needed on these features to ensure they are functioning properly; ongoing maintenance typically includes removal (and proper disposal) of accumulated materials (e.g., sediment and debris), elimination of standing water (and causes), clearing of inlet/outlet structures, as-needed structural repairs, and identification of additional maintenance/cleaning services if applicable.

In addition, the Habitat Manager will inspect signage annually to ensure legibility and will inform the Project Owner of any repairs or maintenance needed, such as repairs or replacement of faded, vandalized, or otherwise illegible signs, stencils, or other labeling facilities. The Habitat Manager will notify the HOA if such a situation occurs.

## 6.13 MAINTENANCE OF PUBLIC RIGHTS-OF-WAY

Camino Santa Fe, Carroll Canyon Road, the Carroll Canyon Road arch culvert over Carroll Canyon Creek, the box culverts beneath Camino Santa Fe, storm drain outfalls along Carroll Canyon Creek, the pedestrian bridge over Carroll Canyon Creek, trails, and a maintenance access road are features within and adjacent to the Preserve Area that will require occasional maintenance. The Project Owner will be responsible only for maintenance of the pedestrian bridge, storm drain outfalls, and pedestrian trails. The Project Owner will not be responsible for Camino Santa Fe Road or Carroll Canyon Road maintenance (including the culverts) or the maintenance access road; maintenance of such will be the responsibility of the City.

The Habitat Manager will coordinate with the Project Owner and City staff when maintenance of these features is required to ensure sensitive resources within the Preserve Area are protected from irreversible damage. When maintenance occurs, the Habitat Manager will document before and after conditions and the measures taken to avoid and minimize impacts. Excessive damage to sensitive resources within the Preserve Area will be brought to the attention of the Project Owner and City.

SDG&E has several electric powerlines and transmission lines as well as natural gas lines that traverse the project area. Such lines have been identified as an allowable use by the City's MSHCP including necessary operations, maintenance or repair/replacement. Placement of areas within the revised MHPA/preserves for both uplands and wetlands habitat shall not be construed as to limit SDG&E's ability to perform work on electric or natural gas facilities traversing such areas. It is SDG&E's policy to avoid and minimize impacts to natural areas to the greatest extent feasible, however, necessary maintenance, repair or replacement may result in some minor impacts to identified preserve areas where and adjacent to our facilities and related easements traverse MHPA and preserve areas. SDG&E performs work under its own NCCP which is Subregional Plan that includes its own use of mitigation credits, impact accounting and restoration as needed.

## 6.14 REPORTING

The Habitat Manager will submit brief memorandums to the City to report documentation of a state or federally listed species (e.g., least Bell's vireo) or to alert the City of remedial actions required to address a management issue.

An annual report summarizing the status of the Preserve Area, results of monitoring, and management actions taken will be submitted to the City each year, in perpetuity. The annual report will include, but not limited to:

- Summary of monitoring efforts performed within the Preserve Area, including methodologies and results of habitat monitoring and species surveys (including a map of vegetation and annual species lists).
- Status of habitats and sensitive species within the Preserve Area (including maps depicting locations of observed sensitive species, invasive species, illegal dumping, homeless encampments, etc.).
- Management actions undertaken within the Preserve Area.
- Recommendations for changes in management actions for the next year.
- Any unforeseen changes due to natural or man-made causes.
- Photographs from fixed locations.
- Funds generated, expenses incurred, and year-end funding balances.

Each annual report will build upon the previous years' report, comparing the most recent data with data collected in previous years. The annual report shall be submitted within 45 days following the end of each monitoring year (i.e., by February 15 of each year).

# 7.0 ADAPTIVE MANAGEMENT

The Habitat Manager will implement management actions within an adaptive management context. Adaptive management is a dynamic strategy in which management efforts are reviewed regularly to assess their status and effectiveness. Monitoring described in Section 6 is generally qualitative in nature; therefore, quantitative triggers for adaptive management are not established in this LTHMP. However, the qualitative data collected by the Habitat Manager during monitoring will be used to assess effectiveness of management actions. Adaptive management directives related to control of exotic plant species are described below, as this is anticipated to be the primary management issue within the Preserve. However, the Habitat Manager will use their professional judgment to adjust all management actions, as-needed, based on results of on-going monitoring.

As described in Section 6.3.1, exotic plant species will be removed on an as-needed basis based on the results of annual habitat monitoring. If necessary, the Habitat Manager will prioritize areas for exotic species control based on the aggressiveness of the invasive species and the degree of the threat.

Generally, the Habitat Manager will allow treated areas to passively revegetate. However, should natural recruitment slow, or stop over time, active restoration efforts (e.g., seed application, cuttings, and/or container plants) with native species may be performed. Additional active restoration efforts will not be subject to specific success criteria. Rather, the Habitat Manager will qualitatively assess the re-establishment of native species and continue as-needed removal of invasive species using methods described in Section 6.3.1.

Examples of additional potential adaptive management actions include: 1) actions necessary to control or repair minor erosion, 2) minor cleanup, trimming, or replanting following flood events, and 3) addressing illegal entry into the Preserve through changes in signage, barriers, or similar actions.

# 8.0 FRAMEWORK MANAGEMENT PLAN CONSISTENCY

Section 1.5 of the City's MSCP Subarea Plan (City 1997) contains the Framework Management Plan designed to "maintain and enhance biological diversity in the region and conserve viable populations of endangered, threatened, and key sensitive species and their habitats, thereby preventing local extirpation and ultimate extinction, and minimizing the need for future listings, while enabling economic growth in the region." This section demonstrates the LTHMP's consistency with applicable portions of the City's MSCP Framework Management Plan, including Section 1.5.2 (General Management Directives) and Section 1.5.7 (Specific Management Policies and Directives for Urban Lands).

## 8.1 CONSISTENCY WITH GENERAL MANAGEMENT DIRECTIVES

Section 1.5.2 of the City's MSCP Subarea Plan (City 1997) contains general management directives that apply to all areas of the City's MSCP Subarea Plan. The following subsections address each topic in Section 1.5.2 of the City's MSCP Subarea Plan.

### 8.1.1 Mitigation

The Project was designed to avoid impacts to sensitive biological resources within the MHPA; however, impacts to 0.64-acre of MHPA by the Project will occur. Mitigation is required and described in the Project's Biological Technical Report (HELIX 2019a). Further, implementation of measures that address biological resources as provided in the Project's Site Development Permit (No. 1499942) is required as a condition of approval. These measures include designation of a qualified biologist to educate construction crews regarding the on-site environmental constraints and monitor construction activity, as well as avian and bat protection requirements to be implemented during construction (e.g., avoidance of nesting birds and roosting bats). If the qualified biologist determines post-construction that unanticipated impacts occurred, the Project will be required to mitigate these impacts in accordance with the City's Biology Guidelines, Environmentally Sensitive Lands and MSCP regulations, California Environmental Quality Act, and other applicable local, state, and federal law.

### 8.1.2 Restoration

The Project includes re-establishment and restoration of habitat within the MHPA and some areas immediately surrounding. A HRMP was prepared and approved by the City (HELIX 2019b). The Revegetation Plan includes information regarding site preparation, planting specifications, maintenance,

monitoring, success criteria, and remediation and contingency criteria as required by the Framework Management Plan.

### 8.1.3 Public Access, Trails, and Recreation

Although the Project will not construct new trails within the MHPA, the pedestrian bridge located outside and above/over Carrol Canyon Creek will be in the MHPA and the existing access road near the southwest corner of the Preserve Area will be improved and will remain located in the MHPA.

Improvements to the existing access road will occur in the same area where they currently exist. Sections 6.4 and 6.5 of this LTHMP provide additional information on signage and barriers/fencing.

Access road improvements will include re-grading and paving the road. The majority of this access road is located outside the MHPA; only a short segment of the road, between Camino Santa Fe and the Carroll Canyon Creek arch culvert, is located within the MHPA. The road in this location is not within the Preserve Area and will be flanked on both sides by native vegetation, which will help filter runoff and minimize erosion. Equestrian trails are not part of the Project's design, and off-road and cross-country vehicles will not be allowed on the trails. Trails and associated fencing and signage will be inspected during regular habitat monitoring visits.

The Project includes a public open space adjacent to the Preserve Area within the MHPA, which will allow for passive uses such as but not limited to: trail use, birdwatching, photography, small-scale picnicking, and etc. Trash receptacles and signage will be installed to minimize littering, feeding of wildlife, and increasing the population of nuisance wildlife. Trash receptacles will be wildlife proof and located next to public open space areas and other seating areas.

The Habitat Manager will notify the Project Owner and local law enforcement of homeless activity documented within the Preserve Area within 24 hours. Section 6.6 of this LTHMP outlines how homeless encampments found within the MHPA will be addressed.

### 8.1.4 Litter/Trash and Materials Storage

Litter will be removed as-needed. Signage and wildlife proof receptacles will also be installed to minimize littering. As previously mentioned, fencing will be installed along the perimeter of the MHPA and Preserve Area where interfacing with developed areas to discourage trespassing and littering in sensitive habitats. The Habitat Manager will be responsible for imposing penalties for littering and dumping in the MHPA. The Habitat Manager will also keep track of locations where repeated littering/dumping is occurring and may enact remedial measures such as additional signage, receptacles, or fencing. Materials will not be stored within the MHPA. Section 6.7 of this LTHMP summarizes litter/trash removal procedures.

### 8.1.5 Adjacency Management Issues

The Habitat Manager will document illegal intrusions into the MHPA and Preserve Area and will notify the City and applicable law enforcement agencies for assistance. Section 6.5 of this LTHMP discusses public awareness measures and Section 6.4 discusses the fencing and barriers that will be installed to prevent unauthorized access to the MHPA.

### 8.1.6 Invasive Exotics Control and Removal

Re-establishment, restoration, and enhancement within the Preserve Area will remove existing invasive non-native plant species. In addition, landscaping throughout the Project adjacent to the MHPA and Preserve Area will not include use of any invasive species.

As described in Sections 6.1.1 and 6.3.1, the presence of non-native species will be monitored, documented, and addressed using appropriate methods. Section 6.3.2 addresses cowbird management.

### 8.1.7 Flood Control

No flood control channels that will require regular maintenance exist within the MHPA or Preserve Area. As described in Section 6.11, the Habitat Manager will cooperate with the City if maintenance work within the Preserve Area is needed to alleviate flooding issues.

## 8.2 CONSISTENCY WITH SPECIFIC MANAGEMENT POLICIES AND DIRECTIVES FOR URBAN LANDS

Section 1.5.7 of the City's MSCP Subarea Plan discusses specific management policies for urban habitat lands, within which the Project is located. The management policies for urban MHPA areas do not contain specific priorities, but instead involve the creation of a Natural Resource Management Plan by the City's Park and Recreation Department to govern the management of those lands. In lieu of a specific plan or priorities, this LTHMP was prepared to address the major issues for urban lands as outlined in Section 1.5.7 of the City's MSCP Framework Management Plan. Table 3, *Consistency with Specific Management Policies and Directives for Urban Lands* lists the major issues for urban lands referenced in the Framework Management Plan and sections of this LTHMP that address each issue.

**Table 3**
**CONSISTENCY WITH SPECIFIC MANAGEMENT POLICIES AND DIRECTIVES FOR URBAN LANDS**

| Major Issue for Urban Lands | Long-term Habitat Management Plan Section(s) Addressing Issue |
|---|---|
| Intense land uses and activities adjacent to and in covered species habitat | Sections 6.4, 6.5, 6.8, and 6.9 |
| Dumping, litter, and vandalism | Section 6.7 |
| Itinerant living quarters | Section 6.6 |
| Utility, facility and road repair, construction, and maintenance activities | Section 6.13 |
| Exotic (non-native) and invasive plants and animals | Section 6.3 |
| Urban runoff and water quality | Section 6.12 |

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HELIX Environmental Planning, Inc. 2019a. Biological Technical Report. 3Roots Project. Prep. for Mesa Canyon Community Partners. April.

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# Appendix A

## Habitat Reclamation and Mitigation Plan

# 3Roots San Diego Project

## Habitat Reclamation and Mitigation Plan

May 2019 | CAH-02.01

*Prepared for:*

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*Prepared by:*

**HELIX Environmental Planning, Inc.**
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# 3Roots San Diego Project

## Habitat Reclamation and Mitigation Plan

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May 2019 | CAH-02.01

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# 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. |

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# 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.

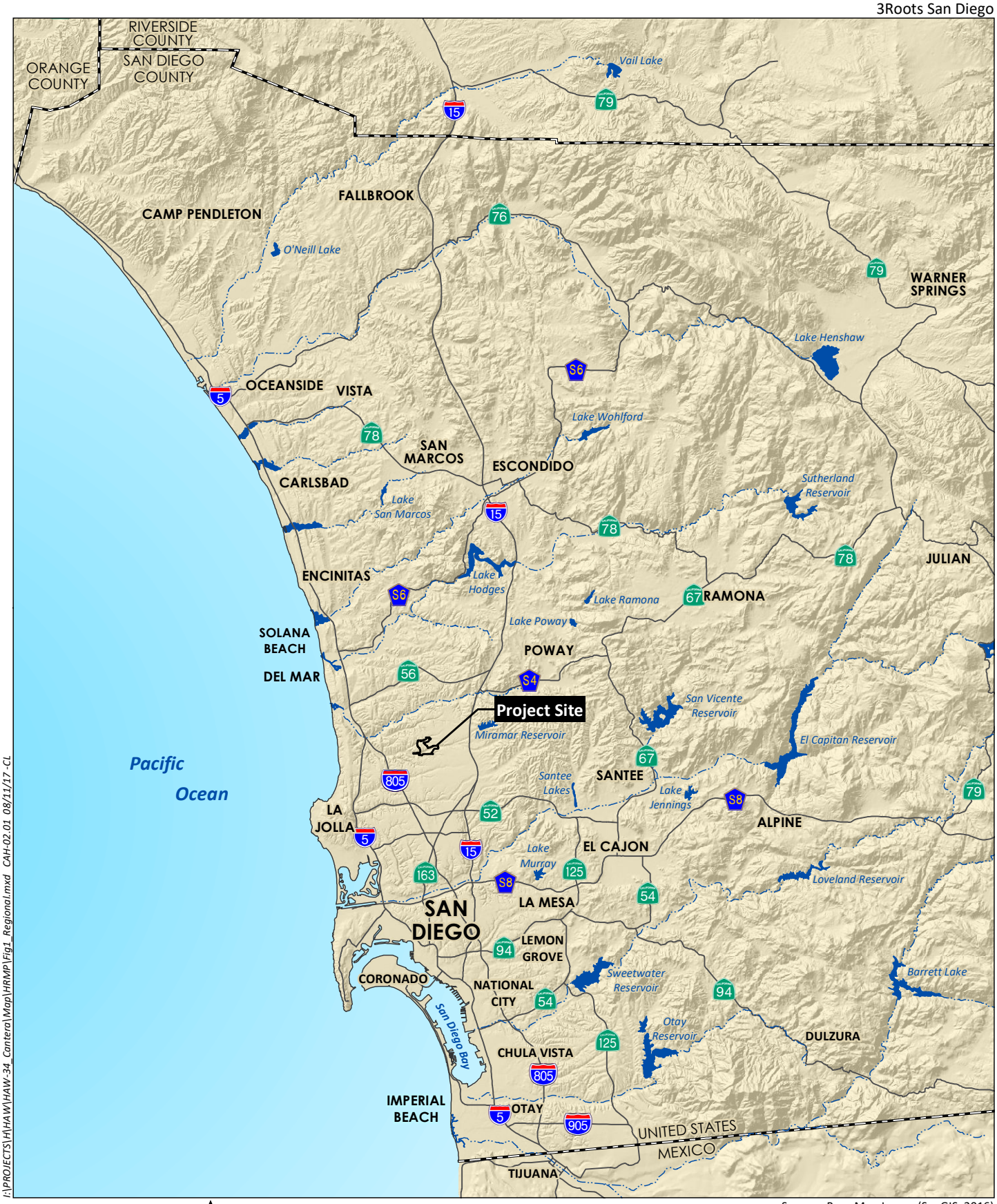
## 1.2 SITE HISTORY

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

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Source: Base Map Layers (SanGIS, 2016)

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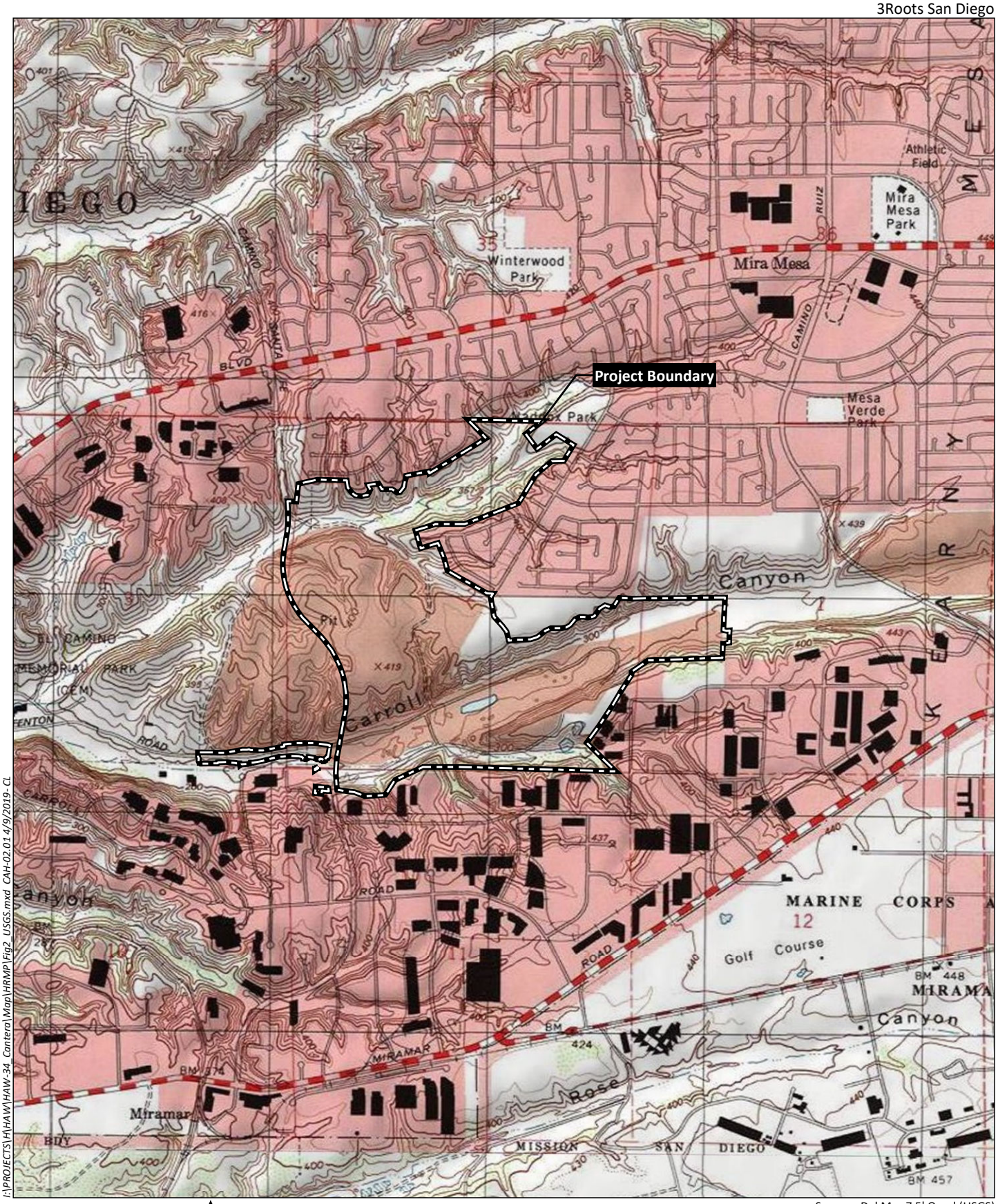
# Regional Location

Figure 1

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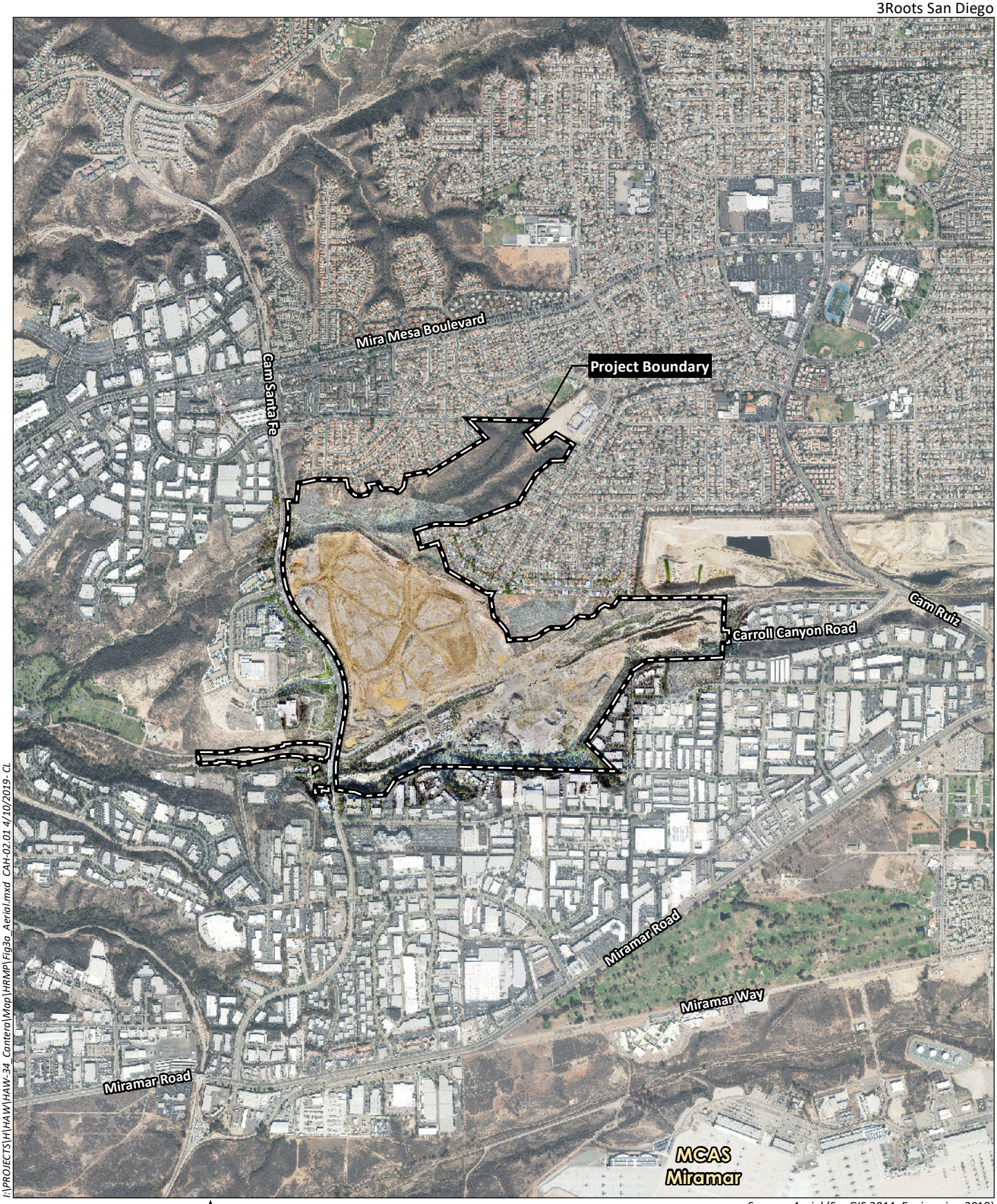
Source: Del Mar 7.5' Quad (USGS)

HELIX Environmental Planning

# USGS Topography

Figure 2

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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
Northrup Dr
Knight Dr
Cannight Wy
Kaufman Wy
Osgood Wy
Bacadi Dr
Kibler Dr
Embry Wy
Embry Pt
Baffin Dr
Caffey Ln
Hefner Ln
Backer Rd
Miratech Dr
Summers Ridge Rd
Biosite Wy
Rehco Rd
Carroll Canyon Creek
Arjons Dr
Dunbrook Rd
Trade Pl
Silverton Av

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

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# 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
Emby Wy
Emby Pt
Baffin Dr
Kaufman Wy
Osgood Wy
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

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0 650 Feet

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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.

3Roots San Diego

Project Boundary
Impact Area
Sample Point
Culvert
Concrete-lined Ditch

**USACE Jurisdiction**

**Wetlands**

Disturbed Wetland
Southern Riparian Woodland
Southern Riparian Woodland - Disturbed
Southern Willow Scrub
Southern Willow Scrub - Disturbed
Mule Fat Scrub
Mule Fat Scrub - Sparse
Mule Fat Scrub - Disturbed

**Non-Wetland**

Unvegetated Channel/Streambed
Unvegetated Channel/Streambed

Flanders Ct
Flanders Dr
Cam Santa Fe
Mesa Ridge Rd
Miratech Dr
Summers Ridge Rd
Biosite Wy
Rehco Rd
Kamwood St
Kook St
Kamwood Pl
Kamwood Ct
Dancy Rd
Bolin St
Tilton St
Clauser St
Perrod Ln
Darden Rd
Darden Ct
Presley St
Gold Coast Dr
Trails End Cr
Hemphill Dr
Antrim Wy
Port Royale Dr
Empress Av
Baroness Av
Royal Ann Av
Lady Bess Wy
Mayor Cr
Kaiser Rd
Bagwell Cv
Hendricks Ct
Hendricks Dr
Jade Coast Rd
Parkdale Av
Northrup Dr
Bacadi Dr
Knight Dr
Kibler Dr
Baffin Dr
Emby Pt
Emby Wy
Canright Wy
Kaufman Wy
Osgood Wy
Caffey Ln
Heffner Ln
Backer Rd
Juniper Creek Ln
Carroll Canyon Rd
Arjons Dr
Miralani Dr
Cabot Dr
Dowdy Dr
Dunbrook Rd
Trade Pl
Silverton Av
3'
3'
6'
3'
3'
5'
2'
1'
sp1
sp2
sp3

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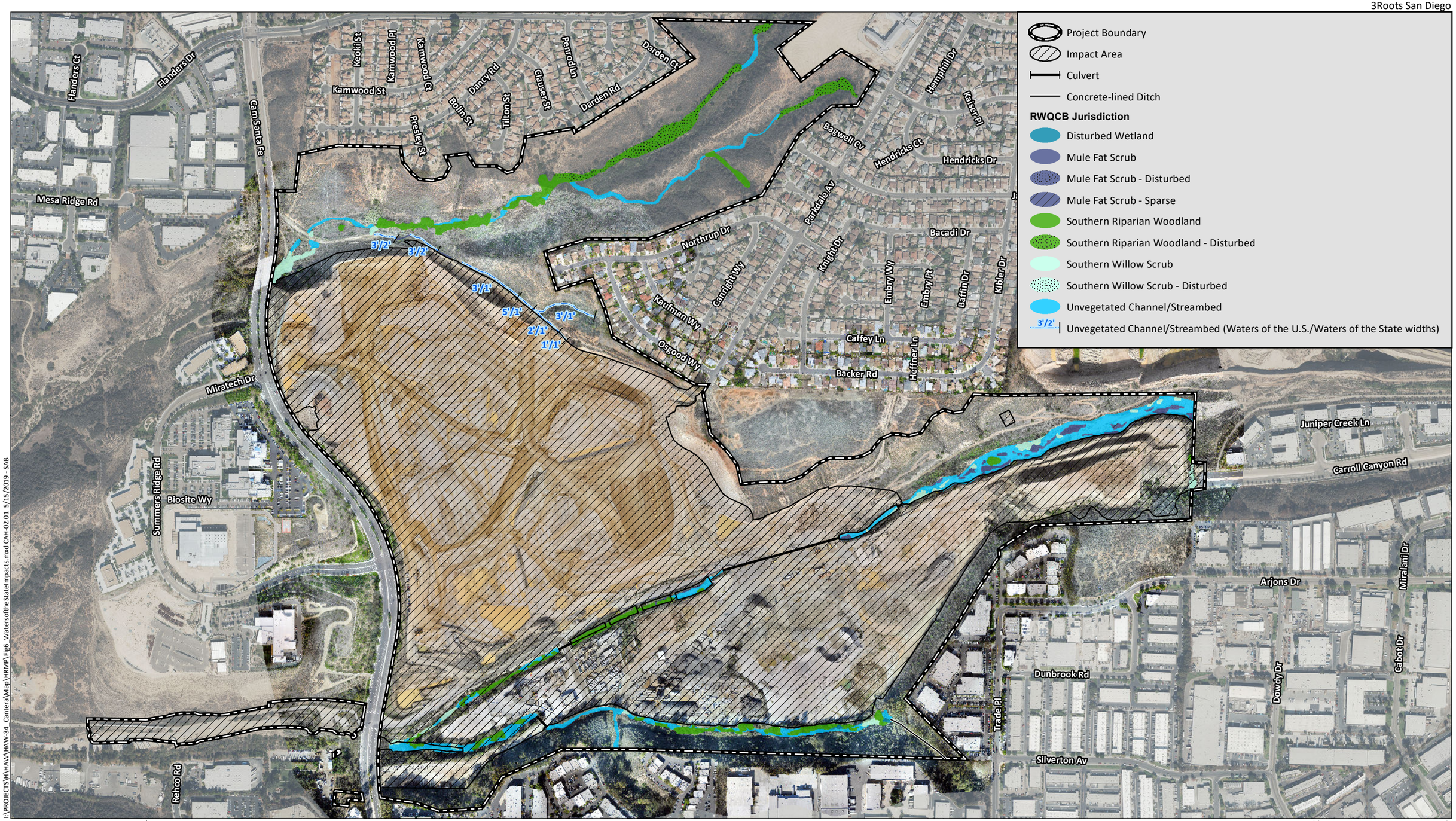
Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018).

HELIX Environmental Planning

# USACE Jurisdictional Impacts

Figure 5

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

HELIX Environmental Planning

# RWQCB Jurisdictional Impacts

Figure 6

3Roots San Diego

Project Boundary
Impact Area
Culvert
Concrete-lined Ditch

**CDFW Habitat**

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
Streambed
Streambed

Flanders Ct
Flanders Dr
Camino Santa Fe
Mesa Ridge Rd
Miratech Dr
Kamwood St
Kook St
Kamwood Pl
Kamwood Ct
Dancy Rd
Bolin St
Tilton St
Clauser St
Penrod Ln
Darden Rd
Darden Ct
Presley St
Bagwell Cv
Hendricks Ct
Hendricks Dr
Hemphill Dr
Trails End Cr
Kaiser Rd
Mayor Cr
Antrim Wy
Port Royale Dr
Gold Coast Dr
Lady Bess Wy
Royal Ann Av
Empress Av
Baroness Av
Jade Coast Rd
Parkdale Av
Northrup Dr
Bacadi Dr
Knight Dr
Kibler Dr
Baffin Dr
Emby Wy
Emby Pt
Canright Wy
Kaufman Wy
Osgood Wy
Caffey Ln
Heffner Ln
Backer Rd
5'
5'
6'
4'
6'
4'
3'
2'
Juniper Creek Ln
Carroll Canyon Rd
Summers Ridge Rd
Biosite Wy
Rehco Rd
Arjons Dr
Miralani Dr
Cabot Dr
Dowdy Dr
Dunbrook Rd
Trade Pl
Silverton Av

0 650 Feet

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

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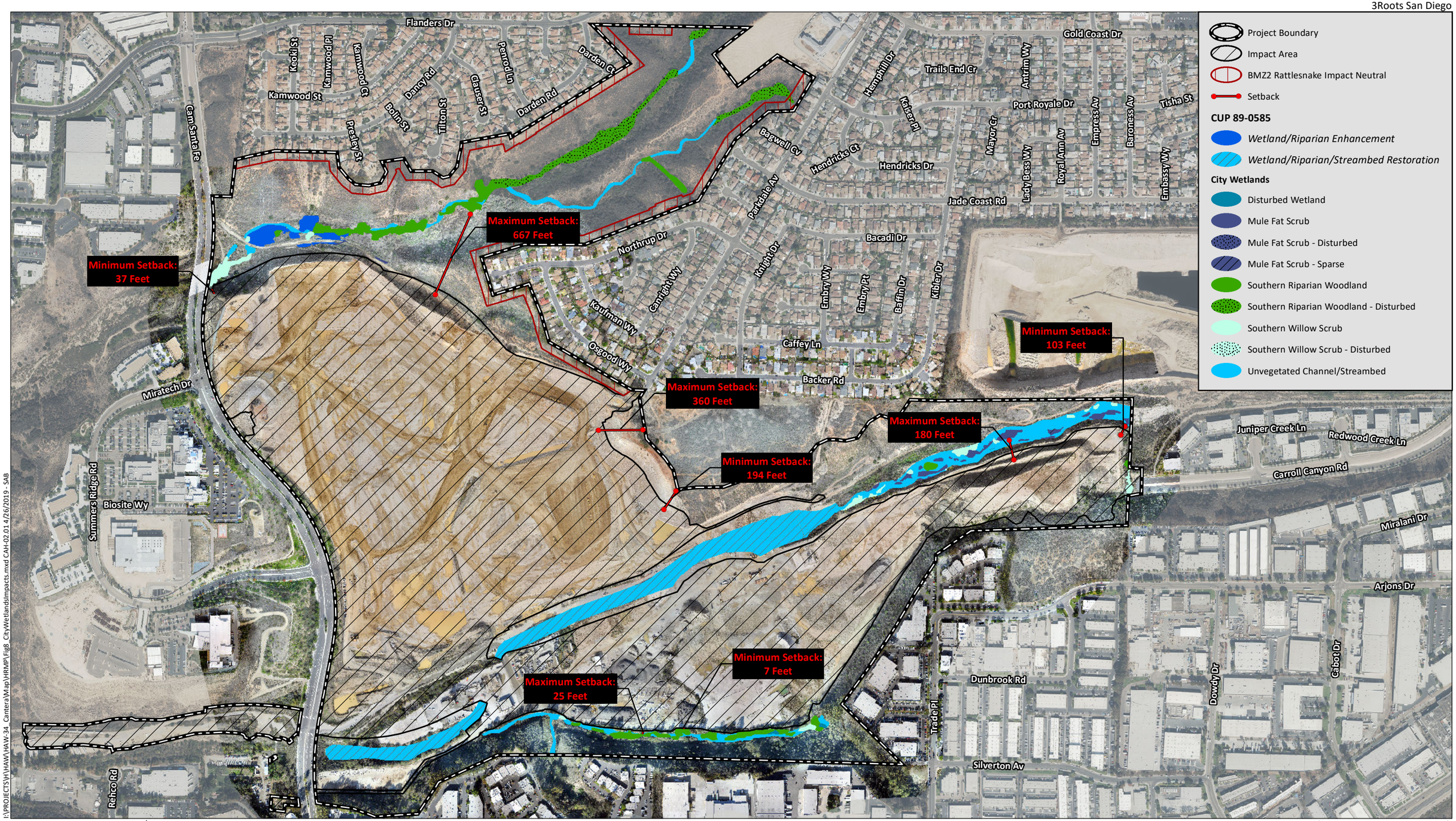
HELIX Environmental Planning

# CDFW Jurisdictional Impacts

Figure 7

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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

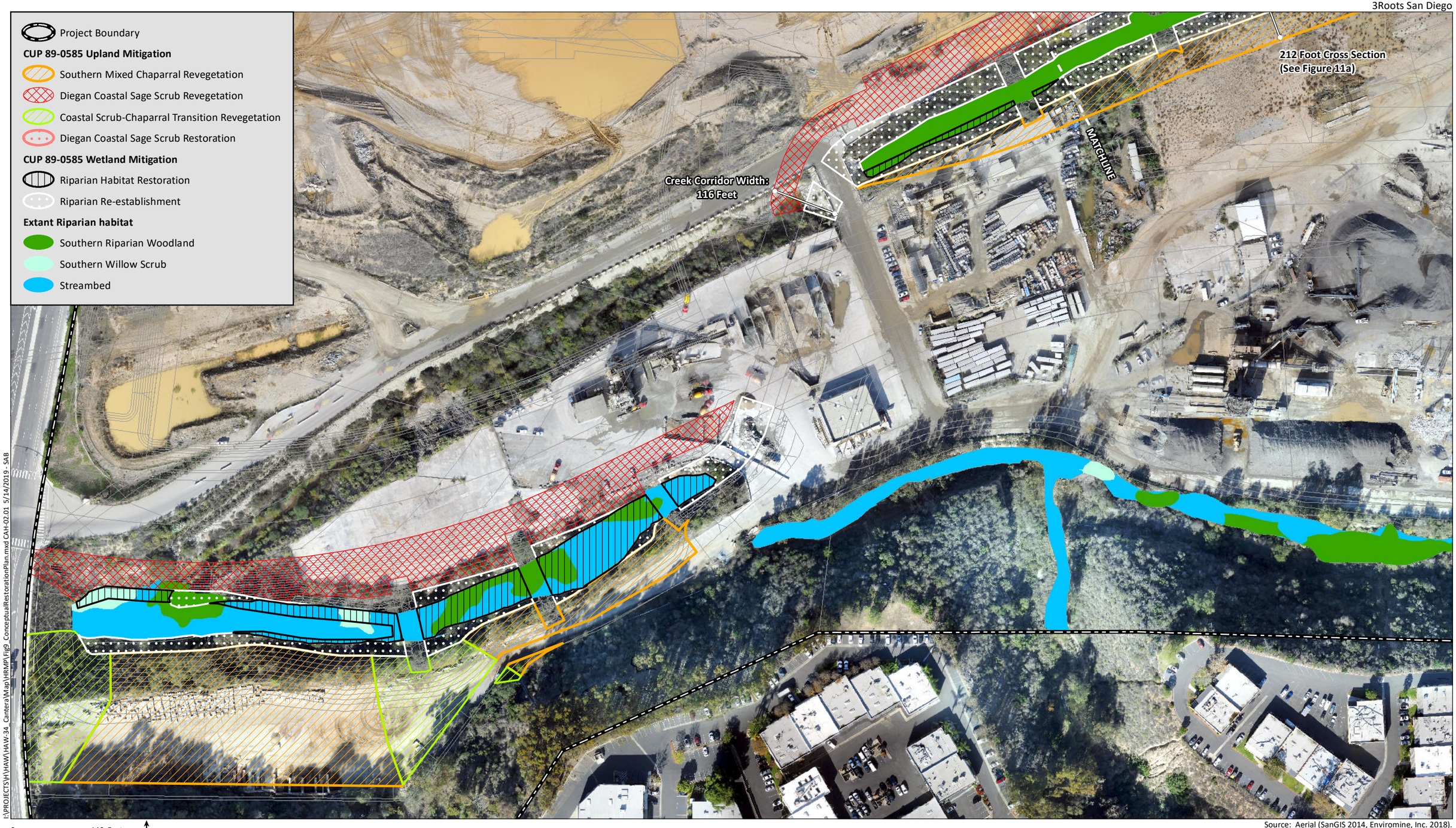
The area proposed for CUP Reclamation and Project mitigation is considered suitable for wetland habitat re-establishment and enhancement due to the location of the site along an existing riparian corridor and the presence of existing riparian habitat both within the Project boundary as well as upstream 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

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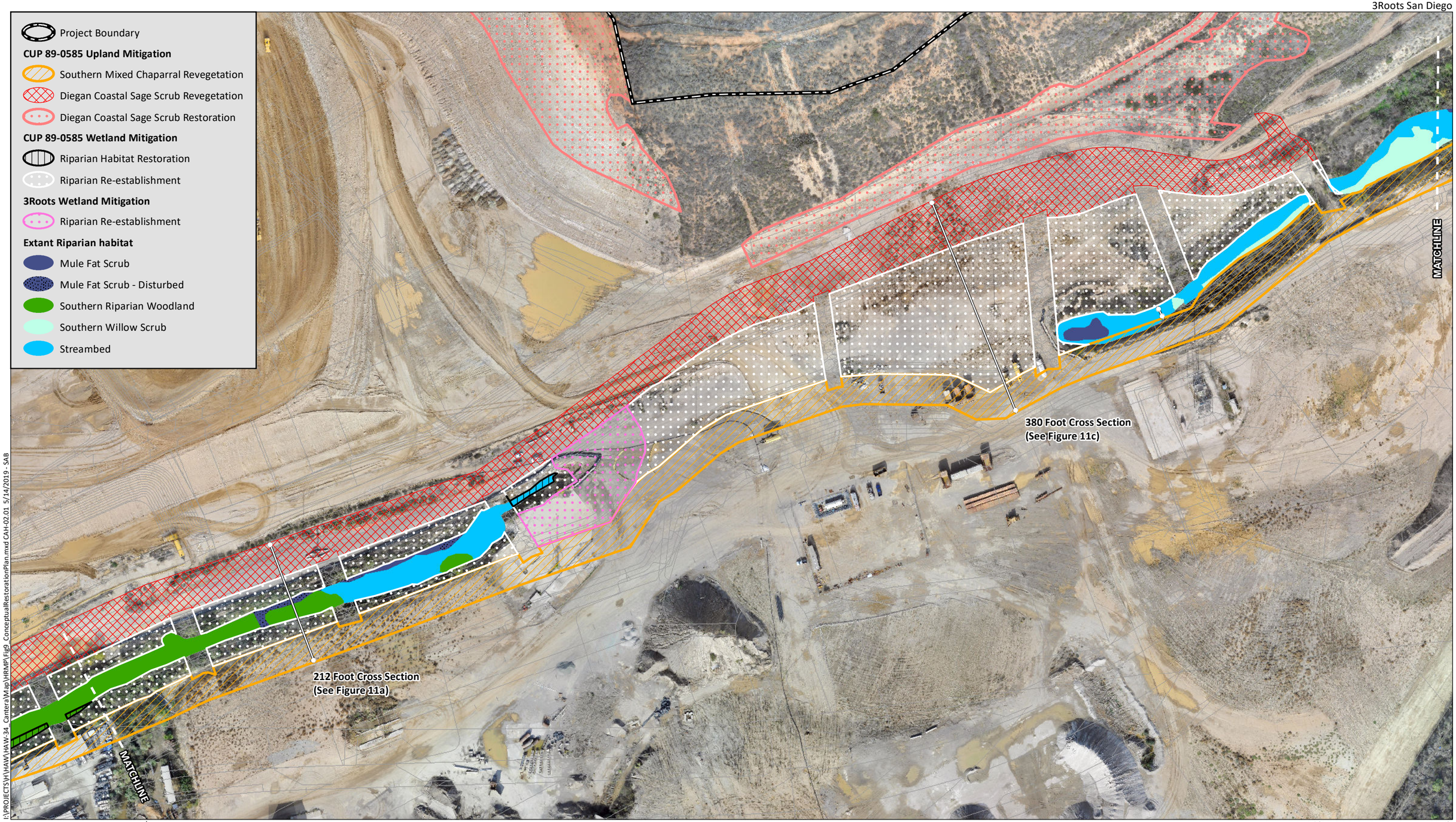
Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018).

HELIX Environmental Planning

# Conceptual Habitat Mitigation Plan

Figure 9a

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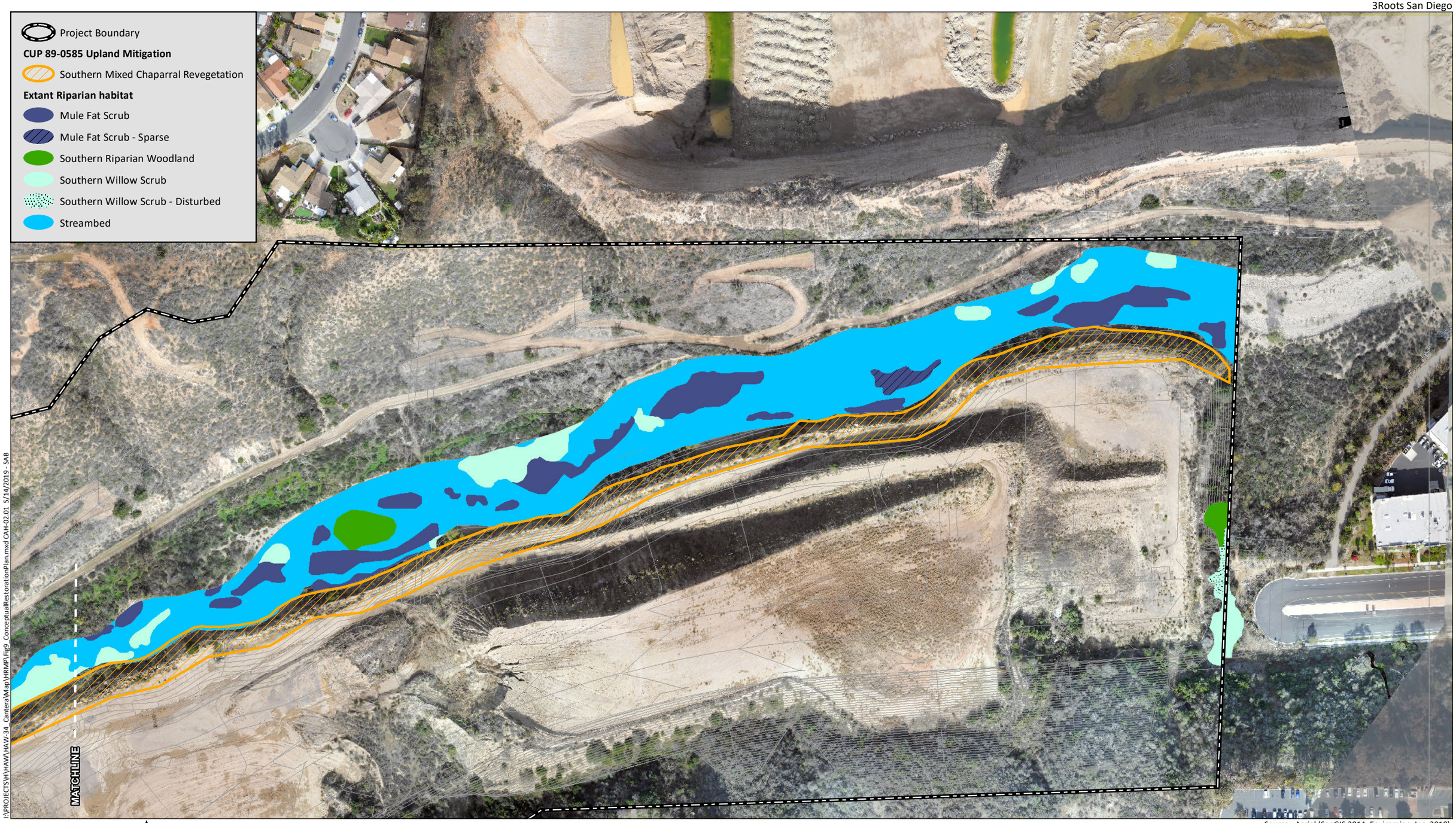
Source: Aerial (SanGIS 2014, Enviromine, Inc. 2018).

HELIX Environmental Planning

# Conceptual Habitat Mitigation Plan

Figure 9b

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

HELIX Environmental Planning

# Conceptual Habitat Mitigation Plan

Figure 9c

3Roots San Diego

Project Boundary

**CUP 89-0585 Upland Mitigation**

Diegan Coastal Sage Scrub Restoration

**CUP 89-0585 Wetland Mitigation**

Wetland/Riparian Enhancement

**Extant Riparian habitat**

Mule Fat Scrub

Southern Riparian Woodland

Southern Riparian Woodland - Disturbed

Southern Willow Scrub

Streambed

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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.

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

Kaoki St
Kamwood Pl
Kamwood Ct
Kamwood St
Dancy Rd
Bolin St
Tilton St
Clausen St
Pearod Ln
Dardan Ct
Dardan Rd
Presley St
Cam Santa Fe
Rattlesnake Creek
Mesa Ridge Rd
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
Carroll Canyon Creek
Arjons Dr
Miralani Dr
Cabot Dr
Dunbrook Rd
Dowdy Dr
Trade Pl
Silverton Av
Rehco Rd

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\HRMP\Fig10_MSCPBoundaryAdjust.mxd CAH-02.01 4/24/2019 -CL,EV, SAB

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.

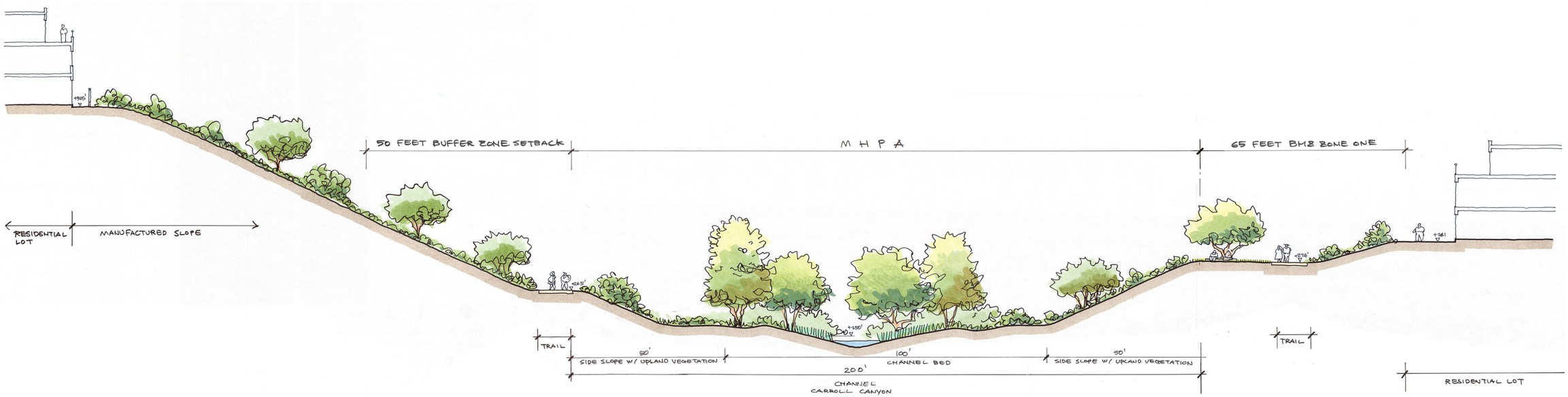
Access within the mitigation site will be approved by the restoration specialist prior to equipment being mobilized. Where access is only possible over native habitat, a route will be chosen to minimize impacts to native habitat and will be flagged to ensure impacts to native habitats are restricted 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

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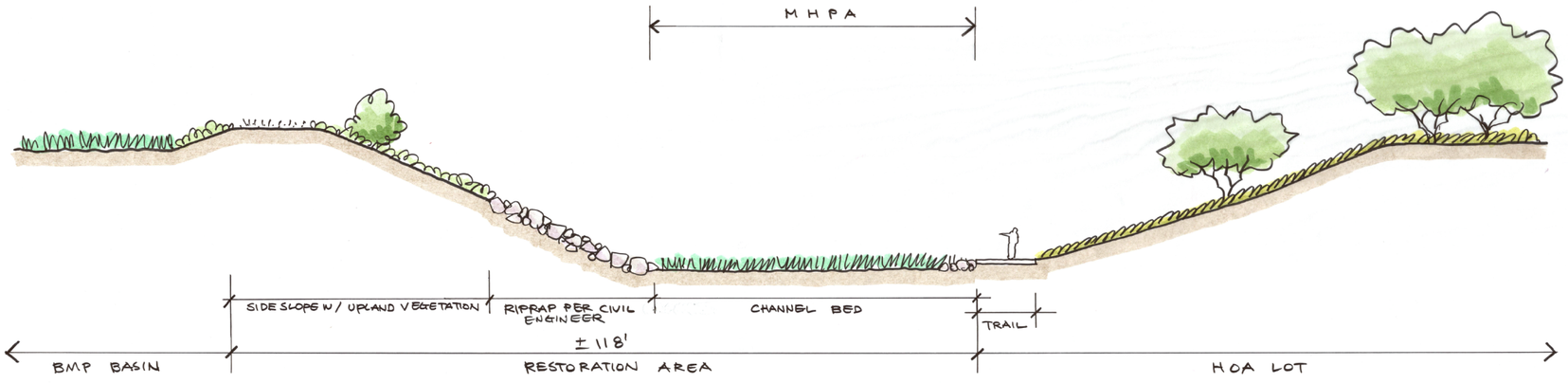
Source: SWA 10/2018

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

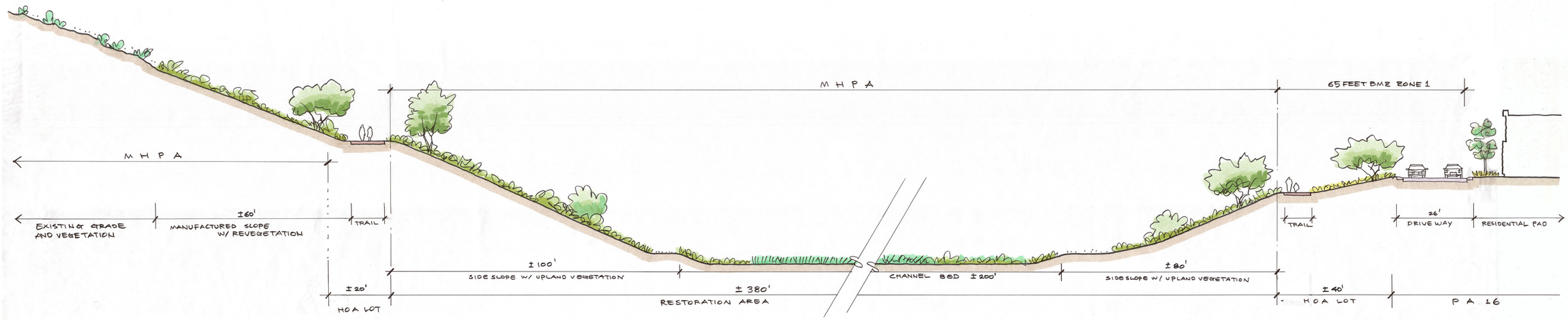
Seed and plant material for this Project will be collected or propagated from local plant populations occurring in coastal San Diego County within 25 miles of the site. The restoration specialist must approve all seed and container stock orders, including specific species and source locations, prior 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

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Source: SWA 10/2018

HELIX Environmental Planning

# Cross Section (Wide)

Figure 11c





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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<br>cuttings | 5<br>5 | 36<br>20 | 360<br>200 | 1,951<br>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<br>cuttings | 10<br>10 | 4<br>3 | 16<br>12 | 87<br>64 |
| | **TOTAL** | 1-gallon<br>cuttings | -- | -- | **862**<br>**212** | **4,4,673**<br>**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 | 8 visits per year |
| January to June | Monthly (6 visits per year) |
| July to December | 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:

| | |
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# Appendix B

## Preliminary Estimate of Non-Wasting Endowment

**Preliminary Endowment Estimate for Long-Term Management of the 3Roots Preserve Area**

**Prepared by HELIX Environmental Planning, Inc.**
**May 31, 2019**

| Fiscal Year (FY) 2019-2020 Management & Maintenance Costs for the 26.03-Acre 3Roots Preserve Area | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Stewardship Item #** | **Activity** | **Frequency (# of times/FY)** | **Hours per Activity** | **Activities per FY** | **Unit Cost** | **Annual (FY) Cost** | |
| **1. Habitat Monitoring** | | | | | | | |
| | Site Inspections | quarterly | 6 | 4 | $101.00 | $2,424.00 | |
| | Vehicle Mileage to/from site | | 50 | 4 | $0.545 | $109.00 | |
| **2. Vegetation Mapping** | | | | | | | **$2,533.00** |
| | Surveys (biologist; full day) | every 5 years | 8 | 0.2 | $101.00 | $161.60 | |
| | GIS | | 6 | 0.2 | $83.00 | $99.60 | |
| | Vehicle Mileage to/from site | | 50 | 0.2 | $0.545 | $5.45 | |
| **3. Sensitive Species Monitoring** | | | | | | | **$266.65** |
| | Site Inspections | tri-annual | 6 | 3 | $101.00 | $1,818.00 | |
| | Vehicle Mileage to/from site | | 50 | 3 | $0.545 | $81.75 | |
| **4. Exotic Species Control** | | | | | | | **$1,899.75** |
| | Site Inspections | biannual | 8 | 2 | $101.00 | $1,616.00 | |
| | Vehicle Mileage to/from site | | 50 | 2 | $0.545 | $54.50 | |
| **5. Meetings** | | | | | | | **$1,670.50** |
| | Coordination and Meetings (SDMMP and HOA) | biannual | 4 | 2 | $101.00 | $808.00 | |
| **6. Maintenance** | | | | | | | **$808.00** |
| | Invasive Species Control/Trash Removal | tri-annual | 3* | 3 | $1,600.00 | $14,400.00 | |
| | Access Control/Signage | every 5 years | - | 0.2 | $1,500.00 | $300.00 | |
| | Materials and Equipment | tri-annual | 1 | 3 | $250.00 | $750.00 | |
| | Dump Fees | annual | 1 | 1 | $100.00 | $100.00 | |
| **7. Reporting** | | | | | | | **$15,550.00** |
| | as-needed memos/correspondance | annual | 20 | 1 | $101.00 | $2,020.00 | |
| | 2019 Annual Work Plan | annual | 14 | 1 | $101.00 | $1,414.00 | |
| **GRAND TOTAL** | | | | | | **$26,161.90** | **$3,434.00** |

* represents 3-person crew

| | | |
|---|---|---|
| | | **$26,161.90** |
| **Contingency** | 12% | **$3,139.43** |
| **Admin** | 16% | **$4,185.90** |
| **Emergency and Legal fund** | 4% | **$1,046.48** |
| | | **$34,533.71** |

| **Estimated Endowment Amount** | | **Notes** |
|---|---|---|
| **4.25** | **Cap Rate** | At a 4.25% cap rate, it will take an endowment of **$812,557.84** to fund annual costs of $34,533.71. |
| $812,557.84 | | |

| | |
|---|---|
| Gabion Drop Structure Repair Fund | $50,000 |
| **Total Endowment Required** | **$862,557.84** |

*Formula for Endowment Estimate*

*Annual Cost x (100/cap rate) = Total Needed in Bank (non-wasting fund) to Pay for Annual Maintenance & Mgmt*

*Assumes the endowment will be funded 3 years prior to initiating long-term management. An additional 3 years of funding would be required if the endowment is funded concurrently with long-term management.*