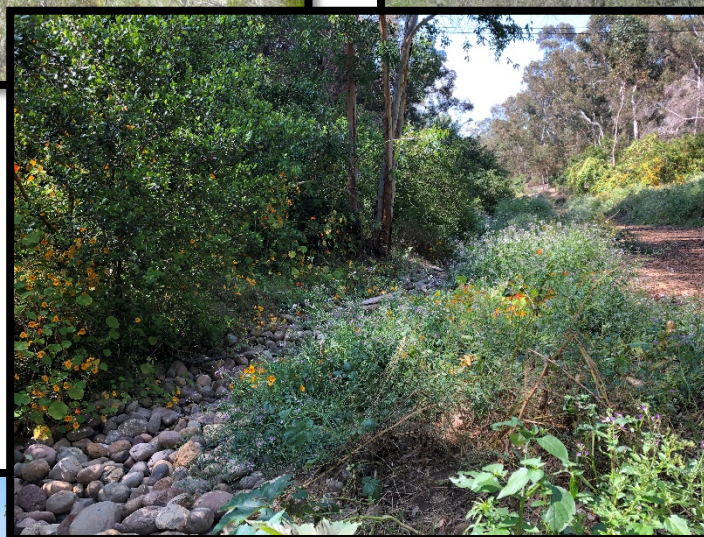


# **Canyon Sewer Cleaning Program And Long Term Sewer Maintenance Program Progress Report**



**2019 Annual Report**  
**July 1, 2018 – June 30, 2019**



*Cover - Top Left: 55th Street Emergency Sewer Point Repair, Top Right: Western burrowing owl, Otay Mesa Mitigation Site, Center: Spruce Canyon Exposed Pipe Repair, Bottom Left: Riparian scrub and forest, San Clemente Canyon; Bottom Right: Alvarado Canyon Sewer Pipe Emergency*

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Attachment A	25 Month Revegetation and Restoration Projects Status Table
Attachment B	Mitigation Summary Table

## ACRONYMS AND ABBREVIATIONS

BMP	Best Management Practices
CDFW	California Department of Fish and Wildlife
CIP	Capital Improvement Project
DSD	Development Services Department
MEAP	Long Term Maintenance and Emergency Access Plan
MHPA	Multiple Habitat Planning Area
OSCAC	Open Space Canyons Advisory Committee
PEIR	Programmatic Environmental Impact Report
PEP	Plant establishment period
Program	Canyon Sewer Cleaning Program and the Long-term Canyon Sewer Maintenance Program
Public Utilities	City of San Diego Public Utilities Department
ROF	Redirection of Flow
SCR	Substantial Conformance Review
USACE	United States Army Corps of Engineers
WWC	Wastewater Collection Division



## EXECUTIVE SUMMARY

In response to an Administrative Order from the U.S. Environmental Protection Agency, in an effort to reduce sewer spills and beach closures, and under the direction of Council Policies 400-13 and 400-14, the City of San Diego's Public Utilities Department (Public Utilities) has adopted the Canyon Sewer Cleaning Program and the Long-Term Canyon Sewer Maintenance Program (Program) to access, clean, and repair miles of sewer infrastructure located in canyons and other environmentally sensitive areas.

A Programmatic Environmental Impact Report (PEIR) was prepared to study the Program and in July 2004 the City of San Diego approved Coastal Development Permit No. 13506 and Site Development Permit No. 13507 for the Program.

The objectives of the Program are:

- To complete the inspection and cleaning of City of San Diego sewer infrastructure located in canyons and other environmentally sensitive areas.
- To identify and implement efficient, effective, and environmentally sensitive means to accomplish the necessary canyon sewer cleaning activities.
- To provide for long-term maintenance of canyon sewer infrastructure, recognizing that availability of access to the infrastructure is essential for an effective long-term program, in accordance with Council Policy 400-13.
- To evaluate and pursue options to redirect sewage flows out of canyons and into street sewer lines or other accessible areas, where feasible and appropriate pursuant to Council Policy 400-14.

This annual report, as required by the site development permit condition 27, provides a Progress Report to the Open Space Canyons Advisory Committee (OSCAC) on the Program for the year from July 1, 2018 through June 30, 2019. This report provides the status of all Program activities within the reporting year, including habitat mitigation, long term access planning and implementation, construction and emergency projects, and 25-month revegetation and restoration projects.

## LONG TERM ACCESS PROJECTS

Long Term Sewer Access Projects provide access paths to sewer infrastructure for ongoing maintenance, inspections, and cleaning. One of the first steps in determining whether an access path is needed is to prepare a redirection of flow (ROF) study. A ROF study evaluates the economic feasibility of removing all or part of the sewer from an environmentally sensitive area or canyon versus providing access to the sewer if it remains in place.

When redirection of flow is found to be infeasible from all or portions of environmentally sensitive areas/canyons, Public Utilities staff develop a Long-Term Maintenance and Emergency Access Plan (MEAP) in accordance with Policy 400-13. Public Utilities staff prepares and submits a Substantial Conformance Review (SCR) packages to the Development Services Department (DSD) for a determination whether the proposed mitigation, restoration, and access planning for individual canyon areas or project is in conformance with the PEIR and Program master permits. Project specific design plans are then prepared as necessary to provide specific direction on access improvements and construction that include additional information necessary to obtain regulatory agency permits. Separate permits or clearances are obtained from the regulatory agencies prior to implementation of long term access projects.

The following canyons are in various stages of long term access planning, implementation, and monitoring:

- **32<sup>nd</sup> Street/Huckleberry** – Public Utilities Wastewater Collection (WWC) Division constructed the new access paths in February 2017. The project, including the post construction 25-month maintenance & monitoring period, has been successfully completed as of July 2019. Public Utilities will continue to maintain the access path as-needed for sewer cleaning and inspection purposes.
- **Alvarado Phase I** – Phase I was fully implemented by City crews in July 2018 and included the creation of a 10-foot-wide sewer access path to accommodate the required cleaning equipment, as well as improvement of one pipe culvert crossing. The project is currently in the post-construction 25-month maintenance and monitoring period.
- **Alvarado Phase II** - Phase II will include additional stream crossing improvements that will expand and improve access to 100% of the canyon manholes. Design for Phase II is complete, and once Public Utilities receives the final biological report and resource agency permits construction will begin. Implementation of Phase II is anticipated to occur in September 2019.
- **East Tecolote Phase I** - Phase I was fully implemented by City crews in September 2018. Phase I included the addition of a bridge that can accommodate the necessary sewer cleaning equipment. The bridge reduced wetland impacts to the streambed

by eliminating the need for an Arizona type crossing. This phase has expanded access to 75% of the canyon manholes for cleaning and inspections. The project is currently in the post-construction 25-month maintenance and monitoring period.

- **East Tecolote Phase II** – Phase II will include additional stream crossing improvements. Design, permitting, and implementation timeline is to be determined.
- **Norfolk Canyon** – Public Utilities completed a technical memorandum that included recommendations for long-term access improvements. The memorandum identified the need for the upsizing of one pipe culvert as well as three streambed crossing improvements. Public Utilities has transferred this project to Public Works for design, permitting, and implementation. Start of construction is to be determined.
- **Home Avenue Trunk Sewer** – Construction was completed by WWC in fall 2017. The project, including the post construction 25-month maintenance & monitoring period, and been successfully completed as of July 2019. Public Utilities will continue maintenance of the path as-needed for cleaning and inspection purposes.
- **South Chollas** –The post construction 25-month maintenance & monitoring period has been completed as of May 2019. Public Utilities will continue maintenance of the access path as-needed for sewer cleaning and inspection purposes.
- **North, Central, and Southern Tecolote Canyon** – Access crossing improvements are included with the Tecolote Canyon Trunk Sewer Replacement Capital Improvement Project (CIP) project. The CIP project is currently in the design and permitting stage. The project is anticipated to start construction in December of 2019.
- **Mt. Elbrus** – The new access path was completed by WWC in January 2017. The project is currently in the post construction 25-month maintenance & monitoring period.
- **Interstate (I)-15 & Balboa** – City crews completed construction of the 8-foot wide access path in October 2018. The project also included raising buried manholes. The project is currently in the 25-month monitoring and maintenance period.
- **Interstate (I)-15 & Adams** –This project is the planning stage, and will include expanding portions of the existing 8-foot-wide access path to 10 feet wide path to accommodate the required cleaning equipment (flusher), and will include stream crossing improvements. Implementation timeline of this project is to be determined.
- **San Clemente Canyon** - This project is in planning stage, and will include improvements to the existing access path, and establishment of new access. Public

Utilities anticipates partial construction of this project to commence September 2020.

- **Lexington Canyon at Redwood Street** – Public Utilities completed a technical memorandum that included recommendations for long-term access improvements. The memorandum identified the need for an energy dissipater at a stormwater outfall, noting that the discharge velocities at this outfall are very high and have significantly eroded the access path downstream. Other recommendations for improvement included installation of rip rap, gabion baskets, and a streambed crossing. Public Utilities plans to move forward with obtaining engineered plans, along with the required environmental reports, and Resource Agency permits.

## **MAINTENANCE, MONITORING, AND MAPPING**

Wastewater Collection Division staff coordinated closely with Environmental Staff (Environmental Section) in ensuring daily activities were in compliance with the Program's master permit, agency permits, and environmental regulations.

Environmental training is provided to all Public Utilities staff working in canyons/environmentally sensitive areas. Crews are directed to contact staff in the Environmental Section for guidance and support for work that may impact sensitive resources.

The Environmental Section reviews daily field work reports, facilitates monthly meetings to discuss and review all work in canyons, obtains permits, and provides daily support to field crews. Work conducted in canyons/environmentally sensitive areas is monitored by the Environmental Section. Bird nesting surveys, vegetation and sensitive species mapping, jurisdictional delineations and other biological surveys are completed by the Environmental Section for daily WWC operation and maintenance of sewer lines in canyons.

Public Utilities has increased its efforts to inventory and map existing access to sewers in canyons. This inventory provides information on existing access conditions, identifies access needs and areas of concern, and facilitates ongoing maintenance. To date, 174 miles of pedestrian and vehicular paths have been mapped with the GPS data for 137 canyon areas. Vehicle access path data is available on Atlas.



## CONSTRUCTION, MAINTENANCE AND EMERGENCY PROJECTS

Below is a list of sewer emergency projects, access path maintenance and repair and pipeline/manhole repair projects that occurred in canyons or environmentally sensitive areas since July of 2018:

### **Emergency Projects**

- Spruce Canyon Sewer Pipe Protection Emergency
- Switzer Canyon Sewer Pipe Protection Emergency
- Switzer Canyon Sewer Spill Emergency
- Juniper Canyon MH 54 Protection Emergency
- Landis-Swift Sewer Pipe Patch Emergency
- Spruce Canyon Emergency Pipe Patch
- San Clemente Canyon Emergency Sewer Repair (FSN 13325)



*Spruce Canyon, February 2019*

### **Other Construction/Maintenance Projects**

- Fairfield Street Sewer Replacement
- Mission Valley Path Maintenance
- Bounty and Waring Path Maintenance
- Miramar VA Cemetery Path Maintenance
- Lexington Canyon Path Reestablishment
- Buchanan Canyon Access Road Maintenance
- Rancho Mission Canyon Access Path Maintenance
- Woodman Canyon Access Path Maintenance

Public Utilities crews completed access path maintenance in multiple canyon areas to facilitate access for cleaning, inspections and maintenance. Path maintenance is usually limited to trimming or mowing vegetation that has grown on the pathways. Maintenance on the access path precedes manhole cleaning and maintenance.

Public Utilities staff manages emergency and non-CIP construction projects. Environmental review, monitoring, and reporting are done in adherence with the Program. Biological assessments have been prepared and permits have been obtained as necessary for these emergency and construction projects. Following construction, revegetation and/or restoration has been implemented in accordance with the Program.

## 25 MONTH REVEGETATION AND RESTORATION PROJECTS

Conditions of the Master Site Development Permit require effective erosion control on access paths and restoration of temporarily impacted areas outside of permanent access paths following construction. Each impact area is monitored and maintained for a period of no less than 25 months.

Revegetation sites include all areas required for permanent access to utilities including the access paths, turn-arounds, and work areas around manholes. When new access paths and permanent access areas are created, revegetation is required. The goal of revegetation is successful erosion control. Maintenance and monitoring of revegetation areas may include hydroseeding or hand-seeding, weeding, mulching or installing wood chips on the path, installation of temporary Best Management Practices (BMPs), site monitoring or a combination of the above treatments.

Restoration sites are areas impacted outside of permanent access areas. Restoration areas are typically staging areas, emergency access or work areas, pipeline repair areas, unauthorized impact areas, or areas disturbed as a result of temporary widening of pathways. The goal of habitat restoration is re-establishment of native habitat. Restoration areas shall obtain native plant coverage equal to the native species present in the adjacent area or 30% coverage, whichever is greater. Restoration areas shall support no more than 1% perennial weeds and no more than 10% annual weeds during the 25-month maintenance period. Maintenance and monitoring of restoration areas may include hydroseeding or hand-seeding, installation of container plants, weeding, and installation of temporary BMPs, temporary irrigation, site monitoring or a combination of the above treatments.

Seed and plant material for revegetation and restoration efforts are typically from locations within 25 miles of the coastline in San Diego County. Maintenance and monitoring of all sites continues for 25 months or until successful erosion control is achieved on the paths and/or restoration goals are met outside of the paths.

During this reporting year, nine (9) sewer revegetation projects were completed. In addition to nine (9) ongoing projects, five (5) additional sites were installed with maintenance and monitoring of these sites initiated.

Updates on the status of the revegetation and restoration projects are a regular agenda item at OSCAC's meetings. See *Attachment A* for the July 2019 Revegetation and Restoration Projects Status update table.





*South Chocolate (Juniper) Canyon Emergency Sewer Point Repair Revegetation*



*Stevenson Canyon Emergency Pipe Protection Restoration (Hydroseeding)*

## MITIGATION PROJECTS

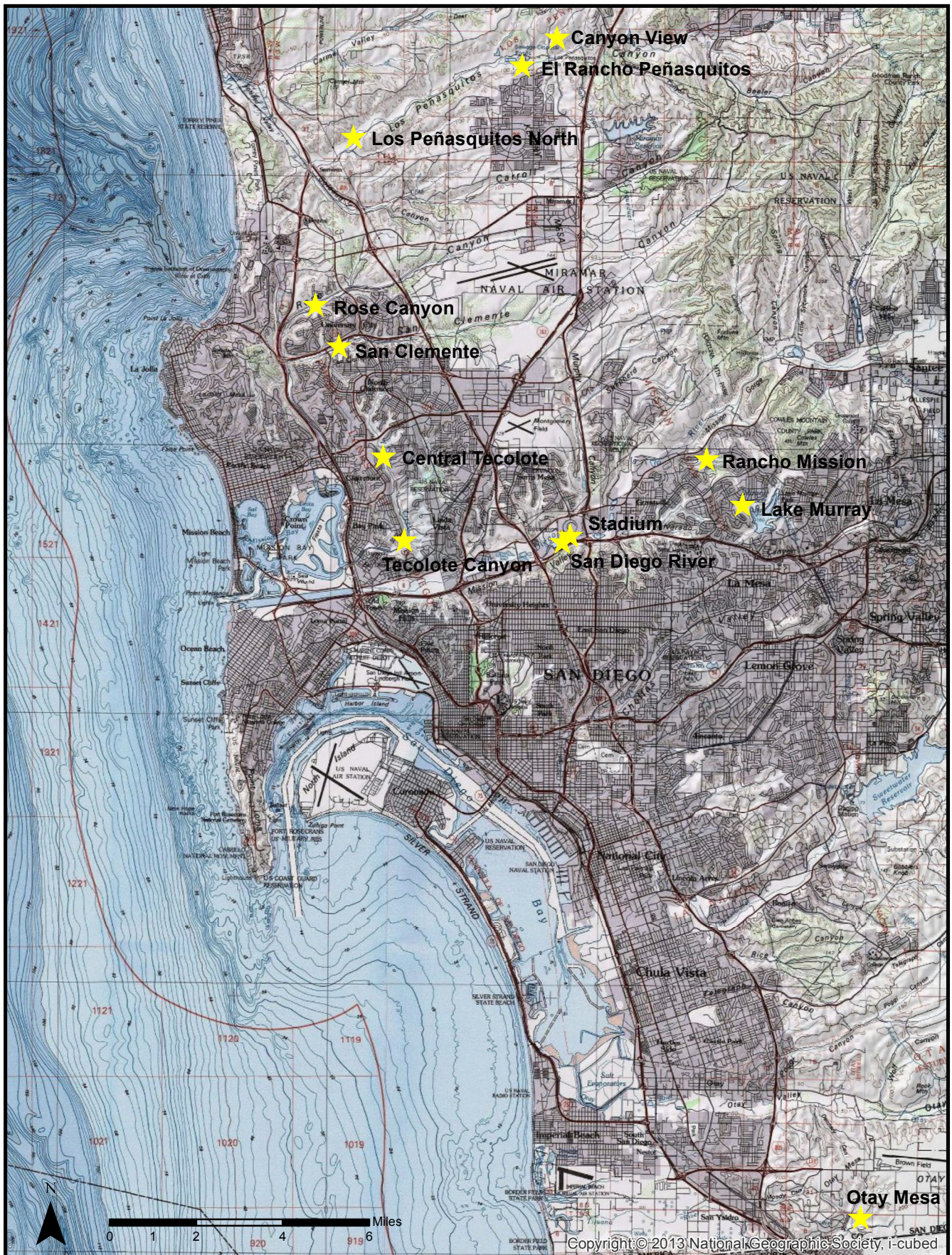
In accordance with applicable local, state, and federal regulations, restoration, revegetation, or mitigation is required for significant biological impacts resulting from the Program, such as the creation of access paths through environmentally sensitive areas, emergency repairs, and pipeline repair projects. In order to mitigate these impacts, Public Utilities staff has identified and implemented a number of habitat mitigation projects located within various watersheds where past, current, or future impacts have or may occur. These mitigation sites are designed and built to accommodate numerous Public Utilities projects. Allocation of mitigation is completed as each project is planned, permitted and constructed. Post construction adjustments are made to mitigation assignments based on actual project impacts. Project impacts and mitigation assignments are tracked internally within the Canyon Database. A summary of acreages available, acreages assigned, and the balance is included as Attachment B. A

The location of these projects is shown in Figure 1. The status of each habitat mitigation project is summarized below.



*Los Peñasquitos North Mitigation Site*







## Canyon View Upland Restoration Mitigation Project

This project is located east of Black Mountain Road and south of Adolphia Street in Los Peñasquitos Canyon (Figure 2). Construction began in September 2011. The project included the restoration of approximately 0.9 acres of native grassland and 6.49 acres of Diegan coastal sage scrub habitat, within Los Peñasquitos Canyon Preserve. Coastal California gnatcatchers (*Polioptila californica californica*) have been observed foraging and feeding fledglings onsite within the native grassland and Diegan coastal sage scrub habitat.

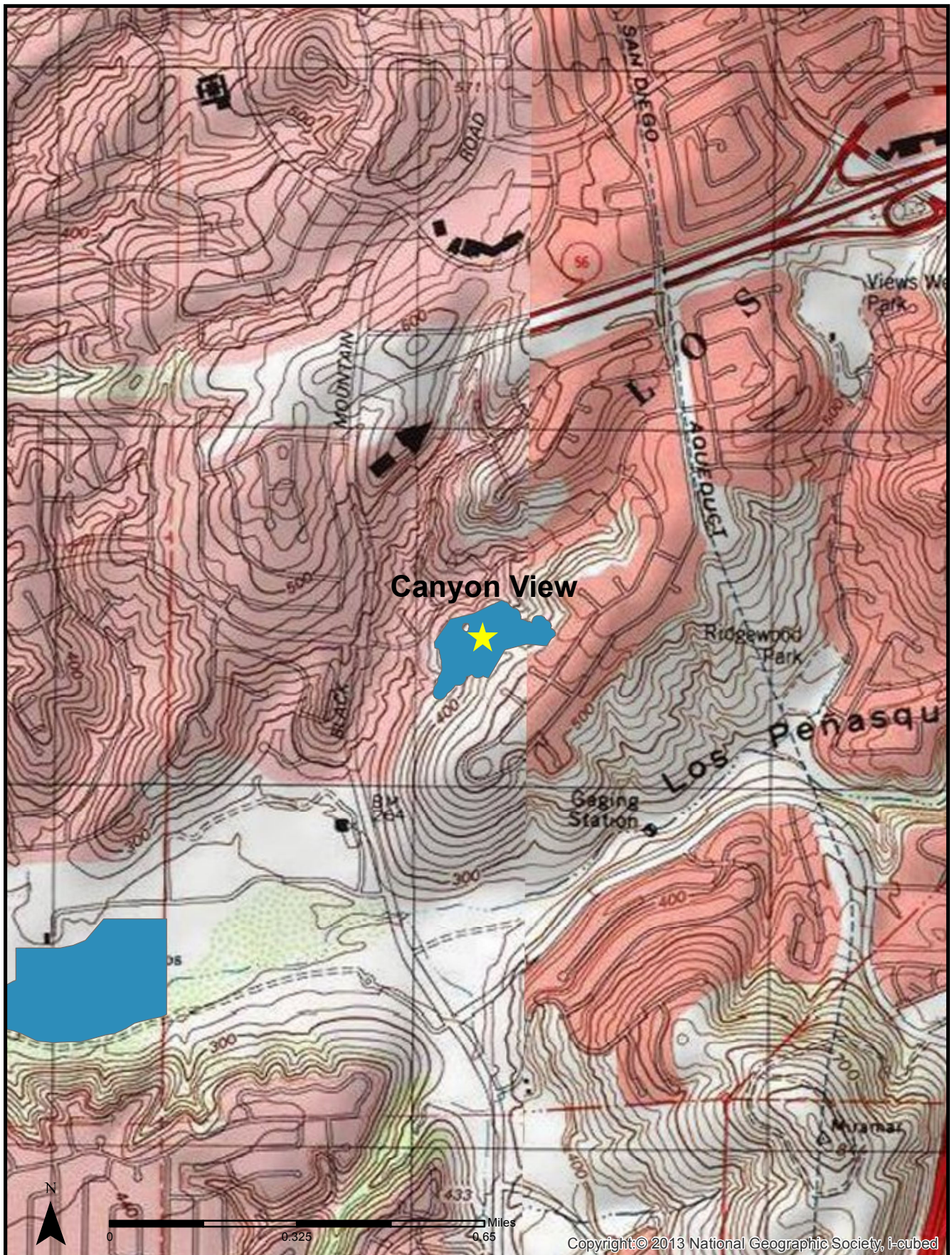


Canyon View: Coastal sage scrub habitat, May 2019

This site has successfully achieved the goal of restoring low quality non-native uplands into high quality native habitats. This project completed the 5-year maintenance and monitoring period in 2017 and received sign-off in spring of 2018. The mitigation area continues to thrive in 2019. The site is dominated by native coastal sage scrub and native grassland species.

Mitigation Credits			
Habitat Type	Acres	Assigned	Balance
Diegan Coastal Sage Scrub (Tier II)	6.49	1.61	4.88
Native Grassland (Tier I)	0.89	0.02	0.87







## Central Tecolote Enhancement Mitigation Project

This project is located south of Balboa Avenue and north of Mt. Acadia Boulevard in Tecolote Canyon (Figure 3). The project consists of riparian enhancement and native grassland/coastal sage scrub restoration in the bottom of Tecolote from Balboa Ave. to Mt. Acadia Dr. At the end of the Year 5 Maintenance and Monitoring period vegetation communities had met or exceeded the success criteria milestones, successfully completing the 5-year maintenance and monitoring period and the project received all regulatory agency sign-offs in June of 2018.



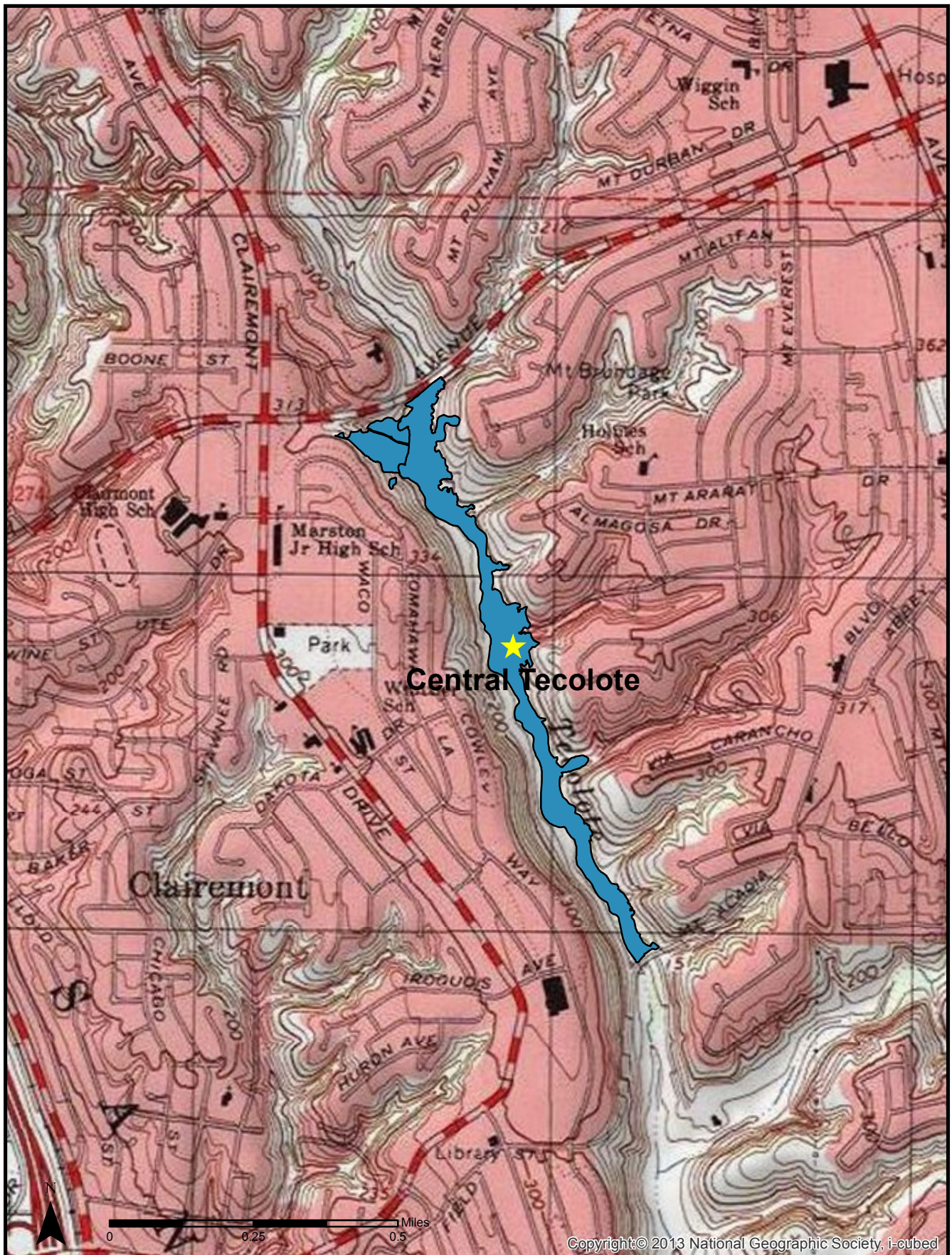
*Central Tecolote: Oak riparian forest and transitional habitat, May 2019*

Exotic species removed from the site include: Brazilian pepper tree, pampas grass, Mexican fan palm, Canary Island date palm, eucalyptus, fennel (*Foeniculum vulgare*), mustard, and yellow sweet clover (*Melilotus indicus*). PUD continues to monitor and maintain the site. Maintenance this year included the removal of target invasive species including mustard, sweet clover, and fan palms. The restored habitats onsite continue to mature with willows exceeding 20 feet in height and sage scrub established to full shrub stature. The oak margins are lined with Mexican Elderberry and poison oak has formed dense thickets in the oak tree understory.

The updated Mitigation Credit table below reflects the habitats restored at the time of agency sign off.

Mitigation Credits			
Habitat Type	Acres	Assigned	Balance
Oak Riparian Forest (Enhancement)	7.35	2.06	5.29
Diegan Coastal Sage Scrub (Tier II)	3.06	0.62	2.44
Native Grassland (Tier I)	0.71	0.23	0.48
Coast Live Oak Woodland (Tier I)	0.04	0.01	0.03
Maritime Succulent Scrub (Tier I)	0.01	0	0.01
Poison Oak Scrub (Tier III)	0.01	0	0.01







## Rose Canyon Mitigation Project

The Rose Canyon Mitigation Project is located in the Rose Canyon Open Space Park, starting 0.5 mile west of Genesee Avenue and continuing another 0.5 mile further west into the park (Figure 4). Approximately 5 acres of oak riparian forest, southern cottonwood-willow riparian forest, and mule fat scrub were created adjacent to Rose Creek with 0.61 acre of riparian enhancement. Approximately 4.75 acres of Diegan coastal sage scrub were restored in the upland areas. Seven years of maintenance was completed in the project area and regulatory sign-off was received in July 2016.

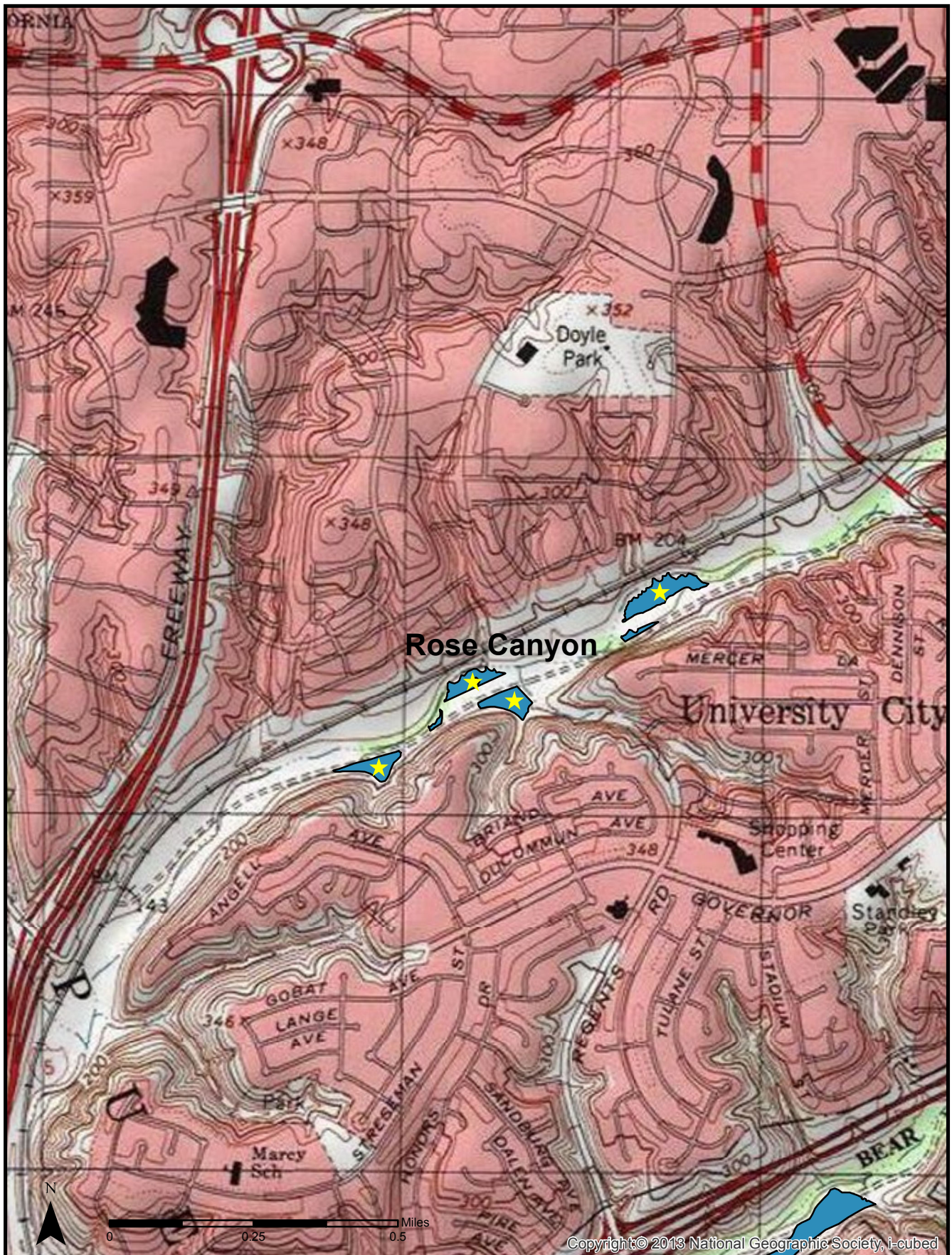


Rose Canyon: Mulefat scrub, May 2019

As of spring 2019, native vegetative cover at the site is very high, with upland habitats exceeding 90 percent cover with a high diversity of species that includes California sagebrush (*Artimisia californica*), lemonadeberry (*Rhus integrifolia*), broom baccharis (*Baccharis sarothroides*), coyote bush (*Baccharis pilularis*), and San Diego goldenbush (*Isocoma menziessii*). The wetland creation habitat exceeds 100 percent cover in some sections of the project area with a good vertical richness of both trees and shrubs. Many cottonwood (*Populus* spp.) and willow (*Salix* spp.) saplings were observed on the site. Higher than average rainfall for the year contributed to site hydrology, but did not cause any obvious damage to plants or erosion within the mitigation areas. The native grassland habitat continues to do well, with increased coverage of purple needlegrass and (*Stipa pulchra*) and beardless wild rye (*Elymus triticoides*). The site will continue to receive maintenance to help ensure native habitat continues to increase in maturity and spatial coverage. This year maintenance crews focused on control and removal of non-native species such as mustard, sweet clover, and pampas grass.

Mitigation Credit Status			
Habitat Type	Acres	Assigned	Balance
Riparian Forest (Creation)	5.05	3.19	1.86
Riparian Forest (Enhancement)	0.61	0.55	0.06
Diegan Coastal Sage Scrub (Tier II)	4.75	2.48	2.27
Native Grassland (Tier I)	0.28	0.09	0.19





**Figure 4**  
**Rose Canyon Mitigation Site**  
**Vicinity Map**



## San Clemente Canyon Mitigation Project

The San Clemente Canyon Mitigation Project is located at two sites within the park, one just east of the Regents East parking area and the other approximately three-fourths of a mile east of the Genesee parking area (Figure 5).

The project included the creation of approximately 2.86 acres of wetland habitat (southern willow riparian forest, streambed, and emergent wetland) and 2.81 acres upland habitat (Diegan coastal sage scrub and oak woodland).

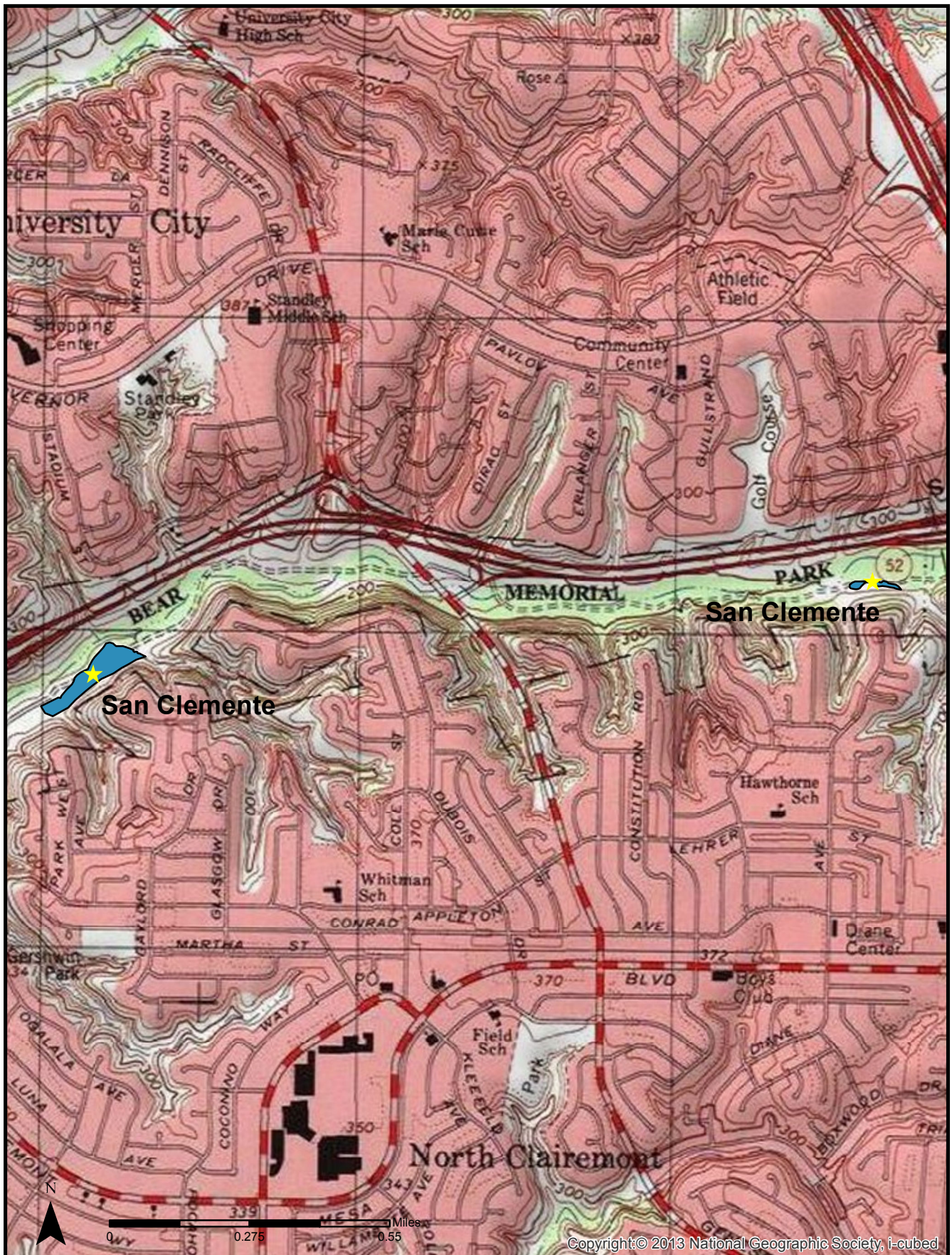


*San Clemente Canyon: Diegan coastal sage scrub with oak woodland, May 2019*

Construction was initiated in October 2007 and received regulatory sign-off from the USACE in January 2015. The upland and wetland planting areas for the project continue to show steady establishment of target species in 2019, with vegetative cover in portions of the wetland habitat over 100 percent cover. The wetlands support a willow or oak overstory and a well-developed understory including species such as mulefat and juncus (*Juncus acutus*). The site will continue to receive maintenance help ensure native habitat continues to increase in maturity and spatial coverage. In 2018/19 maintenance crews focused on control and removal of non-native annuals such as black mustard and sweet clover. Available mitigation acreage below reflects actual acreage of habitats restored at the end of the 5-year maintenance period and rounded totals of assignments to date.

Mitigation Credit Status			
Habitat Type	Acres	Assigned	Balance
Streambed (Creation)	0.02	0.01	0.01
Emergent Wetland (Creation)	0.20	0.01	0.19
Riparian Forest (Creation)	2.64	1.99	0.65
Diegan Coastal Sage Scrub (Tier II)	2.42	1.57	0.85
Oak Woodland (Tier I)	0.39	0.19	0.20







## Rancho Mission Canyon Wetland Enhancement Project

The Rancho Mission Canyon Wetland Enhancement Project is located in the City's Rancho Mission Canyon Open Space Park, south of Mission Gorge Road, north of Navajo Road, and on either side of Margerum Way in the Community of Allied Gardens (Figure 6).



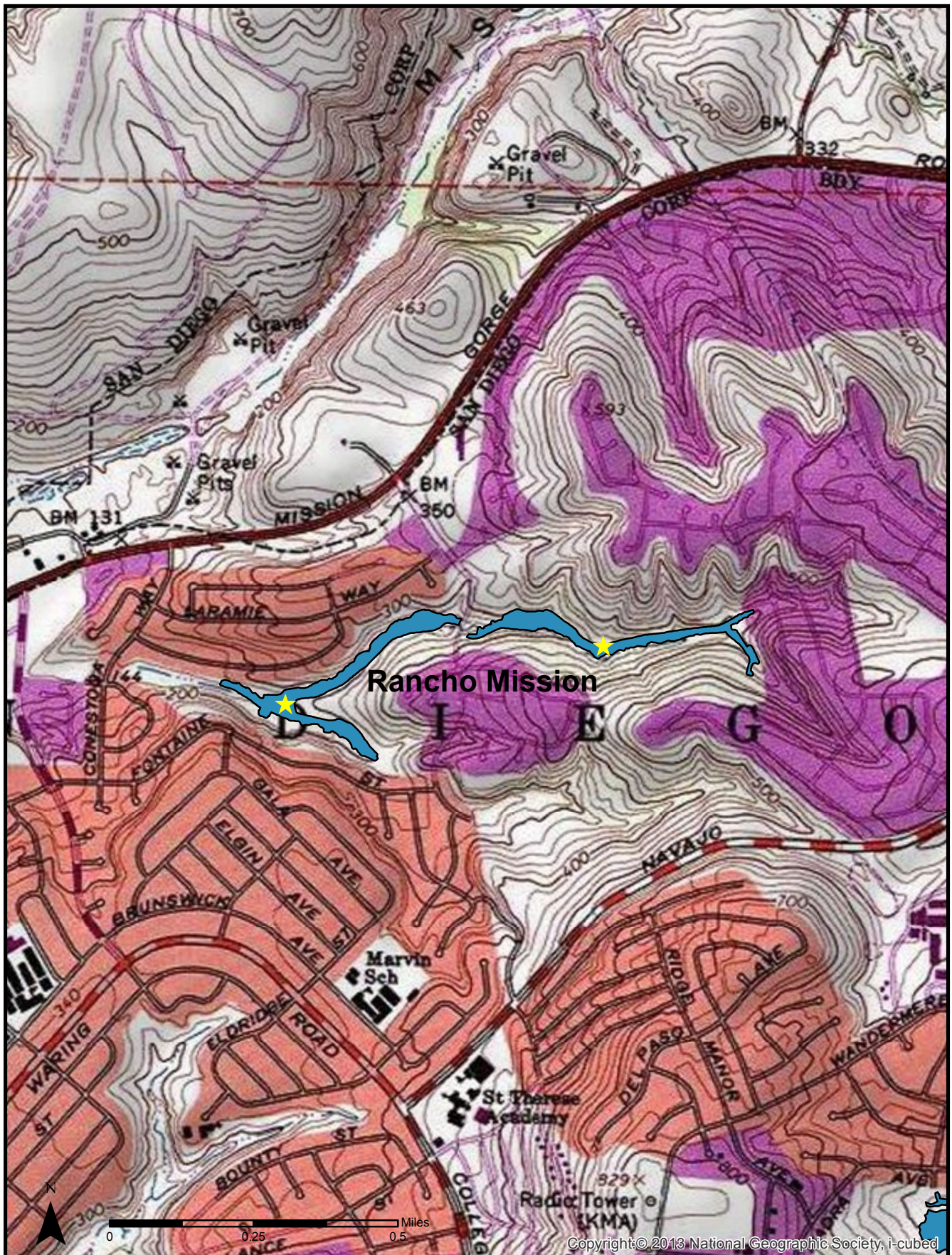
*Rancho Mission Canyon: Southern willow scrub, May 2019*

The Rancho Mission Canyon Project includes the enhancement of 7.59 acres of wetlands and restoration of 1.53 acres (75% mitigation credit) of wetland transitional habitats. Non-native vegetation was removed from the canyon, followed by revegetation with native southern willow scrub and wetland transitional species. The total area of habitat enhancement runs the entire canyon bottom and encompasses more than 13.5 acres.

The site completed the 5-year long-term maintenance and monitoring period in March 2013 with regulatory sign-off and approval in summer of 2013. The site continues to support target native cover of 100%, exceeding the Year 5 goal of 90%. The site is continuing to mature with dense thickets of vegetation found throughout the riparian corridor. Trees within the site continue to mature with some individuals exceeding 30 feet in height, and the understory is well developed with a diverse variety of herbs and shrubs. During the mitigation assessment some non-native species were observed in the creek including; Mexican fan palms, tree tobacco and pampas grass, these plants were targeted for removal during annual maintenance.

Mitigation Credit Status			
Habitat Type	Acres	Assigned	Balance
Southern Willow Scrub (Enhancement)	8.74	2.13	6.61







## Tecolote Canyon Mitigation Project

The Tecolote Canyon Mitigation Project includes two distinct areas; the Balboa site is located south of Balboa Avenue, and the Grove site is located south of the Tecolote Golf Course and north of the University of San Diego (Figure 7).



*Tecolote Canyon: Southern willow scrub, May 2019*

The project includes the creation of 1.61 acres of wetland habitat (southern willow scrub, southern cottonwood willow riparian forest, and oak riparian forest) and restoration of 3.37 acres upland habitat (Diegan coastal sage scrub & native grassland). Construction was initiated in February 2007 and the site met its 5-year maintenance goals and received regulatory sign-off in 2013. A qualitative review of the site in spring of 2019 estimated vegetative cover to be over 90 percent in the Diegan coastal sage scrub habitats, and 80 percent in the riparian areas. Available mitigation acreage below reflects actual acreage of habitats restored at the end of the 5-year maintenance period and rounded totals of assignments to date.

Mitigation Credit Status			
Habitat Type	Acres	Assigned	Balance
Riparian Forest (Creation)	1.19	0.80	0.39
Southern Willow Scrub (Creation)	0.42	0.41	0.01
Diegan Coastal Sage Scrub (Tier II)	3.30	3.29	<0.01
Native Grassland (Tier I)	0.07	0.06	0.01







## San Diego River Wetland Creation Project

The San Diego River Wetland Creation Project is located on a Public Utilities-owned parcel located immediately adjacent to the San Diego River, north of Camino Del Rio North, west of I-15, and east of Mission Center Parkway in the Mission Valley Community of the City of San Diego (Figure 8).



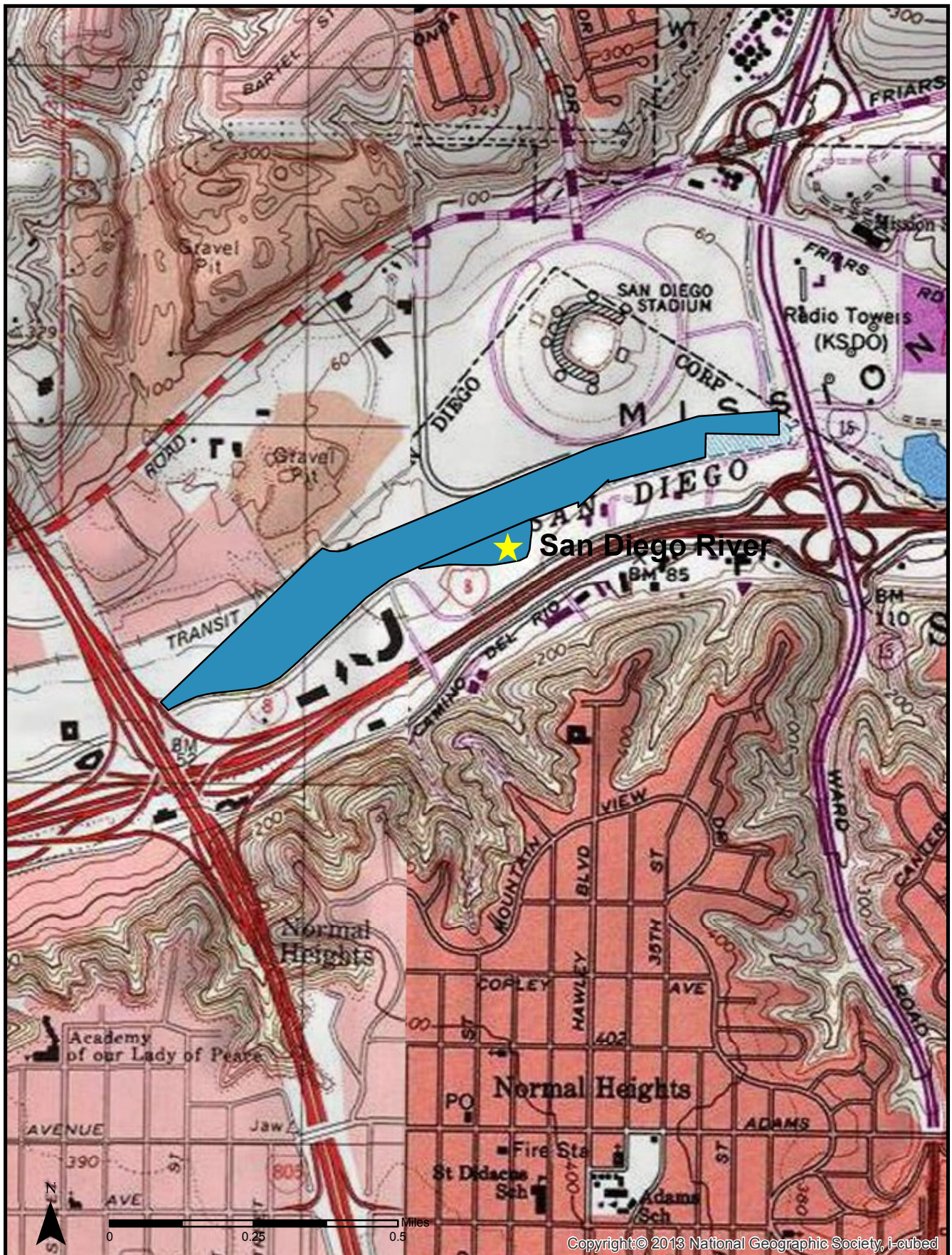
*San Diego River: Riparian forest and coastal sage scrub,  
May 2019*

The site includes the creation of 3.43 acres of native riparian habitat and 2 acres of Diegan coastal sage scrub habitat. The project site was graded in the fall of 2005 to create a basin along the southern bank of the San Diego River. The long-term maintenance, monitoring, and reporting program started June 14, 2006 and the site successfully completed 5-years of maintenance and monitoring in June of 2011.

In 2019, native vegetation at the site continues to mature with trees reaching heights of 25-30 feet, and total vegetative cover at approximately 100 percent. The site supports a well-developed understory of spiny rush (*Juncus acutus*), rose, and mulefat (*Baccharis salicifolia*). Non-native annuals including sweet clover and mustard were observed sporadically throughout the site, primarily along the edges and trails. As part of long term management of the site, these areas were treated and will continue to receive maintenance to help ensure non-native species do not become established. Trash from nearby illegal encampments continues to be removed from the site and adjacent areas. During the 2019 site visit, a Least Bell's vireo (*Vireo bellii pusillus*) territory was observed along the western end of the site. This is the third year in a row vireo have been observed within the site.

Mitigation Credit Status			
Habitat Type	Acres	Assigned	Balance
Riparian Forest (Creation)	3.43	2.21	1.22







## Los Peñasquitos North Wetland Creation Project

Los Peñasquitos North Wetland Creation Project is located in the City of San Diego's Los Peñasquitos Canyon Preserve in the community of Peñasquitos, just north of the Los Peñasquitos Creek (Figure 9).



*Los Peñasquitos North: Southern willow scrub, May 2019*

The project includes the creation of 3.8 acres of wetland habitat, including 3.15 acres of southern willow scrub, 0.43 acres of cottonwood/sycamore woodland, and 0.22 acres of freshwater marsh. The site also includes one acre of Diegan coastal sage scrub habitat to serve as a buffer on the north edge of the site. Regulatory sign-off and approval for the project was received in the spring of 2012.

The site was assessed in May 2019 and appeared in good condition. The site continues to mature with vegetative cover approaching 95% and willows reaching heights of 25 to 35 feet. No trash or debris or unauthorized trails were observed onsite. Vegetation within the wetland habitat is predominately spiny rush, deer grass (*Muhlenbergia rigens*), and various species of willows. Invasive species, including black mustard and pampas grass were observed within the mitigation area, but not in large numbers. This non-native vegetation will be treated and removed from the site throughout the year as part of continued long-term monitoring and maintenance. The access road to the site is becoming overgrown and will also be maintained.

Mitigation Credit Status			
Habitat Type	Acres	Assigned	Balance
Freshwater Marsh (Creation)	0.22	0.22	0
Riparian Woodland (Creation)	0.43	0.43	0
Southern Willow Scrub (Creation)	3.15	2.96	0.19
Diegan Coastal Sage Scrub (Tier II)	1.03	1.03	0





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## Lake Murray Mitigation Project

The Lake Murray Mitigation Project is in the City of San Diego's Mission Trails Regional Park. It is located in the area just west of Lake Murray in the Del Cerro neighborhood of the Navajo Community (Figure 10). The mitigation site includes 2.5 acres of wetland enhancement (southern willow scrub habitat) and



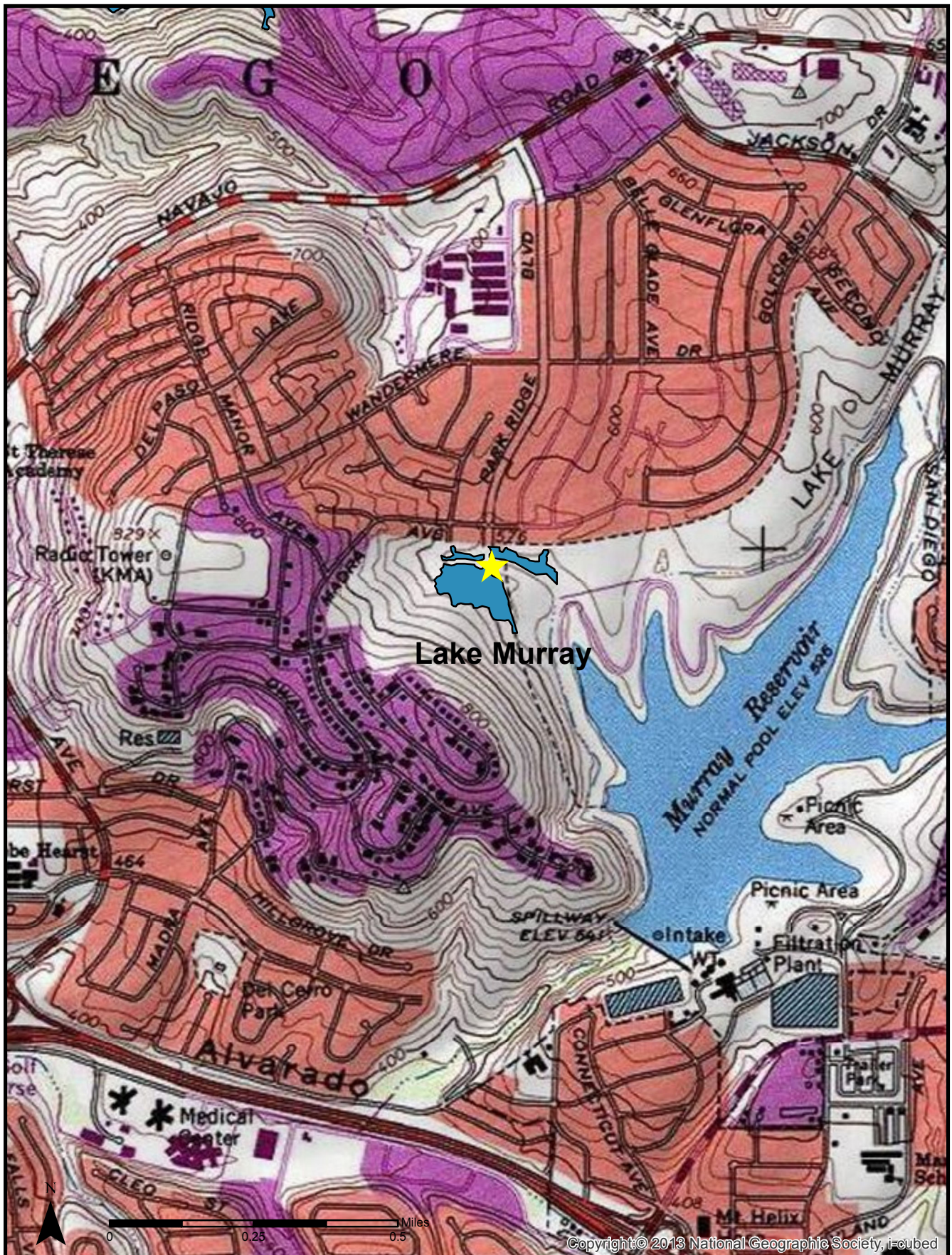
*Lake Murray Mitigation: Southern willow scrub, May 2019*

just over 5.2 acres of upland restoration area (Diegan coastal sage scrub). Official sign-off was received from all of the regulatory agencies by December 2011.

A survey was conducted in May to assess the current condition of the mitigation site. Fifth year success criteria required an average combined cover of 90% for the upland restoration and wetland enhancement areas. The wetland enhancement area exceeds 100% native cover throughout all of the defined enhancement site. The wetland overstory continues to mature, increasing in density and height with species such as Fremont cottonwood (*Populus fremontii*), Western sycamore (*Platanus racemosa*), and various types of willows reaching heights of 40 feet or more. The understory is diverse with species such as spiny rush, spike sedge (*Carex nardina*) evening primrose (*Oenothera elata*), San Diego marsh elder, and broad-leaved cattail (*Typha latifolia*). Species found within the Diegan coastal sage scrub include California sagebrush, lemonade berry (*Rhus integrifolia*), flattop buckwheat (*Erigeron fasciculatus*), laurel sumac (*Malosoma laurina*), and black sage (*Salvia mellifera*). As part of the annual maintenance effort this year, non-native species including salt cedar, Mexican fan palms and pepper trees were treated and removed from the site.

Mitigation Credit Status			
Habitat Type	Acres	Assigned	Balance
Southern Willow Scrub (Enhancement)	2.5	1.53	0.97
Diegan Coastal Sage Scrub (Tier II)	5.2	5.05	0.15





**Figure 10**  
**Lake Murray Mitigation Site**  
**Vicinity Map**



## El Rancho Peñasquitos Wetland Enhancement Project

The mitigation site is located along Los Peñasquitos Canyon approximately 0.5 mile west of Black Mountain Road in the vicinity of the historically designated Johnson Taylor Adobe of Rancho de los Peñasquitos (City of San Diego HRB Site #75). The site is within the MHPA on County and City of San Diego Open Space Land.



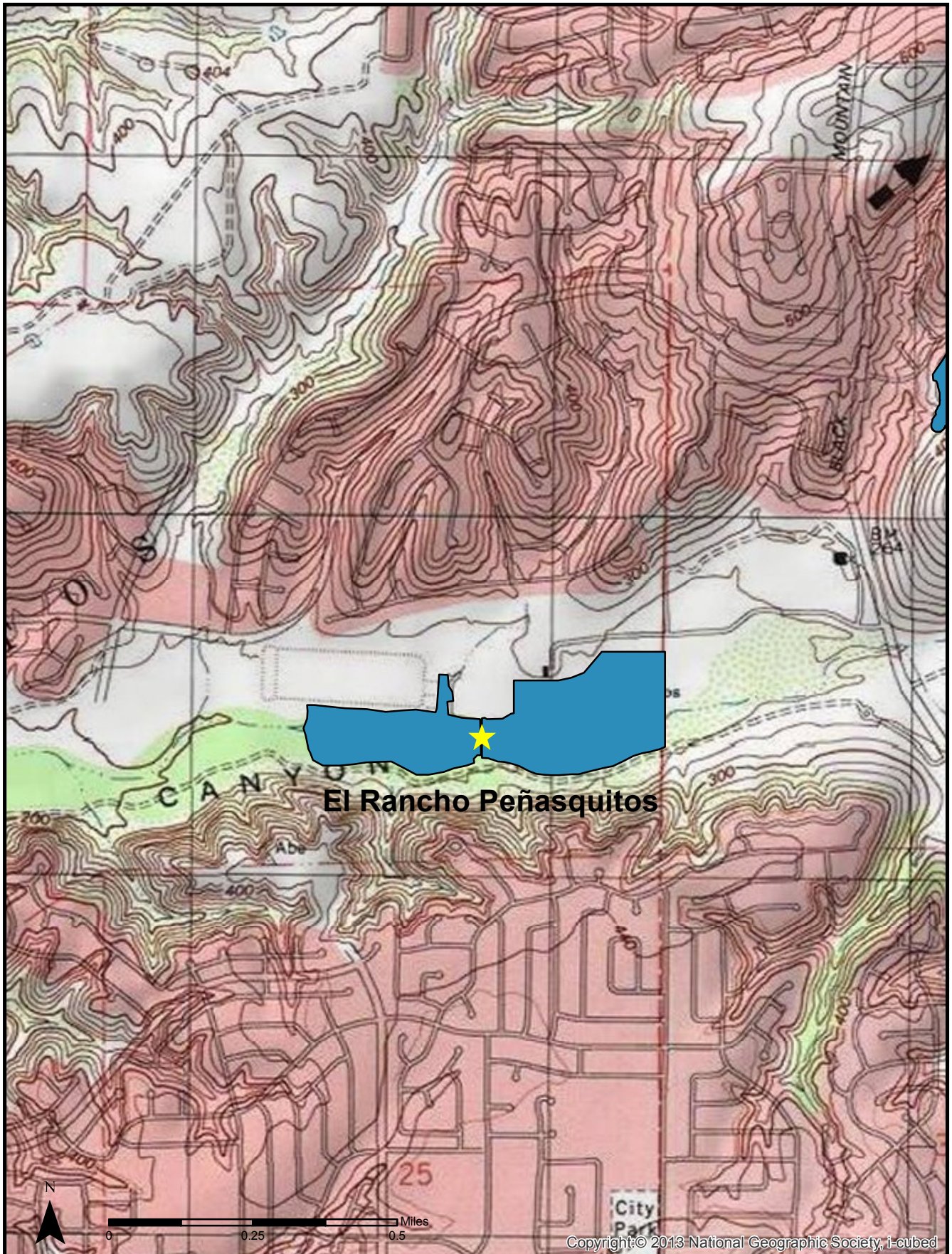
*El Rancho Peñasquitos: Riparian forest, May 2019*

The El Rancho Project included enhancement of 5.53 acres of southern cottonwood willow riparian forest, by eradicating targeted non-native species. Project efforts began March 26, 2006 and regulatory sign-off was received in early 2010. This project treated 6,720 non-native plants, targeted species included Canary Island date palm, Mexican Fan Palm, Eucalyptus, Peruvian pepper tree (*Schinus terebinthifolius*), Brazilian pepper tree, and edible fig (*Ficus carica*).

The El Rancho Peñasquitos Wetland Enhancement Project continues to meet the success criteria outlined in the Mitigation Plan. Many of the larger treated plants have begun to deteriorate and decompose, allowing for the establishment of native species in their direct vicinity. Park and Recreation has taken over long-term management of the site and manages the land consistent with the Multiple Species Conservation Plan which includes targeting the treatment or removal of invasive exotics as part of routine park management. During the 2019 assessment, several small palms and non-native annuals including fennel (*Foeniculum vulgare*), black mustard, and wild oat (*Avena fatua*) were identified on the fringes of the mitigation area. The site will continue to be monitored and maintained to ensure non-native species do not become established in the mitigation area.

Mitigation Credit Status			
Habitat Type	Acres	Assigned	Balance
Riparian Forest (Enhancement)	5.53	4.69	0.84





**Figure 11**

**El Rancho Peñasquitos Mitigation Site  
Vicinity Map**



## Otay Mesa Upland Mitigation Bank

The Otay Mesa Mitigation Bank is in the Otay Mesa community of the City of San Diego and occurs within the MHPA. The mitigation site is located on undeveloped land that is surrounded by other City of San Diego Park and Recreation Open Space lands and federal land holdings along the U.S /Mexico border. Five habitat types are found onsite and include maritime succulent scrub, non-native grasslands, ruderal, disturbed habitat, and vernal pool.



*Otay Mesa Upland Mitigation: Maritime succulent scrub and vernal pools, May 2019*

During the 2019 annual monitoring visit, it was documented that all the fencing installed in 2014 and 2017 was intact and functioning as intended. Rainfall amounts in 2019 were above average and the mitigation area benefitted greatly from the additional moisture. Non-native species removal and native upland species restoration activities are being implemented in the surrounding areas by the Park and Recreation Open Space Division.

Sensitive plant species present onsite include San Diego button-celery (*Eryngium aristulatum* var. *parishii*), variegated dudleya (*Dudleya variegata*), snake cholla (*Opuntia parryi serpentina*), San Diego barrel cactus (*Ferocactus viridescens*), San Diego bur-sage (*Ambrosia chenopodiifolia*), south coast saltbush (*Atriplex pacifica*), and San Diego County viguiera (*Viguiera laciniata*). Notable bird species observed in 2019 within the site include California gnatcatcher and western burrowing owl (*Athene cunicularia*). Notable animal species observed include San Diego fairy shrimp (*Branchinecta sandiegonensis*), western spadefoot toad (*Spea hammondi*), and southern pacific rattlesnake (*Crotalus oreganus helleri*).

Mitigation Credit Status			
Habitat Type	Acres	Assigned	Balance
Maritime Succulent Scrub (Tier I)	45.43	33.92	11.51





**Figure 12**

Otay Mesa Upland Mitigation Bank  
Vicinity Map



## Stadium Wetland Mitigation Project

The Stadium Wetland Mitigation Project is located within the floodplain of the San Diego River between I-15 and I-805. The site is approximately 57 acres and was dominated by a high number of non-native species. This project is restoring native habitat in the area by removal of non-native species, installation of native plants, and a 5 year maintenance and monitoring period.



*Stadium Mitigation Site: Riparian scrub, June 2019*

Work at the Stadium Mitigation site began in August 2016 with the initial cleanup, removal of illegal encampments, and removal of non-native vegetation. Recent work onsite included the replacement planting of container plants and hand broadcasting of seed. The project is now in year two of the maintenance and monitoring period with vegetation communities continuing to diversify.

This site provides high quality habitat for a number of regionally sensitive species including least Bell's Vireo, southwestern willow flycatcher (*Empidonax traillii extimus*), western pond turtle (*Actinemys marmorata*), yellow billed cuckoo (*Coccyzus americanus*), and two-striped garter snake (*Thamnophis hammondi*), and also improve water quality, and functionality of the San Diego River.

Mitigation Credits are released from this site in a planned phased approach with credits released as the project meets set milestones. Currently 65% of the credits have been released for use.<sup>1</sup>

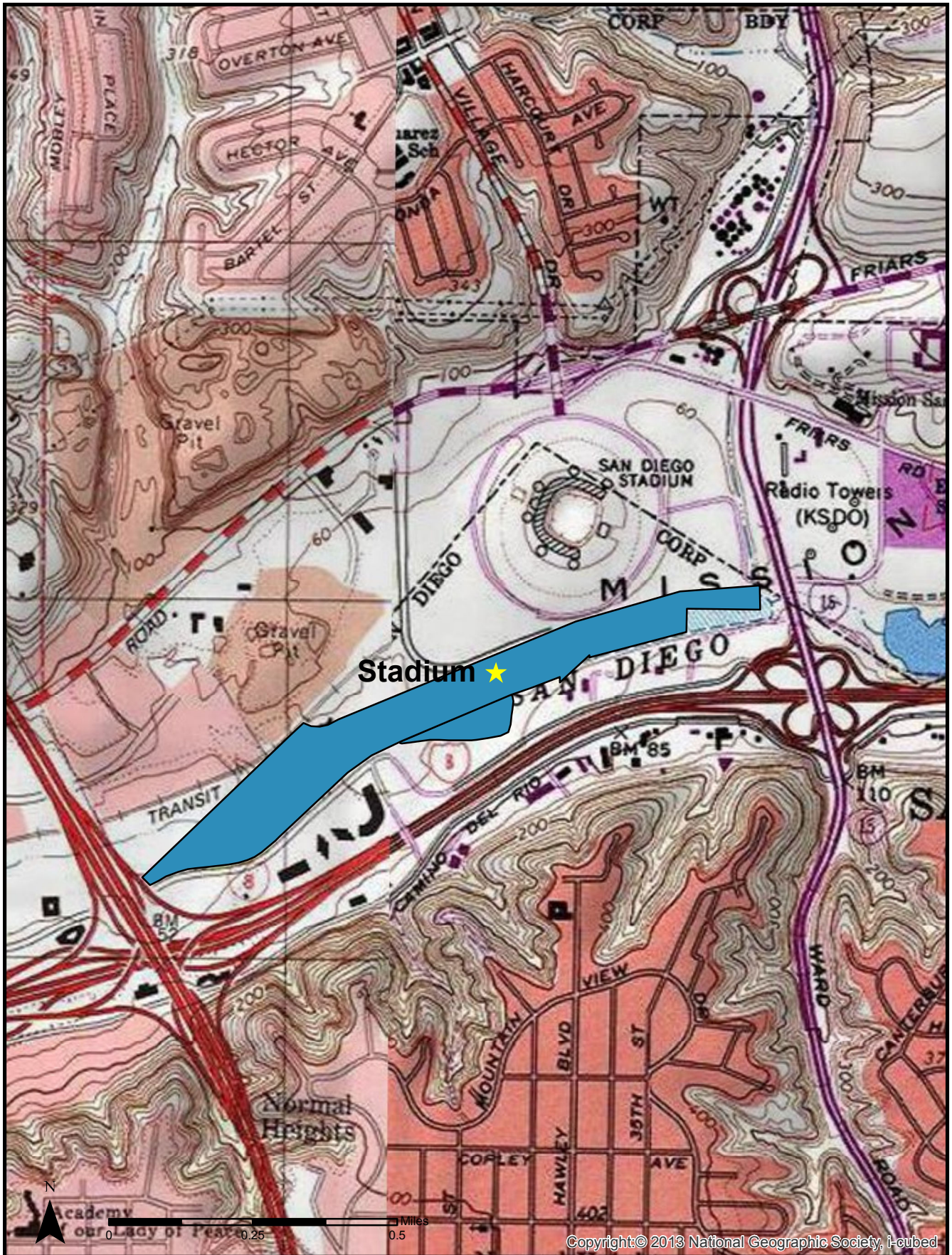
Mitigation Credit Status						
Jurisdictional Resource	Vegetation Community	Total	65% Credit Release	Assigned Credits	Balance of 65% Credit Release	Total Balance of Credits
ACOE/RWQCB						
Wetland Waters of the U.S.	Coastal and Valley Freshwater Marsh	0.49	0.319	0.0	0.319	0.49
	Southern Cottonwood – Willow Riparian Forest	19.75	11.85	4.56	7.29	15.19
	Riparian Scrub	6.32	4.11	0.0	4.11	6.32
	<b>Subtotal</b>	<b>26.56</b>	<b>15.34</b>	<b>4.56</b>	<b>11.72</b>	<b>22.00</b>
Non-wetland Waters of the U.S.*	Southern Cottonwood – Willow Riparian Forest	13.98	9.09	1.43	7.66	12.55
	Riparian Scrub	7.86	5.11	0.002	5.108	7.858
	<b>Subtotal</b>	<b>21.84</b>	<b>14.20</b>	<b>1.432</b>	<b>12.768</b>	<b>20.408</b>
Riparian Buffer (Non-jurisdictional)	Southern Cottonwood – Willow Riparian Forest	2.61	1.70	0.32	1.38	2.29
	Riparian Scrub	2.85	1.85	0	1.85	2.85
	<b>Subtotal</b>	<b>5.46</b>	<b>3.55</b>	<b>0.32</b>	<b>3.23</b>	<b>5.14</b>

<b>Mitigation Credit Status</b>						
<b>Jurisdictional Resource</b>	<b>Vegetation Community</b>	<b>Total</b>	<b>65% Credit Release</b>	<b>Assigned Credits</b>	<b>Balance of 65% Credit Release</b>	<b>Total Balance of Credits</b>
<b>Total</b>		<b>53.86</b>	<b>33.09</b>	<b>6.312</b>	<b>27.718</b>	<b>47.548</b>
<b>CDFW</b>						
Wetlands	Coastal and Valley Freshwater Marsh	0.49	0.319	0.0	0.319	0.49
	Southern Cottonwood – Willow Riparian Forest	36.34	23.62	2.82	20.8	33.52
	Riparian Scrub	17.04	11.08	0.0	11.08	17.04
<b>Total</b>		<b>53.87</b>	<b>35.02</b>	<b>2.82</b>	<b>32.20</b>	<b>51.05</b>
<b>City of San Diego</b>						
Wetlands	Coastal and Valley Freshwater Marsh	0.49	0.319	0.0	0.319	0.49
	Southern Cottonwood – Willow Riparian Forest	36.34	23.62	7.31	16.31	29.03
	Riparian Scrub	17.04	11.08	1.49	12.57	15.55
	<b>Subtotal</b>	<b>53.87</b>	<b>35.01</b>	<b>8.80</b>	<b>29.20</b>	<b>45.07</b>
Uplands	Diegan Coastal Sage Scrub	0.81	0.527	0.0	0.527	0.81
<b>Total</b>		<b>54.68</b>	<b>35.54</b>	<b>8.80</b>	<b>29.73</b>	<b>45.88</b>

\* These areas were classified as non-wetland waters of the U.S. based on the updated jurisdictional delineation, but may develop into wetland waters of the U.S. as the Project establishes and reaches equilibrium and hydric soils and hydrophytic vegetation have time to develop.

**Note:** Totals may not sum due to rounding





**Figure 13**

**Stadium Mitigation Site  
Vicinity Map**

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**ATTACHMENT A**  
**25 MONTH REVEGETATION AND RESTORATION PROJECTS STATUS TABLE**





**Canyon Restoration/Revegetation Projects (2014-2019)**  
**July 2019**

**Active Projects**

Project	Revegetation or Restoration	Size (acre)	Start of 25 Months	Seeding Date	Planting Date	End of 25 Months	PM	Status
El Camino South (Gonzales Canyon)	Revegetation	<0.01	1/31/2016	N/A	N/A	2/31/2018	Jenkins	Additional erosion issues being addressed by the water crews
Switzer Canyon Berm Replacement	Revegetation	<0.01	4/22/2016	4/22/2016	N/A	5/22/2019	Jenkins	NOC in progress
Central Tecolote Sewer Break Emergency	Restoration	0.32	5/19/2016	2/19/2016	5/19/2016	6/19/2018	Smith	Maintenance extended to achieve success standards
Trojan Pipeline Valve Repair Emerg (Water)	Revegetation	0.02	4/21/2017	N/A	N/A	5/21/2019	Jenkins	NOC in progress
San Clemente Emergency Sewer Repair	Revegetation	0.017	4/21/2017	4/21/2017	N/A	5/21/2019	Frick	25 Month Monitoring
Rancho Capistrano Bend WMB Emergency	Restoration	0.01	6/05/2017	N/A	6/05/2017	7/05/2019	Frick	25 Month Maintenance and Monitoring
Mt Elbrus LTA	Restoration	0.021	7/1/2017	9/25/2017	9/18/2017	8/1/2019	Tran	25 Month Maintenance and Monitoring
Hodges Dam Assessment	Revegetation	0.004	9/1/2017	9/1/2017	N/A	10/1/2019	Jenkins	25 Month Monitoring
45 <sup>th</sup> and Quince WMB Emergency	Revegetation	0.03	10/16/2017	10/16/2017	N/A	11/16/2019	Frick	25 Month Monitoring
540 Otsego Drive	Revegetation		10/23/19			11/23/19	Jenkins	25 Month Monitoring
SR-905 & Picador Blvd WMB Emergency	Revegetation	0.05	11/18/2017	11/18/2017	N/A	12/18/2019	Smith	25 Month Monitoring
3555 37 <sup>th</sup> St Water Main Break	Revegetation	0.04	12/09/2017	12/09/17	N/A	1/09/2020	Smith	25 Month Monitoring
El Capitan Condition Assessment	Revegetation	0.02	12/31/2017	12/31/2017	N/A	01/31/2020	Jenkins	25 Month Monitoring
South Chocolate (Juniper) Canyon Emergency Sewer Point Repair	Revegetation	<0.01	3/19/2018	3/19/2018	N/A	4/19/2020	Smith	25 Month Monitoring
55 <sup>th</sup> Street Emergency Sewer Point Repair	Restoration	0.04	3/21/2018	3/21/18	TBD	4/21/2020	Smith	25 Month Maintenance and Monitoring
Elanus Canyon	Revegetation	0.03	3/31/2018	3/31/18	N/A	04/30/2020	Jenkins	25 Month Monitoring
6692 Plaza Ridge Road WMB Emergency	Revegetation	0.11	6/13/2018	6/13/2018	N/A	7/13/2020	Smith	25 Month Monitoring
Central Avenue WMB	Revegetation	0.02	7/17/2018	8/3/2018	N/A	9/3/2020	Jenkins	25 Month Monitoring
1830 Upas St Sewer Repair	Revegetation	<0.01	7/19/2018	7/19/2018	N/A	8/19/2020	Jenkins	25 Month Monitoring
Stevenson Canyon Emergency Sewer Pipe Protection	Restoration	0.02	10/8/2018	5/23/2018	10/8/2018	11/8/2020	Frick	25 Month Maintenance and Monitoring
Alvarado Canyon LTA	Revegetation	0.025	12/17/2018	12/17/2018	12/17/2018	01/17/2021	Lavan	25 Month Monitoring
Highland Ave/Quince St WMB Emergency	Reveg/Rest	0.06	12/20/18	12/20/18	N/A	1/20/2021	Smith	25 Month Maintenance and Monitoring
Rose Canyon Emergency Sewer Point Repair	Restoration	0.11	1/9/2019	1/17/2018	1/9/2019	2/9/2021	Frick	25 Month Maintenance and Monitoring
The Hill Road Meter Relocation	Restoration	0.02	1/10/19	1/10/19	12/28/19	2/10/2021	Jenkins	25 Month Maintenance and Monitoring
Terra Nova Drive WMB	Restoration	0.06	1/10/19	1/10/19	12/28/19	2/10/2021	Jenkins	25 Month Maintenance and Monitoring
San Clemente Pipe Patch FSN 13325	Revegetation	0.029	3/1/2019	3/1/2019	N/A	4/1/2021	Frick	25 Month Monitoring

Completed Projects					
Canyon/Project	Revegetation or Restoration	Project Initiation	Project Completion	PM	
32nd Street LTA	Revegetation	3/8/2017	7/17/19	Tran	
Home Ave TS LTA (Ash Canyon)	Revegetation	9/23/2016	7/15/19	Jenkins	
PS45 Emergency	Restoration	11/16/2015	5/29/19	Jenkins	
Sorrento Valley Water Main Leak Emergency Repair	Restoration	1/31/17	6/14/19	Jenkins	
Point Loma Sludge Pipeline Assessment Friars Road	Revegetation	7/8/16	5/28/19	Jenkins	
Alvarado Ct Sewer Emergency I/II	Restoration	2/27/2016	6/4/2019	Lavan	
South Chollas	Restoration	9/1/15	5/14/2019	Tran	
Alta La Jolla Water Break	Restoration	10/11/16	4/30/19	Frick	
Mission Valley Canyon Sewer Repair	Revegetation	10/31/15	4/17/19	Lavan	
Nimitz Blvd and Catalina Blvd WMB Emergency	Revegetation	March 2016	April 2018	Smith	
4497 Revillo Dr Sewer Repair	Revegetation	7/28/2015	8/28/17	Frick	
Mission Gorge Pipe Protection	Restoration	11/1/2013	9/6/2018	Balo	
3 Water Transmission Pipeline Condition Assessment	Restoration	11/6/2014	9/6/2018	Adleberg	
6610 Potomac St Water Main Break	Revegetation	6/2/2015	9/6/2018	Frick	
East Shepherd Water Emergency	Restoration	8/9/2015	9/6/2018	Paver	
Emerald Hills Standpipe	Revegetation	8/20/2015	9/6/2018	Paver	
Murphy Canyon MH 114	Revegetation	8/27/2015	9/6/2018	Paver	
10325 Roselle St Emergency Water Main Break	Revegetation	10/1/2015	9/6/2018	Adleberg	
4 <sup>th</sup> and Quince Water Main Break	Revegetation	8/24/2015	9/6/2018	Frick	
Sonico Spot Repair	Revegetation	5/15/2015	6/21/2017	Frick	
Manzanita Break II	Restoration	2/13/2015	3/13/2017	Paver	
West SD River Sewer Abandonment	Restoration	2/27/2015	3/27/2017	Frick	
Shepard Canyon Water Emerg (Water)	Restoration	3/6/2015	4/6/2017	Smith	
Nobel Drive MH 97	Revegetation	2/27/2015	3/27/2017	Paver	
Buchanan Emergency	Reveg/Rest	1/12/2015	2/12/2017	Adleberg	
Fairway Spot Repairs –La Jolla	Revegetation	1/1/2015	2/1/2017	Paver	
Conquistador Water Break (Water)	Restoration	11/20/2014	12/20/2016	Paver	
8 <sup>th</sup> Ave Sewer Pipe Repair	Revegetation	10/29/2014	11/29/2016	Paver	
Tecolote Golf Course Water Pipe Repair	Restoration	10/1/2014	11/1/2016	Paver	
Poe St Pipe Repair	Revegetation	9/12/2014	10/12/2016	Paver	
Buchanan Canyon MH 31	Restoration	9/2012	7/10/2017	Adleberg	
Otay Pipe Protection	Restoration	11/2013	9/28/2016	Lavan	
Rancho Mission LT Streambed	Reveg/Rest	3/2014	9/28/2016	Lavan	
Hawk Street Slope Repair (Water)	Revegetation	2/28/2014	9/28/2016	Smith	
PS 77 Force Main Inspection	Restoration	3/10/2014	9/28/2016	Smith	
Washington Creek Path Maint	Revegetation	5/27/2014	9/28/2016	Lavan	
Manzanita Water Break II (Water)	Restoration	6/19/2014	9/28/2016	Paver	
Famosa Slough Pipe Repair	Revegetation	11/15/2013	12/15/2015	Paver	
Spruce Mh 220 Emergency	Revegetation	11/25/2013	12/25/2015	Paver	
Mission Center Canyon	Restoration	4/29/2011	1/27/2016	Tran	
Snead Ave MH Raising	Revegetation	11/21/2012	7/13/2015	Balo	
Fay Ave/ Draper Street	Revegetation	6/1/2013	7/1/2015	Adleberg	
Ocean Blvd Pipe Removal	Restoration	2/15/2013	6/19/2015	Paver	
36-inch Water Pipe Repair Black Mountain	Revegetation	5/13/2014	6/19/2015	Paver	
Middle Rose MH 160 and Lower MH 9	Restoration	12/5/2012	4/16/2015	VanEvery	
Casita Way Sewer Repairs	Revegetation	11/4/2012	2/29/2015	Smith	
Mission Ave Sewer Spot Repair	Revegetation	11/21/2012	2/29/2015	Adleberg	
Manzanita/Lex Water Break	Restoration	11/29/2012	2/29/2015	Paver	
Manzanita Sewer Emergency	Revegetation	12/5/2012	2/29/2015	Paver	
Stevenson MH 257 Emergency	Revegetation	12/6/2012	2/29/2015	Paver	
Wellington Spot Repairs	Revegetation	10/14/2013	2/29/2015	Paver	
Alta View Water Emergency (Water)	Restoration	7/31/2012	10/28/2014	Adleberg	
Imperial and Woodman	Revegetation	9/2012	10/28/2014	Adleberg	
Euclid and Menlo Restoration	Restoration	11/16/2011	8/28/2014	Smith	
Lakeside Ave Emergency	Revegetation/Restoration	4/15/2012	8/28/2014	Paver	
Rose (MH 476)	Revegetation/Restoration	11/2008	6/28/2014	Paver	
Rose Sinkhole	Revegetation/Restoration	5/23/2011	6/28/2014	Paver	
Hotel Circle South Emergency	Restoration	11/9/2011	6/28/2014	Paver	
Chollas YMCA	Revegetation	1/18/2012	6/28/2014	Paver	



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**ATTACHMENT B**  
**MITIGATION SUMMARY TABLE**

# Mitigation Site Details



Mitigation Site	Mitigation Type	Habitat	USACE	RWQCB	CDFW	City	MHPA	Coastal	Acres	Used	Free	
<b>Penasquitos</b>												
Canyon View (Penasquitos Upland)	Upland Restoration	Coastal Sage Scrub (CSS)	✗	✗	✗	✓	✓	✗	6.4900	1.6005	4.8895	●
		Native Grassland (NG)	✗	✗	✗	✓	✓	✗	0.8900	0.0200	0.8700	●
Central Tecolote Enhancement/Mitigation	Upland Restoration	Coast Live Oak Woodland (CLOW)	✗	✗	✗	✓	✓	✗	0.0400	0.0100	0.0300	●
		Diegan Coastal Sage Scrub (DCSS)	✗	✗	✗	✓	✓	✗	3.0600	0.6180	2.4420	●
		Maritime Succulent Scrub (MSS)	✗	✗	✗	✓	✓	✗	0.0100	0.0000	0.0100	●
		Native Grassland (NG)	✗	✗	✗	✓	✓	✗	0.7100	0.2240	0.4860	●
		Poison Oak Scrub (POS)	✗	✗	✗	✓	✓	✗	0.1000	0.0000	0.1000	●
	Wetland Enhancement	Riparian Forest (RF)	✗	✓	✓	✓	✓	✗	5.8200	1.1764	4.6436	●
		Riparian Forest (RF)	✓	✓	✓	✓	✓	✗	1.5300	0.8852	0.6448	●
El Cuervo Norte	Wetland Creation/Restoration	Riparian Forest (RF)	✓	✓	✓	✓	✓	✗	0.7200	0.6370	0.0830	●
	Wetland Enhancement	Riparian Forest (RF)	✓	✓	✓	✓	✓	✗	0.6800	0.6690	0.0110	●
El Rancho (Penasquitos Enhancement)	Wetland Enhancement	Riparian Forest (RF)	✓	✓	✓	✓	✓	✗	5.5300	4.6868	0.8432	●
Los Penasquitos North	Upland Restoration	Diegan Coastal Sage Scrub (DCSS)	✗	✗	✗	✓	✓	✓	1.0300	1.0250	0.0050	●
	Wetland Creation/Restoration	Freshwater Marsh (FM)	✓	✓	✓	✓	✓	✓	0.2200	0.2200	0.0000	●
		Riparian Woodland (RW)	✓	✓	✓	✓	✓	✓	0.4300	0.4300	0.0000	●
		Southern Willow Scrub (SWS)	✓	✓	✓	✓	✓	✓	3.1500	2.9510	0.1990	●
Penasquitos Eucalyptus Removal	Wetland Creation/Restoration	Riparian Forest (RF)	✓	✓	✓	✓	✓	✗	0.3100	0.3100	0.0000	●
Rose Canyon Wetland and Upland	Upland Restoration	Coastal Sage Scrub (CSS)	✗	✗	✗	✓	✓	✗	4.7500	2.4780	2.2720	●
		Native Grassland (NG)	✗	✗	✗	✓	✓	✗	0.2800	0.0870	0.1930	●
	Wetland Creation/Restoration	Riparian Forest (RF)	✓	✗	✓	✓	✓	✗	0.6200	0.5704	0.0496	●
		Riparian Forest (RF)	✓	✗	✓	✓	✓	✗	2.4200	2.1270	0.2930	●
		Riparian Forest (RF)	✗	✗	✓	✓	✓	✗	2.0100	0.4952	1.5148	●
	Wetland Enhancement	Riparian Forest (RF)	✗	✗	✓	✓	✓	✗	0.6100	0.5532	0.0568	●
San Clemente Wetland and Upland	Upland Restoration	Coast Live Oak Woodland (CLOW)	✗	✗	✗	✓	✓	✗	0.3900	0.1890	0.2010	●



San Clemente Wetland and Upland	Upland Restoration	Coastal Sage Scrub (CSS)	✗	✗	✗	✓	✓	✗	2.4200	1.5665	0.8535	●
	Wetland Creation/Restoration	Emergent Wetland (EW)	✓	✓	✓	✓	✓	✗	0.2000	0.0020	0.1980	●
		Riparian Forest (RF)	✓	✓	✓	✓	✓	✗	0.8800	0.7590	0.1210	●
		Riparian Forest (RF)	✗	✗	✓	✓	✓	✗	1.7600	1.2280	0.5320	●
		Streambed (STREAMBED)	✓	✓	✓	✓	✓	✗	0.0200	0.0130	0.0070	●
SANDER	Upland Restoration	Chamise Chaparral (CC)	✗	✗	✗	✓	✓	✗	1.3000	1.3000	0.0000	●
		Coastal Sage- Chaparral (CSC)	✗	✗	✗	✓	✓	✗	12.5500	1.2500	11.3000	●
		Diegan Coastal Sage Scrub (DCSS)	✗	✗	✗	✓	✓	✗	0.8800	0.0000	0.8800	●
		Diegan Coastal Sage Scrub (DCSS)	✗	✗	✗	✓	✓	✗	1.2500	0.0000	1.2500	●
		Scrub Oak Chaparral (SOC)	✗	✗	✗	✓	✓	✗	2.6400	1.3000	1.3400	●
	Wetland Enhancement	Herbaceous Wetland (HW)	✓	✓	✓	✓	✓	✗	1.3300	0.0000	1.3300	●
		Non-Vegetated Channel (NVC)	✓	✓	✓	✓	✓	✗	0.4700	0.0000	0.4700	●
		Vernal Pool (VP)	✓	✓	✗	✓	✓	✗	0.2600	0.2600	0.0000	●
	Wetland Reestablishment	Vernal Pool (VP)	✓	✓	✗	✓	✓	✗	0.6000	0.6000	0.0000	●
	Wetland Rehabilitation	Vernal Pool (VP)	✓	✓	✗	✓	✓	✗	0.2900	0.2900	0.0000	●
Tecolote - Tree of Heaven removal	Wetland Enhancement	Riparian Forest (RF)	✓	✓	✓	✓	✓	✗	0.2500	0.2500	0.0000	●
Tecolote Canyon Wetland and Upland	Upland Restoration	Coastal Sage Scrub (CSS)	✗	✗	✗	✓	✓	✗	3.3000	3.2998	0.0002	●
		Native Grassland (NG)	✗	✗	✗	✓	✓	✗	0.0700	0.0560	0.0140	●
	Wetland Creation/Restoration	Riparian Forest (RF)	✓	✓	✓	✓	✓	✗	1.1900	0.7990	0.3910	●
		Southern Willow Scrub (SWS)	✓	✓	✓	✓	✓	✗	0.4200	0.4090	0.0110	●
San Diego												
Camino del Rio North - San Diego River Creation	Wetland Creation/Restoration	Riparian Forest (RF)	✓	✓	✓	✓	✓	✗	3.4300	2.2089	1.2211	●
Lake Murray	Upland Restoration	Diegan Coastal Sage Scrub (DCSS)	✗	✗	✗	✓	✓	✗	5.2000	5.0502	0.1498	●
	Wetland Enhancement	Southern Willow Scrub (SWS)	✓	✓	✓	✓	✓	✗	2.5000	1.5329	0.9671	●
Rancho Mission Enhancement	Wetland Enhancement	Southern Willow Scrub (SWS)	✓	✓	✓	✓	✓	✗	8.7400	2.1302	6.6098	●
Stadium	Upland Restoration	Diegan Coastal Sage Scrub (DCSS)	✗	✗	✗	✓	✓	✗	0.9690	0.0000	0.9690	●
	Wetland Enhancement	Freshwater Marsh (FM)	✓	✓	✓	✓	✓	✗	0.3680	0.0000	0.3680	●
		Riparian Forest (RF)	✓	✓	✓	✓	✓	✗	13.9940	0.0800	13.9140	●
		Riparian Forest (RF)	✓	✓	✓	✓	✓	✗	7.6560	0.0000	7.6560	●
		Riparian Forest (RF)	✓	✓	✓	✓	✓	✗	1.7830	0.0000	1.7830	●

Stadium	Wetland Enhancement	Southern Riparian Scrub (SRS)	✓	✓	✓	✓	✓	✗	3.7930	0.0000	3.7930	●
		Southern Riparian Scrub (SRS)	✓	✓	✓	✓	✓	✗	1.3940	0.2130	1.1810	●
		Southern Riparian Scrub (SRS)	✓	✓	✓	✓	✓	✗	0.8560	0.0000	0.8560	●
	Wetland Reestablishment	Freshwater Marsh (FM)	✓	✓	✓	✓	✓	✗	0.0550	0.0000	0.0550	●
		Riparian Forest (RF)	✓	✓	✓	✓	✓	✗	0.0020	0.0000	0.0020	●
		Southern Riparian Scrub (SRS)	✓	✓	✓	✓	✓	✗	0.8020	0.0000	0.8020	●
		Southern Riparian Scrub (SRS)	✓	✓	✓	✓	✓	✗	1.5310	0.0000	1.5310	●
	Wetland Rehabilitation	Freshwater Marsh (FM)	✓	✓	✓	✓	✓	✗	0.0690	0.0000	0.0690	●
		Riparian Forest (RF)	✓	✓	✓	✓	✓	✗	5.7560	0.0400	5.7160	●
		Riparian Forest (RF)	✓	✓	✓	✓	✓	✗	6.3280	0.0000	6.3280	●
		Riparian Forest (RF)	✓	✓	✓	✓	✓	✗	0.8260	0.0000	0.8260	●
		Southern Riparian Scrub (SRS)	✓	✓	✓	✓	✓	✗	1.9930	0.0590	1.9340	●
		Southern Riparian Scrub (SRS)	✓	✓	✓	✓	✓	✗	4.9400	0.0120	4.9280	●
		Southern Riparian Scrub (SRS)	✓	✓	✓	✓	✓	✗	1.7280	0.0000	1.7280	●
Tijuana												
Marron Valley Cornerstone Lands Conservation Bank	Upland Bank	Diegan Coastal Sage Scrub (DCSS)	✗	✗	✗	✓	✓	✗	7.5450	6.9480	0.5970	●
Otay Mesa Mitigation Bank	Upland Bank	Maritime Succulent Scrub (MSS)	✗	✗	✗	✓	✓	✗	13.2400	1.7280	11.5120	●